

## **Bottineau** Transitway

# Draft Environmental Impact Statement



Hennepin County  
Regional Railroad Authority  
Minnesota



FEDERAL TRANSIT  
ADMINISTRATION



March 2014



**BOTTINEAU TRANSITWAY  
DRAFT ENVIRONMENTAL IMPACT STATEMENT**

Prepared by:  
United State Department of Transportation (US DOT)  
Federal Transit Administration (FTA)

And

Hennepin County Regional Railroad Authority, Minnesota

Metropolitan Council, Minnesota

In cooperation with  
Federal Highway Administration (FHWA)  
Federal Aviation Administration (FAA)  
United States Army Corps of Engineers (USACE)  
Minnesota Department of Transportation (MnDOT)

Pursuant to:

National Environmental Policy Act of 1969 (NEPA), as amended, 42 U.S.C. Section 4321 *et seq.*; Council of Environmental Quality (CEQ) regulations, 40 C.F.R. Section 1500 *et seq.*, Implementing NEPA; Safe, Accountable, Flexible, Efficient Transportation Equity Act; A Legacy for Users (SAFETEA-LU), Pub. L. No. 109-59 (Aug. 10, 2005); Federal Transit Laws, 49 U.S.C. Chapter 53; Environmental Impact and Related Procedures, 23 C.F.R. Part 771, a joint regulation of the Federal Highway Administration and Federal Transit Administration implementing NEPA and CEQ regulations; Section 106 of the National Historic Preservation Act of 1966, 16 U.S.C. Section 470(f); Section 4(f) of the Department of Transportation Act of 1966, as amended, 49 U.S.C. Section 303; Section 6(f)(3) of the Land and Water Conservation Fund Act of 1965, 16 U.S.C. Section 4601 - 4 *et seq.*; Clean Air Act, as amended, 42 U.S.C. Section 7401 *et seq.*; Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, 42 U.S.C. Section 4601 *et seq.*; Executive Order No. 12898 (Federal Actions to Address Environmental Justice in Minority and Low Income Populations); Executive Order No. 13166 (Improving Access to Services for Persons with Limited English Proficiency); Executive Order No. 11988 (Floodplain Management); other applicable Federal laws and procedures; and all relevant laws and procedures of the State of Minnesota.

FTA will issue a single Final Environmental Impact Statement and Record of Decision document pursuant to Pub. L. 112-141, 126 Stat. 405, Section 1319(b) unless FTA determines statutory criteria or practicability considerations preclude issue of the combined document pursuant to Section 1319.

3-24-2014

Date of Approval

  
Regional Administrator  
Federal Transit Administration  
Region V

3/25/14  
Date of Approval

  
Executive Director  
Hennepin County Regional Railroad Authority

3-25-2014

Date of Approval

  
Director, Metropolitan Transportation Services  
Metropolitan Council



## ABSTRACT

This Draft Environmental Impact Statement (Draft EIS) describes the transportation and environmental impacts associated with the construction and operation of a light rail transit (LRT) project to improve transit service in the Bottineau Transitway Corridor in Hennepin County, Minnesota. The study area is bounded roughly by MN 55 to the south, TH 610 to the north, I-94 to the northwest and Bottineau Boulevard (County Road 81) to the west, and West Broadway Avenue (County Road 103) to the east. The effects of the No-Build Alternative, Enhanced Bus/Transportation Systems Management Alternative, and LRT Alternatives are evaluated and compared across a range of subject areas related to both natural and man-made environments. All potentially significant environmental, social, economic, and transportation benefits and impacts of the proposed alternatives are evaluated including transportation systems, land use, socio-economic conditions, air quality, noise, vibration, visual, ecosystems, water resources, historic resources, archeological resources, parklands, geology, hazardous/regulated materials, safety/security, public involvement, financial analysis, and indirect and cumulative effects.

The proposed Bottineau Transitway Project is a 13-mile corridor of transportation improvements that extends from downtown Minneapolis to the northwest, serving north Minneapolis, Golden Valley, Robbinsdale, Crystal, New Hope, Osseo, Brooklyn Park, and Maple Grove. The Transitway is anticipated to also serve a broader area to the northwest, including the communities of Dayton, Rogers, and Hassan Township. It will integrate with the region's system of transitways, including the existing Blue Line (Hiawatha) LRT, the Green Line (Central Corridor and the planned Southwest line) LRT, bus rapid transit (BRT) on the Red Line (Cedar Avenue) and Orange Line (I-35W South), the Northstar Commuter Rail, and express bus routes.

The primary transportation needs of the community that the Bottineau Transitway project addresses include: 1) growing travel demand, 2) increasing traffic congestion, 3) people who depend on transit, 4) limited transit service to suburban destinations and time-efficient transit options, 5) regional objectives for growth.

The purpose of the Bottineau Transitway is to provide transit service which will satisfy the long-term regional mobility and accessibility needs for businesses and the traveling public.

Transportation and land use studies along the Bottineau Corridor date back to the late 1980s. Previous studies include regional system studies, corridor studies, and site-specific studies. The Bottineau Transitway has consistently been included in regional transportation system plans. Many different alignments and modes, including BRT, LRT, and commuter rail have been considered and evaluated in corridor-specific plans and studies. The region's current long-range transportation plan, the *2030 Transportation Policy Plan (TPP)* (adopted November 2010) identifies the Bottineau Transitway as one of the corridors to be developed by 2030 as LRT, Busway, Highway BRT or Commuter Rail. The recommendation for the Bottineau Transitway is based on findings from the Metropolitan Council's *2030 Transit Master Study* (August 2008), and reinforces the transit travel demand in the Bottineau Transitway, consistently identified in previous regional transportation system plans. These include the *Regional Transit Board LRT Plan* (1990), the *Transit 2020 Master Plan* (February 2000), the *2025 Transportation Policy Plan* (adopted January 2001, amended January 2002), and the *2030 Transportation Policy Plan* (adopted December 2004).

Comments on this document may be submitted in writing or made verbally at public hearings for the project. The public is encouraged to submit comments during the public review period from April 11 through May 29, 2014. Public Hearings will be held at the following locations:



**Wednesday, May 7, 2014**

Golden Valley City Hall  
6:00 – 7:00 PM Public Open House  
7:00 PM Formal Public Hearing

**Thursday, May 8, 2014**

University of Minnesota Urban Research and  
Outreach-Engagement Center (UROC)  
4:30 – 5:30 PM Public Open House  
5:30 PM Formal Public Hearing

**Tuesday, May 13, 2014**

Brooklyn Park City Hall  
4:30 – 5:30 PM Public Open House  
5:30 PM Formal Public Hearing

**Wednesday, May 14, 2014**

Crystal Community Center  
5:00 – 6:00 PM Public Open House  
6:00 PM Formal Public Hearing

The address to which written comments should be sent is:

Hennepin County  
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FTA will issue a single Final Environmental Impact Statement and Record of Decision document pursuant to Pub. L. 112-141, 126 Stat. 405, Section 1319(b) unless FTA determines statutory criteria or practicability considerations preclude issue of the combined document pursuant to Section 1319.

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# Table of Contents

List of Tables .....	vi
List of Figures.....	xi
Glossary of Terms .....	xv
Acronyms .....	xxi
Executive Summary .....	xxiv
1.0 Purpose and Need.....	1-1
1.1 Project Description.....	1-1
1.2 Project Background.....	1-7
1.3 Project Purpose .....	1-10
1.4 Project Need.....	1-10
1.5 Goals and Objectives .....	1-24
2.0 Alternatives.....	2-1
2.1 Alternatives Development Process .....	2-1
2.2 Draft EIS Scoping Process .....	2-6
2.3 Alternatives Not Recommended for Further Study in Draft EIS .....	2-10
2.4 Alternatives Advanced for Further Study in Draft EIS .....	2-11
2.5 Locally Preferred Alternative (LPA) Selection Process .....	2-30
2.6 Environmentally Preferred Alternative .....	2-30
3.0 Transportation Analysis.....	3-1
3.1 Transit Conditions .....	3-2
3.2 Freight Rail Conditions.....	3-15
3.3 Vehicular Traffic .....	3-25
3.4 Pedestrians and Bicycles.....	3-34
3.5 Parking.....	3-45
3.6 Aviation .....	3-52
4.0 Community and Social Analysis.....	4-1
4.1 Land Use Plan Compatibility.....	4-2
4.2 Community Facilities/Community Character and Cohesion.....	4-9
4.3 Displacement of Residents and Businesses.....	4-37
4.4 Cultural Resources.....	4-44
4.5 Visual/Aesthetics .....	4-64
4.6 Business Impacts.....	4-76
4.7 Safety and Security .....	4-81



5.0 Physical and Environmental Analysis.....	5-1
5.1 Utilities.....	5-2
5.2 Floodplains.....	5-13
5.3 Wetlands.....	5-24
5.4 Geology, Soils, and Topography.....	5-29
5.5 Hazardous Materials Contamination.....	5-32
5.6 Noise.....	5-38
5.7 Vibration.....	5-63
5.8 Biological Environment (Wildlife Habitat and Endangered Species).....	5-77
5.9 Water Quality and Stormwater.....	5-93
5.10 Air Quality.....	5-103
5.11 Energy.....	5-112
6.0 Indirect Effects and Cumulative Impacts.....	6-1
6.1 Introduction.....	6-1
6.2 Methodology.....	6-1
6.3 Reasonably Foreseeable Future Actions.....	6-5
6.4 Potential Indirect Effects and Cumulative Impacts.....	6-8
7.0 Environmental Justice.....	7-1
7.1 Introduction and Regulatory Overview.....	7-1
7.2 Methodology for the Bottineau Transitway EJ Analysis.....	7-2
7.3 Environmental Justice Populations in the Study Area.....	7-3
7.4 Public Engagement.....	7-10
7.5 Environmental Justice Impacts Analysis.....	7-21
7.6 Environmental Justice Analysis Conclusions.....	7-35
8.0 Draft Section 4(f) Evaluation.....	8-1
8.1 Section 4(f) Overview.....	8-1
8.2 Alternatives Evaluation and Description of the Project.....	8-3
8.3 Identification of Section 4(f) Properties.....	8-5
8.4 Direct Use of Section 4(f) Properties.....	8-15
8.5 Evaluation of Constructive Use of Section 4(f) Properties.....	8-36
8.6 Temporary Occupancy of Section 4(f) Properties.....	8-42
8.7 Preliminary Determination of Section 4(f) Use.....	8-46
9.0 Consultation and Coordination.....	9-1
9.1 Public Outreach Approach.....	9-1
9.2 Summary of Public Outreach Activities.....	9-4
9.3 Agency Coordination.....	9-9



9.4	Section 106 Coordination .....	9-11
9.5	Section 404/NEPA Merger Process .....	9-13
10.0	Financial Considerations .....	10-1
10.1	Capital Cost Estimate.....	10-1
10.2	Operations and Maintenance Costs .....	10-5
10.3	Sources of Funding.....	10-7
11.0	Evaluation of Alternatives.....	11-1
11.1	Evaluation Framework and Methods.....	11-1
11.2	Alternative Key Differentiators .....	11-3
11.3	Environmentally Preferred Alternative .....	11-13
11.4	Next Steps .....	11-14
Appendix A. List of Recipients		
Appendix B. List of Preparers		
Appendix C. Sources & References Cited		
Appendix D. Agency Coordination		
Appendix E. Conceptual Engineering Drawings		
Appendix F. Supporting Technical Reports and Information		
Appendix G. Supporting Noise and Vibration Information		
Appendix H. Public Notices and Public Information		
Appendix I. Land Use Maps		

## List of Tables

Table 1.4-1. Historic Population Change and Future Population Forecasts within Bottineau Project Area
Table 1.4-2. Historic Employment Change and Future Employment Forecasts within Bottineau Transitway Project Area
Table 1.4-3. Collar County Travel Demand for Trips Ending in the Bottineau Transitway Project Area
Table 1.4-4. Transit-Dependent Population as a Share of Community Population
Table 1.5-1. Bottineau Transitway Goals and Objectives
Table 2.1-1. Screening Criteria Used To Identify Alternatives with Potential to Address Project Needs and Goals
Table 2.3-1. Basis for Scoping Recommendation to Stop Study of BRT
Table 2.4-1. Stations by Alignment
Table 2.4-2. Alternative Descriptions
Table 3.0-1. Summary of Defined Study Areas – Transportation Analysis
Table 3.1-1. Summary of Existing Transit Service and Changes Under Alternatives
Table 3.1-2. End-to-End Travel Times for Enhanced Bus/TSM and Build Alternatives
Table 3.1-3. Summary of Operating Frequencies (Minutes between Buses/Trains)
Table 3.1-4. Bottineau Corridor Transit Ridership Summary (Average Weekday Unlinked Trips)
Table 3.1-5. Ridership by Peak/Off-Peak and Direction (2030)
Table 3.1-6. Regional Linked/New Transit Trips
Table 3.1-7. Daily (Weekday) Hours of User Benefit (2030)
Table 3.1-8. Daily (Weekday) Reduction in Vehicle Miles Traveled (2030)
Table 3.1-9. Summary of Build Alternative Benefits
Table 3.2-1. Operating Phase (Long-Term) Impacts by Alternative – Freight Rail
Table 3.2-2. Location of Potential Bridge Modifications Along Rail Corridor
Table 3.2-3. Potential Bridge Modifications
Table 3.2-4. Construction Impacts by Alternative – Freight Rail
Table 3.3-1. Intersection Level of Service Definitions
Table 3.3-2. No-Build 2030 PM Peak Traffic Operations
Table 3.3-3. Impacts By Alternative – Traffic Operations
Table 3.3-4. Alignment A 2030 PM Peak Traffic Operations
Table 3.3-5. Alignment B 2030 PM Peak Traffic Operations
Table 3.3-6. Alignment C 2030 PM Peak Traffic Operations
Table 3.3-7. Alignment D1 2030 PM Peak Traffic Operations

Table 3.3-8. Alignment D2 2030 PM Peak Traffic Operations
Table 3.3-9. Alignment D Common Section 2030 PM Peak Traffic Operations
Table 3.3-10. Park-and-Ride Facility Trip Generation (Preferred Alternative)
Table 3.4-1. Impacts by Alternative – Bicycle and Pedestrian Facilities
Table 3.5-1. Operating Phase (Long-Term) Parking Impacts by Alternative
Table 3.5-2. Construction Impacts By Alternative – Parking
Table 4.0-1. Summary of Defined Study Areas – Social Analysis
Table 4.2-1. Potential Impacts to Community Facilities/Community Character and Cohesion
Table 4.2-2. Community Facilities along Alignment A in Brooklyn Park
Table 4.2-3. Park Resources along Alignment A in Brooklyn Park
Table 4.2-4. Community Facilities along Alignment B in Brooklyn Park
Table 4.2-5. Park Resources along Alignment B in Brooklyn Park
Table 4.2-6. Park Resources along Alignment C in Brooklyn Park
Table 4.2-7. Community Facilities along Alignment C in Crystal
Table 4.2-8. Park Resources along Alignment C in Crystal
Table 4.2-9. Community Facilities along Alignment C in Robbinsdale
Table 4.2-10. Park Resources along Alignment C in Robbinsdale
Table 4.2-11. Park Resources along Alignment D1 in Robbinsdale
Table 4.2-12. Community Facilities along Alignment D1 in Golden Valley
Table 4.2-13. Park Resources along Alignment D1 in Golden Valley
Table 4.2-14. Park Resources along Alignment D1 in Minneapolis
Table 4.2-15. Community Facilities along Alignment D2 in Robbinsdale
Table 4.2-16. Park Resources along Alignment D2 in Robbinsdale
Table 4.2-17. Community Facilities along Alignment D2 in Minneapolis
Table 4.2-18. Park Resources along Alignment D2 in Minneapolis
Table 4.2-19. Community Facilities along the Alignment D Common Section in Minneapolis
Table 4.2-20. Park Resources along the Alignment D Common Section in Minneapolis
Table 4.2-21. Potential Impacts to Community Facilities/Community Character and Cohesion
Table 4.3-1. Impact Details by Alignment
Table 4.3-2. Impact Details by Alternative
Table 4.3-3. Number and Types of Parcels Impacted by Alignment
Table 4.3-4. Number and Types of Parcels Impacted by Alternative
Table 4.3-5. Acquisition Details for OMF Locations
Table 4.3-6. Displaced Properties by Alignment



Table 4.3-7. Displaced Properties by Alternative
Table 4.3-8. Displaced Properties, by OMF Location
Table 4.4-1. Historic Properties for which Adverse Effects have been determined, by Alternative
Table 4.4-2. Historic Properties with Potential Effects, by Alternative
Table 4.4-3. Historic Properties with Potential Effects, by Alignment
Table 4.4-4. Number of Historic Properties with Adverse Effects or Potential Effects, by Alternative
Table 4.6-1. Summary of Direct Impacts to Commercial Uses along Alignment A
Table 4.6-2. Summary of Direct Impacts to Commercial Uses along Alignment B
Table 4.6-3. Summary of Direct Impacts to Commercial Uses along Alignment C
Table 4.6-4. Summary of Direct Impacts to Commercial Uses along Alignment D2
Table 4.6-5. Summary of Economic Effects by Alternative
Table 4.7-1. Community Facilities and Parklands with Potential Safety Concerns
Table 5.0-1. Summary of Defined Study Areas – Physical and Environmental Analysis
Table 5.1-1. Water Main (Greater than 18”) within the Study Area
Table 5.1-2. Known Private Wells within the Study Area
Table 5.1-3. Sanitary/MCES Interceptor Sewers
Table 5.1-4. Overhead Power Lines within the Study Area
Table 5.1-5. Gas Lines within the Study Area
Table 5.2-1. Summary of 100-Year Floodplain and Floodway Storage Loss by Alternative
Table 5.3-1. Wetland Disturbance of Fill for Alignment A by Plant Community
Table 5.3-2. Wetland Disturbance or Fill for Alignment B (part of the Preferred Alternative) by Plant Community
Table 5.3-3. Wetland Disturbance or Fill for Alignment C (part of the Preferred Alternative) by Plant Community
Table 5.3-4. Wetland Disturbance or Fill for Alignment D1 (part of the Preferred Alternative) by Plant Community
Table 5.3-5. Wetland Disturbance or Fill for Alignment D2 by Plant Community
Table 5.3-6. Summary of Wetland Disturbance or Fill by Alternative
Table 5.5-1. Number of Recorded Sites with Potential Contaminants by Alternative
Table 5.5-2. Contamination Risk by Alignment based on Classification and Location
Table 5.5-3. Contamination Risk by Alternative
Table 5.6-1. FTA Construction Noise Assessment Criteria
Table 5.6-2. FTA Screening Distances for Noise Assessments
Table 5.6-3. Summary of Existing Ambient Noise Measurement Results
Table 5.6-4. Summary of Unmitigated Noise Impacts by Alignment

Table 5.6-5. Summary of Unmitigated Noise Impacts by Alternative
Table 5.6-6. Construction Equipment Noise Emission Levels
Table 5.6-7. Typical Equipment List, At-Grade Track Construction
Table 5.6-8. Potential Noise Mitigation Measures for Operational Impacts
Table 5.6-9. Potential Noise Mitigation Measures by Alignment
Table 5.7-1. Ground-Borne Noise and Vibration Impact Criteria
Table 5.7-2. Ground-Borne Noise and Vibration Impact Criteria for Special Buildings
Table 5.7-3. FTA Criteria for Detailed Vibration Analysis
Table 5.7-4. FTA Vibration Criteria for Potential Structural Damage
Table 5.7-5. FTA Screening Distances for Vibration Assessments
Table 5.7-6. Ground-Borne Vibration Propagation Measurement Locations
Table 5.7-7. Summary of Ground-Borne Vibration Impacts by Alignment
Table 5.7-8. Summary of Vibration Impacts by Alternative
Table 5.7-9. Potential Vibration Mitigation Measures
Table 5.7-10. Potential Vibration Mitigation Measures by Alignment
Table 5.8-1. State- and Federal-Listed Species in the Study Area
Table 5.8-2. Habitat Types by Alignment
Table 5.8-3. Wildlife Habitat Impacts by Alignment
Table 5.8-4. Wildlife Habitat Impacts by Alternative
Table 5.9-1. Downtown Impaired Waters within One Mile of Proposed Alignment
Table 5.9-2. WMC, WMO, and City Stormwater Management Requirements Summary
Table 5.9-3. Impervious Surface Increase by Alternative
Table 5.9-4. Proposed BMPs
Table 5.10-1. Background Carbon Monoxide Concentrations
Table 5.10-2. Carbon Monoxide Modeling Results (Listed in parts-per-million (ppm))
Table 5.10-3. Summary of Air Quality Impacts and Mitigation Measures
Table 5.11-1. Energy Consumption Factors
Table 5.11-2. Estimated Energy Use of Alternatives by 2030
Table 6.3-1 Reasonable Foreseeable Future Actions
Table 6.4-1. Summary of Indirect Effects and Cumulative Impacts
Table 7.3-1. Minority Population by State, Region, County, and Corridor
Table 7.3-2. Low-Income Population by State, Region, County, and Bottineau Transitway
Table 7.4-1. Environmental Justice-Related Outreach Efforts & Outcomes
Table 7.5-1. Operating Phase: Potential Impacts by Alternative

Table 7.5-2. Operating Phase: Disproportionately High and Adverse Impacts by Alternative
Table 7.5-3. Number of Parking Spaces Lost by Alignment
Table 7.5-4. Number of Displaced Residential and Commercial Properties by Alignment
Table 7.5-5. Construction Phase: Potential Impacts by Alternative
Table 7.5-6. Construction Phase: Disproportionately High and Adverse Impacts by Alternative
Table 7.5-7. Daily (Weekday) Hours of User Benefits (2030)
Table 7.6-1. Environmental Resource Impacts to Environmental Justice Populations by Alternative
Table 8.2-1. Summary of LRT Build Alternatives
Table 8.3-1. Publicly Owned Park and Recreational Properties Adjacent to the Bottineau Transitway
Table 8.3-2. Historic Properties Evaluated for Section 4(f) Use
Table 8.7-1. Use of Section 4(f) Properties, by Alternative
Table 9.1-1. Summary of Notices and Flyers
Table 9.2-1. Open House Meeting Participation
Table 9.3-1. Cooperating and Participating Agencies in the Environmental Process
Table 9.3-2. Permits/Approvals Required
Table 10.1-1. Capital Cost Estimate Summary ('000s)
Table 10.2-1. No-Build Alternative Operations & Maintenance Cost (in 2013 dollars over Existing Service)
Table 10.2-2. Operations & Maintenance Cost Summary (in 2013 dollars over No-Build)
Table 10.3-1. Funding by Source
Table 11.1-1. Bottineau Transitway Goals and Objectives
Table 11.2-1. Bottineau Transitway Key Differentiators Evaluation Summary
Table 11.2-2. Summary Performance Ratings of Alternatives



## List of Figures

Figure 1.1-1. Bottineau Transitway Project Area  
Figure 1.1-2. Bottineau Transitway Project Area Activity Centers  
Figure 1.1-3. Existing Project Area Transit Services and Facilities  
Figure 1.1-4. Regional Transitway System  
Figure 1.2-1. Summary of Previous Bottineau (Northwest) Corridor Studies  
Figure 1.4-1. Corridor and Contributing Communities  
Figure 1.4-2. 2010 to 2030 Employment Forecast  
Figure 1.4-3. 2005-2030 Traffic Volume Growth Across Corridor Screenlines  
Figure 1.4-4. 2010-2030 Population Change within the Bottineau Transitway Project Area  
Figure 1.4-5. Percent of Households with Zero Vehicles  
Figure 1.4-6. Percent of Population Over Age 65  
Figure 2.1-1. Range of Alternatives (AA Study)  
Figure 2.1-2. Segment D2 Alignment Options Considered  
Figure 2.2-1. Build Alternatives Proposed for Study in Scoping (*As Reflected in Scoping Booklet*)  
Figure 2.4-1. Bottineau Transitway Build Alternatives  
Figure 2.4-2. Alignments A, B, and C: Park-and-Ride Locations  
Figure 2.4-3. Potential OMF Sites  
Figure 2.4-4. General TPSS Locations  
Figure 2.4-5. Alternative A-C-D1  
Figure 2.4-6. Alternative A-C-D2  
Figure 2.4-7. Alternative B-C-D1  
Figure 2.4-8. Alternative B-C-D2  
Figure 2.4-9. Locations of New Bridge Structures  
Figure 3.1-1. Existing and Planned Regional Transitways (as represented in the 2030 TPP)  
Figure 3.1-2. Transit Service Area and Existing Service  
Figure 3.1-3. Enhanced Bus/TSM Routes 731 and 732  
Figure 3.1-4. 2030 Forecast Daily Station Use for Build Alternatives  
Figure 3.2-1. Freight Rail Study Area  
Figure 3.2-2. Typical Railway Section (Alignment C)  
Figure 3.4-1. Alignment A: Impacts to Pedestrian and Bicycle Facilities  
Figure 3.4-2. Alignment B: Impacts to Pedestrian and Bicycle Facilities

Figure 3.4-3. Alignment C: Impacts to Pedestrian and Bicycle Facilities

Figure 3.4-4. Alignment D1 and D Common Section: Impacts to Pedestrian and Bicycle Facilities

Figure 3.4-5. Alignment D2 and D Common Section: Impacts to Pedestrian and Bicycle Facilities

Figure 3.5-1. Alignment D2: 34th Avenue Parking Impacts

Figure 3.5-2. Alignment D2: West Broadway Parking Impacts

Figure 3.5-3. Alignment D2: Penn Avenue Parking Impacts (1)

Figure 3.5-4. Alignment D2: Penn Avenue Parking Impacts (2)

Figure 3.6-1. Crystal Airport Study Area

Figure 3.6-2. RPZ Typical Sections

Figure 4.2-1. Primary Physical and Community Features in Maple Grove

Figure 4.2-2. Primary Physical and Community Features in Brooklyn Park

Figure 4.2-3. Officially Recognized Neighborhoods and Primary Community Features along the Bottineau Transitway in Crystal

Figure 4.2-4. Primary Physical and Community Features in Robbinsdale

Figure 4.2-5. Primary Physical and Community Features in Golden Valley

Figure 4.2-6. Officially Recognized Neighborhoods and Primary Community Features along the Bottineau Transitway in Minneapolis

Figure 4.4-1. Architectural APE for Alignment A

Figure 4.4-2. Architectural APE for Alignment B

Figure 4.4-3. Architectural APE for Alignment C

Figure 4.4-4. Architectural APE for Alignment D1

Figure 4.4-5. Architectural APE for Alignment D2

Figure 4.4-6. Location of Historic Properties Identified within the Architectural APE

Figure 5.1-1. Known Private Wells within the Potential Area of Disturbance

Figure 5.1-2. Drinking Water Supply Management Areas & Wellhead Protection Areas

Figure 5.2-1. Alignment A Floodplain and Wetland Resources and Impacts

Figure 5.2-2. Alignment B Floodplain and Wetland Resources and Impacts

Figure 5.2-3. Alignment C Floodplain and Wetland Resources and Impacts

Figure 5.2-4. Alignments D1 and D2 Floodplain and Wetland Resources and Impacts (north end)

Figure 5.2-5. Alignments D1 and D2 Floodplain and Wetland Resources and Impacts (south end)

Figure 5.2-6. Alignment D1 Potential Floodplain Storage Mitigation Sites

Figure 5.5-1. Bottineau Transitway Hazardous and Contaminated Sites

Figure 5.6-1. Examples of Typical A-Weighted Sound Levels

Figure 5.6-2. Examples of Typical Outdoor  $L_{dn}$  Noise Exposure

Figure 5.6-3. FTA Noise Impact Criteria Comparing Existing Noise to Project Noise

Figure 5.6-4. FTA Noise Impact Criteria Comparing Existing Noise to Increase in Future Noise

Figure 5.6-5. Project 24-Hour Noise Exposure from LRT Operations

Figure 5.6-6. Noise and Vibration Measurement Locations

Figure 5.7-1. Typical Ground-Borne Vibration levels

Figure 5.7-2. FTA Criteria for Detailed Vibration Analysis

Figure 5.7-3. Noise and Vibration Measurement Locations

Figure 5.8-1. Alignment A Wildlife Habitat Impact

Figure 5.8-2. Alignment B Wildlife Habitat Impact

Figure 5.8-3. Alignment C Wildlife Habitat Impact

Figure 5.8-4. Alignments D1, D2, and D Common Section Wildlife Habitat Impacts

Figure 5.9-1. Bottineau Transitway: Watershed Management Areas

Figure 5.9-2. Impaired Waters Within the Study Area

Figure 5.9-3. Proposed Stormwater Ponds at Park-and-Ride Locations

Figure 5.10-1. National MSAT Emission Trends 1999 - 2050 for Vehicles Operating On Roadways Using EPA's MOBILE 6.2 Model

Figure 6.2-1. Primary Study Areas for Indirect and Cumulative Impacts

Figure 7.3-1. Minority Populations in the Bottineau Transitway Study Area by Block

Figure 7.3-2. African American Population in the Bottineau Transitway Study Area by Block

Figure 7.3-3. Asian American Population in the Bottineau Transitway Study Area by Block

Figure 7.3-4. Hispanic American Population in the Bottineau Transitway Study Area by Block

Figure 7.3-5. Low-Income Population in the Bottineau Transitway Study Area by Block Group

Figure 7.4-1. Corridors of Opportunity Grantee Organizations Working in the Bottineau Transitway Study Area

Figure 8.3-1. Park and Recreational Properties adjacent to the Bottineau Transitway

Figure 8.3-2. Historic Properties adjacent to the Bottineau Transitway

Figure 8.4-1. Alignment B OMF Locations and Rush Creek Regional Trail Area of Potential Use

Figure 8.4-2. Locations of Theodore Wirth Regional Park Facilities

Figure 8.4-3. Location of Winter Trails within the Northern Portion of Theodore Wirth Regional Park

Figure 8.4-4. Plymouth Avenue Station Option – Potential Areas of Direct Use

Figure 8.4-5. Golden Valley Road Station Option – Potential Areas of Direct Use

Figure 8.4-6. Theodore Wirth Regional Park: Areas of Potential Use

Figure 8.4-7. Alignment of LRT and BNSF tracks near Theodore Wirth Parkway

Figure 8.4-8. Minneapolis Public Schools Athletic Field Area of Potential Direct Use

Figure 8.4-9. Homewood Historic District: Area of Potential Direct Use

Figure 8.4-10. Grand Rounds Historic District – Theodore Wirth Segment: Areas of Potential Impacts



Figure 8.6-1. Sochacki Park: Areas of Potential Temporary Occupancy

Figure 8.6-2. Mary Hills Nature Area: Areas of Potential Temporary Occupancy

Figure 8.6-3. Theodore Wirth Regional Park: Areas of Potential Temporary Occupancy

Figure 9.1-1. Bottineau Transitway Project Website

## Glossary of Terms

**Access or Accessibility:** In transportation, “access” or accessibility refers to the ease with which people can reach multiple destinations. People in places that are highly accessible can reach many other activities or destinations quickly and easily.

**Activity center** is a destination where people gather. Activity centers include concentrated work locations, shopping areas, recreation areas, sports stadiums, educational institutions, government centers, museums, and so forth.

**Alignment** is the horizontal location of a railroad or transit system as described by curved and tangent track.

**Archaeological site:** Any place where evidence of past human life is found. Sites can range in size from small locations of artifacts to entire villages and cities.

**Area of Potential Effect (APE):** According to 36 CFR 800.16(d), this is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist.

**Best management practices (BMPs)** are the most efficient and effective means to achieve a desired goal, such as preventing pollution.

**Biota** are plants and animals

**Capital cost** is the one-time cost to build a project.

**Capital investment** is money invested in a business venture with an expectation of income.

**Compensatory mitigation measures** are actions required to offset the use of a Section 4(f) resource when impacts are unavoidable; such as photo-documentation of a historic building.

**Competitive transit option** offers a significant travel-time advantage that would attract people who could drive but chose to use transit while adequately serving transit-dependent riders.

**Contaminated site** is a location where a substance has been released to the environment and its presence creates a risk to human health or natural ecosystems.

**Cultural resource(s)** are defined as the buildings, structures, districts, objects and sites that are listed on or eligible for listing on the National Register of Historic Places (NRHP or National Register).

**Cumulative Impacts:** The CEQ regulations (40 CFR 1508.7) define cumulative impacts as the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time.

**Cut:** An area requiring excavation.

**Earnings:** Income earned based on new spending.

**Economic activity:** The sales of goods and services

**Employment:** Job creation based on new spending.

**Express routes** connect a number of areas with the central business district or other major destinations. These services typically operate during the morning and afternoon-evening peak travel hours. Express routes often use freeways or major arterials and make fewer stops along the way to make more predictable, faster trips.

**Facilitate:** Assist, make easier

**Fixed guideway or guideway** refers to transit service routes that are exclusive or controlled, either entirely or in part. Vehicles operating on fixed guideways may be railways (including light rail), portions of bus service operated on exclusive or controlled rights-of-way, or high-occupancy-vehicle (HOV) lanes.

**General fund appropriations** are the use of money placed into the State's general fund (the general fund consists of monies that are not restricted for specific uses).

**Grade separation** is a bridge or tunnel that separates transportation facilities such as a highway or railroad so that they will not disrupt each other's traffic flow when they cross.

**Ground-borne vibration:** The effects of ground-borne vibration include discernible movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for normal transportation projects, with the occasional exception of blasting and pile-driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings.

**Headway** is the time between buses or trains arriving at stops along a given transit route.

**Historic district** is a group of related buildings, properties, or sites that have been designated as historically or architecturally significant.

**Historic property(ies)** means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

**Housing unit** is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from the outside of the building or through a common hall.

**Impervious surfaces** are those that keep water from being absorbed into the ground. They include asphalt and concrete for roads, parking lots, sidewalks, etc.

**Indirect Effects** are those that are caused by the proposed action that occur later in time and/or proximity while being reasonably foreseeable.



**Infrastructure** is defined as the fundamental facilities and systems serving a country, state, or city. Transportation infrastructure includes things like roads, bridges, highways, bus systems, LRT systems, etc.

**Intermodal:** With respect to the FTA Standard Cost Category, “Intermodal” refers to a location where different modes of transportation connect, such as between commuter rail and light rail, or bus and light rail.

**Intersection operations** define how well intersections function to move traffic and pedestrians.

**Jurisdictional determination** is the process of identifying and locating jurisdictional Waters of the United States (including wetlands) regulated by the U.S. Army Corps of Engineers (COE) under Section 404 of the Clean Water Act.

**Land use** is the human modification of the natural environment or wilderness into built environment, such as fields, pastures, and settlements.

**Level of service (LOS)** is a quality measure used by traffic engineers to describe traffic, generally in terms of speed and travel time, maneuverability, comfort, and convenience. LOS ratings range from A (best) to F (worst). The Highway Capacity Manual provides LOS measures, thresholds, and estimation procedures for automobiles, transit, bicycles, and pedestrians.

**Limited stop routes** are a combination of local and express service. Stops may be several blocks to a mile or more apart.

**Linked trip** is a trip from origin to destination. One linked trip could include several unlinked trips, such as driving to a park and ride, riding a commuter train, and taking a bus to the final destination; this sequence represents one linked trip, but is made up of three unlinked trips and includes two transit system boardings.

**Low Income** person is one whose median household income is at or below the Department of Health and Human Services poverty guidelines.

**Major activity center** is a place of significant employment, retail, or entertainment activity.

**Memorandum of Agreement (MOA)** is a document written between parties to cooperatively work together on an agreed upon project or meet an agreed upon objective.

**Minnesota Environmental Quality Board (EQB)** brings together the Governor’s Office (as chair), five citizens, and the heads of nine state agencies that play a vital role in Minnesota’s environment and development. The board develops policy, creates long-range plans, and reviews proposed projects that would significantly influence Minnesota’s environment. The **EQB Monitor** is a biweekly publication of the Environmental Quality Board that lists descriptions and deadlines for Environmental Assessment Worksheets, Environmental Impact Statements, and other notices. The EQB Monitor is posted on the Environmental Quality board home page at <http://www.eqb.state.mn.us/>

**Minority Populations** are any readily identifiable group or groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed or transient persons such as migrant workers or Native Americans who will be similarly affected by the project.

**Mitigate:** To reduce the impact of an action.

**Mixed use** development is the practice of allowing more than one type of use in a building or set of buildings.

**Mobility**, in transportation, is the ability of people and goods to move freely within the transportation system.

**Multimodal** refers to a variety of modes (forms or types) of transportation such as personal automobile, bus, transit, pedestrian, etc.

**National Register of Historic Places (NRHP)** is the official list of the nation's historic places worthy of preservation. Authorized by the National Historic Preservation Act of 1966, the National Park Service's National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archeological resources.

**New Starts** is the federal funding program for new transit systems or extensions of existing transit systems; these funds are granted under Section 5309 (B) of the United States Code.

**Noise** is any disagreeable or undesired sound or other audible disturbance.

**Operating conditions:** Time of day, number of trains in operation, weather, special events, etc.

**Operation and maintenance** costs are the cost of running the light rail system, repairing any non-functioning parts of the system, and conducting routine maintenance of the light rail system

**Parcel** is a tract or plot of land.

**Passenger mile** is one passenger transported one mile.

**Passenger miles** is a measure of service utilization which represents the cumulative sum of the distances ridden by each passenger. It is normally calculated by summation of the passenger load times the distance between individual bus stops. For example, ten passengers riding in a transit vehicle for two miles equals 20 passenger miles.

**Peak periods** are when light rail would be most used, generally during rush hour.

**Pedestrian facilities** are sidewalks, recreational trails, etc.

**Person trip** is a trip by one or more persons in any mode of transportation. Each person is considered as making one person trip. For example, four persons traveling together in one auto make four person-trips.

**Pollutant loads:** The amount of pollution entering water resources.

**Preventative maintenance** is activity performed on a given schedule to prevent breakdowns of the light rail system or its components.

**Programmatic Agreement (PA)** is a document that spells out the terms of a formal, legally binding agreement between a state Department of Transportation (DOT) and other state and/or federal agencies. A PA establishes a process for consultation, review, and compliance with one or more federal laws, most often with those federal laws concerning historic preservation.

**Railway turnouts and crossovers** are mechanical installations enabling trains to move from one track to another.

**Receptors (noise and vibration)** are places or areas that may be affected by changes in noise and vibration. Generally they are residential areas, churches, schools, recreation areas, hospitals, etc.

**Redevelopment** is a tool created by state law to assist local governments in eliminating blight from a designated area, as well as to achieve the goals of development, reconstruction, and rehabilitation of residential, commercial, industrial and retail districts.

**Regional long-range transit plan** for the Twin Cities metro area is the 2030 Transportation Policy Plan. This plan contains policies and plans to guide development of the transportation system in the area through the year 2030.

**Restrictive covenant** is a clause in a deed or lease to real property that limits what the owner of the land or lease can do with the property. Restrictive covenants allow surrounding property owners, who have similar covenants in their deeds, to enforce the terms of the covenants in a court of law. They are intended to enhance property values by controlling development.

**Restructured local service** means changing local bus routes to more appropriately serve transit travel patterns.

**Reverse commute:** Reverse commuters live in cities and travel to the suburbs to work. This is the opposite of regular commuters who live in the suburbs and work in the city.

**Ridership:** The number of passengers using a particular form of public transportation.

**Right-in/right-out** intersections do not permit left turns or through movements.

**Riparian** areas are the banks of rivers, creeks, or lakes. Plants that grow in these areas are also referred to as riparian.

**Scoping:** NEPA scoping is a formal process to identify issues and alternatives for analysis in the NEPA document, which is either an Environmental Assessment (EA) or an Environmental Impact Statement (EIS).

**Section 106 Agreement** means the document that records the terms and conditions agreed upon to resolve the adverse effects of an undertaking upon historic properties.

**Sensitive noise and vibration receptors** are places or areas that may be affected by changes in noise and vibration. Generally they are residential areas, churches, schools, recreation areas, hospitals, etc.

**Side platforms** are passenger platforms located to the outside of the tracks or guideways, as distinguished from center platforms located between the tracks or guideways.

**Socioeconomics:** Income, education, race, ethnicity, health, age, etc.

**Solicit:** Request

**Stakeholder** is a person or entity that has some interest in a project. For example, stakeholders can be community residents, businesses, construction and design contributors, funding sources and/or government agencies.

**Stormwater ponds** are ponds that collect and temporarily store runoff water during storms to prevent flooding.

**Streetscape** is the appearance or view of a street.

**Study area:** The geographic boundaries of the area being studied for the proposed Bottineau Transitway.

**System linkage** is a transit system's ability to get riders to work, recreation, shopping, and other destinations using a combination of lines or methods.

**Terminus:** End of the line

**Traction power substations (TPSS)** are LRT power sources; these are enclosed structures surrounded by security fencing.

**Transit-oriented development (TOD)** is a development or neighborhood designed to provide easy access to public transportation. TODs are generally located within one-quarter to one-half mile of a transit facility—walking distance—and are designed for a relatively high population. TODs typically include a mix of residential and commercial/office uses built around or adjacent to a light rail station or bus stop.

**Travel demand forecasts** are estimations of the number of people that would ride the light rail line.

**Travel demand model** is a computer generated travel demand estimate, created using either actual or projected population and employment data, to help predict how roadway or transit changes might affect local traffic.

**Travel demand, projected travel demand** is an estimate of how many vehicles will use local roads and area highways in the future.

**Unit costs** are the dollars per item or measurement of various project components. For example steel rail unit costs may be given in dollars per linear foot; parking ramps may be in dollars per parking space.

**Unlinked trip** is a trip taken by an individual on one specific mode. A “linked trip” may involve two or more unlinked trips.

**User benefits** represent the changes in mobility for individual travelers that are induced by a project.

**Vehicle miles traveled (VMT)** is the number of miles traveled by vehicles in one year.

**Vibration** is an oscillation wherein the quantity is a parameter that defines the motion of a mechanical system.

**Visually sensitive receptors** are people whose view of a project area may be changed by the project. These include trail users, residents of nearby homes, or users of adjacent open spaces.

**Water resources** are wetlands, floodplains, streams, rivers, etc.

**Zoning** is a device of land use planning used by local governments to separate one set of land use from another.

**Zoning district** is an area within the limits of a city within which uniform regulations and requirements govern the use, placement, spacing, and size of land and structures.

## Acronyms

AA	Alternatives Analysis
AASHTO	American Association of State Highway Officials
ACER	African Career, Education, and Resource, Inc.
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
AEDA	Asian Economic Development Association
ALP	Airport Layout Plan
ACS	American Community Survey
ANSI	American National Standards Institute
APE	Area of Potential Effect
ARCC	Advise, Review, and Communicate Committee
AREMA	American Railway Engineering and Maintenance-of-Way Association
ASTM	American Society for Testing and Materials
ATF	Across the Fence
BMP	Best Management Practice
BNSF	Burlington Northern Santa Fe (Railroad)
BRT	Bus Rapid Transit
BTU	British Thermal Unit
CAA	Clean Air Act
CAC	Community Advisory Committee
CCLRT	Central Corridor Light Rail Transit
CEI	Cost Effectiveness Index
CEQ	Council on Environmental Quality
CET	Community Engagement Team
CFR	Code of Federal Regulations
CP	Canadian Pacific Railway
CPI	Consumer Product Index
CPTED	Crime Prevention Through Environmental Design
CR	County Road
CRU	Cultural Resource Unit
CSAH	County State-Aid Highway
CTIB	Counties Transit Improvement Board
CTUL	Centro de Trabajadores Unidos En La Lucha
CWR	Continuously Welded Rail
DOT	U.S. Department of Transportation
Draft EIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
EO	Executive Order



EPA	U.S. Environmental Protection Agency
EQB	Environmental Quality Board
FAA	Federal Aviation Administration
FFGA	Full Funding Grant Agreement
Final EIS	Final Environmental Impact Statement
FLSC	Fire Life Safety Committee
FTA	Federal Transit Administration
GBN	Ground-Borne Noise
GBV	Ground-Borne Vibration
GIS	Geographic Information Systems
HCM	Highway Capacity Manual
HCRRRA	Hennepin County Regional Railroad Authority
HERC	Hennepin Energy Recovery Center
HHS	U.S. Department of Health and Human Services
HIA	Health Impact Assessment
LEDPA	Least Environmentally Damaging Preferred Alternative
I-35W	Interstate 35W
I-394	Interstate 394
I-94	Interstate 94
LAWCON	Land and Water Conservation Fund Act
LOS	Level of Service
LPA	Locally Preferred Alternative
LRT	Light Rail Transit
LRV	Light Rail Vehicle
MAC	Metropolitan Airports Commission
MAP-21	Moving Ahead for Progress in the 21 <sup>st</sup> Century Act
MEPA	Minnesota Environmental Protection Act
MICAH	Metropolitan Interfaith Council on Affordable Housing
MLS	Multiple Listing Service
MN MUTCD	Minnesota Manual on Uniform Traffic Control Devices
MnDOT	Minnesota Department of Transportation
MnDOT-CRU	Minnesota Department of Transportation Cultural Resources Unit
MnEQB	Minnesota Environmental Quality Board
MNOSHA	Minnesota Occupational Safety and Health Administration
MOA	Memorandum of Agreement
MOT	Maintenance of Traffic
MP	Mile Post
MPCA	Minnesota Pollution Control Agency
mph	Miles Per Hour
MPRB	Minneapolis Park and Recreation Board

MSAT	Mobile Source Air Toxics
N/A	Not Applicable
NC	Neighborhood Commercial
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NMMC	North Memorial Medical Center
NOA	Notice of Availability
NOI	Notice of Intent
NRHP	National Register of Historic Places
NTN	Northside Neighborhood Transportation Network
O&M	Operation and Maintenance
OCS	Overhead Contact System
OMF	Operations and Maintenance Facility
OSHA	Occupational Safety and Health Administration
PA	Programmatic Agreement
PAC	Policy Advisory Committee
PIP	Public Involvement Plan
RFFAs	Reasonably Foreseeable Future Actions
ROD	Record of Decision
ROW	Right-of-way
RPZ	Runway Protection Zone
SAFETEA-LU	Safe, Accountable, Flexible, and Efficient Transportation Equity Act—A Legacy for Users
SCC	Standard Cost Category
SEL	Sound Exposure Level
SEPP	Security and Emergency Preparedness Plan
SHPO	State Historic Preservation Office
SRF	SRF Consulting Group, Inc.
SSMP	Safety and Security Management Plan
TH	Trunk Highway
THPO	Tribal Historic Preservation Office
TMDL	Total Maximum Daily Load
TOD	Transit Oriented Development
TPP	Transportation Policy Plan
TPSS	Traction Power Substation
TSM	Transportation Systems Management
U.S.	United States
UROC	Urban Research and Outreach-Engagement Center
VMT	Vehicle Miles Traveled

# Executive Summary

## ES.1 What is the Purpose of this Document?

The Federal Transit Administration (FTA), the lead federal agency, with Hennepin County Regional Railroad Authority (HCRRA) and the Metropolitan Council, has prepared this Draft Environmental Impact Statement (EIS) pursuant to 23 CFR 771 to evaluate the potential for significant impacts as a result of the proposed action. The project will pursue federal funding from the FTA and is required to undertake environmental review in compliance with the National Environmental Policy Act (NEPA). The Metropolitan Council is the project sponsor and federal grant applicant for the project and will work in partnership with HCRRA.

The intent of the NEPA process is to ensure that potential environmental impacts are identified and considered in the decision-making process. The primary purpose of the Draft EIS is to assist decision-makers in the assessment of impacts associated with the Bottineau Transitway Project. The Draft EIS documents the purpose and need for the project, alternatives considered, and addresses the anticipated transportation, social, and environmental impacts, and defines appropriate mitigation measures.

In addition to NEPA, the provisions of other statutes, regulations, and executive orders affect the decision-making on federally assisted transportation projects. These mandates and considerations cover such concerns as air and water quality, historic preservation, parklands protection, habitat preservation, and environmental justice. FTA utilizes the NEPA process as the overarching umbrella under which the mandates and considerations of all laws affecting transit project development are considered.

The Draft EIS will also serve to comply with the requirements of the Minnesota Environmental Policy Act (MEPA).

## ES.2 Will the Public Have an Opportunity to Comment on the Draft EIS?

The Draft EIS serves as the primary document to facilitate review by federal, state, and local agencies and the general public of the proposed project. This Draft EIS will be circulated for review to interested parties, including private citizens, community groups, the business community, elected officials, and public agencies in accordance with federal and state requirements. Public hearings will be held to provide a forum for agency and citizen participation and comment. Responses to comments received during circulation of the Draft EIS will be responded to by the FTA and the Metropolitan Council as the project sponsor and state lead agency for preparation of the Final EIS. Both the comments and responses will be documented in the Final EIS.

Comments on the Draft EIS will be accepted from April 11 through May 29, 2014. Comments on the Draft EIS may be submitted through email, mail, or in person at one of the public hearings that will be held on the Bottineau Transitway. Public hearings to receive comments on the Draft EIS are scheduled as follows:

### **Wednesday, May 7, 2014**

Golden Valley City Hall  
6:00 – 7:00 PM Public Open House  
7:00 PM Formal Public Hearing

### **Tuesday, May 13, 2014**

Brooklyn Park City Hall  
4:30 – 5:30 PM Public Open House  
5:30 PM Formal Public Hearing

### **Thursday, May 8, 2014**

University of Minnesota Urban Research and Outreach-Engagement Center (UROC)  
4:30 – 5:30 PM Public Open House  
5:30 PM Formal Public Hearing

### **Wednesday, May 14, 2014**

Crystal Community Center  
5:00 – 6:00 PM Public Open House  
6:00 PM Formal Public Hearing

The address to which written comments should be sent is:

Hennepin County  
Housing, Community Works, & Transit  
701 Fourth Avenue South, Suite 400  
Minneapolis, MN 55415  
**bottineau@co.hennepin.mn.us.**

The Draft EIS and supporting documents are available on the project website at [http://bottineautransitway.org/2012\\_deis\\_documents.htm](http://bottineautransitway.org/2012_deis_documents.htm). Hard copies can be reviewed at the Metropolitan Council and HCRRA offices during regular business hours and at city halls and libraries in Minneapolis, Golden Valley, Robbinsdale, Crystal, New Hope, Brooklyn Park, Osseo, and Maple Grove, Minnesota.

### **ES.3 What is the Proposed Project?**

The Bottineau Transitway is a proposed project that will provide for transit improvements in the highly traveled northwest area of the Twin Cities. The Bottineau Transitway is located in Hennepin County, Minnesota, extending approximately 13 miles from downtown Minneapolis to the northwest serving north Minneapolis and the suburbs of Golden Valley, Robbinsdale, Crystal, New Hope, Osseo, Brooklyn Park, and Maple Grove. The transitway is anticipated to serve a broader area to the northwest, including the communities of Dayton, Rogers, and Hassan Township. (Hassan Township was annexed into the City of Rogers on January 1, 2012. Future reference of Rogers in this document includes Hassan Township).

The Draft EIS evaluates a No-Build alternative, an Enhanced Bus/Transportation System Management (TSM) alternative, and four Build alternatives. The alternatives are described below.

### **ES.4 What is the Purpose and Need for the Project?**

The purpose of the Bottineau Transitway is to provide transit service which will satisfy the long-term regional mobility and accessibility needs for businesses and the traveling public.

The Bottineau Transitway project is needed to effectively address long-term regional transit mobility and local accessibility needs while providing efficient, travel-time competitive transit service that supports economic development goals and objectives of local, regional, and statewide plans.

Due to continued increase in travel demand coupled with few highway capacity improvements planned for regional roadways in this area, congestion is expected to worsen by 2030. While transit investment is recognized regionally as one of the key strategies for managing congestion, transit would offer many other benefits to address the needs of Bottineau Transitway-area residents and businesses. Residents and businesses in the Bottineau Transitway project area need improved access to the region's activity centers to fully participate in the region's economy. Access to jobs in downtown Minneapolis and northbound reverse commute transit options to serve jobs in the growing suburban centers are crucial to continued economic vitality. Current transit options in the Bottineau Transitway project area offer a limited number of travel-time competitive alternatives to the single-occupant vehicle. Without major transit investments, it will be difficult to effectively meet the transportation needs of people and businesses in the corridor, manage highway traffic congestion in the project area, and achieve the region's 2030 goal, as identified in the Metropolitan Council's *2030 Transportation Policy Plan (TPP)* as doubling transit ridership by 2030.

Five factors contribute to the need for the Bottineau Transitway project:

- Growing travel demand resulting from continuing growth in population and employment
- Increasing traffic congestion and limited fiscal resources
- People who depend on transit

- Limited transit service to suburban destinations (reverse commute opportunities) and time-efficient transit options
- Regional objectives for growth stated in the Regional Development Framework

## **ES.5 What Alternatives are Considered in the Draft EIS?**

### **ES.5.1 No-Build Alternative**

The No-Build alternative reflects existing and committed improvements to the regional transit network for the horizon year of 2030 contained in the *TPP*.

### **ES.5.2 Enhanced Bus/TSM Alternative**

The Enhanced Bus/TSM alternative was defined as enhancements and upgrades to the existing transportation system in the project corridor, attempting to meet the project's purpose and need as much as possible without a major transit capital investment. The purpose of the Enhanced Bus/TSM alternative is to provide a comparable transit service to the Build alternatives without the significant capital investment of building a transitway. Service improvements proposed in the Enhanced Bus/TSM alternative focus on serving the same travel markets that were addressed in the Build alternatives.

### **ES.5.3 Alternative A-C-D1**

Alternative A-C-D1 (see [Figure ES-1](#)) originates in Maple Grove at Hemlock Lane/Arbor Lakes Parkway and follows the future Arbor Lakes Parkway and Elm Creek Boulevard to the Burlington Northern Santa Fe (BNSF) railroad corridor located on the west side of Bottineau Boulevard. It enters the railroad corridor separate from the freight rail tracks and continues parallel to the freight rail tracks through the cities of Brooklyn Park, Crystal, Robbinsdale, and Golden Valley. At Trunk Highway (TH) 55, the alignment turns and follows TH 55 to Target Field Station in downtown Minneapolis. Alternative A-C-D1 includes up to 10 new stations; it is assumed that either the Golden Valley Road or Plymouth Avenue/Theodore Wirth Regional Park station option would be chosen due to the proximity of these two stations and their similarity in transit markets served. Four stations are assumed to include park-and-ride lots: Hemlock Lane would have an approximate 6.4 acre park-and-ride; Revere Lane 2.7 acres; the existing 63rd Avenue park-and-ride facility would remain at 6.5 acres, although the vehicle capacity would increase through expansion of the existing structure; and the size of the Robbinsdale park-and-ride is to be determined.

One potential operations and maintenance facility (OMF) site has been identified for Alignment A. The OMF location is a parcel located within the Maple Grove gravel mining operations area west of US 169.

Alternative A-C-D1 includes five new bridge structures: an 820-foot long structure over US 169, a 970-foot long structure over the BNSF railroad, a 500-foot structure over the CP (Canadian Pacific) rail tracks, a 400-foot crossing over TH 100 to accommodate BNSF freight track, and a 125-foot crossing of the Hennepin Energy Recovery Center (HERC) driveway. Eight existing bridges would be modified at TH 100 (widening of existing BNSF freight track bridge to accommodate light rail transit (LRT)), 36th Avenue, Golden Valley Road, Theodore Wirth Parkway, Plymouth Avenue, TH 55, I-94, and the railroad bridge north of TH 55.

### **ES.5.4 Alternative A-C-D2**

Alternative A-C-D2 also originates in Maple Grove and follows the same alignment as Alternative A-C-D1 into Robbinsdale. Once in Robbinsdale, the alignment exits the BNSF railroad corridor near 34th Avenue and joins West Broadway Avenue where it enters Minneapolis. It then travels on Penn Avenue to TH 55 to Target Field Station in downtown Minneapolis as illustrated in [Figure ES-1](#).



Alternative A-C-D2 includes 11 new stations and the same park-and-ride locations and general OMF location as identified in Alternative A-C-D1.

Alternative A-C-D2 includes eight new bridge structures: an 820-foot long structure over US 169, a 970-foot long structure over the BNSF railroad, a 500-foot structure over the CP rail tracks, a 400-foot crossing over TH 100 to accommodate BNSF freight track, a 50-foot long structure at Halifax and 34th Avenues, a 720-foot long structure between France Avenue and North Memorial Medical Center, a 2,000 foot long structure between the North Memorial Medical Center (NMMC) and Lowry Avenue, and a 125-foot crossing of the HERC driveway. Three existing bridges would be modified at TH 100 (widening of existing BNSF freight track bridge to accommodate LRT), 36th Avenue, and at I-94.

### **ES.5.5 Alternative B-C-D1**

Alternative B-C-D1 begins in Brooklyn Park just north of TH 610 near the Target North Campus, follows West Broadway Avenue, and crosses Bottineau Boulevard at 73rd Avenue to enter the BNSF railroad corridor. Adjacent to the freight rail tracks, it continues in the railroad corridor through the cities of Crystal, Robbinsdale, and Golden Valley. At TH 55, the alignment turns to the east and follows TH 55 to Target Field Station in downtown Minneapolis, as illustrated in [Figure ES-1](#).

Alternative B-C-D1 includes up to 10 new stations; it is assumed that either the Golden Valley Road or Plymouth Avenue/Theodore Wirth Regional Park station option would be chosen due to the proximity of these two stations and their similarity in transit markets served. Three of these stations would also include park-and-ride lots: the 93rd Avenue station would have an approximate 11.2-acre park-and-ride; the existing 63rd Avenue park-and-ride facility would remain at 6.5 acres, although the vehicle capacity would increase through expansion of the existing structure; and the size of the Robbinsdale park-and-ride is to be determined.

Two potential OMF site options have been identified for Alignment B. The locations of the two potential OMF sites are at the park-and-ride station at 93rd Avenue and the northwest quadrant of the intersection of Winnetka Avenue (County State Aid Highway (CSAH) 103) and 101st Avenue.

Alternative B-C-D1 includes four new bridges: a 300-long structure over TH 610, a 500-foot structure over the CP rail tracks, a 400-foot crossing over TH 100 to accommodate BNSF freight track, and a 125-foot crossing of the HERC driveway. Eight existing bridges would be modified (see Alternative A-C-D1 for complete listing of the eight bridges that would require modification).

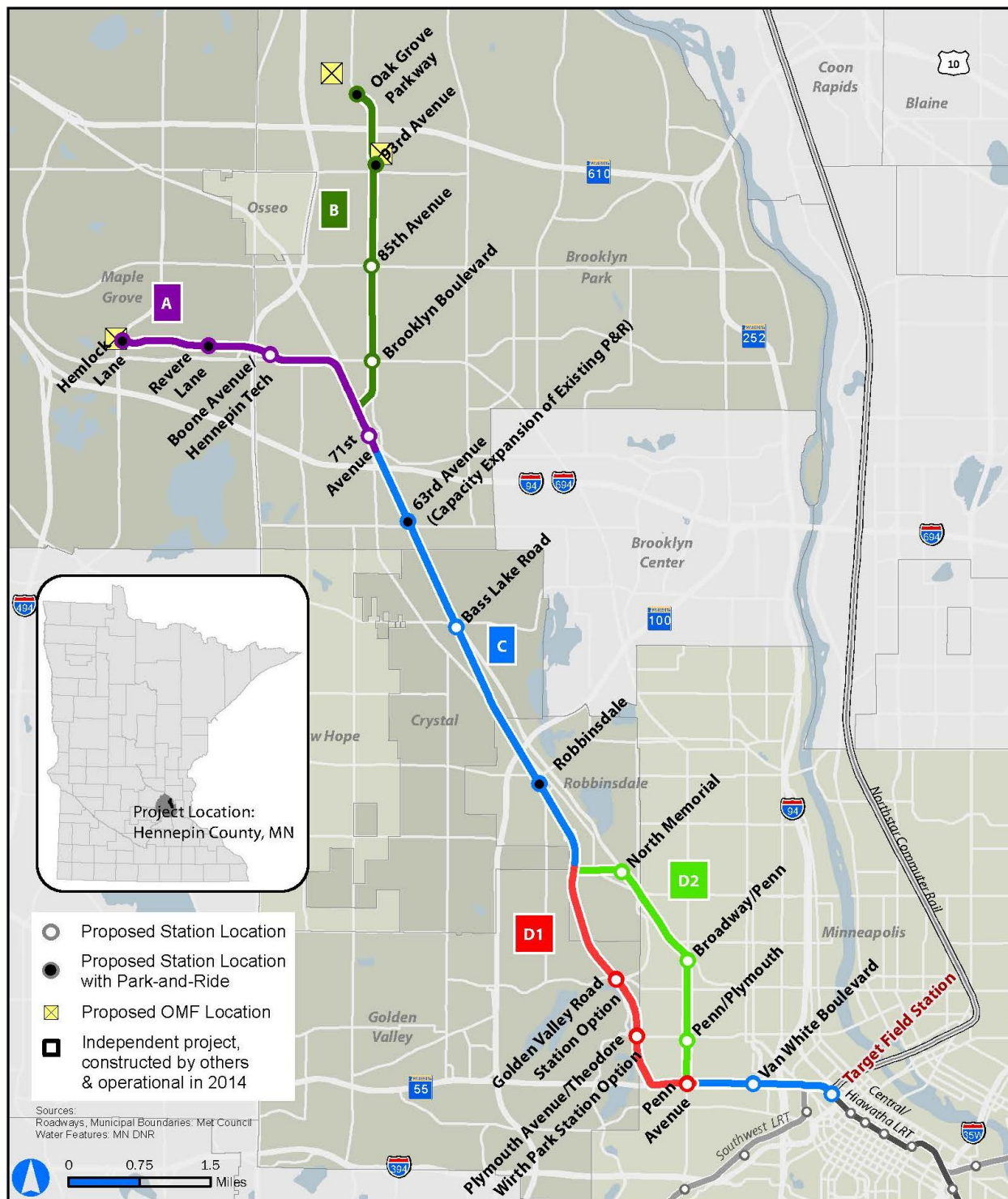
### **ES.5.6 Alternative B-C-D2**

Alternative B-C-D2 originates in Brooklyn Park, following the same alignment as Alternative B-C-D1 through the cities of Crystal and Robbinsdale. Once in Robbinsdale, the alignment exits the BNSF railroad corridor near 34th Avenue and joins West Broadway Avenue where it enters Minneapolis. It then travels on Penn Avenue to TH 55 to the Target Field Station in downtown Minneapolis as illustrated in [Figure ES-1](#).

Alternative B-C-D2 includes 11 new stations and the same three park-and-ride locations and OMF location options as identified in Alternative B-C-D1.

Alternative B-C-D2 includes seven new bridge structures: a 300-long structure over TH 610, a 500-foot structure over the CP rail tracks, a 400-foot crossing over TH 100 to accommodate BNSF freight track, a 50-foot long structure at Halifax and 34th Avenues, a 720-foot long structure between France Avenue and NMMC, a 2,000 foot long structure between NMMC and Lowry Avenue, and a 125-foot crossing of the HERC driveway. Three existing bridges would be modified: TH 100 (widening of existing BNSF freight track bridge to accommodate LRT), 36th Avenue, and at I-94.

### Figure ES-1. Bottineau Transitway Build Alternatives



## **ES.6      How was the Locally Preferred Alternative (LPA) Selected?**

An LPA is the transitway alternative that the corridor's cities, Hennepin County, and the Metropolitan Council recommend for detailed study through engineering and environmental review. The LPA specifies both the type of transit that will be used (mode) and the location (alignment). Other elements of the project, including termini and final station locations, are established formally during subsequent engineering based on additional information, including opening year travel demand forecasts.

The multi-step process to formally recommend and select an LPA for the Bottineau Transitway began following the technical analysis and Scoping decisions previously described. At their meeting on June 26, 2012, following a Policy Advisory Committee (PAC) public hearing and recommendation, and passage of resolutions of support from the cities of Minneapolis, Robbinsdale, Crystal, and Brooklyn Park, and a HCRRA-sponsored LPA public hearing, HCRRA passed a resolution recommending Alternative B-C-D1 as the LPA for the Bottineau Transitway. The City of Golden Valley followed with its resolution in December 2012. On May 8, 2013, the Metropolitan Council formally adopted amendments to the *2030 TPP* – the region's long-range transportation plan – to include the Bottineau Transitway LPA as Alternative B-C-D1. This action, which concludes the LPA process, followed a public comment period and input from the Council's Transportation Advisory Board (TAB). This LPA process will not be the only time cities will have input into the approval of the project. The cities will be required to review preliminary engineering plans and provide municipal approval for portions of the project within their jurisdiction. In a letter dated September 27, 2013, the FTA and the Federal Highway Administration (FHWA) concurred with the amendment to the *TPP* dated May 22, 2013.

## **ES.7      What are the Potential Impacts of the Bottineau Transitway?**

All transportation projects have the potential to cause direct, indirect, or cumulative impacts to natural and human environments. [Table ES-1](#) lists the issue areas evaluated in the Draft EIS and summarizes the adverse impacts and benefits of each alternative.

Table ES-1. Summary of Impacts

Draft EIS Section	Topic		No-Build Alternative	Enhanced Bus/TSM Alternative	Alternative A-C-D1	Alternative A-C-D2	Alternative B-C-D1 (Preferred Alternative)	Alternative B-C-D2
3.1	Transit Conditions	Operating Phase (Long-Term) Impacts	■ N/A	<ul style="list-style-type: none"> <li>■ 18,300 average weekday project boardings (Route 731/732)</li> <li>■ 7,350 new transit riders (compared to No-Build)</li> <li>■ End-to-end travel time of 48:44/50:50 (Route 731/732) (southern terminus at 5th and Marquette/Nicollet)</li> </ul>	<ul style="list-style-type: none"> <li>■ 27,600 average weekday project boardings</li> <li>■ 15,750 new transit riders (compared to No-Build)<sup>1</sup></li> <li>■ 9,460 transportation system daily user benefit hours (compared to TSM)</li> <li>■ End-to-end travel time of 29:20 (southern terminus at 5th and Marquette/Nicollet)</li> </ul>	<ul style="list-style-type: none"> <li>■ 27,200 average weekday project boardings</li> <li>■ 15,150 new transit riders (compared to No-Build)<sup>1</sup></li> <li>■ 9,000 transportation system daily user benefit hours (compared to TSM)</li> <li>■ End-to-end travel time of 33:19 (southern terminus at 5th and Marquette/Nicollet)</li> </ul>	<ul style="list-style-type: none"> <li>■ 27,000 average weekday project boardings</li> <li>■ 14,500 new transit riders (compared to No-Build)<sup>1</sup></li> <li>■ 8,520 transportation system daily user benefit hours (compared to TSM)</li> <li>■ End-to-end travel time of 32:47 (southern terminus at 5th and Marquette/Nicollet)</li> </ul>	<ul style="list-style-type: none"> <li>■ 26,000 average weekday project boardings</li> <li>■ 13,800 new transit riders (compared to No-Build)<sup>1</sup></li> <li>■ 7,940 transportation system daily user benefit hours (compared to TSM)</li> <li>■ End-to-end travel time of 36:46 (southern terminus at 5th and Marquette/Nicollet)</li> </ul>
		Construction Phase Impacts	■ None	■ None	<ul style="list-style-type: none"> <li>■ Intermittent impacts to bus operations within the construction area (e.g., temporary stop relocations or closures, route detours, or suspensions of service on segments of routes operating on streets where LRT is being constructed)</li> <li>■ As project planning and engineering advances, transit routes will be reevaluated and transitway construction will be planned to minimize disruption to transit service.</li> </ul>			
3.2	Freight Rail Conditions	Operating Phase (Long-Term) Impacts	■ None	■ None	<ul style="list-style-type: none"> <li>■ No direct impact to freight rail operations in Alignments A, C, and D1.</li> <li>■ Potential impact to CP Rail in Alignments C and D1.<sup>2</sup></li> </ul>	<ul style="list-style-type: none"> <li>■ No direct impact to freight rail operations in Alignment A and C.</li> <li>■ Potential impact to CP Rail in Alignment C.</li> </ul>	<ul style="list-style-type: none"> <li>■ No direct impact to freight rail operations in Alignments B, C, and D1.</li> <li>■ Potential impact to CP Rail in Alignments C and D1.</li> </ul>	<ul style="list-style-type: none"> <li>■ No direct impact to freight rail operations in Alignments B and C.</li> <li>■ Potential impact to CP Rail in Alignment C.</li> </ul>
		Construction Phase Impacts	■ None	■ None	<ul style="list-style-type: none"> <li>■ Operational impact during construction associated with track relocation in Alignments A, C, and D1</li> </ul>	<ul style="list-style-type: none"> <li>■ Operational impact during construction associated with track relocation in Alignments A and C.</li> <li>■ Minor impact at the north end of Alignment D2.</li> </ul>	<ul style="list-style-type: none"> <li>■ Operational impact during construction associated with track relocation in Alignments B, C, and D1</li> </ul>	<ul style="list-style-type: none"> <li>■ Operational impact during construction associated with track relocation in Alignments B and C.</li> <li>■ Minor impact at the north end of Alignment D2.</li> </ul>
3.3	Vehicular Traffic	Operating Phase (Long-Term) Impacts	Intersections Expected to Operate at Level of Service E/F in 2030: <ul style="list-style-type: none"> <li>■ CSAH 81 at Penn Avenue</li> <li>■ Penn Avenue at TH 55</li> </ul>	■ None	Intersections Expected to Operate at Level of Service E/F in 2030: <ul style="list-style-type: none"> <li>■ Penn Avenue at TH 55</li> </ul>	Intersections Expected to Operate at Level of Service E/F in 2030: <ul style="list-style-type: none"> <li>■ CSAH 81 at Penn Avenue</li> <li>■ Penn Avenue at TH 55</li> </ul>	Intersections Expected to Operate at Level of Service E/F in 2030: <ul style="list-style-type: none"> <li>■ Penn Avenue at TH 55</li> </ul>	Intersections Expected to Operate at Level of Service E/F in 2030: <ul style="list-style-type: none"> <li>■ CSAH 81 at Penn Avenue</li> <li>■ Penn Avenue at TH 55</li> </ul>
		Construction Phase Impacts	■ None	■ None	<ul style="list-style-type: none"> <li>■ Disruptions to traffic operations, including lane closures, short-term intersection and roadway closures, and detours that would cause localized increases in congestion</li> </ul>			



Table ES-1. Summary of Impacts (continued)

Draft EIS Section	Topic		No-Build Alternative	Enhanced Bus/TSM Alternative	Alternative A-C-D1	Alternative A-C-D2	Alternative B-C-D1 (Preferred Alternative)	Alternative B-C-D2
3.4	Pedestrians and Bicycles	Operating Phase (Long-Term) Impacts	■ None	■ None	■ 9 crossings closed	■ 17 crossings closed	■ 12 crossings closed	■ 20 crossings closed
		Construction Phase Impacts	■ None	■ None	■ Temporary closures or detours ■ Construction traffic and debris can pose obstacles or issues ■ Safe access for non-motorized users, as a result of detours, closures, and other inconveniences during the construction phases, would be included in phasing plans.			
3.5	Parking	Operating Phase (Long-Term) Impacts	■ None	■ None	■ None	■ 270 on-street parking spaces lost	■ None	■ 270 on-street parking spaces lost
		Construction Phase Impacts	■ None	■ None	■ None	■ All on-street parking restricted or closed	■ None	■ All on-street parking restricted or closed
3.6	Aviation	Operating Phase (Long-Term) Impacts	■ None	■ Additional bus service would run on the existing Bottineau Boulevard located adjacent to the Crystal Airport ■ No physical improvements to Bottineau Boulevard within the Crystal Airport Runway Protection Zone (RPZ)	■ The proposed LRT alignment would be within the existing 100 foot BNSF right-of-way, which is currently within the controlled activity area (17,860 square feet) and the central portion of the Crystal Airport Runway 6L Runway Protection Zone (RPZ) (25,470 square feet).			
		Construction Phase Impacts	■ None	■ None	■ Construction of Alignment C would impact the Runway 6L RPZ. ■ Construction operations and phasing in the RPZ would be coordinated with the MAC and FAA during the project's final design phase to mitigate impacts.			
4.1	Land Use Plan Compatibility	Operating Phase (Long-Term) Impacts	■ A key goal of city and regional plans would not be fulfilled	■ The intent of regional and local comprehensive plans to support and develop transit in the corridor would be partially fulfilled	■ Compatible with the local land use planning policies of Maple Grove, Brooklyn Park, Crystal, Robbinsdale, Golden Valley, and Minneapolis ■ Compatible with regional land use planning policies			
		Construction Phase Impacts	■ None	■ None	■ None	■ None	■ None	■ None



Table ES-1. Summary of Impacts (continued)

Draft EIS Section	Topic		No-Build Alternative	Enhanced Bus/TSM Alternative	Alternative A-C-D1	Alternative A-C-D2	Alternative B-C-D1 (Preferred Alternative)	Alternative B-C-D2
4.2	Community Facilities/Community Character and Cohesion	Operating Phase (Long-Term) Impacts	■ None	■ None	■ None	■ Community character and cohesion would not be maintained	■ None	■ Community character and cohesion would not be maintained
		Construction Phase Impacts	■ None	■ None	■ Temporary impacts to community facilities, character, and cohesion			
4.3	Displacement of Residents and Businesses	Operating Phase (Long-Term) Impacts	■ None	■ None	■ Full takes: 17 parcels (7.0 acres) ■ Partial takes: 28-30 parcels (13.9-14.3 acres) ■ 8 residential displacements ■ 2 commercial displacements	■ Full takes: 142 parcels (26.7 acres) ■ Partial takes: 50 parcels (15.8 acres) ■ 113 residential displacements ■ 5 commercial displacements	■ Full takes: 18 parcels (8.3 acres) ■ Partial takes: 55-57 parcels (8.5-8.9 acres) ■ 8 residential displacements ■ 3 commercial displacements	■ Full takes: 143 parcels (28 acres) ■ Partial takes: 77 parcels (10.4 acres) ■ 113 residential displacements ■ 6 commercial displacements
		Construction Phase Impacts	■ None	■ None	■ Short-term impacts due primarily to activities requiring temporary construction easements ■ Temporary modification or closure of some existing property access			
4.4	Cultural Resources <sup>3</sup>	Operating Phase (Long-Term) Impacts	■ None	■ None	■ 0 adverse impacts ■ 14 potential adverse impacts	■ 1 adverse impact ■ 19 potential adverse impacts	■ 0 adverse impacts ■ 14 potential adverse impacts	■ 1 adverse impact ■ 19 potential adverse impacts
		Construction Phase Impacts	■ None	■ None	■ Noise, vibration, visual, and traffic impacts			
4.5	Visual/Aesthetics	Operating Phase (Long-Term) Impacts	■ None	■ Minimal	■ Moderate	■ High	■ Moderate	■ High
		Construction Phase Impacts	■ None	■ Minimal	■ Moderate	■ High	■ Moderate	■ High
4.6	Business Impacts	Operating Phase (Long-Term) Impacts	■ None	■ Limited direct impacts (from park-and-ride)	■ Limited direct impacts	■ Greater direct impacts (right-of-way, parking loss)	■ Limited direct impacts	■ Greater direct impacts (right-of-way, parking loss)
		Construction Phase Impacts	■ None	■ Temporary changes in access, on-street parking availability, and traffic flow	■ Access changes, temporary loss of parking, and nuisance impacts (e.g., noise and dust)	■ Greater construction impacts given land use and dependence of businesses on access and on-street parking	■ Access changes, temporary loss of parking, and nuisance impacts (e.g., noise and dust)	■ Greater construction impacts given land use and dependence of businesses on access and on-street parking
4.7	Safety and Security	Operating Phase (Long-Term) Impacts	■ None	■ None	■ None	■ None	■ None	■ None
		Construction Phase Impacts	■ None	■ Temporary hazards to personal safety for workers; federal and state standards for safety of construction site personnel would be maintained ■ Public safety near open excavations and other construction activity is an issue to be resolved by the creation, proper timing, and placement of protective safety programs, public information efforts, and selected protective measures.				
5.1	Utilities	Operating Phase (Long-Term) Impacts	■ None	■ None	■ Private and public utilities that run parallel or cross within the transitway corridor would be located during design to determine if they are in conflict with the transitway corridor and would require relocation to avoid conflict with LRT operations.			
		Construction Phase Impacts	■ None	■ None	■ Minimal utility service disruptions to facilitate utility relocations and during excavation and grading activities, placement of structural foundations, and work that requires large-scale equipment			

Table ES-1. Summary of Impacts (continued)

Draft EIS Section	Topic		No-Build Alternative	Enhanced Bus/TSM Alternative	Alternative A-C-D1	Alternative A-C-D2	Alternative B-C-D1 (Preferred Alternative)	Alternative B-C-D2
5.2	Floodplains	Operating Phase (Long-Term) Impacts	■ None	■ None	■ 17,250 cubic yards of floodplain fill	■ 6,250 cubic yards of floodplain fill	■ 18,700 cubic yards of floodplain fill	■ 7,700 cubic yards of floodplain fill
		Construction Phase Impacts	■ None	■ None	■ None	■ None	■ None	■ None
5.3	Wetlands	Operating Phase (Long-Term) Impacts	■ None	■ None	■ 8.6 acres of wetland fill	■ 3.2 acres of wetland fill	■ 9.4 to 10.2 acres of wetland fill	■ 4.0 to 4.8 acres of wetland fill
		Construction Phase Impacts	■ None	■ None	■ Temporary impacts due to construction of retaining walls, grading, and soil disturbance			
5.4	Geology, Soils, and Topography	Operating Phase (Long-Term) Impacts	■ None	■ None	■ None	■ None	■ None	■ None
		Construction Phase Impacts	■ None	■ Areas of poorly drained soils within the potential area of disturbance may require soil correction for construction of track, pavement, or other structures. ■ Excavated soils would need to be removed or reused in areas that do not require consolidated soils.				
5.5	Hazardous Materials Contamination	Operating Phase (Long-Term) Impacts	■ None	■ None	■ No hazardous or regulated materials would be produced by the project ■ No permanent storage tanks would be installed ■ Acquiring land with known contamination which cannot be easily remediated or contained would be avoided to the extent possible			
		Construction Phase Impacts	■ None	■ None	■ 27 low contamination risk sites ■ 7 medium contamination risk sites ■ 1 high contamination risk site	■ 53 low contamination risk sites ■ 17 medium contamination risk sites ■ 1 high contamination risk site	■ 33 low contamination risk sites ■ 0 medium contamination risk sites ■ 1 high contamination risk site	■ 59 low contamination risk sites ■ 16 medium contamination risk sites ■ 1 high contamination risk site
5.6	Noise <sup>4</sup>	Operating Phase (Long-Term) Impacts	■ No significant impacts	■ No significant impacts	■ Moderate Mitigated Impacts ■ Alignment A: 5-10 receptors ■ Alignment C: 350-355 receptors ■ Alignment D1: 25-35 receptors ■ D Common Section: 15-20 receptors ■ Severe Mitigated Impacts ■ Alignment A: 0 receptors ■ Alignment C: 15-20 receptors ■ Alignment D1: 0-5 receptors	■ Moderate Mitigated Impacts ■ Alignment A: 5-10 receptors ■ Alignment C: 350-355 receptors ■ Alignment D2: 305-310 receptors ■ D Common Section: 15-20 receptors ■ Severe Mitigated Impacts ■ Alignment A: 0 receptors ■ Alignment C: 15-20 receptors ■ Alignment D2: 5-10 receptors	■ Moderate Mitigated Impacts ■ Alignment B: 55-60 receptors ■ Alignment C: 350-355 receptors ■ Alignment D1: 25-35 receptors ■ D Common Section: 15-20 receptors ■ Severe Mitigated Impacts ■ Alignment B: 5-10 receptors ■ Alignment C: 15-20 receptors ■ Alignment D1: 0-5 receptors	■ Moderate Mitigated Impacts ■ Alignment B: 55-60 receptors ■ Alignment C: 350-355 receptors ■ Alignment D2: 305-310 receptors ■ D Common Section: 15-20 receptors ■ Severe Mitigated Impacts ■ Alignment B: 5-10 receptors ■ Alignment C: 15-20 receptors ■ Alignment D2: 5-10 receptors
		Construction Phase Impacts	■ None	■ None	■ Temporary noise impacts from construction of new tracks and stations, utility relocation, grading, excavation, track work, demolition, and installation of systems components ■ Impacts may occur in residential areas and at other noise-sensitive land uses located within several hundred feet of the alignment; potential for impact greatest at locations near pile-driving operations, pavement breaking, and nighttime construction work			

Table ES-1. Summary of Impacts (continued)

Draft EIS Section	Topic		No-Build Alternative	Enhanced Bus/TSM Alternative	Alternative A-C-D1	Alternative A-C-D2	Alternative B-C-D1 (Preferred Alternative)	Alternative B-C-D2
5.7	Vibration	Operating Phase (Long-Term) Impacts	■ None	■ None	■ 51 impacted receptors	■ 51 impacted receptors	■ 51 impacted receptors	■ 51 impacted receptors
		Construction Phase Impacts	■ None	■ None	■ Temporary vibration impacts from construction of new tracks and stations, utility relocation, grading, excavation, track work, demolition, and installation of systems components ■ Impacts may occur in residential areas and at other vibration-sensitive land uses located within several hundred feet of the alignment; potential for impact greatest at locations near pile-driving operations, pavement breaking, and nighttime construction work			
5.8	Biological Environment (Wildlife Habitat and Endangered Species)	Operating Phase (Long-Term) Impacts	■ None	■ None	■ 10.7-acres loss of wildlife habitat ■ Potential impact to Blanding's turtle habitat	■ 3-acres loss of wildlife habitat ■ No endangered species impacts	■ Loss of wildlife habitat ■ 101st Avenue OMF location option: 30.9 acres ■ 93rd Avenue OMF location option: 13.9 acres ■ Potential impact to Blanding's turtle habitat	■ Loss of wildlife habitat ■ 101st Avenue OMF location option: 23.2 acres ■ 93rd Avenue OMF location option: 6.2 acres ■ No endangered species impacts
		Construction Phase Impacts	■ None	■ None	■ Temporary and limited impacts in active construction areas			
5.9	Water Quality and Stormwater	Operating Phase (Long-Term) Impacts	■ None	■ 60% impervious surface increase <sup>5</sup>	■ 38% impervious surface increase <sup>5</sup>	■ 29% impervious surface increase <sup>5</sup>	■ 31% impervious surface increase <sup>5</sup>	■ 23% impervious surface increase <sup>5</sup>
		Construction Phase Impacts	■ None	■ Soil disturbance and runoff could potentially erode slopes and drainage ways, form gullies, and deposit sediment in adjacent water bodies				
5.10	Air Quality	Operating Phase (Long-Term) Impacts	■ None	■ The project would not cause exceedences of carbon monoxide concentrations or other criteria pollutants ■ MSAT emissions would likely be lower than present levels in the design year				
		Construction Phase Impacts	■ None	■ Higher concentrations of air pollutants	■ Increased emissions and higher concentrations of air pollutants near homes and businesses as a result of increased traffic due to detours ■ Higher concentrations of air pollutants			
5.11	Energy	Operating Phase (Long-Term) Impacts	■ Annual direct energy consumption: 224.214 trillion BTUs	■ Annual direct energy consumption: 224.163 trillion BTUs	■ Annual direct energy consumption: 224.092 trillion BTUs	■ Annual direct energy consumption: 224.096 trillion BTUs	■ Annual direct energy consumption: 224.112 trillion BTUs	■ Annual direct energy consumption: 224.116 trillion BTUs
		Construction Phase Impacts	■ None	■ Limited short-term energy use for construction of the park-and-ride facility	■ Energy would be required for construction of the Build alternatives, for the production of the raw materials used in construction, and for the operation of construction equipment. ■ Energy use would be localized and temporary.			

Table ES-1. Summary of Impacts (continued)

Draft EIS Section	Topic		No-Build Alternative	Enhanced Bus/TSM Alternative	Alternative A-C-D1	Alternative A-C-D2	Alternative B-C-D1 (Preferred Alternative)	Alternative B-C-D2
7.6	Environmental Justice	Operating Phase (Long-Term) Impacts	■ None	■ None	■ No disproportionately high or adverse impacts	■ Potentially high or disproportionate impacts (ped/bike, parking, community facilities, displacements, visual)	■ No disproportionately high or adverse impacts	■ Potentially high or disproportionate impacts (ped/bike, parking, community facilities, displacements, visual)
		Construction Phase Impacts	■ None	■ None	■ No disproportionately high or adverse impacts	■ Potentially high or disproportionate impacts (traffic disruptions, access, parking, noise, dust, visual)	■ No disproportionately high or adverse impacts	■ Potentially high or disproportionate impacts (traffic disruptions, access, parking, noise, dust, visual)
8.7	Section 4(f)	Operating Phase (Long-Term) Impacts	■ None	■ None	■ Direct use of Theodore Wirth Regional Park ■ <i>De minimis</i> use of Grand Rounds Historic District	■ Direct use of Minneapolis Public Schools Athletic Field ■ Direct use of Homewood District	■ <i>De minimis</i> use of Rush Creek Regional Trail <sup>6</sup> ■ Direct use of Theodore Wirth Regional Park ■ <i>De minimis</i> use of Grand Rounds Historic District	■ <i>De minimis</i> use of Rush Creek Regional Trail <sup>6</sup> ■ Direct use of Minneapolis Public Schools Athletic Field ■ Direct use of Homewood District
		Construction Phase Impacts	■ None	■ None	■ Temporary occupancy of Sochacki Park, Mary Hills Nature Area, Theodore Wirth Regional Park	■ None	■ Temporary occupancy of Sochacki Park, Mary Hills Nature Area, Theodore Wirth Regional Park	■ None
10.1	Financial Considerations	Project capital cost (\$2017)	■ N/A	■ N/A	■ \$1,002 million <sup>7</sup>	■ \$1,124 million <sup>7</sup>	■ \$1,002 million	■ \$1,118 million
		Operations and maintenance cost (in 2013 dollars over No-Build)	■ N/A	■ \$17.3 million	■ \$32.8 million	■ \$34.2 million	■ \$32.5 million	■ \$33.7 million

<sup>1</sup> Maple Grove Transit currently provides excellent transit service to its commuter express market. There is some uncertainty as to whether or not commuter express riders would chose to move from express bus service to LRT service.

<sup>2</sup> Potential impacts to CP Rail include relocation of an existing diamond crossing where CP Rail and BNSF Railway cross each other north of TH 100 and reconstruction of an existing turnout that provides a connection between CP Rail and BNSF Railway north of TH 55.

<sup>3</sup> Following the provisions of the Section 106 review process, ways to avoid, minimize, and mitigate adverse effects to historic properties will continue to be explored through consultation with the SHPO, Section 106 consulting parties, other interested parties, and the public. The Advisory Council on Historic Preservation (ACHP) may also join in this consultation. Measures for avoidance, minimization, and mitigation will be stipulated in a Section 106 Agreement signed by the FTA, the SHPO, the ACHP (if participating), and other consulting parties. FTA will execute a Section 106 agreement prior to the Final EIS/Record of Decision (ROD). The project will be implemented in accordance with the stipulations in the Section 106 agreement.

<sup>4</sup> Noise mitigation is considered depending on the need, feasibility, reasonableness, and effectiveness of potential options. The FTA states that in considering potential noise impact, severe impacts should be mitigated if at all practical and effective. At the moderate level, more discretion should be used, and other project specific factors should be included in considering the need for mitigation. These factors include the existing noise level, predicted increase over the existing noise levels, the types and number of noise sensitive land uses affected, the noise sensitivity of the properties, the acoustic effectiveness of mitigation options, and the cost effectiveness of mitigation the noise.

<sup>5</sup> Percent over existing; impacts represent the total area that is located within the potential area of disturbance of the project.

<sup>6</sup> 101st Avenue OMF site option only

<sup>7</sup> The capital cost estimates for Alignment A assume significant cooperation from current landowners to prepare the corridor for transit service. Alignment A requires construction of a new roadway, Arbor Lakes Parkway, separate from the transitway project and through the gravel mining area in Maple Grove, in a way that would accommodate LRT and provide access to the future development.

## ES.8 What was the Result of the Evaluation of Alternatives?

Based on the information in [Table ES-1](#) and the analysis of each alternative, each alternative was rated on how well it performs with respect to purpose and need and project goals, adverse impacts, benefits, and overall performance. One of three ratings was assigned:

- Good: Good performance against goals and objectives and/or minor adverse impacts
- Fair: Fair performance against goals and objectives and/or moderate adverse impacts
- Poor: Poor performance against goals and objectives and/or severe adverse impacts

Summary rating results are shown in [Table ES-2](#). If a “poor” rating is assigned to any of the first three categories (purpose and need, adverse impacts, benefits), then the overall performance is automatically rated as “poor.” In other words, a “poor” rating in one area cannot be overcome by “fair” or “good” performance in other areas with respect to the overall rating.

### ES.8.1 No-Build Alternative

The overall performance of the No-Build alternative is **poor**. It does not meet the project purpose and need. While it has only minor adverse impacts related to the committed improvements included, the No-Build alternative does not provide measurable transportation benefits compared to existing conditions nor does it address the Bottineau Transitway transportation goals and objectives. It would not satisfy four of the five project goals.

### ES.8.2 Enhanced Bus/TSM Alternative

The overall performance of the Enhanced Bus/TSM alternative is **poor**. While the alternative has only minor adverse impacts, it provides relatively little benefit and does not meet the project purpose and need. For these reasons, the Enhanced Bus/TSM alternative is not recommended as the environmentally preferred alternative for the Bottineau Transitway.

### ES.8.3 Build Alternatives

#### A-C-D1

Alternative A-C-D1 would deliver a **fair** performance overall. Despite its good performance in most benefit areas and relatively minor adverse physical impacts, construction of the north end of the alternative in Maple Grove could be delayed or made more expensive, as much of the adjacent land is in active use for gravel mining. Infrastructure and land use development investments (including the future Arbor Lakes Parkway and land use development around station areas) outside of the transitway project are required for implementation of the transitway. This also puts Alternative A-C-D1 at a disadvantage with respect to short-term economic development benefit. These factors, combined with the availability of an alternative with similar levels of benefit without such short-term implementation challenges, are the reasons why Alternative A-C-D1 is not recommended as the environmentally preferred alternative for the Bottineau Transitway.

#### A-C-D2

Alternative A-C-D2 would deliver **poor** performance overall due to the severe adverse impacts it would have on properties and communities in north Minneapolis. While Alternative A-C-D2 has good transportation benefits, the adverse physical and community impacts described above demonstrate that it does not meet Goal 5 (Support Healthy Communities and Sound Environmental Practices). For these reasons, it is not recommended as the environmentally preferred alternative for the Bottineau Transitway.



### B-C-D1























































Overall, Alternative B-C-D1 would deliver **good** performance. This is due to its relatively minor adverse impacts and its strong benefits.

***Alternative B-C-D1 is recommended as the environmentally preferred alternative*** based on its strong transportation benefits, its land use and short-term economic development potential at the north end (Brooklyn Park), its ability to be implemented, and its relatively moderate adverse impacts.




### B-C-D2

Alternative B-C-D2 would deliver **poor** performance overall due to the severe adverse impacts it would have on properties in north Minneapolis combined with only fair transportation performance. For these reasons, this alternative is not the environmentally preferred alternative for the Bottineau Transitway.

Table ES-2. Summary Performance Ratings of Alternatives

Performance Category	No-Build	Enhanced Bus/TSM	LRT A-C-D1	LRT A-C-D2	LRT B-C-D1 (Preferred Alternative)	LRT B-C-D2
<b>Purpose and Need</b>						
Goal 1: Enhance Access to Regional Activity Centers						
Goal 2: Enhance the Effectiveness of Transit Service within the Corridor						
Goal 3: Provide a Cost-effective and Financially Feasible Transit System						
Goal 4: Promote Sustainable Development Patterns						
Goal 5: Support Healthy Communities and Sound Environmental Practices						
<b>Adverse Impacts</b>						
<b>Benefits</b>						
<b>Overall Performance<sup>1</sup></b>						

**RATINGS KEY:**

-  Good Performance and/or Minor Adverse Impacts
-  Fair Performance and/or Moderate Adverse Impacts
-  Poor Performance and/or Severe Adverse Impacts

1. Note: If a “poor” rating is assigned to any of the first three categories (purpose and need, adverse impacts, benefits), then the overall performance is automatically rated as “poor.” In other words, a “poor” rating in one area cannot be overcome by “fair” or “good” performance in other areas with respect to the overall rating.

## **ES.9 How was the Environmentally Preferred Alternative Identified?**

The Draft EIS describes the transportation, economic, community, and environmental impacts associated with the construction and operation of the Bottineau Transitway Project. The effects of the No-Build, Enhanced Bus/TSM, and Build alternatives were evaluated across a range of subject areas related to the built and natural environment.

As described in Section ES.8, Alternative B-C-D1 meets the purpose and need of the Bottineau Transitway project and is the environmentally preferred alternative because it will cause the least damage to the biological and physical environment and it best protects, preserves, and enhances historic, cultural, and natural resources.

Identifying the environmentally preferred alternative included extensive public and stakeholder outreach in addition to technical analysis of issues identified during NEPA Scoping. The identification process considered the transitway alternatives in their component pieces (Alignments A, B, C, D1, and D2). Ultimately, the adverse physical and community impacts of Alignment D2 (LRT on Penn/Broadway Avenues) resulted in a decision not to advance Alternatives A-C-D2 and B-C-D2 in the process. The remaining decision, between Alternatives A-C-D1 and B-C-D1, focused on the differentiators between Alignment A (Maple Grove) and Alignment B (Brooklyn Park). Alignment B is the environmentally preferred alternative because it would provide transit service to the large existing and future populations of people in households with low incomes, provide transit service to many activities at North Hennepin Community College and the new Hennepin County library, provide transit access to more jobs than Alignment A, and does not have the same potential short-term implementation challenges experienced with Alignment A. Specifically, under Alignment A construction could be delayed or made more expensive as much of the adjacent land is in active use for gravel mining. While the area is zoned for future mixed-use development, there is no timeline established for this land use transition to occur. Infrastructure and land use development investments (including the future Arbor Lakes Parkway and land use development around station areas) outside of the transitway project are required for implementation of the transitway.

The US Army Corps of Engineers (USACE) has its own process for determining the Least Environmentally Damaging Preferred Alternative (LEDPA). In a letter dated June 19, 2013, the USACE issued concurrence on the purpose and need and array of alternatives considered for the Bottineau Transitway Project, as well as the alternatives evaluated in this Draft EIS (Concurrence Points #1 and #2 under the NEPA/404 merger process). In a letter dated October 1, 2013, USACE issued concurrence on the identification of the selected alternative (Concurrence Point #3).

Throughout the development of the environmentally preferred alternative, HCRRA, in cooperation with the Metropolitan Council, the affected communities, and the public, has refined the design and alignment, where feasible, to avoid, minimize, or mitigate adverse effects. However, some adverse effects cannot be overcome due to the design and safety standards that must be met for the project; the developed character of the communities the Bottineau Transitway is intended to serve; and the need to design the project to be compatible with future operations of other transportation facilities in the corridor. Consequently, the environmentally preferred alternative involves recognizing and understanding that there are trade-offs between the benefits and the effects of the Bottineau Transitway.

Where adverse effects of the environmentally preferred alternative remain, FTA, HCRRA, and the Metropolitan Council have identified mitigation measures intended to offset remaining effects to the natural and human environment. Mitigation measures are described in this Draft EIS and will be finalized in the Final EIS/Record of Decision (ROD).

## ES.10 What are the Next Steps?

The Draft EIS will be distributed to appropriate local, regional, state, and federal agencies as well as the public for their review and comment. Public comment on the Draft EIS will be considered and addressed in the combined Final EIS/ROD.

Local elected officials and the public have been and will continue to be involved in the project throughout design and construction through public meetings, advisory committee and stakeholder meetings, and individual briefings.

# 1.0 Purpose and Need

This chapter gives an overview of the Bottineau Transitway Project, including its location and setting within the local communities and the region, and the context of previous planning studies. It also describes the needs driving the study of the Bottineau Transitway, the purpose of the project, and the parameters under which the project will be evaluated.

## 1.1 Project Description

### Project Location

The Bottineau Transitway is a proposed project that will provide for transit improvements in the highly traveled northwest area of the Twin Cities. The Bottineau Transitway is located in Hennepin County, Minnesota, extending approximately 13 miles from downtown Minneapolis to the northwest serving north Minneapolis and the suburbs of Golden Valley, Robbinsdale, Crystal, New Hope, Osseo, Brooklyn Park, and Maple Grove. The transitway is anticipated to serve a broader area to the northwest, including the communities of Dayton, Rogers, and Hassan Township. (Hassan Township was annexed into the City of Rogers on January 1, 2012. Future reference of Rogers in this document includes Hassan Township).

**Figure 1.1-1** illustrates the project area. Key transportation facilities within the project area include the highways shown as well as the Burlington Northern Santa Fe Railway (BNSF), Canadian Pacific Railway (CP), Crystal Airport, County State Aid Highway (CSAH) 81 (Bottineau Boulevard), CSAH 103 (West Broadway Avenue), and CSAH 2 (Penn Avenue).

### Project Setting

The character of the Bottineau Transitway project area transitions from a moderately dense urban setting in north Minneapolis to a less dense suburban setting starting in Robbinsdale, Golden Valley, and Crystal, and extending through Brooklyn Park and Maple Grove at the north end of the corridor. The project area includes a variety of land use patterns that have been influenced by the Bottineau Transitway's development over a long period of time and its transportation-oriented past. Low-density, auto-oriented land uses have heavily influenced the corridor's existing development patterns, which primarily reflect highway-oriented regulations and traditional suburban development forms. Additionally, the presence of the existing railway lines has also influenced the development patterns and settings in the project corridor (e.g., development set back from the railroad right-of-way).

Development in north Minneapolis and Robbinsdale reflects West Broadway Avenue's past as a commercial streetcar corridor, with strips of auto-oriented commercial activity developed more recently. Residential neighborhoods are located along CSAH 81 in Minneapolis, Robbinsdale, Crystal, and Brooklyn Park. In Brooklyn Park south of 73rd Avenue and northern Crystal, development adjacent to CSAH 81 includes highway-oriented commercial activity and the Crystal Airport. Large industrial, commercial, and mixed-use development is prevalent in the Maple Grove area of the corridor. In Brooklyn Park north of 73rd Avenue, development adjacent to West Broadway Avenue includes mixed commercial and retail, commercial office/corporate campus (Target North Campus), residential, and institutional use (North Hennepin Community College, programmed Hennepin County Library).

As illustrated in **Figure 1.1-2**, several activity centers are located along the corridor, including downtown Minneapolis, Theodore Wirth Regional Park, North Memorial Medical Center, downtown Robbinsdale, the Crystal Shopping Center, the Brooklyn Park commercial strip, Hennepin Technical College, North Hennepin Community College, and the Arbor Lakes commercial area in downtown Maple Grove. In addition, large commercial developments with substantial employment concentrations are anticipated by 2030 in both Maple Grove (in the former Gravel Mining Area) and in Brooklyn Park (surrounding the Target North Campus north of TH 610).

## Regional Transit System

The Bottineau Transitway project area is presently served by a mix of express and local bus service provided by Metro Transit, the region's largest transit provider, and Maple Grove Transit, a suburban transit provider serving Maple Grove. Key existing transit facilities within the corridor, illustrated in [Figure 1.1-3](#), include the Maple Grove Transit Station, Starlite Transit Center, the 63rd Avenue Park-and-Ride in Brooklyn Park, and the Robbinsdale Transit Center at Hubbard Marketplace in Robbinsdale. Additional infrastructure in the corridor includes bus-only shoulders on most of I-94 in both directions between Minneapolis and northern Maple Grove.

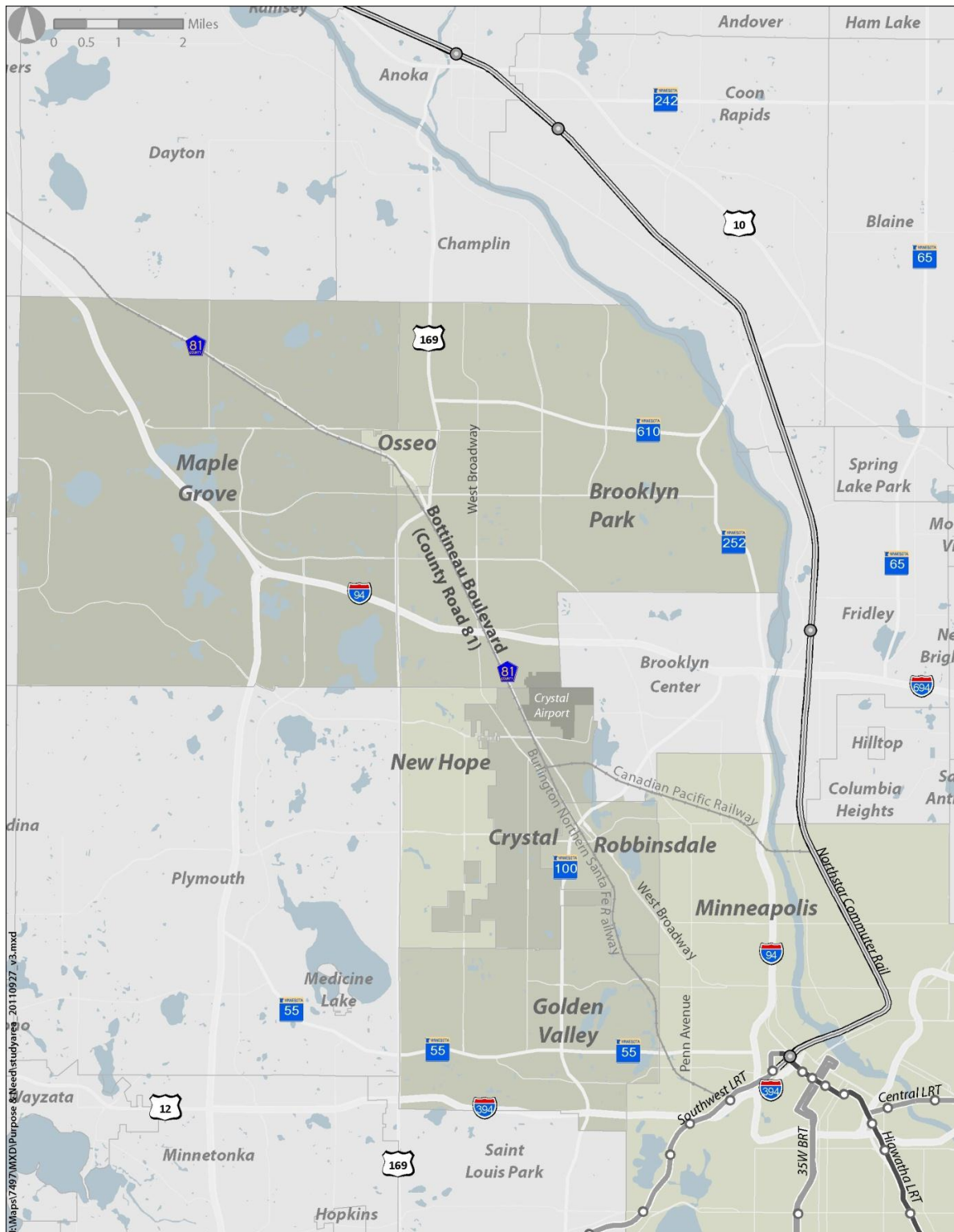
The majority of transit service in the project area consists of urban local routes serving north Minneapolis, with some lower-frequency suburban local service in southern and northern suburban communities in the corridor. The remainder of the project area is mainly served by peak-only, peak-direction suburban express routes. Currently, no bus routes operate on CSAH 81 or serve mid-length trips in the general northwest-southeast direction in the project area, particularly during off-peak periods.

The Metropolitan Council's *2030 Transportation Policy Plan (TPP)* envisions further development of the region's local and express bus networks, with additional investment in park-and-ride facilities to support the latter. In addition, the *2030 TPP* shows the Twin Cities region moving toward a regional system of transitways to meet mobility needs and increase transit system ridership. A transitway is a combination of infrastructure and transit service improvements that allows transit customers to avoid congestion on roadways and connect to regional activity centers, and that boosts the potential for transit-oriented development.

The Bottineau Transitway will connect north Minneapolis and the region's northwest suburbs with the region's system of transitways that consist of existing light rail transit (LRT) on the Blue Line (Hiawatha) and Green Line (Central Corridor and the planned Southwest line), bus rapid transit (BRT) on the Red Line (Cedar Avenue) and Orange Line (I-35W South), the Northstar Commuter Rail, and express bus routes as shown in [Figure 1.1-4](#). Development of a Bottineau Transitway will include bus service revisions focused on maintaining and enhancing overall transit service in the corridor.



Figure 1.1-1. Bottineau Transitway Project Area



**Figure 1.1-2. Bottineau Transitway Project Area Activity Centers**

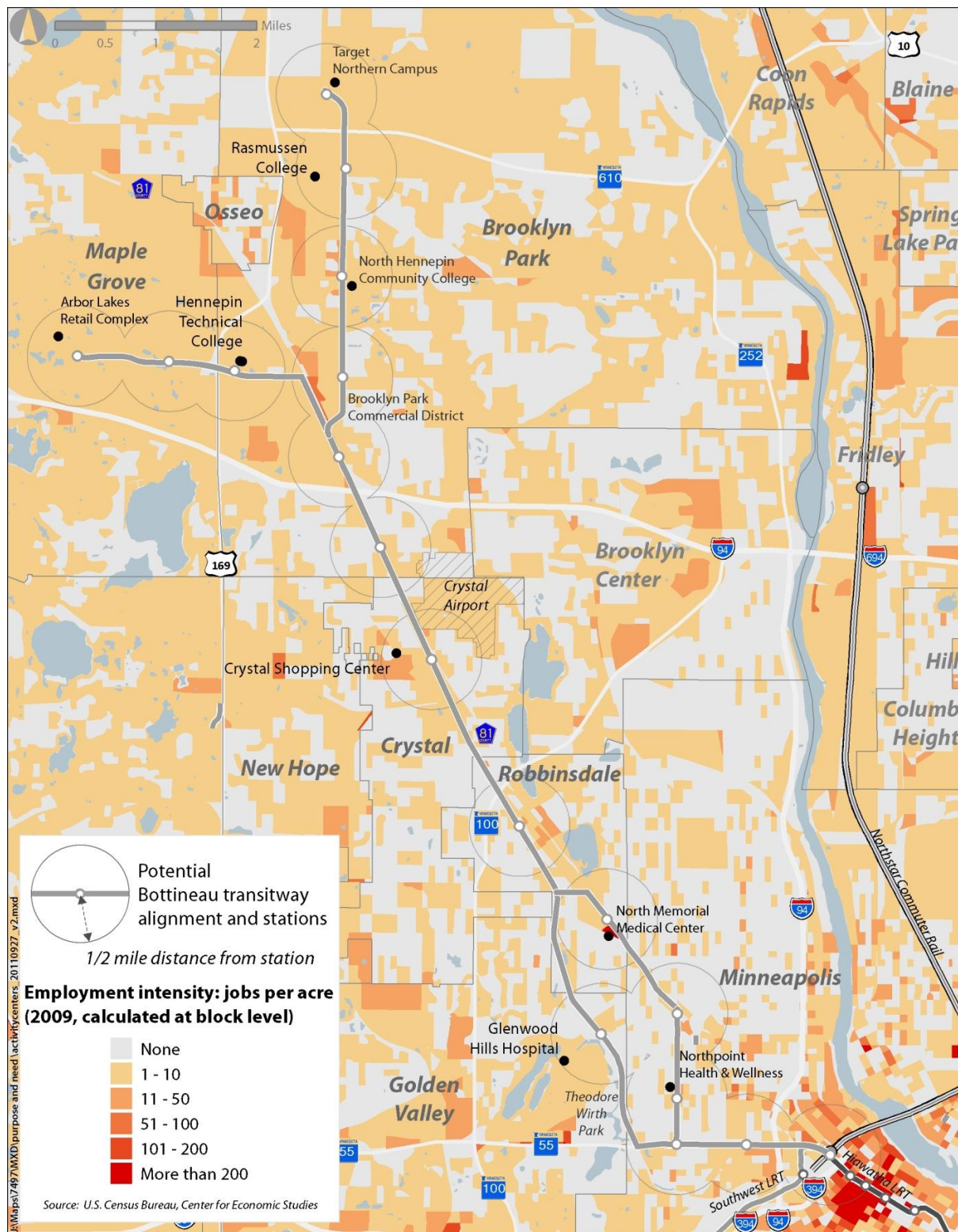




Figure 1.1-3. Existing Project Area Transit Services and Facilities

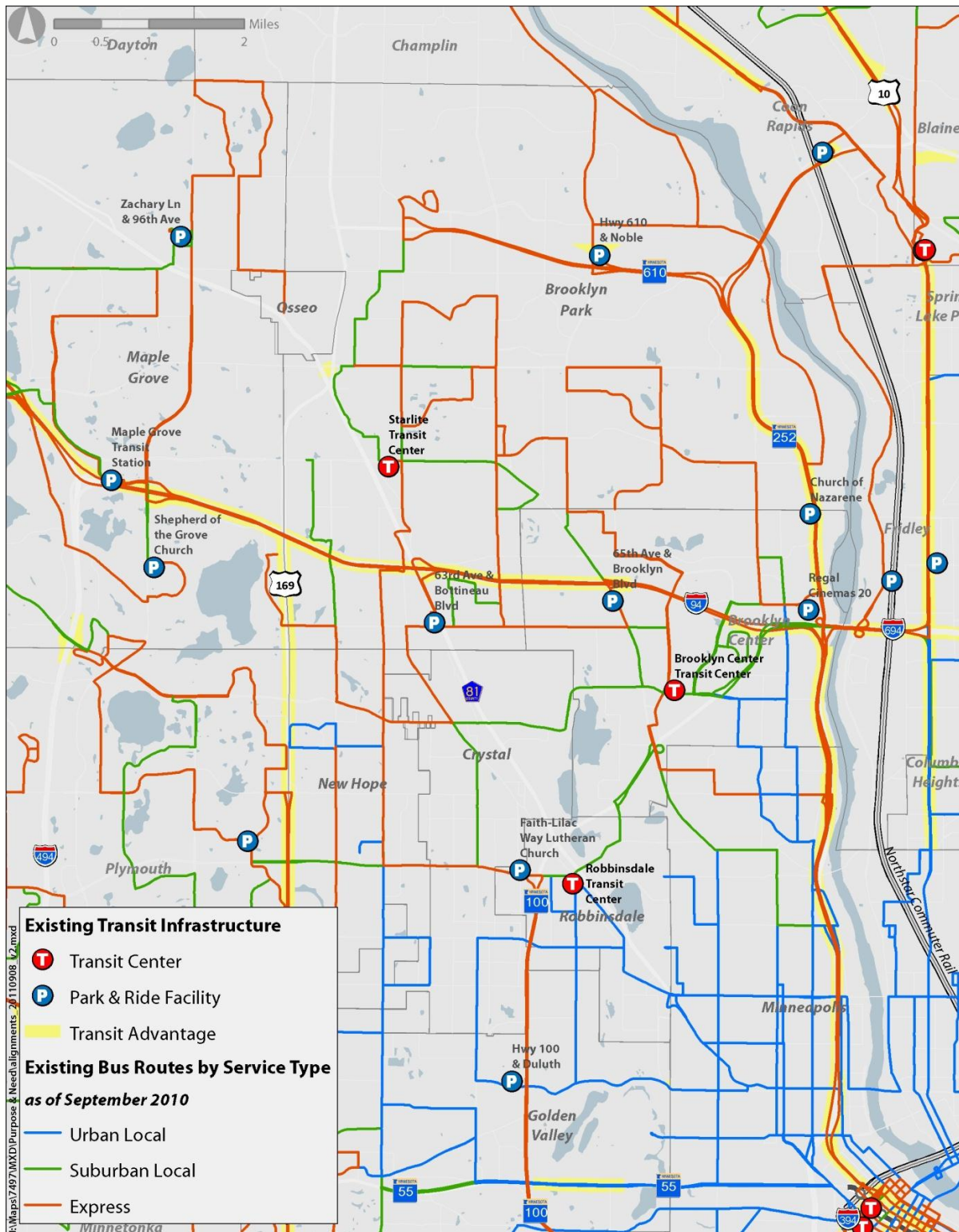
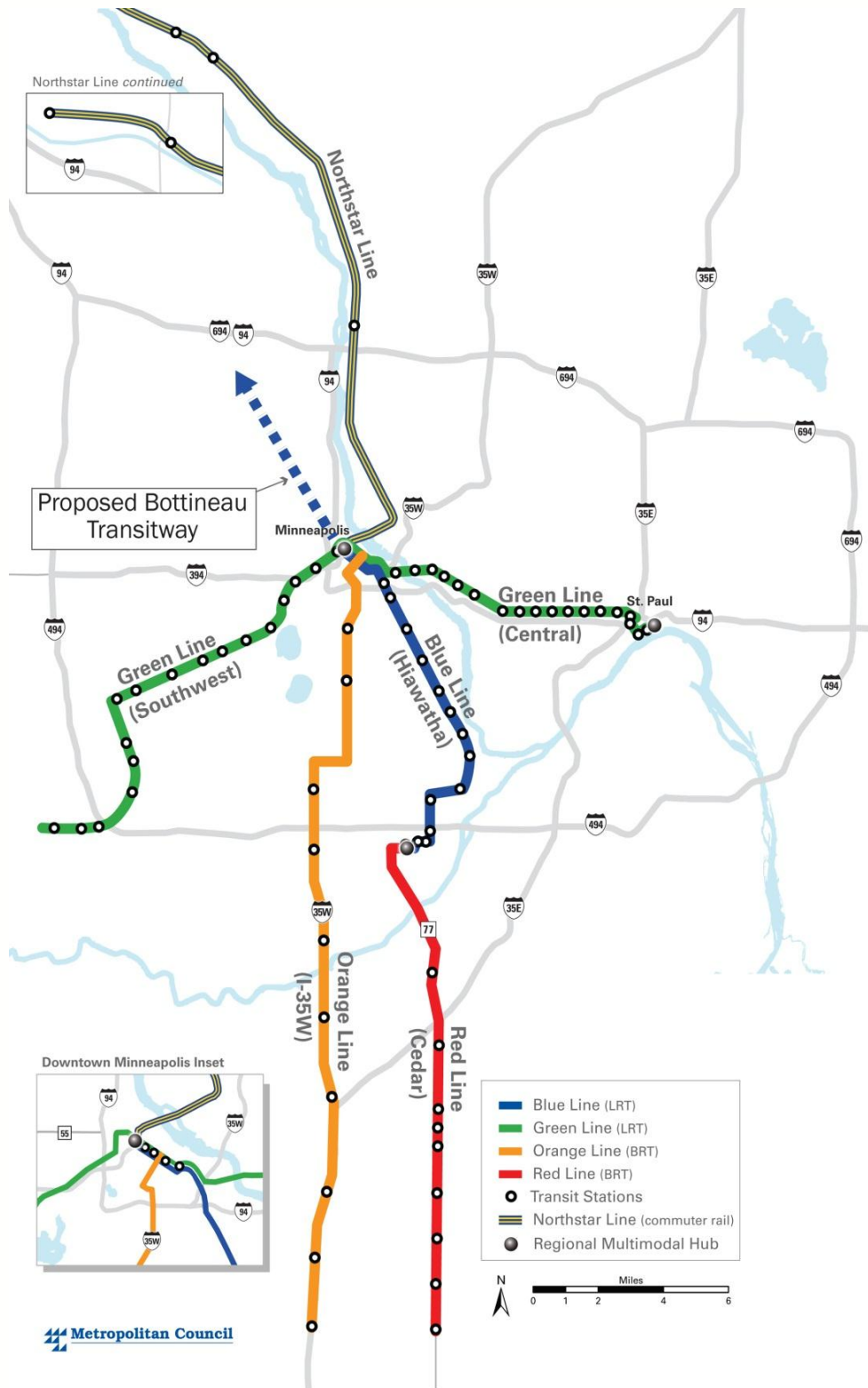


Figure 1.1-4. Regional Transitway System



## 1.2 Project Background

### Early Planning Efforts

Transportation and land use studies along the Bottineau Transitway date back to the late 1980s. Previous studies include regional system studies, corridor studies, and site-specific studies. The Bottineau Transitway (previously identified as the Northwest Transitway) has consistently been included in regional transportation system plans. Many different alignments and modes, including BRT, LRT, and commuter rail, have been considered and evaluated in corridor-specific plans and studies. Previous studies provide a valuable base of information for the Bottineau Transitway Environmental Impact Statement (EIS) process. [Figure 1.2-1](#) summarizes the studies conducted to date in the corridor.

The region's current long-range transportation plan, the *2030 TPP*, identifies the Bottineau Transitway as one of the corridors to be developed by 2030 as LRT, Busway, Highway BRT, or Commuter Rail. The recommendation for the Bottineau Transitway is based on findings from the Metropolitan Council's *2030 Transit Master Study* (August 2008) and reinforces the transit travel demand in the Bottineau (Northwest) Transitway, consistently identified in previous regional transportation system plans including the *Regional Transit Board LRT Plan* (1990), *Transit 2020 Master Plan* (February 2000), *2025 Transportation Policy Plan* (adopted January 2001, amended January 2002), and *2030 Transportation Policy Plan* (adopted December 2004).

### Environmental Review Process

Hennepin County Regional Railroad Authority (HCRRA) is the local public agency responsible for completing this Draft EIS, and is required to comply with the requirements of the Minnesota Environmental Policy Act (MEPA) (Minn. Stat. 116D.04 and 116D.045). The project will also pursue federal funding from the Federal Transit Administration (FTA) and as a result, the FTA is required to undertake environmental review in compliance with the National Environmental Policy Act (NEPA). The Metropolitan Council is the project sponsor and federal grantee and will lead the process for preliminary engineering, and final design and construction if the project proceeds. FTA, as the federal lead agency, the HCRRA, as the state lead agency, and the Metropolitan Council, as the local project sponsor have prepared this Draft EIS to satisfy both NEPA and MEPA.

The intent of the NEPA and MEPA processes is to ensure that potential environmental impacts are identified and considered in the decision-making process. The primary purpose of the Draft EIS is to assist decision-makers in the assessment of impacts associated with the Bottineau Transitway Project. The Draft EIS documents the purpose and need for the project, alternatives considered, and addresses the anticipated transportation, social, and environmental impacts, and defines appropriate mitigation measures.

The Draft EIS serves as the primary document to facilitate review by federal, state, and local agencies and the general public of the proposed project. This Draft EIS will be circulated for review to interested parties, including private citizens, community groups, the business community, elected officials, and public agencies in accordance with federal and state requirements. Public hearings will be held to provide a forum for agency and citizen participation and comment. Responses to comments received during circulation of the Draft EIS will be responded to and both the comments and responses will be documented in the Final EIS.

NEPA also requires engaging the public in the environmental review process. In addition, Moving Ahead for Progress in the 21<sup>st</sup> Century (MAP-21) requires the development of a coordination plan to outline how the environmental process for Bottineau Transitway will engage the public, Tribal governments, and local, state, and federal agencies with an interest in the project. Certain state, local and tribal agencies were also invited to have a more formal role in the environmental review process as cooperating and/or participating agencies. A complete discussion of the public and agency engagement process, including

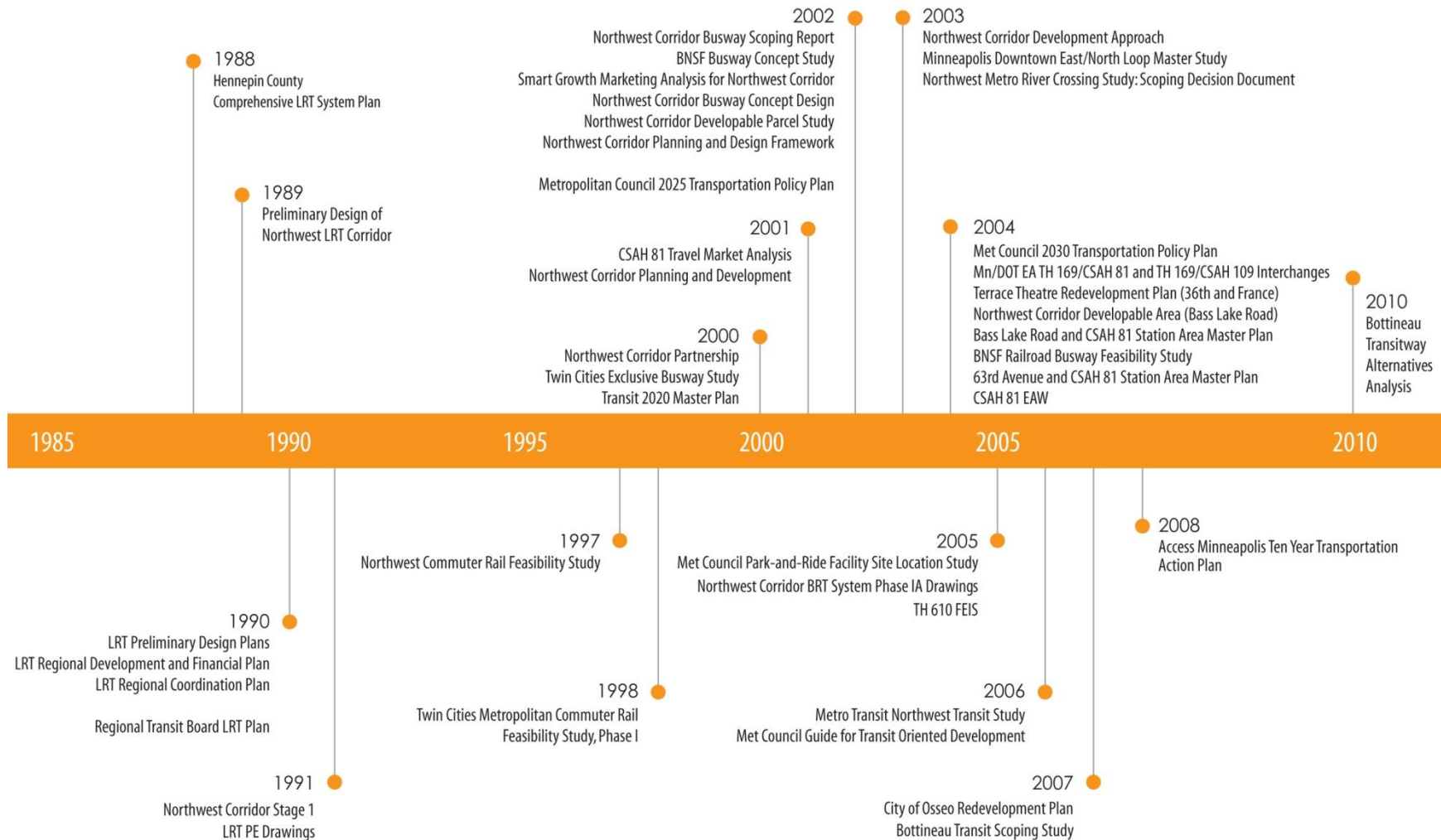
the identification of cooperating and participating agencies for the Bottineau Transitway Project, can be found in Chapter 9 Consultation and Coordination.

As a cooperating agency, the United States Army Corps of Engineers (USACE) has the ability to adopt the Draft EIS for its own NEPA compliance and have a more formal role and input into project development. This helps the USACE determine whether the proposed project is in compliance with the Clean Water Act (CWA), which allows them to issue a permit. USACE has its own process for determining the Least Environmentally Damaging Preferred Alternative (LEDPA), known as the NEPA/404 merger process. As part of this process, USACE evaluates the project and issues four points of concurrence on the project: #1 Purpose and Need and Alternative Screening Criteria; #2 Alternatives to be Evaluated in Detail; #3 Preferred Alternative and LEDPA; and #4 Permit Application and Compensatory Mitigation.

To date, USACE has provided concurrence with Points #1, #2, and #3 (see letters in [Appendix D](#)). Specific to Point #1, in a letter dated June 19, 2013, USACE reviewed and concurred with the purpose and need statement for use in NEPA documentation for the Bottineau Transitway Project. USACE also concurred on the array of alternatives considered for the Bottineau Transitway Project and the alternatives that had been carried forward for further review (Point #2). In a letter dated October 1, 2013, USACE issued concurrence on the identification of the selected alternative (Concurrence Point #3).



Figure 1.2-1. Summary of Previous Bottineau (Northwest) Corridor Studies



### 1.3 Project Purpose

The purpose statement below specifically defines the fundamental reasons why the Bottineau Transitway project is being proposed.

**The purpose of the Bottineau Transitway is to provide transit service which will satisfy the long-term regional mobility and accessibility needs for businesses and the traveling public.**

### 1.4 Project Need

This section outlines the foundation for the statement of the project purpose defined in Section 1.3. More specifically, this section identifies the problems or “needs” that the Bottineau Transitway project is intended to address and the underlying causes of the defined “needs.”

**The Bottineau Transitway project is needed to effectively address long-term regional transit mobility and local accessibility needs while providing efficient, travel-time competitive transit service that supports economic development goals and objectives of local, regional, and statewide plans.**

Due to continued increase in travel demand coupled with few highway capacity improvements planned for regional roadways in this area, congestion is expected to worsen by 2030. While transit investment is recognized regionally as one of the key strategies for managing congestion, transit would offer many other benefits to address the needs of Bottineau Transitway-area residents and businesses. Residents and businesses in the Bottineau Transitway project area need improved access to the region’s activity centers to fully participate in the region’s economy. Access to jobs in downtown Minneapolis and northbound reverse commute transit options to serve jobs in the growing suburban centers are crucial to continued economic vitality. Current transit options in the Bottineau Transitway project area offer a limited number of travel-time competitive alternatives to the single-occupant vehicle. Without major transit investments, it will be difficult to effectively meet the transportation needs of people and businesses in the corridor, manage highway traffic congestion in the project area, and achieve the region’s 2030 goal, as identified in the *TPP* as doubling transit ridership by 2030.

Five factors contribute to the need for the Bottineau Transitway project:

- Growing travel demand resulting from continuing growth in population and employment
- Increasing traffic congestion and limited fiscal resources
- People who depend on transit
- Limited transit service to suburban destinations (reverse commute opportunities) and time-efficient transit options
- Regional objectives for growth stated in the Regional Development Framework

#### Growing Travel Demand

To illustrate patterns of growth in communities served by the Bottineau Transitway, communities are grouped into Corridor Communities and Contributing Communities, as represented in [Figure 1.4-1](#) and the following tables. Corridor Communities are those adjacent to the proposed alignments, and include Minneapolis; Southern Corridor Communities of Robbinsdale, Golden Valley, Crystal, and New Hope; and Northern Corridor Communities of Brooklyn Park, Maple Grove, and Osseo. Contributing Communities are those which are not on the corridor, but are anticipated to contribute to travel demand and ridership. These include Dayton, Rogers, and Hassan Township. This breakdown of communities illustrates that each area has a distinct pattern and rate of growth. As illustrated in [Table 1.4-1](#), between 1990 and 2010, the Bottineau Transitway communities of Brooklyn Park and Maple Grove experienced population increases, with greater growth in the outlying suburbs of Dayton and Rogers. According to the Metropolitan Council Regional Development Framework 2030 Forecasts, between 2010 and 2030,

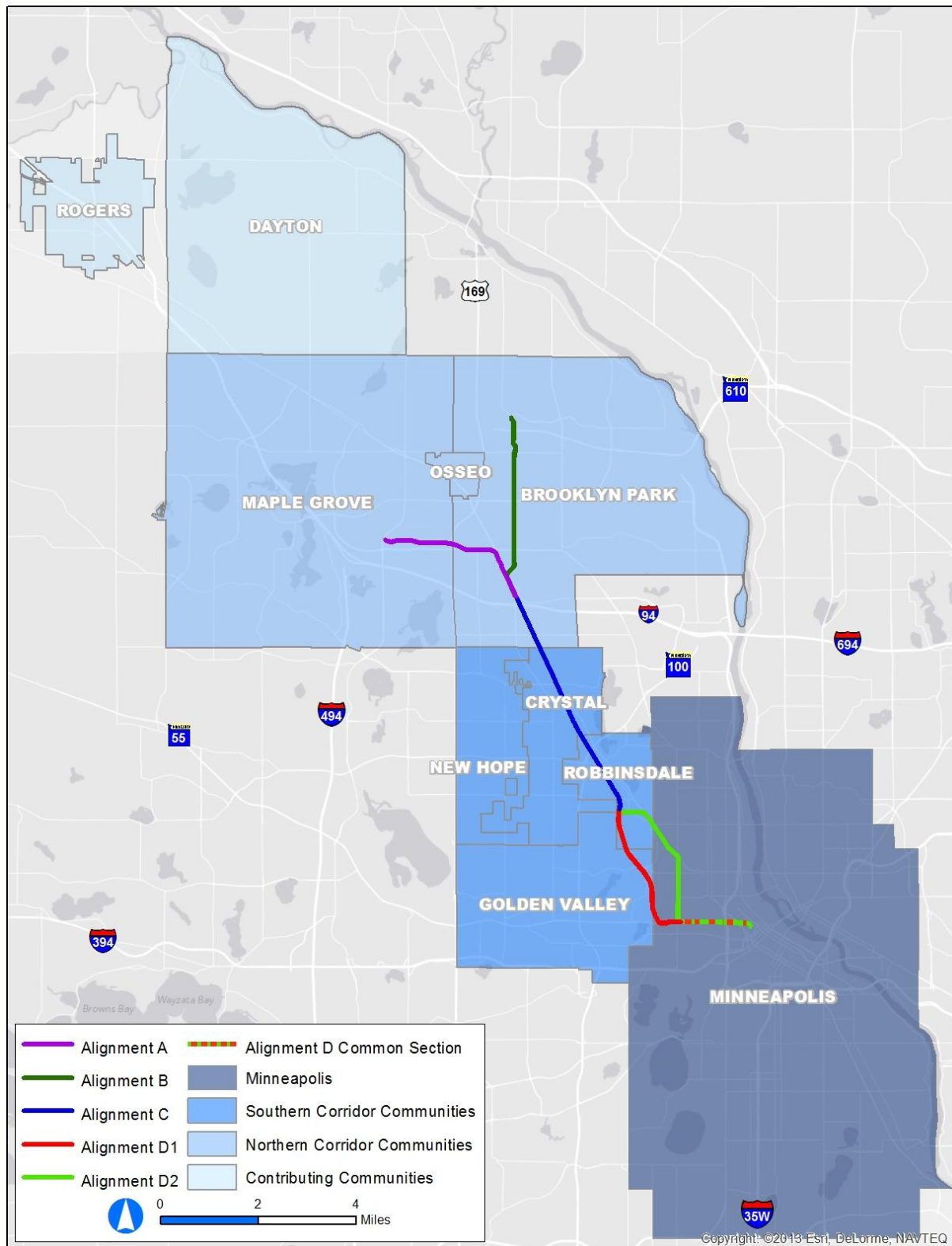
communities served by the Bottineau Transitway are expected to grow by 140,000 people. Maple Grove and several communities to the north and west that may also potentially be served by the transitway (Osseo, Dayton, and Rogers) are projected to grow by more than 66,000 people, outpacing the overall population growth rate for Hennepin County and the Twin Cities Metropolitan Area between 2010 and 2030.

Employment in the Bottineau Transitway project area is also expected to increase in coming years according to the Regional Development Framework 2030 Forecasts (see [Figure 1.4-2](#)). Approximately half of all jobs in the Bottineau Transitway project area are located in downtown Minneapolis, which is currently the region's largest travel demand generator with nearly 65,000 jobs anticipated to be added by 2030. The remaining employment in the project area is dispersed throughout the corridor, mainly along regional highways. Large employment concentrations outside downtown Minneapolis are located at North Memorial Medical Center in Robbinsdale, the TH 610 development area (including the Target North Campus) in Brooklyn Park, and the Arbor Lakes commercial area in Maple Grove. Brooklyn Park, Maple Grove, and Osseo are expected to experience the highest growth in employment in the project area by 2030. These trends are shown in [Table 1.4-2](#).

Growth in population and employment in the project area and beyond is expected to result in increased transportation demand. Significant growth in traffic volumes is anticipated within the project area, in the range of 15 to 20 percent along project area roadways.

Population growth in the collar counties (the 12 counties adjacent to the seven-county Twin Cities Metropolitan Area) coupled with employment growth in the Bottineau Transitway project area will result in a sizable increase in trips between these areas. In 2010, collar county residents from Sherburne and portions of Wright and Isanti Counties made an estimated 35,600 trips per day to destinations along the Bottineau Transitway project area. By 2030, this number is expected to increase by 66 percent, to nearly 60,000 trips per day, as illustrated in [Table 1.4-3](#).

Figure 1.4-1. Corridor and Contributing Communities



**Table 1.4-1. Historic Population Change and Future Population Forecasts within Bottineau Project Area**

	1990 <sup>1</sup>	2000 <sup>1</sup>	2010 <sup>1</sup>	2020 <sup>2</sup> Forecast	2030 <sup>2</sup> Forecast	% Change 1990- 2010	% Change 2010- 2030
<b>Corridor Communities</b>	<b>547,212</b>	<b>580,780</b>	<b>599,170</b>	<b>669,950</b>	<b>701,000</b>	<b>9%</b>	<b>17%</b>
Minneapolis	368,383	382,618	382,578	425,800	441,100	4%	15%
Southern Corridor Communities	81,008	77,975	76,814	81,600	83,600	-5%	9%
<i>Robbinsdale</i>	14,396	14,123	13,953	14,600	15,000	-3%	8%
<i>Golden Valley</i>	20,971	20,281	20,371	23,000	24,000	-3%	18%
<i>Crystal</i>	23,788	22,698	22,151	22,000	22,100	-7%	0%
<i>New Hope</i>	21,853	20,873	20,339	22,000	22,500	-7%	11%
Northern Corridor Communities	97,821	120,187	139,778	162,550	176,300	43%	26%
<i>Brooklyn Park</i>	56,381	67,388	75,781	84,000	89,000	34%	17%
<i>Maple Grove</i>	38,736	50,365	61,567	75,700	84,000	59%	36%
<i>Osseo</i>	2,704	2,434	2,430	2,850	3,300	-10%	36%
<b>Contributing Communities</b>	<b>7,041</b>	<b>10,737</b>	<b>15,814</b>	<b>41,200</b>	<b>56,300</b>	<b>125%</b>	<b>256%</b>
Dayton <sup>3</sup>	4,392	4,686	4,617	26,200	35,100	5%	660%
Hassan Township <sup>4</sup>	1,951	2,463	2,600	0	0	33%	-100%
Rogers	698	3,588	8,597	15,000	21,200	1132%	147%
<b>Project Area Total</b>	<b>554,253</b>	<b>591,517</b>	<b>614,984</b>	<b>711,150</b>	<b>757,300</b>	<b>11%</b>	<b>23%</b>
<b>Hennepin County</b>	<b>1,032,431</b>	<b>1,116,200</b>	<b>1,152,425</b>	<b>1,308,415</b>	<b>1,394,660</b>	<b>12%</b>	<b>21%</b>
<b>Twin Cities Metropolitan Area</b>	<b>2,288,721</b>	<b>2,642,056</b>	<b>2,849,567</b>	<b>3,432,293</b>	<b>3,728,175</b>	<b>25%</b>	<b>31%</b>

<sup>1</sup> US Census Bureau

<sup>2</sup> Metropolitan Council Regional Development Framework 2030 Forecasts; revised 2009

<sup>3</sup> A small portion (less than one percent in 2000) of the City of Dayton lies within Wright County; hence, it is not included in the population figures reported in this table.

<sup>4</sup> Population projections for Hassan Township are zero in 2020-2030 due to anticipated annexation of township land to the City of Rogers.



**Table 1.4-2. Historic Employment Change and Future Employment Forecasts within Bottineau Transitway Project Area**

	1990 <sup>5</sup>	2000	2010 <sup>6</sup>	2020 <sup>7</sup> Forecast	2030 <sup>7</sup> Forecast	% Change 1990- 2010	% Change 2010- 2030
<b>Corridor Communities</b>	<b>362,993</b>	<b>415,394</b>	<b>402,023</b>	<b>489,950</b>	<b>538,850</b>	<b>11%</b>	<b>34%</b>
Minneapolis	278,438	308,127	282,372 <sup>8</sup>	332,500	346,500	1%	23%
Southern Corridor Communities	55,570	56,454	55,008	62,500	65,800	-1%	20%
Robbinsdale	6,813	7,109	6,846	7,600	8,100	0%	18%
Golden Valley	28,589	30,142	33,157	33,100	34,500	16%	4%
Crystal	6,019	5,638	3,929	7,300	8,100	-35%	106%
New Hope	14,149	13,565	11,076	14,500	15,100	-22%	36%
Northern Corridor Communities	26,462	44,313	55,852	74,950	98,550	111%	76%
Brooklyn Park	16,592	23,692	23,922	29,100	32,000	44%	34%
Maple Grove	7,750	18,309	30,181	42,900	63,500	289%	110%
Osseo	2,120	2,312	1,749	2,950	3,050	-18%	74%
<b>Contributing Communities</b>	<b>2,523</b>	<b>6,500</b>	<b>8,818</b>	<b>20,000</b>	<b>28,000</b>	<b>250%</b>	<b>218%</b>
Dayton	498	1,086	921	8,000	12,500	85%	1257%
Hassan Township	250	721	1,616	0	0	546%	-100%
Rogers	1,775	4,693	6,281	12,000	15,500	254%	147%
<b>Project Area Total</b>	<b>362,993</b>	<b>415,394</b>	<b>402,050</b>	<b>489,950</b>	<b>538,850</b>	<b>11%</b>	<b>34%</b>
<b>Hennepin County</b>	<b>723,105</b>	<b>877,375</b>	<b>804,970</b>	<b>1,035,320</b>	<b>1,116,360</b>	<b>11%</b>	<b>39%</b>
<b>Twin Cities Metropolitan Area</b>	<b>1,272,773</b>	<b>1,606,994</b>	<b>1,543,896</b>	<b>2,023,150</b>	<b>2,205,730</b>	<b>21%</b>	<b>43%</b>

<sup>5</sup> Metropolitan Council

<sup>6</sup> MnDEED 2010 Quarter 2 Employment Estimates

<sup>7</sup> Metropolitan Council Regional Development Framework 2030 Forecasts; revised 2009. Brooklyn Park and Crystal forecasts revised 2011.

<sup>8</sup> Metropolitan Council Revision, August 2011

**Table 1.4-3. Collar County Travel Demand for Trips Ending in the Bottineau Transitway Project Area**

Zone	2010 Average Weekday Person Trips	2030 Average Weekday Person Trips	2010-2030 Increase	2010-2030 Percent Increase
Downtown Minneapolis	4,500	5,000	500	11%
North Minneapolis	1,300	1,300	0	0%
Robbinsdale, Golden Valley, Crystal, New Hope	7,700	8,800	1,100	14%
Brooklyn Park	4,700	10,100	5,400	115%
Maple Grove	17,400	33,800	16,400	94%
<b>Project Area Total</b>	<b>35,600</b>	<b>59,000</b>	<b>23,400</b>	<b>66%</b>

Source: MnDOT Collar County Travel Demand Model<sup>9</sup>

Growth in population and employment in the project area and beyond is expected to result in growing travel demand. As illustrated in [Figure 1.4-3](#), significant growth in traffic volumes is anticipated within the project area, particularly in the northern suburbs of Brooklyn Park, Maple Grove, and Dayton. The figure illustrates expected growth in traffic volumes on highways and arterial roadways crossing the reference lines. Traffic volumes on the combination of all roadways in the project area just north of TH 610 (Line 1) are expected to grow by 57 percent or approximately 130,000 daily trips by 2030. In addition, volumes are projected to increase by 110,000 daily trips or 26 percent on the combination of all roadways in the project area between the proposed TH 610 and the I-94/I-494 split by 2030 (Line 2). Although projected increases are smaller than for other communities, traffic volumes are also expected to increase by 15 percent (110,000 daily trips) and 21 percent (65,000 daily trips) near Crystal (Line 3) and north Minneapolis (Line 4), respectively.

The roadway system configured within the area's natural and built environment focuses high mobility demand on a limited number of facilities including I-94, I-694, I-494, TH 100, and US 169. Although TH 610 and its planned connection between US 169 and I-94 would increase capacity for some of the east-west demand in the project area, it is not expected to address the increasing northwest-southeast oriented mobility needs in the project area travelshed or relieve demand on I-94. No other major highway improvements are planned in the next 20 years for the metropolitan highway system within the project area.

### Increasing Traffic Congestion

Growing travel demand is expected to increase traffic congestion on the region's highways and in downtown Minneapolis. In the past, the region responded to increased demand by constructing new roadways or expanding existing ones. In recent years, however, roadway expansion in the Twin Cities Metropolitan Area has not kept pace with mounting travel demand and is not anticipated to keep pace in the future.

State policy, outlined in the Minnesota Department of Transportation's (MnDOT) *Statewide Multimodal Transportation Plan* and different modal investment plans under the Minnesota GO vision, and regional policy, outlined in the 2030 *TPP*, both recognize the importance of a balanced approach to meeting travel demand that invests in maintaining the existing transportation system and favors projects such as the Bottineau Transitway.

Specifically, the *Statewide Multimodal Transportation Plan* includes overarching key objectives of "Transportation in Context" and "Critical Connections" that highlight the importance of a multimodal

<sup>9</sup> The collar county model is a modified version of the Twin Cities regional travel demand model developed by MnDOT to better estimate travel demand in portions of the Twin Cities area. The better estimations were developed by including additional refinements to the roadway network and trip making analysis of the 12 counties that surround the seven-county metro area.

system. Key strategies in support of these objectives include working with other regional and local agencies to:

- Improve accessibility and safety for everyone traveling on, along, and across roads.
- Define priority networks for all modes based on connectivity and accessibility.
- Improve the connections between transit services to provide greater transportation options for travel within and between cities.
- Define priority networks for all modes based on connectivity and accessibility.

The need to optimize mobility through strategies that manage highway traffic congestion in the project area is relevant to the Bottineau Transitway Project. The Bottineau Transitway project area contains several major regional highways that experience congestion today. Due to continued increase in travel demand coupled with few highway capacity improvements planned for regional roadways in this area, congestion is expected to worsen by 2030. Because many regional highways are already experiencing congestion and this situation is expected to worsen, many local arterial roadways paralleling the regional highway system are likely to absorb increases in traffic by 2030 as the regional system nears capacity.

**Figure 1.4-3** illustrates the projected increase in traffic volumes on highways and arterials between 2005 and 2030 in the Bottineau Transitway project area.

In recent years, MnDOT, the Metropolitan Council, and Metro Transit have cooperated to provide transit investments along the roadway system as one of the key strategies for managing congestion. In the case of I-94 in the Bottineau Transitway project area, as well as other freeways in the Twin Cities Metropolitan Area, transit advantages in the form of bus-only shoulders and ramp meter bypass lanes have been implemented. As the I-94 corridor approaches capacity, even minor fluctuations in traffic demand could have a major impact on the performance and level of congestion of the facility overall. With no planned roadway capacity improvements along the I-94 corridor in the project area, transit investments will play an increasingly important role in effectively managing traffic congestion in the project area.

Policy direction at the local level has also concluded that continual roadway expansion is unsustainable. Specifically, the *Access Minneapolis Ten Year Transportation Action Plan (2007)* indicates that about half of downtown trips currently are walk, bike, or transit trips. It also states, "One of the downtown transportation targets of the City's *Sustainability Plan* is to increase the use of alternative transportation modes in downtown to 67% by 2013." It goes on to state, "The new transportation strategy for downtown places particular emphasis on walking, biking, transit (bus, light rail, and commuter rail), and pedestrians, while also retaining automobile access. This approach ensures that automobile access is always accommodated but gives appropriate priority to walking, biking, and transit, which must take on a rising share of travel in and through the downtown as growth continues to occur."



Figure 1.4-2. 2010 to 2030 Employment Forecast

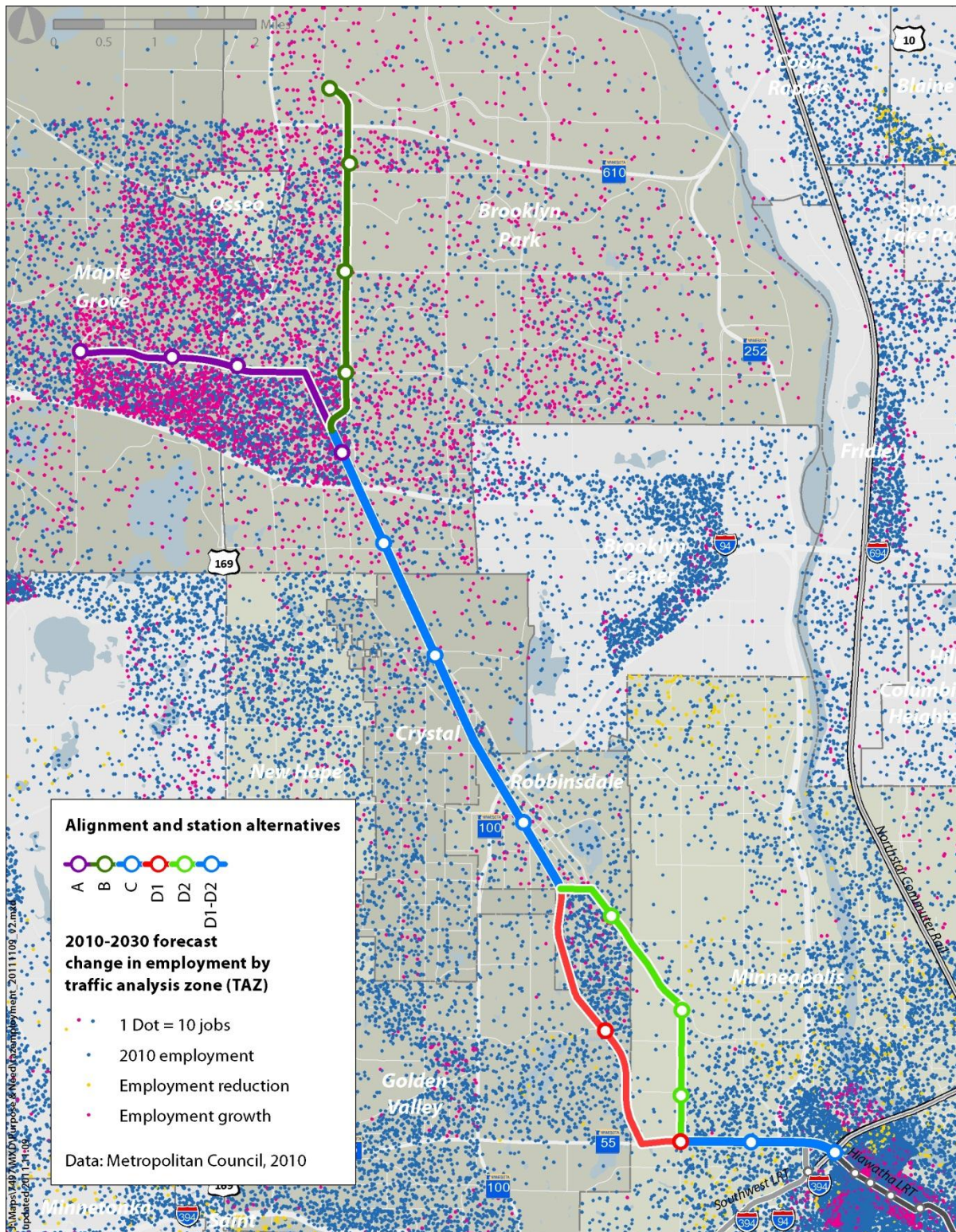




Figure 1.4-3. 2005-2030 Traffic Volume Growth Across Corridor Screenlines

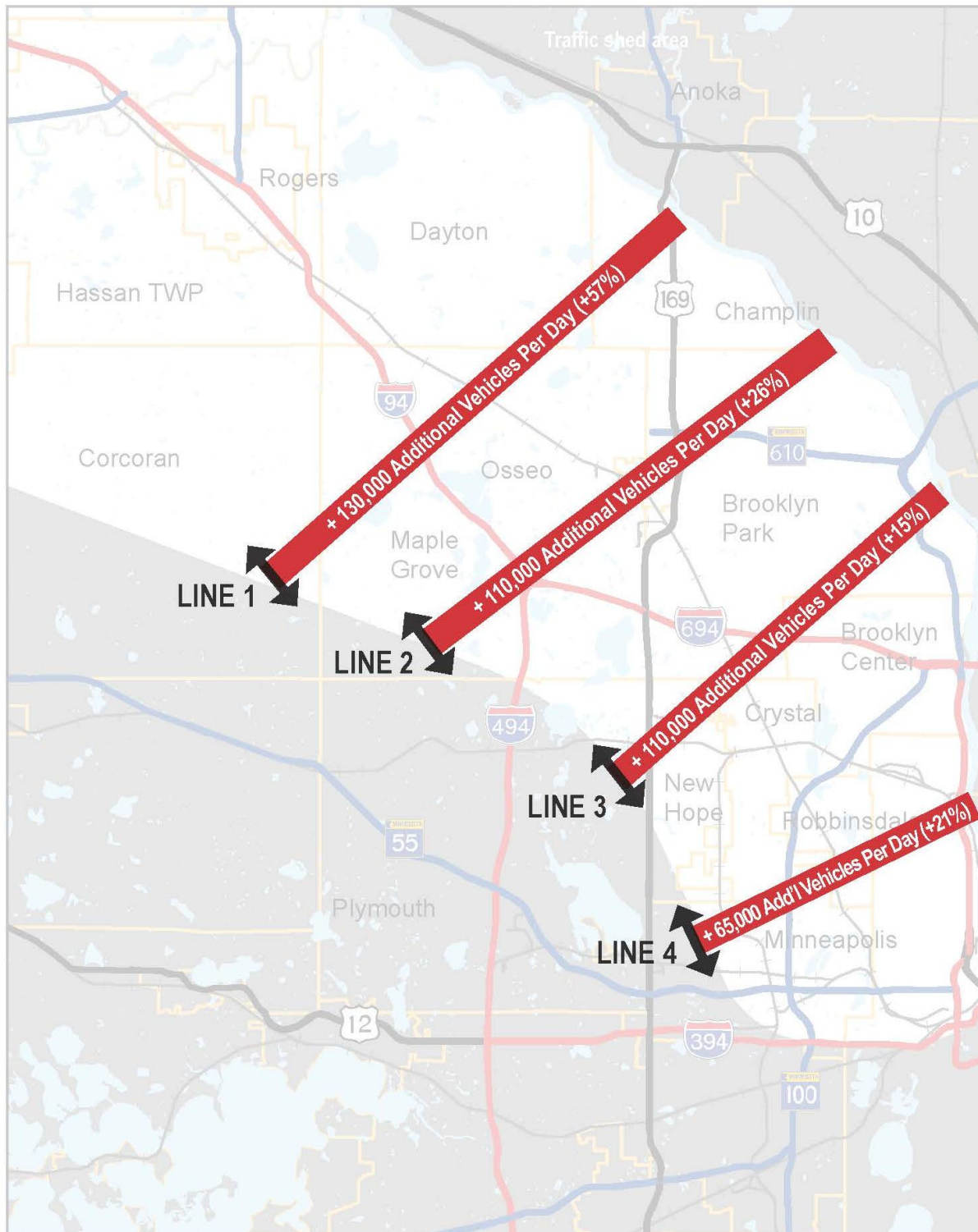
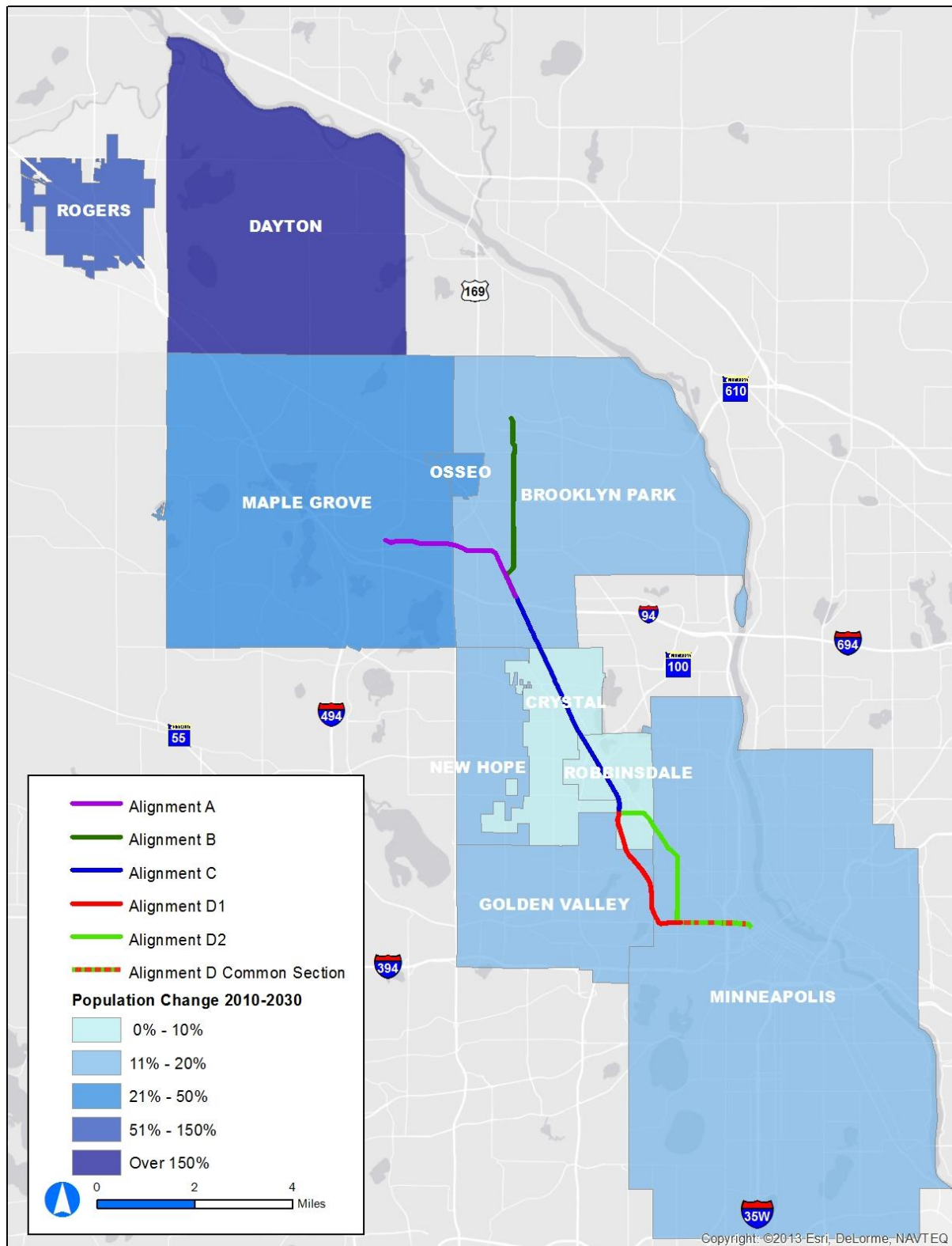




Figure 1.4-4. 2010-2030 Population Change within the Bottineau Transitway Project Area



### Needs of People Who Depend on Transit

The Bottineau Transitway project area is home to a large number of people who depend on transit to meet their transportation needs. Based on US Census information, 14 percent of households in the project area do not own a vehicle. This is nearly double the metropolitan area average of eight percent, as shown in [Table 1.4-4](#). [Figure 1.4-5](#) illustrates the distribution of households with no vehicles and highlights the presence of areas in north Minneapolis and portions of suburban communities in the corridor where these percentages are the highest. In some areas of north Minneapolis, the number of zero-car households exceeds 50 percent; in areas of New Hope and Brooklyn Park, the number exceeds 22 percent. The high proportion of people without access to vehicles underscores the need for transit access in these parts of the Bottineau Transitway project area.

In addition, seniors represent an important market segment for public transportation. In the project area communities of Golden Valley, Robbinsdale, Crystal, and New Hope, seniors make up a larger share of the population compared to the makeup of the overall regional population, as shown in [Table 1.4-4](#) and [Figure 1.4-5](#). Moreover, senior populations are expected to grow in the Bottineau Transitway communities during the next 20 years by as much as 125 percent.

**Table 1.4-4. Transit-Dependent Population as a Share of Community Population<sup>10</sup>**

	Occupied Housing Units	Zero Vehicles Available	Percent Zero-Vehicle	Total Population	Population Over 65	Percent over 65
<b>Corridor Communities</b>	<b>245,541</b>	<b>33,859</b>	<b>14%</b>	<b>599,170</b>	<b>54,222</b>	<b>9%</b>
Minneapolis	165,253	28,947	18%	382,578	30,511	8%
Southern Corridor Communities	31,918	2,663	8%	76,814	12,675	17%
<i>Robbinsdale</i>	6,062	611	10%	13,953	1,724	12%
<i>Golden Valley</i>	8,818	504	6%	20,371	4,142	20%
<i>Crystal</i>	8,821	477	5%	22,151	3,035	14%
<i>New Hope</i>	8,217	1,071	13%	20,339	3,774	19%
Northern Corridor Communities	48,370	2,249	5%	139,778	11,036	8%
<i>Brooklyn Park</i>	24,740	1,669	7%	75,781	5,928	8%
<i>Maple Grove</i>	22,466	424	2%	61,567	4,532	7%
<i>Osseo</i>	1,164	156	13%	2,430	576	24%
<b>Contributing Communities</b>	<b>4,840</b>	<b>120</b>	<b>2%</b>	<b>14,884</b>	<b>1,250</b>	<b>8%</b>
Dayton	1,579	17	1%	4,671	420	9%
Hassan Township	756	22	3%	1,616	112	7%
Rogers	2,505	81	3%	8,597	718	8%
<b>Project Area Total</b>	<b>250,381</b>	<b>33,979</b>	<b>14%</b>	<b>614,054</b>	<b>55,472</b>	<b>9%</b>
<b>Hennepin County</b>	<b>469,770</b>	<b>46,244</b>	<b>10%</b>	<b>1,152,425</b>	<b>130,814</b>	<b>11%</b>
<b>Twin Cities Metropolitan Area</b>	<b>1,097,513</b>	<b>82,321</b>	<b>8%</b>	<b>2,849,567</b>	<b>306,750</b>	<b>11%</b>

<sup>10</sup> Zero-vehicle data from 2005-2009 American Community Survey Five-Year Estimates; population and age data from 2010 Census.

### Limited Transit Service to Suburban Destinations (reverse commute opportunities) and Time-Efficient Transit Options

Currently, the dominant commute pattern in the Bottineau Transitway project area is inbound from suburban areas during the morning peak period to serve traditional employment destinations in downtown Minneapolis.

For suburban commuters originating beyond the I-694/I-494 beltway, Maple Grove Transit provides a travel-time competitive transit option during commuter peak periods serving Maple Grove travel markets via park-and-ride facilities, and several Metro Transit services deliver suburban commuters from southern corridor communities to downtown Minneapolis jobs via large suburban park-and-rides on the Brooklyn Park end of the corridor. Express buses in the project area benefit from a robust system of transit advantages, consisting of ramp meter bypass lanes and bus-only shoulders, to ensure travel time reliability and short trip times during periods of congestion on the highway system.

Even within the peak commute period, however, there are limited travel-time competitive transit options for some project area travel markets, specifically inside the I-694 ring (including the communities of Crystal, New Hope, Robbinsdale, and north Minneapolis neighborhoods). This limits transit's ability to compete with automobile travel times, leaving a significant gap in travel options for residents of this area.

Although the dominant commute pattern in the Bottineau Transitway project area today is oriented toward downtown Minneapolis, a notable reverse commute pattern exists from Minneapolis and the southern corridor communities of Robbinsdale, Golden Valley, and Crystal to developing areas such as Brooklyn Park, Maple Grove, and Rogers. As illustrated in [Figure 1.4-2](#), job concentrations exist throughout the project area. This reverse commute pattern of job distribution is expected to continue to grow between now and 2030, as the suburban employment nodes gain jobs.

Although project area communities are served by a network of local and express bus routes, fast and convenient transit options to access schools and jobs are limited. Direct bus service from Minneapolis to suburban communities in the Bottineau Transitway is provided on two limited-stop and express routes. Residents of Minneapolis and the southern corridor communities do have other transit options for accessing activity centers in the northern corridor communities of Maple Grove and Brooklyn Park via three transit centers located within the project area (Starlite Transit Center, Brooklyn Center Transit Center, and Robbinsdale Transit Center). Unfortunately, these suburban local routes stop frequently, often require transfers, and travel at lower speeds on arterial streets, resulting in long overall travel times.

Although regional plans call for improved local and express bus services in the future, the overall configuration of transit service in the project area is not expected to change significantly. Future service will continue to focus on a network of park-and-rides served by peak period, inbound express routes and a suburban local network comprised of infrequent services operating out of suburban transit centers. Demand for mid-length and reverse commute trips on transit within the project area will not be met by 2030 bus plans.<sup>11</sup>

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<sup>11</sup> Transit Operations Plans Report (Connetics Transportation Group, 2012)

Figure 1.4-5. Percent of Households with Zero Vehicles

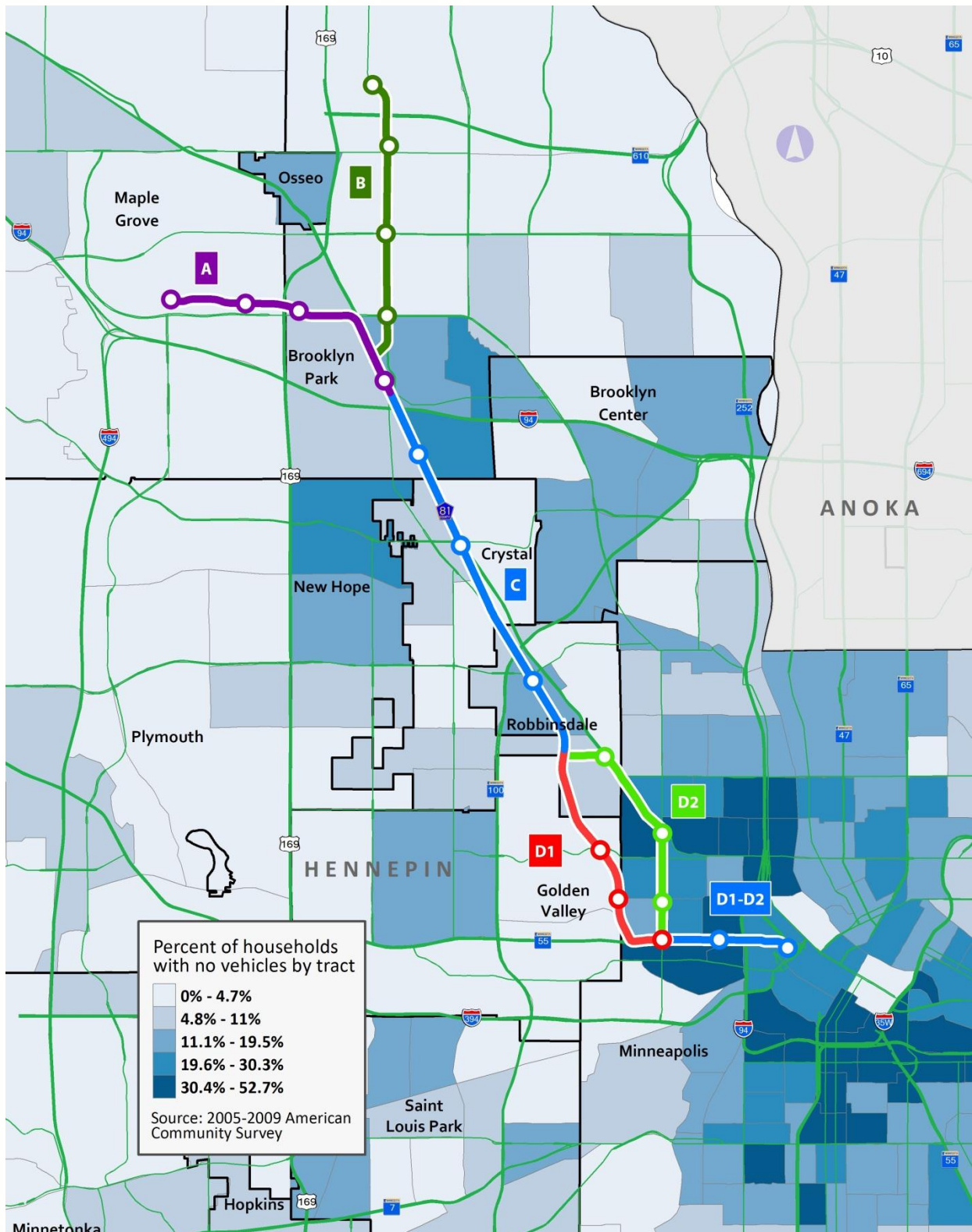
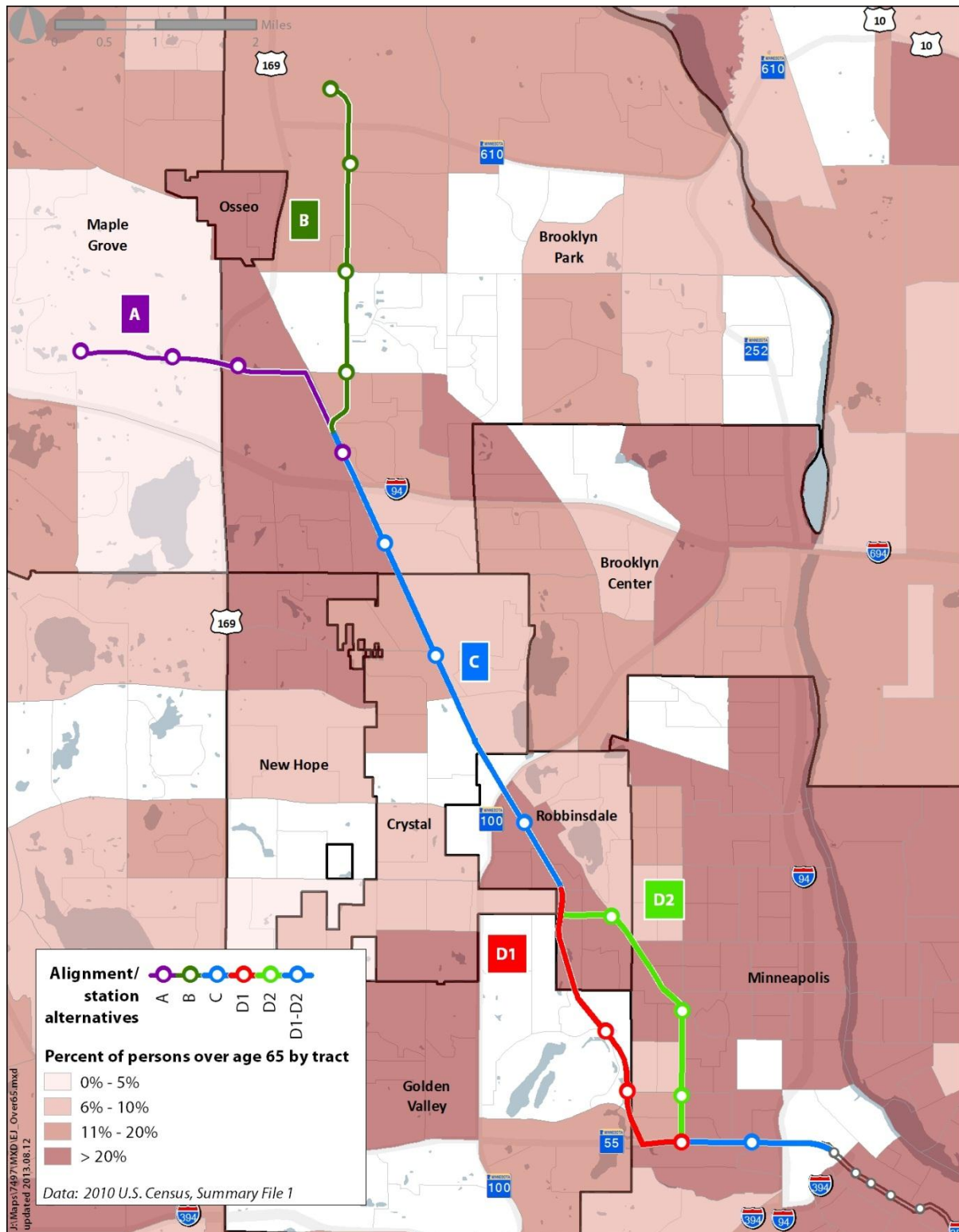




Figure 1.4-6. Percent of Population Over Age 65





## Regional Objectives for Growth

The Twin Cities Metropolitan Area is working to ensure the orderly, economical development of its seven-county area and the efficient use of four regional systems: transportation, aviation, water resources (including wastewater collection and treatment), and regional parks and open space. The policies guiding the region's development are articulated in the *2030 Regional Development Framework*. Most recently updated in December 2006, the *2030 Regional Development Framework* established four policies for guiding growth in the region:

- Accommodate growth in a flexible, connected, and efficient manner
- Plan and invest in multi-modal transportation choices to slow the growth of traffic congestion and serve the region's economic needs
- Encourage expanded choices in housing locations and types and improved access to jobs and opportunities
- Conserve, protect, and enhance the region's vital natural resources

Bottineau Transitway, as part of a regional transitway system, would be a step toward achieving these goals.

## 1.5 Goals and Objectives

The establishment of goals and objectives articulates the desired benefits of the proposed Bottineau Transitway and establishes a foundation for the definition of evaluation measures including quantitative and qualitative criteria to be used in comparing the performance of the alternatives.

The following goals have been developed to serve as a framework to evaluate the alternatives under consideration for the Bottineau Transitway. Based on the purpose and need of the Bottineau Transitway, Goals 1 through 3 outlined below address the core purpose and need of the project. Goals 4 and 5 reflect broader community goals, and hence should be considered in the evaluation of alternatives that meet the first step in the screening evaluation process. These goals, along with the identified project needs, provide the basis for the analysis of alternatives discussed in Chapter 2.

**Table 1.5-1 Bottineau Transitway Goals and Objectives**

Goal 1: Enhance Regional Access to Activity Centers	
Objectives	
1	Maximize total transit riders
2	Improve service to people who depend on transit
3	Expand reverse commute and off-peak transit opportunities
4	Increase transit system linkages, access to regional destinations, and multimodal transportation opportunities
5	Maximize transit access to housing, employment, schools, community services, health care facilities, and activity centers
Goal 2: Enhance the Effectiveness of Transit Service within the Corridor	
Objectives	
6	Maximize new transit riders
7	Maximize passengers per hour of revenue service
8	Maximize traveler time savings

**Table 1.5-1 Bottineau Transitway Goals and Objectives (continued)**

<b>Goal 3: Provide a Cost-Effective and Financially Feasible Transit System</b>	
<b>Objectives</b>	
9	Balance project costs and benefits
10	Minimize project capital and operating cost
11	Maximize long-term investment in the regional transit system
12	Maximize flexibility to efficiently expand the transit investment to accommodate transitway demand beyond 2030 weekday travel demand forecasts
<b>Goal 4: Promote Sustainable Development Patterns</b>	
<b>Objectives</b>	
13	Promote land development and redevelopment that supports sustainable transportation policies
14	Ensure compatibility with local and regional comprehensive plans
15	Support economic development and redevelopment efforts
<b>Goal 5: Support Healthy Communities and Sound Environmental Practices</b>	
<b>Objectives</b>	
16	Minimize impacts on wetlands/water/floodplains, parks, visual resources, noise/vibration, and historic/cultural resources
17	Minimize short- and long-term impacts to property, property access, and on-street parking
18	Maximize cohesion, preservation, and enhancement of Bottineau Transitway communities
19	Maximize pedestrian and bicycle connections to the Bottineau Transitway
20	Maximize health, environmental, and economic benefits to the Bottineau Transitway communities
21	Minimize disproportionately high and adverse impacts on the region's minority and/or low-income communities
22	Minimize area traffic impacts

## 2.0 Alternatives

This chapter describes the alternatives development process, the alternatives under consideration in this Draft Environmental Impact Statement (Draft EIS), and the alternatives that were considered and subsequently withdrawn from further consideration for the Bottineau Transitway Project.

From 2005 through mid-2012 the authorizing legislation guiding FTA's programs was entitled the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). In July 2012 a new authorization was enacted entitled the Moving Ahead for Progress in the 21st Century Act (MAP-21) that changed several aspects of FTA's primary grant program for funding locally planned, implemented and operated major transit capital investments, including rapid rail, light rail transit (LRT), bus rapid transit (BRT), commuter rail, and ferries. The Major Capital Investment Projects (New and Small Starts) draft final rule sets a new regulatory framework for FTA's evaluation and rating of major transit capital investments seeking funding under the discretionary "New Starts" and "Small Starts" programs.

Primary project decision-making for the Bottineau Transitway to date is summarized in Chapter 2, Alternatives, including the selection and approval of the locally preferred alternative (LPA), identification of the environmentally preferred alternative, and the least environmentally damaging preferred alternative (LEDPA). This chapter will continue to reflect the previous New Starts rule and guidance that were in effect at the time of decision-making. This accurately reflects the information decision-makers had at the time, and is representative of the decision-making process. As the project progresses through more advanced stages of project development and into a Final EIS, future project decisions will be based on the Major Capital Investment Projects (New and Small Starts): Final Rule and associated criteria.

### 2.1 Alternatives Development Process

#### 2.1.1 Alternatives Analysis Study – Spring 2008 – Spring 2010

The Hennepin County Regional Railroad Authority (HCRRA), in consultation with the Metropolitan Council, the Federal Transit Administration (FTA) and local jurisdictions, initiated an Alternatives Analysis (AA) Study for the Bottineau Transitway in 2008. Completed in 2010, the study evaluated a wide range of transit modes and alignments (*Bottineau Transitway Alternatives Analysis Study Final Report*, Hennepin County Regional Railroad Authority, March 2010).

The AA Study developed and evaluated a No-Build alternative, an Enhanced Bus/Transportation System Management (TSM) alternative, and a broad range of transit alternatives. To narrow this initial universe of alternatives, the project team developed screening criteria in consultation with local committee members and other stakeholders ([Table 2.1-1](#)). The purpose of screening was to identify those initial alternatives with potential to address the project needs, goals, and objectives. Alternatives that met all the screening criteria were advanced in the AA Study. The study did not advance those alternatives that did not meet all the screening criteria.

**Table 2.1-1. Screening Criteria Used To Identify Alternatives with Potential to Address Project Needs and Goals**

<b>1. Service Area</b>
<ul style="list-style-type: none"> <li>■ Alignment must be accessible (within walking distance or by connecting feeder bus) to people who depend on transit</li> <li>■ South end must serve downtown Minneapolis</li> <li>■ North end must serve a major traffic or employment generator</li> <li>■ Alignment must serve the highest concentration of origins and destinations</li> </ul>
<b>2. Service Efficiency (travel time and directness)</b>
<ul style="list-style-type: none"> <li>■ Alignment must be as physically short as possible</li> <li>■ Alignment must follow right-of-way that allows for high travel speeds</li> <li>■ Alignment must provide for low travel time between stations on alignment and between origins and destinations on the transit system</li> </ul>
<b>3. System Connectivity</b>
<ul style="list-style-type: none"> <li>■ Alignment must connect or have reasonable interchange in downtown Minneapolis with the regional transitway system</li> </ul>
<b>4. Compatibility with Existing Infrastructure</b>
<ul style="list-style-type: none"> <li>■ Alignment should use existing infrastructure wherever possible</li> <li>■ Alignment should be compatible with the existing roadway system and the built environment</li> </ul>

The AA Study considered the following mode, alignment, and facility types:

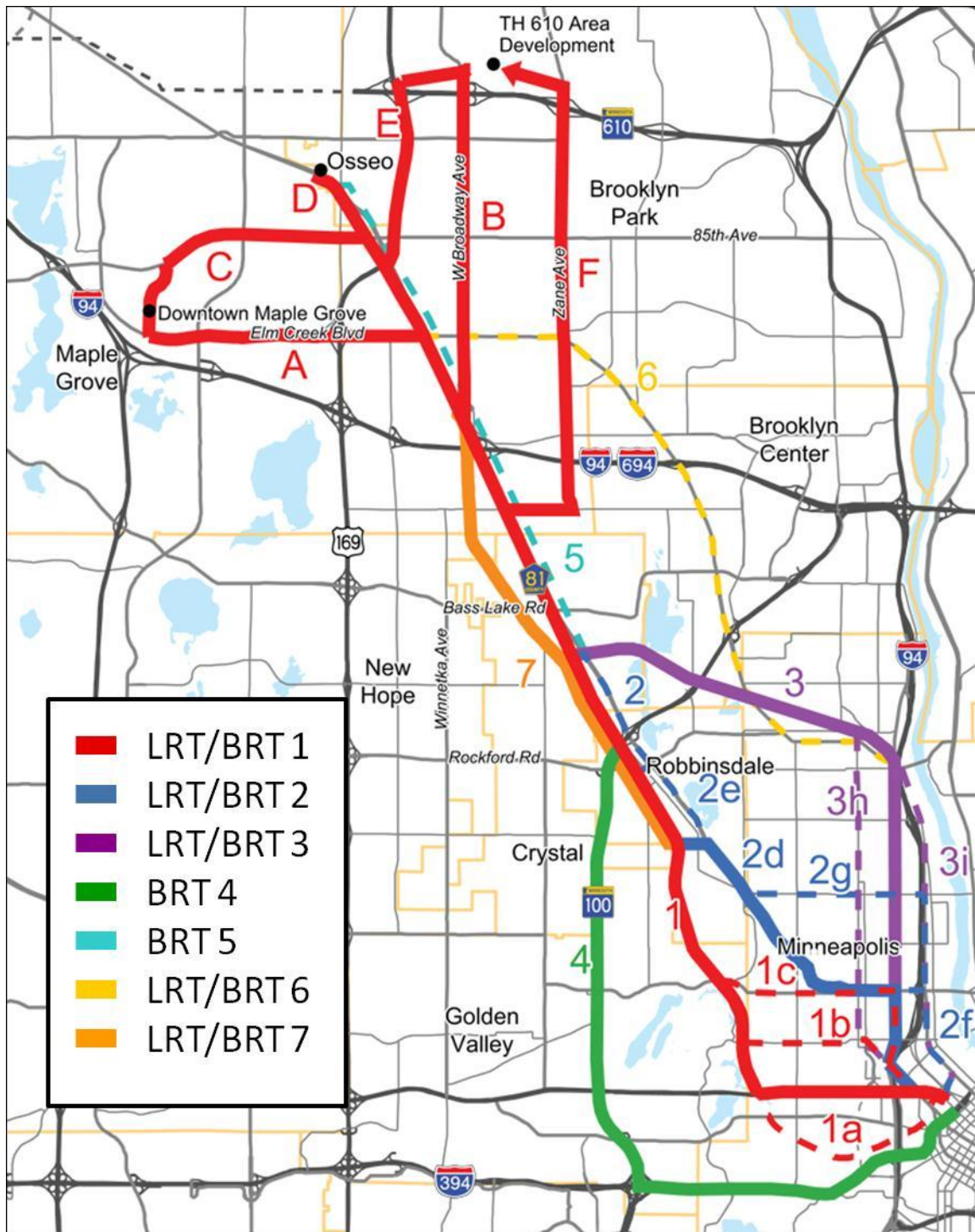
■ **Modes**

Commuter rail, light rail transit (LRT), and bus rapid transit (BRT) modes were considered. Commuter rail alternatives considered would not serve communities in north Minneapolis and Robbinsdale. As such, they would not meet the identified project objective of providing effective reverse commute service and did not meet the service area-screening criterion. As a result, the commuter rail mode was eliminated from further consideration. LRT and BRT modes were retained for technical evaluation.

■ **Alignments**

Alignments were considered for BRT as well as LRT modes. Six LRT or BRT routes providing access to Maple Grove, Osseo, or Brooklyn Park were studied ([Figure 2.2-1](#)). Alternatives with a northern terminus in Maple Grove or Brooklyn Park were retained, as they passed the service area-screening criterion. The alternative terminating in Osseo was dropped from further study because Osseo is no longer a major activity center. On the south end of the corridor, seventeen alternatives were considered for entry into Minneapolis, including 15 suitable for BRT or LRT and two BRT-only alternatives. Five alternatives met all four screening criteria and were retained for technical evaluation. The BRT and LRT alternatives that were dropped all provided system connectivity but failed to meet at least one of the other three screening criteria, most commonly because they were incompatible with existing infrastructure or did not meet the service area criterion.

Figure 2.1-1. Range of Alternatives (AA Study)





## ■ Facility Types

The study sought to develop alternatives with dedicated transitway facilities wherever possible. The primary reasons were to provide the maximum opportunity for travel time advantages, ridership, and mobility benefits and to minimize potential impacts on traffic operations and safety. The study explored some mixed traffic facilities when dedicated facilities were not feasible.

At the conclusion of the screening process, 21 alternatives (12 BRT and nine LRT) were recommended for technical evaluation. The 21 alternatives were then evaluated against the five project goals and 22 objectives. Results for each alternative were reported quantitatively and ranked on a five-point scale for each objective. From this information, summary rankings were developed to allow each alternative to be compared against the others. Complete results are provided in the AA Study report.

### **AA Study Decision: Continue Study of Four LRT Alternatives and One BRT Alternative**

At the conclusion of the AA Study, five alternatives were advanced. The alternatives included the three most promising LRT alternatives identified in the AA Study, a fourth LRT alternative considered in the study that was less promising but still of interest, and a refined BRT alternative.

The refined BRT alternative was developed based on additional understanding gained during the AA Study. Modifications to routing, alignment, and operations were explored to maximize the potential benefits of BRT. The resulting alternative had substantially improved performance over those initially considered in the AA Study and the decision was made to advance this refined BRT alternative for further study.

### **AA Study Decision: Stop Study of Options on West Broadway Avenue East of Penn Avenue**

West Broadway Avenue in Minneapolis (Alignment 2d in [Figure 2.2-1](#)) is a key traffic and activity corridor in the study area and one in which the public has expressed interest. BRT and LRT alternatives on West Broadway Avenue east of County State Aid Highway (CSAH 2) (Penn Avenue) were considered as part of the AA Study because of West Broadway Avenue's role as an important regional and local transportation and activity corridor.

Study of an LRT alternative on West Broadway Avenue east of Penn Avenue was discontinued during the AA Study because of its less feasible connection to the regional LRT system and because of its significant and likely impacts on surrounding land uses, property owners, and other modes of transportation. Because of these concerns, LRT was screened out as a practical mode alternative on West Broadway Avenue.

- **Regional LRT System Connection** – All Bottineau Transitway LRT alternatives connect to the regional LRT system at the Target Field Station (formerly called The Interchange at Target Field) since any Bottineau LRT alternative would become an extension of the Blue Line (Hiawatha). The LRT system connection necessary at the Target Field Station for LRT alternatives on West Broadway Avenue east of Penn Avenue was higher cost, more complex, and limited future expansion potential as compared to the connection possible for other LRT alternatives.
- **Impacts on Surrounding Land Uses, Property Owners, and Other Modes of Transportation** – Additional issues with LRT on West Broadway Avenue east of Penn Avenue included significant impacts to land uses/private property, on-street parking, traffic operations, and right-of-way width. The development of Bottineau Transitway alternatives sought to avoid or minimize these kinds of impacts.

Study of BRT alternatives on West Broadway Avenue east of Penn Avenue was initiated when it became clear that LRT on this alignment would not advance for further study. The BRT alternatives were assumed to operate in mixed traffic, not in the dedicated lanes assumed for all LRT and other BRT alternatives, between Penn and Lyndale Avenues. This approach allowed the BRT alternatives to minimize impacts on

land uses/private property, on-street parking, traffic operations, and right-of-way width. The study considered three BRT alternatives on West Broadway Avenue east of Penn Avenue. Study of the three West Broadway Avenue BRT alternatives was discontinued because of their comparatively weak performances in terms of their ability to meet the Bottineau Transitway purpose and need.

### **2.1.2 D2 Alignment Investigation – April 2010 through November 2011**

The AA Study identified two alignments in Minneapolis for further study: the D1 alignment located in the BNSF (Burlington Northern Santa Fe Railroad) right-of-way and the D2 alignment located on West Broadway and Penn Avenues. The investigation of routing options for the D2 alignment occurred following the publication of the AA Study in March 2010 and continued through November 2011.

Several options for the D2 alignment were considered for the segment between West Broadway Avenue and Trunk Highway (TH) 55. These options (called D2-A, D2-B, and D2-C) included various ways of using Penn and/or Oliver Avenues for the Bottineau Transitway ([Figure 2.1-2](#)). The D2 evaluation process included a technical evaluation of each of the options within the framework of the purpose and need for the Bottineau Transitway as well as the FTA New Starts program evaluation criteria. Through the evaluation process, the Advise, Review, and Communicate Committee (ARCC) worked to create transitway operating conditions required for the Bottineau Transitway to become a financially viable element of the regional transitway system. The ARCC also worked to develop transitway operating conditions that are compatible with general motor vehicle, bus, bicycle, and pedestrian traffic and with neighboring businesses and residents for the long-term.

An open house was held on October 6, 2011, to share detailed information on the benefits and costs of the D2 options and to obtain community input as to which of these options should be used to compare to the D1 alternative. A survey was provided to attendees and also made available online for those unable to attend the open house. Eighty-three survey responses were received which provided insight into area resident and business owner concerns regarding the potential addition of LRT on Penn or Oliver Avenues.

During the 2010 through November 2011 time period, the Northside Neighborhood Transportation Network (NTN), a coalition of north Minneapolis residents and businesses, was actively involved in a process of engaging and informing Northside residents and stakeholders regarding the Bottineau Transitway. Through the NTN engagement process, two additional D2 alignment options were proposed: D2-D and D2-W. D2-D proposed having LRT and a bus lane on Penn Avenue and diverting Penn Avenue traffic to Queen and Oliver Avenues, with Queen Avenue accommodating southbound traffic and Oliver Avenue accommodating northbound traffic. D2-W proposed centering the LRT guideway on Penn Avenue while maintaining two-way traffic. Both of these alignment options did not officially advance for consideration during the Scoping process, as they resulted in greater right-of-way and accessibility impacts to the surrounding neighborhood, without resulting in higher benefits as compared to alignments D2-A, D2-B, or D2-C.

The ARCC prepared a technical paper as input to the Policy Advisory Committee (PAC) which described the relative benefits and impacts of each D2 option. The ARCC concluded that if a D2 alignment alternative were to be carried forward as a comparison to alignment D1, option D2-C should advance for further study, and the study of options D2-A and D2-B should stop. This was based on the fact that Option D2-C would provide access to two key regional destinations – the Terrace Mall and the North Memorial Medical Center (NMMC) – without adversely impacting either facility. Options D2-A and D2-B would have adversely impacted loading and circulation for NMMC to the point where the options were not considered viable. Option D2-C also minimizes street closures in the residential neighborhood.

In addition, the ARCC recommended that the study continue regarding transit system improvements in relationship to the Bottineau Transitway alternatives. Specifically, transit improvements should include the restructuring of the local bus network to integrate with the D1 and D2 alternatives as well as the consideration of other transit improvement initiatives.

Following consideration of public and stakeholder input, the PAC met on November 14, 2011 to recommend a preferred option for Alignment D2. The PAC agreed with the ARCC conclusion to continue study of option D2-C and stop study of options D2-A and D2-B, including Option D2-C as part of Alignment D2 to be studied in the Draft EIS.

**Figure 2.1-2. Segment D2 Alignment Options Considered**



## 2.2 Draft EIS Scoping Process

### 2.2.1 Alignment Definition

For ease of comparison, the alternatives considered following the AA Study and D2 investigation are named in terms of their component alignments. As illustrated in [Figure 2.2-1](#), there are two alignment options at the north end of the corridor:

- **Alignment A:** Begins in Maple Grove at Hemlock Lane/Arbor Lakes Parkway and follows the future Arbor Lakes Parkway and Elm Creek Boulevard to the BNSF railroad corridor located on the west side of Bottineau Boulevard
- **Alignment B:** Begins in Brooklyn Park south of Oak Grove Parkway near the Target North Campus (located just north of TH 610), follows West Broadway Avenue, and crosses Bottineau Boulevard at 73rd Avenue to enter the BNSF railroad corridor

In the middle portion of the corridor, there is one alignment option:

- **Alignment C:** Just south of 71st Avenue, both the A and B alignments would transition to the C alignment in the BNSF railroad corridor on the west side of Bottineau Boulevard through southern Brooklyn Park, Crystal, and Robbinsdale. Alignment C is common to all the alternatives.

South of Robbinsdale and into downtown Minneapolis, there are two alignment options:

- **Alignment D1:** Continues along the BNSF railroad corridor to TH 55, and then follows TH 55 to downtown
- **Alignment D2:** Exits the railroad corridor near 34th Avenue, joins West Broadway Avenue, and travels on Penn Avenue to TH 55 and into downtown

## 2.2.2 Technical Analysis

HCRRA conducted a technical analysis following the AA Study and D2 investigation of the four LRT alternatives and one BRT alternative carried forward. The technical analysis identified the characteristics that differentiate the five alternatives and compared the alternatives by alignment (A or B; D1 or D2) and mode (LRT B-C-D1 or BRT B-C-D1) in relation to the five project goals and 22 objectives listed in Chapter 1, Purpose and Need. The goals and objectives have served as a framework for both the development and evaluation of the alternatives.

## 2.2.3 EIS Scoping

The Notice of Intent (NOI) to prepare an EIS on the proposed Bottineau Transitway was published on Tuesday, January 10, 2012 in the Federal Register (Vol. 77, No. 6). The environmental process began with a Scoping effort to determine the content of the Draft EIS. As the first step in the Scoping process, interested members of the public and agencies are invited to participate in the evaluation of the Bottineau Transitway's environmental impacts. The purpose of Scoping is to confirm the purpose and need for the project, identify appropriate alternatives that could address project needs, focus on potentially significant issues that should be studied in the Draft EIS, and eliminate issues that are not significant and/or have been addressed by prior studies.

Based on the findings from the AA Study and D2 investigation, the following alternatives were presented in the EIS Scoping process, which served to define the alternatives and to identify the issues that will be evaluated in the Draft EIS:

- No-Build alternative
- Enhanced Bus/TSM alternative
- LRT A-C-D1 (Maple Grove to Minneapolis via BNSF/ TH 55)
- LRT B-C-D1 (Brooklyn Park to Minneapolis via BNSF/TH 55)
- LRT A-C-D2 (Maple Grove to Minneapolis via West Broadway Avenue/Penn Avenue/TH 55)
- LRT B-C-D2 (Brooklyn Park to Minneapolis via West Broadway Avenue/Penn Avenue/TH 55)
- BRT B-C-D1 (Brooklyn Park to Minneapolis via BNSF/TH 55)

**Figure 2.2-1** illustrates the Build alternatives proposed for study in Scoping. Each LRT alternative would include right-of-way, tracks, stations, support facilities, and transit service for LRT and connecting bus routes. The BRT alternative would include right-of-way, travel lanes, stations, support facilities, and transit service for BRT and connecting bus routes. The BRT alternative would be a high quality investment similar to LRT and would include a dedicated guideway, high-amenity stations, and the service, speed, reliability, and frequency characteristics of our region's other LRT and BRT transitways.



## Refinements During Scoping

Several refinements to alignments were identified and incorporated as part of the Scoping process:

- **Alignment B:** HCRRA worked with the City of Brooklyn Park to refine Alignment B so it would integrate with master planning activities for the Target North Campus. The refinement focused on the alignment north of 93rd Avenue to connect to the proposed park-and-ride facility at 93rd Avenue, and modified the proposed Oak Grove Parkway station location to better accommodate future plans for the property adjacent to the station area.
- **D1 Station Locations:** Input during the Theodore Wirth Regional Park Master Planning effort suggested moving the Golden Valley Station from Golden Valley Road to Plymouth Avenue, potentially providing better access to surrounding residential areas and park facilities. Both station options along alignment D1 were presented during Scoping.
- **D2 Robbinsdale Options:** HCRRA worked with the City of Robbinsdale during the Scoping process to refine the D2 alignment transition between the BNSF railroad corridor and West Broadway Avenue near the Terrace Mall and North Memorial Medical Center. A range of concepts were considered on 36th Avenue and 34th Avenue in Robbinsdale that provided a connection between the BNSF railroad corridor and West Broadway Avenue in Minneapolis. The 34th Avenue alignment was incorporated into the D2 alignment because it minimized the potential impacts to Bottineau Boulevard and the Terrace Mall and best met the identified needs of the City of Robbinsdale. This option was presented during Scoping.

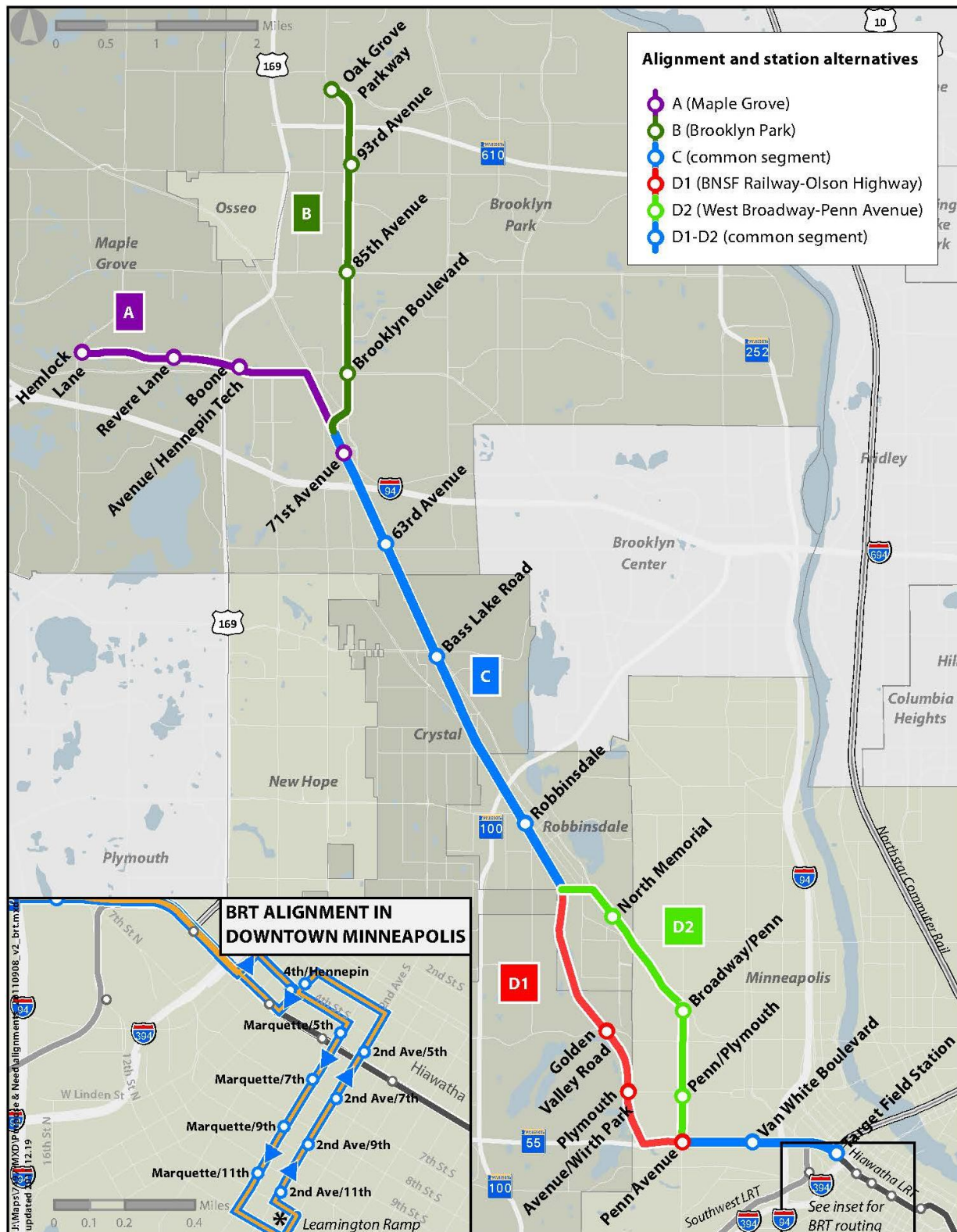
## Scoping Results: Stop Study of BRT Alternative and Continue Study of Four LRT Alternatives in the Draft EIS

Based on the results of the technical analysis and Scoping input, the ARCC, Community Advisory Committee (CAC), and PAC advised and the PAC resolved in April 2012 that study of the BRT alternative should stop, and made the recommendation to HCRRA for final action. The PAC also recommended the continued study of the four LRT alternatives in the Draft EIS, in addition to the No-Build and the Enhanced Bus/TSM alternative. In their resolution, the PAC affirmed the alternatives evaluation process that was conducted and acknowledged the public participation in the process. Following the PAC action, HCRRA passed a resolution adopting the Scoping Decision recommended by the PAC. This resolution and other supporting documentation to the Scoping process can be found in the *Bottineau Transitway Scoping Decision Document*, June 2012.

Section 2.4 provides more detail regarding the reasons for eliminating the study of BRT in the Draft EIS. Section 2.5 provides more detail on the alternatives advanced for further study in the Draft EIS.



Figure 2.2-1. Build Alternatives Proposed for Study in Scoping (As Reflected In Scoping Booklet)



## 2.3 Alternatives Not Recommended for Further Study in Draft EIS

The basis for the decision to discontinue study of BRT is summarized in [Table 2.3-1](#) and organized in relation to the five project goals. Under each goal is a summary of associated criteria that resulted in differences between LRT and BRT. These differentiating criteria are reflective of the objectives established for each goal. In their discussions, the ARCC and the PAC recognized the BRT's lower capital cost and better cost effectiveness index (CEI) as compared to the LRT alternatives. The groups also recognized that while BRT is not the best performing mode choice for the Bottineau Transitway, the reasons are specific to the physical attributes, ridership characteristics, and other features of the Bottineau Transitway. HCRRA adopted these recommendations as the final Scoping Decision.

**Table 2.3-1. Basis for Scoping Recommendation to Stop Study of BRT**

<b>Goal 1: Enhance Regional Access to Activity Centers</b>				
The LRT B-C-D1 alternative would accomplish this goal better than the BRT alternative on the same alignment. Forecast total ridership for LRT B-C-D1 is 27,000 and 19,000 for BRT B-C-D1. Ridership for the BRT alternative is limited by BRT's single-vehicle capacity; that is, multiple BRT vehicles cannot be linked together to expand capacity, in contrast to LRT which can be expanded from two cars to three.				
<b>Goal 2: Enhance the Effectiveness of Transit Service within the Corridor</b>				
The transit service provided by LRT B-C-D1 would be more effective than that provided by the BRT alternative. BRT B-C-D1 is expected to generate approximately 1,500 fewer new daily riders than LRT B-C-D1 (5,650 riders compared to 7,150). BRT B-C-D1 also is expected to generate less than half as many passengers per revenue hour than LRT on the same alignment in the year 2030 (71 for BRT vs. 181 for LRT). Also, based on travel time and average speed, the LRT B-C-D1 is forecast to provide more daily travel time benefits in 2030 compared to BRT (8,250 hours per day for LRT B-C-D1 compared to 5,880 for BRT B-C-D1).				
<b>Goal 3: Provide a Cost Effective and Financially Feasible Transit System</b>				
BRT B-C-D1 had a lower (better) cost effectiveness index (CEI) <sup>1</sup> than LRT B-C-D1. The better result for the BRT alternative was driven largely by its lower capital and operating costs, as shown below.				
	<b>CEI</b>	<b>CEI Rating</b>	<b>Capital Cost</b>	<b>Operating Cost</b>
<b>BRT B-C-D1</b>	21	Medium	\$560 million	\$20.7 million
<b>LRT B-C-D1</b>	26	Medium-Low	\$1,000 million	\$24.1 million
<b>Goal 4: Promote Sustainable Development Patterns</b>				
There were no significant differentiators between LRT and BRT B-C-D1.				
<b>Goal 5: Support Healthy Communities and Sound Environmental Practices</b>				
The primary differentiator under this goal pertains to traffic operations. Specifically, the roadway system would not be able to accommodate additional BRT vehicles beyond the assumed six-minute headways while still maintaining acceptable traffic operations. In turn, 2030 ridership forecasts show transitway demand entering downtown Minneapolis during the morning peak hour would exceed the capacity of the BRT alternative. Also, because BRT B-C-D1 would travel to 2nd/Marquette Avenues in downtown Minneapolis in mixed traffic, it would add to capacity issues that would already exist on the downtown street network.				

<sup>1</sup> Cost effectiveness index (CEI) has been one of several criteria used by the Federal Transit Administration (FTA) as part of FTA's Major Transit Capital Investment discretionary funding program. At the time of this decision, CEI was defined as the annualized project cost per hour of user benefit, with user benefit reported as travel time savings. Future decisions will be based on the updated Major Capital Investment Projects final rule.

## 2.4 Alternatives Advanced for Further Study in Draft EIS

A No-Build alternative, Enhanced Bus/TSM alternative, and four LRT Build alternatives were advanced for further study in this Draft EIS. These alternatives are described in more detail in the following sections.

### 2.4.1 No-Build Alternative

The No-Build alternative reflects existing and committed improvements to the regional transit network for the horizon year of 2030. Based on the Metropolitan Council's *2030 Transportation Policy Plan (TPP)*, major transportation improvements in the No-Build alternative in the Bottineau Transitway project area include:

- Green Line (Central Corridor) LRT and associated corridor bus service changes
- Green Line (Southwest) LRT and associated corridor bus service changes
- Red Line (Cedar Avenue) BRT with station-to-station BRT service and associated corridor bus service changes
- Orange Line (I-35W) BRT with station-to-station BRT service and associated corridor bus service changes
- Target Field Station Project in the City of Minneapolis. This project will provide transportation infrastructure improvements that will maximize the efficiency of existing transit operations, provide for enhanced multi-modal connections, and appropriately plan for future system integration to better serve passengers.
- An Arterial BRT line serving the West Broadway Avenue corridor from Robbinsdale Transit Center (in downtown Robbinsdale) to downtown Minneapolis and associated restructuring of local bus service in the corridor
- Additional Arterial BRT on Snelling Avenue, West 7th Street, East 7th Street, Chicago Avenue, and American Boulevard, and associated restructuring of local bus service in these corridors
- Service frequency improvements to local and express routes within the Bottineau Transitway project area and throughout the regional transit network, consistent with regional service improvement plans
- New park-and-ride facilities at various locations outside of the Bottineau Transitway project area as defined in the Metropolitan Council's *2030 Park-and-Ride Plan*
- Reconstruction of County State Aid Highway (CSAH) 103 in the city of Brooklyn Park from south of Candlewood Drive to north of CSAH 30
- CSAH 81 Reconstruction, CSAH 10 (Bass Lake Road) to CSAH 30 (Hennepin County Transportation)
- Candlewood Drive Extension, CSAH 103 to 79th Avenue (City of Brooklyn Park)
- TH 610, CSAH 81 to I-94 – New roadway construction (MnDOT)

The No-Build alternative would not include any improvements within the Runway Protection Zone (RPZ) for Runway 6L-24R at Crystal Airport.

### 2.4.2 Enhanced Bus/TSM Alternative

The Enhanced Bus/TSM alternative was defined as enhancements and upgrades to the existing transportation system in the project corridor, attempting to meet the project's purpose and need as much as possible without a major transit capital investment. The purpose of the Enhanced Bus/TSM alternative is to provide a comparable transit service to the Build alternatives without the significant capital

investment of building a transitway. Service improvements proposed in the Enhanced Bus/TSM alternative focus on serving the same travel markets that were addressed in the Build alternatives.

For this project, an Enhanced Bus/TSM alternative was defined to serve comparable travel markets as the Build alternatives considered.

In addition to the improvements included in the No-Build alternative, the Enhanced Bus/TSM alternative includes the following:

- New transit center and park-and-ride facility in Brooklyn Park on West Broadway Avenue near TH 610
- Additional limited stop bus routes 731 and 732 (see description below)
- Service frequency improvements to existing transit routes
- Restructuring of existing bus routes in the corridor to connect to the Route 731/732 services and enhance connections within the corridor

The Enhanced Bus/TSM alternative would not result in new transportation facilities being introduced within the RPZ for Runway 6L-24R at Crystal Airport.

#### Route 731 Description

New limited stop bus Route 731 would provide all-day, two-way service in general purpose traffic lanes from Brooklyn Park to downtown Minneapolis. The route would begin at an Oak Grove Parkway Transit Center and follow West Broadway Avenue to the Starlite Transit Center in Brooklyn Park. Route 731 would continue along Bottineau Boulevard, West Broadway Avenue, Penn Avenue, and TH 55 into downtown Minneapolis, serving downtown using the Marquette/2nd Avenue transit lanes. The route's limited stops would be sited at approximately the same locations as stations proposed under the Build alternatives.

#### Route 732 Description

New limited stop bus Route 732 would provide all-day, two-way service in general purpose traffic lanes from Maple Grove to downtown Minneapolis. The route would begin at the Maple Grove Transit Station and travel along Hemlock Lane and Elm Creek Boulevard to the Starlite Transit Center in Brooklyn Park. From Starlite Transit Center, the route would continue on the same alignment as Route 731 into downtown Minneapolis. The route's limited stops would be sited at approximately the same locations as stations proposed under the Build alternatives.

Frequencies for both Routes 731 and 732 would be 15 minutes in the peak periods (6:00 to 9:00 a.m. and 3:00-6:30 p.m.) and 20 minutes in the midday. Together, the routes would provide combined 7.5-minute peak/10-minute midday frequency south of the Starlite Transit Center.

For both of the new 731 and 732 routes, minor construction for bus stops is assumed within existing right-of-way.

### 2.4.3 LRT Alternatives

Four light rail transit (LRT) Build alternatives are under consideration in this Draft EIS, as illustrated in [Figure 2.4-1](#) and summarized below.

- Alternative A-C-D1 (Maple Grove to Minneapolis via BNSF/TH 55)
- Alternative A-C-D2 (Maple Grove to Minneapolis via West Broadway Avenue/Penn Avenue/TH 55)
- Alternative B-C-D1 (Brooklyn Park to Minneapolis via BNSF/TH 55)
- Alternative B-C-D2 (Brooklyn Park to Minneapolis via West Broadway Avenue/Penn Avenue/TH 55)



### 2.4.3.1 General Elements

Several elements of the proposed transitway system are proposed in each of the alternatives: stations, operations and maintenance facility (OMF), traction power substations (TPSS), fare collection, trackway, vehicles, train control, and operating frequencies. These features are summarized in the following sections, along with a detailed description of each alternative and its unique alignment and features.

#### Stations

A station is where passengers board or alight from a light rail vehicle (LRV). Primary elements of stations include the platform(s), shelter, wheelchair ramps, and station amenities such as lighting, benches, security systems, and information displays. These components are essential for traveler safety and security, as well as amenities for passenger comfort and convenience. Stations that require a vertical separation between the platform and adjacent infrastructure would have accommodations so patrons can reach the platform. It is anticipated that elevators would be provided at Golden Valley Road or Plymouth Avenue Station. Station design also reflects compliance with Americans with Disabilities Act (ADA) requirements.

Platforms for the proposed project alternatives would be compatible with low-floor LRT vehicles, with a platform edge 14 inches above the top of the rail. The recommended platform length is 300 feet, with a minimum length of 270 feet required to accommodate a three-car train. A station includes both southbound and northbound platforms. In some cases, a center station would be located between the northbound and southbound tracks.

Station locations are summarized below and illustrated in [Figure 2.4-1](#). At some locations, a park-and-ride would be provided. These locations as well as the approximate acreage associated with the park-and-ride also are noted in [Table 2.4-1](#) and illustrated in [Figure 2.4-2](#). As noted in the table, there is an existing park and ride facility at 63rd Avenue and Bottineau Boulevard. The existing facility has capacity for 565 vehicles on a 6.5 acre site. Under the proposed Build alternatives, the parking capacity at the existing 63rd Avenue facility would expand to accommodate approximately 725 vehicles through modifying the existing structure (additional deck level). Additionally, the Target Field Station in Minneapolis is currently being constructed, and is assumed under the No Build alternative and scheduled to be operational in 2014.

**Table 2.4-1. Stations by Alignment**

Alignment A	Alignment B	Alignment C	Alignment D1	Alignment D2
<ul style="list-style-type: none"> <li>■ Hemlock Lane<sup>1</sup> <ul style="list-style-type: none"> <li>■ Park-and-ride: 6.4 acres</li> </ul> </li> <li>■ Revere Lane<sup>1</sup> <ul style="list-style-type: none"> <li>■ Park-and-ride: 2.7 acres</li> </ul> </li> <li>■ Boone Avenue/Hennepin Technical College</li> <li>■ 71st Avenue</li> </ul>	<ul style="list-style-type: none"> <li>■ Oak Grove Parkway</li> <li>■ 93rd Avenue<sup>1</sup> <ul style="list-style-type: none"> <li>■ Park-and-ride: 11.2 acres</li> </ul> </li> <li>■ 85th Avenue</li> <li>■ Brooklyn Boulevard</li> </ul>	<ul style="list-style-type: none"> <li>■ 63rd Avenue<sup>1</sup> <ul style="list-style-type: none"> <li>■ Park-and-ride: 6.5 acres (existing 565 vehicle facility is located on the 6.5 acre site)</li> </ul> </li> <li>■ Bass Lake Road</li> <li>■ Robbinsdale<sup>1</sup> <ul style="list-style-type: none"> <li>■ Park-and-ride: acres TBD</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ Golden Valley Road <u>or</u> Plymouth Ave/Theodore Wirth Regional Park<sup>3</sup></li> <li>■ Penn Avenue</li> <li>■ Van White Boulevard</li> <li>■ Target Field Station<sup>2</sup></li> </ul>	<ul style="list-style-type: none"> <li>■ North Memorial Hospital</li> <li>■ West Broadway/Penn Avenues</li> <li>■ Penn/Plymouth Avenues</li> <li>■ Van White Boulevard</li> <li>■ Target Field Station<sup>2</sup></li> </ul>

<sup>1</sup> Proposed station where park-and-ride would be provided. The existing 565 vehicle park and ride facility on 6.5 acres at the 63rd Avenue site would be expanded through modification of the existing structure (additional parking deck level) to accommodate up to approximately 725 vehicles on the 6.5 acre site.

<sup>2</sup> Built separately from the Bottineau Transitway, included under the No Build alternative definition, and assumed to be operational in 2014.

<sup>3</sup> Draft EIS will evaluate Golden Valley Road and Plymouth Avenue/Theodore Wirth Regional Park stations on the D1 alignment. It is anticipated only one station location will advance due to low ridership demand.



### *Operations and Maintenance Facility*

The OMF site would be located at the north end of the alternatives, either in Maple Grove (Alignment A) or Brooklyn Park (Alignment B). Potential OMF sites are illustrated in [Figure 2.4-3](#).

The OMF sites evaluated on Alignments A and B were selected due to their proximity to the end of the line, adequate space for the special trackwork required between the mainline track and facility, and adequate property for the facility (minimum 14 acres).

Specific to the Alignment A OMF, the facility was located south of the future Arbor Lakes Parkway and east of Hemlock Lane, due to the availability of suitable property that is currently owned by MnDOT.

Within Alignment B, two OMF site options were identified adjacent to West Broadway at 93rd Avenue and 101st Avenue. The 93rd Avenue OMF site was originally identified in the AA and was carried forward from the AA due to the availability of suitable undeveloped property adjacent to the guideway. The 101st Avenue OMF site was selected due to the availability of suitable undeveloped property that is owned by the City of Brooklyn Park. In addition, the 101st Avenue site was identified to reduce potential noise and visual impacts adjacent to the residential neighborhood located at West Broadway and 93rd Avenue. Only one of these sites will be chosen for the OMF.

A potential OMF site at 71st Avenue and Bottineau Boulevard, within Alignment B, was identified within the AA but was eliminated as a viable alternative because it is located west of the freight railroad track. This location would require grade separation of the LRT track over the freight railroad track to access the facility.

The OMF site would be occupied by a storage and maintenance building that is approximately 128,000 square-feet, surface parking for employees and visitors, trackwork, and open space. The facility would include areas to store, service, and maintain up to 36 LRVs, vehicle washing and cleaning equipment, and office space to accommodate staff that would report for work at this facility. The facility would be equipped to perform daily cleaning and repair activities on the LRVs as they enter and leave revenue service. To ensure operational safety and reliability, scheduled service and maintenance inspections would be performed in this facility.

Figure 2.4-1. Bottineau Transitway Build Alternatives

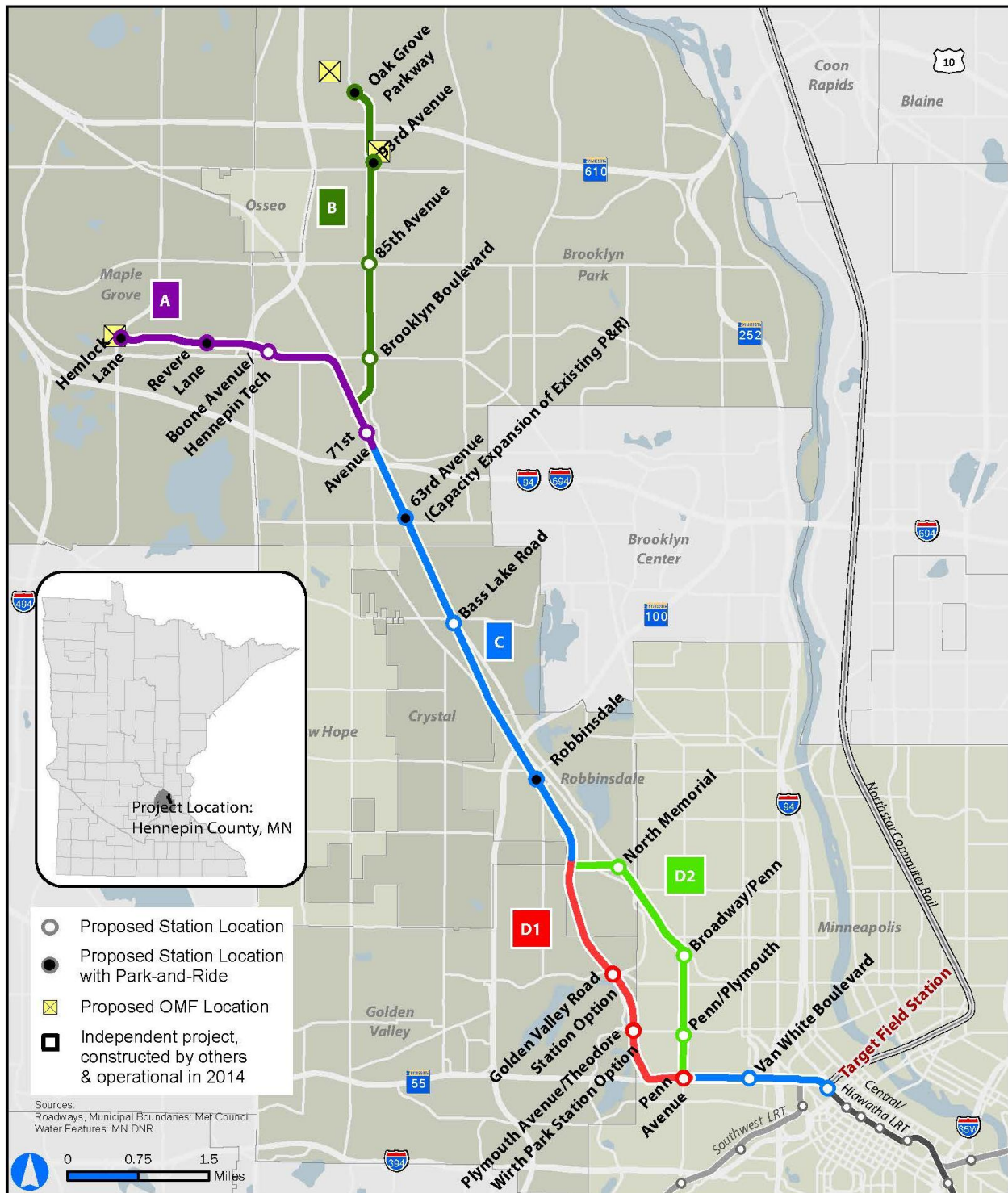




Figure 2.4-2. Alignments A, B, and C: Park-and-Ride Locations



Alignment A - Revere Lane Station



Alignment A - Hemlock Lane Station



Alignment C - Robbinsdale Station



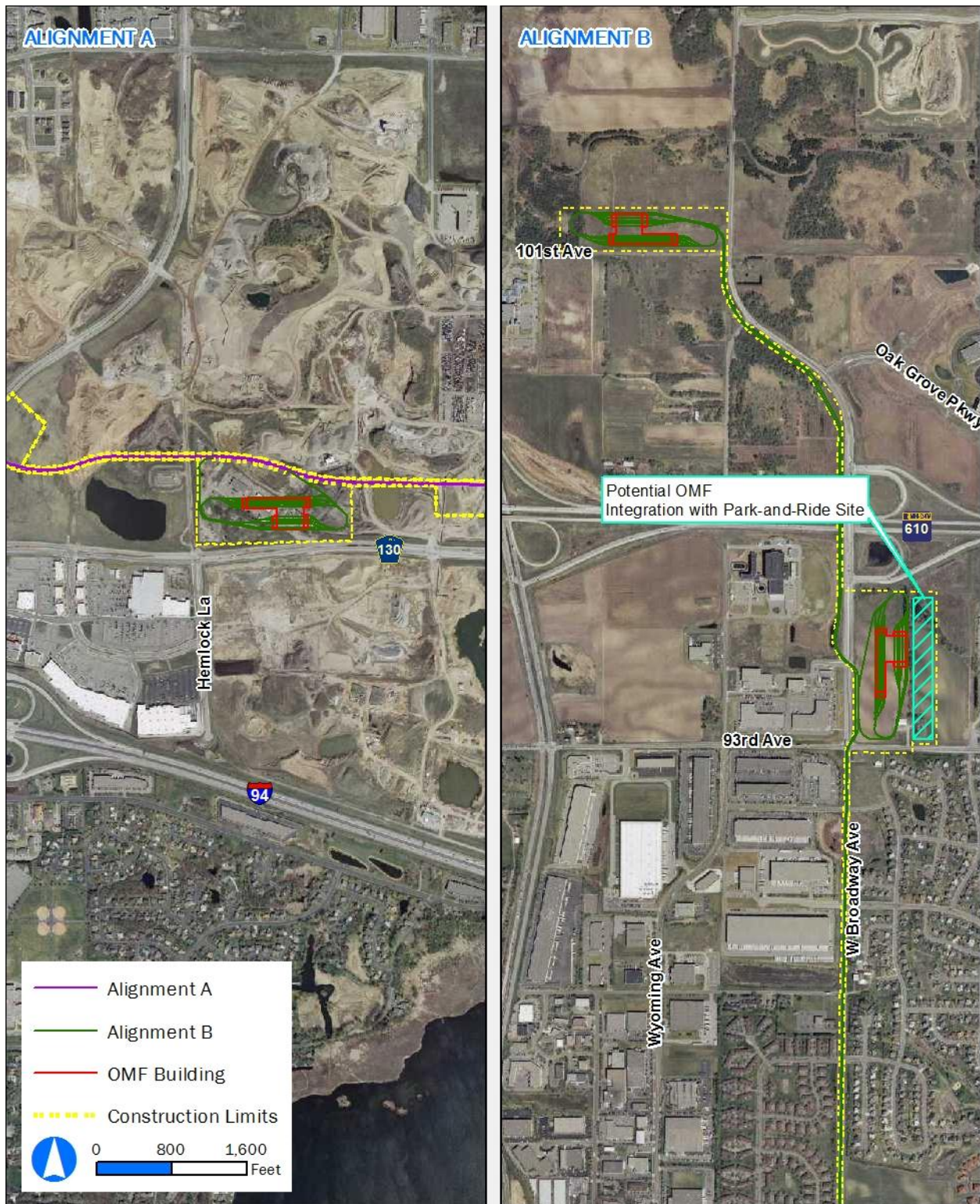
Alignment B - 93rd Avenue Station



Alignment C - 63rd Avenue Station (existing facility on 6.5 acres)



Figure 2.4-3. Potential OMF Sites



### *Traction Power Substations*

TPSS sites are necessary to convert existing electrical current to an appropriate type (AC to DC) and level to power LRT vehicles through an overhead catenary system. They do not generate electricity. TPSS sites would be approximately 4,000 square feet (SF) in size and able to accommodate a single-story building that is approximately 40 feet by 20 feet. Access to the building must also be accommodated.

Typically, TPSS sites are spaced less than one mile apart. A distance greater than one mile reduces the ability to safely deliver and return power from a traveling train. TPSS site spacing must also consider overlaps in the overhead catenary system. For optimal safety and performance, the overlaps in the overhead conductor should not occur at critical locations, including hills, curves, bridges, tunnels, and the passenger stations. Preliminary analysis shows that TPSS sites would be required at approximately  $\frac{3}{4}$ -mile to 1-mile intervals along the proposed alignments to supply electrical power to the traction networks, stations, and the OMF.

Potential locations for the TPSS sites are shown in [Figure 2.4-4](#). There are a total of 28 potential TPSS locations that have been identified along all of the proposed Build alternative alignments; approximately 18 or 19 TPSS would be required for any given Build alternative. The TPSS locations are represented by areas with a 500-foot radius. These areas would be refined through more detailed engineering to minimize impacts to surrounding properties and resources and balance safety, reliability, cost, and operational efficiencies. The majority of the TPSS would be located on the east side of the proposed LRT track; some TPSS are associated with the LRT platforms and stations as opposed to power for the rail vehicles. The TPSS sites would be located at least eight feet from the tracks, consistent with minimum clearance requirements. It is anticipated that most, if not all, TPSS would be located within existing transportation right-of-way. If this is not possible based on more detailed engineering, impacts to additional land would be evaluated in subsequent stages of the EIS process.

### *Fare Collection*

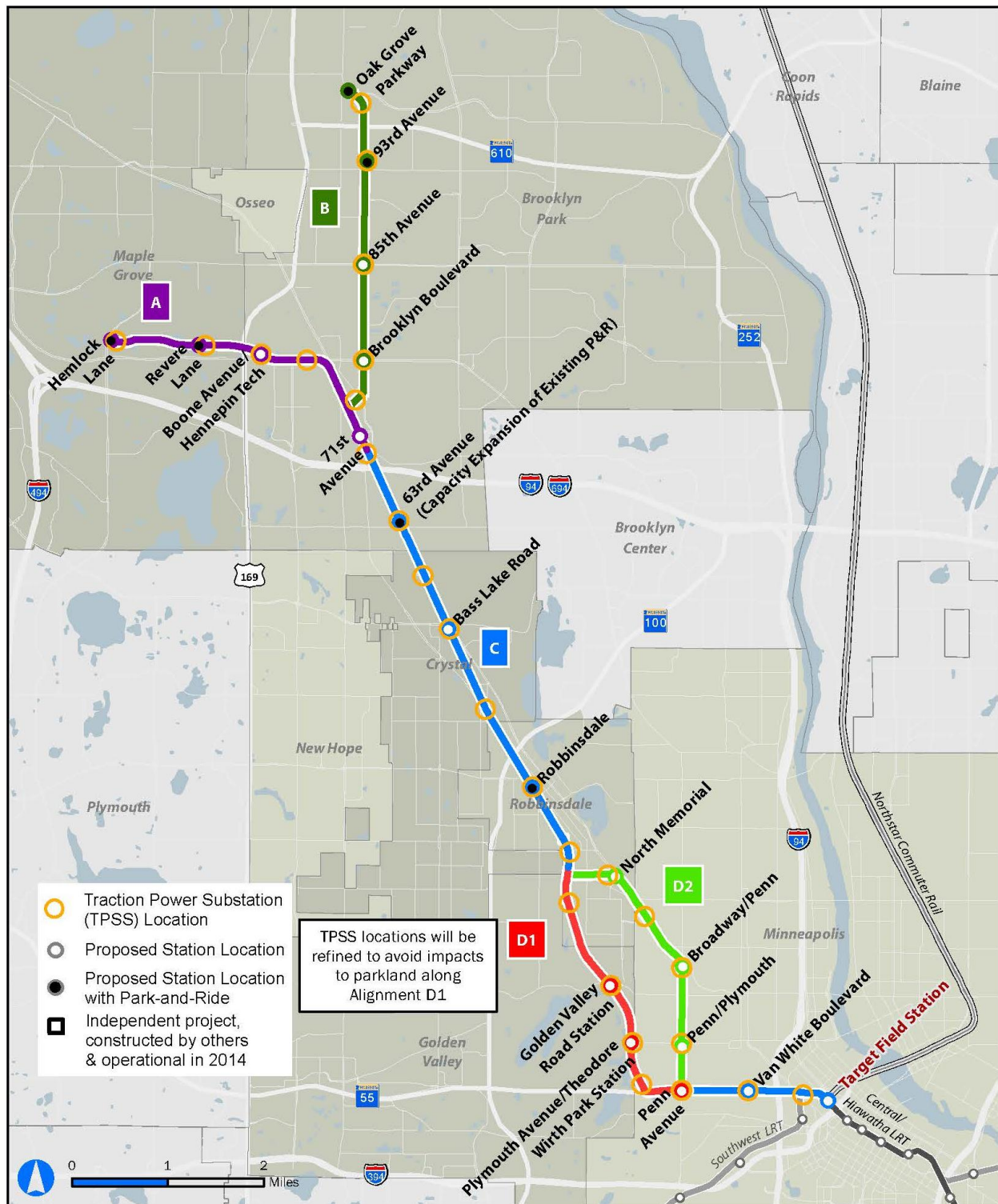
A self-service, proof-of-payment fare collection system is assumed for the Bottineau Transitway, consistent with that used on the Blue Line (Hiawatha) today. Passengers would purchase individual or multiple rides from fare vending machines located at each station. Passengers would validate tickets prior to boarding the train. Passengers on board the trains would be subject to random checks for proof of payment by ticket inspectors. The absence of turnstiles or fareboxes and the use of cars with multiple, wide boarding doors provides for rapid passenger boarding/alighting and minimal delays at stations.

### *Trackway*

LRVs would operate on standard gauge railroad track. The proposed system would be double-tracked throughout, providing a separate track for northbound and southbound train movements. Generally, a cross-section for an at-grade, double-track LRT alignment is a 30-foot right-of-way for ballasted track and 28-foot right-of-way for embedded track. The minimum vertical clearance is approximately 14 feet from top of rail. The maximum recommended gradient along a vertical alignment is six percent; short segments may have steeper grades. The radius of track curvature plays a significant role in LRT operating speed. The minimum turning radius for a typical modern articulated (able to bend in the middle) light rail vehicle is 82 feet. Crossovers to allow trains to cross from the northbound to the southbound tracks would be provided at regular intervals for special operations or emergencies. Typically, the trackway in the BNSF railroad corridor would be ballasted track separate from the freight rail track. Alignments in streets could be either ballasted or embedded depending on location and the context of the street. In the D2 alignment, the track would be embedded due to its location within street right-of-way and proximity to people and buildings.



Figure 2.4-4. General TPSS Locations



### *Vehicles*

For the purposes of conceptual engineering to support the Draft EIS, a number of assumptions have been made regarding the LRVs that would operate on the transitway. The LRVs have been assumed to be articulated cars capable of bi-directional operation as a single-unit or multi-unit train. Mechanisms located on the roof of each vehicle are assumed to provide for power collection from the overhead catenary system and transmission to the traction motors. Each car is assumed to be approximately 95 feet long, with about 66 seats and capacity of approximately 160 passengers (including those standing). Passengers are assumed to board the trains through four, low-level double doors located on each side of the vehicle. The system would be designed for trains of two-cars (that is, two LRVs connected to each other), with potential to be expanded for three car trains if needed to accommodate ridership demand. The vehicles may be operated at up to 55 miles per hour.

The LRT system would be designed to be fully compatible with ADA standards. The LRVs would be fully accessible with level boarding from accessible platforms and provisions for wheelchair space and on all cars. LRVs would be anticipated to accommodate bicycles.

### *Train Control*

This Draft EIS assumes an operator would control each light rail train, consistent with current practice. Operators have control over the acceleration and braking of the train, as well as passenger door operations. Passenger announcements may be made by the operator or automatically by the rail control center. Operators are in radio contact with the rail control center that oversees and directs all rail operations. Automated train signal and communication systems would transmit various operations data to the rail control center. These systems would also provide for priority consideration at traffic signals, activation of crossing gates, collision and overspeed protection, and track switch operations.

### *Operating Frequencies*

Trains are assumed to operate at the frequencies below between 4:00 a.m. and 1:00 a.m.:

- 7.5-minute frequencies during the weekday morning (6:00 a.m. – 9:00 a.m.) and afternoon (3:00 p.m. – 6:30 p.m.) peak periods
- 10-minute frequencies at all other times (weekday midday and evenings and Saturday and Sunday days and evenings)

#### **2.4.3.2 Description of Alternatives**

The unique alignment and features for each LRT alternative are described below and summarized in [Table 2.4-2](#). The features below are based on assumptions associated with the conceptual level of engineering conducted on the alternatives to date and may be modified as the project proceeds. Under each of the proposed Build alternatives, the LRT alignment would connect to the regional system at the Target Field Station in downtown Minneapolis, a project that will be completed independent of the Bottineau Transitway and be operational in 2014.

**Table 2.4-2. Alternative Descriptions**

	Alternative			
	A-C-D1	A-C-D2	B-C-D1	B-C-D2
<b>Northern Terminus</b>	Maple Grove	Maple Grove	Brooklyn Park	Brooklyn Park
<b>Length<sup>1</sup></b>	12.6 miles	12.7 miles	13.3 miles	13.4 miles
<b>Capital cost (\$2017, in millions)<sup>2</sup></b>	\$997	\$1,119	\$997	\$1,113
<b>Operating cost (\$2013, in millions)<sup>2</sup></b>	\$32.8	\$34.2	\$32.5	\$33.7
<b>Ridership (total)</b>	27,600	27,200	27,000	26,000
<b>Bottineau Stations</b>	<u>10 Stations</u> <ul style="list-style-type: none"> <li>■ Hemlock Lane<sup>3</sup></li> <li>■ Revere Lane<sup>3</sup></li> <li>■ Boone Ave/ Henn Tech</li> <li>■ 71st Avenue</li> <li>■ 63rd Avenue<sup>3</sup></li> <li>■ Bass Lake Road</li> <li>■ Robbinsdale<sup>3</sup></li> <li>■ Golden Valley Rd or Plymouth Avenue/Theodore Wirth Regional Park<sup>5</sup></li> <li>■ Penn Avenue</li> <li>■ Van White Blvd</li> </ul>	<u>11 Stations</u> <ul style="list-style-type: none"> <li>■ Hemlock Lane<sup>3</sup></li> <li>■ Revere Lane<sup>3</sup></li> <li>■ Boone Ave/ Henn Tech</li> <li>■ 71st Avenue</li> <li>■ 63rd Avenue<sup>3</sup></li> <li>■ Bass Lake Road</li> <li>■ Robbinsdale<sup>3</sup></li> <li>■ North Memorial</li> <li>■ Broadway/Penn</li> <li>■ Penn/Plymouth</li> <li>■ Van White Blvd</li> </ul>	<u>10 Stations</u> <ul style="list-style-type: none"> <li>■ Oak Grove Parkway</li> <li>■ 93rd Avenue<sup>3</sup></li> <li>■ 85th Avenue</li> <li>■ Brooklyn Blvd</li> <li>■ 63rd Avenue<sup>3</sup></li> <li>■ Bass Lake Road</li> <li>■ Robbinsdale<sup>3</sup></li> <li>■ Golden Valley Rd or Plymouth Avenue/Theodore Wirth Regional Park<sup>5</sup></li> <li>■ Penn Avenue</li> <li>■ Van White Blvd</li> </ul>	<u>11 Stations</u> <ul style="list-style-type: none"> <li>■ Oak Grove Parkway</li> <li>■ 93rd Avenue<sup>3</sup></li> <li>■ 85th Avenue</li> <li>■ Brooklyn Blvd</li> <li>■ 63rd Avenue<sup>3</sup></li> <li>■ Bass Lake Road</li> <li>■ Robbinsdale<sup>3</sup></li> <li>■ North Memorial</li> <li>■ Broadway/Penn</li> <li>■ Penn/Plymouth</li> <li>■ Van White Blvd</li> </ul>
<b>Station Constructed by Others Where Bottineau LRT Alignment Would Connect with Regional Rail System</b>	Target Field Station	Target Field Station	Target Field Station	Target Field Station

**Table 2.4-2. Alternative Descriptions (continued)**

	Alternative			
	A-C-D1	A-C-D2	B-C-D1	B-C-D2
<b>Key Bridge Structures (length)</b>	5 new: US 169 (820'), BNSF railroad (970'), CP rail tracks (500'), TH 100 (400'), HERC driveway (125') <sup>4</sup>  8 existing bridges modified	8 new: US 169 (820'), BNSF railroad (970'), CP rail tracks (500'), TH 100 (400'), Halifax/34th Ave (50'), France Ave to NMMC (720'), NMMC to Lowry Ave (2,000'), HERC driveway (125') <sup>4</sup>  3 existing bridges modified	4 new: TH 610 (300'), CP rail tracks (500'), TH 100 (400'), HERC driveway (125') <sup>4</sup>  8 existing bridges modified	7 new: TH 610 (300'), CP rail tracks (500'), TH 100 (400'), Halifax/34th Ave (50'), France Ave to NMMC (720'), NMMC to Lowry Ave (2,000'), HERC driveway (125') <sup>4</sup>  3 existing bridges modified
	General locations of new bridge structures can be seen on <a href="#">Figure 2.4-9</a> . Refer to the Conceptual Engineering Drawings in Appendix E for detailed location information.			
<b>Operations and Maintenance Facility (OMF) Alternatives</b>	For the alternatives that include alignment A, the OMF facility would be located at the northern end of alternative in Maple Grove on parcel currently within gravel mining area west of US 169.		For the alternatives that include Alignment B, the OMF facility would be located at the northern end of alternative in Brooklyn Park on one of two potential sites: 93rd Avenue park-and-ride or in the northwest quadrant of Winnetka Avenue (CSAH 103) and 101st Avenue intersection.	
<b>Traction Power Substations</b>	18 proposed	18 proposed	19 proposed	19 proposed
	TPSS are proposed to be located at approximately ¾ mile – 1 mile spacing along the LRT line, with most located near LRT stations (as shown in <a href="#">Figure 2.4-4</a> ). TPSS would be located on limited access sites that are approximately 4,000 SF in size and are able to accommodate a single-story building that is approximately 40 ft by 20 ft.			

<sup>1</sup> The length represents the full end-to-end length of the proposed alternatives. Based on direction provided during the AA Study, and affirmed during the Scoping process; the alternatives evaluation will reflect full corridor analysis.

<sup>2</sup> Cost estimates provided are a snapshot in time and are based on the level of design development contemplated as part of Scoping.

<sup>3</sup> Proposed station location where park and ride would be provided.

<sup>4</sup> The Hennepin Energy Recovery Center (HERC) driveway structure is proposed specific for the Bottineau Transitway project and would be an expansion of the structure required for the independent Target Field Station in downtown Minneapolis.

<sup>5</sup> The Draft EIS will evaluate a Golden Valley Road and Plymouth Avenue/Theodore Wirth Regional Park stations on the D1 alignment. It is anticipated only one station location will advance due to low ridership demand.

### **Alternative A-C-D1**

Alternative A-C-D1 originates in Maple Grove at Hemlock Lane/Arbor Lakes Parkway and follows the future Arbor Lakes Parkway and Elm Creek Boulevard to the BNSF railroad corridor located on the west side of Bottineau Boulevard. It enters the railroad corridor separate from the freight rail tracks and continues parallel to the freight rail tracks through the cities of Brooklyn Park, Crystal, Robbinsdale, and Golden Valley. At TH 55, the alignment turns and follows TH 55 to Target Field Station in downtown Minneapolis. Alternative A-C-D1 is illustrated in [Figure 2.4-5](#). Alternative A-C-D1 includes up to 10 new stations, as illustrated in [Figure 2.4-5](#) and summarized in [Table 2.4-2](#). With the D1 alignment, it is assumed that either the Golden Valley Road or Plymouth Avenue/Theodore Wirth Regional Park station option would be chosen due to the proximity of these two stations and their similarity in transit markets



served. Four stations are assumed to include park-and-ride lots ([Figure 2.4-2](#)). Hemlock Lane would have an approximate 6.4 acre park-and-ride; Revere Lane 2.7 acres; the existing 63rd Avenue park-and-ride facility would remain at 6.5 acres, although the vehicle capacity would increase through expansion of the existing structure; and the size of the Robbinsdale park-and-ride is to be determined.

One potential OMF site has been identified for Alignment A. The OMF location is a parcel located within the Maple Grove gravel mining operations area west of US 169 ([Figure 2.4-3](#)).

Alternative A-C-D1 includes five new bridge structures: an 820-foot long structure over US 169, a 970-foot long structure over the BNSF railroad, a 500-foot structure over the CP (Canadian Pacific) rail tracks, a 400-foot crossing over TH 100 to accommodate BNSF freight track, and a 125-foot crossing of the Hennepin Energy Recovery Center (HERC) driveway. Eight existing bridges would be modified at TH 100 (widening of existing BNSF freight track bridge to accommodate LRT), 36th Avenue, Golden Valley Road, Theodore Wirth Parkway, Plymouth Avenue, TH 55, I-94, and the railroad bridge north of TH 55.

#### *Alternative A-C-D2*

Alternative A-C-D2 also originates in Maple Grove and follows the same alignment as Alternative A-C-D1 into Robbinsdale. Once in Robbinsdale, the alignment exits the BNSF railroad corridor near 34th Avenue and joins West Broadway Avenue where it enters Minneapolis. It then travels on Penn Avenue to TH 55 to Target Field Station in downtown Minneapolis as illustrated in [Figure 2.4-6](#).

Alternative A-C-D2 includes 11 new stations, as illustrated in [Figure 2.4-6](#) and summarized in [Table 2.4-2](#). It includes the same four park-and-ride locations and the same general OMF location as identified in Alternative A-C-D1.

Alternative A-C-D2 includes eight new bridge structures: an 820-foot long structure over US 169, a 970-foot long structure over the BNSF railroad, a 500-foot structure over the CP rail tracks, a 400-foot crossing over TH 100 to accommodate BNSF freight track, a 50-foot long structure at Halifax and 34th Avenues, a 720-foot long structure between France Avenue and North Memorial Medical Center, a 2,000 foot long structure between NMMC and Lowry Avenue, and a 125-foot crossing of the HERC driveway. Three existing bridges would be modified at TH 100 (widening of existing BNSF freight track bridge to accommodate LRT), 36th Avenue, and at I-94.

#### *Alternative B-C-D1*

Alternative B-C-D1 begins in Brooklyn Park just north of TH 610 near the Target North Campus, follows West Broadway Avenue, and crosses Bottineau Boulevard at 73rd Avenue to enter the BNSF railroad corridor. Adjacent to the freight rail tracks, it continues in the railroad corridor through the cities of Crystal, Robbinsdale, and Golden Valley. At TH 55, the alignment turns to the east and follows TH 55 to Target Field Station in downtown Minneapolis, as illustrated in [Figure 2.4-7](#).

Alternative B-C-D1 includes up to 10 new stations, as illustrated in [Figure 2.4-7](#) and summarized in [Table 2.4-2](#). With the D1 alignment, it is assumed that either the Golden Valley Road or Plymouth Avenue/Theodore Wirth Regional Park station option would be chosen due to the proximity of these stations and their similarity in transit markets served. Three of these stations would also include park-and-ride lots ([Figure 2.4-2](#)). The 93rd Avenue station would have an approximate 11.2-acre park-and-ride; the existing 63rd Avenue park-and-ride facility would remain at 6.5 acres, although the vehicle capacity would increase through expansion of the existing structure; and the size of the Robbinsdale park-and-ride is to be determined.

Two potential OMF site options have been identified for Alignment B. The locations of the two potential OMF sites are at the park-and-ride station at 93rd Avenue and the northwest quadrant of the intersection of Winnetka Avenue (CSAH 103) and 101st Avenue ([Figure 2.4-3](#)).

Alternative B-C-D1 includes four new bridges: a 300-long structure over TH 610, a 500-foot structure over the CP rail tracks, a 400-foot crossing over TH 100 to accommodate BNSF freight track, and a 125-

foot crossing of the HERC driveway. Eight existing bridges would be modified (see Alternative A-C-D1 for complete listing of the eight bridges that would require modification).

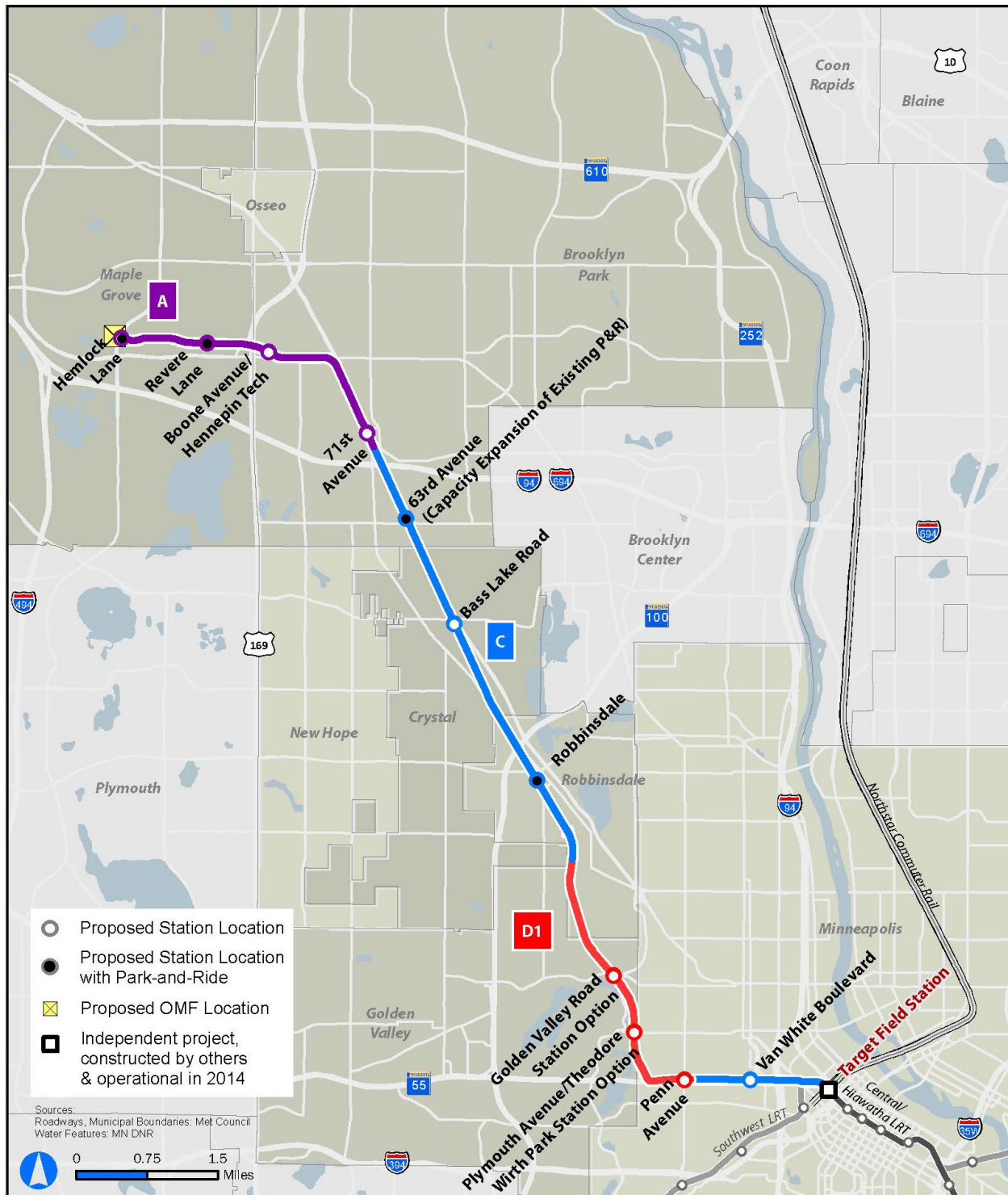
#### *Alternative B-C-D2*

Alternative B-C-D2 originates in Brooklyn Park, following the same alignment as Alternative B-C-D1 through the cities of Crystal and Robbinsdale. Once in Robbinsdale, the alignment exits the BNSF railroad corridor near 34th Avenue and joins West Broadway Avenue where it enters Minneapolis. It then travels on Penn Avenue to TH 55 to the Target Field Station in downtown Minneapolis as illustrated in [Figure 2.4-8](#).

Alternative B-C-D2 includes 11 new stations, as illustrated in [Figure 2.4-8](#) and summarized in [Table 2.4-2](#). It includes the same three park-and-ride locations and the same OMF location options as identified in Alternative B-C-D1.

Alternative B-C-D2 includes seven new bridge structures: a 300-foot structure over TH 610, a 500-foot structure over the CP rail tracks, a 400-foot crossing over TH 100 to accommodate BNSF freight track, a 50-foot long structure at Halifax and 34th Avenues, a 720-foot long structure between France Avenue and NMMC, a 2,000 foot long structure between NMMC and Lowry Avenue, and a 125-foot crossing of the HERC driveway. Three existing bridges would be modified: TH 100 (widening of existing BNSF freight track bridge to accommodate LRT), 36th Avenue, and at I-94.

Figure 2.4-5. Alternative A-C-D1



**Figure 2.4-6. Alternative A-C-D2**

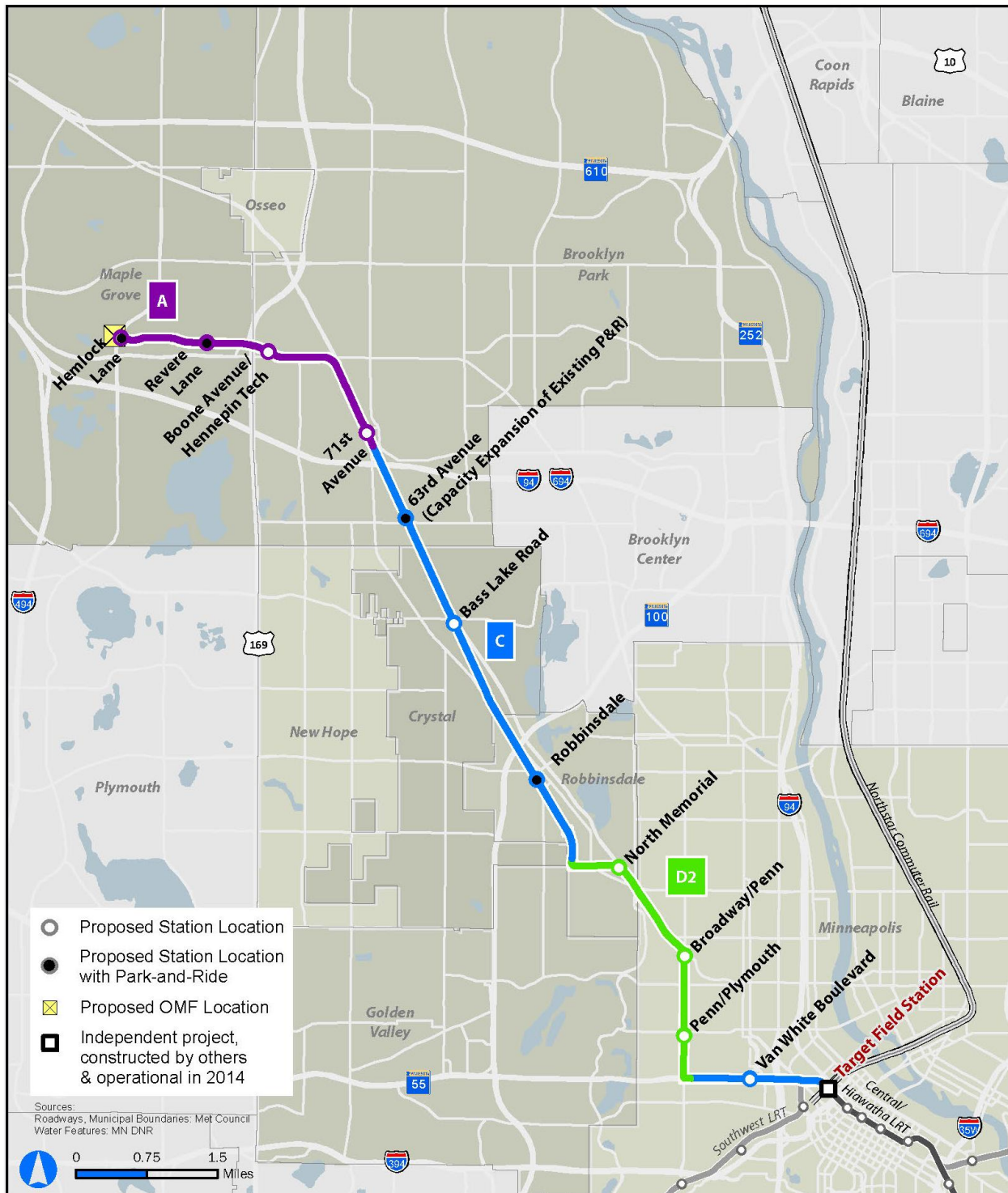




Figure 2.4-7. Alternative B-C-D1

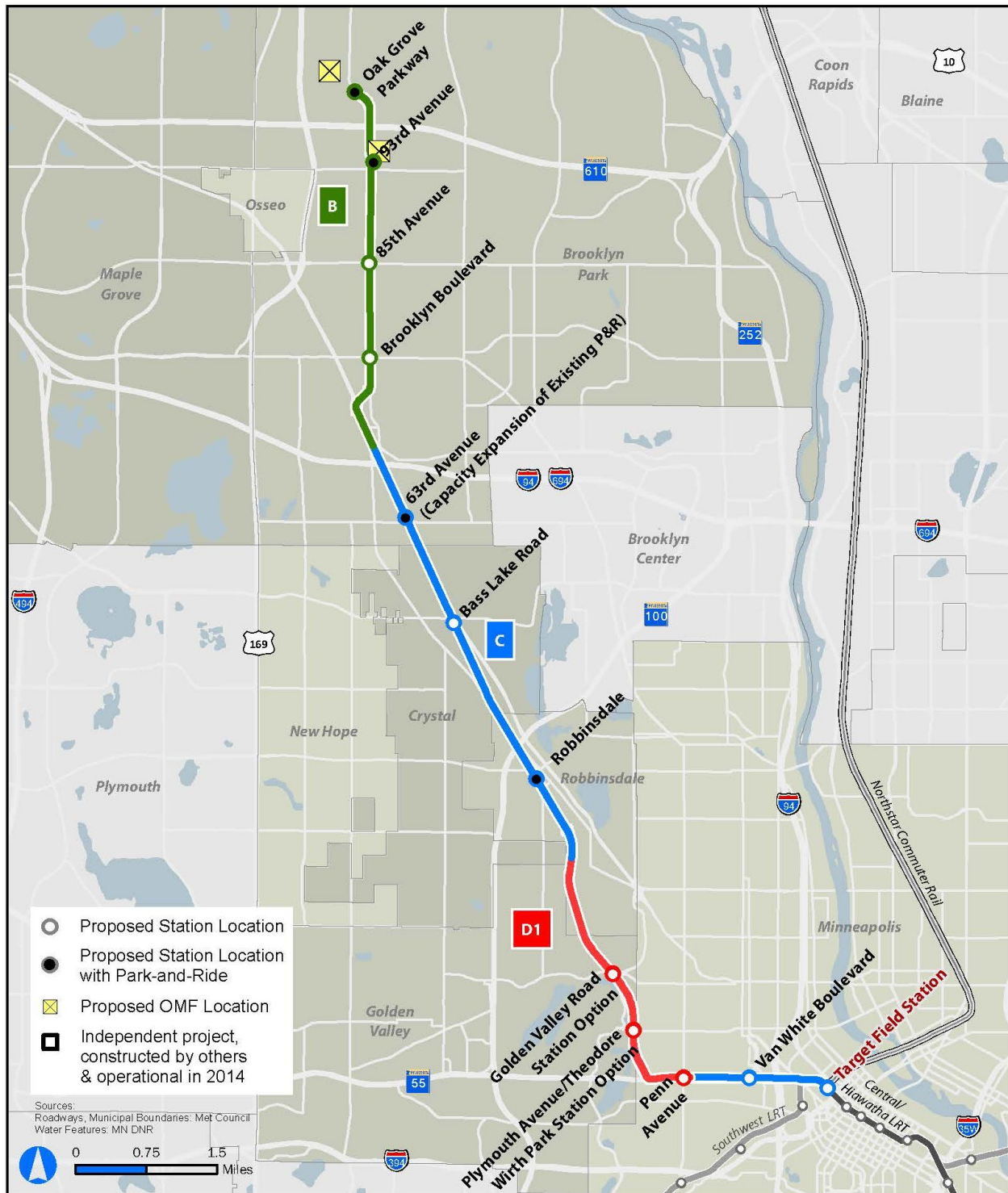


Figure 2.4-8. Alternative B-C-D2

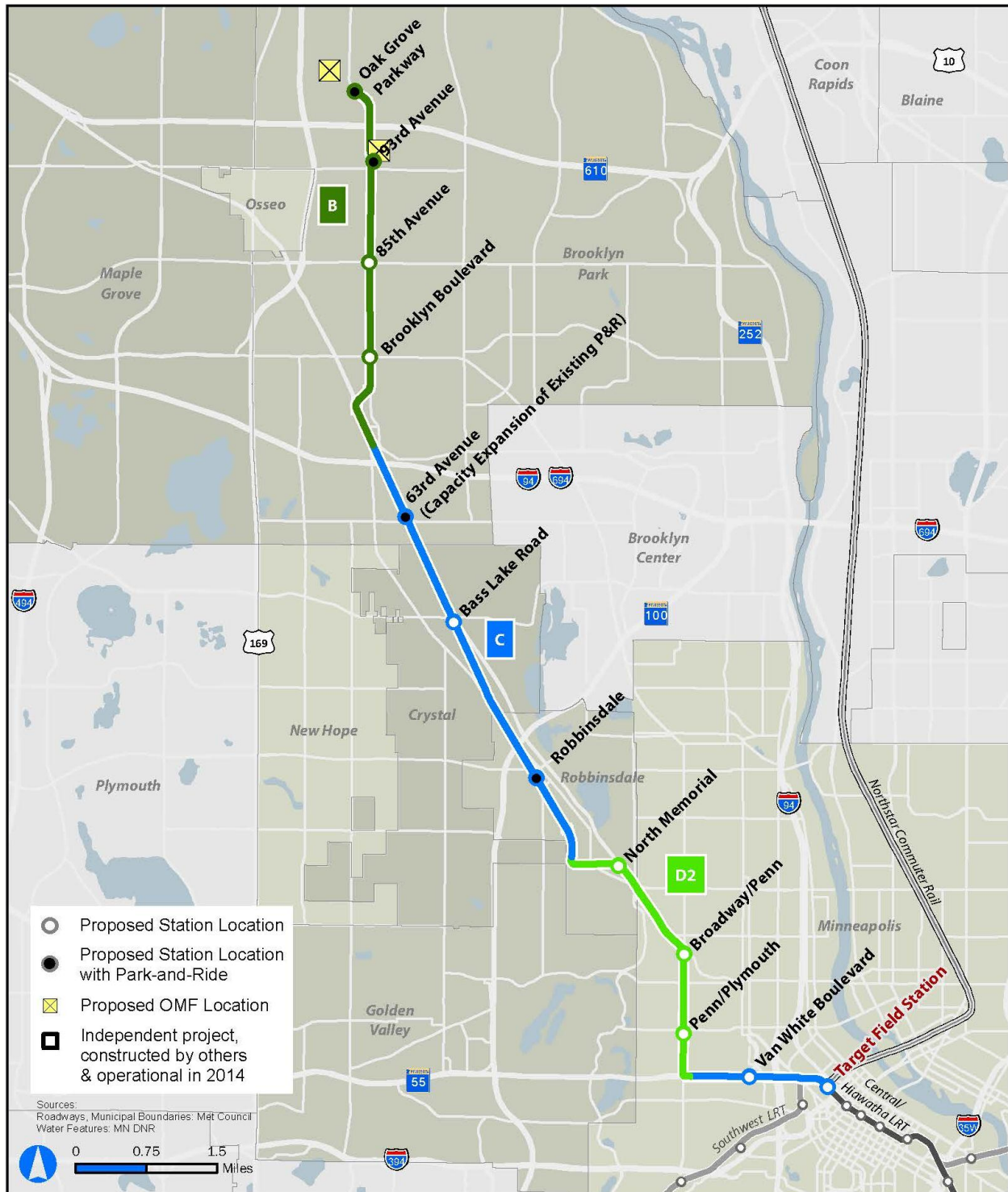
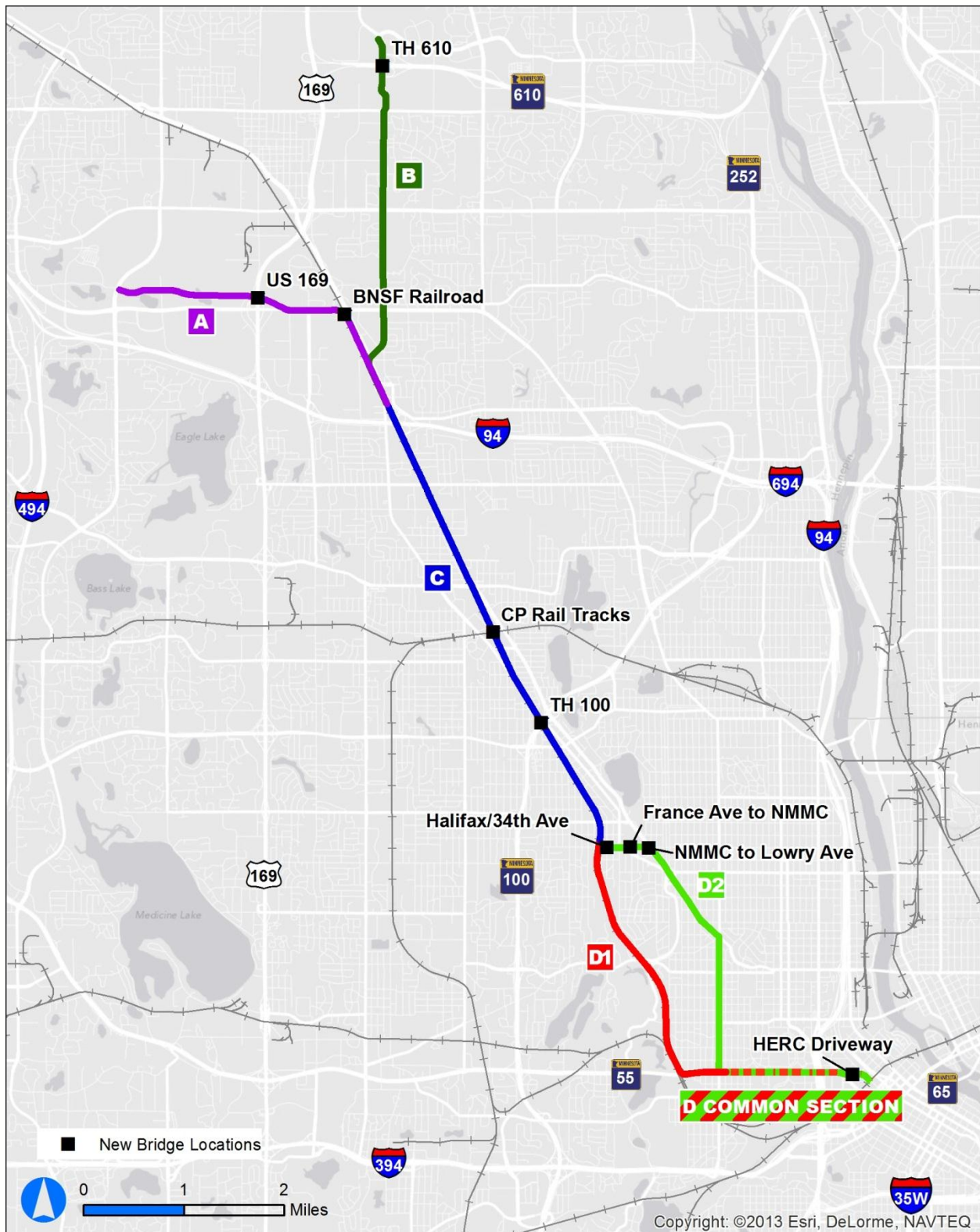




Figure 2.4-9. Locations of New Bridge Structures



## 2.5 Locally Preferred Alternative (LPA) Selection Process

An LPA is the transitway alternative that the corridor's cities, Hennepin County, and the Metropolitan Council recommend for detailed study through engineering and environmental review. The LPA specifies both the type of transit that will be used (mode) and the location (alignment). Other elements of the project, including termini and final station locations are established formally during subsequent engineering based on additional information, including opening year travel demand forecasts.

The multi-step process to formally recommend and select an LPA for the Bottineau Transitway began following the technical analysis and Scoping decisions previously described. At their meeting on June 26, 2012, following a PAC public hearing and recommendation, and passage of resolutions of support from the cities of Minneapolis, Robbinsdale, Crystal, and Brooklyn Park, and a HCRRA-sponsored LPA public hearing, HCRRA passed a resolution recommending Alternative B-C-D1 as the LPA for the Bottineau Transitway. The City of Golden Valley followed with its resolution in December 2012. On May 8, 2013, the Metropolitan Council formally adopted amendments to the 2030 *TPP* – the region's long-range transportation plan – to include the Bottineau Transitway LPA as Alternative B-C-D1. This action, which concludes the LPA process, followed a public comment period and input from the Council's Transportation Advisory Board (TAB). This LPA process will not be the only time cities will have input into the approval of the project. The cities will be required to review preliminary engineering plans and provide municipal approval for portions of the project within their jurisdiction. In a letter dated September 27, 2013, the FTA and the Federal Highway Administration (FHWA) concurred with the amendment to the *TPP* dated May 22, 2013 (see [Appendix D](#)).

Additional details on public input into the LPA selection process can be found in Chapter 9 Consultation and Coordination.

## 2.6 Environmentally Preferred Alternative

As summarized in Chapter 11 Evaluation of Alternatives, Alternative B-C-D1 meets the purpose and need of the Bottineau Transitway project and is environmentally preferred alternative because it will cause the least damage to the biological and physical environment and that best protects, preserves, and enhances historic, cultural, and natural resources.



## 3.0 Transportation Analysis

Chapter 3 presents results from the analysis of impacts on the transportation system. Results are presented for the No-Build alternative for the purpose of establishing a base from which to identify impacts of the other alternatives. Operating phase (long-term) and construction phase (short-term) impacts are identified for the Enhanced Bus/Transportation System Management (TSM) alternative and four Build alternatives, which includes a Locally Preferred Alternative. The alternatives are described and illustrated in Chapter 2 Alternatives.

This chapter identifies and evaluates effects to six parts of the transportation system: transit, freight rail, general motor vehicle traffic, pedestrians and bicycles, parking, and aviation.

- Transit is analyzed for the Bottineau Transitway.
- Freight rail is analyzed within the affected Burlington Northern Santa Fe (BNSF) and Canadian Pacific Railway (CP) rights-of-way.
- General motor vehicle traffic is analyzed at all intersections along the transitway alignments that are signalized, would be anticipated to be signalized, or unsignalized and anticipated to be controlled by gate arms.
- Pedestrians and bicycles are analyzed within ½ mile of the transitway alignments.
- Parking is analyzed within anticipated construction limits.
- Aviation impacts are analyzed for the areas where the preliminary construction limits are within the Crystal Airport Runway Protection Zone and Safety Zone A.

The study area considered for each area of analysis in this chapter is summarized in [Table 3.0-1](#). Greater detail is provided in each section of this chapter. For reference, conceptual engineering plans are located in [Appendix E](#).

**Table 3.0-1. Summary of Defined Study Areas – Transportation Analysis**

Resource Evaluated	Study Area Definition	Basis for Study Area
<b>Transit Conditions</b>	Bottineau Transitway	Estimated area where changes would occur for the proposed project at this stage of design
<b>Freight Rail Conditions</b>	BNSF and CP Railway rights-of-way	Freight rail infrastructure and operations lie within BNSF and CP rights-of-way
<b>Vehicular Traffic</b>	All signalized intersections and proposed signalized intersections along the transitway alignments	Intersections capture concentrated area of potential impacts and delay
<b>Pedestrians and Bicycles</b>	½ mile on either side of alignments and stations	Captures bike/walk area around alignments and stations
<b>Parking</b>	Within potential area of disturbance	Estimated area where construction would occur for the proposed project at this stage of design

**Table 3.0-1. Summary of Defined Study Areas – Transportation Analysis (continued)**

Resource Evaluated	Study Area Definition	Basis for Study Area
<b>Aviation</b>	Preliminary construction limits for the Build alternatives that are outside the Crystal Airport property boundaries but within the Runway Protection Zone (RPZ) and Safety Zone A for Runway 6L (the No-Build and Enhanced Bus/TSM alternatives do not include any improvements within the RPZ)	Crystal Airport is the only aviation facility in the project area; RPZ and Safety Zone are the areas with specific requirements

## 3.1 Transit Conditions

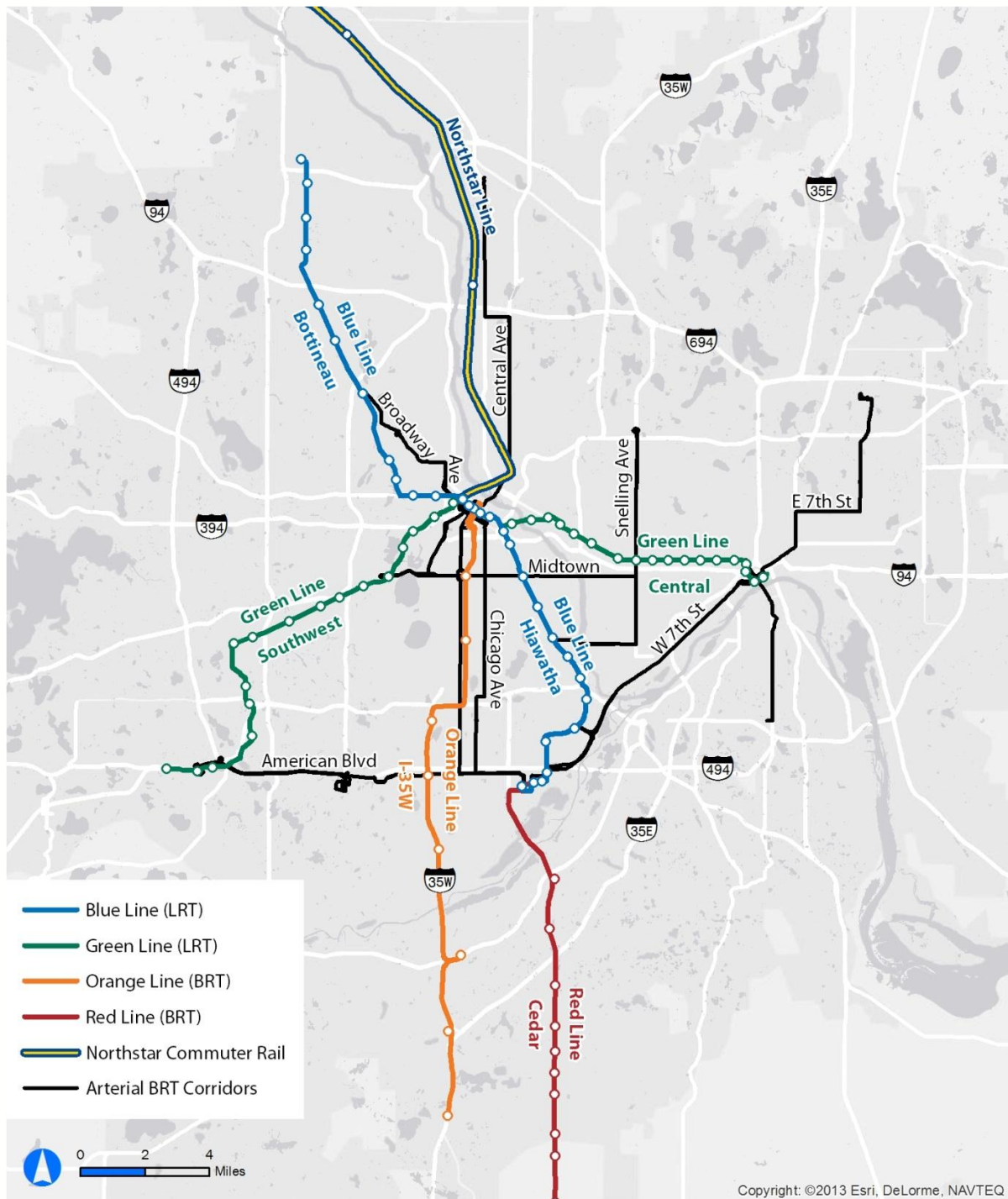
Information in this section is based on the information provided in the Transportation Technical Report (Kimley-Horn and Associates & SRF Consulting Group, 2012).

### 3.1.1 Regulatory Context and Methodology

Transit demand forecasts for year 2030 were developed for the six alternatives evaluated in the Draft EIS (No-Build, Enhanced Bus/TSM, and four Build alternatives). The Regional Travel Demand Forecast Model, developed by the Metropolitan Council, was used for this project. The model is consistent with the regional *2030 Transportation Policy Plan (TPP)*, and was updated in 2012 to incorporate the most current employment, population, land development, and Transit On-Board survey data, as well as adjusted parameters for gasoline prices, automotive fuel efficiency, the Consumer Product Index (CPI), and transit fares.

The model is designed to forecast travel on the entire Twin Cities Metropolitan Area transit and highway system. As such, it contains a network of all existing and planned transitways, as documented in the regional *2030 TPP*. Planned transitways include: Green Line (Central Corridor) LRT, Green Line (Southwest) LRT, Red Line (Cedar Ave) BRT, Orange Line (I-35W South) BRT, and Arterial BRT on Snelling Ave, E 7th Street, W 7th Street, Chicago Avenue, Central Avenue, Lake Street, West Broadway Avenue, and American Boulevard, as shown in [Figure 3.1-1](#). The model network contains service frequency (i.e., how often trains and buses arrive at any given transit stop), routing, travel time, and fares for all these lines. In the highway system, all express highways, all principal arterial roadways, and many minor arterial and local roadways are included. Other primary inputs used in the model include population, employment, household information, parking costs, automobile operating costs, and highway travel time factors. Model outputs can provide information relating to transit ridership demand, which includes estimates of passenger boardings on all existing and proposed transitways. The model also generates statistics that can be used to evaluate the performance of a transportation system at several levels of geographic detail.

Figure 3.1-1. Existing and Planned Regional Transitways (as represented in the 2030 TPP)



### 3.1.2 Study Area

The Regional Travel Demand Forecast Model described above is designed to analyze the effects of a transit improvement on travel patterns in the entire Twin Cities Metropolitan Area and provides information available at different levels of geographic detail.

### 3.1.3 Affected Environment

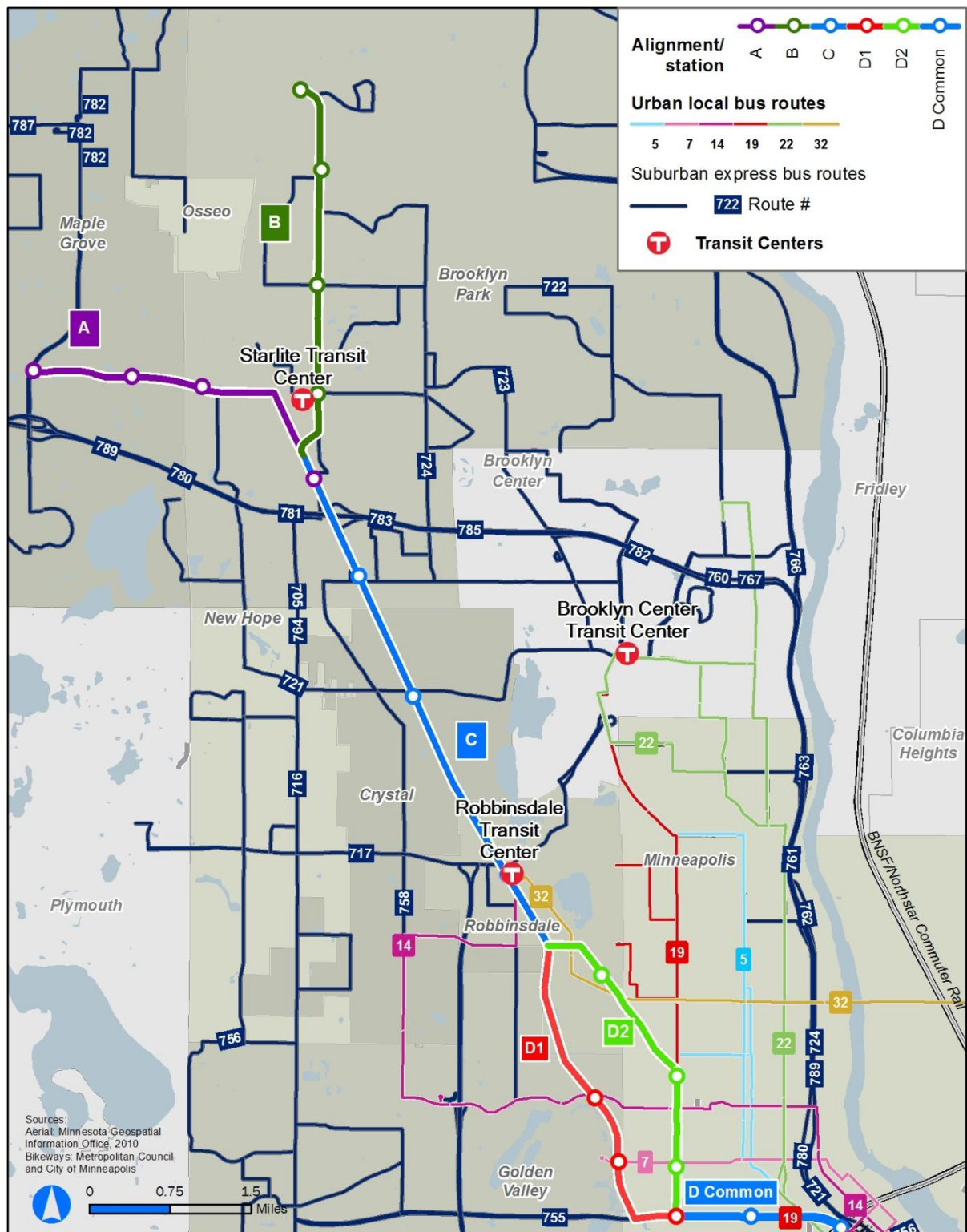
The Bottineau Transitway's transit service area is generally defined by the Mississippi River to the north and east, TH 55 to the south, and I-494 to the west. The area is served by a network of urban and suburban local routes that make timed connections at three transit centers throughout the corridor (Robbinsdale Transit Center, Brooklyn Center Transit Center, and the Starlite Transit Center). The area is also served by express routes, most of which are oriented toward downtown Minneapolis and serve the peak-period ("rush hour") commuter travel market. Existing transit service in the area is described in detail in the Transit Operations Plans Report (Connetics Transportation Group, 2012) and is shown in [Figure 3.1-2](#). [Table 3.1-1](#) presents an overview of existing routes that would change as a result of the Bottineau Transitway alternatives.

Each of the alternatives analyzed in the Regional Travel Demand Forecast Model uses the existing service as a base and includes specific network modifications to form the basis for the transit ridership forecasts. Modifications to existing transit service for the modeled alternatives include changes in routing, frequency, and travel time. Network modifications are focused on providing an integrated connecting, bus network to connect people to LRT stations. These changes are detailed for each alternative in the Transit Operations Plans Report (Connetics Transportation Group, 2012). Bus networks and transit plans would continue to be refined as the project progresses.

Travel time is an important factor in forecasting ridership for the various alternatives. [Table 3.1-2](#) shows the end-to-end travel times for the Enhanced Bus/TSM and Build alternatives. Routes 731 and 732 are new services in the Enhanced Bus/TSM alternative designed to provide reverse commute and intra-corridor access along the Bottineau Transitway between downtown Minneapolis and Brooklyn Park (Route 731) and Maple Grove (Route 732), supplementing the existing express and limited stop service. [Table 3.1-3](#) shows the planned operating frequencies.



Figure 3.1-2. Transit Service Area and Existing Service



### 3.1.4 Environmental Consequences

#### 3.1.4.1 Operating Phase (Long-Term) Impacts

The existing transit service in the Bottineau Transitway study area consists of several Metro Transit urban and suburban routes, routes operated by contracted service providers for the Metropolitan Council, and routes operated by Maple Grove Transit. A detailed summary of service changes as they apply to specific build levels and alignments is provided in the Transit Operations Plans Report (Connetics Transportation Group, 2012) portion of the Draft EIS document. This report first describes each route's characteristics, including facilities, geography, frequency, and span of service, then sets transit service plans for each alternative in the year 2030. The transit service changes recommended modify existing routes to eliminate redundancy in the system and provide access to the Bottineau Transitway. Routes are realigned to provide connectivity to major origins and destinations and to be better coupled with the level of transit offered by the particular Build alternative (see [Table 3.1-1](#)).

**Table 3.1-1. Summary of Existing Transit Service and Changes Under Alternatives**

Route	Existing Frequency and Span of Service	Proposed Route Changes
<b>Urban Local Routes</b>		
Metro Transit Route 5	<ul style="list-style-type: none"> <li>■ Rush Hour: 5-10 min.</li> <li>■ Off-Peak: 7-15 min.</li> <li>■ Owl: 60 min.</li> </ul>	<ul style="list-style-type: none"> <li>■ A-C-D2 and B-C-D2: Route 5F trips would be extended to the Broadway/Penn station.</li> </ul>
Metro Transit Route 7	<ul style="list-style-type: none"> <li>■ Rush Hour: 15-30 min.</li> <li>■ Off peak: 30-60 min.</li> </ul>	<ul style="list-style-type: none"> <li>■ Route would be extended to Robbinsdale Transit Center</li> </ul>
Metro Transit Route 14	<ul style="list-style-type: none"> <li>■ Rush Hour: 10-20 min.</li> <li>■ Off Peak: 20-30 min.</li> </ul>	<ul style="list-style-type: none"> <li>■ No-Build: West Broadway Avenue portion of route is eliminated, routing modified to follow Lyndale Avenue &amp; 7th Street</li> <li>■ Rapid Bus route added to West Broadway Avenue corridor with 15 min frequencies, connecting Robbinsdale Transit Center to downtown.</li> </ul>
Metro Transit Route 19	<ul style="list-style-type: none"> <li>■ Rush Hour: 8-15 min.</li> <li>■ Off-peak: 15-30 min.</li> <li>■ Owl: 60 min.</li> </ul>	<ul style="list-style-type: none"> <li>■ Eliminate Route 19H, a branch of the Route 19 that serves the far northwest corner of Minneapolis.</li> </ul>
Metro Transit Route 22	<ul style="list-style-type: none"> <li>■ Rush Hour: 11-15 min.</li> <li>■ Off Peak: 20-30 min.</li> </ul>	<ul style="list-style-type: none"> <li>■ Increase midday<sup>1</sup> frequencies on Penn Avenue alignment</li> </ul>
Metropolitan Council Route 32	<ul style="list-style-type: none"> <li>■ Rush Hour: 30 min.</li> <li>■ Off-peak: 60 min.</li> </ul>	<ul style="list-style-type: none"> <li>■ Increase midday frequencies</li> </ul>
<b>Suburban Local Routes</b>		
Metropolitan Council Route 705	<ul style="list-style-type: none"> <li>■ Weekdays: 60 min.</li> </ul>	<ul style="list-style-type: none"> <li>■ Extend route to Target North Campus via Route 724 alignment</li> </ul>
Metropolitan Council Route 716	<ul style="list-style-type: none"> <li>■ Weekdays/Saturdays: 60 min.</li> </ul>	<ul style="list-style-type: none"> <li>■ Route modified to include stops at Bass Lake Road stations</li> <li>■ Frequencies increased to 30 min.</li> </ul>
Metropolitan Council/ Metro Transit Route 721	<ul style="list-style-type: none"> <li>■ Rush Hour: 30 min.</li> <li>■ Off-peak: 60 min.</li> </ul>	<ul style="list-style-type: none"> <li>■ Increase midday frequencies</li> </ul>
Metropolitan Council/Metro Transit Route 722	<ul style="list-style-type: none"> <li>■ Weekdays/Weekends: 30 min.</li> </ul>	<ul style="list-style-type: none"> <li>■ Increase midday frequencies to 30 min. for full route alignment</li> </ul>

**Table 3.1-1. Summary of Existing Transit Service and Changes Under Alternatives (continued)**

Route	Existing Frequency and Span of Service	Proposed Route Changes
Metropolitan Council Route 723	<ul style="list-style-type: none"> <li>Weekdays/ Weekends: 60 min.</li> </ul>	<ul style="list-style-type: none"> <li>Frequencies improved to 30 min.</li> <li>A-C-D1 and A-C-D2: route extended to 71st Avenue station</li> <li>B-C-D1 and B-C-D2: route terminates at Brooklyn Center/Starlite Transit Station</li> </ul>
Metro Transit Route 724	<ul style="list-style-type: none"> <li>Weekdays/Weekends: 30 min.</li> <li>Evenings: 30-60 min.</li> </ul>	<ul style="list-style-type: none"> <li>No-Build: Midday trips from Target North Campus are extended to downtown.</li> <li>Enhanced Bus/TSM: Target North Campus service replaced with Route 705</li> <li>A-C-D1, B-C-D1, and A-C-D2: route deviates to 63rd Avenue station</li> </ul>
<b>Limited Stop and Express Routes</b>		
Metro Transit Route 758	<ul style="list-style-type: none"> <li>Rush Hour Service</li> <li>AM: 7 SB</li> <li>PM: 8 NB</li> </ul>	<ul style="list-style-type: none"> <li>Replace Route 758N trips with Route 7 service, Route 758D to Robbinsdale</li> </ul>
Metro Transit Route 760	<ul style="list-style-type: none"> <li>Rush Hour Service</li> <li>AM: 8 SB</li> <li>PM: 7 NB</li> </ul>	<ul style="list-style-type: none"> <li>Route modified to terminate at 63rd Avenue/Brooklyn Boulevard Park-and-Ride. Local service replaced with new Route 759.</li> </ul>
Metro Transit Route 764	<ul style="list-style-type: none"> <li>Rush Hour Service</li> <li>AM: 3 SB</li> <li>PM: 4 NB</li> </ul>	<ul style="list-style-type: none"> <li>Converted to local route operating 60 min. frequencies between Robbinsdale and Starlite Transit Centers</li> </ul>
Metro Transit Route 765	<ul style="list-style-type: none"> <li>Reverse Commute Rush Hour Service</li> <li>AM: 3 NB</li> <li>PM: 3 SB</li> </ul>	<ul style="list-style-type: none"> <li>TSM, A-C-D1, and A-C-D2: route modified to operate in both directions</li> <li>B-C-D1 and B-C-D2: route eliminated</li> </ul>
Metro Transit Route 767	<ul style="list-style-type: none"> <li>Rush Hour Service</li> <li>AM: 6 SB</li> <li>PM: 6 NB</li> </ul>	<ul style="list-style-type: none"> <li>No-Build: no change</li> <li>Other alignments: route eliminated</li> </ul>
<b>Maple Grove Transit Routes</b>		
Maple Grove Transit 781	<ul style="list-style-type: none"> <li>Rush Hour Service</li> <li>AM: 20 SB</li> <li>PM: 22 NB</li> <li>Midday: 1 SB/1NB</li> </ul>	<ul style="list-style-type: none"> <li>No-Build: no change</li> <li>Other alignments: Route 781 becomes local service that connects to LRT Stations</li> </ul>
Maple Grove Transit 782	<ul style="list-style-type: none"> <li>Rush Hour Service</li> <li>AM: 5 SB</li> <li>PM: 5 NB</li> </ul>	<ul style="list-style-type: none"> <li>A-C-D1 and A-C-D2: local route serving Hemlock Lane LRT Station and Maple Grove Transit Station</li> </ul>
Maple Grove Transit 785	<ul style="list-style-type: none"> <li>Rush Hour Service</li> <li>AM: 8 SB</li> <li>PM: 7 NB</li> </ul>	<ul style="list-style-type: none"> <li>Add trips</li> </ul>
Maple Grove Transit 787	<ul style="list-style-type: none"> <li>Flex Route Service</li> <li>PM: 3 NB</li> </ul>	<ul style="list-style-type: none"> <li>No-Build: no change</li> <li>Other alignments: route eliminated</li> </ul>
Maple Grove Transit 788	<ul style="list-style-type: none"> <li>Rush Hour Service</li> <li>AM: 4 NB</li> <li>PM: 5 SB</li> </ul>	<ul style="list-style-type: none"> <li>Add trips on all service, connect to LRT stations where applicable</li> </ul>

<sup>1</sup>Midday is between the hours of 9 am and 3 pm.

There are no changes proposed for the following routes under any alternative: 717, 755, 756, 761, 762, 763, 766, 780, and 783.

In addition to the routes listed in [Table 3.1.1](#), four new routes would be developed in the study area. Routes 729 and 759 would provide local service with 30 and 60 minute frequencies, respectively. Routes 731 and 732 are new services in the Enhanced Bus/TSM alternative designed to provide reverse commute and intra-corridor access along the Bottineau Transitway between downtown Minneapolis and Brooklyn Park (Route 731) and Maple Grove (Route 732), supplementing the existing express and limited stop service. Please see Transit Operations Plans Report (Connetics Transportation Group, 2012) for a full explanation of all proposed changes to the bus transit network associated with each alternative.

Comparisons between the performance of the No-Build, Enhanced Bus/TSM, and Build alternatives considered the following four evaluation criteria: percentage of daily trips by transit mode, bus and rail ridership within the study area, daily passenger miles and passenger hours of travel, and LRT boardings by station. Each alternative would have a different impact on transit service markets. [Table 3.1-1](#) summarizes the level of impact associated with restructuring and eliminating routes.

**Table 3.1-2. End-to-End Travel Times for Enhanced Bus/TSM and Build Alternatives**

Alternative		From	To	Travel Time
Enhanced Bus/TSM	Route 731 <sup>1</sup>	Oak Grove Parkway	5th St/Marquette Ave	0:48:44
	Route 732 <sup>1</sup>	Maple Grove Transit Station	5th St/Marquette Ave	0:50:50
A-C-D1		Hemlock Lane	5th St/Nicollet Mall Station	0:29:20
A-C-D2		Hemlock Lane	5th St/Nicollet Mall Station	0:33:19
B-C-D1 (Preferred Alternative)		Oak Grove Parkway	5th St/Nicollet Mall Station	0:32:47
B-C-D2		Oak Grove Parkway	5th St/Nicollet Mall Station	0:36:46

<sup>1</sup> Routes 731 and 732 are new services in the Enhanced Bus/TSM alternative designed to provide reverse commute and intra-corridor access along the Bottineau Transitway between downtown Minneapolis and Brooklyn Park (Route 731) and Maple Grove (Route 732), supplementing the existing express and limited stop service.

**Table 3.1-3. Summary of Operating Frequencies (Minutes between Buses/Trains)<sup>1</sup>**

Day of Week	Time Period	Enhanced Bus/TSM			LRT
		Route 731	Route 732	Routes 731 + 732 Combined <sup>2</sup>	All alternatives
Weekday	Peak <sup>3</sup>	15	15	7.5	7.5
Weekday	Off-Peak	20	20	10	10
Saturday	Day/evening	20	20	10	10
Sunday	Day/evening	20	20	10	10

<sup>1</sup> The frequencies presented in this table are general and used in travel demand modeling inputs. Frequencies are defined at a more detailed level for times of day for service planning and cost estimation efforts conducted as part of the Draft EIS.

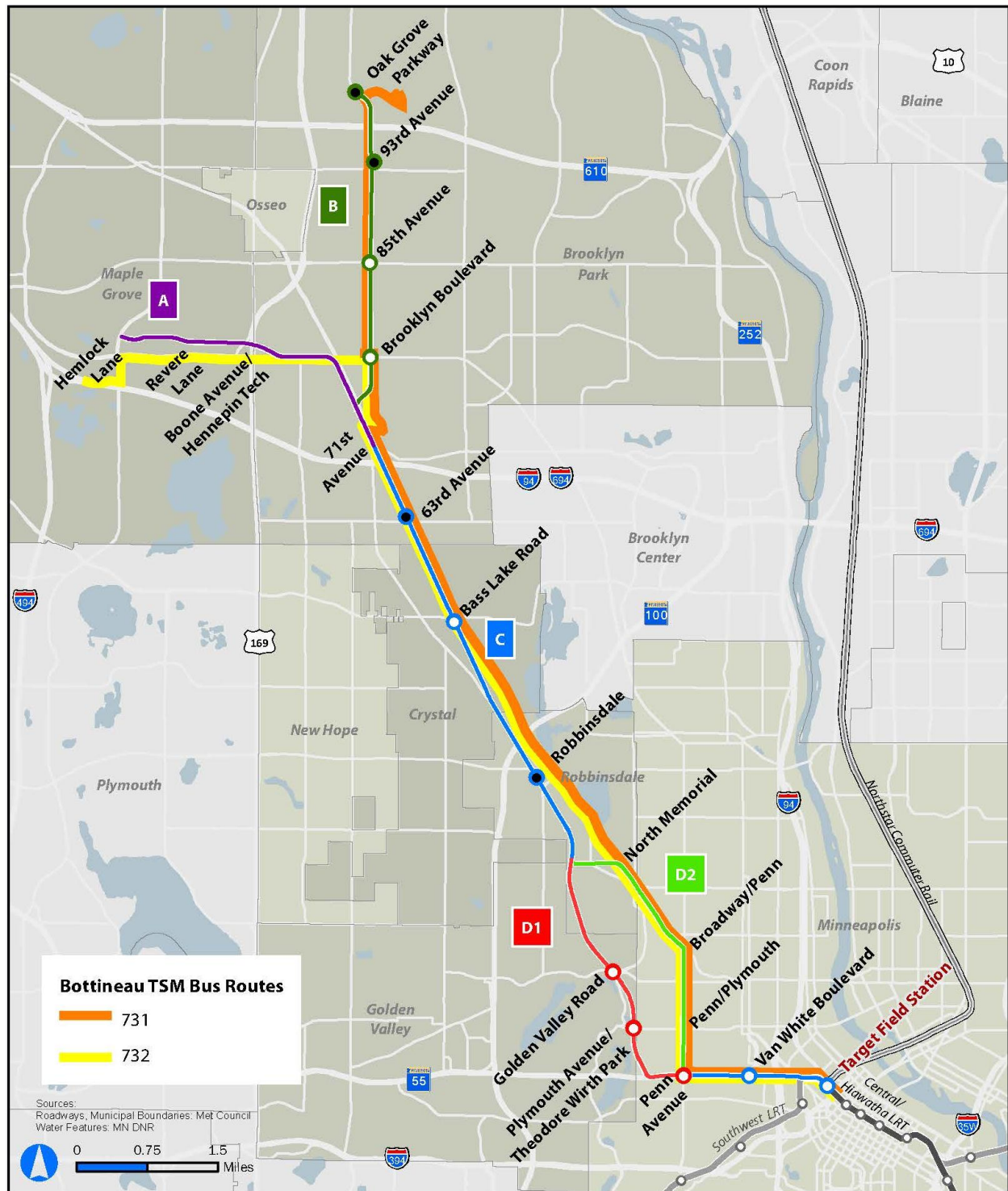
<sup>2</sup> Routes follow same path south of Brooklyn Boulevard (Starlite Transit Center).

<sup>3</sup> Peak periods refer to 6:00 a.m. to 9:00 a.m. (morning) and 3:00 p.m. to 6:30 p.m. (evening).

A map of the Enhanced Bus/TSM Routes 731 and 732 is shown below in [Figure 3.1-3](#).



Figure 3.1-3. Enhanced Bus/TSM Routes 731 and 732



## Transit Ridership Results

### Unlinked Trips/Corridor Transit Boarding

**Table 3.1-4** shows the Bottineau Transitway ridership totals by alternative and service type. These are “unlinked” trips, representing individual transit boardings (as opposed to a “linked” trip, which represents a transit user who makes a trip between an origin and destination, regardless of the number of transfers). Corridor service restructuring in the Enhanced Bus/TSM and Build alternatives is intended to enhance intra-corridor connectivity by creating the potential for more trips involving transfers. Therefore, the number of unlinked trips is greater than that of linked trips.

- Compared to 2010 levels, ridership is expected to increase 35 percent by the year 2030 under the No-Build alternative, including 4,700 daily trips on the assumed West Broadway Avenue enhanced transit service through north Minneapolis into Robbinsdale.
- Service improvements and restructuring in the Enhanced Bus/TSM alternative are forecast to increase transit trips in the corridor by an additional 29 percent over the No-Build alternative, including 18,300 daily trips on the Enhanced Bus/TSM routes (731 and 732) by the year 2030.
- Selective elimination or restructuring of routes (as described in **Table 3.1-1**) would slightly reduce the amount of express ridership from a 2030 forecast of 8,000 riders per day to between 6,500 to 7,900 riders per day. Most peak express ridership to downtown Minneapolis would remain on buses, while some existing express riders would choose to use transitway service where time savings can be realized.

The Build alternatives are forecast to carry 26,000 to 27,600 trips per day on the LRT transitway, depending on the alternative. Overall corridor ridership for Build alternatives is 21 to 27 percent greater than for the Enhanced Bus/TSM alternative.

**Table 3.1-4. Bottineau Corridor Transit Ridership Summary (Average Weekday Unlinked Trips)**

	2010	2030 No-Build	2030 Enhanced Bus/TSM	2030 A-C-D1	2030 A-C-D2	2030 B-C-D1 (Preferred Alternative)	2030 B-C-D2
Local Bus	25,300	30,600	27,200	31,100	30,100	29,900	29,300
Express Bus	6,800	8,000	7,900	7,500	7,700	6,700	6,800
West Broadway Avenue transit service improvement <sup>1</sup>	--	4,700	2,300	2,500	2,000	2,500	2,000
Enhanced Bus/TSM Routes 731/732	--	--	18,300	2,200	2,100	3,500	3,400
LRT	--	--	--	27,600	27,200	27,000	26,000
Total Corridor Boardings	32,100	43,300	55,700	70,900	69,100	69,600	67,500
Change over Enhanced Bus/TSM	--	--	--	15,200	13,400	13,900	11,800
Percent change over Enhanced Bus/TSM	--	--	--	27%	24%	25%	21%

<sup>1</sup> Includes transit service improvements along West Broadway Avenue connecting downtown Minneapolis with north Minneapolis, extending to downtown Robbinsdale in correlation with the rapid bus concept identified in the regional *Transportation Policy Plan*. Does not include a planning initiative underway (being led by the City of Minneapolis) for an alternatives analysis which will include study of a streetcar alternative along West Broadway Avenue.

### *Reverse Commute/Off-Peak Period Ridership*

**Table 3.1-5** provides a summary of selected Bottineau Transitway ridership characteristics. For each of the LRT alternatives, 55-56 percent of total daily ridership occurs in the peak period. These results are consistent with those currently observed on the Blue Line (Hiawatha LRT). Work trips make up 65-66 percent of the peak period demand, which is higher than the 61 percent found on the Blue Line. Reverse commute trips (work trips in the non-peak direction) constitute 37-42 percent of the peak work trips. Travel in the off-peak time periods is 44-45 percent of the daily transit ridership.

**Table 3.1-5. Ridership by Peak/Off-Peak and Direction (2030)**

	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2
<b>Total Daily Transitway Riders</b>	27,600	27,200	27,000	26,000
<b>Peak Period Trips</b>	15,500	15,100	15,000	14,200
<b>Percent of Daily Total</b>	56%	56%	56%	55%
<b>Peak Period Work Trips</b>	10,250	9,950	9,700	9,200
<b>Percent of Peak Period Trips</b>	66%	66%	65%	65%
<b>Peak Direction Work Trips</b>	6,100	5,800	6,100	5,650
<b>Percent of Peak Period Work Trips</b>	60%	58%	63%	61%
<b>Non-Peak Direction (Reverse Commute) Work Trips</b>	4,150	4,150	3,600	3,550
<b>Percent of Peak Period Work Trips</b>	40%	42%	37%	39%
<b>Off-Peak Period Trips</b>	12,100	12,100	12,000	11,800
<b>Percent of Daily Total</b>	44%	44%	44%	45%

### *Linked Trips/New Transit Trips*

A linked trip represents a transit user who makes a trip between an origin and destination, regardless of the number of transfers the user makes. The net regional increase of all of these linked trips is commonly referred to as “new transit trips.” **Table 3.1-6** provides a regional summary of linked transit trips for existing service (2010) and projected “new transit trips” that would result from the No-Build, Enhanced Bus/TSM, and Build alternatives.

Even without improvements to the Bottineau Transitway, significant growth in regional transit ridership is forecast to occur between 2010 and 2030 as a result of planned investment in the regional transit system, including other LRT, BRT, and arterial BRT corridors. These improvements are included in the No-Build alternative. For the Build alternatives, new transit trips are attributable only to those improvements associated with the Bottineau Transitway. Compared to the Enhanced Bus/TSM alternative, the LRT alternatives attract 6,450-8,400 new transit trips each weekday.

**Table 3.1-6. Regional Linked/New Transit Trips**

	2010	2030 No-Build	2030 Enhanced Bus/TSM	2030 A-C-D1	2030 A-C-D2	2030 B-C-D1 (Preferred Alternative)	2030 B-C-D2
<b>Average Weekday Linked Trips</b>	203,600	324,100	331,450	339,850	339,250	338,600	337,900
<b>Change over Enhanced Bus/ TSM New Transit Trips</b>	--	-- <sup>1</sup>	-- <sup>2</sup>	8,400	7,800	7,150	6,450
<b>Percent Change over Enhanced Bus/ TSM</b>	--	--	--	2.5%	2.4%	2.2%	2.0%

<sup>1</sup> Increase of 120,550 linked trips over 2010 (59% increase)

<sup>2</sup> Increase of 7,350 trips over No-Build (2.2% increase)

#### *User Benefits*

The results of the Regional Travel Demand Forecast Model can be used to illustrate the extent to which different geographic areas in the region would potentially benefit from the Bottineau Transitway Build alternatives, as compared to the Enhanced Bus/TSM alternative. These benefits are usually projected as the overall travel time savings (called user benefits). Using the travel demand model results, the performance of the Enhanced Bus/TSM and Build alternatives are compared, and the overall time and cost savings of each alternative are estimated. To make the comparison easier, all cost savings are converted to equivalent time savings.

These savings are generally expressed as daily hours of user benefit for regional transit riders. They are used in the estimation of the project's cost effectiveness index (CEI), which is one of the factors that the Federal Transit Administration (FTA) uses to evaluate a project's potential for federal funding.<sup>1</sup> [Table 3.1-7](#) summarizes the daily hours of user benefit that would accrue to transit riders as a result of each alternative.

**Table 3.1-7. Daily (Weekday) Hours of User Benefit (2030)**

	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2
<b>Daily User Benefit Hours</b>	9,460	9,000	8,520	7,940

User benefits for a given alternative vary by geographic area within the alternative. Detailed maps of the distribution of user benefits are provided in Appendix A of the Transportation Technical Report (Kimley-Horn and Associates & SRF Consulting Group, 2012).

#### *Vehicle Miles Traveled*

The Build alternatives would reduce the number of trips made by persons in automobiles, decreasing the amount of automobile (vehicle) travel in the region by 62,800 to 73,800 vehicle miles traveled (VMT) per

<sup>1</sup> Under the Safe Accountable Flexible Efficient Transportation Equity Act-A Legacy for Users (SAFETEA-LU), the Federal Transit Administration used user benefits and the cost effectiveness index (CEI) to evaluate a transitway's potential for federal funding. With the expiration of SAFETEA-LU and the enactment of Moving Ahead for Progress in the 21<sup>st</sup> Century (MAP-21), FTA no longer measures cost effectiveness with the user benefits metric and instead uses a simple ratio of annual capital and operating costs per trip on the transitway.



day compared to the baseline Enhanced Bus/TSM alternative. On a per person basis (reflecting both auto drivers and passengers switching to transit) the reduction would range from 8.8 to 9.7 VMT per new rider. The Build alternatives would reduce the number, as shown in [Table 3.1-8](#).

**Table 3.1-8. Daily (Weekday) Reduction in Vehicle Miles Traveled (2030)**

	Enhanced Bus/TSM	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2
Daily Reduction in VMT over No-Build	-51,700	--	--	--	--
Daily Reduction in VMT over Enhanced Bus/TSM	--	-73,800	-72,600	-64,300	-62,800
New Transit Riders	--	8,400	7,800	7,150	6,450
Daily Reduction in VMT per New Rider	---	-8.8	-9.3	-9.0	-9.7

[Figure 3.1-4](#) is a graphical representation of the boardings and alightings at each station on each Bottineau LRT Build alternative. Circle sizes are proportional; the circles in the legend provide a reference for approximate boardings and alightings.

### 3.1.4.2 Operating Phase Impacts

#### No-Build Alternative

No operating phase impacts would be associated with the No-Build alternative.

#### Enhanced Bus/TSM Alternative

The Enhanced Bus/TSM alternative would result in a reduction in vehicle miles traveled, and an increase in average weekday trips on transit. Please see [Table 3.1-9](#).

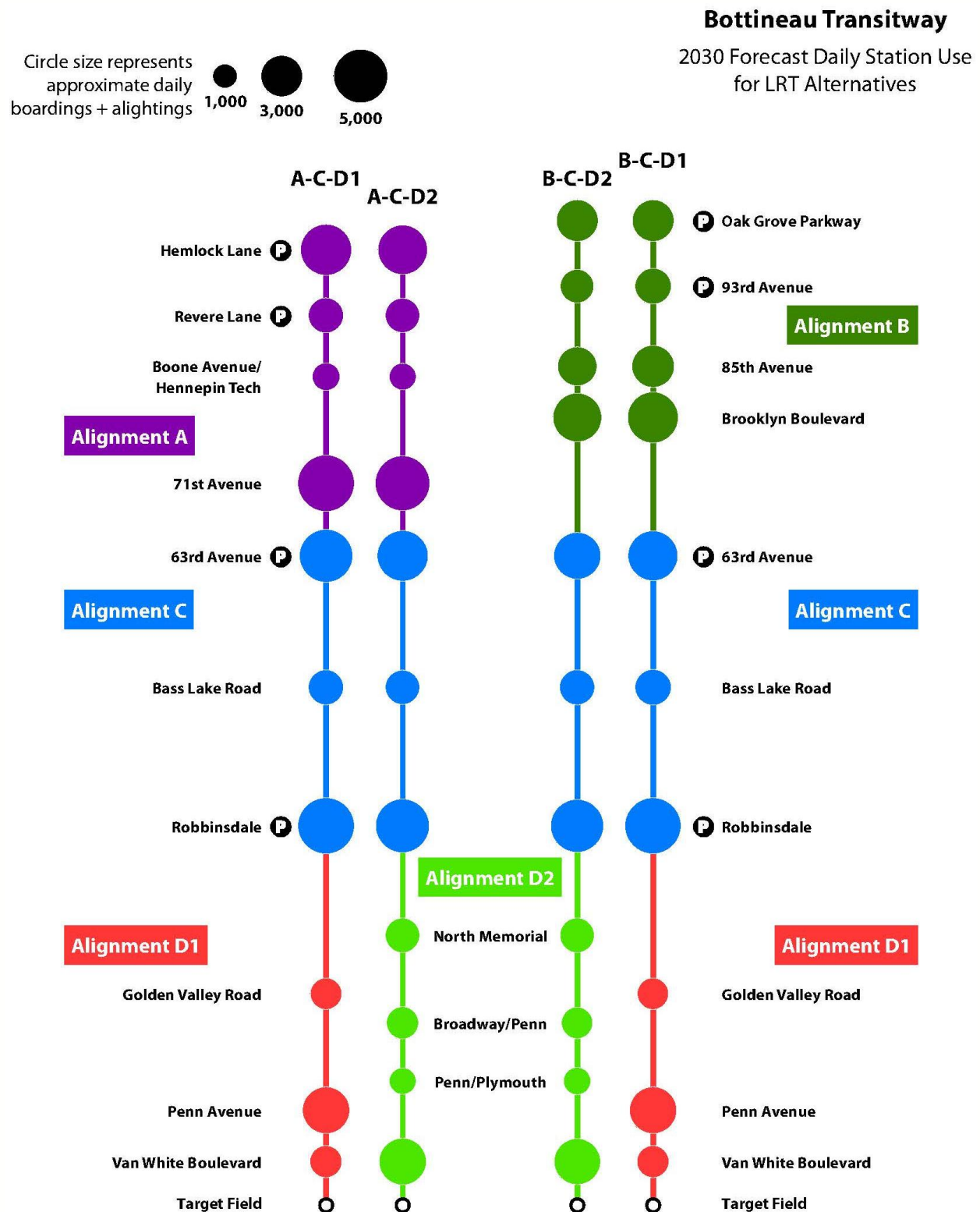
#### Build Alternatives

Operations of any of the Build alternatives would result in reduced vehicle miles traveled, an increase in new transit riders, an increase in daily user benefit hours, and an increase in average weekday trips on transit. Specifics are shown in [Table 3.1-9](#)

**Table 3.1-9. Summary of Build Alternative Benefits**

	Enhanced Bus/TSM	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2
Daily Reduction in VMT	-51,700	-73,800	-72,600	-64,300	-62,800
New Transit Riders		8,400	7,800	7,150	6,450
Total Corridor Boardings	55,700	70,900	69,100	69,600	67,500
Change over TSM		15,200	13,400	13,900	11,800
Daily User Benefit Hours		9,460	9,000	8,520	7,940
Average Weekday Linked Trips	331,450	339,850	339,250	338,600	337,900
Change over TSM		8,400	7,800	7,150	6,450
Percent change over TSM		2.5%	2.4%	2.2%	2.0%

Figure 3.1-4. 2030 Forecast Daily Station Use for Build Alternatives



### 3.1.4.3 Construction Phase Impacts

#### No-Build Alternative

No construction phase impacts would be associated with the No-Build alternative.

#### Enhanced Bus/TSM Alternative

No construction phase impacts would be associated with the Enhanced Bus/TSM alternative.

#### Build Alternatives

Existing routes in the Bottineau Corridor are shown in [Figure 3.1-1](#). Construction of any of the Build alternatives could result in intermittent impacts to bus operations on any of these routes within the construction area. These may include temporary stop relocations or closures, route detours, or suspensions of service on segments of routes operating on streets where LRT is being constructed. As project planning and engineering advances, transit routes will be reevaluated and transitway construction will be planned to minimize disruption to transit service.

### 3.1.5 Avoidance, Minimization, and/or Mitigation Measures

For short-term changes to bus operations during construction, Metro Transit would post information at bus stops indicating temporary stop closures and/or detour details. Information would also be published in advance of detours on Metro Transit's website and in its on-board information brochure, *Connect*.

For implementation of the Preferred Alternative, Metro Transit would develop and refine a service plan to enhance the transitway service, including service changes to improve transfers from connecting bus service to LRT. Metro Transit would follow standard procedures for route changes, additions, and deletions which will include a Title VI analysis to determine how service changes would affect low-income and minority communities, a community outreach process in designing route changes, a public hearing for the proposed service changes, and ongoing outreach efforts to communicate service changes prior to implementation.<sup>2</sup>

## 3.2 Freight Rail Conditions

Information in this section is based on the information provided in the Transportation Technical Report (Kimley-Horn and Associates & SRF Consulting Group, 2012).

HCRRA and the Metropolitan Council applied for a preliminary jurisdictional determination from the Federal Railroad Administration (FRA) in a letter dated June 17, 2013. FRA concluded that Bottineau Transitway would be an urban rapid transit (URT) operation; therefore, FRA would not exercise its safety jurisdiction over the Bottineau Transitway except to the extent necessary to ensure railroad safety at any limited shared connections between the Bottineau Transitway and other railroad carriers that operate on the general railroad system of transportation (see [Appendix D](#)).

HCRRA has discussed with BNSF representatives the acquisition of the eastern 50 feet of BNSF's right-of-way for LRT purposes and preserving the western 50 feet for the freight track and access road. Additional coordination will take place as the project advances into further stages of project development.

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<sup>2</sup> Metro Transit recently completed a transit service study for the Central Corridor LRT line, which involved extensive outreach to the communities along the corridor including: contacting and meeting with neighborhood and community groups and District Councils; holding five public hearings; posting brochures with comment cards for current customers and the general public; and hiring "trusted advocates", well-connected members of the community who conducted individual meetings in their communities to gather feedback and explain the route change process. The study also evaluated potential impacts to low-income and minority populations by completing a Title VI analysis, as well as evaluating the efficiency and effectiveness, route coverage, and budgetary impacts of the proposed service changes. A similar process would be completed for the Bottineau Transitway Project.

### 3.2.1 Regulatory Context and Methodology

Preliminary Bottineau Transitway design drawings and existing BNSF track charts were used to identify potential physical impacts to freight rail infrastructure. Minnesota State Statute 219.46, BNSF Railway, American Railway Engineering and Maintenance-of-Way Association (AREMA), and Minnesota Department of Transportation (MnDOT) requirements were reviewed to determine vertical and horizontal clearance requirements for the freight rail track. Per Minnesota State Statute 219.46, subd. 2, a minimum of 14 feet horizontal separation is required between the rail track centerline. The Bottineau Transitway Project provides a horizontal separation greater than 14 feet. This additional separation would allow a service road to be constructed between the LRT and freight rail track and also would allow Metropolitan Council and BNSF to perform maintenance on their respective track without impacting service on the other track.

### 3.2.2 Study Area

The study area for freight impacts is approximately 8.4 miles of the BNSF right-of-way within the Monticello Subdivision located between Brooklyn Boulevard in Brooklyn Park (Mile Post (MP) 9.99) and TH 55 in Minneapolis (MP 1.56). The width of the BNSF-owned right-of-way is generally 100 feet (approximately 50 feet on either side of the existing freight rail track).

### 3.2.3 Affected Environment

Within the study area, the BNSF operates on one freight rail track generally located in the center of a 100-foot right-of-way that the railroad owns and maintains. Within this area, there are several locations where the BNSF right-of-way is less than 100 feet. BNSF operates one freight train per day on this track. During peak operations in previous years, up to five trains per day operated in the corridor. Future freight operations could increase or decrease based on the future needs of BNSF.

This portion of the BNSF system is located in “dark territory,” which means that train movements are controlled by track warrants or train order operations, with train dispatchers issuing orders by radio communication with train engineers, not by train signals. This type of system allows only one train to be on a particular segment of the track at any given time. This portion of the corridor is Class II track and operates at a maximum speed of 25 miles per hour (mph) based on existing track conditions.

Between Brooklyn Boulevard and I-94, four siding tracks allow rail service to be provided to the Anchor Block site, Atlas Cold Storage building, former Knox Lumber site, and the current Feed My Starving Children building. BNSF has not provided service to these sites for several years.

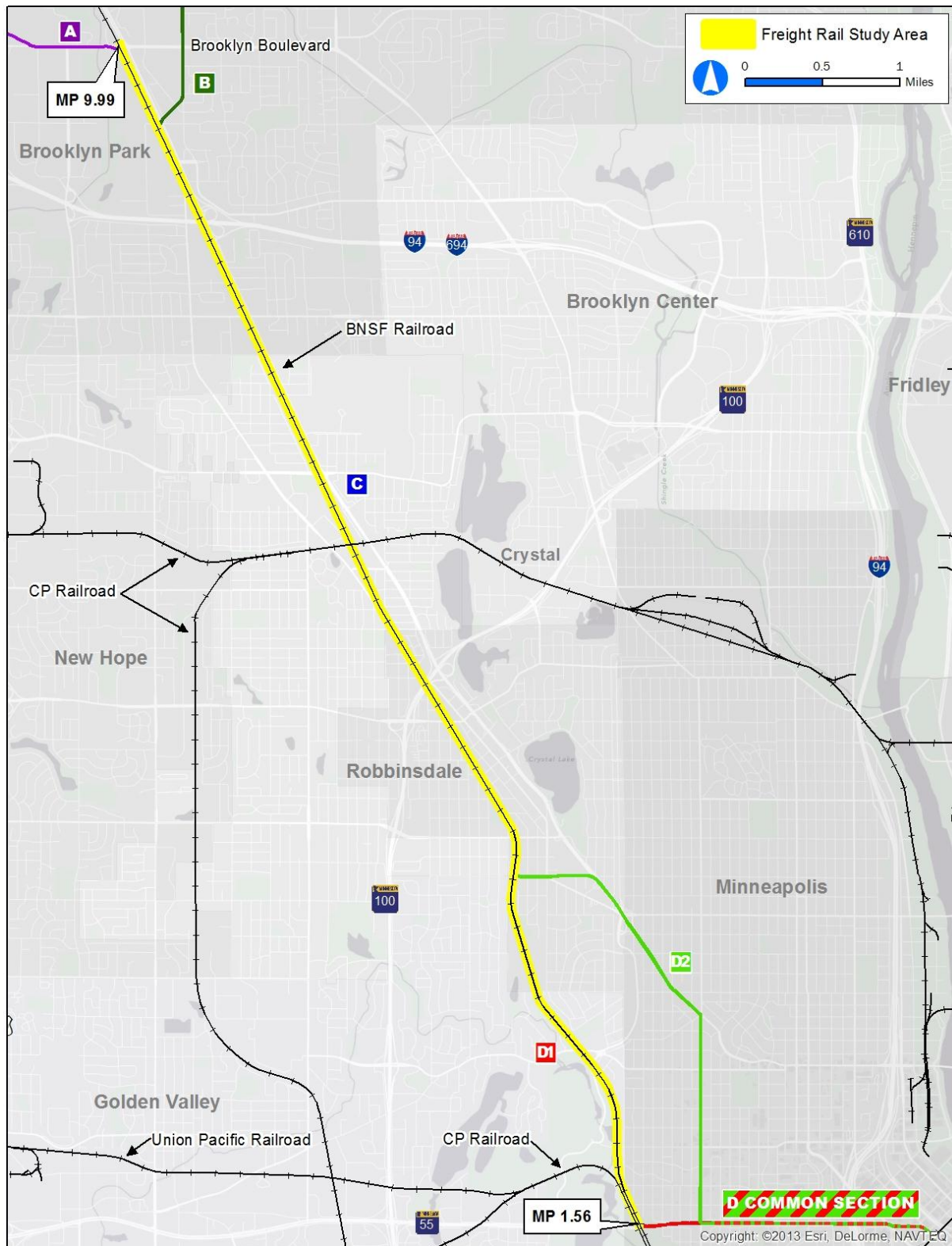
The CP Railway has two tracks that come into contact with the BNSF rail line. One is located between Bass Lake Road and Corvallis Avenue and generally runs east-west. At this location, the BNSF track crosses the CP track perpendicularly with a diamond crossing. The second track is located at the south end of Alignment D1, where the CP track connects to the BNSF track with a crossover.

Within Alignments A, B, and C, the existing freight rail track is generally at the same elevation as the adjacent roadways. There are 10 at-grade crossings, with active warning devices provided at nine of them (detailed in the Transportation Technical Report (Kimley-Horn and Associates and SRF Consulting Group, 2012)). Passive warning devices are provided at the 40th Avenue at-grade crossing, located within Alignment C.

Between 36th Avenue N and TH 55 in Alignment D1, the freight rail track is located in a 100-foot right-of-way within a “trench” at an elevation that is lower than the adjacent infrastructure. In these areas there are vegetated side slopes on either side of the track and no at-grade crossings. The track crosses under five bridge structures, two of which (Golden Valley Road and Theodore Wirth Parkway) were designed to accommodate a future LRT track. The track located in the remaining portion of Alignment D1 is generally at the same elevation or higher than the adjacent roadways.



Figure 3.2-1. Freight Rail Study Area



### 3.2.4 Environmental Consequences

#### 3.2.4.1 Operating Phase (Long-Term) Impacts

##### No-Build Alternative

No operating phase (long-term) impacts to the freight rail corridor would be associated with the No-Build alternative.

##### Enhanced Bus/TSM Alternative

No operating impacts to the freight rail corridor would be associated with the Enhanced Bus/TSM alternative.

##### Build Alternatives

The Build alternatives include constructing the proposed LRT guideway in the eastern half of the BNSF right-of-way (see discussion under Section 3.2). The project would divide the existing 100-foot right-of-way to accommodate both the BNSF and LRT tracks. This would require that the BNSF track be relocated approximately 25 feet to the west, allowing BNSF to operate within the western 50 feet of the right-of-way while, providing 25 feet of horizontal clearance from the rail track centerline at most locations. The LRT tracks would operate in the eastern 50 feet of the existing right-of-way. Proposed project construction would include a 12-foot wide access road generally located between the relocated BNSF track and the LRT guideway. See [Figure 3.2-2](#) for a typical section diagram.

The Build alternatives include modifications to active warning devices and signals for at-grade crossings in order to accommodate the relocated BNSF and new LRT tracks. This would include relocation of existing active warning devices, such as gate arms, to accommodate the relocated BNSF track and LRT track, and installation of new active warning devices, such as gate arms, at locations where they are not currently provided. The project would include fencing at LRT stations to provide additional separation between pedestrians using the LRT station platform and the freight rail operations. Replacement of existing fence located on the BNSF right-of-way line affected by construction would also be provided.

While BNSF would be required to operate within the western 50 feet of their right-of-way, the incorporation of an access road would improve BNSF's overall accessibility to their track. No additional right-of-way is required to implement the access road. The project is relocating the existing freight track but is not changing the overall configuration or location of the freight track; therefore, no operational changes are anticipated.

[Table 3.2-1](#) provides a summary of the operating impacts of the various alternatives on freight rail.

Further discussion of the impacts and improvements needed to accommodate the relocated freight rail alignment is provided below. Unless otherwise noted, these impacts do not have a permanent impact to freight rail operations.

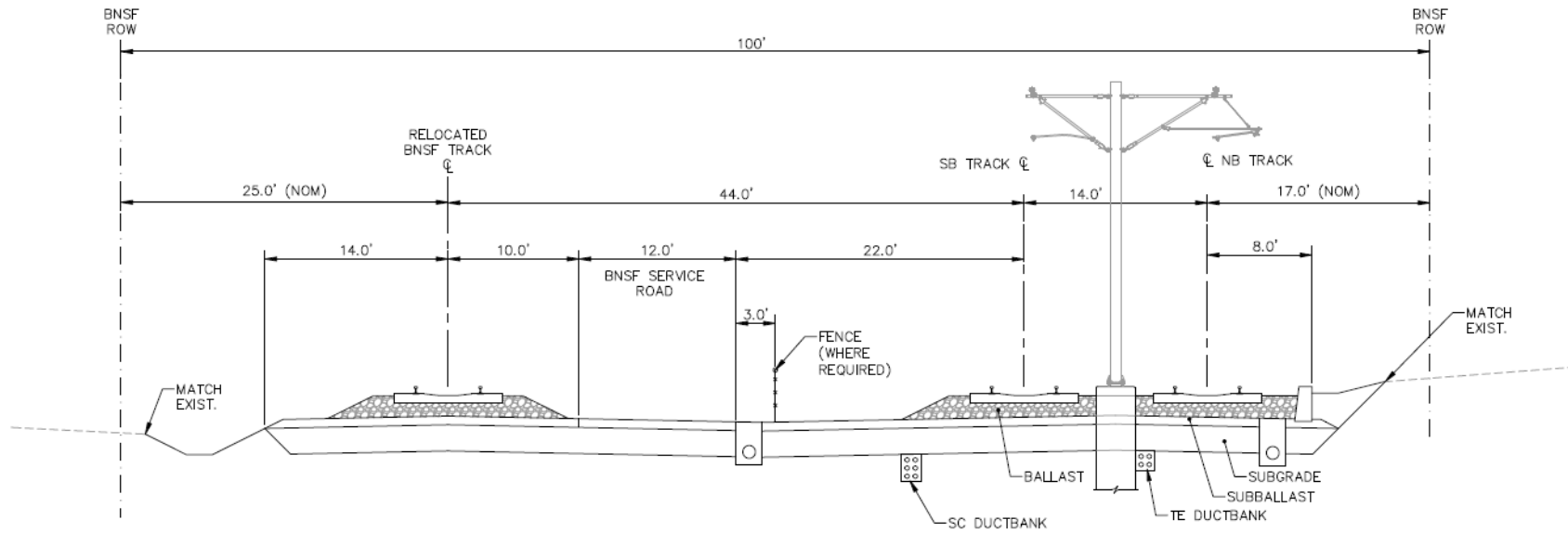
**Table 3.2-1. Operating Phase (Long-Term) Impacts By Alternative – Freight Rail**

Alternative	Total Freight Rail Impact <sup>1</sup>
<b>No-Build</b>	No impact
<b>Enhanced Bus/TSM</b>	No impact
<b>A-C-D1</b>	No direct impact to freight rail operations in Alignments A, C, and D1. Potential impact to CP Rail in Alignments C and D1. <sup>2</sup>
<b>A-C-D2</b>	No direct impact to freight rail operations in Alignment A and C. Potential impact to CP Rail in Alignment C.
<b>B-C-D1 (Preferred Alternative)</b>	No direct impact to freight rail operations in Alignments B, C, and D1. Potential impact to CP Rail in Alignments C and D1.
<b>B-C-D2</b>	No direct impact to freight rail operations in Alignments B and C. Potential impact to CP Rail in Alignment C.

<sup>1</sup>There are no anticipated freight rail impacts associated with the proposed park-and-ride or OMF facilities.

<sup>2</sup>Potential impacts to CP Rail include relocation of an existing diamond crossing where CP Rail and BNSF Railway cross each other north of TH 100 and reconstruction of an existing turnout that provides a connection between CP Rail and BNSF Railway north of TH 55.

Figure 3.2-2. Typical Railway Section (Alignment C)





### Bridge Modifications

As shown in [Table 3.2-2](#), between two and six bridges within the limits of the freight rail corridor may need to be modified, depending on the alternative. Modifications range from slope and retaining wall changes to bridge piers to construction of a new bridge structure. Further details are provided in [Table 3.2-3](#) and in the Transportation Technical Report (Kimley-Horn and Associates & SRF Consulting Group, 2012).

**Table 3.2-2. Location of Potential Bridge Modifications Along Rail Corridor**

Alternative	Potential Bridge Modifications					
	TH 100	36th Avenue	Golden Valley Road	Theodore Wirth Parkway	Plymouth Avenue	TH 55
A-C-D1	X	X	X	X	X	X
A-C-D2	X	X				
B-C-D1 (Preferred Alternative)	X	X	X	X	X	X
B-C-D2	X	X				

**Table 3.2-3. Potential Bridge Modifications**

Alignment	Bridge Location	Proposed Improvements
<b>Alignment C (part of the Preferred Alternative)</b>	TH 100	<p>Provide two separate bridge structures for LRT and BNSF tracks. The existing BNSF bridge structure will be widened to accommodate two LRT tracks and a new BNSF bridge structure will be constructed south of the existing alignment. The BNSF track alignment will be shifted to accommodate the new BNSF bridge structure.</p> <p>BNSF operations would only occur on the new BNSF bridge structure, which they would be required to maintain.</p>
	36th Avenue	<p>The existing slope paving and portions of the embankment would be removed and new retaining walls would be constructed to accommodate the relocated freight rail track. A horizontal clearance of approximately 15 feet would be provided between the existing bridge pier and new retaining wall within the west portal of the bridge structure.</p> <p>Existing piers would require modifications to provide adequate crash wall protection based on current MnDOT and AREMA standards.</p> <p>No change to BNSF operations or maintenance requirements.</p>
<b>Alignment D1 (part of the Preferred Alternative)</b>	Golden Valley Road	<p>Existing slope paving and portions of the embankment would be removed and new retaining walls would be constructed within the west portal to accommodate the relocated freight rail track. The west abutment was designed to accommodate a future track within the west portal of the bridge.</p> <p>Existing piers would require modifications to provide adequate crash wall protection based on current MnDOT and AREMA standards.</p> <p>No change to BNSF operations or maintenance requirements.</p>

**Table 3.2-3. Potential Bridge Modifications (continued)**

Alignment	Bridge Location	Proposed Improvements
	Theodore Wirth Parkway	Existing slope paving and portions of the embankment would be removed and new retaining walls would be constructed within the west portal in order to accommodate the relocated freight rail track. Within the east portal, removal of the existing slope paving and portions of the embankment along with construction of a new retaining wall would occur in order to accommodate the LRT guideway. The west abutment was designed to accommodate a future track within the west portal of the bridge.  Existing piers would require modifications in order to provide adequate crash wall protection based on current MnDOT and AREMA standards.  No change to BNSF operations or maintenance requirements.
	Plymouth Avenue	Existing slope paving and portions of the embankment would be removed and new retaining walls would be constructed within the portal east of the existing track in order to accommodate the LRT guideway.  Existing piers would require modifications in order to provide adequate crash wall protection based on current MnDOT and AREMA standards.  No change to BNSF operations or maintenance requirements.
	TH 55	The north half of the TH 55 Bridge would be reconstructed in order to accommodate the transition of the LRT guideway out of the BNSF right-of-way into the median of TH 55. These bridge reconstruction impacts are not associated with the relocation of the freight rail track.  No change to BNSF operations or maintenance requirements.

***Alignment A***

The BNSF freight rail track would be relocated approximately 25 feet west of its current alignment. South of 71st Avenue, a portion of the BNSF right-of-way is less than 100 feet wide due to the 71st Avenue roadway configuration. This may require installation of a barrier between the existing roadway (back of sidewalk) and freight rail track. Existing sidings that are located south of Brooklyn Boulevard are currently out of service, and in some cases not connected to the existing freight track. The relocated freight track may need to reconnect these existing sidings, if service to these customers is anticipated to resume.

***Alignment B (part of the Preferred Alternative)***

The BNSF freight rail track would be relocated approximately 25 feet west of its current alignment. South of 71st Avenue, a portion of the BNSF right-of-way is less than 100 feet wide due to the 71st Avenue roadway configuration. This may require installation of a barrier between the existing roadway (back of sidewalk) and freight rail track. Existing sidings that are located south of Brooklyn Boulevard are currently out of service, and in some cases not connected to the existing freight track. The relocated freight track may need to reconnect these existing sidings, if service to these customers is anticipated to resume.

***Alignment C (part of the Preferred Alternative)***

The BNSF freight rail track would be relocated 25 feet west of its current alignment. The existing diamond crossing that is located at the BNSF/CP Railway at-grade intersection would require relocation as part of shifting the freight rail track. The southern portion of Alignment C is located within the “trench” described

previously. In some areas, retaining walls would replace the existing vegetated side slopes on either side of the BNSF railroad corridor to accommodate the relocated freight rail track and minimize adjacent property impacts.

The existing BNSF bridge that crosses over TH 100 would require modifications to accommodate the LRT guideway, and a new BNSF bridge would be constructed south of the existing bridge. Two bridge structures are proposed to minimize construction impacts to BNSF operations. This would allow BNSF to utilize the existing bridge structure until the new bridge structure is constructed. Once constructed, BNSF would transition to the new bridge structure allowing the existing bridge structure to be widened for the LRT guideway. See [Table 3.2-3](#) for proposed modifications.

The 36th Avenue Bridge, which is located at the south end of Alignment C, would require modifications to accommodate the relocated freight rail track and LRT guideway, including new retaining walls and some modifications to existing piers to provide adequate crash wall protection (see [Appendix E](#) for additional detail). Unlike some of the bridges located within Alignment D1, this bridge was not designed to accommodate a future track within the west portal. See [Table 3.2-3](#) for proposed modifications.

#### ***Alignment D1 (part of the Preferred Alternative)***

Alignment D1 is located within the “trench” described previously. In some locations, retaining walls would replace the existing vegetated side slopes on either side of the BNSF railway corridor to accommodate the relocated freight rail track and elevation difference and to minimize adjacent property impacts. At Plymouth Avenue and TH 55, the proposed freight rail alignment transitions to the existing alignment to minimize impacts to existing bridge structures. The Golden Valley Road Bridge, Theodore Wirth Parkway Bridge, Plymouth Avenue Bridge, and TH 55 Bridge would all require modifications in order to accommodate the relocated freight rail track and LRT guideway. See [Table 3.2-3](#) for proposed modifications.

The existing crossover located north of TH 55 at the south end of Alignment D1 would require reconstruction to accommodate the relocated freight rail track.

#### ***Alignment D2***

Freight rail impacts associated with Alignment D2 would be minimal and would be located at the northerly end of Alignment D2 where the alignment exits the BNSF right-of-way at 34th Avenue. North of 34th Avenue the freight rail track would be relocated generally 25 feet west of its existing alignment to accommodate the LRT guideway. South of 34th Avenue, the freight rail track would transition back to its existing alignment, which is generally located in the center of the BNSF right-of-way.

#### ***Alignment D Common Section (part of the Preferred Alternative)***

There are no impacts associated with freight rail in the Alignment D Common Section.

#### ***Traction Power Substations***

TPSS sites would be located on the east side of the proposed LRT track, with a minimum horizontal clearance between the TPSS stations and the LRT track centerline of eight feet. Larger horizontal clearances, a minimum of 15 feet, would be required if located adjacent to the BNSF freight rail track. However, they could be located on property adjacent to the tracks to avoid or minimize impacts to the freight rail tracks. Depending on the location of the TPSS site, utilities may need to cross under or over the freight rail tracks. Vertical and horizontal clearances, as required by the BNSF Utility Accommodation Policy, would need to be maintained for these utility crossings.

### **3.2.4.2 Construction Phase Impacts**

#### **No-Build Alternative**

No construction phase impacts to freight rail are associated with the No-Build alternative.

### Enhanced Bus/TSM Alternative

No construction phase impacts to freight rail are associated with the Enhanced Bus/TSM alternative.

### Build Alternatives

Construction activities required to relocate the freight rail track, located within Alignments A, B, C and D1, required as part of constructing the LRT guideway, would affect existing freight service within the corridor. Construction phase impacts would be minimized through phasing, which would allow freight rail operations to continue throughout the duration of construction. Construction phasing would likely consist of constructing the new freight rail track adjacent to the existing track, shifting freight rail operations to the new freight rail track and then removing the existing freight rail track to allow for construction of the LRT guideway. Grade crossing improvements will likely be constructed during 48-hour weekend closures (for road and civil work). Construction signage and traffic control devices will be provided and vehicular/pedestrian traffic will be detoured around the grade crossing construction zone. Bridge modifications identified at 36th Avenue, Golden Valley Road, Theodore Wirth Parkway and Plymouth Avenue are located under the bridge deck and would have a minimal impact to general traffic and bike/pedestrian movements. Relative to modifications to the existing BNSF bridge over TH 100, construction/modifications to the bridge structures would not physically occur on TH 100 and should have a minimal impact to vehicular traffic on TH 100. It is anticipated that some lane closures may be required to construct the bridge, but a complete roadway closure is not anticipated.

It is anticipated that the majority of the construction work associated with relocating the freight rail track would occur during the traditional construction season when ambient temperatures remain above freezing. Some work, such as bridge, retaining wall piling and foundation work may be able to occur during the winter months.

Construction activities associated with relocation of the freight rail track will primarily occur within the existing BNSF Railway right-of-way, with some temporary easements to accommodate construction outside of the in-place railroad right-of-way.

Impacts to vehicular traffic on TH 100 would occur during construction of the two bridge structures over TH 100. It is anticipated that these impacts would not be significant and may require lane closures during portions of the construction.

Construction activities may also result in temporary impacts to sidings used by freight customers. Temporary crossovers between the existing and relocated freight rail track would be required to facilitate construction phasing and maintain freight operations. Construction of these crossovers would occur to minimize impacts to freight rail operations within the corridor. Construction impacts associated with each alternative are shown in [Table 3.2-4](#).

**Table 3.2-4. Construction Impacts by Alternative – Freight Rail**

Alternative	Total Freight Rail Impact <sup>1</sup>
No-Build	No impact
Enhanced Bus/TSM	No impact
A-C-D1	Operational impact during construction associated with track relocation in Alignments A, C, and D1
A-C-D2	Operational impact during construction associated with track relocation in Alignments A and C. Minor impact at the north end of Alignment D2.
B-C-D1 (Preferred Alternative)	Operational impact during construction associated with track relocation in Alignments B, C, and D1
B-C-D2	Operational impact during construction associated with track relocation in Alignments B and C. Minor impact at the north end of Alignment D2.

<sup>1</sup> There are no anticipated freight rail construction impacts associated with the proposed park-and-ride or OMF facilities.



Construction of Alignments C and D1, as well as the southerly portions of Alignments A and B, would result in temporary impacts and interruptions in freight rail service that would be required as part of relocating and reconstructing the existing freight rail infrastructure. Freight rail operations would be temporarily interrupted when operations shift from the existing freight rail line to the new freight rail track. Coordination with BNSF Railway would be conducted to minimize impacts during construction.

### **3.2.5 Avoidance, Minimization, and/or Mitigation Measures**

Where existing freight rail track is relocated, conditions would be improved compared to the existing rail infrastructure through providing continuously welded rail (CWR) and a new service road adjacent to the relocated freight rail track.

Mitigation measures, such as construction phasing to minimize track outages, would be taken to minimize impacts to existing freight rail operations during construction. Coordination with BNSF Railway and CP Rail would continue through the National Environmental Policy Act (NEPA) process and beyond to affirm appropriate mitigation measures.

## **3.3 Vehicular Traffic**

Information included in this section is based on the information provided in the Traffic Technical Report (Kimley-Horn and Associates, 2012).

### **3.3.1 Regulatory Context and Methodology**

The approach to the traffic operations analysis is derived from the established methodologies documented in the Highway Capacity Manual (HCM). The HCM contains a series of analysis techniques for evaluating the operations of transportation facilities under various operating conditions, such as geometric configuration, intersection control, type of roadway facility, and other factors such as bus stops, parking maneuvers, and percentage of heavy vehicle traffic. The Bottineau Transitway traffic models have been developed using Synchro/SimTraffic and VISSIM, software packages that implement the HCM methodologies. The inputs into the models include lane geometrics, existing and forecast<sup>3</sup> turning movement volumes, intersection traffic control devices, and signal timing characteristics. The level of service (LOS) thresholds, as defined by the HCM, are shown in [Table 3.3-1](#). Based on standard practice in the traffic engineering industry, as well as guidance from the American Association of State Highway and Transportation Officials (AASHTO) and conformance with MnDOT and Hennepin County practice, the threshold for acceptable level of intersection operations is between LOS D and LOS E (with LOS D being considered acceptable and LOS E unacceptable) during the peak hour for urban and suburban areas. The PM peak hour was analyzed as the worst case scenario based on the higher traffic volumes during the PM peak hour compared to the AM peak hour. In addition, initial capacity analysis at selected intersections along the corridor showed that the intersections had higher delays during the PM peak hour compared to the AM peak hour due to the higher overall traffic volumes and greater demand/capacity ratios.

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<sup>3</sup> City and county comprehensive plans were used to identify the 2030 forecasts that were used for the traffic modeling.

**Table 3.3-1. Intersection Level of Service Definitions**

Level of Service (LOS)	Average Delay (seconds/vehicle)	
	Signalized Intersection	Unsignalized Intersection
<b>A</b>	<10	<10
<b>B</b>	10-20	10-15
<b>C</b>	20-35	15-25
<b>D</b>	35-55	25-35
<b>E</b>	55-80	35-50
<b>F</b>	>80	>50

Source: Highway Capacity Manual 2010, Transportation Research Board.

The traffic operations analysis has also incorporated the requirements and standards documented in the Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD) relative to requirements for signal preemption (manipulation of traffic signals to provide green lights for priority vehicles) and gate operations.

All full-access intersections with the transitway (i.e., locations where all vehicular movements are allowed) were assumed to be signalized to provide safe movement of transit light rail vehicles (LRV) and motorized vehicles. In addition, at-grade roadway crossings with transit LRV speeds greater than 35 mph would be equipped with automatic gates, based on the MN MUTCD standards.

### 3.3.2 Study Area

The analysis of traffic operations for the Bottineau Transitway Project included existing and proposed signalized intersections along the Bottineau Transitway alternative alignments. In addition, several unsignalized crossings of the transitway that would be controlled with automatic gates have been included in the analysis.

### 3.3.3 Affected Environment

The regional highway system consists of principal and minor arterials, including Interstate, state highways, and county highways, and some city streets. The *Metropolitan Council 2030 TPP* indicates that the existing roadway network is expected to experience a substantial increase in automobile demand by the year 2030, with a regional forecast of 91.2 million daily VMT, an increase of 37 percent compared to 2005 VMT. This would equate to an approximate average growth of 1.5% per year.

Although the opportunities for roadway expansion to address this increase in VMT are limited within the study area, several roadway improvement projects are planned within the study area by 2030:

- CSAH 103 (West Broadway Avenue) Reconstruction, south of Candlewood Drive to north of CSAH 30 (93rd Avenue) – Capacity expansion from two lanes to four lanes (Hennepin County Transportation)
- CSAH 81 Reconstruction, CSAH 10 (Bass Lake Road) to CSAH 30 (Hennepin County Transportation)
- Candlewood Drive Extension, CSAH 103 to 79th Avenue (City of Brooklyn Park)
- TH 610, CSAH 81 to I-94 – New roadway construction (MnDOT)

### 3.3.4 Environmental Consequences

#### 3.3.4.1 Operating Phase (Long-Term) Impacts

##### No-Build Alternative

The results of the 2030 No-Build traffic analysis provide a basis from which to determine the impacts of the Bottineau Transitway Project. The intersections shown in [Table 3.3-2](#) fall into one of two categories:

- The intersection operates at unacceptable levels (LOS E or F) under the future No-Build conditions.
- There are concerns at the intersection relative to the operations in the future Build conditions, and therefore there is a need for comparison to determine the impacts due to background growth and changes and the impacts due to the Bottineau Transitway Project.

The results of the 2030 No-Build analysis for the PM peak hour are shown in [Table 3.3-2](#). More detailed analysis and results discussion are provided in the Traffic Technical Report (Kimley-Horn and Associates, 2012).

**Table 3.3-2. No-Build 2030 PM Peak Traffic Operations**

Intersection	Vehicle Delay (seconds/vehicle)	Intersection LOS
CSAH 81 at Penn Ave/McNair Ave	84	F
TH 55 at Penn Ave	150+	F
TH 55 at W Lyndale Avenue (I-94 West Ramps) <sup>1</sup>	29	C
TH 55 at E Lyndale Avenue (I-94 East Ramps) <sup>1</sup>	26	C

<sup>1</sup>Although the TH 55/Lyndale intersections operate at acceptable levels (LOS C), they are included for comparison to the 2030 Build conditions.

##### Enhanced Bus/TSM Alternative

The Enhanced Bus/TSM alternative would not be expected to have any significant operating phase (long-term) impacts because the Enhanced Bus/TSM alternative is very comparable to the No-Build alternative from a traffic operations perspective. The increase in the number of transit vehicles, transit stops, and potential transit signal priority along CSAH 81 may have minor effects on traffic flow and vehicle delay but are not expected to be significant. Therefore, traffic operations were not analyzed for the Enhanced Bus/TSM alternative because the analysis would not provide additional information relative to identifying impacts of the Bottineau Transitway Project.

##### Build Alternatives

The summary of intersections expected to operate at LOS E or LOS F in the 2030 PM peak hour Build conditions is provided in [Table 3.3-3](#). In general, all intersections would be expected to have acceptable operations under any of the Build alternatives. The LOS E/F operations at the CSAH 81/ CSAH 2 (Penn Avenue) and Penn Avenue/TH 55 intersections during the PM peak hour would be expected to occur in 2030 even if the Bottineau Transitway Project was not constructed.

**Table 3.3-3. Impacts By Alternative – Traffic Operations**

Alternative	Intersections Expected to Operate at LOS E/F
No-Build	CSAH 81 at Penn Avenue Penn Avenue at TH 55
Enhanced Bus/TSM	No impacts
A-C-D1	Penn Avenue at TH 55
A-C-D2	CSAH 81 at Penn Avenue Penn Avenue at TH 55
B-C-D1 (Preferred Alternative)	Penn Avenue at TH 55
B-C-D2	CSAH 81 at Penn Avenue Penn Avenue at TH 55

A description of potential impacts by the component alignments that make up each alternative is provided below. More detailed presentation of the analysis results is provided in the Traffic Technical Report (Kimley-Horn and Associates, 2012).

#### *Alignment A*

The intersections in Alignment A affected by the proposed action would be expected to operate acceptably during the PM peak hour. The results of this analysis are shown in [Table 3.3-4](#). The future Arbor Lakes Parkway intersections were not modeled because it has been assumed that the roadway would be designed with adequate geometrics to accommodate future transit operations. The transitway operating speed along Arbor Lakes Parkway would be 35 mph, and therefore the signals would be anticipated to operate under transit priority.

The CSAH 81 and CSAH 130 (Brooklyn Boulevard) intersection would be expected to operate at or near capacity (LOS E). However, this is not due to any effect caused by the operations of the Bottineau Transitway because the transitway would be grade-separated over CSAH 130. The grade separation would eliminate any potential influence of transit operations on the overall intersection operations at this location. The other intersections analyzed in Alignment A would be expected to have acceptable operations during the peak hour.

In Alignment A, three public intersections would be converted from full access to right-in/right-out.<sup>4</sup> In addition, three traffic signals are to be added along the proposed Arbor Lakes Parkway, and two signalized crossings with gates would be added at 73rd and 71st Avenues.

<sup>4</sup> Right-in/right-out intersections do not permit left turns or through movements.



**Table 3.3-4. Alignment A 2030 PM Peak Traffic Operations**

Intersection	Operations			Comments
	Assumed Traffic Signal Operating Scheme	Vehicle Delay (seconds/vehicle)	Intersection LOS	
CSAH 130 at Boone Avenue	Transit Priority	41	D	
CSAH 81 at CSAH 130	No transit interaction	60	E	Bottineau Transitway grade separated over CSAH 130
CSAH 81 at 73rd Avenue	Preemption	31	C	
CSAH 81 at 71st Avenue/CSAH 8	Preemption	50	D	

**Alignment B (part of the Preferred Alternative)**

Alignment B includes CSAH 103, which is currently in the planning stages for a roadway reconstruction project from north of CSAH 30 to south of Candlewood Drive. The proposed roadway improvement project is a Hennepin County project, separate from the Bottineau Transitway Project, and includes expanding the roadway from a two-lane undivided to a four-lane divided section with a median wide enough to accommodate a future transportation purpose. Construction activities for the CSAH 103 roadway improvements are scheduled for late 2015.

The intersections in Alignment B affected by the proposed action would be expected to operate acceptably during the PM peak hour Build alternative. The results of this analysis are shown in [Table 3.3-5](#).

Seven public intersections would be converted from full access to right-in/right-out in Alignment B. Five new traffic signals would also be added, with a potential for two additional traffic signals with the 101st Avenue OMF Alternative. Two traffic signals would be removed and the intersections would be converted to right-in/right-out. In addition, Alignment B would include two at-grade crossings on Jolly Lane and Lakeland Avenue. Similar to Alignment A, one signalized crossing with gates would be included at 71st Avenue.

**Table 3.3-5. Alignment B 2030 PM Peak Traffic Operations**

Intersection	Operations			Comments
	Assumed Traffic Signal Operating Scheme	Vehicle Delay (seconds/vehicle)	Intersection LOS	
CSAH 103 at 94th Avenue	Preemption	28	C	Diagonal crossing
CSAH 103 at CSAH 30	Preemption	42	D	Diagonal crossing
CSAH 103 at Setzler Parkway	Preemption	17	B	
CSAH 103 at CSAH 109	Preemption	47	D	
CSAH 103 at College Park Drive	Preemption	22	C	
CSAH 103 at Candlewood Drive	Preemption	17	B	
CSAH 103 at CSAH 152 (Brooklyn Boulevard)	Preemption	53	D	

**Table 3.3-5. Alignment B 2030 PM Peak Traffic Operations (continued)**

Intersection	Operations			Comments
	Assumed Traffic Signal Operating Scheme	Vehicle Delay (seconds/vehicle)	Intersection LOS	
<b>CSAH 103 at 76th Avenue</b>	Preemption	28	C	
<b>CSAH 81 at 73rd Avenue</b>	Preemption	12	B	Diagonal crossing
<b>CSAH 81 at 71st Avenue/ CSAH 8</b>	Preemption	50	D	

***Alignment C (part of the Preferred Alternative)***

The intersections in Alignment C affected by the proposed action would be expected to operate acceptably during the PM peak hour Build alternative. The results of this analysis for the PM peak hour Build alternative are shown in [Table 3.3-6](#).

The queues at the CSAH 9 (42nd Avenue) and CSAH 8 (West Broadway Avenue) intersection were also evaluated to determine whether there would be any safety issues due to vehicle queues from the signal extending to the at-grade transitway crossing. The modeling showed that the maximum eastbound queue on CSAH 9 from the CSAH 8 intersection would be approximately 210 feet compared to a storage distance of 350 feet. Therefore, no operational or safety impacts would be expected at the intersection or the grade crossing due to the Bottineau Transitway.

Alignment C does not include any access closures or modifications, but eight crossings are proposed to become signalized with gates.

**Table 3.3-6. Alignment C 2030 PM Peak Traffic Operations**

Intersection	Operations			Comments
	Assumed Traffic Signal Operating Scheme	Vehicle Delay (seconds/vehicle)	Intersection LOS	
<b>CSAH 81 at 63rd Avenue</b>	Preemption	53	D	
<b>CSAH 81 at CSAH 10</b>	Preemption	29	C	
<b>CSAH 9 at Transitway</b>	Unsignalized; Automatic Gates	2	A	

***Alignment D1 (part of the Preferred Alternative)***

The Bottineau Transitway would be grade separated from the roadway crossings through most of Alignment D1, including at the transition into the median at TH 55. The intersections in Alignment D1 affected by the proposed action would be expected to operate acceptably during the PM peak hour Build alternative, with the exception of the TH 55/Penn Avenue intersection. The results of this analysis are shown in [Table 3.3-7](#).

The TH 55/Penn Avenue intersection would be expected to operate at LOS E in the 2030 Build conditions; however, this would be an improvement over the 2030 No-Build operations. The improvement in intersection operations would be the result of intersection geometric improvements constructed as part of the Bottineau Transitway Project that allow the northbound/southbound phases to operate concurrently, rather than split phased as they do now. The intersection geometric improvements would include median modifications, realignment of the northbound and southbound approach lanes, and additional striping to guide left-turning vehicles through the intersection.

Alignment D1 includes one public access modification along TH 55, west of the Alignment D Common Section. Existing operations at Russell Avenue N allow southbound left turns onto TH 55 which would be restricted with the Bottineau Transitway. Alignment D1 also includes one new traffic signal at TH 55 and Thomas Avenue.

**Table 3.3-7. Alignment D1 2030 PM Peak Traffic Operations**

Intersection	Operations			Comments
	Assumed Traffic Signal Operating Scheme	Vehicle Delay (seconds/vehicle)	Intersection LOS	
TH 55 at Penn Avenue	Priority	60	E	

#### *Alignment D2*

The D2 alignment along CSAH 81 would include a single traffic lane in each direction from 29th Avenue N to Penn Avenue. Therefore, left-turn movements along the alignment would be prohibited where left-turn lanes could not be provided, due to conflicts with the movement of light rail vehicles, at the following intersections:

- CSAH 81 and 29th Avenue
- CSAH 81 and 26th Avenue
- CSAH 81 and Penn Avenue (west side of intersection)

The intersections in Alignment D2 affected by the proposed action would be expected to operate acceptably during the PM peak hour Build alternative, with the exception of the CSAH 81/Penn Avenue and TH 55/Penn Avenue intersections. The results of this analysis are shown in [Table 3.3-8](#). The TH 55/Penn Avenue intersection would be expected to operate at LOS E in the 2030 Build conditions; however, this would be an improvement over the 2030 No-Build operations. The improvement in intersection operations would be the result of intersection geometric improvements constructed as part of the Bottineau Transitway Project that allow the northbound/southbound phases to operate concurrently, rather than split-phased as they do now (i.e. northbound is allowed to go, then stops and allows southbound to go). The intersection geometric improvements would include median modifications, realignment of the northbound and southbound approach lanes, and additional striping to guide left-turning vehicles through the intersection. The impacts of Alignment D2 on the Penn Avenue intersections at CSAH 81 and TH 55 are expected to be greater than the impacts of Alignment D1 due to the changes in approach geometrics and the crossing of the alignment diagonally through the intersection.

In Alignment D2, nine public intersections would be converted from full access to right-in/right-out, and two full access intersections would be converted to cul-de-sac. In addition, the CSAH 81/Penn Avenue intersection would remain full access except the fifth leg, the McNair Avenue approach, would be converted to right-in/right-out with access from Penn Avenue. Similarly, the CSAH 81/26th Avenue intersection would remain full access except for the fifth leg, the southbound Sheridan Avenue approach, would be converted to right-in/right-out. The CSAH 81/27th Avenue/Thomas Avenue intersection would also require access modifications due to the Bottineau Transitway. At the intersection, the eastbound 27th Avenue approach would be converted to right-in/right-out, the northbound Thomas Avenue approach would be converted to cul-de-sac, and the westbound 27th Avenue approach would be closed and routed into the southbound Thomas Avenue approach.

In addition, Alignment D2 would include one new traffic signal at Penn Avenue and 23rd Avenue. Three traffic signals would be removed and the intersections converted to right-in/right-out, and one at-grade crossing would be included at France Avenue.

**Table 3.3-8. Alignment D2 2030 PM Peak Traffic Operations**

Intersection	Operations			Comments
	Assumed Traffic Signal Operating Scheme	Delay (seconds/vehicle)	Intersection LOS	
France Avenue/Oakdale Avenue at 34th Avenue	Priority	11	B	
CSAH 81 at 29th Avenue	Priority	7	A	Left-turn movements on CSAH 81 would be prohibited
CSAH 81 at 26th Avenue	Priority	19	B	Left-turn movements on CSAH 81 would be prohibited
CSAH 81 at Penn Avenue	Priority	56	E	Eastbound left-turn movements on CSAH 81 would be prohibited
Penn Avenue at Golden Valley Rd	Priority	32	C	
Penn Avenue at Plymouth Avenue	Priority	49	D	
Penn Avenue at TH 55	Priority	79	E	Right angle crossing between north and east legs of intersection

***Alignment D Common Section (part of the Preferred Alternative)***

The Build conditions at the TH 55/7th Street/6th Avenue intersection would include improvements on 7th Street to provide two northbound left-turn lanes and a southbound left-turn lane, in addition to two through lanes and a bike lane in each direction. These improvements would be needed for the intersection to operate at LOS D or better in the peak hour.

The intersections in the Alignment D Common Section affected by the proposed action would be expected to operate acceptably during the PM peak hour Build alternative. The results of this analysis are shown in [Table 3.3-9](#). The pedestrian crossing of TH 55 on the west side of West Lyndale Avenue was assumed to be eliminated due to the number of lanes that would need to be crossed and the resulting number of vehicle conflicts and poor signal operations. The operation of the TH 55/West Lyndale Avenue and TH 55/East Lyndale Avenue intersections with one or two traffic signal controllers would also need further exploration in future phases of the project.

Several movements at the TH 55/West Lyndale Avenue and TH 55/East Lyndale Avenue intersections would be expected to operate at LOS E or LOS F in the 2030 PM peak hour. This was mainly due to the high traffic volumes at both intersections and the change in left-turn phasing on TH 55 from protected/permissive to protected only, which would be necessary to protect left-turn movements from conflicts with LRT. The left-turn phasing combined with the short distance between the two intersections would be expected to result in queues that extend through the upstream ramp intersection. However, the queues would primarily occur on TH 55 and would not impact the freeway operations or the intersections at Bryant Avenue and Border Avenue/Oak Lake Avenue. Based on the operation of the overall intersections at LOS D or better, no mitigation would be proposed at the TH 55/West Lyndale Avenue or TH 55/East Lyndale Avenue intersections.

One public intersection would be converted from full access to right-in/right-out in the Alignment D Common Section. No traffic control modifications would be necessary.



**Table 3.3-9. Alignment D Common Section 2030 PM Peak Traffic Operations**

Intersection	Operations			Comments
	Assumed Traffic Signal Operating Scheme	Delay (seconds/ vehicle)	Intersection LOS	
TH 55 at Van White Memorial Blvd	Priority	34	C	
TH 55 at Bryant Avenue	Priority	18	B	
TH 55 at West Lyndale Avenue (I-94 West Ramps)	Priority	44	D	Pedestrian crossing on west leg eliminated
TH 55 at East Lyndale Avenue (I-94 East Ramps)	Priority	42	D	
TH 55 at Border Avenue/ Oak Lake Avenue	Priority	20	C	
TH 55/6th Avenue at 7th Street	Priority	38	D	
6th Avenue at Bradford St/Hennepin Energy Recovery Center (HERC) driveway	No transit interaction	9	A	Bottineau Transitway grade separated over roadway

#### *Park and Ride Facilities*

Several new or expanded park and ride facilities are proposed as part of the Bottineau Transitway Project. Based on data collected from other park and ride facilities in the Twin Cities Metropolitan Area, vehicle trip generation rates have been developed for the AM peak hour, PM peak hour, and weekday: 0.55 trips/parking space in the AM peak hour; 0.51 trips/parking space in the PM peak hour; and 2.63 trips/parking space for a weekday. These trip rates include park and ride vehicle traffic, as well as kiss and ride vehicle traffic.

Given that the station area plans, which would include the park and ride facilities, have not yet been developed a full traffic analysis of these facilities has not yet been conducted. However, a trip generation evaluation, shown in [Table 3.3-10](#), was conducted to identify the number of new vehicle trips expected to be added to the roadway network as a result of the proposed park and ride facilities. Potential roadway improvements such as turn lanes or additional intersection control may be needed to accommodate the additional traffic generated by the park and ride. These measures would need to be identified based on the detailed analysis of the station area sites, which would be completed during the Final EIS phase of the project.

**Table 3.3-10. Park-and-Ride Facility Trip Generation (Preferred Alternative)**

Station Name	New Park and Ride Size (parking spaces)	AM Peak Trip Generation (vehicles/ hour)	PM Peak Trip Generation (vehicles/ hour)	Daily Trip Generation (vehicles/day)
63rd Avenue	160	88	80	421
Robbinsdale	500	275	255	1,310
93rd Avenue	800	440	408	2,096

### 3.3.4.2 Construction Phase Impacts

#### No-Build Alternative

The No-Build alternative would not be expected to have any construction phase impacts on traffic operations in the project area.

#### Enhanced Bus/TSM Alternative

The Enhanced Bus/TSM alternative would not be expected to have any construction phase impacts on traffic operations in the project area.

#### Build Alternatives

For all alignments, construction of the Bottineau Transitway Project would be expected to result in disruptions to traffic operations, including lane closures, short-term intersection and roadway closures, and detours that would cause localized increases in congestion.

The details of construction staging would be developed in future stages of project design. Maintenance of traffic (MOT) plans would be required to be developed during final design or construction and submitted for approval to the roadway authorities. The MOT plans would address construction phasing, maintenance of traffic, traffic signal operations, access through the work zone, any road closures, and any traffic detours.

### 3.3.5 Avoidance, Minimization, and/or Mitigation Measures

Intersections along the Bottineau Transitway would be expected to have acceptable operations in the 2030 peak hour with any of the alternatives. The CSAH 81/Penn Avenue and TH 55/Penn Avenue intersections are expected to operate at LOS F under the 2030 No-Build conditions. However, any of the Build alternatives would include improvements to the TH 55/Penn Avenue intersection, including signal phasing, median, lane alignment, and striping changes, as part of the Bottineau Transitway Project for LRT to operate more efficiently through the intersection.

The TH 55/7th Street/6th Avenue intersection would necessitate geometric improvements to maintain acceptable LOS operations for all alternatives. 7th Street would need to be widened to construct a second exclusive northbound left-turn lane and a southbound left-turn lane, which would provide additional capacity and improve the signal phasing. The overall roadway width would be increased by less than 10 feet, and will allow the northbound and southbound pedestrian phases to operate together rather than split phased. These improvements would be expected to maintain acceptable LOS with the projected traffic growth.

## 3.4 Pedestrians and Bicycles

Information included in this section is based on the information provided in the Transportation Technical Report (Kimley-Horn and Associates & SRF Consulting Group, 2012).

### 3.4.1 Regulatory Context and Methodology

This section describes bicycle and pedestrian facilities, connections in the project corridor, and potential impacts of the No-Build, Enhanced Bus/TSM, and Build alternatives on these facilities.

Non-motorized transportation facilities, including sidewalks, single- and multi-use trails, on-street bike facilities, and pedestrian bridges, are found throughout the project area. Facilities were identified by reviewing trail and comprehensive plan maps, aerial photography, and site visits. Conceptual engineering drawings and preliminary construction limits were used to determine the number and severity of impacts. Potential physical encroachments onto existing facilities were identified and measured to avoid or minimize impacts.

Impacts to pedestrian and/or bicycle routes due to transitway crossing restrictions were identified and alternates examined. Existing pedestrian and bicycle safety characteristics at transitway crossings and measures to improve safety are also addressed. Determination of impacts was made by evaluating the location of the pedestrian or bicycle facility and its connection to the pedestrian and bicycle network in relation to the Bottineau Transitway alternative. If the pedestrian or bicycle facility was disturbed by transitway construction or operations, nearby alternatives were identified or mitigation proposed. These characteristics and measures would be used to inform station area planning or other corridor activities for non-motorized facility improvements. Impacts to publicly-owned recreational facilities, including parks and regional trails, are further analyzed in the Chapter 8, Draft Section 4(f) Evaluation.

Hennepin County adopted a Complete Streets policy in 2009 to promote a safe, efficient, and balanced transportation system among all modes of transportation (including auto, transit, bike, pedestrian, and others). The context of the impacts and mitigations described in this section reflect the flexibility of the policy in addressing multi-modal needs.

### **3.4.2 Study Area**

The study area for impacts to non-motorized transportation consists of the potential area of disturbance, facilities near the alignment, and alternate routes in the surrounding area. The study area for alternate routes varied based on the conditions of the surrounding bicycle/pedestrian network but generally included alternate routes within a half mile of the transitway and/or affected crossing.

### **3.4.3 Affected Environment**

The extent and condition of existing pedestrian and bicycle facilities in the study area vary by alternative. Facilities range from non-existent in the gravel mining area of Maple Grove to intermittent facilities in the more suburban areas of the corridor to complete sidewalk systems and on-street bicycle facilities in Minneapolis and the other more urban portions of the corridor. A detailed description of existing facilities is provided in the Transportation Technical Report (Kimley-Horn and Associates & SRF Consulting Group, 2012).

### **3.4.4 Environmental Consequences**

#### **3.4.4.1 Operating Phase (Long-Term) Impacts**

##### **No-Build Alternative**

The No-Build alternative is not expected to have any operating phase (long-term) impacts on the non-motorized transportation environment in the project area.

##### **Enhanced Bus/TSM Alternative**

The Enhanced Bus/TSM alternative is not expected to have any operating phase (long-term) impacts on the non-motorized transportation environment in the project area.

##### **Build Alternatives**

A description of potential impacts by the component alignments that make up each alternative is provided below. These impacts are illustrated in [Figure 3.4-1](#) through [Figure 3.4-5](#), and impacts by alternative are summarized in [Table 3.4-1](#).

##### **Alignment A**

One unmarked pedestrian crossing would be closed at Xylon Avenue and Brooklyn Boulevard. This would be a minor impact, as Xylon Avenue is a dead-end street at this location both north and south of Brooklyn

Boulevard with little connectivity beyond the destinations directly served by the street. Diversion would be about  $\frac{1}{5}$  mile east to the Brooklyn Boulevard/Bottineau Boulevard intersection.

At the Hemlock Lane transit station, a connection to an existing north-south off-street trail along Hemlock Lane would be provided.

***Alignment B (part of the Preferred Alternative)***

Alignment B would result in closing four crossings of West Broadway Avenue in the city of Brooklyn Park: 92nd Avenue, Maplebrook Parkway, 84th Avenue, and 76th Avenue. Alternate crossings are available in each location within  $\frac{1}{8}$  mile.

The OMF option at 101st Avenue could potentially require realignment of a small portion of the unpaved trail associated with the Three Rivers Park District Rush Creek Regional Trail.

The proposed project and planned improvements by other agencies would result in considerable enhancement of the non-motorized transportation environment within Alignment B. New or improved sidewalk crossings of the BNSF/LRT alignment would be included in final design of the transitway at 73rd Avenue. The existing off-street trails on both sides of West Broadway Avenue north of 93rd Avenue would be crossed by the proposed LRT alignment in vicinity of 94th Avenue. Any direct impacts to the trails would be reconstructed. South of 93rd Avenue, a continuous bicycle/pedestrian facility between 93rd Avenue and Candlewood Drive is included in the design plans for the CSAH 103 reconstruction project, which has been programmed independent of Bottineau Transitway and will be completed by Hennepin County. Reconstruction of the sidewalks south of Candlewood Drive would be completed by the Bottineau Transitway Project, providing for continuous facilities along both sides of West Broadway Avenue for the entire alignment.

***Alignment C (part of the Preferred Alternative)***

The project would not result in permanent closure of any existing bicycle or pedestrian crossings of the BNSF railroad corridor. The transitway would pass over a local trail on a continuous structure also used for TH 100. The project's construction limits would come within 10 feet of the existing trail in Lee Park but would not alter the trail itself. As a result, no impacts to pedestrian or bicycle access or facilities are expected.

The project would improve existing pedestrian crossings and facilitate connections to station platforms. New or improved sidewalk crossings of the BNSF/LRT corridor would be included in final design of the transitway at nine locations: 71st Avenue, 63rd Avenue, Bass Lake Road, Corvallis Avenue (replacing existing sidewalk on south side of roadway), West Broadway Avenue, 45th  $\frac{1}{2}$  Avenue (sidewalk on south side of roadway), 42nd Avenue (with connection to LRT station parallel to BNSF track), 41st Avenue/Noble Avenue (with connection to LRT station parallel to BNSF track), and 39th  $\frac{1}{2}$  Avenue (new sidewalk on north side of roadway).

***Alignment D1 (part of the Preferred Alternative)***

Alignment D1 would result in closure of the existing informal (illegal) BNSF railroad crossings at Mary Hills Nature Area and Sohacki Park. Barriers to discourage non-motorized crossings would be necessary in these locations to preserve pedestrian safety near the LRT tracks.

No impact to the off-road trail that shares the grade-separated crossing with Theodore Wirth Parkway is anticipated. North of Plymouth Avenue the proposed BNSF access road would be relocated adjacent to the trail but would be separated by a fence or other barrier, and no impacts to pedestrian or bicycle facilities would result.

East of the BNSF/TH 55 transition, LRT would operate in the median of TH 55. Non-signalized pedestrian crossings of TH 55 at the intersections with Sheridan, Russell, and Queen Avenues would be closed. Alternate crossings are available within  $\frac{1}{8}$  mile for each location.



### ***Alignment D2***

In the city of Robbinsdale, a new sidewalk would be constructed on the south side of 34th Avenue to replace the existing sidewalk which would be removed to construct the guideway. New vertical circulation would be provided for pedestrian access between the Terrace Mall and North Memorial Medical Center (NMMC) outpatient clinic and the new station platform located at the top of the bluff southeast of the mall area. Bicycle and pedestrian facilities would be provided on the new Halifax Avenue bridge over 34th Avenue. Pedestrian and bicycle access across 34th Avenue at Grimes Avenue would be eliminated to accommodate the guideway as it transitions from the BNSF railroad trench to the elevation of the new station platform. Users would need to divert one block ( $\frac{1}{16}$  mile) to cross 34th Avenue.

Along West Broadway Avenue in the city of Minneapolis, pedestrians would be allowed to cross the LRT guideway only at signalized intersections, which would continue to be located at 29th Avenue, 26th Avenue, and Penn Avenue. These three crossings would be designed to permit safe crossing of both the road and LRT guideway (sidewalk to sidewalk). Unmarked pedestrian crossings of West Broadway Avenue at 27th Avenue/Thomas Avenue and Sheridan Avenue would be closed; alternate crossings are available within  $\frac{1}{8}$  mile.

Along Penn Avenue, pedestrians would be allowed to cross the LRT guideway only at six signalized intersections: West Broadway Avenue, Golden Valley Road, 16th Avenue, Plymouth Avenue, Oak Park Avenue, and TH 55. These crossings would be designed to permit safe crossing of both the road and LRT guideway (sidewalk to sidewalk). The remaining eight crossings in this segment of Penn Avenue would be closed: 21st, 17th (east and west), 15th, 14th (east and west), 12th, and 8th Avenues. Resulting diversions would be  $\frac{1}{8}$  mile or less. The street-crossing closures on West Broadway and Penn Avenues, as well as the interruption to the street grid system in north Minneapolis, collectively contribute to decreased walkability and accessibility to and within the neighborhoods surrounding this area of the alignment.

On West Broadway and Penn Avenues, bicyclists would share roadway lanes with vehicular traffic as they do today.

### ***Alignment D Common Section (part of the Preferred Alternative)***

Pedestrian crossings will be limited to signalized intersections on TH 55, which are the same intersections where marked pedestrian crossings are currently provided. Four unmarked pedestrian crossings, where a sidewalk is provided in the median but signage is not provided, are proposed to be closed. These unmarked crossings include: Oliver, Newton, Logan, and James Avenues. Additionally, one existing marked pedestrian crossing of TH 55 is proposed to be closed at West Lyndale Avenue due to the number of lanes that would need to be crossed and the resulting number of vehicle conflicts and poor signal operations. Due to the urban street grid, each closing would result in a diversion of less than  $\frac{1}{10}$  mile to the next nearest crossing.

### ***Traction Power Substations***

TPSS sites associated with the various alternatives would have little to no impact on existing bicycle and pedestrian facilities.

**Table 3.4-1. Impacts by Alternative – Bicycle and Pedestrian Facilities**

Alternative	Alignment/Station Impact	Park-and-Ride Impact	Operation and Maintenance Facility (OMF) Impact <sup>3</sup>	Total Impact
<b>A-C-D1</b>	9 crossings closed: <sup>1</sup> 1 (A) 3 (D1) 5 (D Common Section)	No impact	No impact	9 crossings closed
<b>A-C-D2</b>	17 crossings closed: 1 (A) 11 (D2) 5 (D Common Section)	No impact	No impact	17 crossings closed
<b>B-C-D1 (Preferred Alternative)</b>	12 crossings closed: <sup>1</sup> 4 (B) 3 (D1) 5 (D Common Section)	No impact <sup>2</sup>	No impact (93rd Avenue option) Potential impact (101st Avenue option)	12 crossings closed
<b>B-C-D2</b>	20 crossings closed: 4 (B) 11 (D2) 5 (D Common Section)	No impact <sup>2</sup>	No impact (93rd Avenue option) Potential impact (101st Avenue option)	20 crossings closed

<sup>1</sup> There was no discernible difference in impact between the Golden Valley Road and Plymouth Avenue/Theodore Wirth Regional Park station options.

<sup>2</sup> Park-and-Ride Impacts are the same as the 93rd Avenue OMF impacts; therefore, they were only counted once in the total impact.

<sup>3</sup> No impacts from park-and-rides are anticipated.



Figure 3.4-1. Alignment A: Impacts to Pedestrian and Bicycle Facilities





Figure 3.4-2. Alignment B: Impacts to Pedestrian and Bicycle Facilities

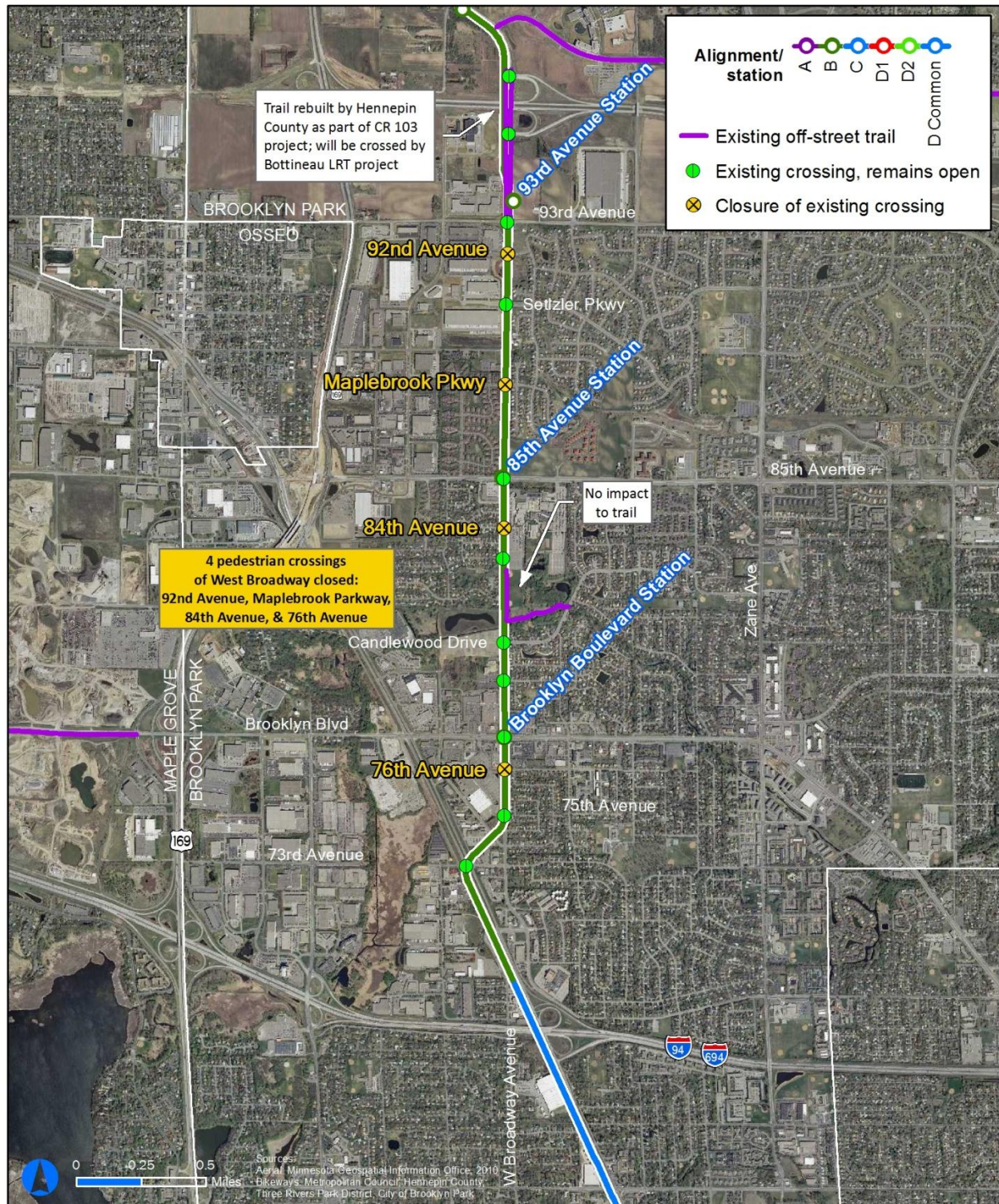




Figure 3.4-3. Alignment C: Impacts to Pedestrian and Bicycle Facilities

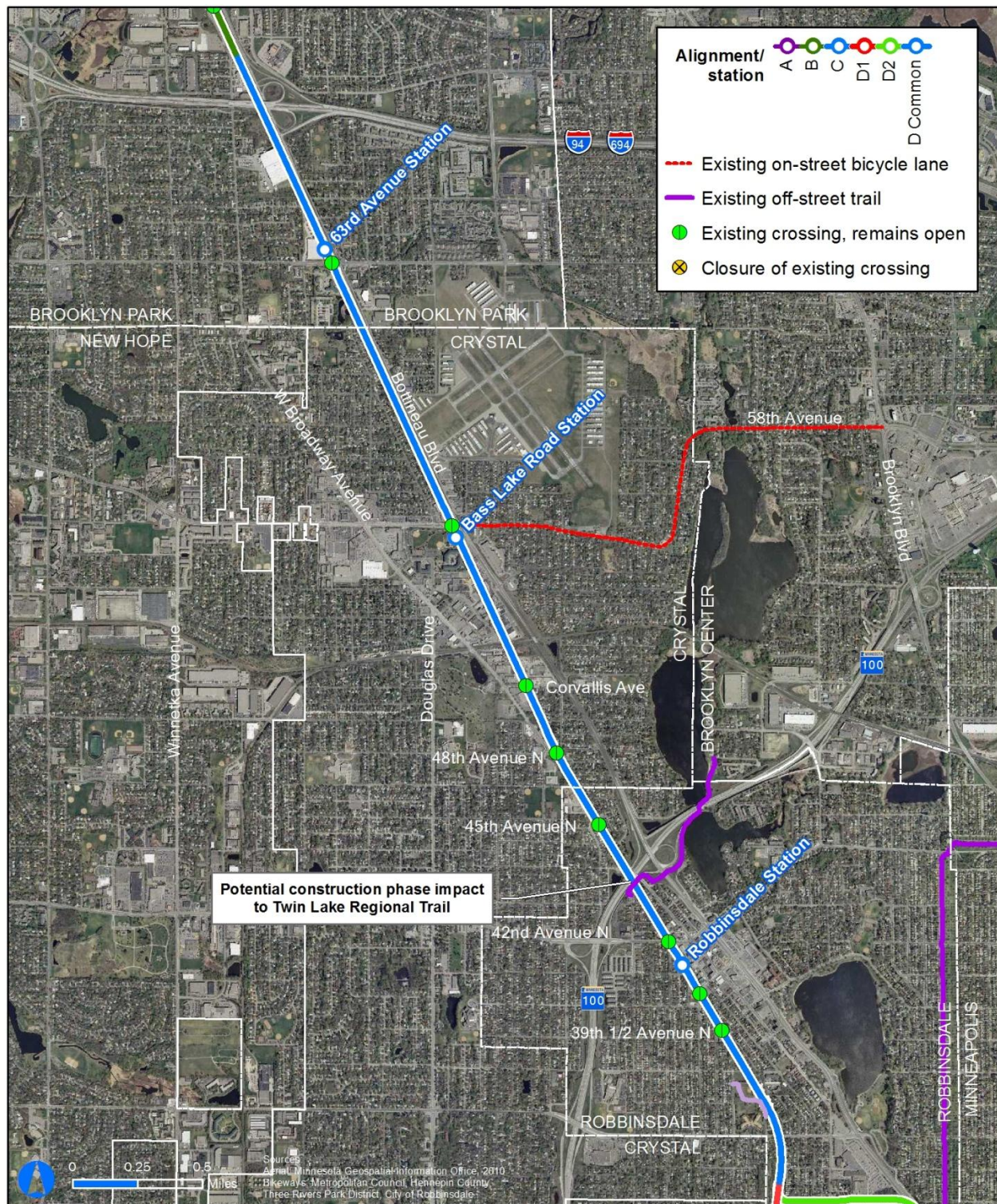




Figure 3.4-4. Alignment D1 and D Common Section: Impacts to Pedestrian and Bicycle Facilities

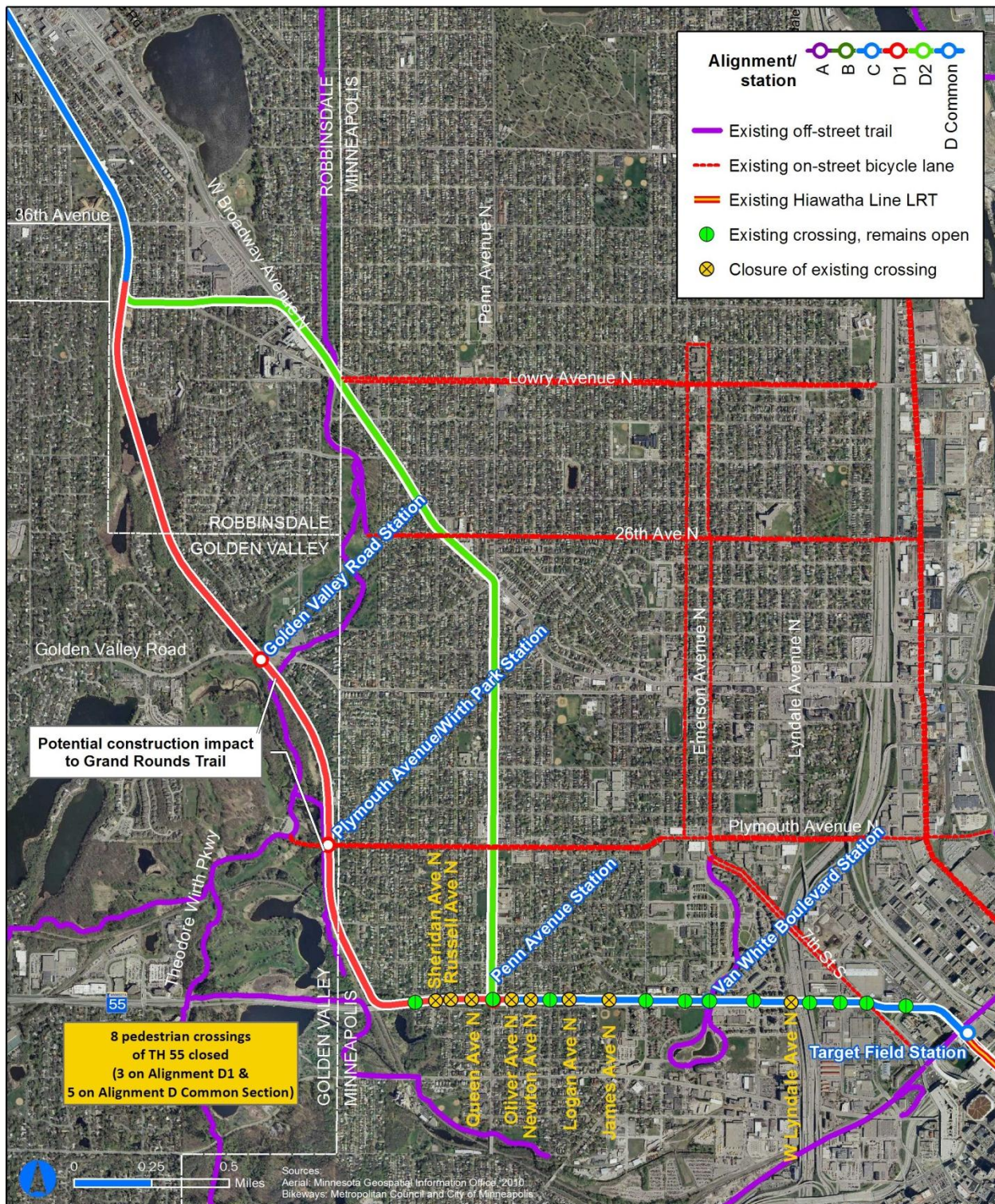
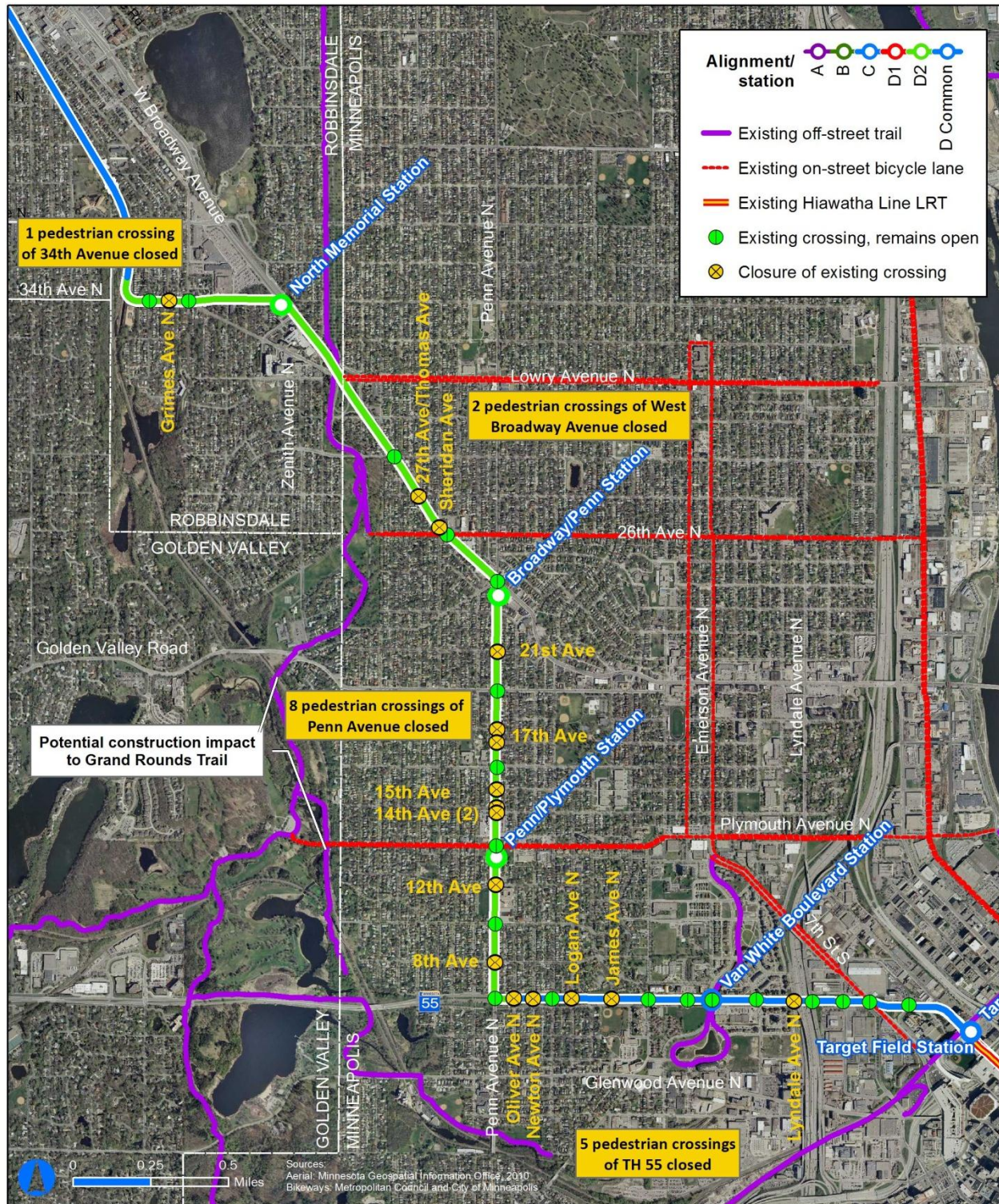




Figure 3.4-5. Alignment D2 and D Common Section: Impacts to Pedestrian and Bicycle Facilities





### 3.4.4.2 Construction Phase Impacts

#### No-Build Alternative

The No-Build alternative is not expected to have any construction phase impacts on the non-motorized transportation environment in the project area.

#### Enhanced Bus/TSM Alternative

The Enhanced Bus/TSM alternative is not expected to have any construction phase impacts on the non-motorized transportation environment in the project area.

#### Build Alternatives

For all alignments across each alternative, temporary closures or detours are anticipated to affect existing bike and pedestrian facilities. Construction traffic and debris such as excess dirt and gravel, can also pose obstacles or issues for pedestrians and bicyclists. Safe access for non-motorized users, as a result of detours, closures, and other inconveniences during the construction phases, would be included in phasing plans.

Construction phase impacts are generally expected to be similar for each alternative, with greater impacts where there are more existing pedestrian and bicycle facilities in or near the construction zone. In particular, Alignment D2 has more locations where residences and businesses rely on pedestrian access (relative to Alignment D1) and would experience greater construction impact.

### 3.4.5 Avoidance, Minimization, and/or Mitigation Measures

Current planning for the Bottineau Transitway supports the enhancement of pedestrian facilities. These enhancements are intended to act both as an improvement and as a natural separation to protect pedestrians, bicyclists, and transit vehicles. All pedestrian crossings would be designed in accordance with current American Disabilities Act (ADA) design requirements and standards to ensure access and mobility for all users, and station areas would be designed according to best practices for bicycle and pedestrian safety.

Measures would be taken to discourage pedestrians from illegally crossing the tracks and to enhance safety at permitted crossing locations, such as providing pedestrian signals and well-marked crosswalks.

If trail impacts cannot be avoided, potential reconstruction options and design guidelines would be discussed with the agencies that have jurisdiction over the facility. If trail facilities have restrictive covenants due to funds used for construction, these requirements would also be addressed. Potential indirect impacts to trail facilities, including safety concerns and visual impacts, would also be identified.

In the short-term, mitigation for potential disruptions to bicycle and pedestrian facilities during construction would include appropriate access provisions in MOT plans, and best management practices (BMPs) to manage debris.

If crosswalks are temporarily closed, pedestrians would be directed to use alternate crossings nearby. Every effort would be made not to close adjacent crosswalks at the same time to allow for continued pedestrian movement across streets. All sidewalks and crosswalks would be required to meet minimum standards for accessibility and be free of slipping and tripping hazards. Temporary sidewalk closures would be discouraged but, if required, would be conducted in such a way as to minimize impacts. Depending on how construction activities would impact sidewalk areas, special facilities (such as handrails, fences, barriers, ramps, walkways, and bridges) may be required to maintain bicyclist and pedestrian safety. During final design, it is expected that a plan would be developed to manage the closure of pedestrian crossings and other restrictions on non-motorized transportation facilities and crossings throughout the construction process. For proposed closures on TH 55, MnDOT's policy regarding Temporary Pedestrian Access Routes will be followed.



## 3.5 Parking

Information in this section is based on the information provided in the Transportation Technical Report (Kimley-Horn and Associates & SRF Consulting Group, 2012).

### 3.5.1 Regulatory Context and Methodology

This section describes parking in the Bottineau Transitway and potential impacts of the No-Build, Enhanced Bus/TSM, and Build alternatives on the number and location of parking spaces. The construction of LRT and associated modifications to roadway geometry would alter the supply of on-street and off-street parking, particularly for the alternatives that include Alignment D2. These changes may, in turn, affect convenient access to businesses and residences. Dedicated park and ride facilities have been identified as part of the transitway Build alternatives which are not addressed as part of this impact assessment of existing parking conditions.

The Bottineau Transitway is characterized by highway facilities with no parking, arterial and local streets with some on-street parking, and off-street parking that serves commercial and institutional facilities. The arterial and local streets that provide on-street parking include 34th Avenue, West Broadway Avenue, and Penn Avenue in Alignment D2. Off-street parking affected as part of the Build alternatives is both publicly and privately owned and is discussed in more detail within the property impacts portion of the Draft EIS.

The analysis is focused on the existing on-street parking conditions. A review of the existing on-street parking supply, which included reviewing aerial photography and field reviews, was performed to assess the impacts of changes in parking supply.

### 3.5.2 Study Area

The study area for parking consists of the potential area of disturbance.

### 3.5.3 Affected Environment

Vehicle parking in the project corridor is a combination of on-street and surface lots. On-street parking is almost entirely available to the public, either as metered or unmetered spaces. The only potentially affected on-street parking within the study area is located within Alignment D2 along 34th Avenue, West Broadway Avenue, and Penn Avenue.

#### *Alignment D2 (A-C-D2 and B-C-D2)*

- 34th Avenue between the BNSF right-of-way and France Avenue contains approximately 40 on-street parking spaces.
- West Broadway Avenue between Victory Memorial Parkway and Penn Avenue contains approximately 123 time-restricted on-street parking spaces. Parking restrictions include peak hour parking restrictions on both sides of the roadway.
- Penn Avenue between West Broadway Avenue and TH 55 contains approximately 392 on-street parking spaces, 32 of which are time-restricted. Parking restrictions include peak hour parking restrictions between West Broadway Avenue and 23rd Avenue. Parking is restricted on Penn Avenue at bus stops, which are generally located at the near side of intersections, or before the intersection cross-street. All other on-street parking is unrestricted.

Off-street parking is a mix of public and private. Private off-street parking is located within Alignments A, B, C, and D2 and is restricted to authorized individuals. Alignments B, C, and D2 include off-street public parking spaces for commercial and retail facilities, which are only accessible to the public when they are using these facilities. These facilities include retail centers, restaurants, churches, North Hennepin Community College in Alignment B, and retail centers, medical centers, and a funeral home at the

intersection of Penn Avenue and Plymouth Avenue. Off-street parking impacts are discussed in more detail within the property impacts portion of the Draft EIS.

### 3.5.4 Environmental Consequences

#### 3.5.4.1 Operating Phase (Long-Term) Impacts

##### No-Build Alternative

No operating phase (long-term) parking impacts would be associated with the No-Build alternative.

##### Enhanced Bus/TSM Alternative

No operating phase (long-term) parking impacts would be associated with the Enhanced Bus/TSM alternative.

##### Build Alternatives

Existing on-street parking is primarily impacted on Alignment D2, along West Broadway and Penn Avenue. No other alignments would be anticipated to experience impacts to on-street parking. The impacts are summarized by alternative in [Table 3.5-1](#).

**Table 3.5-1. Operating Phase (Long-Term) Parking Impacts by Alternative**

Alternative	Alignment/Station Impact (parking spaces eliminated)	Park-and-Ride Impact	OMF Impact	Total Impact (parking spaces eliminated)
No-Build	0	0	0	0
Enhanced Bus/ TSM	0	0	0	0
A-C-D1	0 <sup>1</sup>	0	0	0
A-C-D2	270	0	0	270
B-C-D1 (Preferred Alternative)	0 <sup>1</sup>	0	0 <sup>2</sup>	0
B-C-D2	270	0	0 <sup>2</sup>	270

<sup>1</sup> There is no discernible difference in impact between the Golden Valley Road and Plymouth Avenue/Theodore Wirth Regional Park station options.

<sup>2</sup> Park-and-Ride Impacts are the same as the 93rd Avenue OMF impacts; therefore, they were only counted once in the total impact

Parking impacts associated with Alignment D2 include the removal of on-street parking spaces along 34th Avenue ([Figure 3.5-1](#)), West Broadway Avenue ([Figure 3.5-2](#)), and Penn Avenue ([Figures 3.5-3 and 3.5-4](#)) to accommodate the proposed guideway while minimizing property impacts. Along 34th Avenue, all on-street parking spaces on the three blocks between Indiana Avenue and France Avenue would be eliminated. This would result in a loss of approximately 40 on-street parking spaces. Along West Broadway Avenue, 100 percent of the existing on-street parking spaces would be removed in the 0.8 mile stretch between Victory Memorial Parkway and Penn Avenue. This would result in a loss of approximately 120 on-street parking spaces. Along Penn Avenue, all of the existing on-street parking spaces (390 in total) would be removed from both sides of Penn Avenue, and approximately 280 new on-street parking spaces could be provided with the proposed Penn Avenue cross section. This would result in 28 percent of existing on-street parking, approximately 110 spaces, in the area between West Broadway Avenue and TH 55 on Penn Avenue being eliminated with this alignment.

##### TPSS

TPSS sites are anticipated to be located on available parcels that are adjacent to the guideway and would not directly impact existing on-street parking.

Figure 3.5-1. Alignment D2: 34th Avenue Parking Impacts

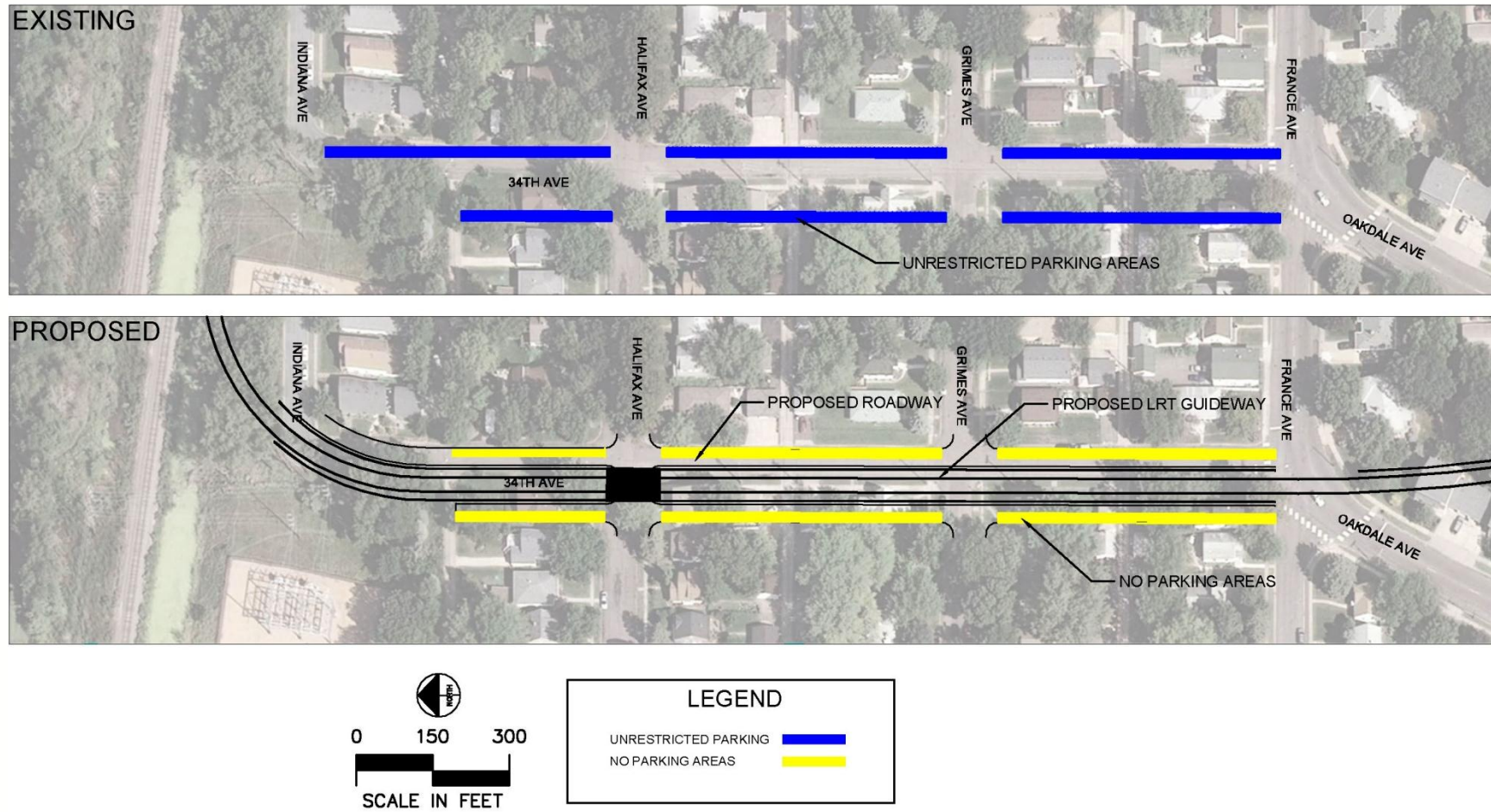




Figure 3.5-2. Alignment D2: West Broadway Parking Impacts

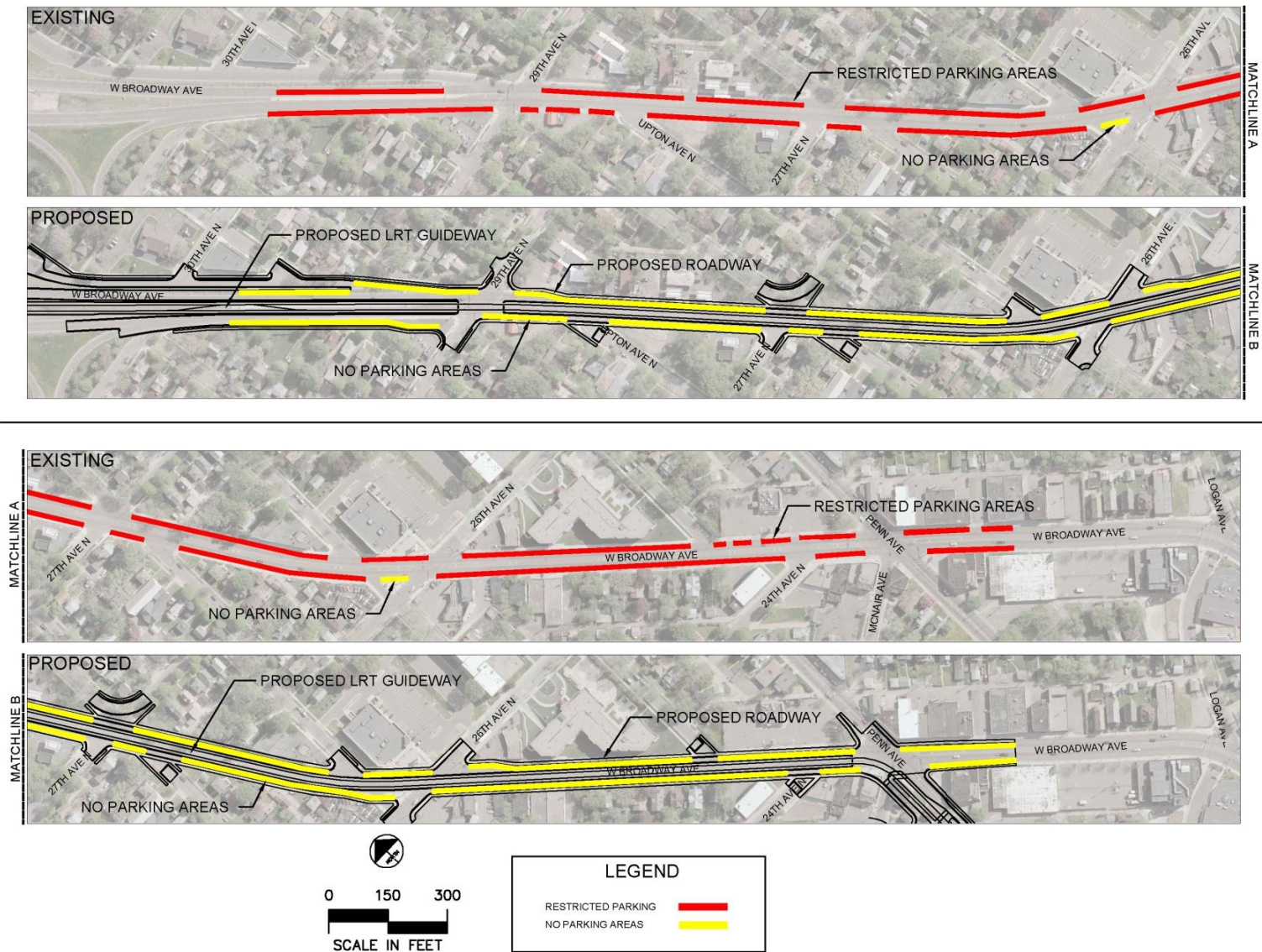




Figure 3.5-3. Alignment D2: Penn Avenue Parking Impacts (1)

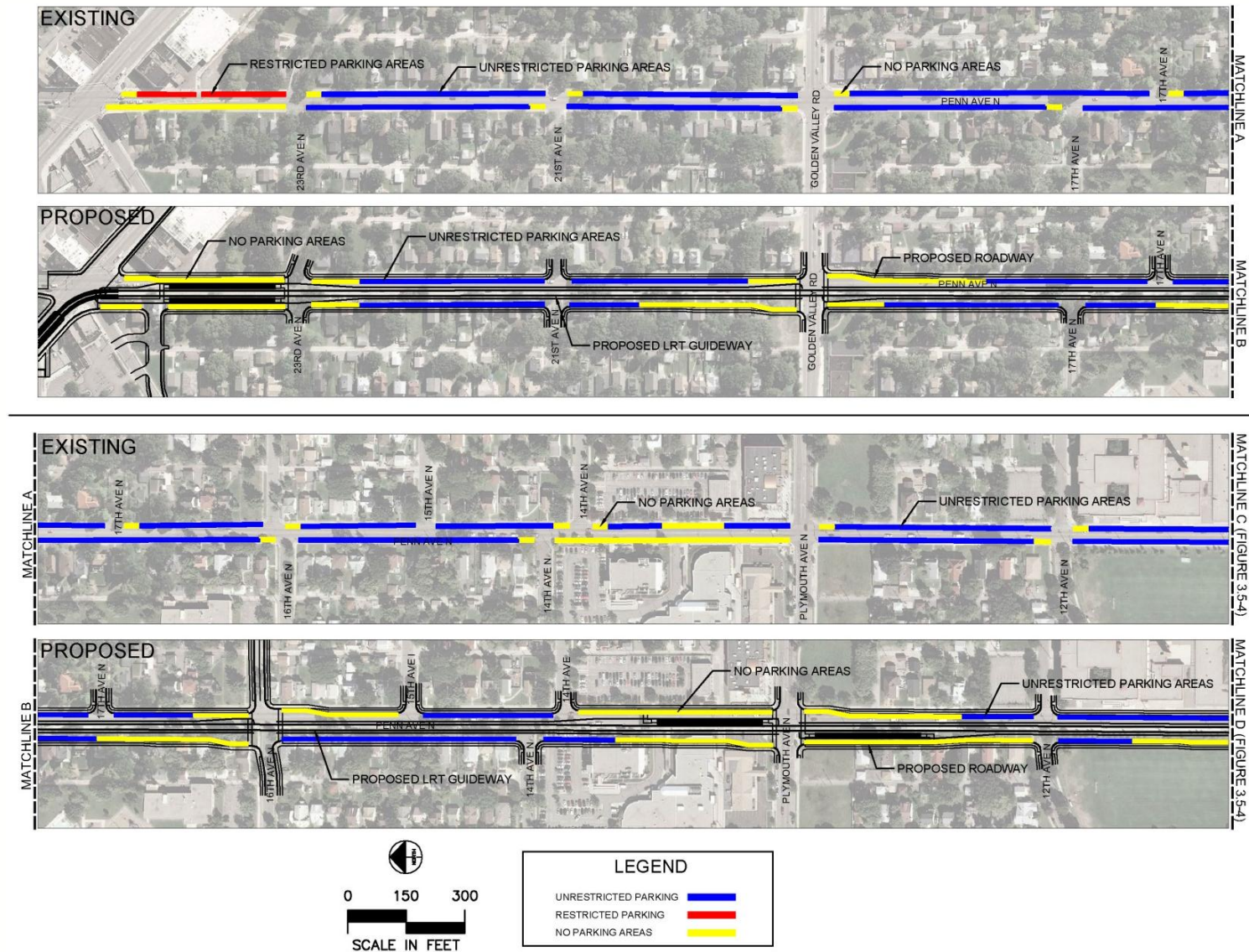
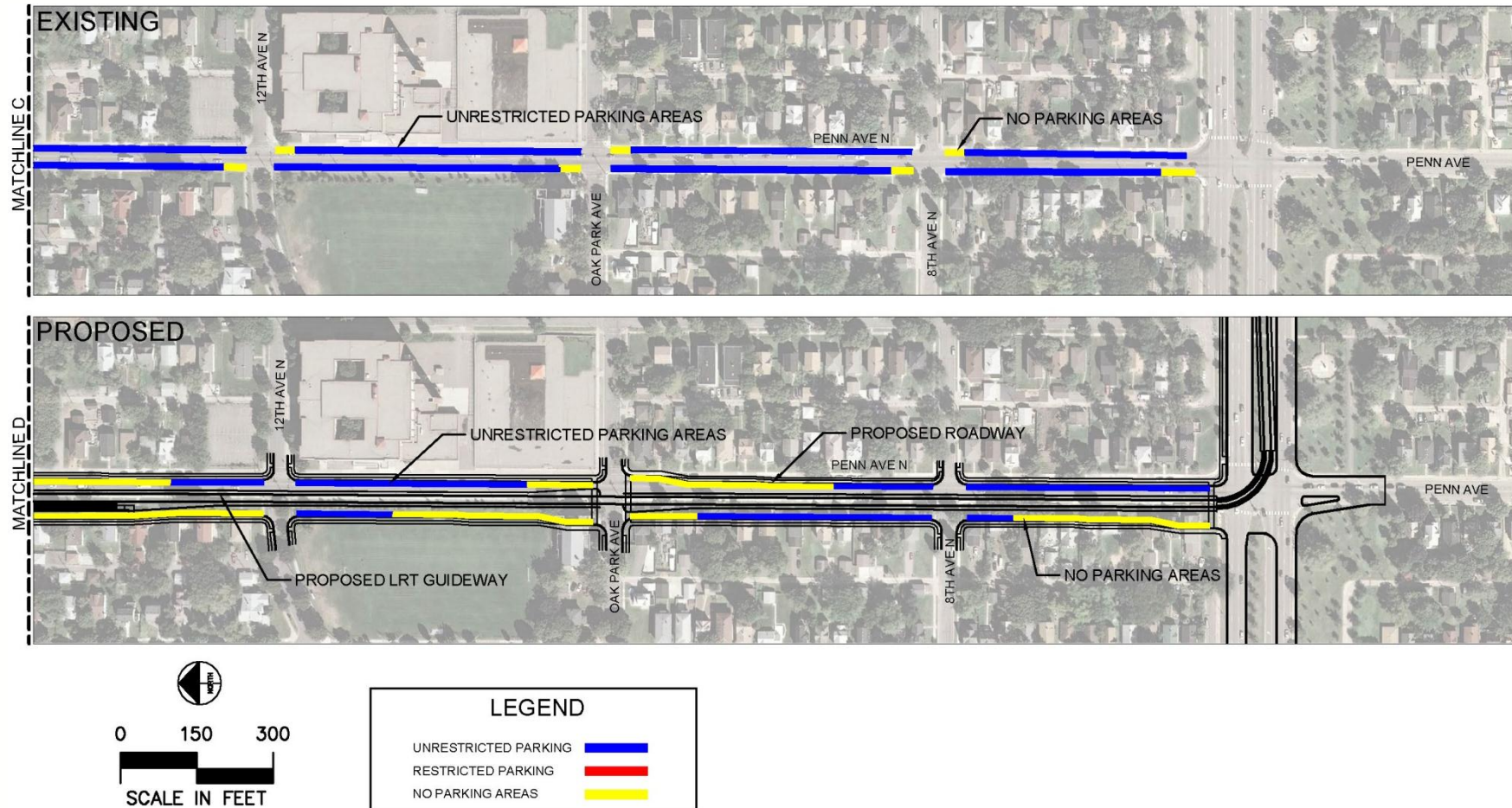


Figure 3.5-4. Alignment D2: Penn Avenue Parking Impacts (2)





### 3.5.4.2 Construction Phase Impacts

#### No-Build Alternative

No construction phase parking impacts would be associated with the No-Build alternative.

#### Enhanced Bus/TSM Alternative

No construction phase parking impacts would be associated with the Enhanced Bus/TSM alternative.

#### Build Alternatives

Parking impacts during construction are summarized in [Table 3.5-2](#). The only significant impacts are those associated with Alignment D2. Depending on the construction phasing that is implemented, all existing on-street parking provided on 34th Avenue, West Broadway Avenue, and Penn Avenue would be restricted or closed during construction of the D2 alignment (as part of A-C-D2 and B-C-D2). Opportunities to reduce parking loss during construction would be considered during final design.

### 3.5.5 Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required for Alignments A, B, C, D1, or the Alignment D Common Section.

Specific mitigation for the loss of on-street parking for the Alignment D2 Build alternatives (A-C-D2 and B-C-D2), specifically on West Broadway Avenue was not quantified as part of the Bottineau Transitway Project. Potential mitigation measures could include creation of small off-street parking facilities proximate to retail businesses. The City of Minneapolis Zoning Ordinance generally requires one parking space per 500 square feet of gross floor area in excess of 4,000 square feet for commercial properties. The specific identification and implementation of parking mitigation measures would involve the City of Minneapolis, to facilitate making long-term parking policy decisions in the best interest of the city and the community. These policy decisions would be intended to make the best of available parking or develop other arrangements to provide additional parking in heavy impact areas. Such measures could result in additional property impacts.

To reduce short-term parking impacts, construction phasing would be implemented throughout construction.

The Penn Avenue and 34th Avenue roadway designs would be further developed to maximize the use of the proposed right-of-way and provide on-street parking to mitigate the loss of parking on Penn Avenue and 34th Avenue to the extent feasible.

**Table 3.5-2. Construction Impacts By Alternative – Parking**

Alternative	Alignment/Station Impact (parking spaces)	Park-and-Ride Impact	OMF Impact	Total Impact
No-Build	0	0	0	0
Enhanced Bus/ TSM	0	0	0	0
A-C-D1	0 <sup>1</sup>	0	0	0
A-C-D2	All on-street parking restricted or closed on Alignment D2	0	0	All on-street parking restricted or closed on Alignment D2.
B-C-D1 (Preferred Alternative)	0 <sup>1</sup>	0	0 <sup>2</sup>	0

**Table 3.5-2. Construction Impacts By Alternative – Parking (continued)**

Alternative	Alignment/Station Impact (parking spaces)	Park-and-Ride Impact	OMF Impact	Total Impact
<b>B-C-D2</b>	All on-street parking restricted or closed on Alignment D2	0	0 <sup>2</sup>	<b>All on-street parking restricted or closed on Alignment D2.</b>

<sup>1</sup> There is no discernible difference in impact between the Golden Valley Road and Plymouth Avenue/Theodore Wirth Regional Park station options.

<sup>2</sup> Park-and-Ride Impacts are the same as the 93rd Avenue OMF impacts; therefore, they were only counted once in the total impact.

## 3.6 Aviation

This section describes the aviation environment in the Bottineau Transitway and the potential impacts of the No-Build, Enhanced Bus/TSM, and Build alternatives on aviation facilities. Information in this section is based on the information provided in the Transportation Technical Report (Kimley-Horn and Associates & SRF Consulting Group, 2012).

Coordination with the Federal Aviation Administration (FAA), Metropolitan Airports Commission (MAC), and MnDOT is ongoing. Coordination meetings to discuss potential impacts of the proposed Bottineau Transitway to the Crystal Airport runway protection zone (RPZ) and Minnesota State Safety Zones began back in August 2012 and have continued through February 2014.

The FAA initially accepted the FTA's invitation to serve as a participating agency for the Bottineau Transitway project. In October 2013, the FTA invited the FAA to change their status from a participating to a cooperating agency for the project, as a segment of the proposed Bottineau Transitway, within existing BNSF right-of-way, traverses through the RPZ for Runway 6L-24R (Runway 6L) of the Crystal Airport. The FAA accepted the invitation on November 20, 2013 ([Appendix A](#)).

### 3.6.1 Regulatory Context and Methodology

According to *FAA Advisory Circular (AC 150/5300-13A)*, the RPZ is "an area at ground level prior to the threshold or beyond the runway end to enhance the safety and protection of people and property on the ground." RPZs are located at the end of each runway and land use is typically controlled by the airport owner. Minnesota State Safety Zone areas overlay and extend beyond the federal RPZs. The most restrictive areas created by MnDOT regulations are called State Safety Zones A and B. The length of State Safety Zone A is typically  $\frac{2}{3}$  of the total runway length; State Safety Zone B is typically  $\frac{1}{3}$  of the total runway length and extends from State Safety Zone A. The MAC adopted an airport zoning ordinance applicable to the Crystal Airport on August 25, 1952. This ordinance provides additional guidance on the use of property within the vicinity of the Crystal Airport.

The FAA Office of Airports (ARP) issued a memorandum on September 27, 2012, that presents interim guidance on land uses within RPZs. This memorandum is intended to clarify what constitutes a compatible land use within an RPZ, as identified in *FAA Advisory Circular 150/5300-Change 17 (Airport Design)*. This circular identifies that "it is desirable to clear all objects from the RPZ," but it also acknowledges that "some uses are permitted" with conditions and other "land uses are prohibited." This memorandum also provides guidance on how to evaluate proposed land uses that would reside within an RPZ. The Bottineau Transitway project is considered a local development (transportation facilities) proposed in the RPZ (either new or reconfigured).

In accordance with the September 27, 2012 FAA policy guidance, the FAA requested that an RPZ Alternatives Analysis (AA) be prepared, specific to the proposed LRT alignment that encroaches on the Crystal Airport RPZ for Runway 6L-24R. A small portion of the existing BNSF track currently passes through the corner of the Runway 6R-24L (Runway 6R) RPZ. Runway 6R is a 2,102-foot turf runway and is



scheduled to be decommissioned by MAC in the next three to seven years. Due to the scheduled closure of Runway 6R, the RPZ AA focuses on the Runway 6L RPZ only.

On October 18, 2013, FTA submitted to FAA a Draft RPZ AA for initial review and consideration. Written comments were provided on November 12 by FAA and discussed at the coordination meeting with MAC, FAA, Hennepin County, and the Metropolitan Council. The Draft RPZ AA was updated to address FAA's initial comments and submitted back to FAA for review on January 24, 2014. A subsequent meeting was held with FAA on February 4, 2014 to review the revised Draft RPZ AA with FAA. Based on direction provided at the February 4th meeting, a revised RPZ AA was submitted back to FAA on February 10, 2014.

The RPZ AA defines and evaluates several alternatives that address eliminating or minimizing the effect of the proposed LRT alignment on the Runway 6L RPZ. These alternatives include modifications to the transitway alignment vertically and horizontally, both within and outside Runway 6L RPZ; modifications that shift the location of the RPZ; and operational alternatives that address coexistence of aircraft and LRT simultaneously in the RPZ.

### 3.6.2 Study Area

The only aviation facility in the proposed Bottineau Transitway is the Crystal Airport, which is near Alignment C. The study area for impacts to the Crystal Airport includes preliminary construction limits that are outside the Crystal Airport property boundaries but within the Runway 6L RPZ and State Safety Zone A for Runway 6L ([Figure 3.6-1](#)). The size of the RPZ for Runway 6L is based on the design aircraft of the runway, which is a B-I Small Aircraft. The RPZ, which is trapezoidal in shape with a 250-foot inner dimension and 450-foot outer dimension, is 1,000 feet long and contains 8.0 acres, 3.1 of which are not on airport property. State Safety Zone A contains 10.3 acres, 3.1 of which are not on airport property. State Safety Zone B contains 8.3 acres, none of which are on airport property or within the study area of the project.

### 3.6.3 Affected Environment

Crystal Airport is one of seven airports owned and operated by the MAC and is designed for B-1 small aircraft. The total number of operations at Crystal Airport in 2012 was 49,995 based on FAA control tower counts. The BNSF railroad, which runs parallel to CSAH 81 (Bottineau Boulevard) and is approximately three to four feet higher in elevation than adjacent ground that is located west and east of the BNSF railroad corridor, passes through the existing Runway 6L RPZ. The approximate length of existing freight rail track within the RPZ is 435 feet. ([Figure 3.6-1](#)). The land use in the portion of State Safety Zone A that is beyond Crystal Airport's property boundary is residential. State Safety Zone B is located beyond the limits of State Safety Zone A, outside of the BNSF right-of-way and outside of the project's identified construction limits.

### 3.6.4 Environmental Consequences

#### 3.6.4.1 Operating Phase (Long-Term) Impacts

##### No-Build Alternative

The No-Build alternative would not include any improvements within the RPZ; therefore, no operating phase (long-term) aviation impacts would be associated with the No-Build alternative.

##### Enhanced Bus/TSM Alternative

The Enhanced Bus/TSM alternative would include running additional bus service on the existing Bottineau Boulevard, located adjacent to the Crystal Airport. The Bottineau Boulevard right-of-way is

within approximately 1.25 acres of the RPZ and 1.25 acres of State Safety Zone A of Runway 6L. The Enhanced Bus/TSM alternative will not result in new transportation facilities being introduced within these areas.

### Build Alternatives

Under each of the proposed LRT alternatives (Alignment C), the existing BNSF tracks would be relocated approximately 25 feet west of the current location and two LRT tracks would be constructed immediately east of the BNSF track. All three tracks would be located within the existing 100 foot-wide BNSF right-of-way through the RPZ. The length of the northbound and southbound LRT tracks within the RPZ is approximately 425 feet each.

The proposed speed of the LRT at this location is estimated at approximately 55 miles per hour. Therefore, the train would be in the RPZ for approximately 5 seconds per operation. It is anticipated that trains would operate in this area about every 7.5 minutes during the morning and afternoon peak periods, and 15 minutes during daytime and evening hours.

The approach surface is an imaginary surface that exists primarily to prevent objects from extending upward into navigable airspace. The height of the LRT vehicle is approximately 16 feet, or about 16.5 feet below the FAA 20:1 Runway 6L approach surface ([Figure 3.6-2](#)). Overhead catenary system (OCS) poles, approximately 23 feet – 4 inches in height, would be located 200 feet on center along this section. The pole location would be established to maximize the distance from poles to the extended runway centerline. It is anticipated that the poles could be located approximately 100 feet left and right of the extended runway centerline. Final OCS pole spacing and locations will be determined during final design.

The proposed LRT alignment would impact areas within the controlled activity area and the central portion of the RPZ. As noted above, the proposed LRT alignment would be within the existing 100 foot BNSF right-of-way, which is currently within the controlled activity area (17,860 square feet) and the central portion of the RPZ (25,470 square feet).

### 3.6.4.2 Construction Phase Impacts

#### No-Build Alternative

The No-Build alternative would not include any improvements within the RPZ; therefore, the No-Build alternative is not expected to have any construction phase impacts on the aviation environment in the study area.

#### Enhanced Bus/TSM Alternative

The Enhanced Bus/TSM alternative would not include any improvements within the RPZ; therefore, the Enhanced Bus/TSM alternative is not expected to have any construction phase impacts on the aviation environment in the study area.

#### Build Alternatives

Construction of Alignment C, including the overhead contact system, would impact the Runway 6L RPZ. Construction operations and phasing in the RPZ would be coordinated with the MAC and FAA during the project's final design phase to mitigate impacts. The FAA's *Form 7460 – Notice of Proposed Construction or Alteration* would be completed during final design. The FAA's *Form 7460* process would be considered complete upon their issuance of a statement of no objection to the proposed activity.

Construction equipment height would be restricted within the runway approach surface. No open water would be allowed in the RPZ during construction to discourage bird nesting.

### **3.6.5 Avoidance, Minimization, and/or Mitigation Measures**

As outlined in Section 3.6.1, an RPZ Alternatives Analysis (AA) has been performed, in conformance with FAA Interim Guidance on Land Uses within an RPZ, to identify the full range of alternatives that could avoid and/or minimize the impact of the land use within the RPZ as well as mitigate the risk to people and property on the ground. The AA reviews several different alternatives to minimize impacts to the RPZ, including depressing the transitway in a tunnel; realigning the transitway around the RPZ; shortening, shifting, realigning, or closing Runway 6L-24R; operational alternatives such as stopping the LRT to obtain clearance prior to proceeding through the RPZ; and bus bridging across the RPZ. The recommendation identified in the RPZ AA prepared by Hennepin County in cooperation with the Metropolitan Council and MAC was that Alignment C, as defined in the LPA, is the preferred alternative. The FAA is currently reviewing the findings and recommendations of the RPZ AA. The local (Minneapolis) Airports District Office of the FAA will advance preliminary recommendation(s) to the FAA Regional Office and FAA Headquarters for concurrence.

The MAC is in the process of updating the Crystal Airport Layout Plan (ALP), which is a planning tool that airports use to depict both existing facilities and planned development for an airport. The ALP identifies the boundaries and proposed additions that are owned or controlled by the airport and planned to be utilized for airport purposes, existing and proposed airport facilities and structures, and the location of existing and proposed non-aviation areas within the airport boundaries. The Bottineau Transitway Project would modify the existing conditions within the RPZ. Based on the decisions rendered by the FAA through the RPZ AA, and confirmed through issuance of a letter of no objection (Form 7460 application); the Bottineau Transitway would be included in the updated Crystal Airport ALP.



Figure 3.6-1. Crystal Airport Study Area

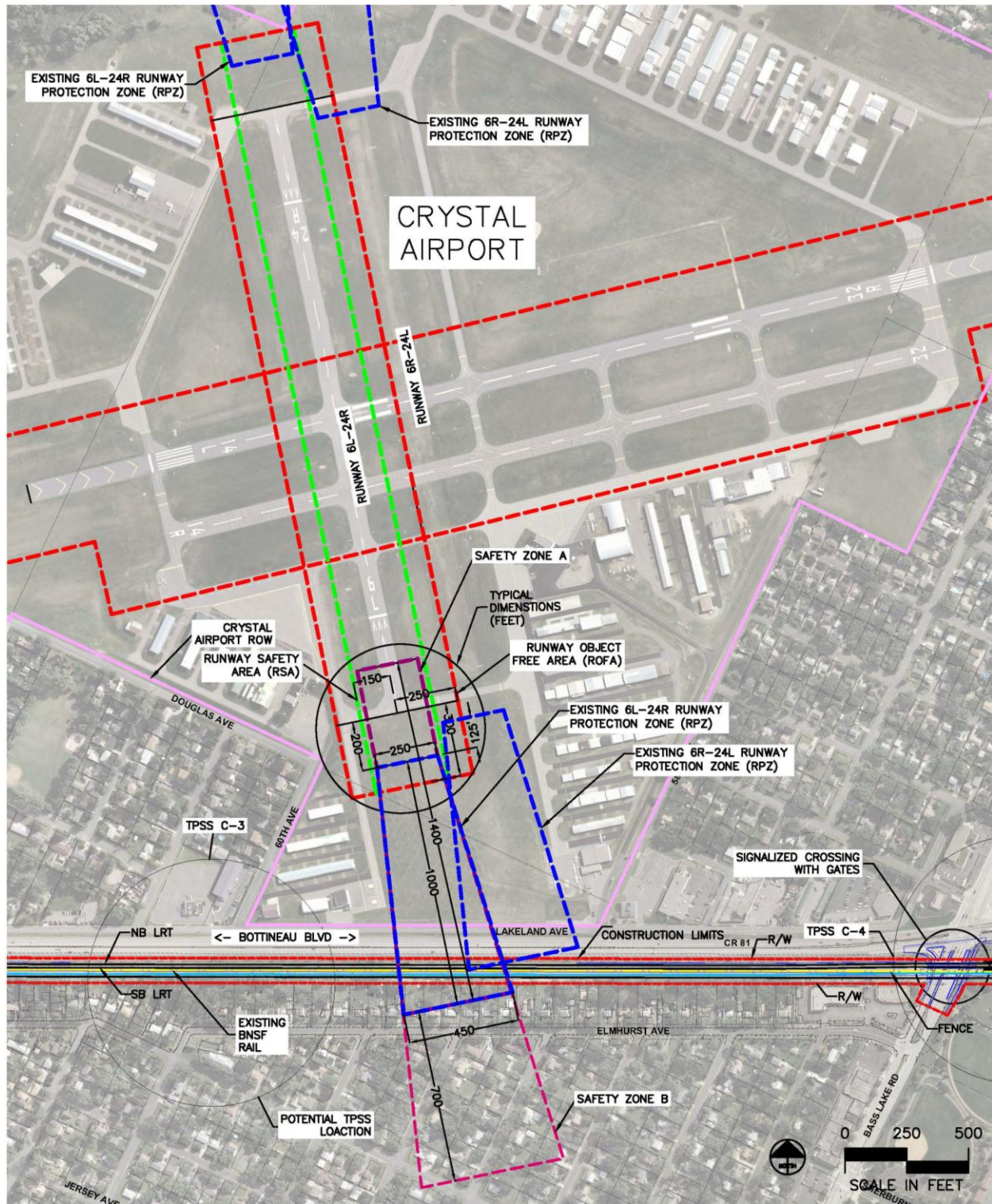
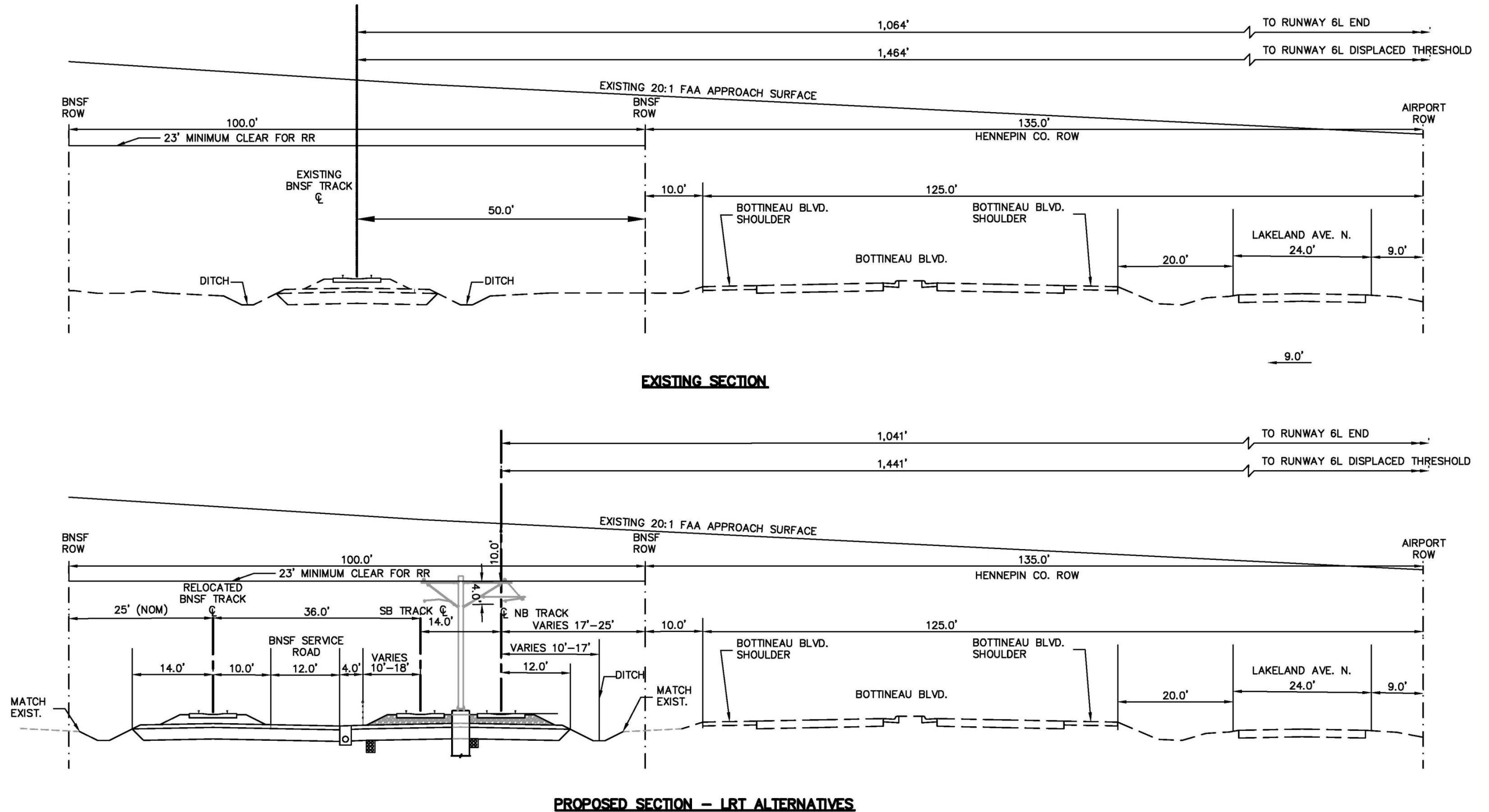




Figure 3.6-2. RPZ Typical Sections



## 4.0 Community and Social Analysis

This chapter addresses the social characteristics and conditions within the Bottineau Transitway study area that would potentially be affected by the alternatives under consideration. Potential operating phase (long-term) impacts and construction phase (short-term) impacts were evaluated. The study area is defined for each topic discussed and varies based on the type of resource under evaluation.

The National Environmental Policy Act (NEPA, 41 USC 4321) and Minnesota Environmental Policy Act (MEPA) (Minn. Stat. Chpt. 116D) form the general basis of consideration for discussing impacts to the social environment. However, specific laws, regulations, and executive orders apply to the evaluation of some community and social impacts, such as residential and business displacements, cultural resources, parklands, safety and security, and environmental justice. Any additional statutory or regulatory laws are provided within the regulatory context, as appropriate. The following were analyzed for potential community and social impacts:

- Land Use Plan Compatibility
- Community Facilities/Community Character and Cohesion
- Displacement of Residents and Businesses
- Cultural Resources
- Visual/Aesthetics
- Business Impacts
- Safety and Security

The study area considered for each area of analysis in this chapter is summarized in [Table 4.0-1](#). Greater detail is provided in each section of this chapter.

**Table 4.0-1. Summary of Defined Study Areas – Social Analysis**

Resource Evaluated	Study Area Definition	Basis for Study Area
<b>Land Use and Plan Compatibility</b>	Jurisdictions in which the transitway would be located	Project compatibility with overall city plans
<b>Community Facilities/Community Character and Cohesion</b>	½ mile radius around stations ¼ mile on either side of alignments	A half-mile radius is commonly used by transit planners to represent the distance transit users are willing to walk to access an LRT station. For alignments, a quarter-mile captures both direct (within 350 feet) and indirect impacts.
<b>Displacement of Residents and Businesses</b>	Within potential area of disturbance <sup>1</sup>	Area reflecting direct impacts on properties

**Table 4.0-1. Summary of Defined Study Areas – Social Analysis (continued)**

Resource Evaluated	Study Area Definition	Basis for Study Area
<b>Cultural Resources</b>	Within potential area of disturbance and 500 feet on either side of alignments; 0.25 mile radius around stations, new structures, and the modification of existing structures; 500 ft to either side of the modification of piers; and one block on either side of the LRT alignment and stations in downtown Minneapolis	Area of Potential Effect (APE) as agreed upon by MnDOT Cultural Resources Unit and the State Historic Preservation Office
<b>Visual/Aesthetics</b>	The immediate area of properties adjacent to and in visual proximity to the various project components, including track alignments, stations, park-and-rides, TPSS, new bridges, and any other infrastructure elements	Properties and features visible from the project components
<b>Business Impacts</b>	½ mile on either side of alignments	Area reflecting direct impacts on properties
<b>Safety and Security</b>	Within and adjacent to potential area of disturbance	Reflects direct impacts and proximity of proposed alignments to places that attract persons of special concern relative to safety and security.

<sup>1</sup> Potential area of disturbance is defined as the estimated area where construction would occur for the proposed project at this stage of design.

For reference, conceptual engineering plans are located in [Appendix E](#).

## 4.1 Land Use Plan Compatibility

Information included in this section is based on the information provided in the Land Use Plan Compatibility Technical Report (SRF Consulting Group, 2012).

### 4.1.1 Regulatory Context and Methodology

No specific laws or executive orders regulate the consideration of land use impacts as part of preparing federal environmental review documents. As stated on page 4-1, NEPA, 41 USC 4321, and MEPA 2007 c 116D form the general basis of consideration for discussing land use issues. Local municipalities have land use controls available to them in the form of comprehensive plans guiding land use and city zoning codes guiding development.

Note that potential impacts, including noise, community cohesion, economic development, and visual quality, have a relationship to the land uses within the study area considered in other sections of this document. Although these impacts may require mitigation at the site level, this section focuses on the compatibility of the Bottineau Transitway with local and regional land use planning documents on a broader scale.

#### 4.1.2 Study Area

The study area is defined as the jurisdictions in which the transitway would be located. Specific land use data were obtained from existing and planned land use maps for the cities of Maple Grove, Brooklyn Park, Crystal, Robbinsdale, Golden Valley, and Minneapolis. These land use maps are drawn from each city's comprehensive plan, which is a locally approved planning document that guides planning policy and land use through the year 2030. Under the Metropolitan Land Planning Act, each local land use plan must also be consistent with the Metropolitan Council's regional growth and development plan, the *2030 Regional Development Framework and Policy Plans*. These data were supplemented by recent aerial photography and field inspections of the study area. Assessment of compatibility with existing and planned land uses was based on the land use inventories and plans in cities' adopted comprehensive plans. See Land Use Plan Compatibility Technical Report (SRF Consulting Group, 2012) for greater detail.

#### 4.1.3 Affected Environment

For the analysis, the specific land use plans of each city were reviewed and summarized below. Land use maps depicting existing and future land uses for each city are provided in [Appendix I](#). These land use maps are referenced as [Exhibits 4-1](#) through [4-14](#).

##### Existing and Future Land Use

The following section outlines the existing and planned land use conditions along the Bottineau Transitway. Existing land use is described for each alignment.

##### *Alignment A*

Alignment A begins in southeastern Maple Grove and passes through the southwestern portion of Brooklyn Park. This alignment has four proposed stations: Hemlock Lane, Revere Lane, Boone Avenue/Hennepin Tech, and 71st Avenue.

As illustrated in [Exhibit 4-1](#) and [Exhibit 4-2](#), the existing land use adjacent to Alignment A between Hemlock Lane and US 169 is designated as "Gravel Mining Area" on the City of Maple Grove's existing and future land use plan maps. This designation denotes the City's intent to provide for extraction of gravel followed by reclamation of the 2,000 acre area for suburban development. Extraction has been completed west of Hemlock Lane, and this area has been redeveloped for commercial and residential use. Extraction activities have moved eastward and are expected to continue for several decades. As the extraction is completed, the land will be graded and made available for development. The *City of Maple Grove 2008 Comprehensive Plan* calls for "regional mixed use" in the area, recommending that development occur in a compact, vertically integrated manner with predominantly office and/or corporate uses. The proposed Hemlock Lane station is located north of a suburban shopping area. The proposed Revere Lane station is located in a current extraction area adjacent to a planned future roadway.

[Exhibit 4-3](#) depicts the existing land uses east of US 169 as primarily industrial uses to the south of Brooklyn Boulevard, with Hennepin Technical College and residential uses to the north. As shown in [Exhibit 4-4](#), the City of Brooklyn Park plans to transition industrial uses to business park use while the other uses are planned to remain. The Boone Avenue/Hennepin Tech station would be located in this area.

As the alignment shifts onto the railroad corridor paralleling CSAH 81, adjacent land uses are primarily commercial/industrial. The *Brooklyn Park 2030 Comprehensive Plan* confirms that these land uses are planned to remain with some areas transitioning to mixed use. As indicated in [Exhibit 4-4](#), the *Brooklyn Park 2030 Comprehensive Plan* introduces the new future land use designation of Neighborhood Commercial (NC) for the area near the proposed 71st Avenue station. A zoning designation of NC by Brooklyn Park is intended for compact, pedestrian-oriented, mixed use areas of limited size as opposed to the auto-oriented commercial uses in the area today.



### ***Alignment B (part of the Preferred Alternative)***

Alignment B begins in Brooklyn Park just north of TH 610 and ends where Alignment C begins near 71st Avenue. Proposed stations would be located at Oak Grove Parkway, 93rd Avenue, 85th Avenue, and Brooklyn Boulevard, all along West Broadway Avenue.

Land uses at the north end of Alignment B are transitioning from agricultural use/open space to commercial use. The Brooklyn Park 2030 Land Use Plan figure in the *Brooklyn Park 2030 Comprehensive Plan* designates a portion of this area near the Oak Grove Parkway station for Signature Mixed Use (including the Target North Campus) with most of the area southwest of the 93rd Avenue station planned for expansion of business parks. The Signature Mixed Use designation indicates commercial development, which shapes a strong image for the City, including “high quality and landmark buildings or coordinated group of buildings with significant height and scale.”

Between the proposed 93rd and 85th Avenue stations, land uses are primarily residential with plans to continue such use in the future.

At 85th Avenue, land uses include North Hennepin Community College and some limited commercial uses along 85th Avenue, with the predominant land use being residential. Residential uses extend south toward Brooklyn Boulevard. These uses are planned to remain. Hennepin County is planning a new library for the northeast quadrant of 85th and West Broadway Avenues.

The proposed Brooklyn Boulevard station is located within a large suburban commercial node characterized by “big box” (e.g., Target) and other auto-oriented retail uses. As illustrated in [Exhibit 4.4](#), this commercial center is expected to remain in the future.

### ***Alignment C (part of the Preferred Alternative)***

Alignment C begins in Brooklyn Park and largely follows CSAH 81 through Crystal and Robbinsdale. Stations would be located at 63rd Avenue, Bass Lake Road, and downtown Robbinsdale.

As depicted in [Exhibit 4-3](#), existing land uses east and west of Alignment C in Brooklyn Park consist of primarily industrial and commercial uses with some residential uses. [Exhibit 4-4](#) indicates that the majority of these land uses are planned to remain, with some uses transitioning to business park use.

Near the proposed 63rd Avenue station area, existing uses are a mix of commercial, industrial, and high-density residential land uses with an existing Metro Transit park-and-ride structure on the west side of CSAH 81. Uses are planned to transition to high-density residential, institutional, and mixed use.

South of 63rd Avenue, Alignment C passes into the city of Crystal. As shown in [Exhibit 4-5](#), land uses between 62nd Avenue and Bass Lake Road are predominantly low-density residential to the west and commercial and airport uses to the east. Currently, high-density residential, commercial, and some park uses are adjacent to the proposed Bass Lake Road station area. [Exhibit 4-6](#) indicates these uses are planned to remain. South of Bass Lake Road, the existing uses are primarily commercial and industrial with some park uses. Again, these land use patterns are generally planned to remain in the future.

From Crystal, Alignment C enters the northwest corner of Robbinsdale at 47th Avenue approximately four blocks north of TH 100. As illustrated in [Exhibit 4-7](#) and [Exhibit 4-8](#), existing and planned future land uses east and west of Alignment C are primarily low-density residential, with some commercial, high-density residential, and park uses.

East of the proposed Robbinsdale (42nd Avenue) station lies “downtown” Robbinsdale, a large retail/office area centered on both West Broadway Avenue and CSAH 81. West of the Burlington Northern Santa Fe (BNSF) railroad corridor, residential uses predominate. As illustrated in [Exhibit 4-8](#), the *Robbinsdale 2030 Comprehensive Plan* indicates increasing density in the downtown area including transition of some parcels to mixed use.

#### ***Alignment D1 (part of the Preferred Alternative)***

Alignment D1 begins near 34th Avenue in Robbinsdale and continues south into the city of Golden Valley crossing the municipal boundary at 26th Avenue.

As shown in [Exhibit 4-7](#) and [Exhibit 4-9](#), existing land uses east and west of Alignment D1 in Robbinsdale and Golden Valley are primarily low-density residential and park uses, with limited areas of institutional use. As depicted in [Exhibit 4-10](#), the *City of Golden Valley Comprehensive Plan 2008-2018* indicates these land uses are planned to remain. The existing and planned future land uses near the Golden Valley Road and Plymouth Avenue/Theodore Wirth Regional Park station options are also low-density residential and park uses.

Alignment D1 continues along the BNSF railroad corridor southeast through eastern areas of Golden Valley, with Theodore Wirth Regional Park to the west and low-density residential land uses to the east. Alignment D1 enters Minneapolis north of TH 55 then travels east to CSAH 2 (Penn Avenue) where it joins the Alignment D Common Section. As shown in [Exhibit 4-11](#), the primary land uses are park and low-density residential uses with no plans for changes in the future. Along TH 55, existing and future planned land uses are primarily low-density residential uses.

#### ***Alignment D2***

The D2 alignment transitions from the BNSF railroad corridor to street-running segments through Robbinsdale and the north side of Minneapolis before rejoining the D1 alignment along TH 55 at Penn Avenue.

As illustrated in [Exhibit 4-11](#), throughout the entire D2 alignment, the predominant land uses are residential, including low-, medium-, and high-density residential uses, community-oriented commercial uses, and institutional uses. North Memorial Medical Center is located in Robbinsdale at the north end of this alignment (see [Exhibit 4-8](#)). The North Memorial station would serve this regional medical facility as well as existing and future commercial uses to the north.

As depicted in [Exhibit 4-12](#), the City of Minneapolis's future land use plan indicates the West Broadway Avenue corridor as an "urban neighborhood" which includes mixed residential and commercial uses. The *Minneapolis Plan for Sustainable Growth* and the *West Broadway Alive Plan* designate West Broadway Avenue as a Commercial Corridor and Penn Avenue as a Community Corridor with the surrounding area as Urban Neighborhood. The plans further designate the intersection of Penn Avenue and West Broadway Avenue as a Neighborhood Commercial Node extending from 26th Avenue to Oliver Avenue that is appropriate for mixed use commercial/residential. Residential uses at the node can be medium to high density. The proposed Broadway/Penn station would serve this existing and future commercial corridor. Adjacent to the proposed Penn/Plymouth station are institutional and community commercial uses within an otherwise residential neighborhood. The Penn Avenue/Plymouth Avenue intersection is a Neighborhood Commercial Node that is appropriate for mixed use commercial/residential uses. Residential uses at the node can be medium to high density. As shown in [Exhibit 4-12](#), *The Minneapolis Plan* designates this area as urban neighborhood.

#### ***Alignment D Common Section (part of the Preferred Alternative)***

The Alignment D Common Section is located entirely in Minneapolis, beginning at Penn Avenue and following TH 55 to 6th Avenue North into downtown Minneapolis. Proposed stations would be located at Van White Boulevard and Target Field.

Land use north and south of the Alignment D Common Section is primarily low- and medium-density residential between Penn Avenue and I-94. Future land uses in this area are designated as urban neighborhood use, which includes religious, institutional, and open space uses. Existing institutional and religious uses (academic facilities, a community center, a library, and a church) are adjacent to the Alignment D Common Section near TH 55 between Irving Avenue and Bryant Avenue. The western

portions of the new Heritage Park neighborhood contain a mix of residential land uses including medium-, and high-density housing. This land use pattern continues to Lyndale Avenue/I-94, where the corridor enters downtown Minneapolis.

As illustrated in [Exhibit 4-12](#), *The Minneapolis Plan for Sustainable Growth* indicates that residential land uses will remain near the proposed Penn Avenue station. The Plan also indicates no planned changes to the existing land uses near the proposed Van White Boulevard station.

East of I-94, the Alignment D Common Section enters the downtown area of Minneapolis, which is characterized by commercial and industrial uses, as shown in [Exhibit 4-13](#). The alignment transitions to the Blue Line (Hiawatha) LRT at the Target Field Station, which is currently transitioning from industrial uses to mixed use development adjacent to the Minnesota Twins ballpark as indicated in The Future Land Use Plan map for the Downtown Sector from *The Minneapolis Plan* ([Exhibit 4-14](#)). The terminal station would be located at the Target Field Station, an intermodal transit station under construction and planned to open in 2014. The *North Loop Small Area Plan* (2010) guides redevelopment for the North Loop area and calls for mixed use developments organized to support transit.

#### 4.1.4 Planning Context

This section provides a summary of land use and other planning documents, which are the basis for evaluating land use compatibility of the Bottineau Transitway project.

##### Local and Regional Plans and Policies

Local and regional policies were reviewed to determine their compatibility with the Bottineau Transitway Project. A description of local and regional plans, as related to transit, is provided below.

An objective of the *City of Maple Grove 2008 Comprehensive Plan* (2008) is that multi-modal transportation be planned for and invested in to slow the growth of congestion. Strategies supporting this objective include promoting the evaluation of light rail and other modes of transit, planning land use patterns to support transit development, continuing to support the integration of land uses enabling shared parking and transit-oriented developments, and planning for the concentration of jobs and housing around transit hubs and daily conveniences. In addition, Maple Grove's comprehensive plan acknowledges that all areas designated as mixed use that have not been developed have the potential for transit-oriented higher-density clustered or mixed use development, including the Gravel Mining Area.

The *Brooklyn Park 2030 Comprehensive Plan* (2008) acknowledges that CSAH 81 is currently being studied by Hennepin County and Metro Transit for use as a transit corridor. The plan states that the City encourages a thorough analysis of the corridor to provide the most cost-effective and efficient mode of transit and to construct it in a timely manner. In addition, Brooklyn Park's comprehensive plan recognizes that changes would be necessary to implement the policies and objectives of the plan, including the consideration of transit overlay districts in areas where the City plans to have transit connections in the future, including Bottineau Boulevard. Additionally, the plan calls for promoting transit-oriented development where possible and encouraging commercial higher density residential uses along transit routes. The proposed station locations would provide access to employment centers and other major destinations in Brooklyn Park, which would be compatible with these goals.

It is a policy of the *City of Crystal, Minnesota Comprehensive Plan Update Through the Year 2030* (2011) to plan and invest in multi-modal transportation choices, based on the full range of costs and benefits, to slow the growth of congestion and serve the region's economic needs. A strategy supporting this policy is to expand the transit system. The Public Transit chapter of Crystal's comprehensive plan supports the development of the Bottineau Transitway Project with LRT as the preferred transit technology.

An objective of the *Robbinsdale 2030 Comprehensive Plan* is to provide an effective choice of transportation modes for the city's residents. The plan states that transit corridors provide the potential for concentrations of residential uses that may accommodate the regional projections for increased

population. The plan also states that the City should coordinate all future downtown redevelopment with a transit hub, exclusive busway, and light rail transit plans. In addition, the transitway is included on Robbinsdale's Transit Routes map (Figure 4G of the comprehensive plan). The transportation chapter of Robbinsdale's comprehensive plan acknowledges the Bottineau Transitway planning efforts, expressing a preference for LRT.

The *City of Golden Valley Comprehensive Plan 2008-2018* includes the goal of enhancing transit usage. A supporting objective is to support local and regional transit provider plans and programs that benefit residents and visitors in the community.

The transportation chapter of *The Minneapolis Plan for Sustainable Growth* (2009) indicates that enhanced transit services are the means to efficiently meeting the needs of the traveling public. The plan also calls for ongoing investment and development of corridors served by light rail, commuter rail, streetcars, and buses. Additionally, The Minneapolis Plan for Sustainable Growth's future Transitway System map acknowledges potential Bottineau Transitway routes, noting that transitway alignments and station locations are still under review and subject to change.

Hennepin County's *2030 Transportation Systems Plan (TSP)* (2011) is one of the four planning elements of the *Hennepin County Comprehensive Plan* (2011), which includes regional plans for wastewater and sewage systems, regional park systems, and surface water management.

The *TSP* states five central transportation goals, and the development of transitways is addressed as a strategy to achieve three of these goals. Goal 3 identifies the need to "provide mobility and choice to meet the diversity of transportation needs, as well as to support health objectives throughout the county." Continuing the progress of environmental documentation for the Bottineau Transitway is explicitly listed as a transit strategy to meet this goal, which also includes targets for improving regional accessibility and the number of jobs accessible via transit service. Goal 4 and Goal 5 address increasing spatial efficiency of land use and reducing the region's environmental footprint through increased development along key transit corridors. The *TSP* also lists the dedicated transitway as one of multiple strategies to achieve a 50 percent increase in transit ridership by 2030.

The Hennepin County *Sustainable Development Strategy* (2011) outlines the County's Housing, Community Works, and Transit Department's approach to aligning resources and targeting development to "integrate multi-modal transportation, economic development, housing, and community choices." Specifically, the *Strategy* addresses the agency partnerships, funding sources, and innovative problem solving used to fund and implement transitways, encourage sustainable, mixed use development, and apply the sustainable development strategy to transit corridors in planning, engineering, and design phases of the project.

Hennepin County, in partnership with the Bottineau Boulevard Partnership, also prepared the *Bottineau Land Use Planning Framework* (2012). While the *Framework* is unlike the aforementioned local comprehensive planning documents because the County does not have land use planning administration authority, it clearly dictates the County and Partnership's priority for increased development along the Bottineau Transitway.

The *Framework* creates a land use planning "To Do" list for the corridor, outlines local and best practices regarding land use planning around transit, and specifically emphasizes the Federal Transit Administration's (FTA) non-financial rating methodology, of which 40 percent is comprised by land use and economic development measures. Ultimately, the *Framework* states that "a strong land use planning process and subsequent adoption of new policies can increase this score and make a transit project more likely to receive federal funding."

Metropolitan Council's *Regional 2030 Transportation Policy Plan* (2010) acknowledges ongoing study of the Bottineau Transitway as a future transit route. Policy 15 of the *Transportation Policy Plan* addresses transitway development and implementation. The policy states that the "Metropolitan Council will strongly



pursue, in coordination with the Counties Transit Improvement Board (CTIB), county regional railroad authorities and transit providers, the cost-effective implementation of a regional network of transitways to provide a travel-time advantage for transit vehicles, improve transit service reliability, and increase the convenience and attractiveness of transit service.”

Strategies supporting Policy 15 refer to land use. Strategy 15c states that Metropolitan Council will consider readiness, priority, and timing along with local commitment to transitway implementation and land use when making transitway investments. Strategy 15g states that local units of government are expected to develop local comprehensive plans, zoning, and community development strategies that ensure more intensified development along transitways and that this development should be effectively linked to the transitway through compact, walkable environments.

#### **4.1.5 Operating Phase (Long Term) Impacts**

##### **No-Build Alternative**

The No-Build alternative would not fulfill a key goal of city and regional plans described above. These plans indicate support for the enhancement, development, and implementation of transit improvements. In addition, these plans address the importance of diversity of transportation modes and the efficiency of land use offered by transit.

##### **Enhanced Bus/TSM Alternative**

The Enhanced Bus/Transportation System Management (TSM) alternative would provide some transit improvements and would therefore partially fulfill the intent of regional and local comprehensive plans to support and develop transit in the corridor. However, the Enhanced Bus/TSM Alternative would not be as effective as LRT in meeting plan goals for planning land use development to support transit development, including the concentration of housing and employment around transit hubs. Additionally, the *Robbinsdale 2030 Comprehensive Plan* specifically expresses a preference for LRT.

##### **Build Alternatives**

Overall, the Bottineau Transitway Build alternatives would be compatible with the local land use planning policies of Maple Grove, Brooklyn Park, Crystal, Robbinsdale, Golden Valley, and Minneapolis. Although Golden Valley’s comprehensive plan does not specifically mention the Bottineau Transitway Project, LRT would be compatible with the transit goal and objective of the city’s comprehensive plan. The Build alternatives would also be compatible with regional land use planning policies.

#### **4.1.6 Construction Phase Impacts**

Construction phase impacts are defined as the temporary impacts that occur during project construction only.

##### **No-Build Alternative**

No construction phase impacts would occur under the No-Build alternative. Therefore, there would be no construction-related land use compatibility issues for this alternative.

##### **Enhanced Bus/TSM Alternative**

Construction phase impacts would be limited to the area of the proposed transit center and park-and-ride facility at Oak Grove Parkway and West Broadway Avenue. There would be no construction-related land use compatibility issues for this alternative.

##### **Build Alternatives**

Construction phase impacts generally include:

- Traffic detours resulting in traffic increases through residential neighborhoods

- Noise, dust, and visual impacts due to construction
- Temporary effects to land use due to staging areas

These impacts do not pose compatibility issues with planning policy documents. Negative impacts such as those listed above are addressed under other topic areas (community cohesion, noise, etc.).

#### **4.1.7 Avoidance, Minimization, and/or Mitigation Measures**

As all Build alternatives would be compatible with land use planning policy documents, no avoidance, minimization, or mitigation measures would be needed.

## **4.2 Community Facilities/Community Character and Cohesion**

Information included in this section is based on the information provided in the Noise and Vibration Technical Report (HMMH, 2012), Transportation Technical Report (Kimley-Horn and Associates & SRF Consulting Group, 2012), and Visual Quality Technical Report (SRF, 2012). For information on coordination regarding community facilities, see Chapter 8 Section 4(f) Evaluation.

### **4.2.1 Regulatory Context and Methodology**

No specific laws or executive orders regulate how impacts to community character, cohesion, and community facilities resulting from transit projects are evaluated. NEPA (41 USC 4321) and MEPA (Minn. Stat. Chpt. 116D) form the general basis of consideration of these potential social impacts.

Operating phase (long-term) impacts are the permanent effects associated with operating the transitway. Construction phase impacts are defined as direct impacts, generally temporary in nature, associated with constructing the project. Community data were obtained from comprehensive plans for the cities of Maple Grove, Brooklyn Park, Crystal, Robbinsdale, Golden Valley, and Minneapolis. These data were supplemented by recent aerial photography and input from public involvement activities. Information from the Noise and Vibration Technical Report (HMMH, 2012), Transportation Technical Report (Kimley-Horn and Associates & SRF Consulting Group, 2012), and Visual Quality Technical Report (SRF, 2012) was reviewed and evaluated to assess direct and indirect effects to community character and facilities.

Community facilities near the Bottineau Transitway include schools, colleges, libraries, community centers, parks, medical facilities, places of worship, funeral chapels, police and fire departments, as well as a food bank and a radio station. Community facilities and park resources more than 350 feet from the proposed alignments were assumed to experience no direct impacts. This distance is used because 350 feet is the unobstructed screening distance for FTA noise impact assessments and would allow identification of potential noise impacts to community facilities and park resources.

Parks are also subject to evaluation in the context of Section 4(f) of the Department of Transportation Act of 1966, which governs the use of publicly-owned/open to the public park and recreation lands, government-owned wildlife lands, and historic resources. Section 4(f) is specifically addressed in Chapter 8, Draft Section 4(f) Evaluation. In addition to the protection provided by Section 4(f), Section 6(f) of the Land and Water Conservation Fund Act of 1965 (LAWCON) stipulates that any land or facility planned, developed, or improved with LAWCON funds cannot be converted to uses other than parks, recreation, or open space unless land of at least equal fair market value and reasonably equivalent usefulness is provided. Anytime a transportation project would cause such a conversion, regardless of funding sources, such replacement land must be provided. No permanent right-of-way would be acquired from Section 6(f) resources within the study area. Therefore, no properties planned, developed, or improved with LAWCON funds would be converted to non-outdoor recreation use, and this issue is not discussed further in the Draft EIS.

#### 4.2.2 Study Area

For operating phase (long-term) impacts, the study area is defined as the area within ½ mile of the proposed transit stations. A half-mile radius is commonly used by transit planners to represent the distance transit users are willing to walk to access an LRT station. For areas along corridor alignments that are not within a half-mile radius of a transit station, community character and facilities within ¼ mile of the transitway alignments were evaluated. As indicated above, no direct impacts were assumed to occur within 350 feet of any of the alignments. This means that the study area beyond 350 feet but within ¼ mile of the non-station area alignments was assessed for indirect impacts only.

#### 4.2.3 Affected Environment

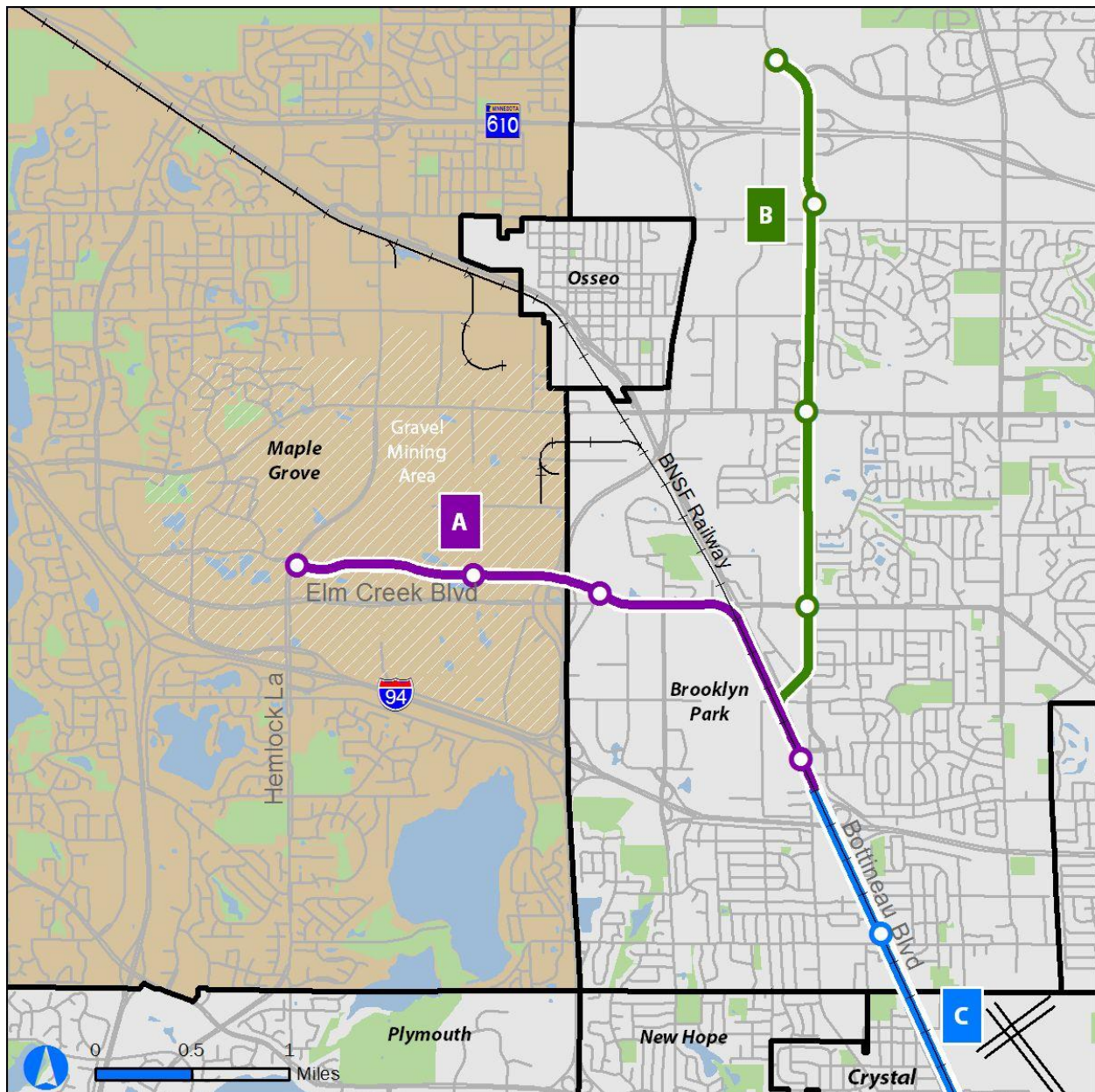
This section describes each of the communities along the proposed Bottineau Transitway (Maple Grove, Brooklyn Park, Crystal, Robbinsdale, Golden Valley, and Minneapolis). Where applicable, descriptions of formally recognized neighborhoods within these communities are also provided. The term neighborhood can refer to a geographically defined area or it can denote a social community. For the purpose of this discussion, neighborhoods are defined as geographic areas within the communities along the Bottineau Transitway.

These community descriptions provide context for subsequent discussion about displacements and relocations, community facilities, cohesion within communities, and safety and security concerns associated with the Bottineau Transitway. Existing physical features (e.g., roadways, railroads, or other features) that may represent barriers between communities and neighborhoods are identified. Roadways that provide connectivity within communities are also noted.

##### Maple Grove

Maple Grove does not have any officially recognized neighborhoods within its boundaries. The area north and south of Alignment A in Maple Grove is currently in use as a gravel mining area and therefore no “community” or “neighborhood” is currently present. The *City of Maple Grove Gravel Mining Area Special Area Plan* envisions mixed uses for the area adjacent to Alignment A. The future roadway north of Elm Creek Boulevard would separate retail uses from office and other uses. Refer to [Figure 4.2-1](#) for primary physical features near Alignment A in Maple Grove.

Figure 4.2-1. Primary Physical and Community Features in Maple Grove



#### Brooklyn Park

Brooklyn Park does not have any officially designated neighborhoods within its boundaries. In the northern portion of the city, the existing area near Alignment B north of TH 610 is currently undeveloped. Future development, including commercial uses, is planned for the area north of TH 610 along Alignment B near the Oak Grove Parkway station. TH 610 separates the future development area from the neighborhoods to the south. Refer to [Figure 4.2-2](#) for primary physical features in Brooklyn Park.

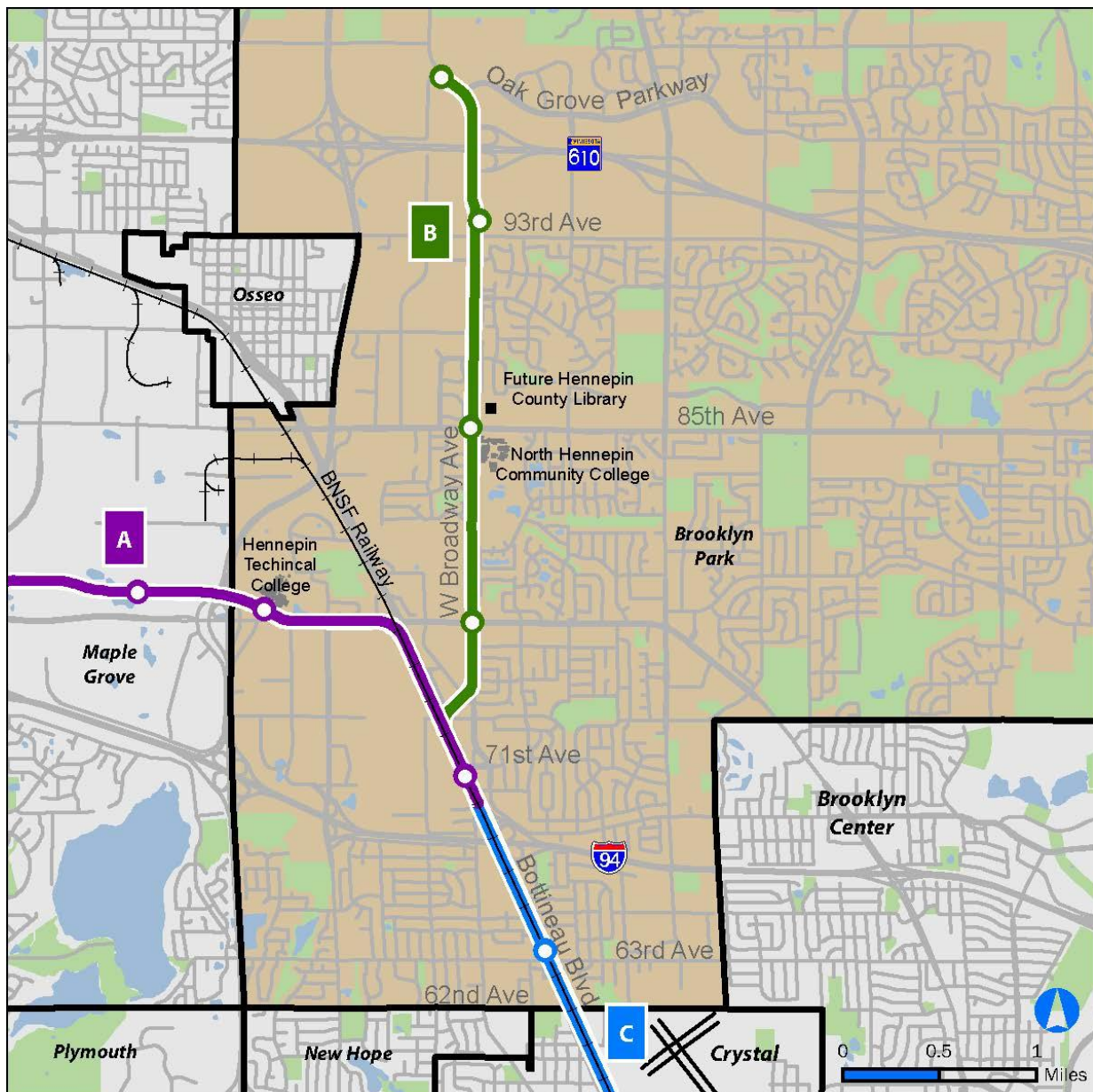
Existing residential neighborhoods are located on either side of Alignment B (West Broadway Avenue) from 93rd Avenue to approximately 71st Avenue. Higher density town homes are present in the area of 85th Avenue. North Hennepin Community College and a future Hennepin County library are near the



location of the 85th Avenue station. The existing neighborhoods have winding internal circulation streets and do not generally face Alignment B (West Broadway Avenue). Residential areas are also located along both sides of Alignment C (CSAH 81) from around 70th Avenue to the city boundary at 62nd Avenue.

Within Brooklyn Park, 93rd Avenue, 85th Avenue, and 63rd Avenue serve as important cross community connectors that link neighborhoods. Proposed station locations at 93rd Avenue and 85th Avenue are anticipated to support connectivity among neighborhoods. In contrast, I-94 presents a barrier to north-south travel within the city. Brooklyn Park has a low- to medium-density suburban character with higher density town homes in the area of 85th Avenue. Neighborhoods east and west of Alignment B (West Broadway Avenue) and Alignment C (CSAH 81) are separate and cohesive in relation to themselves but not across these major roadways.

**Figure 4.2-2. Primary Physical and Community Features in Brooklyn Park**



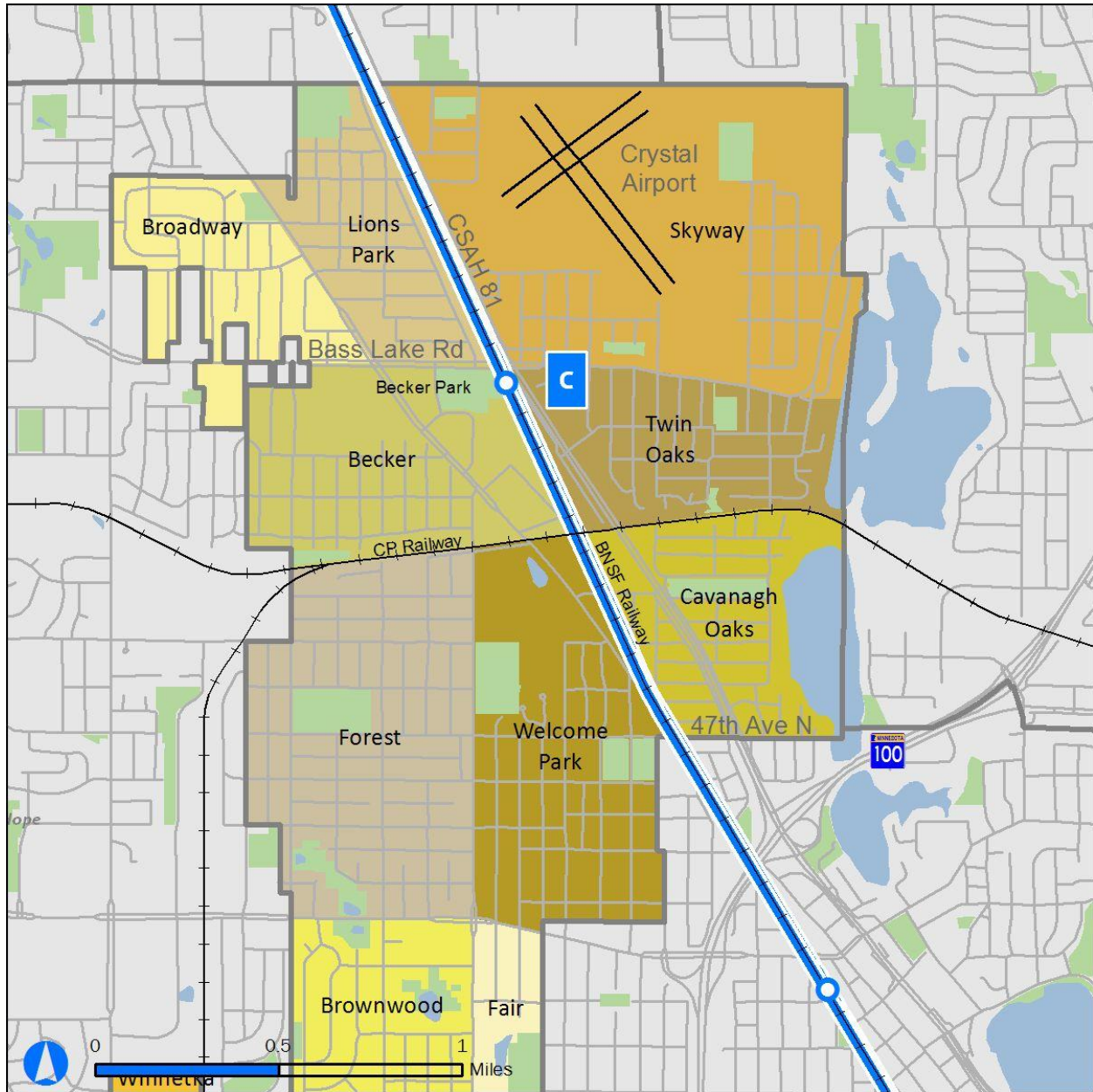
## Crystal

The city of Crystal is comprised of 14 officially recognized neighborhoods. The six neighborhoods adjacent to Alignment C are Lions Park, Skyway, Becker, Twin Oaks, Welcome Park, and Cavanagh Oaks. The location of each neighborhood is illustrated in [Figure 4.2-3](#). These neighborhoods are generally residential.

Within Crystal, Alignment C parallels Bottineau Boulevard then diverges to parallel the existing BNSF railroad south of Bass Lake Road. Along Alignment C (CSAH 81) the neighborhoods are separated by CSAH 81 and the BNSF railroad corridor. The neighborhoods are generally cohesive within themselves but not across the boulevard and the railroad. The Crystal Airport is a major feature embedded within a primarily residential neighborhood east of Alignment C and north of Bass Lake Road.

South of Bass Lake Road, Alignment C deviates from Bottineau Boulevard and shifts to the BNSF railroad corridor then continues along the freight line to the city boundary at 47th Avenue. Between Bass Lake Road and 47th Avenue, Alignment C passes through commercial and residential areas. In this area of Crystal, the Canadian Pacific (CP) railroad (east-west orientation) and BNSF railroad corridors (north-south orientation) present a barrier for movement between neighborhoods. Residential neighborhoods in Crystal have a suburban residential character with a grid street pattern.

Figure 4.2-3. Officially Recognized Neighborhoods and Primary Community Features along the Bottineau Transitway in Crystal



#### Robbinsdale

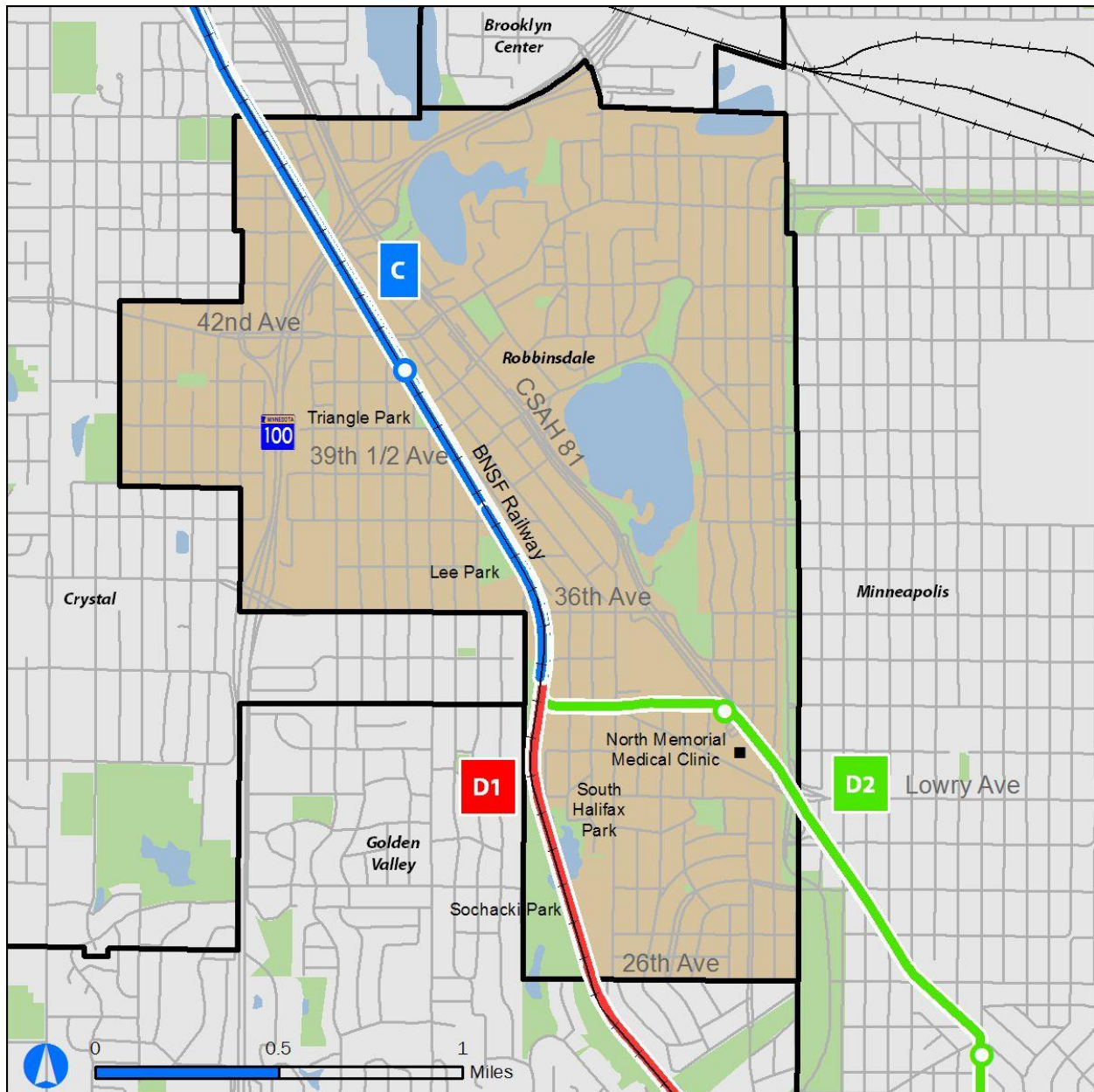
Robbinsdale does not have any officially recognized neighborhoods within its boundaries. Within the city, Alignment C parallels the BNSF railroad corridor. Downtown Robbinsdale is located east of Alignment C. Cross-community connections are provided by 42nd Avenue, 39½ Avenue, and 36th Avenue. Neighborhoods within the city are generally separated by TH 100, Bottineau Boulevard, and the BNSF railroad corridor. Residential neighborhoods are cohesive within themselves but are separated by major roadways and the railroad. Refer to [Figure 4.2-4](#) for primary physical features in Robbinsdale.



Alignment D1 parallels the BNSF railroad from approximately 34th Avenue to 26th Avenue. Parkland and residential neighborhoods are located on both sides of Alignment D.

Residential neighborhoods in Robbinsdale have a suburban residential character with a grid street pattern. The grid street pattern is somewhat interrupted by several lakes within the city boundaries. The lakes also present natural barriers that influence access and connectivity within the city.

**Figure 4.2-4. Primary Physical and Community Features in Robbinsdale**



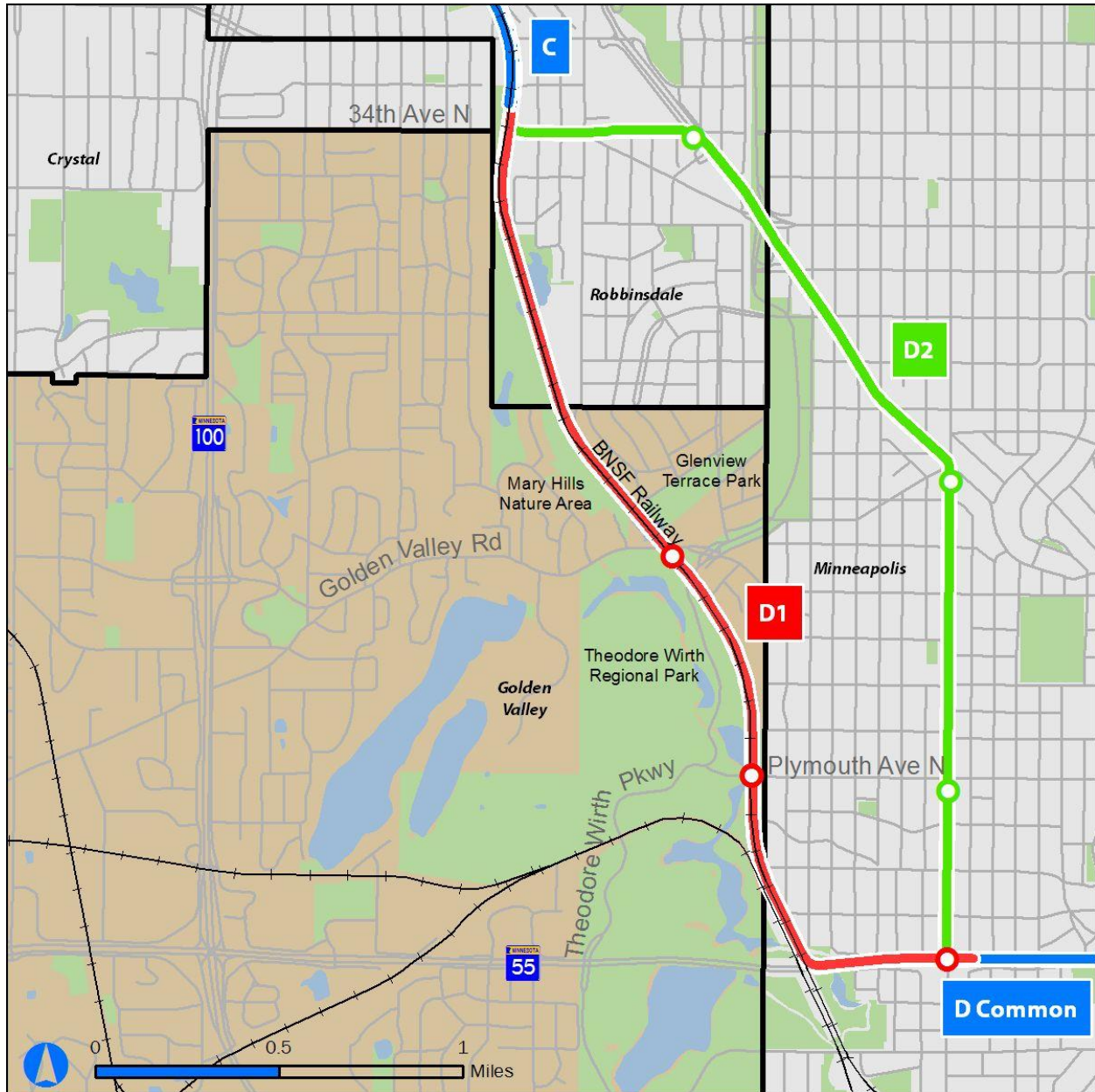
#### Golden Valley

Golden Valley does not have any officially designated neighborhoods within its boundaries. Alignment D1 travels through the city parallel to the BNSF railroad corridor from 34th Avenue to TH 55. The area



adjacent to Alignment D1 consists of parkland to the west and residential neighborhoods to the east. The BNSF railroad corridor (Alignment D1) and parkland separate the residential neighborhoods from one another. Some residential areas to the east have limited vehicle access to the parks. Theodore Wirth Parkway, part of the Grand Rounds Scenic Byway, provides an important connection to Golden Valley Road and connects parkland to nearby neighborhoods. Refer to [Figure 4.2-5](#) for primary physical features in Golden Valley.

**Figure 4.2-5. Primary Physical and Community Features in Golden Valley**



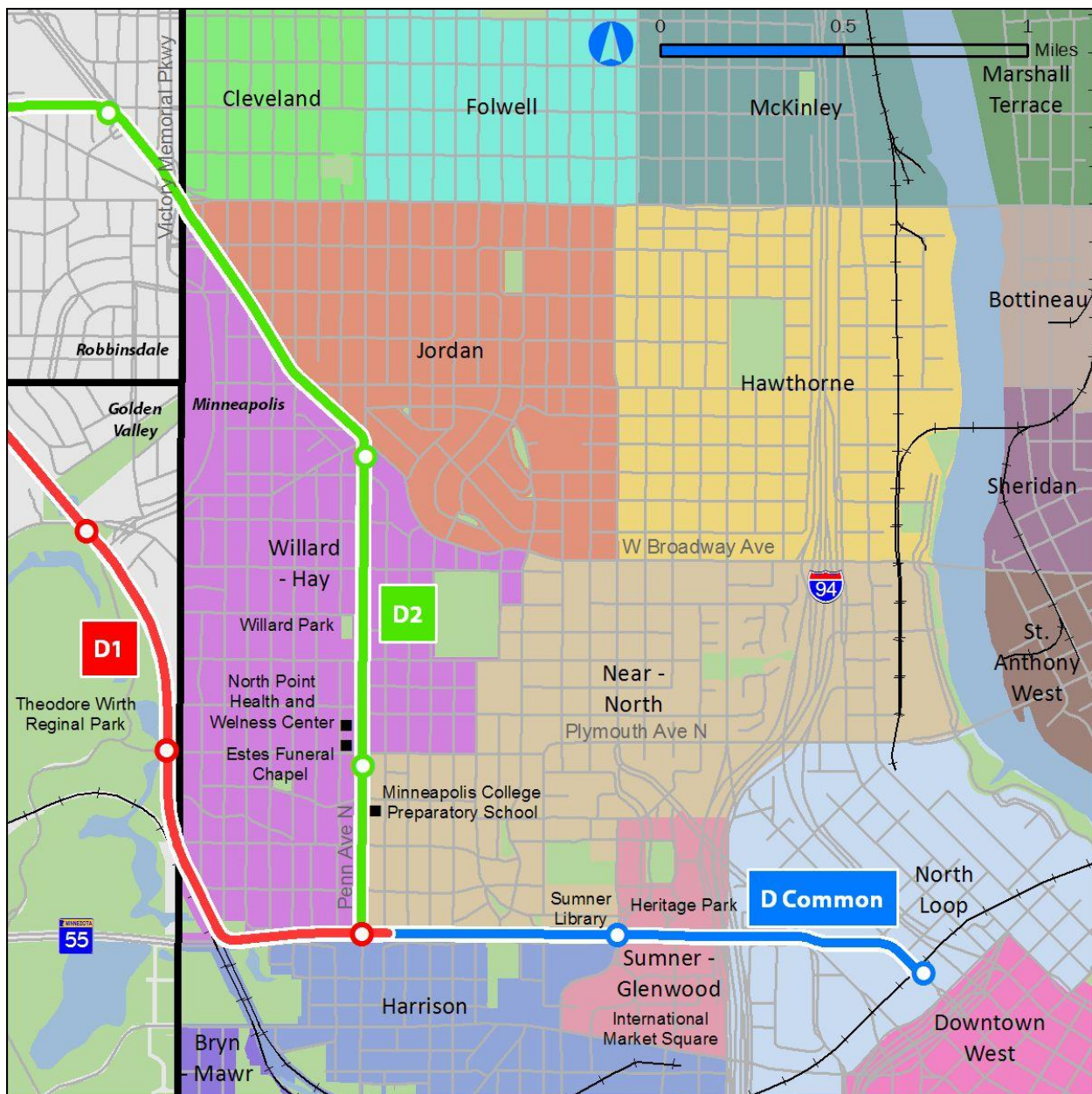
Cross streets within the city are limited to Golden Valley Road, Theodore Wirth Parkway, Plymouth Avenue, and TH 55 which pass over the existing BNSF railroad on bridge structures. Grade-separated roadway crossings provide pedestrians and bicyclists with the only formal crossings of the railroad. Residential

neighborhoods within Golden Valley have a suburban character with curvilinear streets. Neighborhoods are cohesive among themselves but not across the BNSF railroad and parkland.

### Minneapolis

Within Minneapolis, Alignment D1, Alignment D2, and the Alignment D Common Section pass through five officially designated neighborhoods: Jordan, Willard-Hay, Harrison, Near-North, and Sumner-Glenwood. These residential neighborhoods, illustrated in Figure 4.2-6, generally have an urban character with a grid street pattern and residential housing in a variety of densities along the alignments.

**Figure 4.2-6. Officially Recognized Neighborhoods and Primary Community Features along the Bottineau Transitway in Minneapolis**



The neighborhoods bordering the portion of Alignment D2 where it parallels West Broadway Avenue are Jordan and Willard-Hay. These neighborhoods are primarily residential with commercial uses along West Broadway Avenue. Victory Memorial Parkway runs north-south along the western Minneapolis border, crossing under the proposed Alignment D2 on the western border of Minneapolis.

Alignment D2 continues south along Penn Avenue and is bordered by the Willard-Hay and Near-North neighborhoods. Commercial activity and community facilities are located where Penn Avenue intersects West Broadway Avenue and Plymouth Avenue.

Alignment D1 enters Minneapolis also in the Willard-Hay neighborhood. Theodore Wirth Regional Park is a major community feature west of the alignment. In some instances (near Plymouth Avenue), the park is also east of Alignment D1.

The neighborhoods adjacent to Alignment D1 along TH 55 and the Alignment D Common Section are Harrison to the south, Near-North to the north, and Sumner-Glenwood just west of I-94.

The Harrison neighborhood, located south of TH 55, is primarily residential. TH 55 is a wide arterial street with neighborhood connections provided by north-south street crossings with traffic signals at TH 55 intersections. The wide median with trees and green space within the right-of-way serve as a buffer between the highway and the adjacent neighborhoods.

Near-North is primarily residential. Major landmarks include the historic Sumner Library and the recently redeveloped Heritage Park, a mixed use residential development that includes public housing. International Market Square, a redeveloped factory containing commercial businesses, is also a major landmark in the neighborhood. Near-North is bordered on the east by I-94, which physically separates the neighborhood from downtown Minneapolis.

The Alignment D Common Section continues into downtown in the North Loop neighborhood, which has a mixed use urban character.

#### **4.2.4 Environmental Consequences**

This section identifies community facilities and evaluates potential impacts to community character due to access changes, loss of parking, noise impacts, visual changes, and property conversions. Impacts to community cohesiveness are also identified, specific to actions or results from implementation of the proposed project that would divide (physically or visually) the community or negatively alter the connections between parts of the community. Refer to the following individual reports for further detail regarding access changes and parking, noise, and visual changes: Transportation Technical Report (Kimley-Horn and Associates & SRF Consulting Group, 2012), Noise and Vibration Technical Report (HMMH, 2012), and the Visual Quality Technical Report (SRF Consulting Group, 2012).

##### **4.2.4.1 Operating Phase (Long-Term) Impacts**

###### **No-Build Alternative**

No changes to community character, facilities, or cohesiveness within communities are anticipated under the No-Build alternative.

###### **Enhanced Bus/TSM Alternative**

Impacts to community character and facilities would be limited to the area of the transit center and park-and-ride facility at Oak Grove Parkway and West Broadway Avenue, where undeveloped land would be converted to transportation use. No direct or indirect adverse impacts to community character, facilities, or cohesiveness within communities are anticipated.



## Build Alternatives

The following discussion evaluates the effect of the Bottineau Transitway Project on facilities present, the character of the communities, and potential changes in community cohesiveness along each alignment. [Table 4.2-1](#) summarizes potential community impacts associated with facilities, character, and cohesion for each Build Alternative.

**Table 4.2-1. Potential Impacts to Community Facilities/Community Character and Cohesion**

Alternative	Access to Community Facilities Maintained	Community Character Maintained	Community Cohesion Maintained
A-C-D1	Yes	Yes	Yes
A-C-D2	Yes	No	No
B-C-D1 (Preferred Alternative)	Yes	Yes	Yes
B-C-D2	Yes	No	No

While [Table 4.2-1](#) provides an overview of potential community impacts, specific impacts are presented and discussed in further detail in other sections of this Draft EIS. Refer to the following sections for additional information regarding property acquisition, displacement, and relocation (Section 4.3), noise (Section 5.6), vibration (Section 5.7), visual/aesthetics (Section 4.5), parks (Chapter 8 Draft Section 4(f) Evaluation), effects to minority and low-income and populations (Chapter 7), and business impacts (Section 4.6).

Community facilities, including park resources, were identified for each community along each of the proposed alignments. Tables listing community facilities and park resources are provided for each alignment and community, as applicable.

### Alignment A

#### ■ Maple Grove

No community facilities were identified along Alignment A in Maple Grove. Much of the area adjacent to this alignment option is within the gravel mining area.

Effect on community character and cohesiveness:

No adverse effects to community facilities are anticipated along Alignment A in Maple Grove as the majority of the area is undeveloped. Although gravel mining operations in this area may continue for decades, Maple Grove is planning for future development that includes a street alignment that would accommodate the proposed Bottineau Transitway. Future cross street facilities are expected to provide connections between future neighborhoods as well as to transit stations, thereby supporting cohesiveness within and among neighborhoods.

#### ■ Brooklyn Park

Community facilities along Alignment A in Brooklyn Park are listed in [Table 4.2-2](#).

An evaluation of noise, access, right-of-way requirements, and changes in visual character determined that the transitway would not disrupt the functions of Hennepin Technical College or Living Word Christian Center. The Bottineau Transitway Project is expected to provide the positive benefit of enhancing access to Hennepin Technical College.



**Table 4.2-2. Community Facilities along Alignment A in Brooklyn Park**

Community Facility	Distance <sup>1</sup>	Location
Hennepin Technical College	< 350 feet	9000 Brooklyn Boulevard
Living Word Christian Center	> 350 feet	9201 75th Avenue North

<sup>1</sup> Indicates distance from Alignment A

One park resource, Greenhaven Park, was identified along Alignment A in Brooklyn Park and is listed in [Table 4.2-3](#). Greenhaven Park is located far enough away from Alignment A that no impacts are anticipated.

**Table 4.2-3. Park Resources along Alignment A in Brooklyn Park**

Park	Acres	Distance <sup>1</sup>	Facilities
Greenhaven Park	29	> 350 feet	Playground, basketball and game courts, picnic area

<sup>1</sup> Indicates distance from Alignment A

Direct/indirect effects can be summarized as follows:

- Direct effects would result from the acquisition of eight residential properties south of Brooklyn Boulevard and east of Boone Avenue.

Effect on community character:

From Brooklyn Boulevard to 71st Avenue, Alignment A would be constructed within the BNSF right-of-way. Addition of a transitway within this existing rail corridor is not anticipated to substantially change the community character from what exists today.

Effect on community cohesiveness:

Implementation of the Bottineau Transitway is not anticipated to adversely affect connections within the community and no changes in community cohesion are expected.

#### *Alignment B (part of the Preferred Alternative)*

##### ■ Brooklyn Park

Community facilities along Alignment B in Brooklyn Park are listed in [Table 4.2-4](#).

The effect of transitway noise is expected to occur near Prince of Peace Lutheran Church. As worship activities are assumed to be indoors, no adverse impacts are anticipated.

Consideration of noise, access, and visual impacts determined that no other community facilities listed in [Table 4.2-4](#) are expected to be directly or indirectly affected by the transitway. Although changes in access are anticipated, they would not adversely affect the resources described below.

- The access closure at 78th Avenue, which would be required to maintain pedestrian safety, is not expected to affect pedestrian access to Brooklyn Park Evangelical Free Church as pedestrians would be diverted 1/8-mile (5 minute walk) to cross at Candlewood Drive.
- North Hennepin Community College, Step by Step Montessori School, and the future Hennepin County Library are near the proposed 85th Avenue station. The access closure at 84th Avenue, which would be necessary to maintain pedestrian safety, would divert pedestrians 1/8-mile to cross at College Park Avenue and is not expected to impact community facilities near the 85th Avenue station. The college, businesses, residents, and future library patrons are expected to benefit from improved transit access provided by the 85th Avenue station. The Brooklyn Boulevard station would provide improved access to retail activity in the area near the proposed station.

**Table 4.2-4. Community Facilities along Alignment B in Brooklyn Park**

Community Facility	Distance <sup>1</sup>	Location
Berean Baptist Church	< 350 feet	8825 West Broadway Avenue
Step by Step Montessori School	> 350 feet	8401 West Broadway Avenue
Future Hennepin County Library	= 350 feet	85th Avenue and West Broadway Avenue
North Hennepin Community College	< 350 feet	7411 85th Avenue North
Brooklyn Park Evangelical Free Church	< 350 feet	7849 West Broadway Avenue
Prince of Peace Lutheran Church	> 350 feet	7217 West Broadway Avenue
Brooklyn-Crystal Cemetery	> 350 feet	Across from 7217 West Broadway Avenue
Parenting with Purpose	> 350 feet	7111 West Broadway Avenue
Grace Lutheran Church	> 350 feet	6810 Winnetka Avenue North

<sup>1</sup> Indicates distance from Alignment B

Park resources along Alignment B in Brooklyn Park are listed in [Table 4.2-5](#).

Reconstruction of West Broadway Avenue between CSAH 30 (93rd Avenue) and Candlewood Drive would be completed by Hennepin County prior to construction of the Bottineau Transitway Project, a committed project (construction activities to begin late 2015) included under the No-Build alternative. Because the Bottineau Transitway would be built within the median of the reconstructed West Broadway Avenue, no changes in park or trail access are anticipated.

The direct effect of property acquisition (5.2 acres) from Three Rivers Park District is anticipated if an OMF is constructed at the 101st Avenue location. Construction of the OMF may affect the turf portion of Rush Creek Regional Trail. The location of the trail and a detailed discussion of trail impacts are provided in Chapter 8 Draft Section 4(f) Evaluation.

The Bottineau Transitway is not expected to affect any of the other parks identified in [Table 4.2-5](#) due to their location in relation to Alignment B. Tessman Park consists primarily of green space, and the recreation facilities in College Park are set back from the proposed alignment. The character of the North Hennepin Community College ball fields and the adjacent trail would not change as a result of the Bottineau Transitway. An evaluation of noise, access, changes in visual character, and location relative to Alignment B determined that the transitway would not disrupt the function of Brooklyn Acres, Tessman Acres Park, or Park Lawn Park.

**Table 4.2-5. Park Resources along Alignment B in Brooklyn Park**

Park	Acres	Distance <sup>1</sup>	Facilities
Rush Creek Regional Trail	5.2 <sup>2</sup>	Adjacent	Paved and turf trail
Brooklyn Acres	5.6	> 350 feet	Playground, picnic area, path and trail
Tessman Acres Park	6.2	> 350 feet	Playground, picnic area, path and trail
College Park	6	Adjacent	Playground, skate rink, picnic pavilion, park activity building
North Hennepin Community College Ball Fields	5.8	Adjacent	Ball fields
North Hennepin Community College Trail	--	Adjacent	Trail
Tessman Park	10.9	Adjacent	Trail
Park Lawn Park	5	> 350 feet	Playground, basketball, path and trail

<sup>1</sup> Indicates distance from Alignment B

<sup>2</sup> Partial acquisition of property owned by Three Rivers Park District

Direct/indirect effects can be summarized as follows:

- An OMF may be constructed at 101st Avenue or 93rd Avenue and property acquisitions would be needed for either of the OMF options. Construction of an OMF would add a large built structure to the landscape, changing the existing visual character. The area around the OMF option at 101st Avenue is currently undeveloped, but future mixed use is planned at this location. The OMF at 101st Avenue would also require approximately five acres owned by Three Rivers Park District. Should the OMF option at 101st Avenue move forward as the preferred location, formal review would be required by Metropolitan Council and the Park District Board of Commissioners to address restrictive covenants associated with this property. The OMF option at 93rd Avenue may be used as a park-and-ride or a combined OMF and park-and-ride. The area around the OMF option at 93rd Avenue is planned for future business park use.
- Potential noise impacts to residents along Alignment B.
- Property acquisitions are anticipated along Alignment B between the Oak Grove Parkway station and the 93rd Avenue station.
- Acquisition of a narrow strip of right-of-way would occur adjacent to Alignment B to allow for roadway widening to accommodate the transitway south of Candlewood Drive to 75th Avenue.
- Full property acquisitions are anticipated for eight residential properties east of West Broadway Avenue and south of 76th Avenue.
- One commercial property acquisition is expected near 75th Avenue.
- Four crossings of West Broadway Avenue in Brooklyn Park would be closed (92nd Avenue, 84th Avenue, 78th Avenue, and commercial access to Starlite Center/76th Avenue).

Effect on community character:

Although minor variations in visual character directly adjacent to the proposed changes may occur due to the construction of an OMF, acquisition and removal of residential and commercial properties, and access closures, these changes are not expected to change the overall community character of the areas near Alignment B in Brooklyn Park. The effects are confined to limited areas and are not anticipated to affect the overall community character.

Effect on community cohesiveness:

The effects are confined to limited areas and would not present a substantial physical or social barrier affecting community cohesion.

*Alignment C (part of the Preferred Alternative)*

■ **Brooklyn Park**

Four community facilities, all of which are parks, were identified along Alignment C in Brooklyn Park. An evaluation of noise, access, changes in visual character, and location relative to Alignment C determined that the transitway would not disrupt the function of any of the park resources identified in [Table 4.2-6](#).

**Table 4.2-6. Park Resources along Alignment C in Brooklyn Park**

Park	Acres	Distance <sup>1</sup>	Facilities
<b>Lakeland Park</b>	10.2	> 350 feet	Ball fields, playground, skating and hockey, picnic pavilion, park activity building, tennis, basketball, game courts
<b>Streifel Park</b>	1.3	> 350 feet	Ball field, playground
<b>Edgewood Park</b>	3.6	> 350 feet	Playground
<b>Southbrook Park</b>	9	> 350 feet	Picnic area, path and trail, nature area

<sup>1</sup> Indicates distance from Alignment C

Direct/indirect effects can be summarized as follows:

- Potential for noise impacts to residences north of I-94.
- Change of access to one commercial property (a drive-in restaurant) along West Broadway Avenue
- Expansion of the park-and-ride west of the 63rd Avenue station is anticipated. Adjacent residential neighborhoods may experience the effect of increased traffic.

Effect on community character:

Potential for increased noise at several residences, acquisition of one commercial property, and increased traffic near the park-and-ride are not anticipated to change the overall community character of the area near Alignment C in Brooklyn Park. The effects would be confined to limited areas and are not expected to affect the overall community character.

Effect on community cohesiveness:

The effects would be confined to limited areas and would not present a substantial physical or social barrier affecting community cohesion.

■ **Crystal**

Community facilities along Alignment C in Crystal are listed in [Table 4.2-7](#).

Increased noise is anticipated to occur at Doug Stanton Ministries. As activities of the ministry are assumed to be indoors, no adverse impacts are anticipated. No other direct or indirect impacts are expected for the community facilities identified in [Table 4.2-7](#). An evaluation of noise, access, right-of-way requirements, and changes in visual character determined that the transitway would not affect the function of these community facilities.



**Table 4.2-7. Community Facilities along Alignment C in Crystal**

Community Facility	Distance <sup>1</sup>	Location
<b>Crystal Medical Center</b>	< 350 feet	5706 Lakeland Avenue
<b>Conquerors Christian Center</b>	< 350 feet	5250 Hanson Court
<b>Doug Stanton Ministries</b>	< 350 feet	4947 West Broadway Avenue
<b>Washburn-McReavy Funeral Chapel</b>	> 350 feet	5125 West Broadway Avenue

<sup>1</sup> Indicates distance from Alignment C

No direct or indirect impacts are anticipated for park resources along Alignment C in Crystal, which are identified in [Table 4.2-8](#).

The Bass Lake Road station would be located directly east of Becker Park. The location of Becker Park is depicted in [Figure 4.2-3](#). Fencing along the eastern boundary of the park provides a barrier to the existing railroad and the proposed transit station. Becker Park, nearby commercial uses, and a senior housing complex located just south of the park may benefit from improved transit access provided by the proposed station.

An evaluation of noise, access, changes in visual character, and location relative to Alignment C determined that Broadway Park, Skyway Park, North Bass Lake Park, Lions Soo Line Park, Cavanagh Park, North Lions Park, and Welcome Park would not be adversely affected by the transitway.

**Table 4.2-8. Park Resources along Alignment C in Crystal**

Park	Acres	Distance <sup>1</sup>	Facilities
<b>North Lions Park</b>	12	< 350 feet	Basketball court, tennis courts, warming house, playground, trail, BBQ grills, volleyball courts, softball and baseball fields
<b>Broadway Park</b>	3.3	> 350 feet	Half-court basketball, softball field, playground, hockey rink, skating rink, warming house
<b>Skyway Park</b>	3.5	> 350 feet	Half-court basketball, playground, softball field, picnic shelter
<b>Becker Park</b>	12.4	< 350 feet	Basketball court, playground, tennis courts, softball fields, playground, trails, picnic tables, horseshoe courts, activity center
<b>North Bass Lake Park</b>	1.5	> 350 feet	Basketball court, playground, picnic shelter
<b>Lions Soo Line Park</b>	0.5	> 350 feet	Playground
<b>Cavanagh Park</b>	4.8	> 350 feet	Playground, picnic shelter, softball fields
<b>Welcome Park</b>	9.5	< 350 feet	Basketball court, skating rink, hockey rink, warming house, tennis courts, baseball fields, playground, soccer field

<sup>1</sup> Indicates distance from Alignment C

Direct/indirect effects can be summarized as follows:

- Potential for existing residences at several locations adjacent to Alignment C to experience the effect of increased noise

Effect on community character:

Increased noise is not anticipated to affect the community character of the area surrounding Alignment C in Crystal.

Effect on community cohesiveness:

Potential noise impacts would not affect community cohesion as it is localized and does not present a physical or social barrier.

#### ■ Robbinsdale

No direct or indirect impacts are anticipated for the community facilities along Alignment C in Robbinsdale, which are identified in [Table 4.2-9](#). An evaluation of noise, access, right-of-way requirements, and changes in visual character determined that the transitway would not disrupt the function of these community facilities.

**Table 4.2-9. Community Facilities along Alignment C in Robbinsdale**

Community Facility	Distance <sup>1</sup>	Location
Redeemer Lutheran Church	> 350 feet	4201 Regent Avenue North
Robbinsdale Police Department	< 350 feet	4101 Hubbard Avenue
Elim Lutheran Church	> 350 feet	3978 West Broadway Avenue
Sacred Heart Catholic Church and School	> 350 feet	4087 West Broadway Avenue
Bethel World Outreach	< 350 feet	3900 Hubbard Avenue North

<sup>1</sup> Indicates distance from Alignment C

Park resources along Alignment C in Robbinsdale are listed in [Table 4.2-10](#).

Triangle Park is located adjacent to Alignment C, and park users are expected to experience the effects of increased noise. The perimeter of Triangle Park is bounded by chain-link fencing. Lee Park is bordered by the railroad corridor on the east, with fencing providing a barrier between the railroad corridor and the park. The fencing is expected to remain, thereby providing a barrier between park activities and transitway operations. The location of Triangle Park and Lee Park are shown in [Figure 4.2-4](#).

An evaluation of noise, access, and changes in visual character determined that Spanjers Park, Mielke Park, Thomas Hollingsworth Park, Lakeview Terrace Park, and Lee Park would not be adversely affected by the transitway.

**Table 4.2-10. Park Resources along Alignment C in Robbinsdale**

Park	Acres	Distance <sup>1</sup>	Facilities
Spanjers Park	2.5	> 350 feet	Ball field, picnic area, paths/trails
Mielke Park	0.7	> 350 feet	Picnic area
Triangle Park	1	Adjacent	Ball field, playground equipment, picnic area, wading pool
Thomas Hollingsworth Park	4.4	> 350 feet	Picnic Area, path/trail, fishing dock
Lakeview Terrace Park	30	> 350 feet	Ball fields, playground equipment, tot equipment, picnic area, paths/trails, tennis courts, concession stand, boat access
Lee Park	6.7	Adjacent	Ball field, playground equipment, tot equipment, picnic area, picnic pavilion, paths/trails,

<sup>1</sup> Indicates distance from Alignment C

Direct/indirect effects can be summarized as follows:

- Residences adjacent to Alignment C, particularly along the east side, are expected to experience the effect of increased noise generated by transitway operations.

- Five commercial parcels (three properties with buildings and two parking lots) would be acquired to accommodate parking near the Robbinsdale station. Hubbard Marketplace, one of the three commercial properties, would likely be replaced by another structure that would serve as a transit facility.

**Effect on community character:**

Increased noise and the acquisition of five commercial properties are not anticipated to change the overall community character of the area surrounding Alignment C in Robbinsdale. Although minor changes in visual character may occur due to the removal of commercial properties, the positive effect of improved access provided by the Robbinsdale station is anticipated to support retail and commercial activity in the area. The effects would be confined to limited areas and are not expected to affect the overall community character.

**Effect on community cohesiveness:**

The effects would be confined to limited areas and would not present a substantial physical or social barrier affecting community cohesion.

***Alignment D1 (part of the Preferred Alternative)***

Alignment D1 passes through the cities of Robbinsdale, Golden Valley, and Minneapolis. The majority of Alignment D1 is within a trench where the existing railroad corridor is approximately 20 to 30 feet below grade. The railroad right-of-way is 100 feet wide within the trench. Freight rail would continue to operate on the western 50 feet and LRT would operate on the eastern 50 feet.

■ **Robbinsdale**

Three community facilities, all of which are parks, were identified along Alignment D1 in Robbinsdale. These parks are listed in [Table 4.2-11](#).

Sochacki Park is bordered by June Avenue and residential backyards on the west and the BNSF railroad corridor on the east. There is a trail within Sochacki Park that parallels the railroad north of Grimes Pond. The trail is less than 50 feet from the railroad in some locations. The natural setting of Sochacki Park may be somewhat diminished due to the proximity of the trail to Alignment D1. The location of Sochacki Park is depicted in [Figure 4.2-4](#).

South Halifax Park is east of Alignment D1 and south of Lowry Avenue. East of Alignment D1, the existing BNSF railroad corridor is buffered by an Xcel Energy substation facility, South Halifax Park, and large densely vegetated backyards. Deciduous vegetation provides some screening of the existing railroad corridor for residents along Indiana Avenue. Given its proximity to Alignment D1, moderate visual impacts are possible. The location of South Halifax Park is shown in [Figure 4.2-4](#).

No direct or indirect impacts are anticipated for Parkview Park, as it is located far enough away from Alignment D1 that no impacts are expected.

**Table 4.2-11. Park Resources along Alignment D1 in Robbinsdale**

Park	Acres	Distance <sup>1</sup>	Facilities
<b>Sochacki Park</b>	37.4	Adjacent	Picnic area, picnic pavilion, paths/trails
<b>South Halifax Park</b>	4	Adjacent	Playground equipment, tot equipment, half-court basketball, paths/trails
<b>Parkview Park</b>	0.3	> 350 feet	Playground equipment, picnic area

<sup>1</sup> Indicates distance from Alignment D1

Direct/indirect effects can be summarized as follows:

- Noise impacts are anticipated for residents north of South Halifax Park along Indiana Avenue between 33rd Avenue and Lowry Avenue.

Effect on community character:

Increased noise for residents north of South Halifax Park is not anticipated to change the community character of the area surrounding Alignment D1 in Robbinsdale. The effects would be confined to limited areas and are not expected to affect the overall community character.

Effect on community cohesiveness:

The effects would be confined to limited areas and would not present a substantial physical or social barrier affecting community cohesion.

#### ■ Golden Valley

No direct or indirect impacts are anticipated for the community facilities along Alignment D1 in Golden Valley, which are identified in [Table 4.2-12](#). An evaluation of noise, access, and changes in visual character determined that the transitway would not disrupt the function of these community facilities.

**Table 4.2-12. Community Facilities along Alignment D1 in Golden Valley**

Community Facility	Distance <sup>1</sup>	Location
Unity Christ Church	> 350 feet	4000 Golden Valley Road
St. Margaret Mary Catholic Church and Loveworks Academy	> 350 feet	2225 Zenith Avenue

<sup>1</sup> Indicates distance from Alignment D1

Park resources along Alignment D1 in Golden Valley are listed in [Table 4.2-13](#). [Figure 4.2-5](#) shows the location of Mary Hills Nature Area, Glenview Terrace Park, and Theodore Wirth Regional Park.

Mary Hills Nature Area is located west of the BNSF railroad. A meandering trail system connects Mary Hills Nature Area with Sochacki Park to the north. The trail generally parallels the existing railroad corridor, with deciduous vegetation providing some visual screening. The recreational experiences of this park resource may be lessened due to the effects of increased transitway operations and change in setting.

Although Glenview Terrace Park is adjacent to Alignment D1, the active uses of the park are well buffered by a ravine and wooded area.

Theodore Wirth Regional Park is located generally between a line extending along France Avenue on the west (France Avenue is discontinuous and exists north and south of the park only), Xerxes Avenue on the east, I-394 to the south, and Golden Valley Road on the north. Some of the walking trails and cross-country ski trails are near Alignment D1. Although deciduous trees provide some visual screening of the existing railroad corridor, their buffering effect would be reduced as a result of leaf loss during the winter months. Recreational experiences within the park may be somewhat diminished due to the effects of transitway operations and change in setting.

An evaluation of noise, access, changes in visual character, and location relative to Alignment D1 determined that Stockman Park, Rice Lake Nature Area, Valley View Park, and Sweeney Lake Park would not be adversely affected by the transitway.



**Table 4.2-13. Park Resources along Alignment D1 in Golden Valley**

Park	Acres	Distance <sup>1</sup>	Facilities
Stockman Park	1.5	> 350 feet	Game squares, play equipment, basketball court, softball field
Mary Hills Nature Area	15.7	Adjacent	Trails, picnic areas, benches
Rice Lake Nature Area	9	> 350 feet	Trail, wooden boardwalk, overlook across scenic pond
Glenview Terrace Park	5	Adjacent	Play equipment, walkways/trails, tennis court
Valley View Park	5.5	> 350 feet	Picnic areas, open fields, walking and cycling paths
Sweeney Lake Park	0.9	> 350 feet	Dock, canoe launch, sun shelter
Theodore Wirth Regional Park	759	Adjacent	Fishing pier, boat launch, volleyball courts, playground, picnic area/pavilion, snowboard park, trails, golf courses and clubhouse, Eloise Butler Wildflower Garden, Quaking Bog, cross-country skiing

<sup>1</sup> Indicates distance from Alignment D1

Direct/indirect effects can be summarized as follows:

- There are two potential station sites for Alignment D1: the Plymouth Avenue/Theodore Wirth Regional Park station option and the Golden Valley Road station option. No additional right-of-way is needed if the Plymouth Avenue/Theodore Wirth Regional Park station option is selected.
  - To construct the transitway, permanent property acquisition is anticipated from Theodore Wirth Regional Park near where Alignment D1 crosses Plymouth Avenue. A small amount of right-of way (0.4 acre) is anticipated due to the slope at this location. The property is owned by the Minneapolis Park & Recreation Board (MPRB).
  - To construct the Golden Valley Road station option, permanent acquisition of less than one half acre is expected from Theodore Wirth Regional Park. The property would be acquired from the MPRB.

Effect on community character:

Potential changes in the setting of Sochacki Park and Mary Hills Nature area and minor property acquisitions from Theodore Wirth Regional Park are not anticipated to change the community character of the area surrounding Alignment D1 in Golden Valley. Property acquisitions would occur near the park's eastern boundary and are not anticipated to impact park facilities or recreational use. Coordination with the MPRB regarding potential park impacts is ongoing. Construction of either proposed station is anticipated to improve access to Theodore Wirth Regional Park.

Effect on community cohesiveness:

The effects described would be confined to limited areas and are not anticipated to present a substantial physical or social barrier affecting community cohesion.

#### ■ Minneapolis

Two community facilities, both of which are parks, were identified along Alignment D1 in Minneapolis and are listed in [Table 4.2-14](#).

No direct or indirect impacts to Farwell Park are anticipated due to its distance from Alignment D1. A temporary easement from Theodore Wirth Regional Park would be required to construct the LRT guideway north of TH 55 where it transitions from the BNSF railroad corridor to TH 55. The property would be

acquired from the MPRB. The location of Theodore Wirth Regional Park is depicted in [Figure 4.2-6](#) and further discussion of park impacts is provided in Chapter 8 Draft Section 4(f) Evaluation.

**Table 4.2-14. Park Resources along Alignment D1 in Minneapolis**

Park	Acres	Distance <sup>1</sup>	Facilities
Farwell Park	1.1	> 350 feet	Picnic area, playground
Theodore Wirth Regional Park	759	Adjacent	Fishing pier, boat launch, volleyball courts, playground, picnic area/pavilion, snowboard park, trails, golf courses and clubhouse, Eloise Butler Wildflower Garden, Quaking Bog, cross-country skiing

<sup>1</sup> Indicates distance from Alignment D1

Direct/indirect effects can be summarized as follows:

- East of the BNSF railroad/TH 55 transition, three non-signalized pedestrian crossings of TH 55 would be closed (Sheridan Avenue, Russell Avenue, and Queen Avenue).
- Nearby low- and medium-density residential areas would experience the effects of general activity surrounding the Penn Avenue station.

Effect on community character:

The closure of three pedestrian crossings and the increased activity near the Penn Avenue station is not anticipated to change the community character of the area surrounding Alignment D1 in Minneapolis. Residences and community facilities near the station would benefit from improved transit access. The effects would be confined to limited areas and are not expected to affect the overall community character.

Effect on community cohesiveness:

The effects would be confined to limited areas and would not present a substantial physical or social barrier affecting community cohesion.

#### **Alignment D2**

##### ■ Robbinsdale

Community facilities along Alignment D2 in Robbinsdale are listed in [Table 4.2-15](#).

North Memorial Medical Center is a Level I Trauma Center equipped to provide emergency services while nearby North Memorial Outpatient Center provides outpatient services. Access to both the main campus and outpatient facilities would be maintained and no effects related to noise or changes to visual character are anticipated. Access and time delays are concerns for medical facilities because a prompt emergency response can influence a patient's outcome. Refer to [Figure 4.2-4](#) for the location of North Memorial Medical Center.

**Table 4.2-15. Community Facilities along Alignment D2 in Robbinsdale**

Community Facility	Distance <sup>1</sup>	Location
North Memorial Medical Center Main Campus	> 350 feet	3300 Oakdale Avenue North
North Memorial Outpatient Center	> 350 feet	3435 West Broadway Avenue

<sup>1</sup> Indicates distance from Alignment D2

Park resources along Alignment D2 in Robbinsdale are listed in [Table 4.2-16](#). No direct or indirect impacts to Manor Park are anticipated, as it is located far enough away from Alignment D2 to not be adversely affected by the transitway.

**Table 4.2-16. Park Resources along Alignment D2 in Robbinsdale**

Park	Acres	Distance <sup>1</sup>	Facilities
<b>Manor Park</b>	3.8	> 350 feet	Ball field, playground equipment, tot equipment, picnic area, paths/trails, tennis court, splash pad

<sup>1</sup> Indicates distance from Alignment D2

Direct/indirect effects can be summarized as follows:

- Potential noise impacts are anticipated along 34th Avenue in Robbinsdale.
- Alignment D2 would be constructed on a new alignment where it enters Robbinsdale, introducing direct physical changes to the residential neighborhood. Five residential parcels south of 34th Avenue and one parcel north of 34th Avenue would be acquired.
- Access along 34th Avenue would be reconfigured between the railroad corridor and Oakdale Avenue with a north-south connection maintained at Halifax Avenue. To maintain traffic safety, access would change to right-in, right-out only along 34th Avenue, except at Halifax Avenue.
- Pedestrian and bicycle access across 34th Avenue at Grimes Avenue would be eliminated to accommodate for the guideway as it transitions from the BNSF railroad trench to the elevation of the new station platform. Users would need to divert one block ( $\frac{1}{16}$  mile) east or west to cross 34th Avenue.
- The North Memorial station would be located just south of, but elevated from, the Terrace Mall retail/medical office complex. Acquisition of five residential properties, one four-unit condominium, and additional right-of-way would be necessary to construct the station and the elevated transitway near North Memorial Medical Center, resulting in direct impacts.
- The elevated transitway near North Memorial Medical Center may alter the visual character of the neighborhood.

Effect on community character:

The effects of increased noise, permanent residential acquisitions, changes in access, and change in visual character are expected to alter the community character of areas adjacent to Alignment D2 but would not affect other Robbinsdale neighborhoods. Although roadway circulation patterns would be modified at 34th Avenue, the change would affect a small number of residents. The effects would be limited to the area near 34th Avenue and North Memorial Medical Center and may be perceived to affect community character in these areas.

Effect on community cohesiveness:

The minor access changes near 34<sup>th</sup> Avenue North do not present a substantial physical or social barrier affecting community cohesion.

#### ■ Minneapolis

Community facilities along Alignment D2 in Minneapolis are listed in [Table 4.2-17](#). [Figure 4.2-6](#) shows the location of NorthPoint Health and Wellness Center, Estes Funeral Chapel, and Minneapolis College Preparatory School.

NorthPoint Health and Wellness Center is a multi-specialty medical, dental, and mental health center and human service agency serving north Minneapolis residents and employees. The Bottineau Transitway

would require partial acquisition of NorthPoint, resulting in a direct right-of-way impact. Although the transitway would require removal of part of the facility, it is anticipated that modifications to the building would allow its continued use. Access closures at 14th Avenue (east and west) would divert pedestrians ¼ mile to cross at Plymouth Avenue. However, these closures are not expected to impair access to NorthPoint Health and Wellness Center.

Estes Funeral Chapel provides services for the local community. The Penn/Plymouth station would require the removal of the chapel, which is located south of NorthPoint. The full acquisition would result in direct property impacts.

Minneapolis College Preparatory School, a public charter school that leases the Lincoln Community School Building, is adjacent to Penn Avenue. An access closure at 12th Avenue would divert pedestrians ¼ mile to cross at Plymouth Avenue. However, this closure is not expected to impair access to the school.

None of the other community facilities listed in [Table 4.2-17](#) are expected to sustain direct or indirect impacts. An evaluation of right-of-way requirements, noise, access, and changes in visual character determined that the transitway would not disrupt the function of these community facilities.

**Table 4.2-17. Community Facilities along Alignment D2 in Minneapolis**

Community Facility	Distance <sup>1</sup>	Location
Parkway United Church of Christ	< 350 feet	3120 Washburn Avenue North
True Vine Missionary Baptist Church	< 350 feet	2639 Thomas Avenue North
Church of St. Anne	> 350 feet	2627 Queen Avenue North
New Creation Church	> 350 feet	1922 25th Avenue North
KMOJ Radio Station	< 350 feet	2323 West Broadway Avenue
Morning Star Assembly of God	< 350 feet	2229 West Broadway Avenue
All Nations Seventh Day Adventist Church	< 350 feet	2315 24th Avenue North
Plymouth Christian Youth Center	= 350 feet	2210 Oliver Avenue North
North Community Missionary	< 350 feet	1832 Penn Avenue North
Twin Cities Community Gospel	> 350 feet	1530 Russell Avenue North
NorthPoint Health and Wellness Center	< 350 feet	1313 Penn Avenue North
Estes Funeral Chapel	< 350 feet	2210 Plymouth Avenue North
Police Station	> 350 feet	1925 Plymouth Avenue North
University of Minnesota Urban Research and Outreach-Engagement Center (UROC)	> 350 feet	2001 Plymouth Avenue North
Minneapolis Urban League	< 350 feet	2100 Plymouth Avenue North
Minneapolis College Preparatory School	< 350 feet	2131 12th Avenue North
Holsey Memorial Christian Church	> 350 feet	1229 Logan Avenue North
Hospitality House	> 350 feet	1220 Logan Avenue North
Pastor Paul's Mission	< 350 feet	1000 Oliver Avenue North
Minneapolis Believers – Christ	< 350 feet	1001 Penn Avenue North

<sup>1</sup> Indicates distance from Alignment D2

Park resources along Alignment D2 in Minneapolis are listed in [Table 4.2-18](#). Refer to Chapter 8 Draft Section 4(f) Evaluation for the location of the Lincoln Community School playground and the Minneapolis Public Schools athletic field.

Willard Park is located west of Penn Avenue and south of 17th Avenue. Acquisition and removal of residential housing along the west side of Penn Avenue would expose the park to transitway operations. Without visual screening such as vegetation or future development of the remnant strip west of Penn



Avenue, the transitway is expected to be visible from Willard Park. Access closures at 17th Avenue (east and west) would divert pedestrians  $\frac{1}{8}$  mile to cross at 16th Avenue or Golden Valley Road, respectively. However, access closures at 17th Avenue are not expected to affect access to the park. Willard Park is used for active recreation and no disruption to its function as a community facility is anticipated due to transitway operations. [Figure 4.2-6](#) shows the location of Willard Park.

The Lincoln Community School playground is owned by the Minneapolis Board of Education. The school closed in 2007 and is currently being leased by the Minneapolis College Preparatory School. The chain-link fencing bordering the playground on the southern portion of the property provides a barrier to Penn Avenue and the proposed transitway. An access closure at 12th Avenue would divert pedestrians  $\frac{1}{8}$  mile to cross at Plymouth Avenue or Oak Park Avenue. However, this closure is not expected to affect access to the playground. The playground is used for active recreation and no disruption to its function as a community facility is anticipated due to transitway operations.

A Minneapolis Public Schools athletic field, located across the street from the Lincoln Community School building, functions as a soccer and football field for Minneapolis Public Schools and is occasionally used by the community. Lincoln Peace Garden is situated in the northeast corner of the property. A strip of land on the east side of the athletic field would need to be acquired to construct the transitway, resulting in a direct right-of-way impact. The total area of use is estimated at about a half an acre, representing approximately 18 percent of the field's total area. Although the resource could still function as a football field, it would no longer be wide enough to accommodate a full-size soccer field. Removal of the existing row of coniferous trees along the eastern boundary of the park would eliminate the buffer to Penn Avenue. The area of the Lincoln Peace Garden, located in the northeast corner of the athletic field, would be reduced. The loss of full use of the athletic field, and the green space it provides, may affect community character. An access closure at 12th Avenue would divert pedestrians  $\frac{1}{8}$  mile to cross at Plymouth Avenue or Oak Park Avenue. This closure is not expected to affect access to the athletic field. The area of impact is illustrated and discussed in Chapter 8 Draft Section 4(f) Evaluation.

An evaluation of noise, access, changes in visual character, and location relative to Alignment D2 determined that the transitway would not disrupt the function of any of the other park resources identified in [Table 4.2-18](#).

**Table 4.2-18. Park Resources along Alignment D2 in Minneapolis**

Park	Acres	Distance <sup>1</sup>	Facilities
Victory Memorial Pkwy	75.2	Adjacent	2.8 mile parkway, WW I monument
Cleveland Park	1.4	< 350 feet	Baseball field, basketball court, picnic area, playground, softball field, wading pool
Russell Triangle Park	0.03	> 350 feet	Green space
Newton Triangle Park	0.14	> 350 feet	Green space
Cottage Park	0.5	> 350 feet	Picnic area, playground
Oliver Triangle	0.04	< 350 feet	Green space
Glen Gale Park	1.4	> 350 feet	Playground
Irving Triangle Park	0.09	> 350 feet	Green space
North Commons Park	25.5	> 350 feet	Baseball field, basketball court, picnic area, playground, soccer field, softball field, swimming pool, tennis court, wading pool
Willard Park	1.2	< 350 feet	Basketball court, picnic area, playground, wading pool
Lincoln Community School Playground	1.4	< 350 feet	Playground

**Table 4.2-18. Park Resources along Alignment D2 in Minneapolis (continued)**

Park	Acres	Distance <sup>1</sup>	Facilities
<b>Minneapolis Public Schools Athletic Field</b>	3.7	Adjacent	Soccer field, football field

<sup>1</sup> Indicates distance from Alignment D2

Direct/indirect effects can be summarized as follows:

- Near 29th Avenue, one residential property would be removed and several partial acquisitions would be required to accommodate bus pullouts. West Broadway Avenue would be reduced to one lane in each direction and left turn movements would be prohibited. Street parking would be removed.
- Minor right-of-way acquisitions would be necessary at the West Broadway Avenue/26th Avenue intersection. Two partial property acquisitions would result in direct right-of-way impacts.
- The Bottineau Transitway would require one property owned by Metropolitan Council (Metro Transit) and three partial acquisitions at the West Broadway Avenue/Penn Avenue intersection, near the proposed Broadway/Penn station. Residential uses within the station area may experience nuisance effects of transitway operations. A station in this location could be a catalyst for redevelopment near the West Broadway Avenue/Penn Avenue intersection. Refer to the Economic Impacts Technical Report (SRF Consulting Group & Biko Associates, 2012) for further information regarding redevelopment of this intersection.
- Between McNair Avenue and TH 55, approximately 90 residential properties on the west side of Penn Avenue would be acquired and removed to construct the transitway. The backyards of the existing houses that face Queen Avenue would be exposed to transitway operations.
- The unmarked pedestrian crossings at the following two locations would be closed: 27th Avenue/Thomas Avenue and Sheridan Avenue.
- Eight pedestrian/vehicle access crossings at the following intersections of Penn Avenue would be closed: 21st Avenue, 17th Avenue–west, 17th Avenue–east, 15th Avenue, 14th Avenue– east, 14th Avenue–west, 12th Avenue, and 8th Avenue.

Effect on community character:

Changes in community character are expected for neighborhoods surrounding Alignment D2 within Minneapolis. The Willard-Hay neighborhood would experience a change in community character due to the removal of approximately 90 residential properties, a funeral chapel, and a church as well as visual changes resulting from modifications to NorthPoint Health and Wellness Center and an athletic field.

The loss of approximately 270 on-street parking spaces along 34th Avenue, West Broadway Avenue, and Penn Avenue to accommodate the proposed guideway is anticipated to alter community character along Alignment D2. Residents and their visitors may have difficulty finding places to park near their homes. Public comments provided during the Scoping process expressed concerns that loss of nearby parking would be particularly detrimental to the elderly and people with disabilities.

Effect on community cohesiveness:

The above-mentioned loss of approximately 270 on-street parking spaces along 34th Avenue, West Broadway Avenue, and Penn Avenue is also anticipated to alter community cohesion along Alignment D2. Changes in access across Penn Avenue, which would be necessary to maintain pedestrian safety, are also expected to affect community cohesion. The closure of eight pedestrian/vehicle crossings along Penn Avenue, as well as the interruption to the street grid system in north Minneapolis, would collectively contribute to decreased walkability and accessibility to and within the neighborhoods surrounding this area of Alignment D2.

*Alignment D Common Section (part of the Preferred Alternative)*

■ **Minneapolis**

Community facilities along the Alignment D Common Section in Minneapolis are listed in [Table 4.2-19](#).

Access closures at Oliver Avenue, Newton Avenue, Logan Avenue, and James Avenue are not expected to affect pedestrian traffic associated with community facilities as access closures would require a diversion of less than 0.1 mile. An evaluation of right-of-way requirements, noise, access, and changes in visual character determined that the transitway would not disrupt the function of community facilities along the Alignment D Common Section in Minneapolis.

**Table 4.2-19. Community Facilities along the Alignment D Common Section in Minneapolis**

Community Facility	Distance <sup>1</sup>	Location
United Christian Ministries	> 350 feet	1919 8th Avenue North
Joint Heirs with Christ Faith	> 350 feet	500 Newton Avenue North
Minneapolis Central Church	> 350 feet	1922 4th Avenue North
Redeemer Lutheran Church	> 350 feet	1800 Glenwood Avenue
Bryn Mawr Health Care Center	> 350 feet	275 Penn Avenue North
Sumner Library	< 350 feet	611 Van White Memorial Boulevard
Glenwood Lyndale Community Center	< 350 feet	555 Girard Terrace
Jehovah's Witnesses	> 350 feet	701 Humboldt Avenue North
Zion Baptist Church	< 350 feet	621 Elwood Avenue North
Lao Assistance Center	> 350 feet	503 North Irving Avenue
Harrison Education Center	> 350 feet	501 Irving Avenue North
Bethune Community School	> 350 feet	919 Emerson Avenue North
Phyllis Wheatley Community Center	> 350 feet	1301 10th Avenue North
Heritage Park Senior Services Center	> 350 feet	1015 North 4th Avenue
La Creche Early Childhood Center	< 350 feet	1800 Olson Memorial Highway
Wayman AME Church	< 350 feet	1221 7th Avenue North
Harvest Preparatory School	< 350 feet	1300 Olson Memorial Highway
Sharing and Caring Hands	< 350 feet	525 North 7th Street
Mary's Place	> 350 feet	401 North 7th Street
3 Degrees Ministry Center	> 350 feet	119 North 4th Street
Greater Lake Country Food Bank	> 350 feet	554 8th Avenue North
Fire Station 4	> 350 feet	1101 North 6th Street
Fire Station 16	> 350 feet	1600 Glenwood Avenue

<sup>1</sup> Indicates distance from Alignment D Common Section

No direct or indirect impacts to park resources are expected along the Alignment D Common Section in Minneapolis, which are listed in [Table 4.2-20](#). Harrison Park, Lovell Square, Mary McLeod Bethune Park, and Sumner Field are more than 350 feet from the Alignment D Common Section while Barnes Place and Humboldt Triangle Park are comprised primarily of green space.

**Table 4.2-20. Park Resources along the Alignment D Common Section in Minneapolis**

Park	Acres	Distance <sup>1</sup>	Facilities
<b>Harrison Park</b>	6.9	> 350 feet	Baseball field, basketball court, picnic area, playground, soccer field, softball field, tennis court, wading pool
<b>Barnes Place</b>	0.6	< 350 feet	Green space
<b>Lovell Square</b>	1.3	> 350 feet	Walking path, picnic area, totlot playground
<b>Mary McLeod Bethune Park</b>	12.2	> 350 feet	Basketball court, picnic area, play field, playground, wading pool
<b>Humboldt Triangle Park</b>	0.3	< 350 feet	Picnic tables
<b>Sumner Field</b>	4.8	> 350 feet	Walking trail

<sup>1</sup> Indicates distance from Alignment D Common Section

The Alignment D Common Section would run in the median of TH 55, which currently has high traffic volumes. Due to the buffer area between homes and TH 55, and the fact that TH 55 is an existing busy road, the transitway is not expected to substantially increase noise or traffic on TH 55. Refer to the Traffic Technical Report (Kimley-Horn and Associates, 2012) for details regarding TH 55 traffic volumes.

Direct/indirect effects can be summarized as follows:

- Four existing unmarked pedestrian crossings of the TH 55 median would be closed (Oliver Avenue, Newton Avenue, Logan Avenue, and James Avenue).
- One existing marked pedestrian crossing of TH 55 would be closed at West Lyndale Avenue.
- Medium-density residential areas near the Van White Boulevard station are expected to experience the effects of transitway operations and general activity.

Effect on community character:

Access closures along TH 55, transitway operations, and general activity associated with the proposed transit stations are not anticipated to change the overall community character of the Harrison, Sumner-Glenwood, and Near-North neighborhoods. Residences and nearby community facilities would benefit from improved transit access, and the changes would be relatively minor. Evaluation of pedestrian access closures along TH 55 would continue during project design and development. The Van White Boulevard station would improve transit access to future planned mixed use areas along Glenwood Avenue to the south, less than a half mile away from the transit station. The effects would be confined to limited areas and are not expected to affect the overall community character.

Effect on community cohesiveness:

Overall effects would be confined to limited areas and would not present a substantial physical or social barrier affecting community cohesion.

#### ***Traction Power Substations***

The TPSS buildings are generally small enough to not be visually intrusive and are not anticipated to affect community character. Siting of TPSS facilities would take into account potential visual impacts and ability to screen with appropriate landscaping, especially in residential areas.

#### **4.2.4.2 Construction Phase Impacts**

Construction phase impacts are defined as the temporary impacts occurring during project construction.



### No-Build Alternative

No construction impacts would occur under the No-Build alternative.

### Enhanced Bus/TSM Alternative

Construction phase impacts would be limited to the area of the proposed transit center and park-and-ride facility at Oak Grove Parkway and West Broadway Avenue, and the undeveloped land at this location would be converted to transportation use. No adverse impacts to community character or facilities are anticipated.

### Build Alternatives

Although temporary in nature, construction phase impacts may affect community facilities, character, and cohesion. Traffic detours may increase traffic through residential neighborhoods or change access to community facilities. Similarly, sidewalk closures and detours may affect pedestrian traffic patterns. Construction impacts such as increased levels of noise and dust may temporarily affect neighborhood character, primarily in areas that are relatively quiet. The presence of large construction equipment may be perceived as visually disruptive, resulting in temporary effects to community character, particularly in residential settings.

#### 4.2.5 Avoidance, Minimization, and/or Mitigation Measures

Adverse effects to community character and cohesion have been identified for Alignment D2. Mitigation may include measures to facilitate better connectivity within the community, redevelopment of unused property acquired by the project, or other methods to enhance community character and cohesion.

Although impacts to Alignments A, B, C, D1, and the D Common Section were not severe enough to affect overall community character and cohesion, mitigation would be implemented for specific locations where long-term operational impacts and short-term construction impacts are anticipated. Specific mitigation for identified long-term operational impacts such as property acquisitions, displacements, and visual impacts are discussed under the appropriate sections. Mitigation of predicted noise impacts along Alignments B, C, D1, and D2 is addressed in Section 5.6. As discussed in Section 5.6, noise mitigation strategies that will be further evaluated in preliminary engineering will consider the need, feasibility, reasonableness, effectiveness, and acceptability to the community.

Short-term construction impacts may be mitigated by the use of deliberate construction staging or phasing, signage, and signal control requirements during construction for roads, trails, and sidewalks to maintain access to neighborhoods and community facilities throughout the construction period. Although specific mitigation plans have not yet been developed, Best Management Practices (BMPs) would include working with residents and community facility managers to provide alternative access, giving residents and community facilities adequate notice about construction plans and phasing, keeping access to bus stops open, and alerting the public to detours.

##### 4.2.5.1 Summary of Potential Community Impacts

**Table 4.2-21** summarizes potential community impacts associated with facilities, character, and cohesion. For alternatives A-C-D2 and B-C-D2, it is anticipated that community facilities, character, and cohesion would not be fully maintained. Along Penn Avenue, modifications to NorthPoint Health and Wellness Center and the Minneapolis Public Schools athletic field would occur and a funeral chapel and church would be demolished. As previously stated, changes in community character and cohesion are expected due to loss of residential properties and on-street parking. The closure of eight pedestrian/vehicle crossings along Penn Avenue is expected to affect community cohesion, as these changes would contribute to decreased walkability and accessibility to and within the neighborhoods surrounding this area.

**Table 4.2-21. Potential Impacts to Community Facilities/Community Character and Cohesion**

Alternative	Community Facilities Maintained	Community Character Maintained	Community Cohesion Maintained
A-C-D1	Yes	Yes	Yes
A-C-D2	No	No	No
B-C-D1 (Preferred Alternative)	Yes	Yes	Yes
B-C-D2	No	No	No

### 4.3 Displacement of Residents and Businesses

The Bottineau Transitway Project would require the acquisition of land (partial and full) for the construction and operation of the transitway. Each alignment would require additional land beyond that already dedicated to transportation purposes. This section summarizes land acquisition and residential, commercial, and farmland displacements associated with the proposed alignments and alternatives.

#### 4.3.1 Regulatory Context and Methodology

Specific regulations govern the displacement and relocation of residents and businesses resulting from publicly funded transportation projects. Public agencies are required by law to compensate land owners for property acquired for public uses. Any acquisition of property required for the Bottineau Transitway Project would be in accordance with the Uniform Relocation and Real Property Acquisitions Policies Act of 1970 as amended (Uniform Act or URA) (PL 91–646) and 49 CFR part 24, the implementing regulation. The objective of the Uniform Act is to provide fair and equitable treatment of people whose real property is acquired or who are displaced in connection with federally funded projects, to ensure relocation assistance is provided, and to ensure that decent, safe, and sanitary housing is available within the displaced person's financial means.

Right-of-way acquisitions can be divided into two categories: partial acquisitions and full acquisitions. A partial acquisition occurs when a public agency acquires part of a property, but the original use of the property remains intact. For example, a partial acquisition may occur when a strip of land is acquired from the front of a residential lot for a transitway project, but the residence remains intact and undisturbed. In contrast, a full acquisition occurs when the entire property is acquired for public use.

In addition to permanent partial and full acquisitions, permanent and temporary easements would be required. A permanent easement is a right granted by the property owner that entitles the holder of the easement a specific use of the property (e.g., utility access). A temporary easement is a right granted for a specific period of time, and, once it expires, the rights granted return to the property owner (e.g., temporary use of property for construction staging). Permanent and temporary easement requirements would be refined in subsequent engineering phases.

This analysis identifies the location, size and number of parcels, and type of property that may be acquired to accommodate the Bottineau Transitway. The proposed acquisitions (partial and full) were identified and estimated using the potential area of disturbance and approximate right-of-way requirements for the proposed project.

#### 4.3.2 Study Area

The study area is defined as the area within the potential area of disturbance, which provides a conservative estimate of right-of-way requirements. Further refinements of right-of-way requirements will be provided in the Final EIS.

### 4.3.3 Affected Environment

Development along the proposed Bottineau Transitway includes residential, commercial, industrial, institutional, agricultural, park, and transportation uses. A gravel mining area is located along Alignment A in Maple Grove. Existing land uses along the proposed alignment options are identified and described in Section 4.1 of this Draft EIS.

Parklands, and the specific regulations associated with parkland acquisition, are described in Chapter 8 Draft Section 4(f) Evaluation. Utilities and potential utility relocations are discussed in Section 5.1.

### 4.3.4 Environmental Consequences

#### 4.3.4.1 Operating Phase (Long-Term) Impacts

The operating phase of the Bottineau Transitway Project would require the permanent acquisition of right-of-way from residential, commercial, industrial, park, and farm properties.

##### No-Build Alternative

The No-Build alternative would not require acquisition of any properties within the Bottineau Transitway.

##### Enhanced Bus/TSM Alternative

Right-of-way impacts would be limited to the property required to construct a transit center and park-and-ride facility near Oak Grove Parkway and West Broadway Avenue, north of TH 610 in Brooklyn Park. The facility would be constructed in an undeveloped area and no relocations would be necessary.

##### Build Alternatives

The operating phase of the Bottineau Transitway Project would require the permanent acquisition of right-of-way from residential, commercial, industrial, park, and farm properties. Estimated full and partial acquisitions, based on project alignments, are provided in [Table 4.3-1](#).

**Table 4.3-1. Impact Details by Alignment**

Alignment	Partial Acquisition		Full Acquisition	
	Parcels	Acres	Parcels	Acres
A	17	12.9	9	4.5
B (part of the Preferred Alternative)	44	7.5	10	5.8
C (part of the Preferred Alternative)	7	0.5	7	2.4
D1 <sup>1</sup> (part of the Preferred Alternative)	3 - 5	0.4 - 0.8	0	0
D2	25	2.3	125	19.7
D Common Section (part of the Preferred Alternative)	1	< 0.1	1	< 0.1

<sup>1</sup> Range shown for Plymouth Avenue/Theodore Wirth Regional Park and Golden Valley Road station options

Estimated permanent right-of-way acquisitions, based on project alternatives, are provided in [Table 4.3-2](#).

**Table 4.3-2. Impact Details by Alternative**

Alternative	Partial Acquisition		Full Acquisition	
	Parcels	Acres	Parcels	Acres
A-C-D1 <sup>1</sup>	28 - 30	13.9 - 14.3	17	7.0
A-C-D2	50	15.8	142	26.7
B-C-D1 <sup>1</sup> (Preferred Alternative)	55 - 57	8.5 - 8.9	18	8.3
B-C-D2	77	10.4	143	28.0

<sup>1</sup> Range shown for Plymouth Avenue/Theodore Wirth Regional Park and Golden Valley Road station options

There are two potential station sites for Alignment D1: the Plymouth Avenue/Theodore Wirth Regional Park station option or the Golden Valley Road station option. No additional right-of-way is needed if the Plymouth Avenue/Theodore Wirth Regional Park station option is selected (a small amount of right-of-way is anticipated near Plymouth Avenue due to the slope at this location). If the Golden Valley Road station option is selected, two additional partial acquisitions totaling approximately 0.4 acre are expected.

The types of properties that are expected to require full and partial property acquisitions, based on project alignments, are presented in [Table 4.3-3](#). The types of properties that are expected to require full and partial property acquisitions, based on project alternatives, are provided in [Table 4.3-4](#). Residential properties are expected to incur the greatest impacts in terms of number and area. It is important to note that some of the parcels are vacant. In [Table 4.3-3](#) and [Table 4.3-4](#), the total number of properties is followed in parentheses by the number of vacant parcels. In general, vacant parcels are undeveloped and do not have any structures.

**Table 4.3-3. Number and Types of Parcels Impacted by Alignment**

Alignment	Number of Residential Parcels <sup>1</sup>		Number of Commercial Parcels <sup>1</sup>		Number of Park Parcels		Number of Other Parcels <sup>1,2</sup>	
	Partial	Full	Partial	Full	Partial	Full	Partial	Full
<b>A</b>	5 (2)	9	3	1 (1)	0	0	9 (2)	0
<b>B (part of the Preferred Alternative)</b>	30 (2)	8	12 (2)	2 (1)	0	0	2 (1)	0
<b>C (part of the Preferred Alternative)</b>	5	1 (1)	2 (1)	6 (4)	0	0	0	0
<b>D1<sup>3</sup> (part of the Preferred Alternative)</b>	0	0	1	0	1 - 3	0	1	0
<b>D2</b>	13	115 (10)	10 (2)	10 (7)	0	0	2	0
<b>D Common Section (part of the Preferred Alternative)</b>	1	0	0	1 (1)	0	0	0	0

<sup>1</sup> The total number of properties is followed in parentheses by the number of vacant parcels.

<sup>2</sup> Other category includes industrial, railroad, or utility

<sup>3</sup> Range shown for Plymouth Avenue/Theodore Wirth Regional Park and Golden Valley Road station options

**Table 4.3-4. Number and Types of Parcels Impacted by Alternative**

Alternative	Number of Residential <sup>1</sup> Parcels		Number of Commercial <sup>1</sup> Parcels		Number of Park Parcels		Number of Other Parcels <sup>1,2</sup>	
	Partial	Full	Partial	Full	Partial	Full	Partial	Full
<b>A-C-D1<sup>3</sup></b>	11 (2)	10 (1)	6 (1)	8 (6)	1 - 3	0	10 (2)	0
<b>A-C-D2</b>	24 (2)	125 (11)	15 (3)	18 (13)	0	0	11 (2)	0
<b>B-C-D1<sup>3</sup> (Preferred Alternative)</b>	36 (2)	9 (1)	15 (3)	9 (6)	1 - 3	0	3 (1)	0
<b>B-C-D2</b>	49 (2)	124 (11)	24 (5)	19 (13)	0	0	4 (1)	0

<sup>1</sup> The total number of properties is followed in parentheses by the number of vacant parcels.

<sup>2</sup> Other category includes industrial, railroad, or utility

<sup>3</sup> Range shown for Plymouth Avenue/Theodore Wirth Regional Park and Golden Valley Road station options



## Operations and Maintenance Facilities

In addition to the right-of-way needed to construct the proposed alternatives, the Bottineau Transitway Project would require the construction of an OMF. Three potential OMF locations have been identified, one of which would be selected for the proposed project. For the alternatives including Alignment A, an OMF facility would be located at the northern end of the alternative in Maple Grove on a parcel currently within the gravel mining area east of Hemlock Lane. For the alternatives including Alignment B, an OMF facility would be located at the northern end of the alternative in Brooklyn Park on one of two potential sites: the 93rd Avenue and West Broadway Avenue park-and-ride site or the northwest quadrant of the Winnetka Avenue and 101st Avenue intersection. The OMF site north 93rd is currently undeveloped farmland. The OMF site north of 101st Avenue consists of an undeveloped parcel owned by the City of Brooklyn Park and a parcel that contains a portion of the Rush Creek Regional Trail, which is under the jurisdiction of Three Rivers Park District. [Table 4.3-5](#) provides an estimate of the number of parcels and acres required for each OMF alternative. The number of parcels and acres needed for the OMF would be in addition to the right-of-way requirements identified in [Table 4.3-1](#) and [Table 4.3-2](#).

**Table 4.3-5. Acquisition Details for OMF Locations**

OMF Location <sup>1</sup>	Partial Acquisition		Full Acquisition	
	Parcels	Acres	Parcels	Acres
Alignment A – Hemlock Lane <sup>2</sup>	1	6.2	0	0
Alignment B – 93rd Avenue option <sup>3</sup>	3	10.9	2	21.3
Alignment B – 101st Avenue option	2	18.4	0	0

<sup>1</sup> Alignment B is part of the Preferred Alternative B-C-D1. Two OMF locations are currently under evaluation as part of the Preferred Alternative.

<sup>2</sup> The Hemlock Lane site would also include adjacent land owned by the Minnesota Department of Transportation (not included in Table 4.3-5).

<sup>3</sup> The 93rd Avenue site includes additional area for a park-and-ride facility.

## Traction Power Substations

Proposed TPSS would be located along the LRT line and spaced approximately  $\frac{3}{4}$  mile to one mile apart, with most located near LRT stations. TPSS would be located on limited access sites that would be approximately 4,000 square feet (less than 0.1 acre) in size and able to accommodate a single-story building that is about 40 feet by 20 feet. Although most TPSS are expected to fit within the transportation right-of-way, there may be cases where these buildings may be sited outside of existing right-of-way.

## Displacements and Relocations

The Bottineau Transitway Project is expected to require the relocation of residents (both renters and property owners) as well as several commercial properties.<sup>1</sup> [Table 4.3-6](#) depicts the number of residential and business displacements by alignment, while [Table 4.3-7](#) shows the number of displacements by project alternative. The financial and other compensation that displaced residents and businesses would be entitled to is described under Section 4.3.5 Avoidance, Minimization, and/or Mitigation Measures.

<sup>1</sup> The acquisition of parcels designated as “double bungalow” assumed that two relocations would be necessary for each property.

**Table 4.3-6. Displaced Properties by Alignment**

Alignment	Residential Properties	Commercial Properties
A	8	0
B (part of the Preferred Alternative)	8	1
C (part of the Preferred Alternative)	0	2
D1 (part of the Preferred Alternative)	0	0
D2	105	3
D Common Section (part of the Preferred Alternative)	0	0

**Table 4.3-7. Displaced Properties by Alternative**

Alternative	Residential Properties	Commercial Properties
A-C-D1	8	2
A-C-D2	113	5
B-C-D1 (Preferred Alternative)	8	3
B-C-D2	113	6

The majority of residential relocations are anticipated along Alignment D2. Correspondingly, Alternatives A-C-D2 and B-C-D2 would have the greatest number of residential relocations. The Bottineau Transitway Project is expected to require one business relocation along Alignment B, two business relocations along Alignment C, and three business relocations along Alignment D2. Thus, Alternatives A-C-D2 and B-C-D2 and would have the greatest number of business relocations. No business relocations would be necessary along Alignment D1 or the Alignment D Common Section.

In addition to the residential and business displacements provided in [Table 4.3-6](#) and [Table 4.3-7](#), the acquisition of two agricultural properties are anticipated for the OMF option at 93rd Avenue (Alignment B). As shown in [Table 4.3-8](#), the total area of the two farm properties is 21.3 acres.

**Table 4.3-8. Displaced Properties, by OMF Location**

OMF Location <sup>1</sup>	Agricultural Properties	
	Parcels	Acres
Alignment A – Hemlock Lane	0	0
Alignment B – 93rd Avenue option	2	21.3
Alignment B – 101st Avenue option	0	0

<sup>1</sup> Alignment B is part of the Preferred Alternative B-C-D1. Two OMF locations are currently under evaluation as part of the Preferred Alternative.

### Relocation Potential and Services under URA

The relocation potential for displaced residents and businesses was evaluated based on the availability of similar residential or commercial properties within the same or nearby community. A search of the Multiple Listing Service (MLS) was conducted to assess the future potential for identifying suitable replacement properties for residents and businesses whose properties may be acquired for the Bottineau Transitway. The number of displaced properties was compared with the number of comparable properties available, assuming similar properties may be available at the time of construction. MLS search results were also used to assess the availability of suitable residential or commercial properties in or near the community where displacements are anticipated to occur. Although this methodology cannot predict the future availability of suitable properties, it does provide a sense of the degree of difficulty associated with

relocating a small number of properties (low) as compared to relocating a large number of properties (high).

This MLS exercise was performed only to assess the ability to relocate displaced residents and businesses in current real estate market conditions. Should the Bottineau Transitway proceed to construction, displaced residents and businesses would receive relocation assistance in accordance with their needs and current market availability. Relocation assistance would also be provided for agricultural properties.

Replacement residential properties were identified based on comparable housing costs. Replacement commercial properties were based on type of use. In general, where displacements of residents and businesses are minimal, adequate replacement properties are anticipated to be available based on current projections. Displacements and relocation potential are summarized below by alignment.

#### ***Alignment A***

Relocation of eight residential parcels south of Brooklyn Boulevard in Brooklyn Park would be necessary to construct LRT tracks and guideway where Alignment A transitions onto the railroad corridor paralleling CSAH 81. Currently, two of the eight residential properties are occupied by tenants; the remainder are owner-occupied. A search of available housing in the area indicates that similar housing stock currently exists as a potential source of relocation.

#### ***Alignment B (part of the Preferred Alternative)***

Eight owner-occupied residential parcels east of West Broadway Avenue and south of Brooklyn Boulevard in Brooklyn Park would be acquired to construct the LRT tracks and guideway. A search of available housing in the area indicates that similar housing stock currently exists as a potential source of relocation.

Relocation of one business is anticipated north of 73rd Avenue where Alignment B transitions from West Broadway Avenue to CSAH 81. Commercial property of similar use is currently available in the area.

#### ***Alignment C (part of the Preferred Alternative)***

Two business relocations are anticipated along Alignment C to construct the Bottineau Transitway. Two businesses (electronics store and Asian market) are situated east of the proposed Robbinsdale station. Commercial property of similar use is currently available in the area.

A drive-in restaurant is located west of CSAH 81 and north of I-94 in Brooklyn Park. The parking lot of the restaurant is currently located on railroad right-of-way. Access to this property would be impacted by the project. Refinements would be considered during final design to minimize and/or mitigate these impacts.

#### ***Alignment D1 (part of the Preferred Alternative)***

No residential or business relocations would be necessary along Alignment D1.

#### ***Alignment D2***

Approximately 105 residential displacements are expected at various locations along Alignment D2. Relocations are anticipated where Alignment D2 transitions from the railroad corridor to 34th Avenue in Robbinsdale, near the North Memorial station where the transitway transitions from 34th Avenue to Bottineau Boulevard, and west of the West Broadway Avenue/29th Avenue intersection in Minneapolis. The majority of residential displacements are expected to occur along Penn Avenue between McNair Avenue and TH 55 in Minneapolis. It is estimated that about 75 percent of these residents are homeowners and about 25 percent are tenants. Although replacement properties are currently available in Minneapolis and Robbinsdale, due to the large number of residential displacements available properties may be outside of the displaced residents' immediate neighborhoods.

Three business relocations (animal hospital, funeral chapel, and church) are anticipated west of Penn Avenue in Minneapolis. Commercial property of similar use is currently available in the area.

*Alignment D Common Section (part of the Preferred Alternative)*

No residential or business relocations would be necessary along the Alignment D Common Section.

**Availability of Replacement Housing for Low-Income Populations**

Low-income populations have been identified along much of the Bottineau Transitway. Comparable replacement properties are expected to be available in locations where the number of displaced residents is minimal (Alignments A, B, C, and D1). Displacement of approximately 90 homeowners and tenants would occur along the west side of Penn Avenue in Minneapolis under Alignment D2. Based on MLS information, comparable replacement housing is currently available for homeowners and tenants along Penn Avenue; however, not all currently available properties are near the current location of the displaced properties. Securing affordable housing for displaced low-income residents may be challenging, and it is possible that residents would need to relocate outside their immediate neighborhoods (Jordan, Willard-Hay, and Near-North) to secure comparable housing options.

Should the Bottineau Transitway proceed to construction, displaced residents and businesses would receive individual relocation assistance in accordance with their needs and current market availability. Transit accessibility would be considered for displaced residents who do not own automobiles.

**4.3.4.2 Construction Phase Impacts**

Construction activities would result in short-term impacts due primarily to activities requiring temporary construction easements. In addition, project construction would likely require temporary modification or closure of some existing property access. Refer to Section 3.3, Section 3.4, Section 3.5, and Section 4.6 of this Draft EIS for further discussion of construction impacts related to access closures and impacts to on-street parking.

**4.3.5 Avoidance, Minimization, and/or Mitigation Measures**

Loss of private residential property would be mitigated by payment of fair market compensation and provision of relocation assistance in accordance with URA. For residential displacements, the following would be provided:

- Relocation advisory services to displaced tenants and owner occupants
- Minimum 90 days written notice to vacate prior to requiring possession
- Reimbursement for moving expenses
- Payments for the added cost of renting or purchasing comparable replacement housing

For non-residential displacements, the following would be provided:

- Relocation advisory services
- Minimum 90 days written notice to vacate prior to requiring possession
- Reimbursement for moving and reestablishment expenses

Although the law requires a minimum of 90 days written notice to vacate for residential and non-residential displacements, the displaced owners would have been previously contacted by a right-of-way agent and an appraiser. Relocation advisory services would ensure that relocation activities are coordinated with the owners.

There are a number of other reimbursable/incidental expenses related to relocation that may also be provided to residents and businesses if determined to be actual, reasonable, and necessary.



## 4.4 Cultural Resources

This section describes cultural resources and discusses potential impacts that would result from proposed project implementation. Cultural resources are defined as the buildings, structures, districts, objects, and sites that are listed in or eligible for listing in the National Register of Historic Places (NRHP) as required under the National Historic Preservation Act. Historic properties designated or eligible for designation by the City of Minneapolis or other local governments are not subject to review under the National Historic Preservation Act, unless those properties are also listed in or eligible for the NRHP.

Information included within this section is based on the information provided in the Phase I and II Architectural History Survey for the Bottineau Transitway Project, Crystal, Brooklyn Park, Golden Valley, Maple Grove, Minneapolis, New Hope, and Robbinsdale, Hennepin County, Minnesota (The 106 Group Ltd., 2012) and the Phase IA Archaeological Assessment for the Bottineau Transitway Project, Hennepin County, Minnesota (The 106 Group Ltd., 2012). The analysis completed for this section was conducted in coordination with the Minnesota State Historic Preservation Office (SHPO), Minnesota Department of Transportation Cultural Resources Unit (MnDOT CRU), and Native American tribes (see discussion throughout this section and in Chapter 9 Consultation and Coordination).

### 4.4.1 Legal and Regulatory Context

The Bottineau Transitway Project is applying for FTA funding and therefore must comply with Section 106 of the National Historic Preservation Act (Section 106) of 1966 and with other applicable federal mandates. The Minnesota Field Archaeology Act, the Minnesota Historic Sites Act, and the Minnesota Private Cemeteries Act must also be addressed, as applicable.

Section 106 requires federal agencies to consider the effects of their actions on historic properties before undertaking a project. For the purposes of this document, historic properties and cultural resources are synonymous. FTA's Section 106 compliance is achieved through consultation with SHPO, Native American tribes, local governments, and other interested parties. In accordance with the Section 106 process, the responsible federal agency shall:

- Identify the project's Area of Potential Effect (APE) and the properties within the APE that are listed, or eligible for listing, in the NRHP
- Assess the effects of the project on those properties
- Resolve adverse effects by exploring alternatives that avoid, minimize, or mitigate for the adverse effects through project design, consultation with Section 106 consulting parties, and development of a Section 106 Agreement

The FTA has designated MnDOT CRU to carry out many aspects of the Section 106 review for this project.

### 4.4.2 Consultation

FTA initiated Section 106 consultation for the Bottineau Transitway Project with SHPO and Native American tribes. In January 2012, FTA sent coordination letters to Native American tribes that may have an interest in the Bottineau Transitway Project. The letters requested that tribes identify any historic, cultural, archaeological, or other concerns regarding the project, and invited them to participate in public Scoping meetings and/or schedule a separate meeting to discuss any specific tribal issues and concerns. Although none of the tribes elected to participate, they will have the opportunity to comment on the Draft EIS.

Letters were sent to the following tribes:

- Fond du Lac Reservation Tribal Council
- Keweenaw Bay Indian Community

- Grand Portage Reservation Council and Tribal Historic Preservation Office (THPO)
- Mille Lacs Band of Ojibwe
- Upper Sioux Indian Community
- Standing Rock Sioux Tribe
- White Earth Tribal Council
- Bois Forte Reservation Tribal Council
- Prairie Island Indian Community Council
- Lower Sioux Indian Community Council
- Red Lake Tribal Council
- Shakopee Dakota Community Council
- Three Affiliated Tribes
- Bad River Band of Lake Superior Chippewa
- Flandreau Santee Community
- Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin
- Lac du Flambeau Band of Lake Superior Chippewa Indians of Wisconsin
- Lac Vieux Desert Band Ketegitigaaning Ojibwe Nation
- Red Cliff Band of Lake Superior Chippewa Indians
- Sokaogon Chippewa (Mole Lake)
- Spirit Lake Tribal Council
- St. Croix Chippewa Indians of Wisconsin
- Turtle Mountain Band of Chippewa
- Northern Cheyenne Tribe
- Fort Peck Tribes
- Leech Lake Band of Ojibwe
- Santee Sioux Nation
- Sisseton-Wahpeton Oyate of the Lake Travers Reservation

The following governments, agencies, and organizations have elected to participate in the Section 106 review as consulting parties under the provisions of 36 CFR § 800.2: City of Brooklyn Park, City of Maple Grove, City of Crystal, City of Robbinsdale, City of Golden Valley, City of Minneapolis, and the Minneapolis Park & Recreation Board. Consultation and outreach will continue throughout the Section 106 process.

Consultation with SHPO is described below.

#### **4.4.3 Area of Potential Effect / Methodology**

Two Areas of Potential Effect (APEs) have been defined for this project. The first addresses the potential for effects on NRHP listed/eligible buildings, structures, districts, and landscapes, identified as the “Architectural APE.” The second addresses the potential for effects on NRHP listed/eligible archaeological sites and is termed the “Archaeological APE.”

#### 4.4.3.1 Architectural APE and Methodology

An appropriate APE for architectural history resources must account for any physical, auditory, atmospheric, visual, or change-in-use impacts to historic properties. The Bottineau Transitway Project has the potential for both direct and indirect effects.

The following APE for architecture/history has been delineated:

- **Proposed routes/corridors** – 500 feet on either side of the proposed alignment
- **Stations** – 0.25 mile radius from the center point of the station area
- **New structures** (new or replacement bridges, pedestrian bridges, etc.) – 0.25 mile radius from the structure (assumes the potential for pile driving)
- **Existing structures** – modification (widening/reconstruction of existing structures) – 0.25 mile radius from the structure (assumes the potential for pile driving)
- **Existing structures** – pier modification only (moving piers to allow the LRT to go under) – 500 feet radius from the structure (assumes using drilling and no pile driving)

Detailed rationale for these distances can be found in the Phase I/II report<sup>2</sup> of the architectural history survey. The Architectural APE is illustrated on [Figures 4.4-1](#) through [4.4-5](#) showing the five project alignments. The original APE was supplemented to reflect the addition of the Plymouth Avenue/Theodore Wirth Regional Park station option to Alignment D1.

To identify NRHP-eligible architectural resources in the Architectural APE, a Phase I/II survey was completed of all five alignments. Architectural history surveys focus on above-ground resources, including buildings, structures, districts, and landscapes. Information was compiled on properties already listed on the NRHP or previously evaluated for eligibility. Surveyors conducted field investigations to identify previously unevaluated above-ground resources that may merit listing on the NRHP.

#### 4.4.3.2 Archaeological APE and Methodology

The APE for archaeology includes all areas of proposed construction activities or other potential ground disturbing activities associated with construction. Based on the current understanding of the proposed project, the Archaeological APE generally includes the existing railroad right-of-way for portions of the project in an existing railroad corridor, and the potential area of disturbance for other areas. The Archaeological APE for the stations includes all areas within 500 feet from the center point of the currently proposed station platforms to account for potential direct impacts from construction or development activities. Similarly, the Archaeological APE for the currently proposed park-and-rides and OMF locations includes all area within 500 feet from the potential area of disturbance. The Phase IA archaeology assessment report,<sup>3</sup> completed in November 2012, provides detailed rationale for these distances.

The Phase IA archaeology assessment included a cultural resources literature review to identify all previously identified cultural resources and previously surveyed portions within the study area as well as a review of topographic maps, existing historical contexts, historical aerial photographs, and historical plat maps to assess archaeological potential within the APE. In addition, county histories, city directories, and

<sup>2</sup> Kellerhals, Kelli Andre, Greg Mathis, Saleh Miller, Kathryn Ohland, and Katherine Scott. Phase I and II Architectural History Survey for the Bottineau Transitway Project, Crystal, Brooklyn Park, Golden Valley, Maple Grove, Minneapolis, New Hope, and Robbinsdale, Hennepin County, Minnesota. Prepared by the 106 Group Ltd., St. Paul, Minnesota, 2012.

Kellerhals, Kelli Andre, Greg Mathis, Saleh Miller, Kathryn Ohland, and Katherine Scott. Bottineau Transitway Phase I and II Architectural History Survey, Hennepin County, Minnesota, Supplemental Report 1. Prepared by the 106 Group Ltd., St. Paul, Minnesota, 2013.

<sup>3</sup> Halvorsen, Peer, and Anne Ketz. Phase IA Archaeological Assessment for the Bottineau Transitway Project, Hennepin County, Minnesota. Prepared by the 106 Group Ltd., St. Paul, Minnesota, 2012.

historical census data were reviewed to further aid in assessing the potential for post-contact archaeological resources within the APE.

Visual inspection was conducted for most of the APE. Since access was not granted to private property, the visual inspection was conducted from within the public right-of-way.

#### **4.4.3.3 Determination of Eligibility**

In accordance with the Section 106 process, the findings of the Phase IA archaeology assessment and of the Phase I/II architectural history survey, together with MnDOT CRU's eligibility determinations, were submitted to SHPO and the other Section 106 consulting parties. Comments were received from SHPO and from the City of Minneapolis. All of the eligibility determinations included in Section 4.4.4 have the concurrence of the SHPO. Letters from the SHPO (October 26, 2011; October 19, 2012; January 29, 2013; August 7, 2013; and October 9, 2013) and from the City of Minneapolis (January 24, 2013, February 25, 2013, and August 9, 2013) can be found in [Appendix D](#).

#### **4.4.3.4 Assessment and Resolution of Effects**

This assessment of effects is presented for the purposes of comparing alternatives and informing selection of the Preferred Alternative. However, at this time, the engineering plans for the project are only in the conceptual stage. It is anticipated that consultation on design efforts during subsequent project stages would seek to avoid or minimize any potential impacts on historic properties. Mitigation for any adverse effects which are not avoided in the design process will be considered. FTA intends to make an effect finding for the project and each of the historic properties listed or eligible for the NRHP as part of the Final EIS/Record of Decision (ROD), after its consideration of public and consulting party comments on this Draft EIS. Based on review of potential effects on historic properties and archeological resources FTA is preparing to make a No Adverse Effect finding in the Final EIS/ROD for all properties and will seek concurrence from the SHPO prior to publication of that document. FTA is seeking input from consulting parties and the public on the effects to historic properties prior to making its final finding of effect.

Following the provisions of the Section 106 review process, ways to avoid, minimize, and mitigate adverse effects to historic properties will continue to be explored through consultation with the SHPO, Section 106 consulting parties, other interested parties and the public. The Advisory Council on Historic Preservation (ACHP) may also join in this consultation. Measures for avoidance, minimization, and mitigation will be stipulated in a Section 106 Agreement signed by the FTA, the SHPO, the ACHP (if participating), and other consulting parties. FTA will execute a Section 106 agreement prior to the Final EIS/ROD. The project will be implemented in accordance with the stipulations in the Section 106 agreement.



Figure 4.4-1. Architectural APE for Alignment A

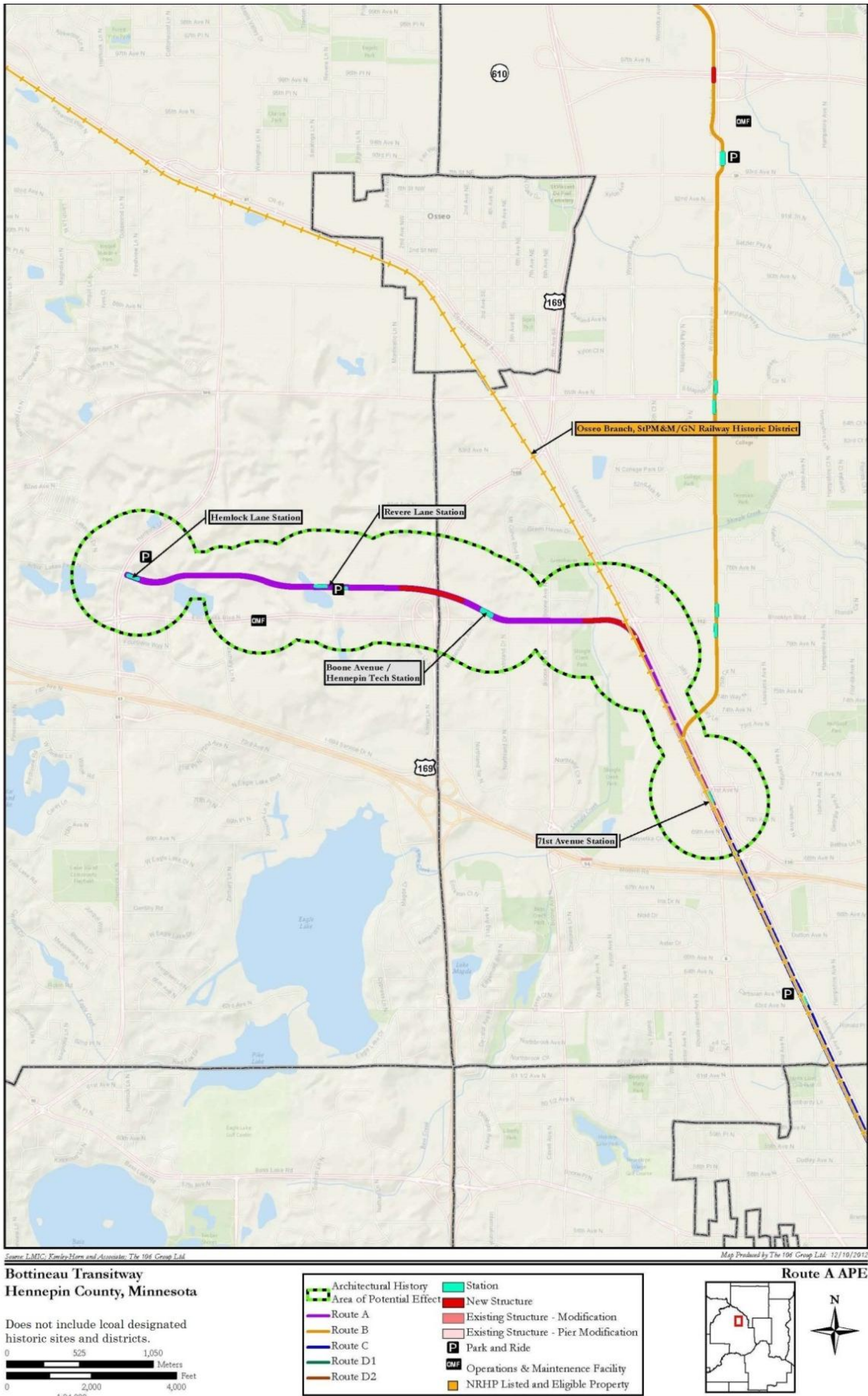
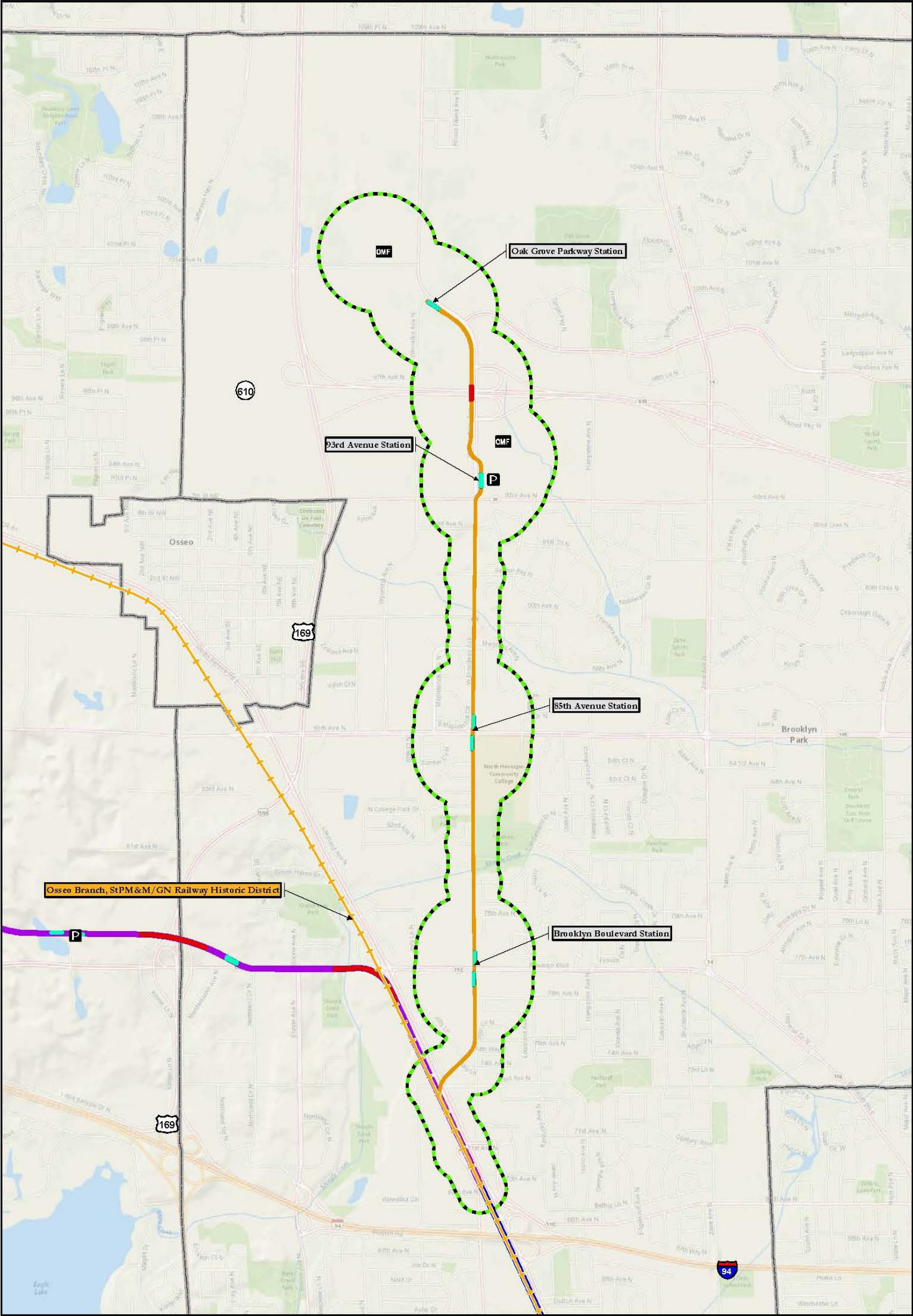




Figure 4.4-2. Architectural APE for Alignment B

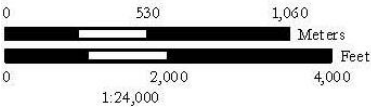


Source: LMIC, Kintley-Horn and Associates, The 106 Group Ltd.

Map Produced by The 106 Group Ltd. 12/10/2012

**Bottineau Transitway  
Hennepin County, Minnesota**

Does not include locally designated  
historic sites and districts



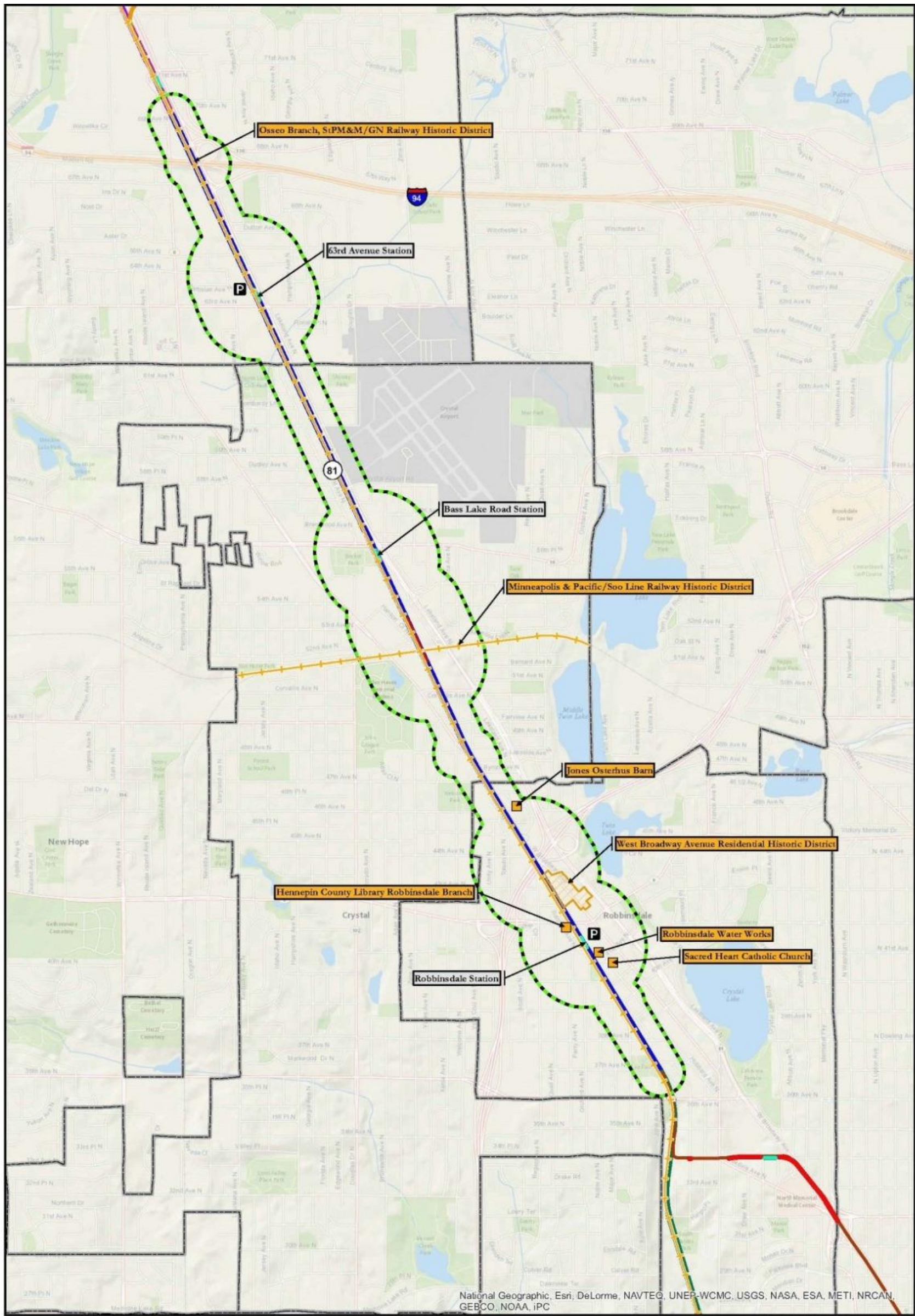
	Architectural History		Station
	Area of Potential Effect		New Structure
	Route A		Existing Structure - Modification
	Route B		Existing Structure - Pier Modification
	Route C		Park and Ride
	Route D1		Operations & Maintenance Facility
	Route D2		NRHP Listed and Eligible Property

**Route B APE**



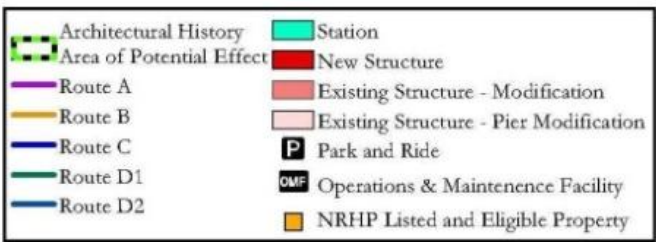


Figure 4.4-3. Architectural APE for Alignment C



**Bottineau Transitway  
Hennepin County, Minnesota**

Does not include local designated historic sites and districts.

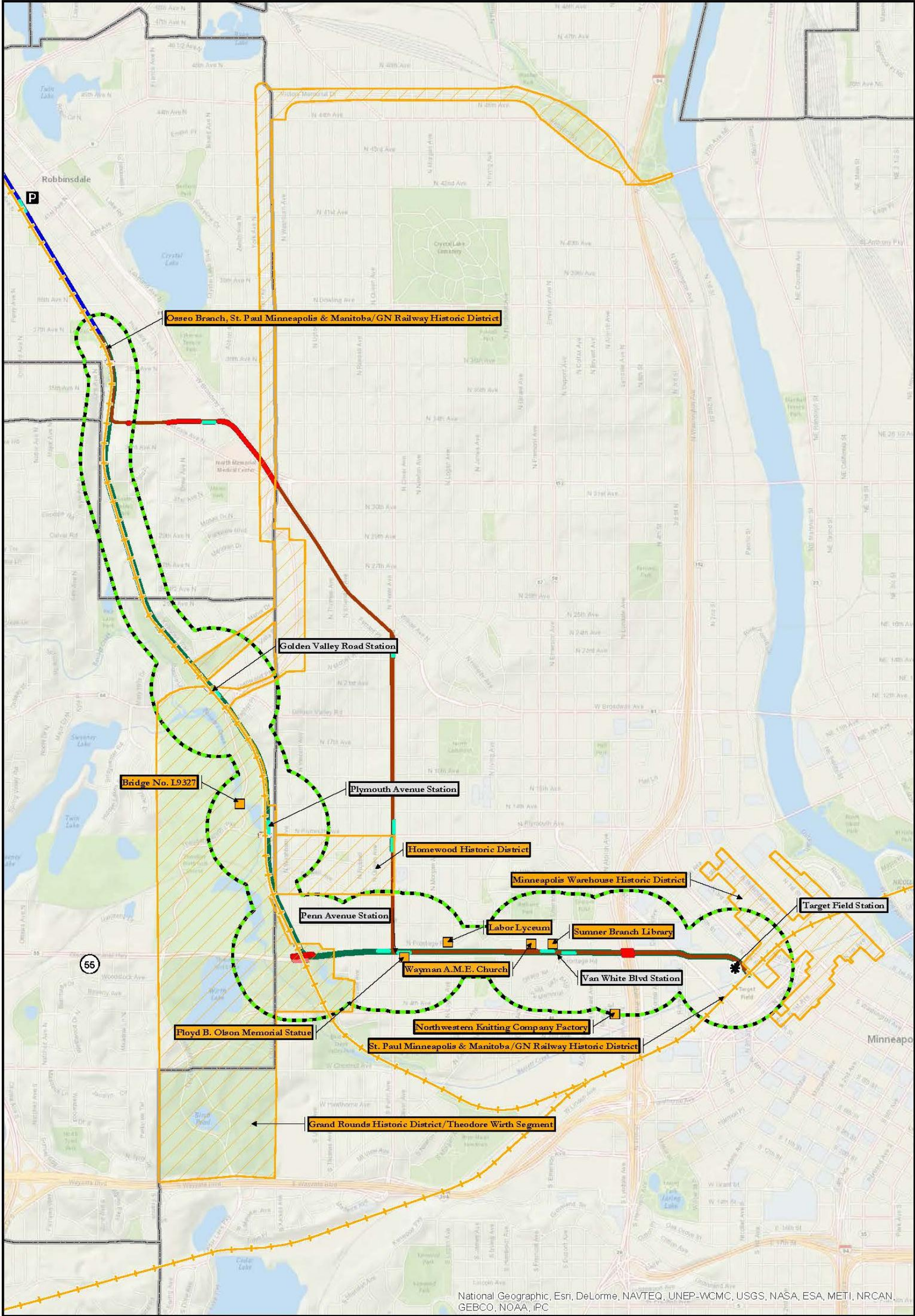


Route C APE



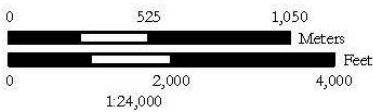


Figure 4.4-4. Architectural APE for Alignment D1



**Bottineau Transitway  
Hennepin County, Minnesota**

Does not include locally designated  
historic sites and districts



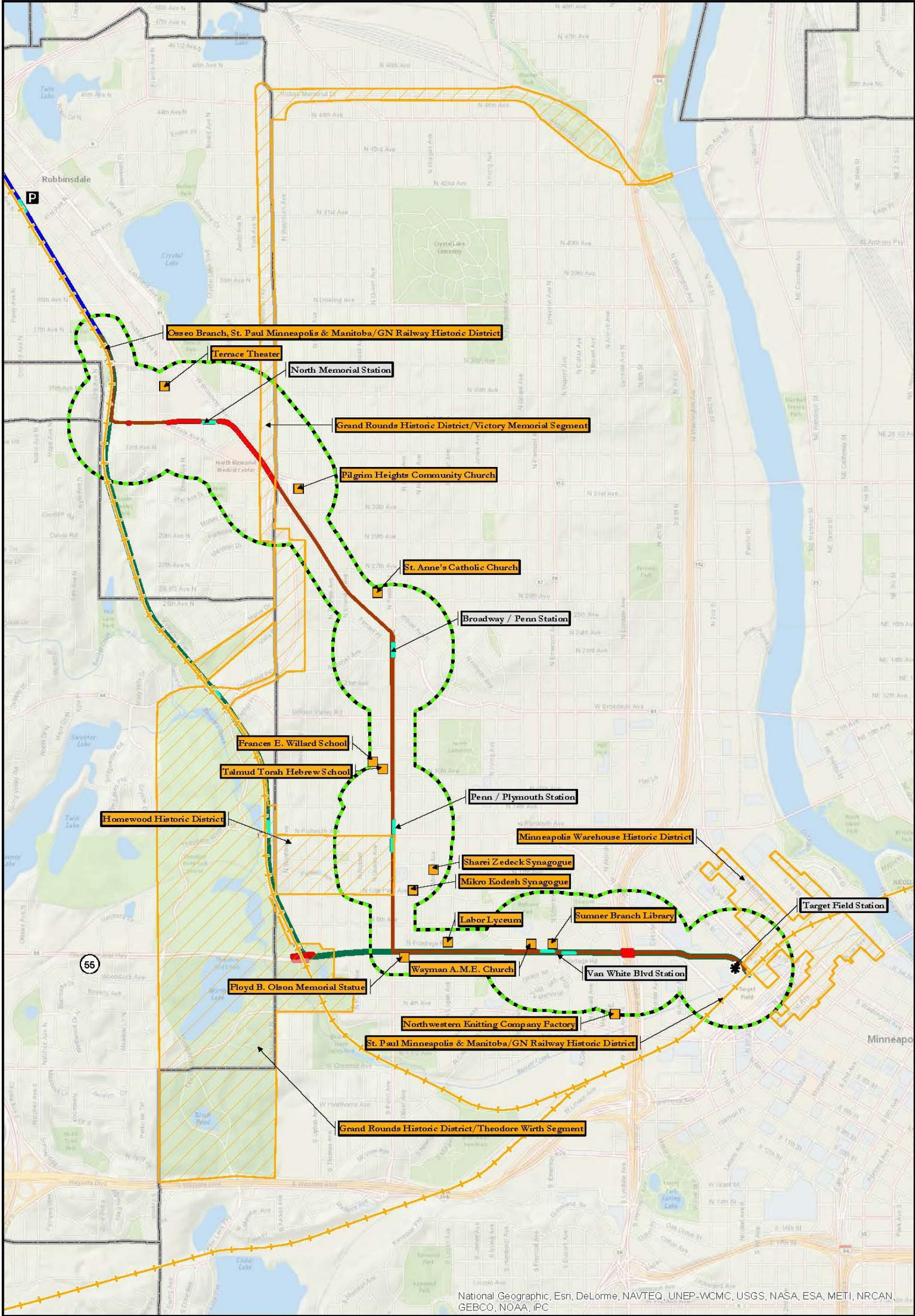
	Architectural History		Station
	Area of Potential Effect		New Structure
	Route A		Existing Structure - Modification
	Route B		Existing Structure - Pier Modification
	Route C		Park and Ride
	Route D1		Operations & Maintenance Facility
	Route D2		NRHP Listed and Eligible Property

**Route D1 APE**





Figure 4.4-5. Architectural APE for Alignment D2

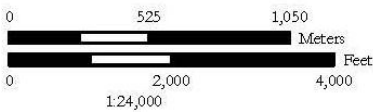


Source: LMIC, Kimley-Horn and Associates, The 106 Group Ltd.

Map Produced by The 106 Group Ltd. 6/27/2013

**Bottineau Transitway  
Hennepin County, Minnesota**

Does not include locally designated  
historic sites and districts



Architectural History	Station
Area of Potential Effect	New Structure
Route A	Existing Structure - Modification
Route B	Existing Structure - Pier Modification
Route C	Park and Ride
Route D1	Operations & Maintenance Facility
Route D2	NRHP Listed and Eligible Property

**Route D2 APE**





#### 4.4.4 Affected Environment/ Identified Resources

##### 4.4.4.1 Architectural Resources

Architectural resources listed on, or determined eligible for, the NRHP within the architectural APE are depicted in [Figure 4.4-6](#) and described below.

■ **Jones Osterhus Barn (HE-RBC-264), 4510 Scott Avenue North, Robbinsdale**

The Jones-Osterhus Barn is one of the last remaining remnants of the first generation of settlement in the Robbinsdale area. The barn was built circa 1860 by one of the early settlers in the Robbinsdale area, David W. Jones, and was later owned by the Osterhus family. The barn embodies the rural, agrarian character of the lands northwest of Minneapolis in the last half of the nineteenth century and the first half of the twentieth century, prior to the development of the area as a suburb after World War II. The Jones-Osterhus Barn has been determined eligible for listing in the NRHP under Criterion C as it embodies the transition from grain production to more diversified farming operations, exhibits the adaptations made by settlers of available building materials for the purpose of constructing necessary buildings, and is a rare example of barn design from the first period of agricultural development in Minnesota.

■ **Hennepin County Library, Robbinsdale Branch (HE-RBC-024), 4915 42nd Avenue North, Robbinsdale**

The Robbinsdale Library was established by the Robbinsdale Library Club, which was organized in 1907. The Club raised money for both the first library materials and the library building, which was completed in 1925 by architect H.H. Livingston. The Club owned and maintained the library until 1976, when it was donated to the City of Robbinsdale. The Robbinsdale Library is listed in the NRHP under Criterion A for its representation of the efforts of the Robbinsdale Library Club to provide the residents of the Robbinsdale area with the opportunity to improve their lives and gain enjoyment through reading. Additionally, the Club represents the self-help culture prevalent in America at the beginning of the twentieth century by funding the library without the aid of the government or an outside foundation.

■ **Robbinsdale Waterworks (HE-RBC-286), 4127 Hubbard Avenue North, Robbinsdale**

Built between 1938 and 1963, the Robbinsdale Waterworks consists of two pump houses, a water tower, an above ground water cistern, and a filtration plant. The Robbinsdale Waterworks was initially constructed in response to a 1925 fire that destroyed half a block of downtown Robbinsdale. The initial construction of the system was completed in 1938 and was partially funded by the WPA. Later components of the system were built as Robbinsdale's population grew during and after World War II. The Robbinsdale Waterworks is eligible for listing in the NRHP under Criterion A as an example of a WPA public utilities project in Minnesota. The Robbinsdale Waterworks is also eligible for its embodiment of successful political initiatives that were implemented to overcome longstanding resistance to develop public infrastructure to meet the needs and demands of its residents.

■ **Sacred Heart Catholic Church (HE-RBC-1462), 4087 West Broadway, Robbinsdale**

Constructed in 1958, Sacred Heart Church was designed by prolific Twin Cities architecture firm Hills, Gilbertson, and Hayes. The church is part of a complex that is also comprised of a school, convent, rectory, and gymnasium. Sacred Heart Church has been determined eligible for listing in the NRHP under Criterion C as a distinctive example of the integration of Modernist principles with the traditional design standards of the Catholic Church that began to occur in the years preceding the Second Vatican Council. Sacred Heart Catholic Church embodies the architectural shift from Gothic Revival to Mid-Century Modern as it exhibits features of both styles. In the Twin Cities the shift from Gothic Revival to Mid-Century Modern was spurred by Eliel Saarinen's design for Christ Church Lutheran in Minneapolis, which was completed in 1949. Saarinen's design used simplistic and tranquil yet dramatic design and light as a spiritual element. Hills, Gilbertson, and Hayes teamed with Saarinen on the design of Christ Church Lutheran, and elements of the firm's design for Sacred Heart Catholic Church, including smooth wall

planes and the lack of a projected, semi-circular chapel to the rear of the altar, are drawn from Christ Church Lutheran.

■ **Terrace Theater (HE-RBC-200), West Broadway and 36th Avenue North, Robbinsdale**

The Terrace Theater was originally owned by Sidney and William Volk, who commissioned the architectural firm of Liebenberg and Kaplan to design the theater. Liebenberg and Kaplan was one of the most prominent architecture firms in Minneapolis during the mid-twentieth century. The Terrace Theater has been determined eligible for listing in the NRHP under Criterion C as an outstanding example of Mid-Century Modern theater design, and as a distinct design of renowned Minneapolis theater architects Liebenberg and Kaplan. Architecturally, the Terrace Theater embodies the futuristic, space-age ideals that became popular in architecture in the 1950s and 1960s, specifically through its brick and glass tower crowned by a pair of signed illuminated signs. The Terrace Theater originally featured a 1,300-seat auditorium, a smoking lounge, and a television room that were innovative in theater design.

■ **Pilgrim Heights Community Church (HEMPC-8277), 3120 Washburn Avenue North, Minneapolis**

Built between 1952 and 1953, the Pilgrim Heights Community Church is an example of a Mid-Century Modern ecclesiastical building. The church complex is comprised of a one-story church and a two-story educational wing. The church was designed by the architecture firm of McEnary and Krafft. After World War II, McEnary and Krafft began concentrating on church design and designed several community churches in Minnesota throughout the 1950s and 1960s, of which Pilgrim Heights Community Church was the first. The Pilgrim Heights Community Church has been determined eligible for listing in the NRHP under Criterion C as an example of an early modernist community church designed by the Minneapolis firm of McEnary and Krafft. The church exhibits many typical characteristics of the Mid-Century Modernist movement. The church also represents the development of the design aesthetic McEnary and Krafft used for future ecclesiastical commissions, which embraced Mid-Century Modernism.

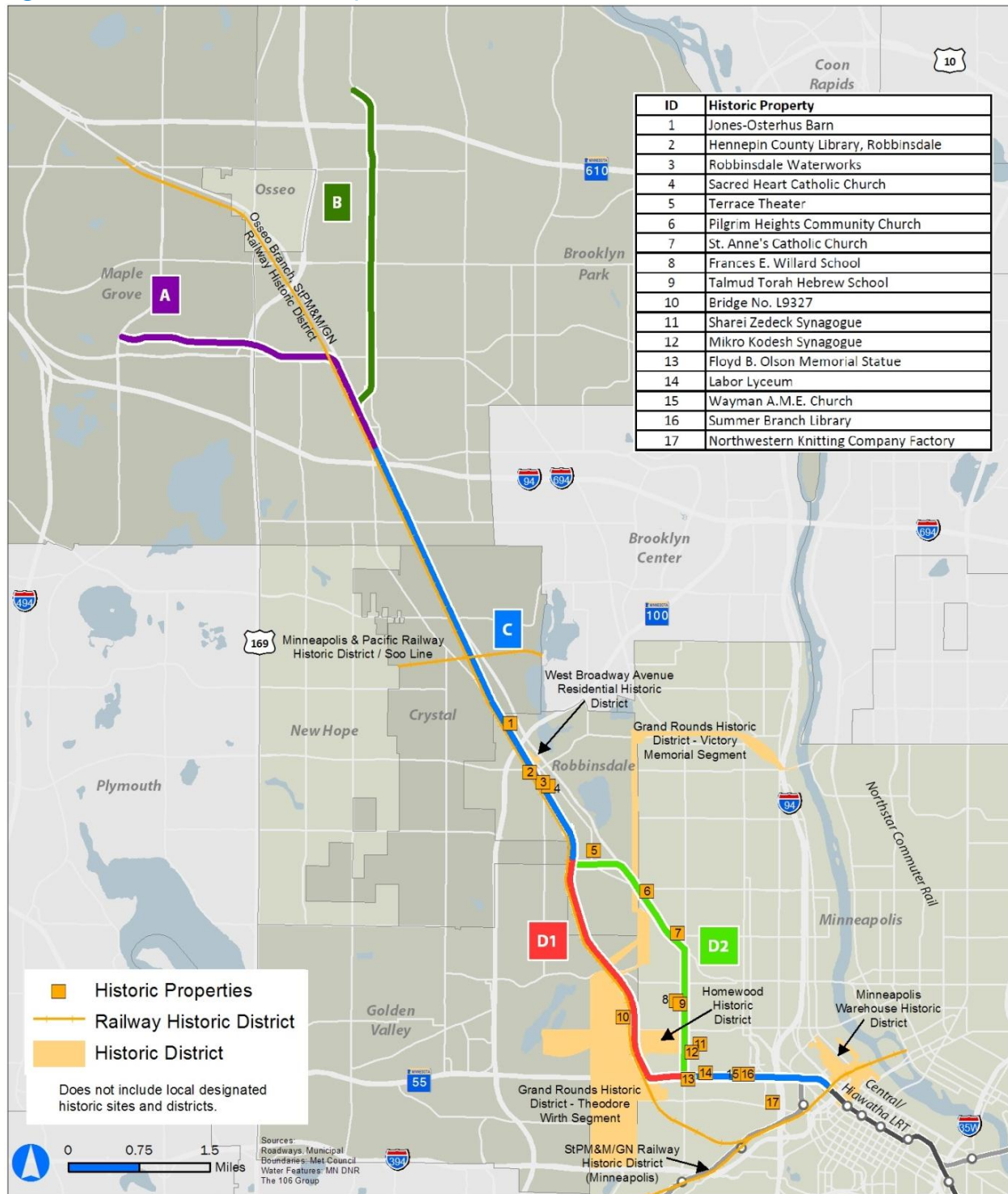
■ **St. Anne's Catholic Church (HE-MPC-8251), 2306 26th Avenue North, Minneapolis**

Constructed in 1949, St. Anne's Church is an example of the Italian Renaissance style. The church is part of a complex that is also comprised of a rectory, school, and convent. Founded in 1884 as St. Clotilde's to serve French Canadians, St. Anne's parish is among the five oldest Catholic parishes in Minneapolis. The congregation started building on this site in the 1920s. Designed by well-known St. Paul architect Frederick Slifer, the current church was built as a result of the growth and prosperity of the congregation. St. Anne's Church has been determined eligible for listing in the NRHP under Criterion C as the embodiment of the distinctive characteristics of the Italian Renaissance style. Built at a time when ecclesiastical architecture was taking a dramatic turn away from traditional church forms, St. Anne's Church was one of the last and grandest Italian Renaissance style churches built in Minnesota and was one of the last buildings designed by architect Frederick Slifer, a well-known architect who designed several prominent churches in the Twin Cities Metropolitan Area.

■ **Frances E. Willard School (HE-MPC-8249), 1615 Queen Avenue North, Minneapolis**

The Frances E. Willard School is a two-and-a-half-story building that features elements of the Classical Revival style. The school was constructed in two stages, the first rectangular section of the school was built in 1910, and a rectangular wing was built in 1919 by contractor J. E. Pilgram. The school is named after Frances E. Willard, an American reformer, founder of the Women's Christian Temperance Union, and promoter of the women's suffrage movement. The Minneapolis public school closed in 2005. The Frances E. Willard School has been determined eligible for listing in the NRHP under Criterion A for its association with education in North Minneapolis.

Figure 4.4-6. Location of Historic Properties Identified within the Architectural APE





■ **Talmud Torah Hebrew School (HE-MPC-7612), 1616 Queen Avenue North, Minneapolis**

The Talmud Torah, founded in 1894, was the first Jewish school established in Minneapolis and provided Hebrew schooling and services to the Jewish community living in North Minneapolis. The Talmud Torah was originally housed in rooms at Keneseth Israel Synagogue and then at a building on Fremont Avenue until this two-story T-shaped brick building was constructed in 1951. The Talmud Torah Hebrew School has been determined eligible for listing in the NRHP under Criterion A for the opportunity it provided to all Jewish children, including those without the means to afford a private school, to receive a quality education founded on Jewish values and heritage. Unlike other Jewish schools that were private and associated with a particular congregation, at the Talmud Torah Hebrew School all Jewish children could attend without having to pay tuition and regardless of congregational affiliation. Additionally, the school played a critical role in the efforts of the Jewish community in North Minneapolis to maintain and perpetuate its culture, values, traditions, heritage, and identity.

■ **Bridge No. L9327 (HE-GVC-0050), Theodore Wirth Parkway over Bassett's Creek, Golden Valley**

This bridge is located in Theodore Wirth Park and carries the Theodore Wirth Parkway over Bassett Creek. The bridge is a half mile south of Golden Valley Road. The single-span, filled spandrel, concrete arch bridge is 50 feet in length and was constructed in 1939. The bridge carries two lanes of vehicular traffic through Theodore Wirth Park, which is the largest regional park in the Minneapolis Park System. Bridge No. L9327 is eligible for listing in the NRHP under Criterion C, within the area of architecture.

■ **Sharei Zedeck Synagogue (HE-MPC-8211), 1119 Morgan Avenue North, Minneapolis**

The Sharei Zedeck Synagogue was the last of four major synagogues that were built in the Near North Side of Minneapolis during the early part of the twentieth century. The synagogue played an important social role in the community during the height of Jewish settlement in North Minneapolis, which occurred between the early 1900s and 1960s. Although the Jewish population started to move westward to St. Louis Park in the decades after World War II, the synagogue continued to play an important role in the North Minneapolis Jewish community. Reflecting the increased shift of Jewish institutions out of North Minneapolis in the late 1960s, the Sharei Zedeck congregation followed, leaving Minneapolis by 1969. The Sharei Zedeck Synagogue is eligible for listing in the NRHP at the local level under Criterion A, in the areas of social history and ethnic heritage within the historical context Jewish Settlement in North Minneapolis, 1890-1969.

■ **Mikro Kodesh Synagogue (HE-MPC-8227), 1000 Oliver Avenue North, Minneapolis**

The Mikro Kodesh Synagogue was built in 1926 by architect S. J. Bowler who incorporated several styles into his design including Byzantine, Romanesque, and Classical Revivals. The Mikro Kodesh Synagogue has been determined eligible for listing in the NRHP under Criterion A for its association with the historic Jewish population in North Minneapolis. The Mikro Kodesh Synagogue, along with the Beth El Synagogue, fostered the migration of the Jewish population to the Penn and Plymouth area of Minneapolis. The Synagogue also became the largest Orthodox congregation in the Upper Midwest in 1948.

■ **Floyd B. Olson Memorial Statue (HE-MPC-9013), TH 55 at Penn Avenue North, Minneapolis**

The Floyd B. Olson Memorial Statue was erected in 1940 to commemorate Minnesota's popular 22<sup>nd</sup> Governor, Floyd B. Olson (1891-1936). The statue was designed and executed by renowned St. Paul artists Carlo Brioschi, A. (Amerigo) J. Brioschi, and L. R. Kirchner, with Carlo Brioschi as the lead designer. Carlo Brioschi came to St. Paul in 1909 and helped establish the Brioschi-Minuti Company. The Brioschi-Minuti Company specialized in sculptures, stone carving, terra cotta, and other architectural ornamentation for both building interiors and exteriors. Among the company's most prominent local commissions include ornamentation for the St. Paul Cathedral, the Foshay Tower, and the St. Paul Auditorium. The Floyd B. Olson Memorial Statue is eligible for listing in the NRHP under Criterion C as an expression of the work of master sculptor Carlo Brioschi during the last stage of his career (1931-1940),

when he turned the focus of his work from primarily architectural ornamentation to outdoor freestanding sculpture. The Floyd B. Olson Memorial Statue was the last major commission by Carlo Brioschi.

■ **Labor Lyceum (HE-MPC-7553), 1800 Olson Memorial Highway, Minneapolis**

The Labor Lyceum is a one-story, frame meeting hall that is located in the Near North Side of Minneapolis, which was historically home to a large concentration of Jewish residents. Social ostracism resulted in the Minneapolis Jewish population establishing their own network of social services and institutions to meet the needs of their growing community. The building was constructed in 1915 by the Workmen's Circle as a social center. The Workmen's Circle was part of the anti-Zionist Communist and Socialist labor movements within Minneapolis' Jewish community. Additionally, the Labor Lyceum was a place to maintain Jewish culture without religion. The Workmen's Circle provided medical and insurance benefits to members, organized a Yiddish language school and library, and staged Yiddish plays. The Labor Lyceum has been determined eligible for listing in the NRHP under Criterion A for its role in Jewish settlement in Minneapolis; for its association with the Workmen's Circle, Jewish radicalism, and labor movements; as well as the programs it offered to perpetuate Jewish culture and traditions, including the continuation of Yiddish as a spoken language.

■ **Wayman A.M.E. Church (HE-MPC-8290), 1221 7th Avenue North, Minneapolis**

The Wayman A.M.E. Church is a one-story, 16-sided, brick ecclesiastical building that is surmounted by an iconic, 75 foot tall, hexadecagon roof with an exaggerated bell-shape. Constructed in 1966 by an African American congregation, the building was designed in the Mid-Century Modern style by architect Harry E. Gerrish. By the 1960s, Modern ecclesiastical architectural designs had gained a foothold and exceptional examples of the style began to be built nationwide. The Wayman A.M.E. Church has been determined eligible for listing in the NRHP under Criterion C as an outstanding and distinctive example of Mid-Century Modern ecclesiastical architecture in Minneapolis. The church is an important and distinctive example of nationwide changes in ecclesiastical architectural design that rejected historicism and embraced new forms that were often abstract, asymmetrical, and futuristic in design.

■ **Sumner Branch Library (HE-MPC-8081), 611 Emerson Avenue North, Minneapolis**

Designed by architect Cecil Bayless Chapin in the Tudor Revival style, the Sumner Branch Library was built in 1915. Listed in the NRHP under Criteria A and B, the library was one of 14 public libraries that were built and acquired in Minneapolis between 1894 and 1936. The building is a well-preserved example of a small public library and was one of four public libraries that were built with Carnegie funds in Minneapolis. The library is also associated with the extensive outreach program of the Minneapolis Public Library that affected the educational and cultural development of Minneapolis. Additionally, the building is associated with Gratia Alta Countryman, the longtime head of the Minneapolis Public Library and leader in the movement to develop a public library system nationwide.

■ **Northwestern Knitting Company Factory (HE-MPC-8125), 718 Glenwood Avenue, Minneapolis**

In 1888, the Northwestern Knitting Company's founder, George Munsing, invented a method of plating woolen fibers with silk and cotton to take the "itch" out of woolen underwear. The less bulky, single-piece undergarments made Munsingwear the nation's leading producer and distributor of underwear. The success of the company necessitated the need for factory expansion. Between 1904 and 1915, the site on Glenwood Avenue in Minneapolis expanded to include five large buildings designed by architects Bertrand and Chamberlain. The Northwestern Knitting Company continued to thrive until 1981 when a deteriorating national economy forced the factory to close. Renovated in the 1980s into offices and showrooms, the complex is known as the International Market Square today. The factory is listed in the NRHP under Criterion A.

■ **Minneapolis Warehouse Historic District (HE-MPC-0441), Minneapolis**

The Minneapolis Warehouse Historic District covers a thirty-block area in downtown Minneapolis and includes nineteenth and early twentieth century commercial buildings, many of which were architect designed. The district is listed in the NRHP under Criteria A and C. The buildings within the district range from three to seven stories in height and include examples of Italianate, Queen Anne, Richardsonian Romanesque, Classical Revival, and early twentieth century commercial styles. The Minneapolis Warehouse Historic District was an area of early commercial growth in Minneapolis and the city's warehouse and wholesaling district that expanded when Minneapolis became a major distribution center for the upper Midwest. The district is also architecturally distinct for its intact concentration of commercial buildings designed by the city's leading architects.

■ **Osseo Branch, St. Paul Minneapolis & Manitoba Railway Historic District (HE-RRD-002 [including HE-BPC-0084, HE-CRC-0238, HE-RBC-0304, and HE-MPC-16389]), Brooklyn Park, Crystal, Robbinsdale, Golden Valley, Minneapolis)**

The Osseo Branch Line (Osseo Branch Line, St. Paul Minneapolis & Manitoba Railroad (StPM&M)/Great Northern Railway (GN) (aka Minneapolis & Northwestern Railroad Company (M&NW)/Burlington Northern Santa Fe (BNSF)) of the StPM&M is a c. 13 mile long segment of the railroad line originally constructed by the M&NW between Minneapolis and St. Cloud in 1881-1882. The Osseo Branch Line became an essential component in the development of the City of Osseo as a major potato growing, marketing, and distribution center. With the coming of the railroad, Osseo potato distributors could transport their product quickly and efficiently to markets in Minneapolis and beyond. As a result, area farmers could grow potatoes as a cash crop on a relatively large scale because they were now able to ship their crops before they spoiled. The Osseo Branch, St. Paul Minneapolis & Manitoba Railway Historic District has been determined eligible for listing in the NRHP under Criterion A as an important transportation corridor that linked Osseo with the Twin Cities, and its agricultural markets. Additionally, the railroad line established a connection that did not previously exist and resulted in the significant expansion of the potato-growing region in northern Hennepin County.

■ **St. Paul Minneapolis & Manitoba Railway Historic District (XX-RRD-010), Minneapolis**

As a segment of the Great Northern Railway's transcontinental route, the St. Paul, Minneapolis & Manitoba Railway Historic District corridor helped to solidify Minneapolis and St. Paul as the commercial, financial, and manufacturing center of an area extending from eastern Wisconsin to central Montana. Although its importance began to wane by the 1920s due to competition from automobiles and trucks, the Great Northern Railway's transcontinental route remained a vital component of Minnesota's and the region's transportation network into the 1950s. As such, the St. Paul, Minneapolis & Manitoba Railway Historic District is eligible for listing in the NRHP under Criterion A, because it meets registration requirement numbers 2 and 3 from the *Railroads in Minnesota, 1862-1956 Multiple Property Documentation Form*. The historic district meets registration requirement 2 because it established a railroad connection that did not previously exist and/or served as the dominant transportation corridor. Additionally, the railway facilitated the expansion of the industrial, commercial, and agricultural practice along the corridor. The historic district also meets registration requirement 3 as it was an influential component of the state's railroad network and made important connections within the network and with other modes of transportation.

■ **Minneapolis & Pacific Railway Historic District (Soo Line) (HE-CRC-199), Crystal**

The Minneapolis & Pacific Railway Company (M&P) was incorporated in 1884 to construct a single-track mainline from Minneapolis to the Red River Valley. The Minneapolis & Pacific Railway Historic District has been determined eligible for listing in the NRHP under Criterion A for its association with the Minneapolis mill owners who built the line to secure their own connection to wheat growers in western Minnesota and North Dakota. The M&P line was critical in bringing wheat directly from its source in the Red River Valley

to the flour mills of Minneapolis. Additionally, the M&P line was the first successful effort of the Minneapolis mill owners to reach the large, profitable markets in the East and Europe directly. In 1888, the M&P was consolidated, along with three other railroads, into the Minneapolis, St. Paul & Sault Ste. Marie Railway Company (Soo Line). The Canadian Pacific Railway took control of the Soo Line in 1990.

■ **West Broadway Residential Historic District (HE-RBC-158), Robbinsdale**

The West Broadway Avenue Residential Historic District encompasses approximately three city blocks in the City of Robbinsdale. The West Broadway Avenue Residential Historic District has been determined eligible for listing in the NRHP under Criterion A for its association with the development of the City of Robbinsdale as an early twentieth century suburb of Minneapolis. Built between 1919 and 1940, the houses in the district are examples of styles that were popular among suburban homebuilders before World War II. The residential styles in the district include Colonial Revival, Tudor Revival, Prairie, and Craftsman. The district represents the expansion of Robbinsdale between World War I and World War II. Additionally, the district was home to many locally prominent members of the community, who lived there during the Interwar period.

■ **Grand Rounds Historic District (Theodore Wirth Parkway Segment and Victory Memorial Drive Segment) (XX-PRK-0001), Robbinsdale, Golden Valley, Minneapolis**

In 1883, Horace Cleveland, a landscape architect, brought his idea for a continuous green necklace of parkway and open space around Minneapolis to the newly formed Board of Park Commissioners (renamed the Minneapolis Park and Recreation Board in 1969). The Grand Rounds was subsequently acquired and built over many years by the Board of Park Commissioners primarily during the late nineteenth and early twentieth century. Theodore Wirth, Superintendent of Parks from 1906 until 1935, had a prominent role in the acquisition of lands and development of the Grand Rounds. Comprised of seven districts, the Grand Rounds passes through almost every part of Minneapolis. Each of the seven segments was acquired and developed at a different time and contributes its own history and significance to the Grand Rounds as a whole. The seven districts include a dozen lakes and ponds, four golf courses, two waterfalls, natural and planned gardens, creek and river views, and 50.1 miles of trails. There are also more than 50 identified interpretive sites. The Grand Rounds has been determined eligible for listing in the NRHP as a superb example of an urban byway and park system.

■ **Homewood Historic District (HE-MPC-12101), (bounded by Penn, Oak Park, Xerxes, and Plymouth Avenues, Minneapolis**

The Homewood Historic District encompasses a large, rectangular-shaped, 80-acre, hilly area that is eight blocks by two blocks in size. The district includes 254 parcels, which were primarily developed from 1910 to 1946, and 12 extant stone entrance markers around the perimeter of the district. The residences within the district were constructed in a variety of popular architectural styles from the early twentieth century, including Tudor Revival, Colonial Revival, French Eclectic, and Spanish Colonial Revival. A number of houses in the area were designed by noted Minneapolis architecture firm Liebenberg & Kaplan. The Homewood Historic District attracted a large number of prominent upper-middle class Jewish residents beginning in the mid-1910s. Many synagogues were built in the area around the district as a result. The Homewood Historic District has been determined eligible for listing in the NRHP under Criterion A for the significant role it played in the development of the western portion of North Minneapolis as the second location of a Jewish community in North Minneapolis, which was occupied by primarily Jewish residents from 1911 until the late 1960s.

#### **4.4.4.2 Archaeological Resources**

The Phase IA archaeology assessment did not identify any NRHP-listed archaeological sites nor did it recommend any further archaeological investigations for potentially eligible sites. It did acknowledge a previous study, which identified an area along 5th Avenue North, between 4th Street North and 5th Street



North, with potential for historic archaeological resources.<sup>4</sup> Therefore, if any project related ground disturbing activities were to occur in this area, further archaeological investigation may be warranted. At this time, no project work is anticipated in the area. SHPO has reviewed and concurred with the Phase IA archaeological assessment findings.

#### 4.4.5 Environmental Consequences

##### 4.4.5.1 Operating Phase (Long-Term) Impacts

###### No-Build Alternative

There would be no anticipated effects to the identified cultural resources under the No-Build alternative.

###### Enhanced Bus/TSM Alternative

There are no anticipated effects to the identified cultural resources under the Enhanced Bus/TSM alternative.

###### Build Alternatives

This assessment of adverse effects to historic properties is based on current conceptual engineering plans. While some effects can be fully understood at this level of project design (e.g., effects resulting from the alignment of the transitway corridor), others are less definite as they are dependent on subsequent stages of project design. These effects may be avoided through consultation during the development of more detailed project engineering and design. If it is not feasible to avoid adverse effects, minimization and mitigation will be considered.

Potential adverse effects to historic properties fall into three main categories: project design, station area planning and development, and noise. In accordance with 36 CFR 800.5, FTA, in consultation with the SHPO, will review the project elements after considering avoidance, minimization, and mitigation to determine if there is an adverse effect to these properties. FTA will also consider input on the effects to historic properties provided by consulting parties and the public.

- **Project Design:** The project design of the LRT infrastructure (LRT tracks, poles, catenary, stations, retaining walls, aerial structures, traction power substations, signal bungalows, and other project elements) may alter the characteristics of a historic property that would diminish the integrity of the historic property. Examples include physical destruction or damage to part or all of the property; alteration of a property; change of the character of the property's use or physical features that contribute to the property's setting; or introduction of visual elements that diminish the integrity of the property's significant historic features.
- **Station Area Planning and Development:** Activities related to station area planning and development may alter the characteristics of a historic property that would diminish the integrity of the historic property. Examples include physical destruction or damage to part or all of the property; alteration of a property; change of the character of the property's use or physical features that contribute to the property's setting; or introduction of visual elements that diminish the integrity of the property's significant historic features. This category does not include the station and LRT system as described above, but it does include related infrastructure and development activities including transit-related parking and traffic.
- **Noise:** Construction and/or operations noise may introduce audible elements that diminish the integrity of the property's significant historic features.

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<sup>4</sup>Harrison, Christina and Penny Peterson. 2011 *Phase IA Archaeological Review for the Proposed Interchange Project, Hennepin County, Minnesota*. Prepared by Archaeological Research Services, Minneapolis, MN, 2011.

Potential effects are detailed in the Section 106 Potential Effects Table, which was developed in consultation with SHPO and consulting parties as part of the Section 106 process. This table is provided in [Appendix D](#) of this Draft EIS.

#### *Adverse Effects on NRHP Eligible Properties*

Based on current conceptual plans, an adverse effect was assessed for the Homewood Residential Historic District due to the right of way necessary to construct Alignment D2. The project design of the guideway as well as the Penn/Plymouth Station along Alignment D2 would remove historic properties on the west side of Penn Avenue as well as shift the original curb/sidewalk and significantly affect the entire east edge of the historic district.

[Table 4.4-1](#) identifies the alternatives for which adverse effects have been determined.

**Table 4.4-1 Historic Properties for which Adverse Effects have been determined, by Alternative**

Property Name (Historic)	Adverse Effects			
	A-C-D1	A-C-D2	B-C-D-1 (Preferred Alternative)	B-C-D2
Homewood Residential Historic District		●		●

#### *Potential Effects on NRHP Listed and NRHP Eligible Properties*

Based on current conceptual plans, potential effects have been identified for 16 historic properties and five historic districts. Properties for which potential effects have been identified are listed, by alternative, in [Table 4.4-2](#). [Table 4.4-3](#) identifies the type of potential effects by alignment. These tables indicate the potential for effects; these effects may be avoided or minimized through consultation during project design. Any adverse effects that are not avoided may be considered for mitigation. Property locations are shown in [Figure 4.4-6](#).

**Table 4.4-2. Historic Properties with Potential Effects, by Alternative**

Figure ID <sup>1</sup>	Property Name (Historic)	Potential Effects <sup>2</sup>			
		A-C-D1	A-C-D2	B-C-D-1 (Preferred Alternative)	B-C-D2
--	Osseo Branch, St. Paul Minneapolis & Manitoba RR/Great Northern Historic District	●	●	●	●
--	Minneapolis & Pacific RR/Soo Line Historic District	●	●	●	●
--	West Broadway Avenue Residential Historic District	●	●	●	●
--	Grand Rounds Historic District – Victory Memorial Drive and Theodore Wirth Parkway Segments		●		●
--	Grand Rounds Historic District – Theodore Wirth Segment	●		●	
--	Homewood Residential Historic District <sup>2</sup>	●		●	
1	Jones Osterhus Barn	●	●	●	●
2	Hennepin County Library, Robbinsdale Branch	●	●	●	●
3	Robbinsdale Water Works	●	●	●	●
4	Sacred Heart Catholic Church	●	●	●	●
5	Terrace Theater		●		●
6	Pilgrim Heights Community Church		●		●
7	St. Anne’s Catholic Church		●		●
8	Frances E. Willard School		●		●
9	Talmud Torah Hebrew School		●		●

**Table 4.4-2. Historic Properties with *Potential Effects*, by Alternative (continued)**

Figure ID <sup>1</sup>	Property Name (Historic)	Potential Effects <sup>2</sup>			
		A-C-D1	A-C-D2	B-C-D-1 (Preferred Alternative)	B-C-D2
10	Bridge L9327	●		●	
11	Sharei Zedeck Synagogue		●		●
12	Mikro Kodesh Synagogue		●		●
13	Floyd B. Olson Memorial Statue	●	●	●	●
14	Labor Lyceum	●	●	●	●
15	Wayman A.M.E. Church	●	●	●	●
16	Sumner Branch Library	●	●	●	●

<sup>1</sup> Historic districts are not numbered in Figure 4.4-6.

<sup>2</sup>For the Homewood District, an adverse effect resulting from demolition of contributing properties has been determined for Alignment D2 only. However, Alignment D1, while it does not result in demolition of properties, could result in other types of effects potentially avoided or mitigated by project design.

**Table 4.4-3. Historic Properties with Potential Effects, by Alignment**

Alignment	Figure ID <sup>1</sup>	Property Name (Historic)	Potential Effects		
			Project Design	Station Area Development	Noise
<b>A</b>		Osseo Branch, St. Paul Minneapolis & Manitoba RR/Great Northern Historic District	●	●	
<b>B (part of the Preferred Alternative)</b>		Osseo Branch, St. Paul Minneapolis & Manitoba RR/Great Northern Historic District	●		
<b>C (part of the Preferred Alternative)</b>		Osseo Branch, St. Paul Minneapolis & Manitoba RR/Great Northern Historic District	●	●	
	–	Minneapolis & Pacific RR/Soo Line Historic District	●		
	1	Jones Osterhus Barn	●		
	–	West Broadway Avenue Residential Historic District	●	●	●
	2	Hennepin County Library, Robbinsdale Branch	●	●	●
	3	Robbinsdale Water Works	●	●	
	4	Sacred Heart Catholic Church	●	●	●
<b>D1 (part of the Preferred Alternative)</b>		Osseo Branch, St. Paul Minneapolis & Manitoba RR/Great Northern Historic District	●	●	
	–	Grand Rounds Historic District – Theodore Wirth Segment	●	●	●
	10	Bridge L9327		●	
	–	Homewood Residential Historic District <sup>2</sup>	●	●	●
	13	Floyd B. Olson Memorial Statue	●	●	

**Table 4.4-3. Historic Properties with Potential Effects, by Alignment (continued)**

Alignment	Figure ID <sup>1</sup>	Property Name (Historic)	Potential Effects		
			Project Design	Station Area Development	Noise
D2		Osseo Branch, St. Paul Minneapolis & Manitoba RR/Great Northern Historic District	●		
	5	Terrace Theater		●	
	–	Grand Rounds Historic District – Victory Memorial Drive and Theodore Wirth Parkway Segments	●	●	
	6	Pilgrim Heights Community Church	●		
	7	St. Anne’s Catholic Church	●	●	
	8	Frances E. Willard School	●		
	9	Talmud Torah Hebrew School	●		
	11	Sharei Zedeck Synagogue		●	
	12	Mikro Kodesh Synagogue	●	●	
	13	Floyd B. Olson Memorial Statue	●		
D Common Section (part of the Preferred Alternative)	14	Labor Lyceum	●		
	15	Wayman A.M.E. Church	●	●	
	16	Sumner Branch Library	●	●	

<sup>1</sup> Historic districts are not numbered in Figure 4.4-6.

<sup>2</sup>For the Homewood District, an adverse effect resulting from demolition of contributing properties has been determined for Alignment D2 only. However, Alignment D1, while it does not result in demolition of properties, could result in other types of effects potentially avoided or mitigated by project design.

### Comparison of Alternatives

**Table 4.4-4** summarizes the preliminary number of properties adversely affected or potentially affected by the proposed alternatives. Measures to avoid, minimize, and mitigate adverse effects will be specified in the Section 106 Agreement as previously discussed in Section 4.4.3.4.

**Table 4.4-4. Number of Historic Properties with Adverse Effects or Potential Effects, by Alternative**

Type of Effect	Number of Potential Effects			
	A-C-D1	A-C-D2	B-C-D-1 (Preferred Alternative)	B-C-D2
Total Adverse Effect	0	1 <sup>1</sup>	0	1 <sup>1</sup>
Total Potential Effect	14	19	14	19

### 4.4.5.2 Construction Phase Impacts

#### No-Build Alternative

There would be no construction effects to the identified cultural resources under the No-Build alternative.

#### Enhanced Bus/TSM Alternative

There would be no construction effects to the identified cultural resources under the Enhanced Bus/TSM alternative.



## Build Alternatives

Noise, vibration, visual, and traffic impacts would be experienced during construction throughout all segments. These impacts would be short-term and temporary. Noise and vibration impacts and mitigation measures are discussed in Section 5.6 and Section 5.7 and will be addressed as part of Section 106 consultation. Short-term visual impacts and mitigation are discussed in Section 4.5. Short-term access impacts and mitigation are discussed in Chapter 3.

### 4.4.6 Avoidance, Minimization, and/or Mitigation Measures

Methods for avoidance, minimization, or mitigation of impacts to historic and archaeological property would be developed and coordinated under the Section 106 consultation process and stipulated in the Section 106 Agreement.

Potential avoidance/minimization/mitigation measures may include:

- Development of a construction protection plan in consultation with SHPO and interested parties to mitigate potential construction related impacts to nearby historic properties
- Educational efforts and incentives aimed at the rehabilitation of historic properties in areas that may experience project-related redevelopment, including station areas
- Coordination with local municipalities to develop incentive to promote the rehabilitation of historic properties near the project corridor, particularly in station areas
- Development of a plan to monitor and address potential noise effects on historic properties during construction

Develop an interpretive plan to provide public education and interpretation about historic properties in the project area

## 4.5 Visual/Aesthetics

Information included in this section is based on the information provided in the Visual Quality Technical Report (SRF Consulting Group, 2012).

### 4.5.1 Introduction

This section assesses the existing physical character of the Bottineau Transitway study area including physical development, vegetation and other natural features, and visually sensitive landmarks and views. Potential impacts on the visual character of the areas adjacent to the alternatives are also evaluated. The Visual Quality Technical Report (SRF Consulting Group, 2012), which provides the basis for this assessment of visual quality, is incorporated into this Draft EIS by reference.

The Bottineau Transitway Project has a number of constructed elements that would have a visual presence within the transitway right-of-way. The Visual Quality Technical Report (SRF Consulting Group, 2012) includes a detailed description of the LRT track alignment and catenary wires/supports, LRT vehicles, stations, park-and-ride facilities, OMF, and TPSS. It is noteworthy that although lighting would be provided at station areas, there would be no lighting along the guideway between stations.

### 4.5.2 Definition of Terms

#### Visual Features

The term “visual features” refers to the components of the natural, built, or project environments that are capable of being seen.

- Natural visual features include the land, water, vegetation, and animals that compose the natural environment. Although natural features may have been altered or imported by people, features that

are primarily geological or biological in origin are considered natural.

- Built visual features include the buildings, structures, and artifacts that compose the surrounding built environment. These are features that were constructed by people.
- Project visual features include the geometrics, structures, and fixtures that compose the project environment. These are the constructed features that would be placed in the environment as part of the proposed project. For this project, the features include both the transitway and other infrastructure modified by the project.

### Visual Quality

The term “visual quality” refers to what viewers like and dislike about the visual features that compose a particular scene. Visual quality is inherently subjective, as different viewers may evaluate visual features differently. Based on the developed urban and suburban context of the study area, specific features were identified as “higher quality visual features” when they exemplify one of the following characteristics:

- A remnant natural feature exemplary of pre-settlement conditions
- A visually distinct natural or built feature that stands out from the surroundings and contributes physically and symbolically in a positive way to the overall community’s visual quality
- A natural or built feature that is an integral component of the broader physical pattern of the community and is generally regarded positively

### General Visual Context

The term “general visual context” is the appearance of the nearby surroundings from the vantage point of a person from ground level, i.e., as one would perceive it from a car, train, bus, bicycle, or on foot. The Bottineau Transitway passes through developed urban and suburban areas with a wide range of development patterns. A brief description of the general visual context of each area is provided in Section 4.5.5 as a basis for understanding the identified effects on specific visual features.

#### 4.5.3 Regulatory Context and Methodology

The methodology used for this analysis is composed of two primary aspects: inventory of existing visual features (natural and built) and assessment of project effects on those features. The project area was studied and inventoried using mapping and direct observation from field visits. The conceptual project design and potential identified right-of-way impacts were considered in evaluating the potential visual change to the project area.

A three-tier scale (high, moderate, or minimal) was used to qualitatively assess the degree of visual quality effect that the project elements would have on higher quality visual features. The following definitions summarize each classification:

- **High:** Introduction of new elements that would substantially affect the quality of the visual/aesthetic features
- **Moderate:** Introduction of new elements that may have an effect on the quality of the visual/aesthetic features
- **Minimal:** Introduction of new elements that are not likely to have an effect on visual/aesthetic features

The basis for the level of effects for higher quality visual resources is provided below.

#### 4.5.4 Study Area

The study area is defined as the right-of-way for the alternative alignments currently under consideration and the immediately adjacent properties with a visual connection to the proposed transitway. In select instances, the extent of analysis was expanded to account for specific features that were visible by field observation along the proposed transitway as a result of topography, physical scale, architectural distinction, or other considerations. A collection of photographs is available in the Visual Quality Technical Report (SRF Consulting Group, 2012) to assist the reader in understanding the existing visual context and visual features of the study area.

#### 4.5.5 Affected Environment

The study area includes developed urban and suburban communities extending from Minneapolis into the northwest Twin Cities Metropolitan Area. It includes a diverse array of development patterns, railroads, highways, and local roadways. For each alignment under consideration, a summary of the general visual context is provided along with a list of identified higher quality visual features. Unique project visual features are also noted for each alignment. The Visual Quality Technical Report (SRF Consulting, 2012) includes descriptions of the higher quality visual features identified along each alignment.

##### Alignment A

Gravel mining operations are the primary current use of land around Alignment A between Hemlock Lane and US 169 in Maple Grove, but future development of the area is planned. Industrial, business park, and institutional land uses can be found in Brooklyn Park around Alignment A. The mining area is characterized by large piles of soil, sand, and gravel and large pits. Large equipment is used to dig, pile and sort materials, creating a continuously changing landscape. Vegetation in the active gravel mining area is sparse. There is a large interchange where Elm Creek Boulevard and Brooklyn Boulevard cross over US 169. Future redevelopment with higher intensity land uses is envisioned for the area, which would bring a more suburban development pattern with new streets, buildings, parking, and landscaping.

East of US 169, the Bottineau Transitway would pass the Hennepin Technical College campus and follow Brooklyn Boulevard, which is flanked by light-industrial sites and residential neighborhoods. Approximately one block west of CSAH 81, Shingle Creek passes under Brooklyn Boulevard through a culvert, affording a brief view of the riparian corridor. The Bottineau Transitway would turn south along the BNSF railroad corridor adjacent to CSAH 81, which is flanked by larger-scale commercial and industrial properties. One higher quality visual feature, Shingle Creek, was identified along Alignment A.

##### Alignment B (part of the Preferred Alternative)

North of TH 610 up to 101st Avenue near Alignment B, open field agricultural land is the predominant land use with some remnant woodland and grassland areas. The recently constructed Target North Campus, with its multi-story buildings, is located along Oak Grove Parkway east of West Broadway Avenue and has landscaped grounds characterized by mowed lawn and trees. Future redevelopment with higher-intensity land use is envisioned for the area, which would likely bring a more suburban development pattern with new streets, buildings, parking, and landscaping.

South of TH 610, the adjacent land use transitions from agricultural to a mix of single-story commercial and light-industrial buildings, as well as single-family residential neighborhoods. The commercial areas have front yards characterized by mowed lawns, trees, and stormwater treatment ponds. The homes face away from West Broadway Avenue, and fences and landscaping visually separate backyards from the roadway. North Hennepin Community College, located in the southeast corner of the West Broadway Avenue and 85th Avenue intersection, is comprised of one- and two-story buildings organized around a central green space. The perimeter of the campus is dominated by surface parking lots. Tessman Park is

located south of the college and contains two ball fields and mowed lawn. A uniform large-scale planned commercial development is located west of Alignment B and south of Brooklyn Boulevard.

These higher-quality visual features were identified along Alignment B:

- Shingle Creek
- West Broadway Avenue Bridge over TH 610

#### **Alignment C (part of the Preferred Alternative)**

In general, on Alignment C, the Bottineau Transitway would follow the BNSF railroad corridor along the southern half of the alignment. In some locations, the route would parallel a primary roadway. In other locations, it would be more secluded, running behind commercial and residential areas. At the north end of Alignment C, the route would pass under I-94, and the development pattern in that vicinity is comprised of single-story commercial buildings oriented towards CSAH 81, primarily clustered at I-94, 63rd Avenue, and Bass Lake Road. The transitway would parallel CSAH 81, a multi-lane divided-median county highway. Along the edges of the railroad right-of-way, rows of tree cover provide some visual buffer for adjacent residential properties. The railroad right-of-way is also a primary utility corridor and includes overhead utility lines and poles. Alignment C passes over the Canadian Pacific (CP) railroad approximately ½ mile south of Bass Lake Road.

Moving south, the transitway would run adjacent to West Broadway Avenue, a lower speed two-lane county roadway. Between 47th Avenue and TH 100, a handful of mature trees are in a grass median between the railroad and West Broadway Avenue. Crossing over TH 100, the transitway would pass along the west edge of downtown Robbinsdale's commercial area between 42nd Avenue and Noble Avenue. Downtown Robbinsdale is an area primarily comprised of single-story storefront buildings and an enhanced streetscape with brick pavers, decorative lighting, and other features. Two neighborhood-scale parks with ball fields are located adjacent to the transitway: Triangle Park and Lee Park. These parks are characterized by mowed lawn with some tree cover at the edges. Along the edges of the railroad right-of-way, rows of tree cover provide some visual buffer for adjacent residential properties, and continuous chain link fencing restricts access.

In the segment between Noble Avenue and 36th Avenue, the transitway would be aligned at a skew from the neighborhood street grid, so vantage points would vary. At the edges of the railroad right-of-way, continuous chain link fencing restricts access. Near 36th Avenue, the railroad corridor is depressed with steep side slopes to allow clearance under the 36th Avenue Bridge. South of 36th Avenue, the transitway would pass by Sochacki Park, a narrow wooded park situated outside the west embankment of the BNSF railroad corridor.

Higher quality visual features identified along Alignment C include:

- I-94 Bridge over the BNSF railroad corridor and CSAH 81
- City of Crystal gateway area (near Bass Lake Road)
- CSAH 81 Bridge over CP railroad corridor
- Green boulevard on west side of West Broadway Avenue between 47th Avenue and TH 100
- West Broadway Avenue and BNSF railroad bridges over TH 100
- Historic Robbinsdale Public Library
- Sacred Heart Catholic Church



### Alignment D1 (part of the Preferred Alternative)

Along the edge of the Robbinsdale and Minneapolis city limits, Alignment D1 would run in the eastern 50 feet of the total 100-foot wide BNSF railroad corridor alongside the BNSF railroad tracks. This alignment is independent of other roads. From 36th Avenue southward, the transitway would be depressed in relation to the surroundings with wooded embankments on both sides. Adjacent land uses primarily include residential neighborhoods and public parkland.

While some of the residential areas are secluded from the rail corridor by wider vegetative buffers, others are in proximity or have less vegetative buffer such as along the eastern edge on Indiana Avenue, Kewanee Way, parts of Xerxes Avenue, and the area near the transition to TH 55. Along the western edge of the rail corridor, a linear natural area is comprised of a series of parks that are a natural retreat from the surrounding urban and suburban development including Sochacki Park, South Halifax Park, Rice Lake Park, Mary Hills Nature Area, Glenview Terrace/Valley View Park, and Theodore Wirth Regional Park and Golf Course. The Visual Quality Technical Report (SRF Consulting Group, 2012) includes a description of each park. Within Theodore Wirth Regional Park, Bassett Creek meanders through a patchwork of forested areas at the edge of the golf course as it heads south toward Bassett Lake and TH 55.

The BNSF railroad corridor is also a primary utility corridor. A power substation is located adjacent to the BNSF corridor near 34th Avenue. A high-voltage power line with metal lattice towers runs along the east side of the railroad corridor. The presence of the railroad and utilities through this generally natural area indicates the natural area has been previously disturbed. At TH 55, the transitway would turn east under the westbound TH 55 bridge over the BNSF railroad corridor to the center median of TH 55.

Higher quality visual features identified along Alignment D1 include:

- Theodore Wirth Regional Park and Golf Course
- Bassett Creek and Bassett Lake
- Theodore Wirth Parkway
- Sochacki Park, South Halifax Park, Rice Lake Park, and Mary Hills Nature Center
- Glenview Terrace/Valley View Park
- Plymouth Avenue Bridge over Bassett Creek and BNSF railroad corridor

### Alignment D2

In Robbinsdale, Alignment D2 would pass through a residential neighborhood along 34th Avenue where most homes are single-family dwellings. There are mature boulevard street trees and yards with trees and lawn. Approaching CSAH 81, the transitway would pass the Terrace Mall commercial site and then North Memorial Medical Center, which is comprised of a number of variously scaled buildings in a campus layout. It would follow CSAH 81 and West Broadway Avenue, which were both reconstructed within the past ten years to include streetscape enhancements such as decorative lighting and boulevard trees.

Entering Minneapolis, the buildings along West Broadway Avenue and Penn Avenue are a mix of commercial, residential, and civic structures. Commercial buildings are generally single-story structures. Some are freestanding and some are “storefront” buildings. Two three-story, multi-family residential structures were newly constructed within the last several years, one of which is a senior housing facility. Many single-family homes directly face these two streets with Penn Avenue being predominantly single-family residential. Much of the housing stock was constructed in the early to mid-1900s. Some of the building stock and tree cover in the neighborhood was affected by the 2011 tornado, and some repairs appear to be pending.

Higher quality visual features identified along Alignment D2 include:

- Victory Memorial Parkway and Theodore Wirth Parkway
- City of Robbinsdale gateway area
- City of Minneapolis gateway area
- Church of St. Anne
- 5 Points Building plaza
- Minneapolis Urban League building
- NorthPoint Health and Wellness Center
- Lincoln Community School
- International Foursquare Gospel Church

#### **Alignment D Common Section (part of the Preferred Alternative)**

The Alignment D Common Section runs along TH 55 towards downtown Minneapolis. As part of the *Minneapolis Near Northside Master Plan* (2000), TH 55 was envisioned as a “gateway” corridor. This plan acknowledges that LRT would need to be accommodated in the right-of-way in the future. Since the plan’s adoption, a number of improvements have been implemented, including new boulevard and median tree plantings to complement the mature trees along the south frontage road.

Along TH 55, homes in the adjacent residential neighborhoods face inward to the local streets and do not face the highway directly. Some multi-family residential buildings ranging from two to six stories do have some units facing the highway. On the south side of TH 55, Harrison Park includes ball fields and a community center building. Additionally, several civic buildings and spaces have prominent locations.

East of I-94, industrial and civic buildings line the route, and there is little greenery. The intersection of TH 55, 6th Avenue, and 7th Street is a skewed configuration and a challenging area to navigate visually. 7th Street branches off as a multi-lane road to access downtown Minneapolis. Approaching the Target Field Station, 6th Avenue realigns to the street grid of downtown becoming 5th Street. The roadway narrows where it runs parallel to the existing Blue Line and Green Line (Central) LRTs. The taller buildings of downtown Minneapolis are visible in the near distance.

Higher quality visual features identified along the Alignment D Common Section include:

- Boulevard and median trees along TH 55 west of I-94
- Harrison Neighborhood gateway sculptures
- Floyd B. Olson memorial
- Zion Baptist Church
- Seed Academy and Wayman Church
- Sumner Library
- Metro Transit headquarters
- HERC site landscaping

## 4.5.6 Environmental Consequences

### 4.5.6.1 Operating Phase (Long-Term) Impacts

#### No-Build Alternative

No effects to visually sensitive resources are anticipated as a result of the No-Build alternative.

#### Enhanced Bus/TSM Alternative

A proposed transit center and park-and-ride facility would be constructed at Oak Grove Parkway and West Broadway Avenue, north of TH 610, and would alter the current landscape characterized by agricultural, grassland, and remnant woodland at the edge of suburban development.

#### Build Alternatives

The following summarizes the degree of effect to existing visual features along each of the proposed alignments. The Visual Quality Technical Report (SRF Consulting Group, 2012) includes detailed descriptions of these effects.

##### *Alignment A*

Alignment A would use land in Maple Grove that is either currently being used for gravel mining or is existing road or freight rail right-of-way. Potential effects to visual quality would be generally minimal throughout Alignment A. Minimal effects are anticipated to Shingle Creek, a higher quality visual feature identified along this alignment. The new transitway bridge that would curve from the south side of Brooklyn Boulevard onto the BNSF railroad corridor would also span Shingle Creek; it would therefore not impede views from eye level. The retaining walls at the end of the bridge in BNSF railroad corridor would end before the wetland features adjacent to the creek; it would therefore not impede views from CSAH 81.

##### *Alignment B (part of the Preferred Alternative)*

Alignment B utilizes the existing right-of-way of West Broadway Avenue. For much of Alignment B the transitway would be located in the center of the roadway and would have minimal to moderate effects to visual quality. Effects on higher quality visual features are listed below:

#### ■ Shingle Creek – Minimal

Views of Shingle Creek would be minimally affected. The only transitway features in the vicinity would be the tracks and catenary in the center median of the roadway, and they would not visually interrupt clear views to the creek.

#### ■ West Broadway Avenue Bridge over TH 610 – Minimal

The bridge would be minimally affected. The new transitway bridge that would parallel the West Broadway Avenue Bridge over TH 610 would block views of the West Broadway Avenue Bridge, but the transitway bridge could be designed to be consistent with the TH 610 aesthetic guidelines.

##### *Alignment C (part of the Preferred Alternative)*

Alignment C utilizes the existing BNSF railroad corridor. Effects to visual quality would generally be minimal because the transitway would run closely parallel to the existing railroad. Some moderate effects are identified. Effects on higher quality visual features are listed below:

#### ■ I-94 Bridge over the BNSF railroad and CSAH 81 – Minimal

Since no modifications to the I-94 Bridge would be required, visual effects to this resource would be minimal.

■ **City of Crystal gateway area – Minimal**

Visual effects to the gateway area would be minimal. The gateway sign and landscaping are near the CSAH 81/Bass Lake Road intersection and would not be in conflict with the station location.

■ **CSAH 81 Bridge over Canadian Pacific railroad – Minimal**

Visual effects to the bridge would be minimal. It would not be physically impacted, and since the new bridge for the transitway over the railroad is separated visually by commercial development, there would be minimal visual influence between them.

■ **Green boulevard west of West Broadway Avenue between 47th Avenue and TH 100 – High**

Visual effects to the boulevard would be high. The construction of the transitway would require the removal of some mature trees and reduce the width of the green space separating the roadway and railroad.

■ **West Broadway Avenue and BNSF Railroad Bridges over TH 100 – Minimal**

Visual effects to the bridges would be minimal. The existing BNSF Railroad Bridge would be widened to accommodate the transitway, and a new BNSF Railroad Bridge would be constructed south of the existing bridge. It could be designed to be consistent with the TH 100 aesthetic guidelines.

■ **Historic Robbinsdale Public Library – Minimal**

Visual effects to the library would be minimal since the transitway infrastructure would run within the existing BNSF right-of-way and would not alter views of the building.

■ **Sacred Heart Catholic Church – Minimal**

Visual effects to the church would be minimal since the transitway infrastructure would run within the existing BNSF right-of-way and would not alter views of the building.

***Alignment D1 (part of the Preferred Alternative)***

Alignment D1 utilizes the existing BNSF railroad corridor between 34th Avenue and TH 55. The transitway would run closely parallel to the existing BNSF freight rail tracks and, as such, would be a modification to an existing dedicated rail corridor rather than the introduction of a new rail corridor. Still, the implementation of LRT would bring an increased frequency of vehicles passing through.

Effects to visual quality would be minimal to moderate. In some locations, the tracks would be in a depressed cut section and shielded by the topography and vegetation. In other instances though, residential and park areas on both the east and west sides have more of a visual connection based on close proximity and varying degrees of openness of existing vegetation. Both temporary and permanent effects to the vegetation along the BNSF railroad corridor from construction may alter the views and amount of screening of adjacent neighborhoods to the east and parks to the west. Effects to higher quality visual features include:

■ **Sochacki Park, South Halifax Park, Rice Lake Park, and Mary Hills Nature Area – Moderate**

These parks would be moderately affected. The additional utilitarian features, as listed in the description of effects to Theodore Wirth Regional Park, would add additional visual intrusions to the perceived “natural” character of the parks beyond the existing railroad and overhead utilities.

■ **Glenview Terrace/Valley View Park – Minimal**

Glenview Terrace/Valley View Park would be minimally affected. The presence of wetlands in the BNSF railroad corridor adjacent the park would prevent cutting into side slopes and minimal removal of trees. The active uses of the park are well buffered by a wooded area.



■ **Theodore Wirth Regional Park and Golf Course – Moderate**

Theodore Wirth Regional Park and Golf Course would be moderately affected, since views to the BNSF railroad corridor may be opened up by grading and vegetation thinning for the transitway. The additional utilitarian features, including catenary wires, support poles, tracks, TPSS, and the light rail vehicles, would add visual intrusions to the perceived “natural” character of the park, beyond the existing railroad and overhead utilities.

■ **Theodore Wirth Parkway – Minimal**

Theodore Wirth Parkway would be minimally affected since it passes over the transitway on a bridge only briefly. Some views to the BNSF railroad corridor may be opened up in the approaches by grading and vegetation thinning for the transitway but would be peripheral to the immediate scenery adjacent the Parkway.

■ **Plymouth Avenue Bridge over Bassett Creek and BNSF railroad – Minimal**

Some modifications to the bridge would be necessary to make space for the transitway whether or not the Plymouth Avenue/Theodore Wirth Regional Park station option is constructed at this location. In either case, the overall visual quality of the bridge would be minimally affected since the primary aesthetic features including the pier arches, railing, and lighting on the deck would remain unchanged. In order to accommodate the new LRT tracks an area below the bridge would be altered from a paved slope to a clear opening with infill walls added to two of the existing arched piers for crash protection and to retain grade. This modification would only be visible from the pedestrian trail west of the BNSF track and would be unnoticeable from Plymouth Avenue above.

A transit station at this location would have a visual presence. Design modifications, such as an enclosed elevator, would be needed to provide transit patrons with access to the station.

■ **Bassett Creek and Bassett Lake – Moderate**

Bassett Creek and Bassett Lake would be moderately affected similarly to Theodore Wirth Regional Park since they are part of the park’s natural scenery.

*Alignment D2*

At the northern end of Alignment D2, the transitway transitions from running in the BNSF railroad corridor to running within road right-of-way. As it would enter suburban and urban neighborhoods with denser development patterns than other alignments, the transitway would be in closer visual proximity to a greater number of people. Along Penn Avenue, the transitway cross section design requires the full acquisition of a number of properties resulting in a high degree of visual impacts. Minimal to moderate effects are also identified. Effects to higher quality visual features include:

■ **Victory Memorial Parkway and Theodore Wirth Parkway – Minimal**

The parkways would be minimally affected since the new transitway bridge would cross over them in conjunction with the existing CSAH 81 bridges.

■ **City of Robbinsdale/Minneapolis gateway area – High**

A welcome sign for Robbinsdale is oriented towards those traveling northbound (over Oakdale Avenue/Lowry Avenue) on CSAH 81. A welcome sign for Minneapolis is oriented towards those traveling southbound (over Oakdale Avenue/Lowry Avenue) on CSAH 81. A number of streetscape features in the center median of CSAH 81 including a monument sign, landscaping, and lighting would be highly affected by the proposed transitway bridge, which curves from 34th Avenue onto CSAH 81, requiring their removal.

■ **Church of St. Anne – Minimal**

The church would be minimally affected since it is a full block away from the transitway and buffered by other buildings.

■ **5 Points Building plaza – Minimal**

The plaza would be minimally affected since it is already located at a high-traffic intersection. There may potentially be curb or sidewalk alterations based on the conceptual plan, but the sculptural transit shelter, furnishings, and landscaping in the plaza would not be affected.

■ **Minneapolis Urban League building – Moderate**

The Urban League building would be moderately affected. Even though the transitway would be constructed within the median of Penn Avenue and would not affect the building itself, building users would be subject to potential increased distraction as a result of the addition of LRT vehicle frequency. The exterior gathering areas around the building have some buffering from Penn Avenue by a retaining wall and railing since they are set below the sidewalk grade, but would still feel quite close visually.

■ **NorthPoint Health and Wellness Center – Moderate**

The NorthPoint Health and Wellness Center would be moderately affected because Penn Avenue would be widened to the west to accommodate the transitway, thereby requiring partial acquisition of the property frontage. Some building modifications would be necessary to create adequate space for the transitway.

■ **Lincoln Community School – Moderate**

The Lincoln Community School would be moderately affected. Even though the transitway would be constructed within the median of Penn Avenue and would not affect the building itself, building users would be subject to potential increased distraction as a result of the addition of LRT vehicle frequency.

■ **International Foursquare Gospel Church – High**

The church would be highly affected visually since Penn Avenue would be widened to accommodate the transitway and full acquisition of the property and removal of the building to create adequate space for the transitway would be required.

*Alignment D Common Section (part of the Preferred Alternative)*

In the Alignment D Common Section, the transitway would run along TH 55, a highway that currently accommodates a relatively high amount of traffic. Although it is envisioned as a “gateway” corridor to downtown Minneapolis, the *Minneapolis Near Northside Master Plan* (2000) envisioned that LRT could be accommodated without sacrificing the overall desired character in the context of a redesigned TH 55 right-of-way with a widened center median. This project would not reconstruct the entire highway cross section, and the construction of the transitway within the existing median would alter its existing green character. Considering the existing industrial character of the visual context east of I-94 approaching downtown, it is anticipated that minimal visual effects would occur in that area. Effects to higher quality visual features include:

■ **Boulevard and median trees along TH 55 west of I-94 – High**

The TH 55 center median would be highly affected. Newly planted trees would need to be removed for the transitway alignment. After the transitway is constructed in the center median, there would not be adequate space for new trees alongside it. Trees at the highway edges would remain and continue to support the “gateway” appearance of the corridor.

■ **Harrison Neighborhood gateway sculptures – Minimal**

The sculptures would be minimally affected since the transitway turns onto TH 55 and does not conflict with their siting.

■ **Floyd B. Olson memorial – Minimal**

The memorial would be minimally affected since the transitway turns onto TH 55 and does not conflict with its siting.

■ **Zion Baptist Church – Minimal**

The church would be minimally affected since it is visually buffered by the north frontage road along TH 55. Use of church sanctuaries is typically an indoor activity, and the church is already located along a busy highway.

■ **Seed Academy and Wayman Church – Minimal**

The school and church would be minimally affected since the use of church sanctuaries is typically an indoor activity, and it is already located along a busy highway.

■ **Sumner Library – Minimal**

The library would be minimally affected visually since it is already located along a busy highway.

■ **Metro Transit headquarters – Minimal**

The Metro Transit building would be minimally affected visually since it is already located along a busy highway and serves as a transit vehicle service and storage site.

■ **HERC site landscaping – Moderate**

The HERC site landscaping would be moderately affected by the Bottineau Transitway. The transitway would run parallel to 6th Avenue in a widened right-of-way, which would require partial removal of planter wall, trees, and the lawn area at the corner of 6th Avenue and 7th Street.

■ **Ford Building – Minimal**

The Ford Building would be minimally affected because the Blue Line already passes the building along 5th Street.

**Summary of Operational Impacts by Alternative**

Based on the degree of effect identified for each alignment, a list of effects by alternative is provided below.

■ <b>No-Build Alternative:</b>	None
■ <b>Enhanced Bus/TSM Alternative:</b>	Minimal
■ <b>Alternative A-C-D1:</b>	Moderate
■ <b>Alternative A-C-D2:</b>	High
■ <b>Alternative B-C-D1 (Preferred Alternative):</b>	Moderate
■ <b>Alternative B-C-D2:</b>	High

**4.5.6.2 Construction Phase Impacts**

Anticipated visual effects during construction would be similar to the appearance of typical roadway projects including the temporary presence of heavy equipment, traffic control measures, and construction

activities. Where the transitway passes along residential neighborhoods, the construction activity would likely be perceived as visually disruptive to typically more peaceful residential settings.

#### **Alignment A**

Future redevelopment of the area is planned but would not be implemented prior to the transitway. Therefore, without any active land use except gravel mining, no construction phase effects are anticipated for Alignment A.

#### **Alignment B (part of the Preferred Alternative)**

The construction of the new bridge for the transitway over TH 610 would be highly visible to travelers along eastbound TH 610.

#### **Alignment C (part of the Preferred Alternative)**

The reconstruction of the BNSF bridge over TH 100 to create adequate width for the transitway would be highly visible to travelers along northbound TH 100. Where the transitway passes along residential neighborhoods, the construction activity would likely be perceived as more visually disruptive to these typically peaceful residential settings.

#### **Alignment D1 (part of the Preferred Alternative)**

Users of Theodore Wirth Regional Park, Sochacki Park, South Halifax Park, Rice Lake Park, and Mary Hills Nature Area would likely perceive construction activity as undesirable and not consistent with their anticipated recreational experience. The reconstruction of the westbound TH 55 bridge over the BNSF railroad corridor and depressed transitway with retaining walls curving onto TH 55 would be highly visible to travelers along TH 55. Based on final construction limits, there may be temporary grading for the construction of retaining walls or other features that would affect slopes and vegetation.

#### **Alignment D2**

Construction of the fly-over bridge from 34th Avenue to CSAH 81 and the North Memorial station would be highly visible to travelers along CSAH 81, West Broadway Avenue, Lowry Avenue, Victory Memorial Parkway, and Theodore Wirth Parkway. With the relatively narrow street width, homes with frontages along West Broadway Avenue on the east side of Penn Avenue would be subject to the construction activity nearby.

#### **Alignment D Common Section (part of the Preferred Alternative)**

The reconstruction of the TH 55 Bridge over I-94 to create adequate width for the transitway would be highly visible to travelers along I-94 and TH 55.

#### **Summary of Construction Impacts by Alternative**

Construction impacts would range from minimal to high depending on the acquisition of properties for additional transitway right-of-way, removal of vegetation, and visual proximity.

■ <b>No-Build Alternative:</b>	None
■ <b>Enhanced Bus/TSM Alternative:</b>	Minimal
■ <b>Alternative A-C-D1:</b>	Moderate
■ <b>Alternative A-C-D2:</b>	High
■ <b>Alternative B-C-D1 (Preferred Alternative):</b>	Moderate
■ <b>Alternative B-C-D2:</b>	High



#### **4.5.7 Avoidance, Minimization, and/or Mitigation Measures**

The various Build alternatives would not result in a substantial change to the visual character of the corridor as a whole. The most dramatic (high) visual effects would occur as part of alternatives A-C-D2 and B-C-D2, particularly along Alignment D2 where a significant number of homes would be removed and the Alignment D Common Section where the existing center green median of TH 55 would be affected. Under these alternatives, the community would be involved in the station design process, and the process of selecting landscaping and streetscape elements that would complement and benefit the visual nature of this neighborhood. Along TH 55, coordination would occur with MnDOT and the MPRB to identify potential opportunities for tree replacement.

Moderate visual effects are anticipated as a result of alternatives A-C-D1 and B-C-D1, particularly along Alignment D1 near Theodore Wirth Regional Park and the string of several other community parks. In this location, transitway elements added to the rail corridor may be visually screened or softened using landscaping where adequate space permits, and the loss of existing vegetation on side slopes for grading or access purposes would be replaced to the extent feasible. The MPRB and the Cities of Minneapolis, Golden Valley, and Robbinsdale would be involved in selecting landscape treatments that would be compatible with the character of the parks and the surrounding neighborhoods.

For all alternatives, minimal impacts are anticipated as a result of station construction. Stations can be designed to be aesthetically attractive and to complement their surroundings. Station design and aesthetics would be addressed during subsequent engineering phases.

As with station construction, TPSS facilities can be designed to be visually appealing and to fit with their surroundings. To minimize visual quality impacts, TPSS siting would consider the context of each facility in relation to adjacent properties and resources. TPSS design and siting would be determined as the Bottineau Transitway moves into Project Development.

As components of the various Build alternatives, minimal effects to visual quality are generally anticipated to result under Alignments A, B, and C. In Alignment B, the potential construction of the OMF at 93rd Avenue would have a moderate effect on the neighborhood across the street. City code requirements for a front landscape yard would provide some screening. In general, where feasible, removed vegetation would be replaced with vegetation of a similar type. No other specific mitigation is proposed.

### **4.6 Business Impacts**

This section focuses specifically on commercial uses in the Bottineau Transitway, and potential impacts to businesses as a result of the project. A full evaluation of both residential and commercial right-of-way impacts is available in Section 4.3 of this Draft EIS. A complete parking analysis is available in Section 3.5.

#### **4.6.1 Regulatory Context and Methodology**

No specific laws or executive orders regulate the topic of economic impacts. NEPA and MEPA form the general basis of consideration for economic issues.

Operating phase (long-term) impacts include direct impacts of the project as well the permanent impacts of operating the transitway, including acquisition of right-of-way, loss of on-street parking, and changes in traffic patterns. Construction phase impacts are defined as impacts generally temporary in nature associated with constructing the project.

#### **4.6.2 Study Area**

The study area for operating phase (long-term) direct impacts (right-of-way acquisition, loss of on-street parking) is defined as the potential area of disturbance for the project.

### 4.6.3 Affected Environment

#### Existing Economic Activity

The following section outlines the existing economic activities within the Bottineau Transitway. Existing uses are described for each alignment.

##### *Alignment A*

The predominant economic activity in the westernmost segment of Alignment A is gravel mining. Extraction has been completed west of Hemlock Lane, and the area has been redeveloped for commercial and residential use. Extraction activities have moved eastward and are expected to continue for several decades. As the extraction is completed in an eastward fashion, the remaining land would be graded and made available for development.

Continuing east from US 169, Alignment A runs along the south side of Brooklyn Boulevard adjacent to a large area of industrial/business park uses. The proposed Boone Avenue station would be located in this area.

As the alignment shifts onto the BNSF railroad corridor paralleling CSAH 81, commercial/industrial uses surround the corridor. The *Brooklyn Park 2030 Comprehensive Plan* confirms that these activities are planned to remain with some areas transitioning to mixed use.

##### *Alignment B (part of the Preferred Alternative)*

Agricultural activities at the north end of Alignment B are currently transitioning from agricultural to commercial use, most notably with the development of the Target North Campus and developing business parks in the area of the proposed 93rd Avenue station.

The proposed Brooklyn Boulevard station lies within a large suburban commercial node characterized by “big box” (e.g., Target) and other auto-oriented retail.

##### *Alignment C (part of the Preferred Alternative)*

Numerous commercial and industrial uses surround Alignment C in the cities of Brooklyn Park, Crystal, and Robbinsdale. At the proposed 63rd Avenue station area, a small cluster of businesses is located on the west side of CSAH 81. The *Brooklyn Park Comprehensive Plan* guides future redevelopment of this area to mixed use.

South of 63rd Avenue, few businesses are located adjacent to the Bottineau Transitway with the exception of the Crystal Airport located on the east side of CSAH 81. Commercial activity increases south of the Bass Lake Road station area.

East of the Robbinsdale station lies “downtown” Robbinsdale, a large retail/office area centered on both West Broadway Avenue and CSAH 81. The *City of Robbinsdale Comprehensive Plan* envisions intensification of commercial use in the downtown area.

##### *Alignment D1 (part of the Preferred Alternative)*

Few businesses surround Alignment D1, which lies within a predominantly residential area. Commercial activities are not proposed for this area.

##### *Alignment D2*

The North Memorial Medical Center anchors a small retail and medical clinic commercial area at the north end of Alignment D2.

Additional retail activity is scattered along the corridor as it proceeds southward, culminating in a small commercial node at the proposed Broadway/Penn station. As the alignment turns southward into a primarily residential area, a limited number of small businesses are scattered among the residential uses.

The *Minneapolis Plan for Sustainable Growth* reinforces this existing pattern, encouraging business activity to concentrate along West Broadway Avenue.

#### ***Alignment D Common Section (part of the Preferred Alternative)***

No businesses are located in the western portion of the Alignment D Common Section.

East of I-94, the Alignment D Common Section enters the downtown area of Minneapolis, characterized by commercial and industrial uses. The alignment transitions to the existing Blue Line LRT at the Target Field Station, which is currently transitioning from industrial uses to a signature mixed use development adjacent to the Minnesota Twins ballpark as indicated in The Future Land Use Plan map for the Downtown Sector from *The Minneapolis Plan*. The last station to be constructed as part of the Bottineau Transitway would be at Van White Boulevard. The terminal station at the transition to the Blue Line would be located at the Target Field Station, an intermodal transit station under construction and planned to open in 2014. The *North Loop Small Area Plan* (2010) guides redevelopment for the North Loop area and calls for mixed use developments organized to support transit.

### **4.6.4 Environmental Consequences**

#### **4.6.4.1 Operating Phase (Long-Term) Impacts**

The Bottineau Transitway would result in several types of direct impacts to existing businesses in the study area. This section evaluates these direct economic impacts including the following:

- Displacement of commercial uses due to right-of-way acquisition
- Loss of on-street parking and changes to property access due to location of LRT within the street right-of-way
- Other property acquisition (both commercial and non-commercial) due to right-of-way acquisition resulting in reduced property tax collection

#### **No-Build Alternative**

The No-Build alternative would not have any direct economic impacts. Adverse impacts due to introduction of the transitway, such as displacement of businesses, loss of parking, and change in access, would not occur.

#### **Enhanced Bus/TSM Alternative**

Direct impacts would be limited to the area of the proposed transit center and park-and-ride facility at Oak Grove Parkway and West Broadway Avenue, where undeveloped land would be converted to transportation use. As the area is currently undeveloped and not in economic use, no direct economic impacts would occur.

#### **Build Alternatives**

##### ***Alignment A***

Construction of the transitway would largely occur within existing or future roadway right-of-way through this alignment.

**Table 4.6-1** summarizes the direct impacts to commercial uses along Alignment A.

**Table 4.6-1. Summary of Direct Impacts to Commercial Uses along Alignment A**

Type of Impact	Magnitude of Impact
Number of businesses displaced	0
Number of commercially-zoned properties fully acquired	1
Number of on-street parking spaces lost	0
Loss of property access <sup>1</sup>	0
Estimated market value of properties no longer taxable <sup>2</sup>	\$1.56 million

<sup>1</sup> "Property access" as defined by the ability for a vehicle to park in front of the property

<sup>2</sup> Total of 2012 Market Values as determined in the Hennepin County tax records for all full property acquisitions on the alignment

**Alignment B (part of the Preferred Alternative)**

Similar to Alignment A, construction of the transitway would largely occur within existing or future roadway right-of-way through this alignment. One business would be displaced by the proposed Bottineau Transitway Project.

**Table 4.6-2** summarizes the direct impacts to commercial uses along Alignment B.

**Table 4.6-2. Summary of Direct Impacts to Commercial Uses along Alignment B**

Type of Impact	Magnitude of Impact
Number of businesses displaced	1
Number of commercially-zoned properties fully acquired	1
Number of on-street parking spaces lost	0
Loss of property access <sup>1</sup>	0
Estimated market value of properties no longer taxable <sup>2</sup>	\$4.61 million

<sup>1</sup> "Property access" as defined by the ability for a vehicle to park in front of the property

<sup>2</sup> Total of 2012 Market Values as determined in the Hennepin County tax records for all full property acquisitions on the alignment

**Alignment C (part of the Preferred Alternative)**

The transitway would be constructed in BNSF railroad right-of-way for the majority of this alignment with limited impacts to existing commercial activities. No businesses abutting the rail corridor currently use the adjacent rail corridor for commercial activity, nor do any commercial sidings exist along the corridor that could be disrupted by the Bottineau Transitway.

**Table 4.6-3** summarizes direct impacts to commercial uses along Alignment C.

**Table 4.6-3. Summary of Direct Impacts to Commercial Uses along Alignment C**

Type of Impact	Magnitude of Impact
Number of businesses displaced	2
Number of commercially-zoned properties fully acquired	1
Number of on-street parking spaces lost <sup>1</sup>	0
Loss of property access <sup>2</sup>	1
Estimated market value of properties no longer taxable <sup>3</sup>	\$1.13 million

<sup>1</sup> A commercial business site north of 42nd Avenue developed 17 parking spaces on freight rail property without obtaining an easement.

<sup>2</sup> "Property access" as defined by the ability for a vehicle to park in front of the property

<sup>3</sup> Total of 2012 Market Values as determined in the Hennepin County tax records for all full property acquisitions on the alignment

**Alignment D1 (part of the Preferred Alternative)**

Alignment D1 passes through the cities of Robbinsdale, Golden Valley, and Minneapolis. The majority of Alignment D1 is an existing BNSF railroad corridor located approximately 20 to 30 feet below the



surrounding grade. Land uses outside the depressed rail corridor are primarily park and residential. Due to these characteristics, there would be no direct impacts to commercial activity.

#### **Alignment D2**

Alignment D2 is located on existing city streets. Due to the number and proximity of commercial uses along this alignment, a number of businesses would experience direct impacts from construction of the transitway. Retail businesses are more dependent on on-street parking and direct access to the roadways on which the transitway would be located in this alignment, resulting in further impacts.

**Table 4.6-4** summarizes direct impacts to commercial uses along Alignment D2.

**Table 4.6-4. Summary of Direct Impacts to Commercial Uses along Alignment D2**

Type of Impact	Magnitude of Impact
Number of businesses displaced	3
Number of commercially-zoned properties fully acquired	7
Number of on-street parking spaces lost	300 (primarily in residential areas)
Loss of property access <sup>1</sup>	77
Estimated market value of properties no longer taxable <sup>2</sup>	\$15.23 million

<sup>1</sup> "Property access" as defined by the ability for a vehicle to park in front of the property

<sup>2</sup> Total of 2012 Market Values as determined in the Hennepin County tax records for all full property acquisitions on the alignment

#### **4.6.4.2 Construction Phase Impacts**

Construction phase impacts include impacts to existing businesses during transitway construction through temporary vehicular and pedestrian access changes, temporary loss of parking, and nuisance impacts related to construction activities, such as noise and dust.

##### **No-Build Alternative**

No construction impacts would occur under the No-Build alternative.

##### **Enhanced Bus/TSM Alternative**

Construction phase impacts would be limited to the area of the proposed transit center and park-and-ride facility at Oak Grove Parkway and West Broadway Avenue. Businesses in this vicinity could expect to be temporarily affected by limited changes in customer access, on-street parking availability, service access, traffic flow, and congestion during construction activities.

No further construction phase economic impacts are anticipated.

##### **Build Alternatives**

Under all of the Build alternatives, businesses could expect activities to be temporarily affected by changes in customer access, on-street parking availability, service access, traffic flow, and congestion during construction activities. Depending on the intensity and duration of construction activities, businesses dependent on ease of customer access may experience a loss of revenue during this time.

Businesses with outdoor activities such as outdoor dining or outdoor storage of products or materials could also experience negative impacts due to noise, dust, or other nuisance conditions during nearby construction activities.

Businesses that rely on providing customers with a quiet atmosphere (e.g., dining, spa services) may also be affected during nearby construction activities.

Businesses may experience short-term disruptions of utility services during construction activities if utilities need to be moved or replaced.

#### 4.6.4.3 Summary of Economic Effects by Alternative

The following **Table 4.6-5** shows a summary of adverse economic and business impacts for each alternative.

**Table 4.6-5. Summary of Economic Effects by Alternative**

Alternative	Total Adverse Impacts
<b>No-Build</b>	No economic effects
<b>Advanced Bus/TSM</b>	Limited direct impacts as construction is limited to park-and-ride facility
<b>A-C-D1</b>	Limited direct impacts Construction impacts associated with access changes, temporary loss of parking, and nuisance impacts (e.g., noise and dust)
<b>A-C-D2</b>	Greater direct impacts due to greater right-of-way acquisition and on-street parking loss Greater construction impacts given land use and dependence of businesses on access and on-street parking
<b>B-C-D1 (Preferred Alternative)</b>	Limited direct impacts Construction impacts associated with access changes, temporary loss of parking, and nuisance impacts (e.g., noise and dust)
<b>B-C-D2</b>	Greater direct impacts due to greater right-of-way acquisition and on-street parking loss Greater construction impacts given land use and the dependence of businesses on access and on-street parking

#### 4.6.5 Avoidance, Minimization, and/or Mitigation Measures

The alternatives development process sought to minimize impacts to the greatest degree possible while preserving project benefits.

Loss of commercial property would be mitigated by payment of fair market compensation and provision of relocation assistance in accordance with applicable laws and statutes, as noted in Section 4.3 Displacement of Residents and Businesses.

While not a specific mitigation measure, Hennepin County and the Metropolitan Council would support local communities' station area planning efforts to enhance the potential economic benefits of the Bottineau Transitway through community development.

Measures to avoid and/or minimize adverse impacts to businesses during project construction including maintenance of traffic, maintenance of access, business signage, and advance communication of construction activities would be provided.

### 4.7 Safety and Security

#### 4.7.1 Regulatory Context and Methodology

The Metropolitan Council, as the owner and operator of the Bottineau Transitway, follows safety and security policies that establish minimum requirements for facilities based on local, state, and federal codes or standards. These codes and standards include, but are not limited to, the applicable parts of:

- The National Fire Protection Association (NFPA) 130, *Standard for Fixed Guideway Transit or Passenger Rail Systems*

- The Uniform Building Code, 2007 Edition as amended by the cities of Minneapolis, Golden Valley, Robbinsdale, Crystal, Brooklyn Park, and Maple Grove
- Uniform Fire Code, 1997 Edition as amended
- The 2007 Minnesota State Building Code
- The Life Safety Code as well as ISO standards
- American National Standards Institute (ANSI) and American Society for Testing and Materials (ASTM) Standards

In addition, the FTA provides safety and security oversight for major capital projects (*Safety and Security Guidance for Recipients with Major Capital Projects*, covered under 49 CFR part 633, “Project Management Oversight”). The design of the Bottineau Transitway should meet the following minimum objectives:

- Design for minimum hazard through the identification and elimination of hazards through the use of appropriate safety design concepts and/or alternative designs
- Use of fixed, automatic, or other protective safety devices to control hazards which cannot be eliminated
- Use of warning signals and devices if neither designs or safety devices can effectively eliminate or control an identified hazard
- Provide special procedures to control hazards which cannot be minimized by the aforementioned devices

Safety and security aspects of the Bottineau Transitway would be developed in accordance with the Metropolitan Council’s policies and procedures. Metropolitan Council’s *Regional Transitway Guidelines* and *Station and Support Facility Design Guidelines User Guide Supplement* (February 2012) provide technical guidance for the design of transitway facilities. According to this guidance, Crime Prevention Through Environmental Design (CPTED) principles should be used for all passenger facilities. This approach is consistent with the Minneapolis zoning ordinance, which requires adherence to CPTED principles.

At this time, safety and security policies and procedures have not been developed specifically for the Bottineau Transitway; policies, procedures, and any mitigation measures required for safety and security would be specified at an appropriate level of detail in the Final EIS. For the Green Line (Central Corridor) LRT project, which began construction in summer 2010 and is on schedule to be operational in 2014, the Metropolitan Council developed a Safety and Security Management Plan (SSMP) as part of entering into Preliminary Engineering, and the SSMP was refined during following project phases. As was done for Green Line (Central Corridor) LRT, safety and security plans would be developed for the Bottineau Transitway as the project moves into Project Development.

Metro Transit employees and consultants are expected to fully comply with the provisions of all safety and security plans developed and fully cooperate during planning, engineering, and construction to provide a safe Bottineau Transitway.

#### 4.7.2 Study Area

The study area includes facilities within and adjacent to the potential area of disturbance of the transitway system and considers the proximity of proposed alignments to schools, playgrounds, and other places that attract school-age children and other persons of special concern relative to safety and security.

### 4.7.3 Affected Environment

Public safety and security along the corridor is currently provided by the police, fire departments, and emergency response units of the communities adjacent to the proposed Bottineau Transitway. The Bottineau Transitway alignments pass through the cities of Maple Grove, Brooklyn Park, Crystal, Robbinsdale, Golden Valley, and Minneapolis. Each city has a system for responding to emergencies such as weather, fire, rescue incidents, hazardous materials issues, and homeland security. Minneapolis Police Precincts One and Four provide crime prevention services for the North Loop, Harrison, Sumner-Glenwood, Near-North, Willard-Hay, and Jordan neighborhoods.

Concerns related to the safety of neighborhood children, trail users, pedestrians, and transitway commuters were identified during the Scoping process. There are multiple areas along the Bottineau Transitway for which safety may be a concern. Specific community facilities and parklands with potential safety issues are listed in [Table 4.7-1](#) along with their locations. Community facilities are also identified in Section 4.2 and discussed in the context of social impacts. Parks and trails are identified and discussed in Chapter 8 Draft Section 4(f) Evaluation regarding potential project impacts to these recreational resources.

**Table 4.7-1 Community Facilities and Parklands with Potential Safety Concerns**

<b>Alignment A</b>		
<b>Hennepin Technical College</b>	9000 Brooklyn Boulevard	Brooklyn Park
<b>Alignment B (part of the Preferred Alternative)</b>		
<b>North Hennepin Community College</b>	7411 85th Avenue	Brooklyn Park
<b>Step by Step Montessori School</b>	8401 West Broadway Avenue	Brooklyn Park
<b>Future Hennepin County Library facility</b>	85th Avenue and West Broadway Avenue	Brooklyn Park
<b>Alignment C (part of the Preferred Alternative)</b>		
<b>Sacred Heart Catholic Church and School</b>	4087 West Broadway Avenue	Robbinsdale
<b>Triangle Park</b>	North of 40th Avenue	Robbinsdale
<b>Lee Park</b>	Between 36th Avenue and 38th Avenue	Crystal
<b>Alignment D1 (part of the Preferred Alternative)</b>		
<b>Sochacki Park</b>	Between 26th Avenue and 34th Avenue	Robbinsdale
<b>Mary Hills Nature Area</b>	2190 Bonnie Lane	Golden Valley
<b>St. Margaret Mary Catholic Church and Loveworks Academy</b>	2225 Zenith Avenue	Golden Valley
<b>Alignment D2</b>		
<b>Lincoln Community School playground</b>	2131 12th Avenue	Minneapolis
<b>Minneapolis Public Schools athletic field</b>	West of Lincoln Community School	Minneapolis
<b>Urban League Academy Elementary</b>	2100 Plymouth Ave.	Minneapolis
<b>Alignment D Common Section (part of the Preferred Alternative)</b>		
<b>Sumner Library</b>	611 Van White Memorial Boulevard	Minneapolis
<b>La Creche Early Childhood Center</b>	1800 Olson Memorial Highway	Minneapolis
<b>Harvest Preparatory School (K-6)</b>	1300 Olson Memorial Highway	Minneapolis



#### 4.7.4 Environmental Consequences

##### 4.7.4.1 Operating Phase (Long Term) Impacts

###### No-Build Alternative

No positive or adverse impacts to safety and security are anticipated to result from the No-Build alternative.

###### Enhanced Bus/TSM Alternative

No positive or adverse impacts to safety and security are anticipated to result from the Enhanced Bus/TSM alternative.

###### Build Alternatives

This section describes proposed design elements and other measures to increase personal safety and security at the proposed stations and along the Bottineau Transitway. Potential impacts associated with public safety at specific locations along each of the alignments are also discussed. Given adherence to transitway design guidelines and the oversight of security personnel, no adverse impacts related to safety and security are anticipated along the Bottineau Transitway. Safety measures for co-locating freight and transit within the right-of-way are addressed in Chapter 3.

###### *Design Elements*

Station areas would be designed according to best practices for safety. Stations would include public address systems, video monitoring, and emergency telephones. A public address system, with both speakers and signs, would convey information to people with disabilities in compliance with ADA requirements. Speakers and signs would be positioned to be clearly audible and visible. To deter vandalism, the speakers and signs would be out of public reach. Closed circuit television would record activity at ticket vending areas and platforms. Camera locations would be coordinated with the locations of other equipment such as lighting, audio equipment, and signage. Cameras would be visible to the public but not readily accessible. Stations would incorporate an emergency telephone on or near the platform for use in emergency situations.

General illumination of stations areas as well as vehicular and pedestrian circulation lighting would be consistent with established guidelines. Emergency lighting would be provided in all public areas, including platforms. Pedestrian lighting would be located along walkways, crosswalks, ramps, stairs, and bicycle storage areas. Vehicular traffic areas within station boundaries, such as bus loading and unloading zones, would be illuminated. Lighting would also be provided for park-and-ride facilities.

Station platforms would be fenced on the side not used to access the transitway at median stations and where significant grade changes exist at side platforms. Fencing would also be installed at locations where informal (illegal) crossing of the existing freight rail track have been identified.

Safety and security within the Bottineau Transitway is the joint responsibility of the operator and local law enforcement authorities. Metro Transit has its own licensed police force to address public safety on and near the transit system. Transit police routinely patrol the bus routes and bus stop areas, as well as the Blue Line LRT. Transit police officers on the Blue Line system, which is similar to the Bottineau Transitway system, provide security at the LRT stations and in the rail cars.

###### *Alignment A*

Hennepin Technical College is located north of the proposed Boone Avenue/Hennepin Tech station. It is anticipated that students would use the Bottineau Transitway to commute to and from the college, during day and evening hours. Adherence to design guidelines and other measures would maintain a safe and secure transit environment.

***Alignment B (part of the Preferred Alternative)***

North Hennepin Community College, Step by Step Montessori School, and the future Hennepin County Library are near the proposed 85th Avenue station. Appropriate lighting, fencing, and other measures would maintain the safety of commuters, college students, children, and future library patrons. No adverse impacts are expected near the 85th Avenue station.

***Alignment C (part of the Preferred Alternative)***

Sacred Heart Catholic Church and School, which provides K-8 curriculum and daycare facilities, is located one block east of the Bottineau Transitway. Adherence to design guidelines and other measures would maintain a safe and secure transit environment for schoolchildren near the Bottineau Transitway.

Triangle Park is located immediately west of the BNSF railroad corridor near the proposed Robbinsdale station. The park provides playground equipment and a wading pool for children. The perimeter of the park is bounded by chain-link fencing acting as obstacle barrier between the BNSF railroad corridor and the park. The fencing is expected to remain, thereby continuing to serve as a barrier between park activities and Bottineau Transitway operations.

Lee Park is also located immediately west of the BNSF railroad corridor and has a playground, ball fields, and skating rink. Existing fencing provides a barrier between the park and the railroad corridor. The fencing is expected to remain, serving as a barrier between park activities and Bottineau Transitway operations. No adverse impacts are anticipated.

***Alignment D1 (part of the Preferred Alternative)***

Community concerns related to the safety of park and trail users were expressed during the Scoping process. There are several informal (illegal) crossings of the BNSF railroad corridor within parkland between 36th Avenue and Golden Valley Road. Pedestrians who cross at these unmarked locations are illegally trespassing on (private) BNSF property. During the Scoping process, it was learned that residents of the area east of the park cross the BNSF railroad corridor at these illegal crossing to access the trail and Sochacki Park. Fencing along informal crossings in Sochacki Park and Mary Hills Nature Area would increase safety of trail users.

St. Margaret Mary Catholic Church and Loveworks Academy are situated north of the Golden Valley Road station option. Loveworks Academy is a public charter school serving students in kindergarten through the eighth grade. Adherence to design guidelines and other measures would maintain a safe and secure transit environment for schoolchildren near the proposed Golden Valley Road station option.

***Alignment D2***

The Minneapolis Urban League and Elementary School is located near the proposed Penn/Plymouth station within the northeast quadrant of this intersection. The school serves children in kindergarten through the eighth grade. Adherence to design guidelines and other measures would maintain a safe and secure transit environment for schoolchildren near the proposed Penn/Plymouth station.

The Lincoln Community playground is located east of Penn Avenue and south of 12th Avenue. The playground is open to the public. The playground is fenced, providing a physical barrier along Penn Avenue and the proposed alignment.

A Minneapolis Public Schools athletic field is located across from the Lincoln Community School building. The athletic field is used by the school system for football and soccer games. Currently, a chain-link fence encompasses the athletic field. The Bottineau Transitway would require the acquisition of a strip of land on the east side of the field. The fence would be replaced, maintaining the barrier between the athletic field and the proposed transitway along Penn Avenue.

#### *Alignment D Common Section (part of the Preferred Alternative)*

La Creche Early Childhood Center and Harvest Preparatory School (K-6) are located west of the proposed Van White Boulevard station within 60 feet north of TH 55. Sumner Library is situated at the northwest corner of TH 55 and Van White Boulevard. The Bottineau Transitway would be constructed within the median of TH 55 with existing east-west traffic flow maintained on both sides. Adherence to design guidelines, including the inclusion of pedestrian signals and well-marked crosswalks at crossing locations, would enhance safety along TH 55.

#### *Traction Power Substations*

Based on current track and system design, no specific safety or security issues have been identified concerning the TPSS facilities. The facilities would be contained within enclosed buildings that are not accessible to the public. Applicable safety and security precautions would be outlined in the SSMP and Safety and Emergency Preparedness Plan (SEPP) and would be overseen by the Metro Transit Police in cooperation with local law enforcement authorities.

#### **4.7.4.2 Construction Phase Impacts**

Construction activity may pose a safety risk to both workers and the public. Potential construction impacts for workers include temporary hazards to personal safety such as the possibility for worker-vehicle conflict in restricted workspaces under traffic conditions, work in deep and confined spaces during utility relocations and construction, and the potential for exposure to potential contaminants during soil excavation and drilling work. Both federal Occupational Safety and Health Administration (OSHA) and Minnesota OSHA (MNOSHA) standards for safety of construction site personnel would be maintained. Access to construction sites would be limited by fencing and security gates to prevent inadvertent access by those without access clearance.

Public safety, particularly the encroachment of pedestrians, bicyclists, and other spectators near open excavations and other construction activity, is an issue to be resolved by the creation, proper timing, and placement of protective safety programs, public information efforts, and selected protective measures. The use of construction equipment, delivery of materials, and other construction site activity may have temporary negative safety impacts on adjacent roadways and pedestrian areas.

Applicable safety and security precautions would be specified in the SSMP and SEPP and would be overseen by the Metro Transit Police in cooperation with local law enforcement and emergency response personnel.

#### **4.7.5 Avoidance, Minimization, and/or Mitigation Measures**

System safety and security oversight for the project would be achieved through implementation of safety and security plans by the Metropolitan Council. The primary purpose of these plans is to consider safety and security when designing and constructing the project. These plans would cover requirements for safety and security design criteria, hazard analyses, threat and vulnerability analyses, construction safety and security, operational staff training, and emergency response measures. These plans and programs would also specify actions and requirements of the Metropolitan Council and Metro Transit Police to maintain continuation of safety and security during Bottineau Transitway operations. Safety and security plan development for the project would be closely coordinated with city and county law enforcement agencies. Safety and security notification and outreach to the affected communities could include mass media public service announcements, signage of roadway or trail closures, and during community meetings or public events. The Metropolitan Council would be the responsible agency for communicating safety and security measures during construction and operations of the Bottineau Transitway.

Based on previous transit project practice, it is anticipated that safety and security for the Bottineau Transitway project would be facilitated by a Metro Transit Fire Life Safety Committee (FLSC). Should the

Metropolitan Council follow past practices, the FLSC for the Bottineau Transitway would be tasked with facilitating exchange of information on safety and security to minimize fire and life safety hazards to rail patrons and to project employees and the public. The FLSC would be responsible for reviewing design specifications, drawings, and other related documents for Metro Transit facilities and systems for compliance with established federal, state, and local regulations, codes, and standards relating to fire/life safety.



## 5.0 Physical and Environmental Analysis

Chapter 5 presents results from the analysis of impacts on the physical and environmental system components. Results are presented for the No-Build alternative for the purpose of establishing a base from which to identify impacts of the other alternatives. Operating phase (long-term) and construction impacts are identified for the Enhanced Bus/Transportation System Management (TSM) alternative and the four Build alternatives. The alternatives are described and illustrated in Chapter 2 Alternatives.

This Draft EIS evaluates a number of different physical and environmental resources for impacts: utilities; floodplains; wetlands; geology, soils and topography; hazardous materials; noise; vibration; biological environment; water quality and stormwater; air quality; and energy.

The study area represents a geographic area used to identify resources, and varies based on the resource being evaluated. The basis for each study area begins with the potential area of disturbance, which has been defined as the estimated area where construction would occur for the proposed project at this stage of design. In some cases the study area extends beyond the potential area of disturbance to understand the potential extent of impacts on adjacent resources (for example, a wetland or waterway may extend beyond the potential area of disturbance). The study area considered for each area of analysis in this chapter is summarized in [Table 5.0-1](#). Greater detail is provided in each section of this chapter. For reference, conceptual engineering plans are located in [Appendix E](#).

**Table 5.0-1. Summary of Defined Study Areas – Physical and Environmental Analysis**

Resource Evaluated	Study Area Definition	Basis for Study Area
<b>Utilities</b>	Within or directly adjacent to the potential area of disturbance	Captures utilities within the potential area of disturbance, as well as adjacent utilities that may also be impacted
<b>Floodplains</b>	Within ¼ mile of potential area of disturbance	Captures floodplain impacts to upstream and downstream waters for a distance outside of the potential area of disturbance
<b>Wetlands</b>	Within ¼ mile of potential area of disturbance	The distance captures the wetlands that are within and directly adjacent to the Bottineau Transitway Project. Physical impacts to wetlands are not expected to extend beyond this distance.
<b>Geology/Soils/Topography</b>	Within and adjacent to potential area of disturbance	Estimated area where construction would occur for the proposed project at this stage of design
<b>Biological Environment</b>	Within ¼ mile of the potential area of disturbance	The distance captures the habitat that is directly adjacent to the Bottineau Transitway Project and the wildlife that could potentially be affected by it.
<b>Hazardous Materials Contamination</b>	One mile on either side of alignments	ASTM standards (E1527-05 and 40 CFR Sec. 312)
<b>Noise and Vibration</b>	Based on the screening distances provided in Chapters 4 and 9 of the FTA guidance manual <i>Transit Noise and Vibration Impact Assessment</i> (May 2006)	Based on the screening distances provided in Chapters 4 and 9 of the FTA guidance manual <i>Transit Noise and Vibration Impact Assessment</i> (May 2006)

**Table 5.0-1. Summary of Defined Study Areas – Physical and Environmental Analysis (continued)**

Resource Evaluated	Study Area Definition	Basis for Study Area
<b>Water Quality/ Stormwater</b>	One mile on either side of the alignments (impaired waters); within potential area of disturbance for stormwater	Per National Pollutant Discharge Elimination System (NPDES) requirements for identifying impaired waters within or sensitive resources within 1-mile of the project
<b>Air Quality</b>	Roadways and intersections along the alignments currently proposed to be evaluated in the DEIS and potentially affected by proposed transit service; intersections expected to operate at poor level of service <sup>1</sup> (LOS E or F) in the traffic evaluation will be selected for detailed air quality analysis	Established in cooperation with MPCA
<b>Energy</b>	Anticipated changes in travel patterns and bus operations within the various alternatives proposed for study in the Draft EIS	Total energy consumption of Build alternatives measured in British thermal units (BTUs) (industry standard)

<sup>1</sup> Level of service (LOS) is a measure based on the amount of congestion experienced by motorists. Congestion is rated from A to F, with LOS A representing free flow with no congestion and LOS F representing high levels of congestion with very long delays and slow speeds.

## 5.1 Utilities

A utility-free zone, based on project design criteria, will be established during design. This will be an area under and adjacent to the LRT track in which no utilities would be allowed, minimizing damage to existing utilities, conflicts during construction, and disruption of LRT service during revenue operations. The design of the transitway corridor will include an evaluation of potential utility conflicts and will review whether affected utilities within the utility-free zone would require relocation. The complete relocation of a conflicting utility line beyond the limits of construction will prevent conflicts with the LRT construction and future service disruptions during maintenance of the underground utilities.

General information on existing public and private utilities and the potential effects that may result from the proposed project are included in this section. Only major utility owners that service the study area were contacted for utility information. This section is not intended to identify every utility that provides service in the study area but to address those that may be affected by the proposed project.

### 5.1.1 Regulatory Context and Methodology

#### 5.1.1.1 Legal and Regulatory Context

The following is a representative summary of the laws, regulations, and guidelines that are associated with utility relocation and accommodation.

#### Federal

- U.S. Code, Title 23, Sections 123 and 109(l)(1)
- U.S. Code, Title 23, Code of Federal Regulations 645, Chapter I, Subchapter G, Part 645, Subparts A and B (Federal Highway Administration (FHWA) 2003)

- Federal Transit Administration's (FTA) Project and Construction – Management Guidelines (2003), Appendix C – Utility Agreements

#### **Railroad**

- Burlington Northern Santa Fe (BNSF) Railway Utility Accommodation Policy

#### **State**

##### *Minnesota Department of Transportation (MnDOT)*

- MnDOT's Procedures for Accommodation of Utilities on Highway Right-of-Way
- MnDOT's Wireline Accommodation Policy

##### *Minnesota State Constitution*

- Article 1, section 13, addresses just compensation associated with private property that is taken, destroyed, or damaged for public use.

##### *Minnesota Statutes*

- Section 161.20, subdivision 1, addresses the general powers of the commissioner to carry out the provisions of Article 14, section 2, of the Minnesota State Constitution regarding the public highway system. Subdivision 2 addresses the commissioner's power regarding acquisition of property.
- Section 161.45 addresses utilities within highway rights-of-way that require relocation. This section describes rulemaking authority and utility owner interests when real property is conveyed.
- Section 161.46 addresses reimbursement of utility owners for the relocation of facilities. The section includes definitions, reimbursement requirements, and describes provisions associated with a lump sum settlement, acquisition of relocated facility for utility, and relocation work by the state.
- Section 222.37, subdivision 2, addresses pipeline relocations.
- Section 216D.04, addresses the Department of Public Safety's notice, plan, and locating requirements for excavation projects involving underground facilities.
- Section 216B, Public Utilities addresses utilities that are located within right-of-way that is owned by cities. These utilities may be subject to an individual franchise agreement, which provides the terms for which the utility companies may operate in the public right-of-way.

##### *Minnesota Rules*

Parts 8810.3100 through 8810.3600 address the utility permit process, standards for work conducted under permit, aerial lines, and underground lines.

Chapter 4720.5100 – 4720.5590 sets standards for wellhead protection planning, which is administered by the Minnesota Department of Health's Well Management Program.

#### **5.1.1.2 Methodology**

Existing utilities were inventoried within the study area using existing information that was provided by the utility owners identified below and field investigations.

The Cities of Maple Grove, Brooklyn Park, Crystal, Robbinsdale, Golden Valley, and Minneapolis; Hennepin County; Metropolitan Council; MnDOT; and BNSF Railway provided public utility information for sanitary sewer, storm sewer, and water main, in the form of GIS database files and engineering drawings. This information was compared to the alignment alternatives to identify conflicts.

Private utility information was obtained directly from Xcel Energy, Great River Energy, Sprint Nextel, and CenterPoint Energy for facilities that were located within the study area. This information was compared to the alignment alternatives to identify conflicts.

Wells in the project vicinity were identified from the Minnesota County Well Index database.

### 5.1.2 Study Area

The study area is defined as those utilities within, or directly adjacent to, the potential area of disturbance. The potential area of disturbance can be defined as the estimated area where construction would occur for the proposed project at this stage of design.

### 5.1.3 Affected Environment

#### Existing Water Service

Existing water service within the study area is provided, maintained, and owned by the following entities:

- City of Maple Grove Public Works (Alignment A)
- City of Brooklyn Park (Alignments A, B)
- City of Crystal Public Works (Alignment C)
- City of Robbinsdale Public Works (Alignment C)
- City of Golden Valley Public Works (Alignments D1, D2)
- City of Minneapolis Water Works (Alignments D1, D2, D Common Section)

Water mains within the study area typically range in size from six to 16 inches in diameter. However, there are a few instances where an 18- to 48-inch water main crosses or runs parallel to the study area ([Table 5.1-1](#)).

Six private wells<sup>1</sup> are located within the project limits. These wells are shown in [Figure 5.1-1](#) and [Table 5.1-2](#). Portions of the project are also located within Drinking Water Supply Management Areas, as well as Wellhead Protection Areas, as shown in [Figure 5.1-2](#).<sup>2</sup> The location of wells that supply public water systems cannot be mapped per the Homeland Security Act of 2002.

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<sup>1</sup> Private wells are those that do not supply the public water system.

<sup>2</sup> Drinking Water Supply Management Area is the Minnesota Department of Health approved surface and subsurface area surrounding a public water supply well that completely contains the scientifically calculated wellhead protection area and is managed by the entity identified in a wellhead protection plan. The boundaries of Drinking Water Supply Management Areas are delineated by identifiable physical features, landmarks, or political and administrative boundaries. A Wellhead Protection Area is the recharge area to a public well and is the area managed by the public water supplier, as identified in the wellhead protection plan, to prevent contaminants from entering public wells.



**Table 5.1-1. Water Mains (Greater than 18") within the Study Area**

Alignment	Utility Location
A	No water mains that are greater than 18" are located in Alignment A.
B (part of the Preferred Alternative)	24" water main at two locations: <ul style="list-style-type: none"> <li>■ On West Broadway at 89th Avenue and Maplebrook Parkway</li> <li>■ On West Broadway south of 85th Avenue, parallel to the roadway</li> </ul>
C (part of the Preferred Alternative)	No water mains that are greater than 18" are located in Alignment C.
D1 (part of the Preferred Alternative)	48" steel pipe water main located north of Golden Valley Road, crossing under the existing BNSF railroad corridor
D2	24" water main at two locations: <ul style="list-style-type: none"> <li>■ Crossing West Broadway at 29th Avenue</li> <li>■ Crossing TH 55 at Penn Avenue</li> </ul>

**Table 5.1-2. Known Private Wells within the Study Area**

Minnesota Unique Well Number	Address	Alignment
137710	7746 Lakeland Avenue Brooklyn Park, MN 55445	A
183196	8601 77th Avenue N Brooklyn Park, MN 55445	A
203273	8100 77th Avenue N Brooklyn Park, MN 55428	A
203284	8509 77th Avenue N Brooklyn Park, MN 55428	A
203285	77th Avenue N Brooklyn Park, MN 55428	A
203500	6221 56th Avenue N Crystal, MN 55429	C (part of the Preferred Alternative)

Figure 5.1-1. Known Private Wells within the Potential Area of Disturbance<sup>3</sup>

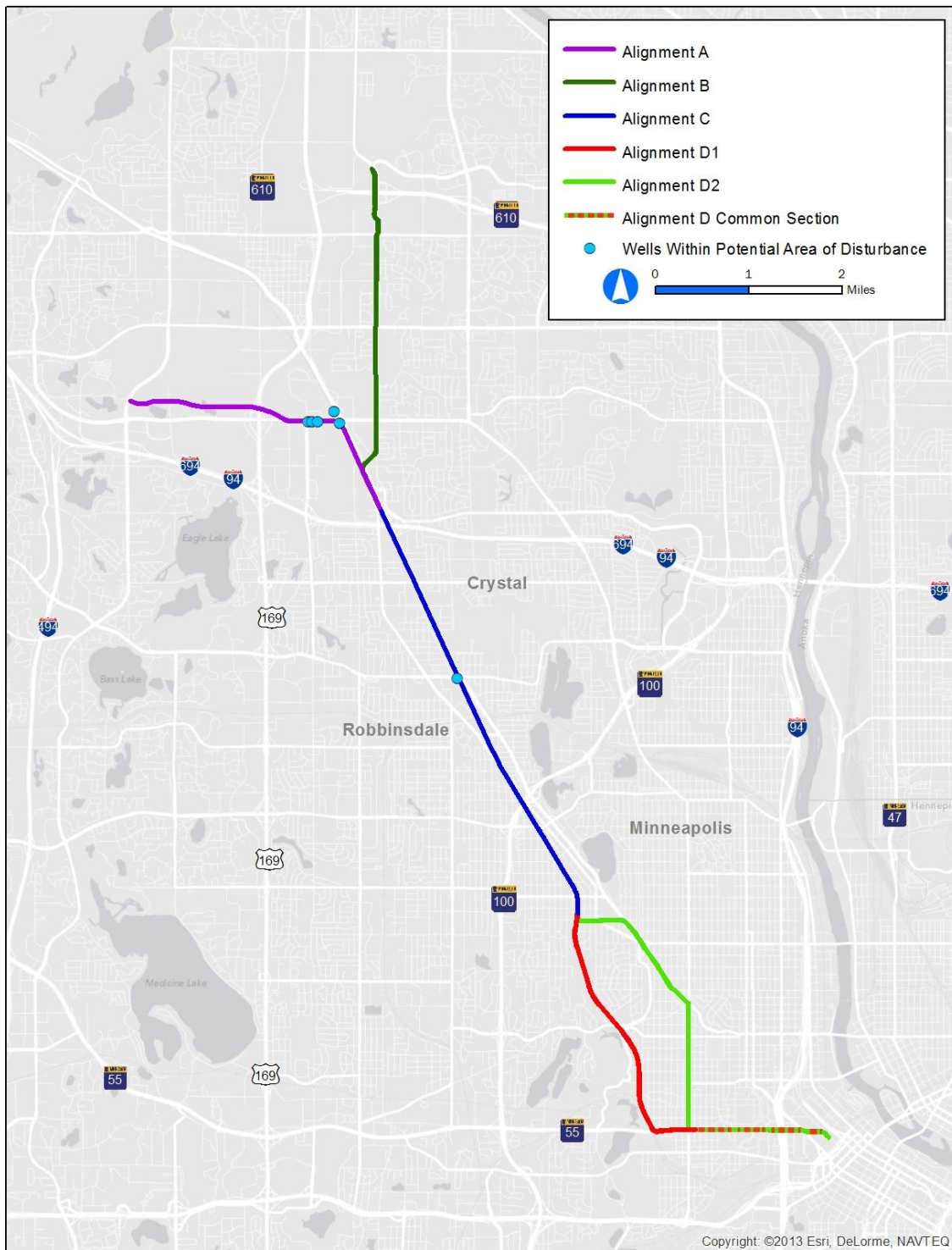
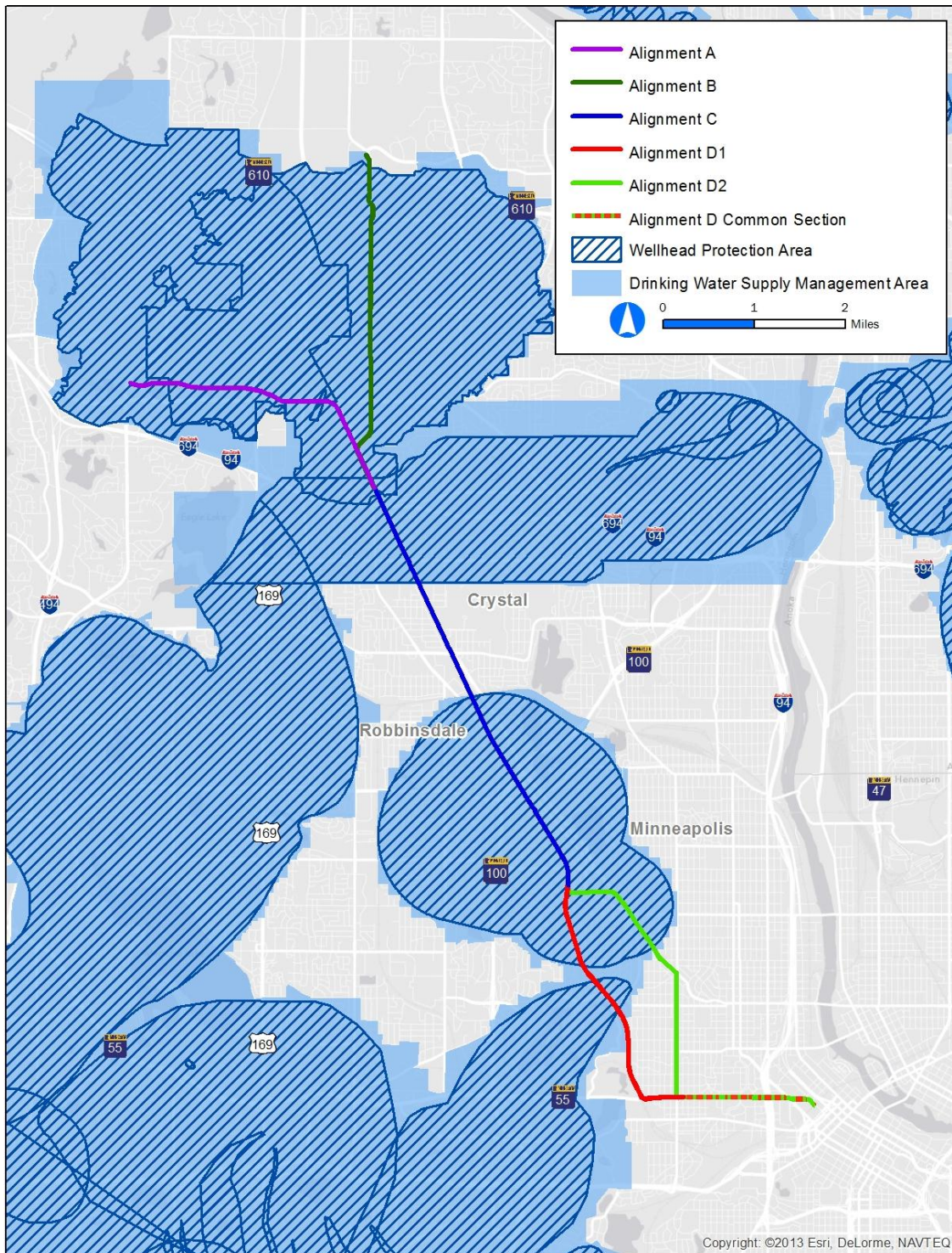




Figure 5.1-2. Drinking Water Supply Management Areas & Wellhead Protection Areas<sup>4</sup>



<sup>4</sup> Source: Minnesota Department of Health, 2012

### Existing Sanitary and Storm Sewer Service

Sanitary and storm sewer services are owned and maintained by the public works divisions of the cities in which they are located, including:

- City of Maple Grove, Brooklyn Park, Crystal, Robbinsdale, Golden Valley, and Minneapolis Public Works
- Hennepin County

Storm sewer services that are located within a county roadway, such as County State Aid Highway (CSAH) 103 (West Broadway Avenue) and CSAH 81, are owned and maintained by Hennepin County.

Several publicly owned sanitary and storm sewer services run parallel and intersect the proposed project alignment. The sanitary sewers range in size from eight to 86 inches in diameter, and storm sewers range in size from nine to 144 inches in diameter, all varying in depth. A Metropolitan Council Environmental Services (MCES) interceptor sewer is also located within the study area. See [Table 5.1-3](#) for a summary of sanitary sewer and MCES interceptor sewers that are located within the study area. Existing storm sewers that are located within the study area are described in detail within the Stormwater Technical Report (Kimley-Horn and Associates, 2012).

### Existing Electric and Gas Lines

Both Xcel Energy and Great River Energy provide electrical service within the study area through overhead power lines. Xcel Energy provided drawings, identifying the location of electric transmission and distribution lines that intersect and run parallel to the proposed project. An Xcel Energy transmission line is located near the north end of Alignment B and within Alignments C and D1. Great River Energy also provided drawings identifying an electric transmission line that is located on the north side of TH 610 and crosses over the West Broadway/TH 610 interchange in Alignment B. See [Table 5.1-4](#) for a summary of the overhead power lines that are located within or adjacent to the potential area of disturbance.

CenterPoint Energy owns several underground gas line utilities within the study area. These lines were reviewed using utility maps that were provided by CenterPoint Energy. Gas lines that are located within the corridor range in size from one to 24 inches in diameter, running parallel to and intersecting with the alignments. The highest concentration of conflicts exists within Alignments A and B. The majority of these gas lines are less than 12 inches in size. [Table 5.1-5](#) identifies gas lines that are located within or adjacent to the potential area of disturbance that are equal to or exceed 12 inches in diameter. CenterPoint Energy is currently undergoing a Minnesota Belt Line Rehabilitation project which will include pipeline replacement and in some cases refurbishment of the existing pipeline system. The Belt Line supplies natural gas to distribution lines and includes 80-miles of 20-inch and 24-inch steel pipe, serving hundreds of thousands of customers in the Twin Cities Metropolitan Area. The Belt Line crosses the existing BNSF railroad corridor near Golden Valley Road.



**Table 5.1-3. Sanitary/MCES Interceptor Sewers**

Alignment	Utility Type	Utility Location
<b>A</b>	Sanitary Sewer	No sanitary sewer infrastructure is located within the Alignment A potential area of disturbance.
	MCES Interceptor Sewer	<ul style="list-style-type: none"> <li>■ 46-inch MCES interceptor sewer located within Brooklyn Boulevard east of Shingle Creek, running parallel to the roadway; the sewer continues east on Brooklyn Boulevard towards Alignment B</li> <li>■ 40-inch MCES interceptor sewer crosses Brooklyn Boulevard, west of Shingle Creek</li> </ul>
<b>B (part of the Preferred Alternative)</b>	Sanitary Sewer	Sanitary sewer lines are located on the east side of West Broadway, south of 83rd Avenue, parallel to the roadway.
	MCES Interceptor Sewer	<ul style="list-style-type: none"> <li>■ 54-inch MCES interceptor sewer located on the south side of 101st Avenue, running parallel to the roadway</li> <li>■ 46-inch MCES interceptor sewer crosses West Broadway at Brooklyn Boulevard</li> </ul>
<b>C (part of the Preferred Alternative)</b>	Sanitary Sewer	A sanitary sewer line is located on the east BNSF right-of-way line between 48th Avenue and Byron Avenue, parallel to the freight rail tracks. Alignment C includes some sanitary sewer lines that cross under the LRT and freight rail track.
	MCES Interceptor Sewer	None
<b>D1 (part of the Preferred Alternative)</b>	Sanitary Sewer	Sanitary sewer lines are located parallel to and cross the freight rail corridor at multiple locations with Alignment D1, specifically near Kewanee Way, Manor Drive, and 16th Avenue.
	MCES Interceptor Sewer	A 36-inch MCES interceptor sewer is located west of the freight rail corridor near the Theodore Wirth Regional Park, adjacent to the study area. South of 14th Avenue, continuing past TH 55, the interceptor runs north-south on the west side of the BNSF railroad corridor.
<b>D2</b>	Sanitary Sewer	Several sanitary sewer lines are located within 34th Avenue, West Broadway, and Penn Avenue, running parallel to and crossing the roadway.
	MCES Interceptor Sewer	A 30-inch to 42-inch MCES interceptor sewer parallels TH 55. The interceptor is located on the north side of TH 55 until just west of the existing BNSF freight rail track, where it crosses TH 55 and runs on the south side of TH 55.
<b>D Common Section (part of the Preferred Alternative)</b>	Sanitary Sewer	A sanitary sewer line is located on the south side of TH 55/6th Avenue.
	MCES Interceptor Sewer	A 30- to 42-inch MCES interceptor is located on the south side of TH 55. At Dupont Avenue, the interceptor line combines with two other interceptor lines and crosses TH 55 towards 8th Avenue. A 72-inch diameter pipe and an 8 foot-6 inch x 6 foot box culvert are utilized for this crossing.

**Table 5.1-4. Overhead Power Lines within the Study Area**

Alignment	Owner	Type	Location
A	Xcel Energy	Distribution	North side of Brooklyn Boulevard between Bottineau Boulevard and TH 169
B (part of the Preferred Alternative)	Xcel Energy	Distribution	South of 95th Avenue, west side of West Broadway
	Xcel Energy	Transmission	West side of West Broadway, north of 89th Avenue
	Great River Energy	Transmission	North side of TH 610, running parallel to TH 610 and crosses over the West Broadway/TH 610 interchange
C (part of the Preferred Alternative)	Xcel Energy	Distribution	East side of BNSF railroad corridor, north of Bass Lake Road
	Xcel Energy	Transmission	West side of BNSF railroad corridor south of TH 100
D1 (part of the Preferred Alternative)	Xcel Energy	Transmission	<p>West side of BNSF railroad corridor to Lowry Avenue, east side of freight rail corridor south of Lowry Avenue</p> <p>Transmission towers change from a single pole to a four-side truss tower at Lowry Avenue</p> <p>A substation for the transmission line is located near 34th Avenue and the BNSF railroad corridor.</p>

**Table 5.1-5. Gas Lines within the Study Area**

Alignment	Location
A	No gas lines greater than 12 inches are located within Alignment A.
B (part of the Preferred Alternative)	A 12 inch gas line runs beneath Jolly Lane to the east of CSAH 81, and another 12 inch gas line runs east to west beneath 73rd Avenue, as it crosses the BNSF railroad corridor.
C (part of the Preferred Alternative)	A gas line crosses under CSAH 81, north of I-94.
D1 (part of the Preferred Alternative)	A 20 inch gas line, which is part of the Belt Line, is located south of Golden Valley Road. A 24 inch gas line runs parallel to Queen Avenue, crossing under TH 55.
D2	A 16 inch gas line runs parallel along the north side of TH 55 from Queen Avenue to Logan Avenue.
D Common Section (part of the Preferred Alternative)	A 16 inch gas line runs north to south and crosses TH 55 just west of I-94.

### Existing Long Distance Communication Service

Sprint Nextel Corporation (Sprint) has a fiber optic line that runs parallel to the BNSF railroad corridor through most of Alignment C and Alignment D1. At the Robbinsdale Station, the fiber optic line transitions from the east to the west side of the BNSF railroad corridor. At Plymouth Avenue (Alignment D1), the fiber optic line transitions back to the east side of the freight rail corridor.

## 5.1.4 Environmental Consequences

### 5.1.4.1 Operating Phase (Long-Term) Impacts

Coordination with local and state agencies may be required to relocate specific utilities outside the project corridor. Utilities that are located within right-of-way that is owned by cities may be subject to an individual franchise agreement as authorized by Minnesota Statue 216B, Public Utilities, which provides the terms for which the utility companies may operate in the public right-of-way. Public and private utilities must conform to MnDOT's Procedures for Accommodation of Utilities on Highway Right of Way, which require owners to obtain a permit in order to place utility facilities on trunk highway right of way. Utility installations, on, over, or under BNSF property will require review and approval by the railroad, shall conform to requirements contained within the BNSF Utility Accommodation Policy, and will require a Utility License Agreement issued by BNSF Railway.

### No-Build Alternative

No utility impacts would be associated with the No-Build alternative.

### Enhanced Bus/TSM Alternative

A proposed transit center and park-and-ride facility in Brooklyn Park along West Broadway Avenue near TH 610 would be constructed as part of the Enhanced Bus/TSM alternative. No major utility impacts would be associated with the Enhanced Bus/TSM alternative.

### Build Alternatives

Private and public utilities that run parallel or cross within the transitway corridor would be located during design to determine if they are in conflict with the transitway corridor and would require relocation to avoid conflict with LRT operations.

### Overhead Utilities

Adjustments to the horizontal and vertical location of overhead electric and communication lines would be made to provide adequate vertical and horizontal clearance for LRT vehicles and the overhead catenary system. Overhead utilities may be relocated to a different type of pole or could be buried underground. However, transmission lines are not recommended to be buried underground due to increased construction costs associated with burying the transmission line and operational issues associated with potential overheating of the system because underground lines cannot dissipate heat as well as overhead lines.

Impacts are anticipated for existing electrical transmission towers located within Alignments B, C, and D1 due to the relocation of the freight rail track and construction of the LRT track. Due to the proximity between the proposed transitway corridor and existing transmission towers, several transmission towers would need to be relocated, in coordination with Xcel Energy. These towers would be relocated to the outside edge of the proposed right-of-way to provide sufficient horizontal clearance between the tower and the transitway corridor. In some locations, the towers may be located outside of the transitway corridor right-of-way in order to maintain the required horizontal clearances. These towers would need to be relocated in order to accommodate the transitway corridor.

### *Underground Utilities*

Impacts are anticipated for underground utilities in each alignment. Underground utilities, both private and public, will be evaluated on a case-by-case basis to determine their condition, potential reaction to loading from the LRT and freight rail, and to verify that the utility meets the vertical clearance requirements for the utility owner, MnDOT, and BNSF. Utility conflicts would be resolved by lowering the existing utility, encasing the utility for additional protection, or relocation. Manholes and vaults that are in conflict with the transitway corridor and limit access to the underground utilities would require relocation to provide adequate access.

Potential corrosion of existing metal utilities due to stray-current from the electrification systems would be evaluated. Corrosion could result in a utility line failure, so measures would be taken to reduce the amount of corrosion.

#### **5.1.4.2 Construction Phase Impacts**

##### **No-Build Alternative**

No utility impacts are anticipated.

##### **Enhanced Bus/TSM Alternative**

No utility impacts are anticipated.

##### **Build Alternatives**

Construction phase impacts to utilities are most likely to occur during excavation and grading activities, placement of structural foundations, and work that requires large-scale equipment, which could impact overhead utilities. Utility service disruptions would occur throughout construction to facilitate utility relocations. It is anticipated that these disruptions would be minimal, with temporary connections provided to customers prior to permanent relocation activities. Utility owners would ultimately decide when and if disruptions to service would be allowed.

Utility locations that are uncertain or misidentified can be unintentionally damaged during construction. The large number of utilities present within the study area increases the likelihood of encountering previously unidentified utilities.

#### **5.1.5 Avoidance, Minimization, and/or Mitigation Measures**

Utility location excavations and preconstruction surveys would be performed in general accordance with the MnDOT policy of Subsurface Utility Engineering, helping minimize unintended utility service disruptions.

The Metropolitan Council will require the utility contractor to notify affected businesses and residences of any planned disruption of service due to construction activities. Should utilities be discovered during construction that had not been identified in the contract documents, work would be discontinued and appropriate utility companies and agencies would be contacted to identify the line(s). The discovered line(s) would not be disturbed until businesses and residences are notified and the utility owner approves the proposed alteration.

Wells within the proposed permanent right-of-way would be abandoned and sealed per state and local regulations. Wells outside, but near, the proposed project right-of-way would be avoided. Any well discovered during construction within the right-of-way would be sealed according to state and local regulatory requirements.

Minnesota Department of Health guidance will be utilized to evaluate feasibility of stormwater infiltration practices located within vulnerable wellhead protection areas.



Temporary dewatering during construction may require Minnesota Department of Natural Resources (DNR) groundwater appropriation permits.

## 5.2 Floodplains

Information included within this section is based on the information provided in the Water Resources Technical Report (Kimley-Horn and Associates, 2012). The analysis completed for this section was conducted in coordination with the DNR and local watershed organizations (Bassett Creek Water Management Commission, Shingle Creek and West Mississippi Water Management Organization, and Mississippi Watershed Management Organization) as described in the technical report. Wetlands are addressed separately in Section 5.3.

### 5.2.1 Regulatory Context and Methodology

Floodplains<sup>5</sup> are protected by local, state, and federal legislation because of their ecological value and functionality. The federal laws protecting floodplains are the Clean Water Act (CWA) Section 404, the Rivers and Harbors Act (RHA), and Executive Order 11988. State and local protection is enforced through DNR public waters work permits, Watershed District, Water Management Organization/Commission, or City permits. Impacts to floodplains require permitting from various agencies and regulatory bodies. The required permits vary depending on the feature, size of impact, location of impact, and other factors. A floodplain impact can be defined as a disturbance or fill within a 100-year Federal Emergency Management Agency (FEMA) floodplain boundaries resulting in a floodplain storage loss. Floodplain impacts were estimated based on a conceptual (five percent) design of the alternatives (summer 2012). The estimated magnitude of impacts is expected to decrease as the project design is further developed.

FEMA 100-year floodplains<sup>6</sup> and FEMA floodways<sup>7</sup> were reviewed as part of the Bottineau Transitway evaluation. The floodplains and floodways were identified and evaluated based on current digital data (GIS shapefiles and aerial survey mapping data (contours)).<sup>8</sup>

Flood Insurance Rate Maps (FIRMS) and FEMA Flood Insurance Study (No. 27053CV002A) were used to identify floodplains and floodways within the study area. FEMA 100-year floodplain and floodway GIS shapefiles were downloaded from the DNR floodplain/floodway website and used to determine the impacts for each alternative. The floodplains within the study area are associated with either Shingle Creek in the north or Bassett Creek in the southern alignments.

### 5.2.2 Study Area

The study area for 100-year floodplain and floodway impacts was defined as the area approximately ¼ mile around each of the alignments and associated facilities (operations and maintenance facility (OMF) and park-and-rides). This distance captures floodplains and streams within a ¼ mile of the Bottineau Transitway Project that could potentially be affected by the project. Potential impacts were identified as floodplains and streams within the potential area of disturbance for the proposed alignments.

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<sup>5</sup> Floodplains are defined by Executive Order 11988 as “the lowland and relatively flat areas adjoining inland and coastal waters including floodprone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year.”

<sup>6</sup> According to 44 CFR §9.4, 100-year floodplain (also known as base floodplain) means the floodplain “for the flood which has a one percent chance of being equaled or exceeded in any given year.”

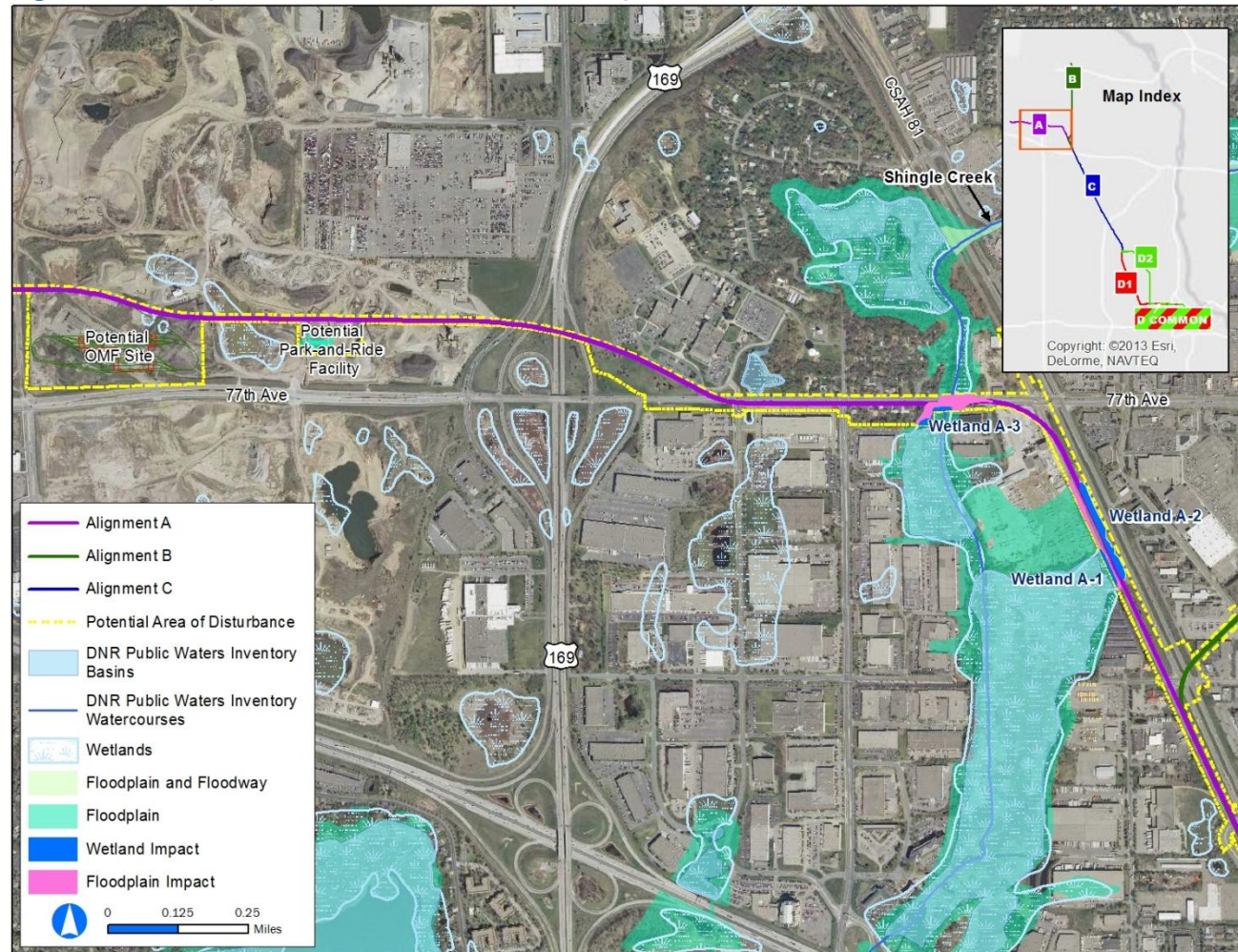
<sup>7</sup> According to 44 CFR §9.4, “floodway means that portion of the floodplain which is effective in carrying flow, within which this carrying capacity must be preserved and where the flood hazard is generally highest, i.e., where water depths and velocities are the greatest. It is that area which provides for the discharge of the base flood so the cumulative increase in water surface elevation is no more than one foot.”

<sup>8</sup> Sources: Aerial: Minnesota Geospatial Information Office, 2010; Wetland: National Wetlands Inventory modified by Kimley-Horn, June 2012; Floodplain: Federal Emergency Management Agency GIS

### 5.2.3 Affected Environment

The adjacent land use within the study area is characterized by commercial, industrial, and residential development. Although not abundant, floodplains and floodways exist within the Bottineau Transitway study area. Floodways and 100-year floodplain boundaries within the study area and impacts within the potential area of disturbance are shown on [Figure 5.2-1](#) through [Figure 5.2-5](#). Segments of the corridors without floodplain or floodway impacts may not be shown in [Figure 5.2-1](#) through [Figure 5.2-5](#).

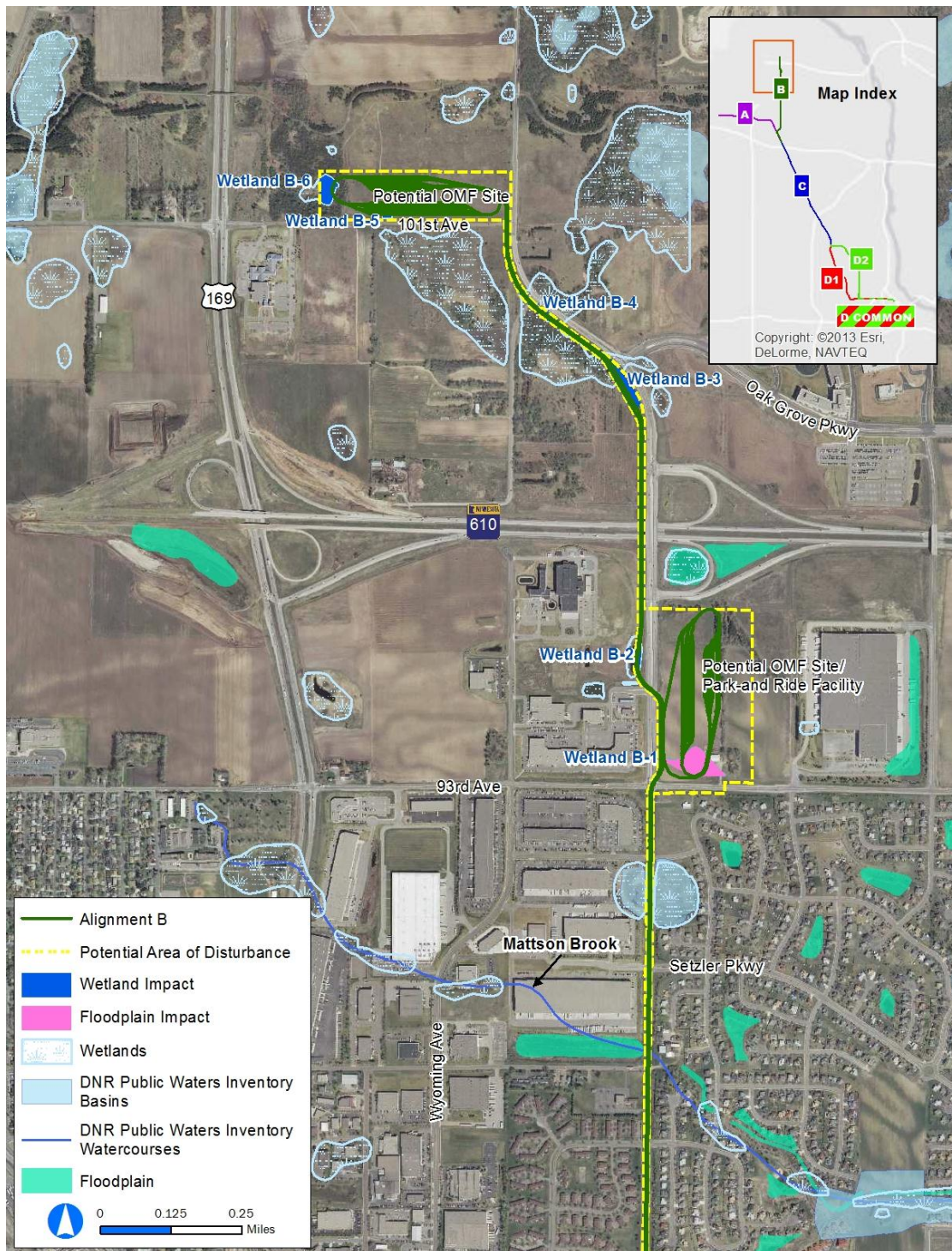
Figure 5.2-1. Alignment A Floodplain and Wetland Resources and Impacts<sup>9</sup>



<sup>9</sup> Sources: Aerial: Minnesota Geospatial Information Office, 2010; Wetland: National Wetlands Inventory modified by Kimley-Horn, June 2012; Floodplain: Federal Emergency Management Agency GIS, 2010; DNR Public Waters Inventory: DNR 2008



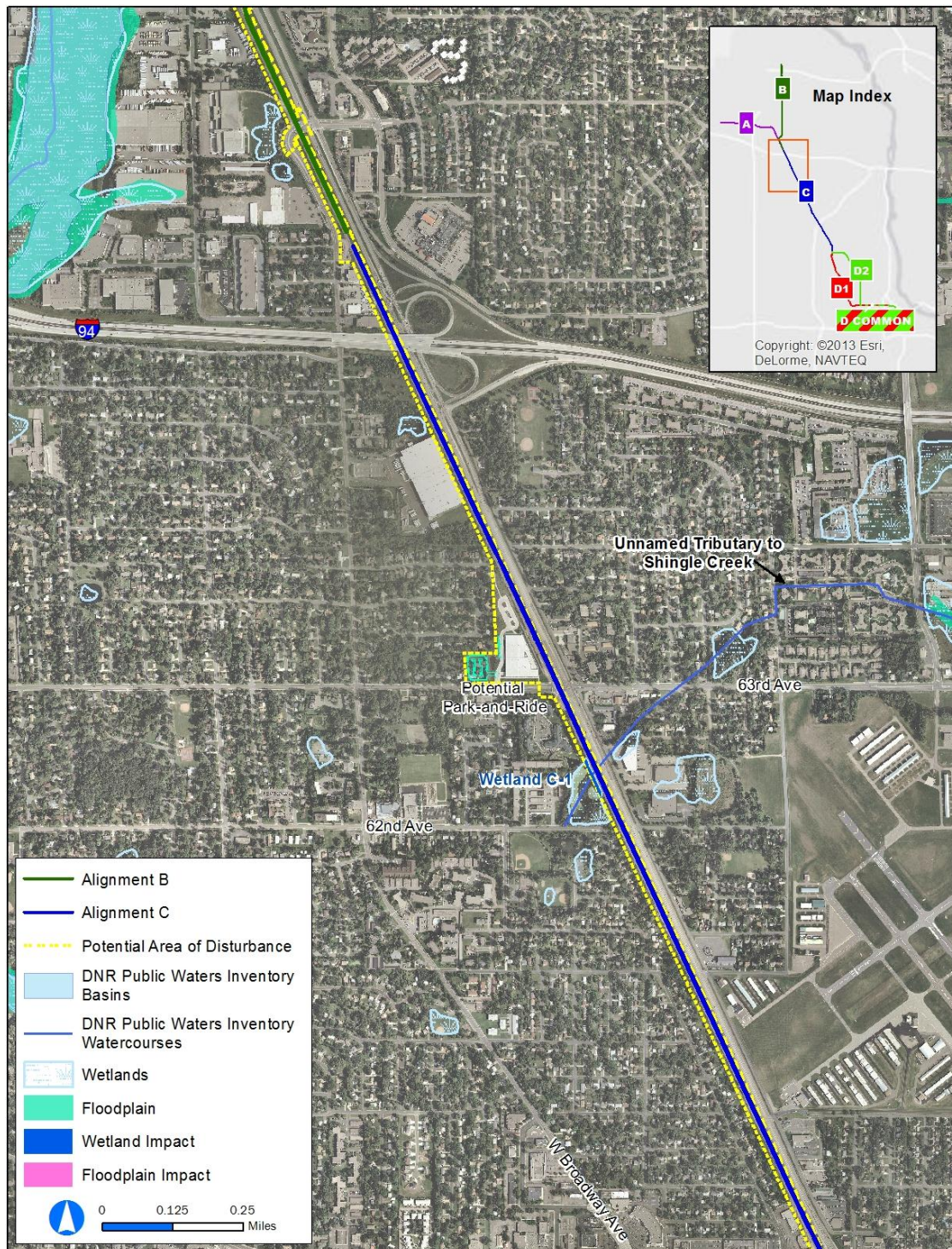
Figure 5.2-2. Alignment B Floodplain and Wetland Resources and Impacts<sup>10</sup>



<sup>10</sup> Sources: Aerial: Minnesota Geospatial Information Office, 2010; Wetland: National Wetlands Inventory modified by Kimley-Horn, June 2012; Floodplain: Federal Emergency Management Agency GIS, 2010; DNR Public Waters Inventory: DNR 2008



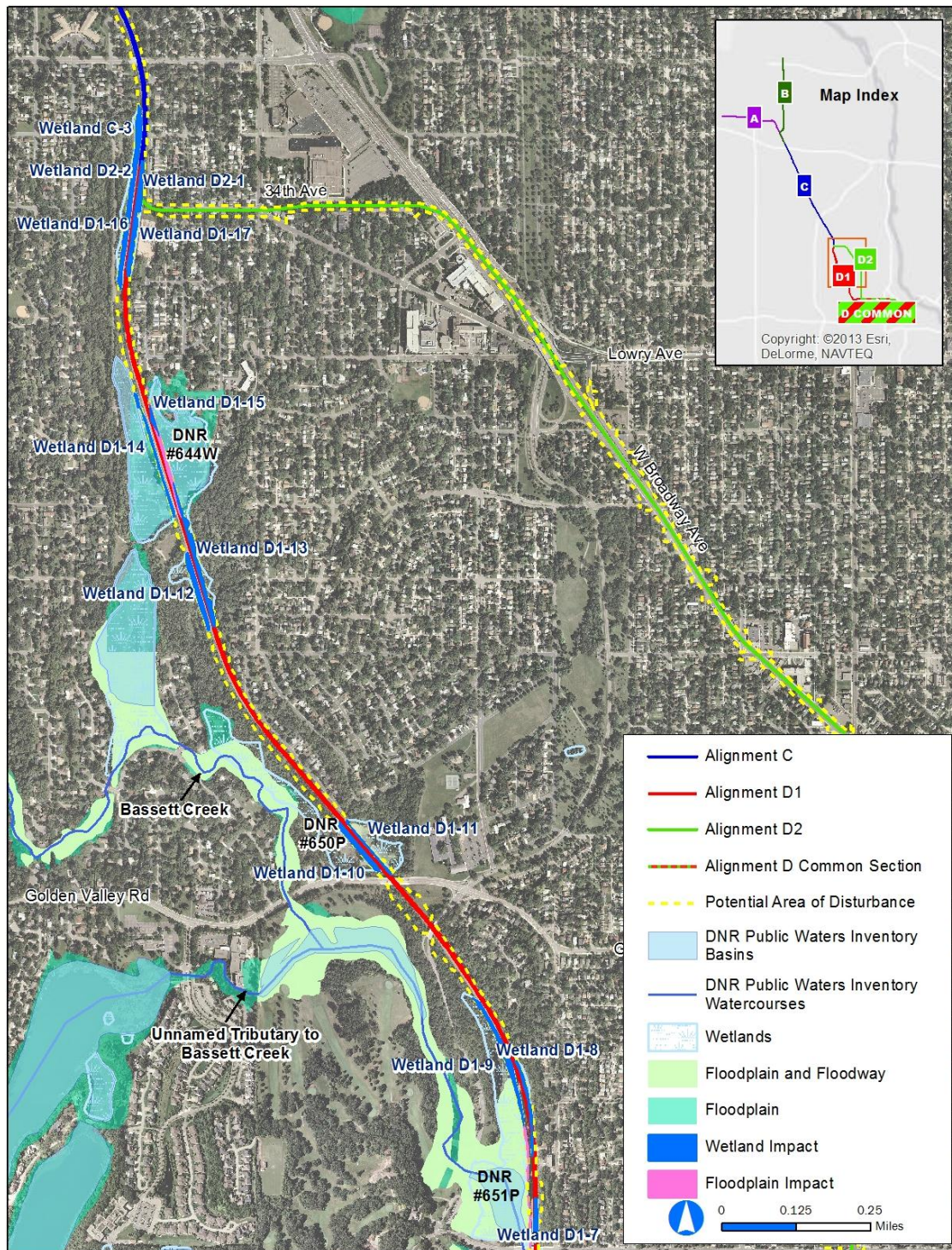
Figure 5.2-3. Alignment C Floodplain and Wetland Resources and Impacts<sup>11</sup>



<sup>11</sup> Sources: Aerial: Minnesota Geospatial Information Office, 2010; Wetland: National Wetlands Inventory modified by Kimley-Horn, June 2012; Floodplain: Federal Emergency Management Agency GIS, 2010; DNR Public Waters Inventory: DNR 2008



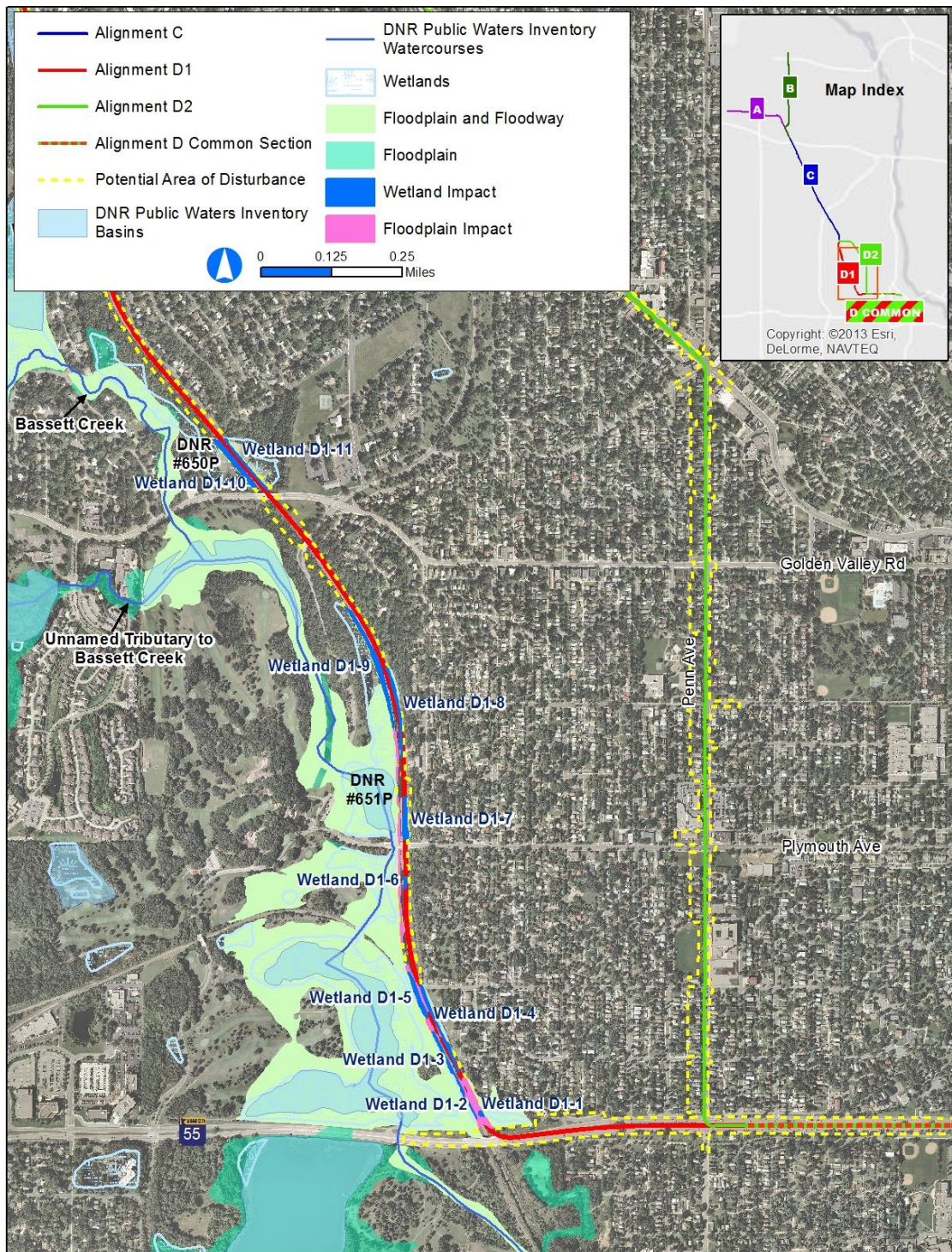
Figure 5.2-4. Alignments D1 and D2 Floodplain and Wetland Resources and Impacts (north end)<sup>12</sup>



<sup>12</sup> Sources: Aerial: Minnesota Geospatial Information Office, 2010; Wetland: National Wetlands Inventory modified by Kimley-Horn, June 2012; Floodplain: Federal Emergency Management Agency GIS, 2010; DNR Public Waters Inventory: DNR 2008



Figure 5.2-5. Alignments D1 and D2 Floodplain and Wetland Resources and Impacts (south end)<sup>13</sup>



<sup>13</sup> Sources: Aerial: Minnesota Geospatial Information Office, 2010; Wetland: National Wetlands Inventory modified by Kimley-Horn, June 2012; Floodplain: Federal Emergency Management Agency GIS, 2010; DNR Public Waters Inventory: DNR 2008

## 5.2.4 Environmental Consequences

### 5.2.4.1 Operating Phase (Long-Term) Impacts

#### No-Build Alternative

There would be no impacts to floodplains and floodways as a result of the No-Build alternative.

#### Enhanced Bus/TSM Alternative

There would be no impacts to floodplains and floodways as a result of the Enhanced Bus/TSM alternative.

#### Build Alternatives

There are four Build alternatives composed of a combination of alignments. Potential impacts were calculated using the proposed alignment, available elevation data (contours), and floodplain elevations within the potential area of disturbance to determine the volume of impact in cubic yards (CY). The potential impacts to floodplains and floodways are listed by alignment, with a summary of impacts per alternative shown in [Table 5.2-1](#). Impact areas are illustrated in [Figure 5.2-1](#) through [Figure 5.2-5](#). Segments of the corridor without impacts may not be included in these figures. Floodplain impacts are determined by the potential loss or gain in flood storage volume.

**Table 5.2-1. Summary of 100-Year Floodplain and Floodway Storage Loss by Alternative**

Alternative	100-year Floodplain Impacts (cubic yards)			
	Alignment/ Station Impact	Park-and-Ride Impact	OMF Impact	Total Impact
No-Build	0	0	0	0
Enhanced Bus/TSM	0	0	0	0
A-C-D1	17,250	0	0	17,250
A-C-D2	6,250	0	0	6,250
B-C-D1 (Preferred Alternative)	11,000	7,700	93rd Avenue option: 0 <sup>1</sup>	18,700
			101st Avenue option: 0	18,700
B-C-D2	0	7,700	93rd Avenue option: 0 <sup>1</sup>	7,700
			101st Avenue option: 0	0

<sup>1</sup> Floodplain impacts are included under the 93rd Avenue park-and-ride.

#### Alignment A

Two areas around Shingle Creek within the study area for Alignment A were identified as 100-year floodplains. The impact to the floodplain within the study area of Alignment A has been estimated to be a 6,250 cubic yards (CY) loss of flood storage, as shown in [Figure 5.2-1](#). There will be no floodplain impacts as a result of the OMF and proposed park-and-ride locations along Alignment A.

#### Alignment B (part of the Preferred Alternative)

A 100-year floodplain associated with Shingle Creek was identified within Alignment B, as shown in [Figure 5.2-2](#). The impact to the floodplain has been estimated at 7,700 CY due to the location of the proposed park-and-ride at the 93rd Avenue station. The location of the OMF will not increase the total floodplain



and/or floodway impacts since no impacts are anticipated for either the 101st Avenue or the 93rd Avenue OMF location options.

***Alignment C (part of the Preferred Alternative)***

No floodplain or floodways were identified within the potential area of disturbance for Alignment C.

***Alignment D1 (part of the Preferred Alternative)***

The floodplain and the floodway for Alignment D1 are overlapping, resulting in approximately the same amount of impact. The 100-year floodplain and floodway along Alignment D1 are associated with Bassett Creek. The total proposed floodplain/floodway fill for Alignment D1 is approximately 11,000 CY as shown in [Figure 5.2-5](#).

***Alignment D2***

No floodplain or floodways were identified within the potential area of disturbance for Alignment D2.

***Alignment D Common Section (part of the Preferred Alternative)***

No floodplain or floodways were identified within the potential area of disturbance for Alignment D Common Section.

**TPSS**

First priority would be to place TPSS sites outside of floodplain areas where possible, to avoid floodplain fill impacts due to required access and placement of the TPSS above floodplain elevation. If TPSS location in a floodplain area is the only option, retaining walls would be installed to minimize impacts. Any pavement surfaces would also be constructed with materials that are more conducive to infiltration (i.e. gravel vs. paved surfaces).

**5.2.4.2 Construction Phase Impacts**

Construction phase impacts are those activities that would be above and beyond the impacts described in the previous section and would occur for a short period of time coincident with the installation/construction of the project.

**No-Build Alternative**

No short-term construction impacts would result from the No-Build alternative.

**Enhanced Bus/TSM Alternative**

No short-term construction impacts would result from the Enhanced Bus/TSM alternative.

**Build Alternatives**

There would be no permanent or temporary construction phase impacts to floodways or floodplains for the Build alternatives.

**TPSS**

No temporary construction phase impacts to floodplains or floodways are anticipated from TPSS sites.

**5.2.5 Avoidance, Minimization, and/or Mitigation Measures**

Potential on-site or project specific floodplain storage mitigation has been preliminarily evaluated for the project, which included low areas adjacent to existing floodplain that are not wetland. The Bassett Creek Watershed Management Commission (BCWMC) has identified that floodplain storage mitigation is required to be located within the same drainage channel (culvert to culvert) as the impact. Adjacent to Alignment D1, there are two areas within Theodore Wirth Regional Park that could meet the storage volume replacement requirement. Based on existing floodplain and wetland sources, both are located

outside existing wetland and floodplain. One of these parcels is owned by the Canadian Pacific (CP) Railroad (located within the park), as shown in [Figure 5.2-6](#). The details of how these areas would be designed to meet replacement requirements would need to be coordinated with the Minneapolis Park & Recreation Board (park manager), the landowner (if different), and the approving agencies (city, DNR, Watershed Management Organization (WMO)). Review of the scope and location of flood storage mitigation in Theodore Wirth Regional Park would be conducted by the Metropolitan Council to determine consistency with the Council's Regional Parks Policy Plan and other relevant park planning documents.

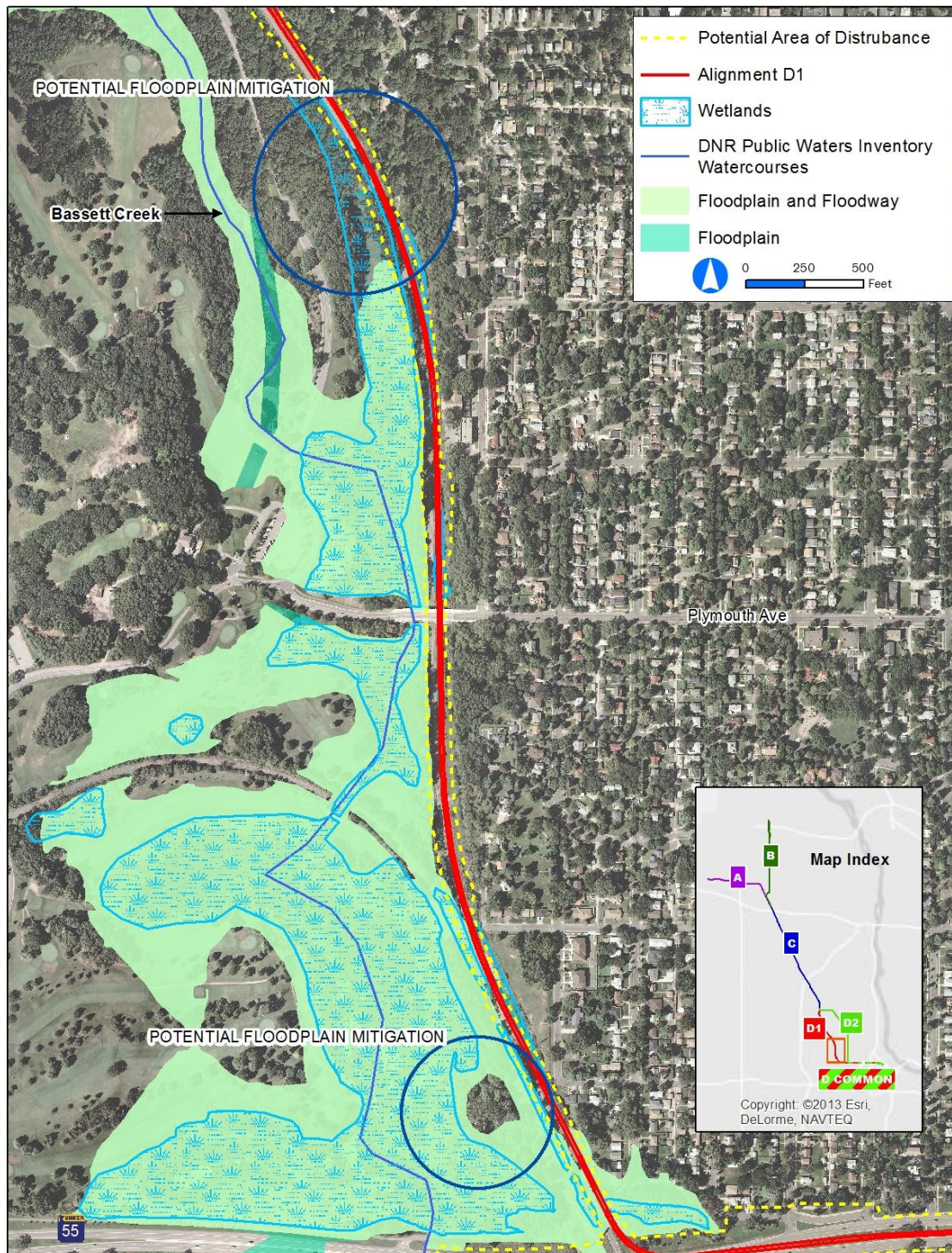
Construction best management practices (BMPs), as discussed in the Stormwater Technical Report (Kimley-Horn and Associates, 2012), would serve to minimize impacts to floodplains and floodways during the construction period.

The BCWMC will be performing a study to update the existing floodplain and floodway elevations, which could modify the floodplain and floodway boundaries adjacent to Bassett Creek. Continued coordination with the City of Golden Valley and the BCWMC will be required to confirm the floodplain impacts based on the outcome of this study. A hydraulic analysis would need to be completed to determine actual floodplain and floodway impacts due to the proposed construction; this cannot be completed until design is further refined and final construction limits are established.

Floodplain mitigation adjacent to Alignment D1 will require approval from the City of Golden Valley, who will issue a permit to the project for the proposed work. As part of that permitting process both the City of Golden Valley and the BCWMC would be provided the opportunity to review and provide comments on the proposed floodplain mitigation to verify that all of the pertinent requirements have been met prior to issuing the permit. Further details regarding the agencies involved in floodplain review can be found in the Water Resources Technical Report (Kimley-Horn and Associates, 2012).



Figure 5.2-6. Alignment D1 Potential Floodplain Storage Mitigation Sites<sup>14</sup>



<sup>14</sup> Sources: Aerial: Minnesota Geospatial Information Office, 2010; Wetland: National Wetlands Inventory modified by Kimley-Horn, June 2012; Floodplain: Federal Emergency Management Agency GIS, 2010; DNR Public Waters Inventory: DNR 2008



## 5.3 Wetlands

Information included within this section is based on the information provided in the Water Resources Technical Report (Kimley-Horn and Associates, 2012). The analysis completed for this section was conducted in coordination with the US Army Corps of Engineers (USACE) as part of the 404 Merger Process, as discussed in Section 5.3.1 and Chapter 9 Consultation and Coordination. Floodplains are addressed separately in Section 5.2.

Wetlands, as defined by the USACE and United States Environmental Protection Agency (EPA), are “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”

Wetlands are areas that are covered by water or have waterlogged soils for long periods during the growing season. Plants growing in wetlands are capable of living in saturated soil conditions for at least part of the growing season. Wetlands such as swamps and marshes are often obvious, but some wetlands are not easily recognized, as they are dry during part of the year.

For purposes of this analysis, wetlands and wetland boundaries have been identified through the use of existing mapping and field observation, as noted below, providing a reasonable estimate of wetland boundaries for potential impact analysis. A detailed delineation of wetland boundaries will be completed for the Preferred Alternative to provide the required detail necessary for the permit review process. All wetlands identified for this analysis were considered Waters of the US and under jurisdiction of the USACE and Local Government Units. As discussed with the USACE, a Jurisdictional Determination will be requested after a formal delineation is completed.

### 5.3.1 Regulatory Context and Methodology

Wetlands are protected by local, state, and federal legislation because of their ecological and functional value. The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and for regulating quality standards for surface waters. The EPA oversees state implementation of the CWA, reviews and comments on individual permit applications, and has the ability to elevate specific permitting cases. Section 404 of the CWA, which establishes a program to regulate the discharge of dredged or fill material into waters of the United States, excluding those wetlands that are hydrologically isolated on the landscape (*Rapanos v. United States*, 547 U.S. 715 (2006)). Section 404 of the CWA is under the purview of the USACE St. Paul District and requires a permit to be issued by the USACE prior to the placement of any dredged or fill material into any Waters of the United States, including wetlands. The USACE is responsible for administering the Section 404 permitting program (including individual and general permit decisions), conducting Final or Preliminary Jurisdictional Determinations, developing policy and guidance, and enforcing all other Section 404 provisions. Transportation projects with less than a half-acre of wetland impact are covered by a general permit, whereas impacts over a half acre require a Letter of Permission, and impacts more than three acres require an Individual Permit and public comment period. When an EIS is conducted for a project with wetland impacts, the USACE typically participates in what is called the 404 Merger Process, where the USACE gets involved in the review of the project purpose and need, alternatives evaluated and selection of the Least Environmentally Damaging Practicable Alternative (LEDPA). This coordinated review process has been initiated with the USACE for this project. The USACE has concurred with the project purpose and need and range of alternatives, and has selected the LEDPA with respect to Section 404 b(1) guidelines, concluding the first three concurrence points of the 404 Merger Process (see also Chapter 9).

Lakes, rivers, streams, and wetlands are regulated by the DNR if they have been identified by the state as public waters or public waters wetlands. Public waters and public waters wetlands are all water basins and water courses that meet the criteria set forth in Minn. Stat., Section 103G.005, subd. 15, and that



are identified on Public Water Inventory (PWI) maps (Minn. Stat., Section 103G.201). Proposed impacts involving a change in the course, current, or cross-section of public waters (including streams) and public waters wetlands would require a permit from the DNR.

The Minnesota Wetland Conservation Act (WCA) of 1991, under the purview of the Minnesota Board of Water and Soil Resources (BWSR) and local government units (LGU), establishes the goal of no net loss of wetlands (Minnesota Rule 8420). The WCA requires that anyone proposing to drain or fill a wetland must try to avoid disturbing the wetland. If avoidance cannot be achieved, the WCA requires that impacts be minimized to the extent possible, and any impacted areas be replaced in kind (comparable function and value).

Impacts to wetlands require permitting from various agencies and regulatory bodies. The required permits vary depending on the feature, size of wetland, location of wetland, and other factors. Other permits relating to stormwater management, erosion control, stream crossings, etc., may also be necessary.

Wetland impacts are defined as a disturbance or placement of fill within the wetland boundary resulting in the loss of the function of the wetlands. All wetland areas within the potential area of disturbance were considered an impact. The area of disturbance was estimated based on a conceptual (five percent) design of the alternatives (summer 2012). The estimated magnitude of impacts is expected to decrease as the project design is further developed.

Wetland boundaries and types were identified based on current digital data (GIS shapefiles, aerial survey mapping data (contours)) and a variety of other sources including U.S. Geological Survey Quadrangle maps, the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), the Department of Natural Resources Public Water Inventory maps (USDNR, 2010; USFWS, 1974-1988; DNR, 1983), and a field review (of wetland areas, which consisted of general observation of the extent of the wetland boundary, dominant vegetation and relative quality based on plant dominance). The USFWS NWI shapefiles were modified based on 2010 aerial photography interpretation, the Hennepin County Soils Survey hydric soils layer (National Resource Conservation Survey (NRCS) Web Soil Survey), and contour data received from the City of Golden Valley. A formal delineation and jurisdictional determination will be completed for the Preferred Alternative.

### 5.3.2 Study Area

The study area for wetlands is defined as the area approximately ¼ mile around each of the alignments and associated facilities (OMF and park-and-rides). This distance captures wetlands near the Bottineau Transitway that could potentially be affected by the project.

### 5.3.3 Affected Environment

The study area is characterized by commercial, industrial, and residential development. Although not abundant, wetlands exist within the Bottineau Transitway study area. Wetland boundaries within the study area are shown on [Figure 5.2-1](#) through [Figure 5.2-5](#). For purposes of this analysis, all wetlands identified are assumed to be under the jurisdiction of the USACE per Section 404 of the CWA and the Local Government Units per the Minnesota WCA. Public Waters Wetlands under DNR jurisdiction are denoted in [Table 5.3-1](#) through [Table 5.3-5](#).

### 5.3.4 Environmental Consequences

#### 5.3.4.1 Operating Phase (Long-Term) Impacts

##### No-Build Alternative

There would be no impacts to wetlands as a result of the No-Build alternative.

### Enhanced Bus/TSM Alternative

There would be no impacts to wetlands as a result of the Enhanced Bus/TSM alternative.

### Build Alternatives

The four Build alternatives are made up of a combination of alignments. The wetlands inventoried and evaluated along with potential impacts are listed by alignment in [Table 5.3-1](#) to [Table 5.3-5](#), with total wetland impacts for each alternative shown in [Table 5.3-6](#), broken out by alignment/station impact, park-and-ride impact, and OMF impact. Impact areas are shown in [Figure 5.2-1](#) through [Figure 5.2-5](#). No wetlands were identified within the potential area of disturbance for Alignment D Common Section.

Stream impacts would be limited to culvert extensions at existing stream crossings. There are no existing crossings in Alignment D2 or the D Common Section. The known crossings are located:

- **Alignment A:** crosses Shingle Creek between Boone Avenue and CSAH 81
- **Alignment B (part of the Preferred Alternative):** crosses Mattson Brook north of 89th Avenue N and crosses Shingle Creek north of Candlewood Drive
- **Alignment C (part of the Preferred Alternative):** crosses an unnamed creek/drainage ditch between 62nd Avenue N and 63rd Avenue N
- **Alignment D1 (part of the Preferred Alternative):** crosses backwater channel of Bassett Creek just north of TH 55

Standard erosion control BMPs would be used for work within the streams to extend existing culverts where necessary, minimizing impacts to the streams and aquatic wildlife.

### TPSS

First priority would be to place TPSS sites within the existing railroad right-of-way or on public owned lands where possible, to avoid impacts to wetlands. If impacts to wetland areas are unavoidable, they would be minimized using features such as retaining walls and steep fill slopes, consistent with USACE minimization guidance.

#### 5.3.4.2 Construction Phase Impacts

Construction phase impacts are generally those that would be above and beyond the impacts described in the previous section and would occur for a short period of time coincident with the installation/construction of the project.

### No-Build Alternative

No short-term wetland impacts would result from the No-Build alternative.

### Enhanced Bus/TSM Alternative

No short-term wetland impacts would result from the Enhanced Bus/TSM alternative.

### Build Alternatives

Wetland impacts during construction would be temporary and occur in locations where retaining walls are needed to minimize permanent wetland fill. The extent of temporary wetland disturbance will be defined through the project design phase, but is not expected to extend beyond what is needed to get equipment in to construct the proposed retaining walls. These temporary impacts would be restored to pre-construction wetland conditions after the retaining walls are completed.

Grading and soil disturbance during construction may cause temporary erosion and sedimentation of disturbed areas. These temporary construction phase impacts would be minimized to the extent possible

by using BMPs for erosion control. All disturbed areas would be graded and reseeded to stabilize the soil. Measures such as silt fences, erosion control blankets, and other soil stabilization measures would be implemented to maintain water quality.

### TPSS

There would be no temporary construction phase impacts to wetlands resulting from TPSS sites.

**Table 5.3-1. Wetland Disturbance or Fill for Alignment A by Plant Community**

Wetland Inventory No. (DNR#)	Plant Community <sup>1</sup>	Wetland Impact (acres)
A-1 (562W)	Deep Marsh	0.2
A-2	Fresh (Wet) Meadow	1.2
A-3 (563W)	Shallow Marsh	0.4
<b>Total</b>		<b>1.8</b>

<sup>1</sup> Plant Communities based on "Wetland Plants and Plant Communities of Minnesota and Wisconsin" by Eggers and Reed (USACOE – St. Paul District). Please see Appendix A of the Water Resources Technical Report (Kimley-Horn and Associates, 2012) for Plant Communities descriptions.

**Table 5.3-2. Wetland Disturbance or Fill for Alignment B (part of the Preferred Alternative) by Plant Community<sup>1</sup>**

Wetland Inventory No. (DNR#)	Plant Community <sup>2</sup>	Wetland Impact (acres)
B-1	Seasonally Flooded Basin	0.1
B-2, B-3, B-4	Shallow Marsh	2.3
B-5	Fresh (Wet) Meadow	0.1
<b>Total</b>		<b>2.5</b>

<sup>1</sup> Does not include park-and-ride or OMF options. Depending on option, adds 0.1 acre or 0.8 acre. See Table 5.3-6.

<sup>2</sup> Plant Communities based on "Wetland Plants and Plant Communities of Minnesota and Wisconsin" by Eggers and Reed (USACOE – St. Paul District). Please see Appendix A of the Water Resources Technical Report (Kimley-Horn and Associates, 2012) for Plant Communities descriptions.

**Table 5.3-3. Wetland Disturbance or Fill for Alignment C (part of the Preferred Alternative) by Plant Community**

Wetland Inventory No. (DNR#)	Plant Community <sup>1</sup>	Wetland Impact (acres)
C-1, C-2, C-3	Shallow Marsh	0.7
<b>Total</b>		<b>0.7</b>

<sup>1</sup> Plant Communities based on "Wetland Plants and Plant Communities of Minnesota and Wisconsin" by Eggers and Reed (USACOE – St. Paul District). Please see Appendix A of the Water Resources Technical Report (Kimley-Horn and Associates, 2012) for Plant Communities descriptions.

**Table 5.3-4. Wetland Disturbance or Fill for Alignment D1 (part of the Preferred Alternative) by Plant Community**

Wetland Inventory No. (DNR#)	Plant Community <sup>1</sup>	Wetland Impact (acres)
D1-1, D1-7	Floodplain Forest	0.4
D1-2, D1-4, D1-5, D1-8, D1-9, D1-16	Fresh (Wet) Meadow	2.4
D1-3, D1-6	Seasonally Flooded Basin	0.3
D1-10 (650P), D1-11 (650P), D1-12, D1-13, D1-14, D1-17	Shallow Marsh	2.9
D1-15 (644W)	Deep Marsh	0.1
<b>Total</b>		<b>6.1</b>

<sup>1</sup> Plant Communities based on "Wetland Plants and Plant Communities of Minnesota and Wisconsin" by Eggers and Reed (USACOE – St. Paul District). Please see Appendix A of the Water Resources Technical Report (Kimley-Horn and Associates, 2012) for Plant Communities descriptions.

**Table 5.3-5. Wetland Disturbance or Fill for Alignment D2 by Plant Community**

Wetland Inventory No. (DNR#)	Plant Community <sup>1</sup>	Wetland Impact (acres)
D2-1, D2-2	Shallow Marsh	0.7
<b>Total</b>		<b>0.7</b>

<sup>1</sup> Plant Communities based on "Wetland Plants and Plant Communities of Minnesota and Wisconsin" by Eggers and Reed (USACOE – St. Paul District). Please see Appendix A of the Water Resources Technical Report (Kimley-Horn and Associates, 2012) for Plant Communities descriptions.

### Summary of Impacts

**Table 5.3-6. Summary of Wetland Disturbance or Fill by Alternative**

Alternative	Wetland Impacts (acres)			
	Alignment/Station Impact	Park-and-Ride Impact	OMF Impact	Total Impact <sup>1</sup>
No-Build	0	0	0	0
Enhanced Bus/TSM	0	0	0	0
A-C-D1	8.6 <sup>2</sup>	0	0	8.6
A-C-D2	3.2	0	0	3.2
B-C-D1 (Preferred Alternative)	9.3 <sup>2</sup>	0.1	93rd Avenue option: 0.0 <sup>3</sup>	9.4
			101st Avenue option: 0.8 <sup>4</sup>	10.2
B-C-D2	3.9	0.1	93rd Avenue option: 0.0 <sup>3</sup>	4.0
			101st Avenue option: 0.8	4.8

<sup>1</sup> The current replacement ratio for wetland credits in this portion of Minnesota is 2.5 to 1 for WCA, although under certain conditions it may be reduced to 2 to 1. The USACE requires a 2 to 1 ratio for wetland replacement.

<sup>2</sup> This total includes wetland impacts at the Plymouth Avenue/Theodore Wirth Regional Park station option. There would be no wetland impacts at the Golden Valley Road station option.

<sup>3</sup> Wetland impacts are included under the 93rd Avenue park-and-ride. .

<sup>4</sup>This acreage is based on supplemental assessment report completed by Hennepin County Conservation District (HCD, July 2013)



### 5.3.5 Avoidance, Minimization, and/or Mitigation Measures

Wetland permits from the USACE (Section 404), Minnesota Pollution Control Agency (MPCA) (Section 401 certification), and DNR (Public Waters) would be required as a part of this project. Additionally, the designated local government unit (LGU) would need to make a Wetland Conservation Act wetland replacement plan determination for the project. Because this is a linear project, Build alternatives cross through several cities and four watershed management organization boundaries – Shingle Creek Watershed - Management Commission (WMC), West Mississippi WMC, Bassett Creek WMC, and Mississippi Watershed Management Organization (WMO). The LGU that experiences the most wetland impact within its jurisdiction would be considered the lead agency and make the WCA wetland replacement plan determination for this project. The LGU would be determined as the project advances into further stages of project development.

Wetland impacts have been avoided and minimized to the extent practical. Wetland impacts will be further studied and a wetland delineation will be completed as part of the 404 permitting process.

The construction timeline for this project has not been established, therefore, the approach to mitigating wetland impacts was to assume purchasing wetland credits from the state-managed wetland bank rather than on-site or project specific replacement. The current replacement ratio for wetland credits in this portion of Minnesota is 2.5 to 1, although under certain conditions it may be reduced to 2 to 1. The final amount, type, and location of wetland replacement or bank credits would be determined by the respective permit agencies during final design and the permit review process.

Areas for construction of on-site or project specific wetland replacement will be investigated as the project advances into further stages of project development. Areas to be considered include public land adjacent to the Preferred Alternative and/or lands acquired for the project.

## 5.4 Geology, Soils, and Topography

### 5.4.1 Regulatory Context and Methodology

In Minnesota, geologic resources are rarely regulated, aside from groundwater dewatering. A permit is required to dewater in excess of 1.0 million gallons per year or 10,000 gallons a day. The DNR issues dewatering permits.

The discharge from dewatering is regulated under the National Pollutant Discharge Elimination System (NPDES) permit that is required for construction activities. If the water is contaminated, an individual NPDES permit must be obtained from the MPCA or the groundwater can be discharged to the sanitary sewer system if approved by Metropolitan Council Environmental Services.

The geologic resources listed in this section are not isolated and can affect or be affected by other water resources discussed in Sections 5.2 and 5.3.

The Geologic Atlas of Hennepin County (Minnesota Geological Survey 1989) was consulted for information regarding surface geology, bedrock geology, and groundwater resources.

### 5.4.2 Study Area

The study area for geology/soils/topography is defined as the area within and adjacent to the potential area of disturbance.

### 5.4.3 Affected Environment

#### 5.4.3.1 Geology

The surface sediments of Hennepin County were deposited primarily by glacial ice and meltwater during the last glaciation (Wisconsinan Stage). Sediments along the major portion of the study area can be

attributed to the advancement and retreat of the Superior lobe and Grantsburg sublobe of the Des Moines lobe and meltwater from these lobes. The St. Paul Sand Flats, a broad sandy outwash plain, dominates this region. As the outwash plain was being deposited, the Glacial River Warren was deepening, and sediments ranging from gravel to sand to some silt and clay were deposited along the terraces of the river. No karst features were identified within the study area (a karst landscape is an irregular limestone region in which erosion has produced sinkholes, underground streams, and caverns).<sup>15</sup>

#### **5.4.3.2 Soils**

The proposed project lies within 36 different soil types. Soil data was obtained from digital soil surveys of Hennepin County distributed by the Twin Cities Metropolitan Council. Digital soil data and descriptions for Hennepin County were gathered from the April 1974 Soil Survey of Hennepin County, Soil Conservation Service (now NRCS) soil maps produced for eastern Hennepin County in 1983, and NRCS Mylar Maps of the Hennepin County Soil Survey.

The description of soils within each alignment is provided below.

##### ***Alignment A***

The majority of Alignment A is within an existing active gravel mine. The soils within this area are highly disturbed; however, the major soil types within the potential area of disturbance for Alignment A are as follows:

- Gravel pits
- Muskego, Blue Earth, and Houghton soils
- Urban – Udorthents soils

These soils range from poorly drained soils to well drained soils. The poorly drained soils are associated with the wetlands and floodplains areas within the study area.

##### ***Alignment B (part of the Preferred Alternative)***

The majority of Alignment B is previously developed land. The soils within this area are highly disturbed; however, the major soil types within the potential area of disturbance for Alignment B are as follows:

- Forada sandy loam
- Anoka and Zimmerman soils
- Duelm loamy sand
- Isan sandy loam
- Soderville loamy fine sand

Sandy loams and loamy sands make up the majority of the soil types within Alignment B. These soils range from poorly drained soils to well drained soils. The poorly drained soils are associated with the wetlands and floodplains areas within the study area.

##### ***Alignment C (part of the Preferred Alternative)***

The majority of Alignment C is previously developed land within the BNSF railroad corridor. The soils within this area are highly disturbed; however, the major soil types within the potential area of disturbance for Alignment C are as follows:

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<sup>15</sup> DNR, Karst Feature Inventory Points shapefile, 2003

- Urban land – Hubbard Complex
- Urban land – Udipsammments

These soils within Alignment C are generally well-drained and excessively drained soils.

#### *Alignment D1 (part of the Preferred Alternative)*

The majority of Alignment D1 is previously developed land within the BNSF railroad corridor. The major soil types within the potential area of disturbance for Alignment D1 are as follows:

- Udorthents, wet substratum
- Urban land – Lester complex
- Urban land – Dundas complex

These soils within Alignment D1 are generally classified as well drained and somewhat poorly drained soils.

#### *Alignment D2*

The majority of Alignment D2 is previously developed land. The major soil types within the potential area of disturbance for Alignment D2 are as follows:

- Udorthents, wet substratum
- Urban land – Lester complex
- Urban land – Dundas complex

These soils within Alignment D2 are generally classified as well drained and somewhat poorly drained soils.

### **5.4.3.3 Topography**

The general topography of the area consists of gently rolling hills. Land surface elevation ranges from 810 feet to 925 feet throughout the study area based on contour data received from Hennepin County (Summer 2012). The average elevation in the vicinity of Alignment A is approximately 885 feet. Alignment B is at approximately 875 feet. Through Alignment C the elevation stays about the same, ranging from 875-885 feet. Alignment D1 ranges from 810 to 865 feet. Some of the elevation changes in this alignment are due to the need for the alignment to go up and over the roadway. Alignment D2 varies from 825 to 925 feet, again from having to go up and over some of the roadways.

## **5.4.4 Environmental Consequences**

### **5.4.4.1 Operating Phase (Long-Term) Impacts**

Impacts to geology and soils will occur solely during construction; therefore, no operating phase (long-term) impacts are anticipated as a result of the Bottineau Transitway Project.

### **5.4.4.2 Construction Phase Impacts**

No geologic features or hazards (karst formations) were identified in the project area and therefore will not be impacted. There were no highly erodible soils or steep slopes found within the potential area of disturbance, however, there are several areas of poorly drained soils (Udorthents) throughout the study area, which generally coincide with the wetland and floodplains described in previous sections. Poorly drained soils within the potential area of disturbance may require soil correction (remove and replace with stabile soils or treat in-place) for construction of track, pavement or other structures. These

excavated soils would need to be removed from the project site or reused in areas that do not require consolidated soils.

Since the majority of the project will follow adjacent to existing track and/or roadways at similar elevations, there will not be substantial grading needed to work around steep slopes or other topographic constraints.

#### **5.4.5 Avoidance, Minimization, and/or Mitigation Measures**

All project-related construction activity would adhere to appropriate standards and applicable permitting requirements of MPCA, MnDOT, and Hennepin County for grading and erosion control.

### **5.5 Hazardous Materials Contamination**

Information included within this section is based on the information provided in the Hazardous Materials Technical Report (Kimley-Horn and Associates, 2012).

#### **5.5.1 Regulatory Context and Methodology**

The MPCA oversees regulations pertaining to contaminated soil, groundwater, and waste cleanup plan approvals; petroleum underground storage tank registration and removal; and NPDES permitting. Additionally, the Minnesota Department of Health regulates asbestos abatement. Activities that encounter contaminated materials must follow state requirements for safe handling and disposal under the purview of the MPCA.

There is no single comprehensive source of information available which identifies known or potential sources of environmental contamination. Therefore, to identify and evaluate sites potentially containing hazardous or regulated materials (such as petroleum products) or other sources of potential contamination, a governmental database search was conducted. This screening tool identifies locations of sites with known or potential environmental liabilities based on information contained in various federal and state government databases (available via MPCA), including the following:

- **Superfund Site Information Listing (SHWS)** – Database including all sites that the state Superfund Program is dealing with or has dealt with.
- **Voluntary Investigation and Cleanup Program (VIC)** – Database containing records for sites enrolled in the VIC
- **Brownfields** – Database containing property information for petroleum impacted sites
- **Leaking Underground Storage Tanks (LUST)** – Database containing records of reported leaking underground storage tanks and other subsurface tank storage incidents
- **Leaking Aboveground Storage Tanks (LAST)** – Database containing records of reported leaking aboveground storage tanks and other surface tank storage incidents
- **SPILLS** – Database containing records for spills reported to the MPCA
- **Department of Agriculture Spills (AG SPILLS)** – Database containing records for pesticide and fertilizer incidents reported to the MPCA
- **Underground Storage Tanks (UST)** – Database listing registered underground storage tanks
- **Aboveground Storage Tanks (AST)** – Database listing registered aboveground storage tanks

The impact analysis attempts to evaluate the potential risk of contaminants being found during construction based on known records. It does not measure the severity of the hazardous materials found onsite. Each of the sites identified through the database search was assigned a degree of risk for



potential soil and or groundwater impacts. When multiple databases referred to a site, the highest applicable risk was used for classification.

- **Low Risk** – These are sites where hazardous material or petroleum products may have been stored or used; however, based on subsequent file review and field reconnaissance, no known contamination is associated with the property. Low risk sites include closed LUST and LAST sites that are more than  $\frac{1}{8}$  mile away from an alignment, inactive UST and AST sites, and closed SPILLS and AG SPILLS sites.
- **Medium Risk** – These sites are known to have or have had soil and/or groundwater contamination, but current information indicates that contamination is being remediated, does not require remediation, or requires continued monitoring. Medium risk sites include all Brownfields, open LUST and LAST sites that were more than  $\frac{1}{8}$  mile away from an alignment, open SPILLS and AG SPILLS sites.
- **High Risk** – These sites have a high potential for contamination to be found on-site. In some cases, contaminated groundwater may have migrated outside the boundaries of the site. Field investigation of soil and groundwater within planned construction limits may be needed to identify any contributing contamination from these sites and to identify a response action plan to be implemented during construction. High risk sites include all SHWS sites, VIC sites, and open LAST and LUST sites within  $\frac{1}{8}$  mile of Build alternative alignments.

A full listing of the contaminated sites potentially affecting the Bottineau Transitway alignments obtained during the records search can be found in the Hazardous Materials Technical Report (Kimley-Horn and Associates, 2012).

### 5.5.2 Study Area

The study area includes potentially contaminated properties or regulated material facilities within the appropriate ASTM (American Society of Testing and Materials) search radius for available governmental databases identified in the ASTM standards (E1527-05 and 40 CFR Sec. 312). These standard search distances vary and can extend up to one mile around the transitway project depending on the data source, as shown in [Figure 5.5-1](#).

### 5.5.3 Affected Environment

Potentially contaminated properties are often found in previously developed industrial and commercial areas. These types of land uses are common throughout the Bottineau Transitway study area. All of the proposed alternatives have some potential to encounter contaminated soils, groundwater, and materials based on prior use and development along the corridor. [Table 5.5-1](#) provides a summary of the known hazardous/regulated materials sites identified within the study area based on a review of several databases that track known contamination sites. The identified sites are shown on [Figure 5.5-1](#).

**Table 5.5-1. Number of Recorded Sites with Potential Contaminants by Alternative**

Alternative	Total Number of Recorded Sites <sup>1</sup>
No-Build	-
Enhanced Bus/TSM	-
A-C-D1	820
A-C-D2	907
B-C-D1 (Preferred Alternative)	790
B-C-D2	883

<sup>1</sup>Totals reflect all sites within the applicable ASTM standard search distances for each governmental database extending up to one mile of the alternative. Sites that exist in the study area for multiple alignments (A, B, C, D1, and D2) were counted as one site within the study area for an alternative.

**Figure 5.5-1. Bottineau Transitway Hazardous and Contaminated Sites<sup>16</sup>**



<sup>16</sup> Source: Environmental Data Resources, April 2012, classified by Kimley-Horn and Associates, 2012

## 5.5.4 Environmental Consequences

### 5.5.4.1 Operating Phase (Long-Term) Impacts

#### No-Build Alternative

There is no likelihood of encountering contamination from hazardous or regulated materials as a result of the No-Build alternative.

#### Enhanced Bus/TSM Alternative

There is no likelihood of encountering contamination from hazardous or regulated materials as a result of the Enhanced Bus/TSM alternative.

#### Build Alternatives

There would be no hazardous or regulated materials produced by the project during operation of the Bottineau Transitway. No permanent storage tanks would be installed for this project. The collection and disposal of oils, grease, and other waste materials generated during vehicle maintenance and repair activities would be accomplished in accordance with recognized industry BMPs for rail transit maintenance facilities.

Acquiring land that is contaminated or contains hazardous or regulated material creates risk in the form of costs and potential liability to the project and project sponsors. The extent of that risk would be based on the type and extent of the contamination. Therefore, acquiring land with known contamination which cannot be easily remediated or contained would be avoided to the extent possible based on a more detailed investigation (Phase I and/or II Environmental Site Assessment [ESA]) of potential for contamination as the project advances into further stages of project development. The long term risk to the project will be determined once remediation is completed in areas of known and encountered contamination during construction.

#### TPSS

There would be no hazardous or regulated materials used or generated by the TPSS sites during operation of the Bottineau Transitway.

### 5.5.4.2 Construction Phase Impacts

#### No-Build Alternative

There is no likelihood of encountering contaminated or regulated materials as a result of the No-Build alternative. Therefore, no positive or negative impacts are expected.

#### Enhanced Bus/TSM Alternative

There is no likelihood of encountering contaminated or regulated materials as a result of the Enhanced Bus/TSM alternative. Therefore, no positive or negative impacts are expected.

#### Build Alternatives

The number of potentially contaminated sites in each alignment is summarized in [Table 5.5-2](#). Since there is overlap in the study area for each alignment, some sites are listed under more than one alignment. [Figure 5.5-1](#) illustrates these overlaps and the known sites. There are no impact differences for the OMF site options under Alignment B, as there are no known potentially contaminated sites near either location. There are also no differences in impacts for either of the proposed stations under Alignment D1, as there are no known potentially contaminated sites near either station location.

## TPSS

Known hazardous sites would be avoided to the extent possible in the siting of TPSS to minimize the risk of encountering contaminated materials during construction.

### 5.5.4.3 Summary of Impacts by Alternative

As shown in [Table 5.5-2](#), only one alignment has a high risk site within the potential area of disturbance (Alignment C), which is included in each of the Build alternatives. There are zero to ten medium risk sites within the potential area of disturbance, depending on the alignment. [Table 5.5-3](#) shows the combined totals of sites by alternative and estimated risk. Alternative B-C-D1 has the lowest number of high/medium risks sites with just one site, whereas the alternatives with alignment D2 have the greatest amount of high/medium risk sites (17 to 18 sites).

High and medium risk sites, if within or near the area of disturbance, would be further assessed to determine the presence, type, and magnitude of contaminated soil and/or groundwater. A high risk area (such as SHWS sites, VIC sites, and open LAST and LUST sites within 1/8-mile of an alignment) or medium risk area (such as Brownfields, open LUST and LAST sites more than 1/8-mile from an alignment, and open SPILLS and AG SPILLS sites) has a greater known risk potential based on contamination type (databases listed in the Regulatory Context and Methodology section). Potential construction phase impacts include the time and expense of identifying, testing, and removing the contaminated materials found within the potential area of disturbance. A Phase I Environmental Site Assessment (ESA) (ASTM standards) will be completed for all disturbance areas under the Preferred Alternative to identify the type of contaminated materials. The results of the investigation would be used to determine if contaminated materials could be minimized or avoided or if additional investigation is needed to define the extent of contamination (Phase II ESA).

A Construction Contingency Plan would be developed as part of a Response Action Plan (RAP) for properly handling, treating, storing, and disposing of solid wastes, hazardous materials, petroleum products, and other regulated materials/wastes that are used or generated during construction and in the event that previously unknown hazardous materials are discovered during construction. Prior to construction activities, the project would be enrolled in the MPCA VIC program and the RAP would be developed and approved by MPCA. In the event that previously unknown hazardous materials are discovered during construction, the Contractor would notify the Project Engineer and follow the prescribed management protocol contained in the Construction Contingency Plan. The RAP will be developed through Engineering and approved prior to the release of the Final EIS.

**Table 5.5-2. Contamination Risk by Alignment based on Classification and Location**

Alignment	High Risk Sites		Medium Risk Sites		Low Risk Sites	
	Within Study Area	Within Estimated Disturbance Area <sup>1</sup>	Within Study Area	Within Estimated Disturbance Area <sup>1</sup>	Within Study Area	Within Estimated Disturbance Area <sup>1</sup>
A	8	0	7	2	144	7
B (part of the Preferred Alternative)	5	0	9	1	114	13
C (part of the Preferred Alternative)	27	1	32	2	254	8
D1 (part of the Preferred Alternative)	31	0	45	0	354	0
D2	31	0	62	10	379	21



**Table 5.5-2. Contamination Risk by Alignment based on Classification and Location (continued)**

Alignment	High Risk Sites		Medium Risk Sites		Low Risk Sites	
	Within Study Area	Within Estimated Disturbance Area <sup>1</sup>	Within Study Area	Within Estimated Disturbance Area <sup>1</sup>	Within Study Area	Within Estimated Disturbance Area <sup>1</sup>
<b>D Common Section (part of the Preferred Alternative)</b>	48	0	44	3	203	12

<sup>1</sup> Sites within the estimated area of disturbance are highlighted in Appendix B of the Hazardous and Regulated Materials Technical Report (Kimley-Horn and Associates, 2012).

**Table 5.5-3. Contamination Risk by Alternative**

Alternative	Risk Classification for Sites <sup>1</sup> within the Study Area		
	Low Risk	Medium Risk	High Risk
<b>No-Build</b>	0	0	0
<b>Enhanced Bus/TSM</b>	0	0	0
<b>A-C-D1</b>	27	7	1
<b>A-C-D2</b>	53	17	1
<b>B-C-D1 (Preferred Alternative)</b>	33	0	1
<b>B-C-D2</b>	59	16	1

<sup>1</sup> Totals reflect all sites within the applicable ASTM standard search distances for each governmental database ranging from adjacent to the project area to sites within one mile of the alternative. Sites that exist in the study area for multiple alignments (A, B, C, D1, and D2) were counted as one site within the study area for an alternative.

### 5.5.5 Avoidance, Minimization, and/or Mitigation Measures

Hennepin County and the Metropolitan Council would enroll in the MPCA VIC Program to obtain assurances that contaminated site cleanup work and/or contaminated site acquisition would not associate the agencies with long-term environmental liability for the contamination, and to obtain approvals for managing contaminated and hazardous materials encountered during construction.

A Phase I ESA (ASTM 1527-05) would be completed for all disturbance areas under the Preferred Alternative. The results of the investigation would be used to determine if contact with contaminated materials could be minimized or avoided and the extent of additional investigation needed (Phase II ESA). Based on the results of Phase II drilling investigations, the RAP will include proper handling and treating of contaminated soil and/or groundwater that could not be avoided during construction. A Construction Contingency Plan would be developed as part of the RAP for properly handling, treating, storing, and disposing of solid wastes, hazardous materials, petroleum products, and other regulated materials/wastes that are used or generated during construction and in the event that previously unknown hazardous materials are discovered during construction. The plan would also establish protocols to minimize impacts to soils and groundwater in the event a release of hazardous substances occurs during construction. If a release were to occur, the Minnesota Duty Officer would be contacted immediately to make the required agency contacts.

Prior to the demolition of any structures, assessments for asbestos-containing materials, lead-based paint, and other regulated materials/wastes would be performed. A demolition and disposal plan would be prepared for any identified contaminants that may be encountered during construction.

## 5.6 Noise

Information included within this section is based on the information provided in the Noise and Vibration Technical Report (HMMH, Inc., 2012).

### 5.6.1 Regulatory Context and Methodology

#### 5.6.1.1 Regulatory Context

Noise has been assessed in accordance with guidelines specified in the FTA *Transit Noise and Vibration Impact Assessment* guidance manual (FTA Report FTA-VA-90-1003-06, May, 2006). This section describes the methodology for assessing potential impact from proposed transit projects such as the Bottineau Transitway.

Local ordinances will regulate construction-generated noise. The applicable ordinances are described in Section 5.6.4.2.

#### 5.6.1.2 Methodology

The methodology for assessing potential long-term noise impact from transit operations includes:

- Identification of noise-sensitive land uses within the area of potential effect of the proposed project
- Measurement and characterization of existing noise conditions at these sensitive receptors
- Projections of future noise levels from transit operations for future Build alternatives
- Assessment of potential long-term noise impact
- Recommendations for noise mitigation

The guidance manual also includes the methodology for predicting and assessing potential short-term noise impact from construction activities. The approach to assessing potential impact from construction activities is more general than for transit operations since specific construction equipment and methods depend on the contractor's approach and are not typically defined at this stage of project development.

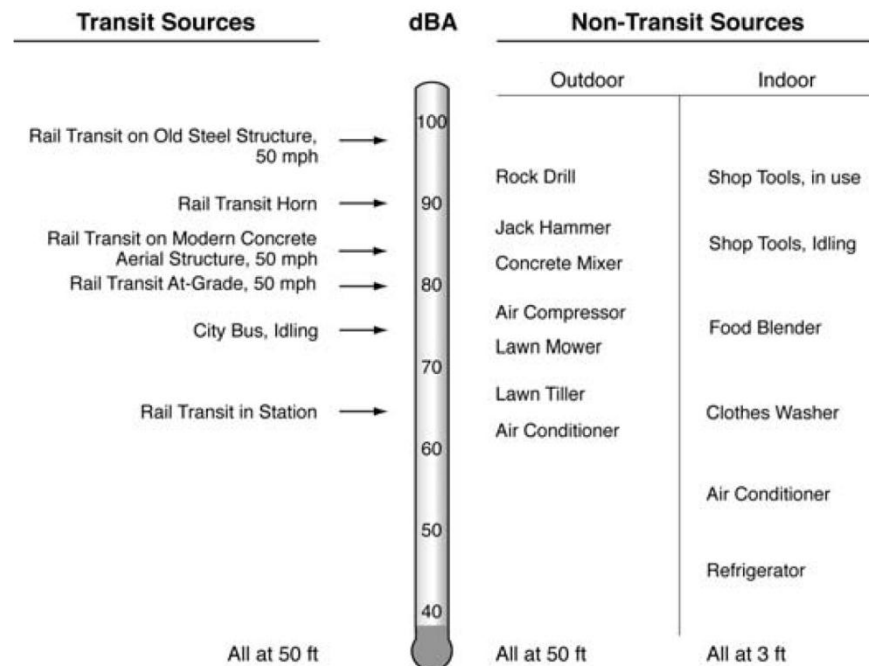
#### Noise Fundamentals and Descriptors

Two important aspects of sound that determine its potential impacts are loudness and frequency. The unit used to measure the loudness of noise is a decibel (dB). An adjusted dB scale, referred to as the A-weighted decibel scale, accounts for humans' ability to hear only a limited range of frequencies. Decibels in the A-weighted scale are designated as dBA. This analysis uses the dBA unit of measurement.

Noise levels at a given location tend to vary with time. To account for the variance in loudness over time, a common noise measurement is the equivalent sound pressure level ( $L_{eq}$ ). It is measured in dBA for a specific time period (e.g., one minute). This analysis uses  $L_{eq}$  to describe traffic and transit noise at schools, libraries, and other sensitive institutions. This analysis also gave more weight to noise that occurs at night (10:00 p.m. to 7:00 a.m.), consistent with federal regulations. Calculations that use this method produce the Day-Night Equivalent Sound level, which is abbreviated as  $L_{dn}$ .

The following chart provides a comparison of the noise levels of some common noise sources.

Figure 5.6-1. Examples of Typical A-Weighted Sound Levels <sup>17</sup>



## Noise Impact Criteria

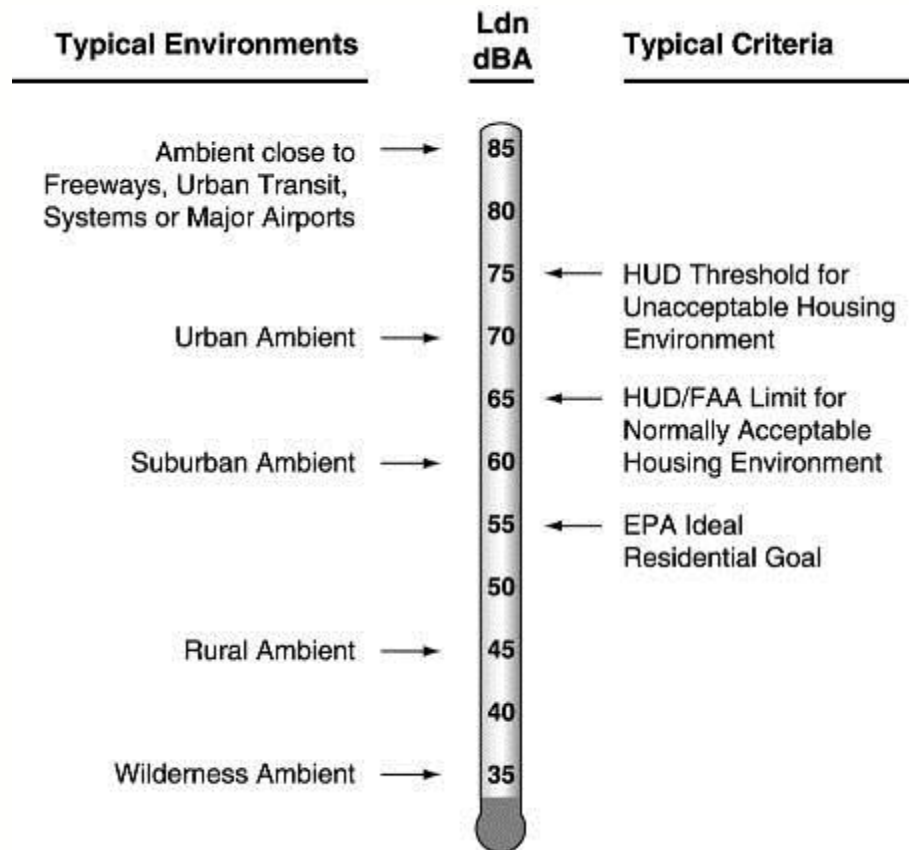
### Noise Sensitive Land Use Categories

The FTA classifies noise-sensitive land uses into the following three categories:

- **Category 1:** Tracts of land where quiet is an essential element in their intended purpose. This category includes lands set aside for serenity and quiet, such land uses as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use. Also included are recording studios and concert halls.
- **Category 2:** Residences and buildings where people normally sleep. This category includes homes, hospitals, and hotels where a nighttime sensitivity is assumed to be of utmost importance.
- **Category 3:** Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds, and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included, such as parks used for passive recreation like reading, conversation, meditation, etc. However, most parks used primarily for active recreation would not be considered noise sensitive.

<sup>17</sup> Source: FTA Transit Noise and Vibration Impact Assessment, May 2006

Figure 5.6-2. Examples of Typical Outdoor  $L_{dn}$  Noise Exposure<sup>18</sup>



#### Impact Criteria

The FTA airborne noise impact criteria are based on the future change in noise exposure using a sliding scale. At locations with higher levels of existing noise, smaller increases in total noise exposure will cause impact. The  $L_{dn}$  is used to characterize noise exposure for locations with nighttime sensitivity, or Category 2 uses. For institutional land uses with primarily daytime use, such as parks and school buildings (Categories 1 and 3), the one-hour  $L_{eq}$  during the facility's operating period is used.

There are two levels of impact used in the FTA criteria, as summarized below:

- **Severe Impact:** Project-generated noise in the severe impact range can be expected to cause a significant percentage of people to be highly annoyed by the new noise and represents the most compelling need for mitigation. Noise mitigation would normally be specified for severe impact areas unless there are truly extenuating circumstances that prevent it.
- **Moderate Impact:** In this range of noise impact, the change in the cumulative noise level is noticeable to most people but may not be sufficient to cause strong, adverse reactions from the community. In this transitional area, other project-specific factors must be considered to determine the magnitude of the impact and the need for mitigation. These factors include the existing noise level, the predicted level of increase over existing noise levels, the types and numbers of noise-sensitive land uses affected, the noise sensitivity of the properties, the effectiveness of the mitigation measures, community views, and the cost of mitigating noise to more acceptable levels.

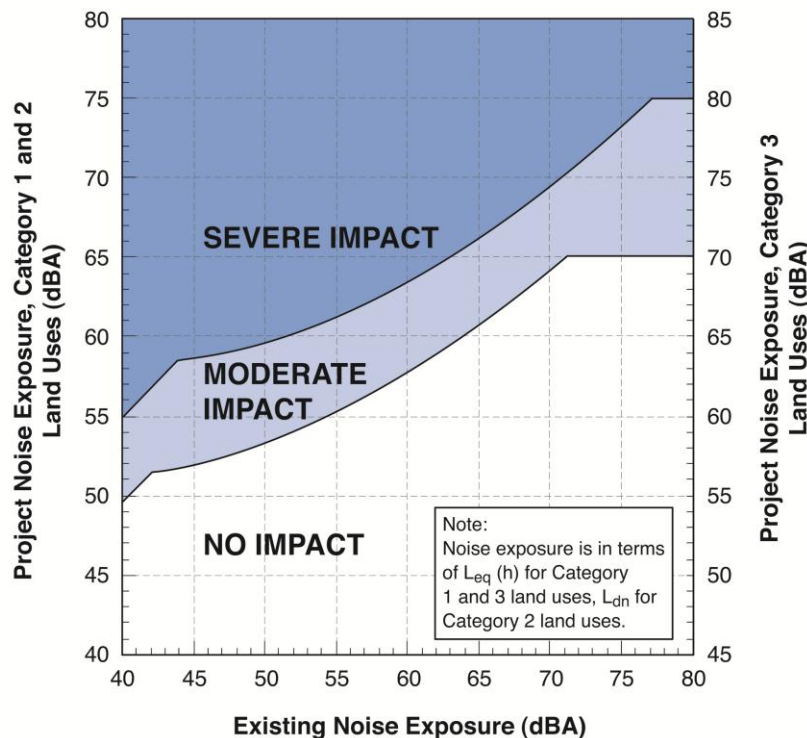
<sup>18</sup> Source: HMMH Inc., 2012



The noise impact criteria are summarized in graphical form in [Figure 5.6-3](#). The figure shows existing noise exposure along the horizontal axis, noise from a new project source (alone) along the vertical axis, and the resulting moderate and severe impact thresholds. In some instances, a proposed project may affect existing noise sources such as in the cases of relocation of streets or existing railroad tracks. In such cases, where existing noise sources would change as a direct result of the project, potential impact must be assessed based on the increase in overall noise exposure from existing to future conditions. While the two methods of assessing potential impact are equivalent, only the method based on the future increase in noise can be used to take into account changes to existing noise sources. [Figure 5.6-4](#) expresses the same criteria in terms of the increase in total or cumulative noise that causes potential impact.

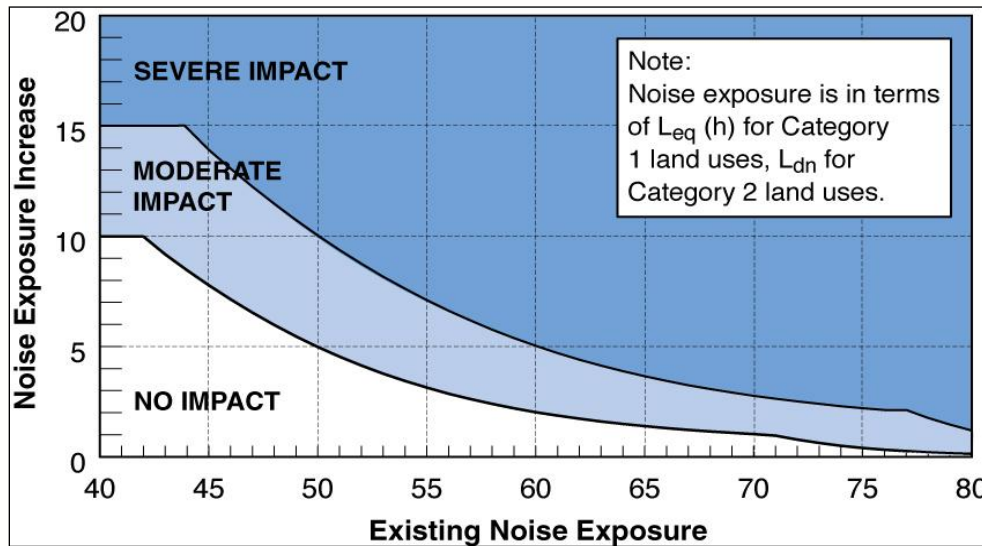
Because this project involves shifting of freight railroad tracks at some locations, this assessment uses the criteria in the form shown graphically in [Figure 5.6-4](#). Along the horizontal axis of the graph is the range of existing noise exposure and the vertical axis shows the noise exposure increase due to the project that would cause either moderate or severe impact. The noise exposure increase is the difference between the existing noise level and the total future noise level, where the future level includes a combination of noise from existing and/or modified existing sources and from future project sources. Therefore, the future noise exposure increase would account for modifications to the existing environment such as shifting the freight railroad tracks.

**Figure 5.6-3. FTA Noise Impact Criteria Comparing Existing Noise to Project Noise<sup>19</sup>**



<sup>19</sup> Source: FTA, 2006

Figure 5.6-4. FTA Noise Impact Criteria Comparing Existing Noise to Increase in Future Noise<sup>20</sup>



#### Construction Noise Impact Criteria

Construction noise criteria are based on the guidelines provided in the FTA guidance manual. These criteria, summarized in [Table 5.6-1](#), are based on land use and time of day and are given in terms of noise exposure over an eight-hour work shift or 30-day period.

Table 5.6-1. FTA Construction Noise Assessment Criteria

Land Use	8-hour $L_{eq}$ (dBA)		Noise Exposure (dBA)
	Day	Night	30-day Average
Residential	80	70	75 <sup>1</sup>
Commercial	85	85	80 <sup>2</sup>
Industrial	90	90	85 <sup>2</sup>

<sup>1</sup> In urban areas with very high ambient noise levels ( $L_{dn} > 65$  dB),  $L_{dn}$  from construction operations should not exceed existing ambient + 10 dB.

<sup>2</sup> Twenty-four-hour  $L_{eq}$ , not  $L_{dn}$ .

Source: FTA, 2006

#### Noise Impact Assessment Methodology

The noise and vibration projections were carried out using the following methodological assumptions:

- All modeling projections are consistent with the methodology in the detailed assessment chapters of FTA's *Transit Noise and Vibration Impact Assessment* guidance manual (May 2006).
- Noise-sensitive land use in the corridor was determined based on parcel data, aerial imagery, and windshield surveys in the field. Specific noise-sensitive uses include: Residential homes (single-family, multi-family, retirement community), churches, children's center parks, a library, schools, retail establishments (shopping, restaurants, etc.), a radio station, and other places of business.

<sup>20</sup> Source: FTA, 2006

- LRT speeds were provided by the project team at 100-foot increments along the corridor. Speeds range from 20 mph to 55 mph along the corridor, and the same speed profile was used for both directions of travel.
- LRT operations were assumed to use three-car trains.
- The operating hours and service frequencies for LRT were assumed to be consistent with Metro Transit's Blue Line (Hiawatha). The service frequency assumed is as follows:
  - Early morning (4:00 to 6:00 a.m.): 20-30 minutes
  - Peak periods (6:00 to 9:00 a.m., 3:00 to 6:30 p.m.): 7.5 minutes
  - Midday (9:00 a.m. to 3:00 p.m.): 10 minutes
  - Evening (6:30 to 10:00 p.m.): 10 minutes
  - Late evening (10:00 p.m. to 2:00 a.m.): 30 minutes
- Existing noise levels were assigned to noise-sensitive receptors based on noise measurements conducted throughout the corridor and discussed in the next section of this report.
- The hours between 10:00 p.m. and 7:00 a.m. define nighttime events.
- Locations of aerial structures, crossovers, and embedded track were identified based on conceptual engineering plans available at the time of the assessment.
  - Noise level increases of up to six dB are assumed for receptors near crossover locations.
  - Noise level increases of four dB are assumed for receptors near aerial structures due to structure-radiated noise and reduced sound absorption for non-ballasted track.
  - Embedded track is assumed to be one dB quieter than ballast and tie track based on measured levels of the Blue Line as reported in the Central Corridor LRT Final EIS.
  - Elevations of structures were based on profile information provided.
- Noise from audible warning devices was projected based on the following assumptions:
  - Trains will sound the bells when entering and exiting station platforms.
  - Train horns will begin to be sounded 20 seconds, but not more than ¼ mile, in advance of higher-speed grade crossings.
  - Wayside bells will be sounded before and after the passage of each train for a total duration of 30 seconds, based on field measurements of the Blue Line.
  - Due to anticipated travel speeds in excess of 45 mph the train high horn will be sounded at the following intersections:
    - 73rd Avenue (Alignment A Only)
    - 71st Avenue (Alignment B Only)
    - Corvallis Avenue
    - Broadway Avenue
    - 45 ½ Avenue
    - 42nd Avenue
    - 39 ½-40th Avenue

■ Reference Levels:

- The source reference levels for the light rail vehicle (LRV) and wayside bells were based on the default values from the FTA guidance manual. The FTA manual assumes that a single rail car on ballast and tie track with continuous welded rail (CWR) generates a sound exposure level (SEL) of 82 dBA at a distance of 50 feet from the track centerline, and that the wayside bells generate a maximum sound level (Lmax) of 73 dBA at a distance of 50 feet.
- The source reference level for wayside bells at pedestrian crossings was determined based on field measurements of the Blue Line. The pedestrian wayside crossing bells were found to generate a sound level of 68 dBA at a distance of 50 feet.
- Reference levels for the vehicle horn and bell were provided by Metropolitan Council. It is assumed that LRV audible warning devices would generate sound levels of 95 dBA at 100 feet for the high horn and 79 dBA at 50 feet for the bell. Use of the high horn is assumed at all grade crossings where the speed exceeds 45 mph, and use of the bell is assumed at all other grade crossings. No low-horn usage was assumed.
- Where LRVs operate on tight-radius curves (approximately 400-foot radius curves or less), there is the potential for increased noise due to wheel squeal. However, because wheel squeal is highly variable and difficult to predict, it has not been included in this assessment. It is assumed that mitigation for wheel squeal on curves, such as track lubrication devices, will be included in final design if curve squeal occurs on the Bottineau Transitway.
- Assumed property acquisitions were not counted as potential noise impacts.

Because the construction of the Bottineau Transitway in Alignments C and D1 would require the existing BNSF rail line to be shifted to the west, the effect of moving freight operations relative to noise-sensitive receivers was included in the noise impact analysis. Freight train noise levels, including contributions from locomotives, rail cars, and horns, were predicted using Federal Railroad Administration (FRA) methodology. Because freight trains tended not to contribute significantly to the measured existing noise levels, and to provide a consistent comparison of existing and future noise levels, the noise from current freight operations was first estimated and then combined with the background ambient noise levels described above to determine the total existing noise levels in Alignments C and D1. The prediction of existing freight train noise was based on the following assumptions:

- Baseline freight train operations include one daily round trip during the daytime hours.
- All freight trains include two locomotives and 20 cars and operate at a speed of 20 mph.
- All freight trains sound their horn 20 seconds, but not more than ¼ mile in advance of grade crossings in conformance with current FRA regulations.
- Locomotive horns are center mounted, generating a sound level of 104 dBA at a distance of 100 feet.
- The shifted BNSF railroad track will be updated from jointed rail to CWR.
- Wheel impacts at track joints cause noise level increases of five dB for rail cars.

The update of the BNSF rail line to CWR will result in a five dB decrease in noise level from the wheel rail interaction for rail cars, but no change to the noise level from locomotive engines. Properties west of the rail line will be closer to the relocated track and may experience an increase in noise level. The increase in noise level due to the shift of the BNSF rail line varies for these properties because their distance to the existing and future rail line varies. Noise levels may increase by up to four dB for properties within 50



feet of the shifted future freight line. Properties that are at least 100 feet or farther from the future freight line will experience little to no increase in noise level from freight operations.

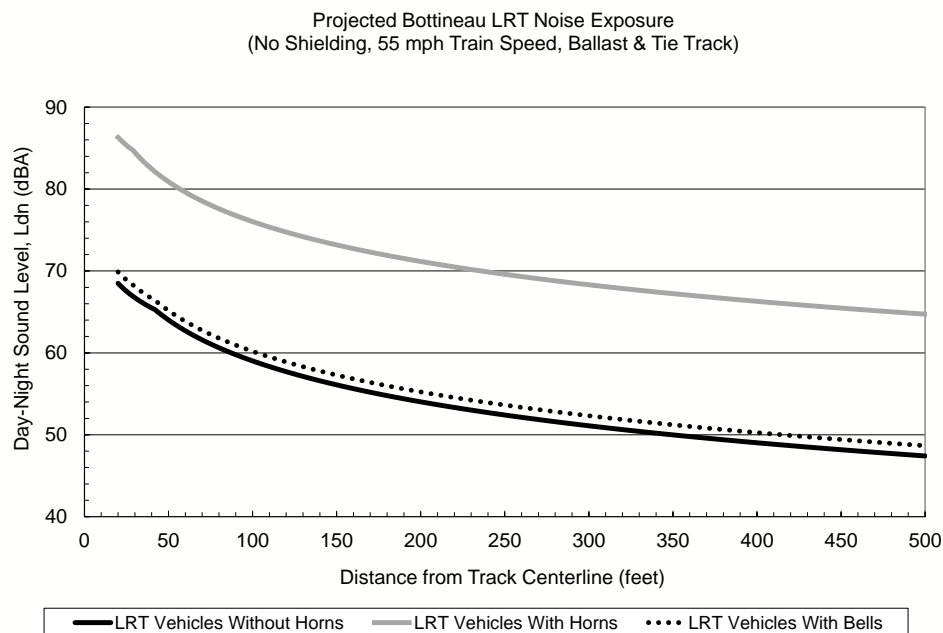
Future freight train noise levels were estimated based on the information above, except that all operations were assumed to be on the relocated and upgraded track (from jointed rail to CWR). The future noise levels from the freight operations were then combined with both the existing baseline ambient noise levels and the predicted LRT noise levels to determine the total future noise exposure. Finally, noise impact was assessed based on the projected noise increase at each sensitive receptor area, according to the FTA criteria.

Additional noise from OMF and station park-and-ride activities has also been taken into account in the assessment. The prediction of noise from these facilities was based on the following assumptions:

- There will be 29 LRT train movements for OMF locations on Alignment B.
- For the park-and-ride facility, the parking lot will fill to capacity in the morning (5:00 to 7:00 a.m. during nighttime hours) and empty completely in evening (5:00 to 7:00 p.m. during daytime hours)

Examples of the projected noise exposure from LRT operations at the maximum operating speed of 55 mph with and without vehicle horns and bells are shown in [Figure 5.6-5](#) as a function of distance. The projections are based on the assumptions described above and are for community locations with an unobstructed view of the tracks. These results show that the highest noise levels occur when LRT train horns are sounded.

**Figure 5.6-5. Projected 24-Hour Noise Exposure from LRT Operations<sup>21</sup>**



### Noise Measurement Locations and Procedures

Existing ambient noise levels in the project area were characterized through direct measurements at selected sites along the study corridor. Sites were selected along each corridor alignment at locations that are representative of an area of similar ambient sources and noise levels, with similar traffic, and

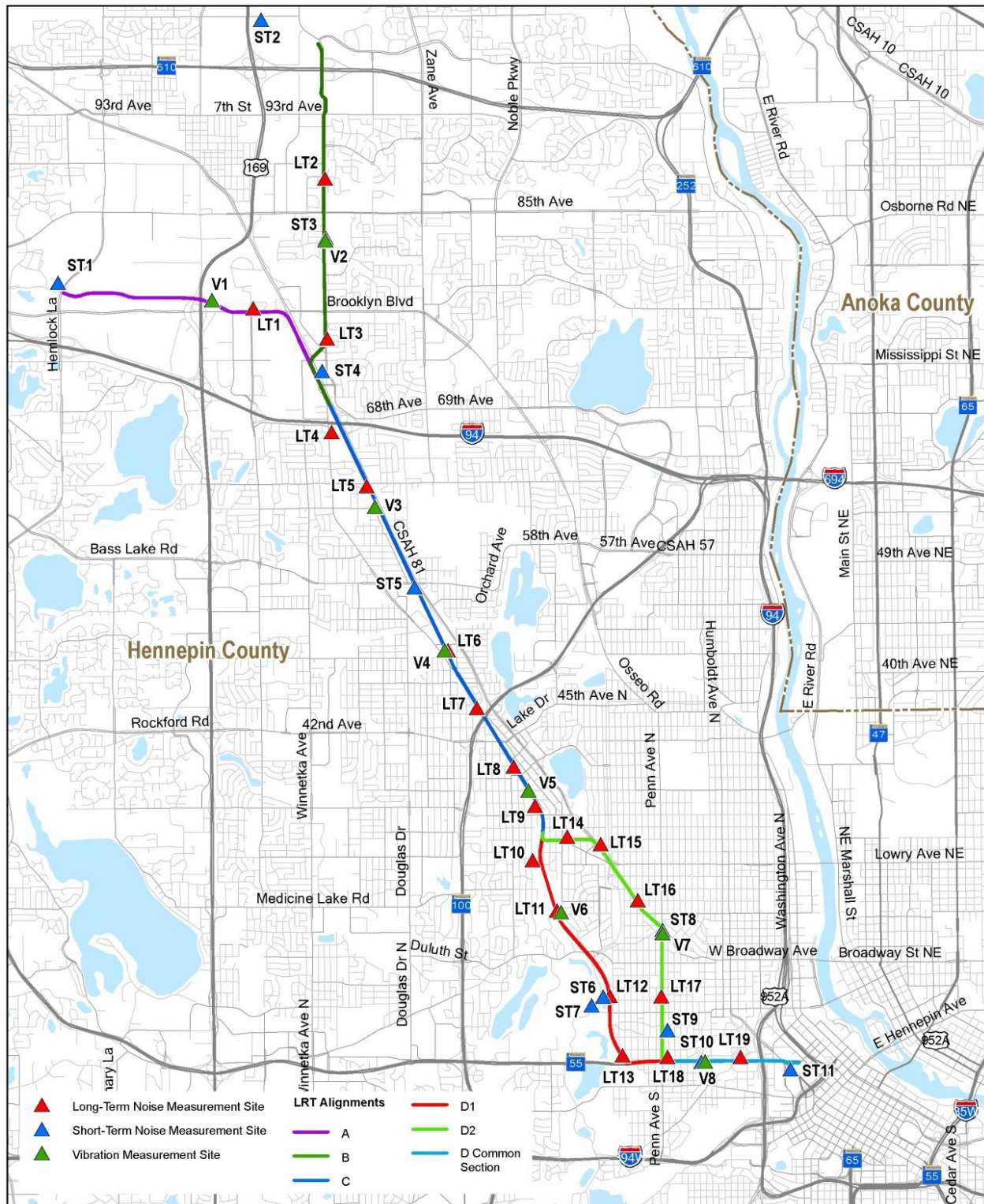
<sup>21</sup> Source: HMMH Inc., 2012

community noise activities. Generally these measurement locations represent an area of several blocks. Measurements were then used for numerous modeling sites in the area, and represent ambient noise levels for every type of land use in the vicinity.

The testing was performed during two time periods, first from July 13 through July 15, 2011 and subsequently from May 14 through May 18, 2012. The measurements consisted of long-term (24-hour) and short-term (one-hour) monitoring of the A-weighted sound level at representative noise-sensitive locations. Seven long-term and two short-term noise measurements were conducted in July 2011, and 12 long-term and nine short-term noise measurements were conducted in May 2012. The measurement locations, shown in [Figure 5.6-6](#), were selected to reflect locations most likely to be affected by transit noise (i.e., sensitive receptors as described previously under Noise Impact Criteria) due to proximity of the proposed LRT alignment and/or future crossing locations. Additionally, measurement locations were selected such that each measurement represents similar existing noise characteristics for a general area. For instance, one measurement site would represent many homes that are parallel to a roadway with consistent traffic volume and speed, or a measurement might represent an area of homes all parallel to an existing freight line. These locations are illustrated in a series of figures in the Noise and Vibration Technical Report (HMMH, Inc., 2012). At each site, the measurement microphone was positioned to characterize the exposure of the site to the dominant noise sources in the area.

Bruel & Kjaer model 2250 noise monitors, conforming to ANSI Standard S1.4 for precision (Type 1) sound level meters, were used for gathering noise data. Calibrations, traceable to the US National Institute of Standards and Technology (NIST) were carried out in the field using acoustic calibrators. Thunderstorms in the Minneapolis area on July 15, 2011 caused a measureable increase in ambient noise from approximately 11:00 a.m. to 1:00 p.m. To more accurately determine existing noise levels from noise monitoring conducted during the thunderstorms, noise levels from data in the hours prior to and following the affected hours were used to estimate the noise levels during the affected time period.

Figure 5.6-6. Noise and Vibration Measurement Locations



### 5.6.2 Study Area

The study area for noise is based on the screening distances provided in Chapters 4 and 9 of the FTA guidance manual *Transit Noise and Vibration Impact Assessment* (May 2006). Screening distances provided in the FTA manual are based on typical project conditions and were adjusted based on the specific conditions of the Bottineau Transitway Project. All noise-sensitive land uses within the relevant screening distances were reviewed to identify locations where impacts may possibly occur. Typical screening distances provided by the FTA for LRT projects are given in [Table 5.6-2](#). The “unobstructed” screening distances apply to noise-sensitive receivers where no large buildings or rows of homes are located in the sound path between the receiver and the noise source to provide shielding from noise. The “intervening buildings” screening distances apply to noise-sensitive receivers where large buildings or rows of homes do exist in the sound path and provide shielding between the receiver and the noise source.

**Table 5.6-2. FTA Screening Distances for Noise Assessments**

Type of Project	Screening Distances <sup>1</sup> (ft)	
	Unobstructed	Intervening Buildings
Light Rail Transit	350	175
Commuter Rail-Highway Crossing with Horns and Bells	1,600	1,200
Yards and Shops	1,000	650
Parking Facilities	125	75
Power Substations	250	125

<sup>1</sup> Measured from the centerline of guideway for mobile sources; from center of noise-generating activity for stationary sources.  
Source: FTA, 2006

### 5.6.3 Affected Environment

The Bottineau Transitway Project Build alternative alignments are located in suburban and urban areas in the greater Minneapolis metropolitan area. The existing noise environments and sensitive land uses vary among the alignments and are described below.

#### Alignment A

This alignment is located along CSAH 130 (Brooklyn Boulevard), and the predominant noise sources are CSAH 130 traffic, local roadway traffic, and commercial activity. Noise-sensitive land use includes Arbor Lakes Senior Living, Hennepin Technical College, and several single- and multi-family residences near Boone Avenue North.

#### Alignment B (part of the Preferred Alternative)

This alignment is located along CSAH 103 and CSAH 130, and the predominant noise sources are traffic on CSAH 103, CSAH 130, and local roadways. Activity from residential neighborhoods, schools, and commercial land uses also contribute to the existing noise environment. Noise-sensitive land use includes North Hennepin Community College, Step by Step Montessori School, and several single- and multi-family residences north and south of CSAH 109 (85th Avenue).

#### Alignment C (part of the Preferred Alternative)

This alignment is located within the BNSF railroad corridor from 73rd Avenue North in Brooklyn Park to 36th Avenue North in Robbinsdale. The alignment is located along CSAH 81 starting from the north, and then shifts to run along West Broadway Avenue after crossing the CP railroad tracks. This alignment also passes by Crystal Airport. The predominant noise sources affecting the existing noise environment are traffic on CSAH 81 and West Broadway Avenue, BNSF train traffic, and airport activity. Noise-sensitive land use includes single- and multi-family residences, schools, churches, several hotels, parks identified



for passive use, and Glen Haven Memorial Garden Cemetery, located about 450 feet west of the proposed alignment.

#### **Alignment D1 (part of the Preferred Alternative)**

This alignment is located within the BNSF railroad corridor and is adjacent to several park areas, including Theodore Wirth Regional Park. The alignment turns east along TH 55 until it reaches downtown Minneapolis. The predominant noise sources affecting the existing noise environment are train traffic on the BNSF railroad, local roadway traffic, and community activity. Noise-sensitive land use includes single- and multi-family residences, schools, churches, hotels, Sumner Library, and parks identified for passive use.

#### **Alignment D2**

This alignment exits the rail corridor at 34th Avenue and proceeds east to CSAH 81, runs along CSAH 81 and Penn Avenue, and then turns east along TH 55 until it reaches downtown Minneapolis. The predominant noise sources affecting the existing noise environment are traffic on those roads, local roadway traffic, and community activity. North Memorial Medical Center, NorthPoint Health and Wellness Center, and KMOJ Radio Station are noise-sensitive land uses that are adjacent to this alignment. Other noise-sensitive land use includes single- and multi-family residences, schools, churches, hotels, Sumner Library, and parks identified for passive use.

#### **5.6.3.1 Noise Measurement Results**

The results of the existing ambient noise measurements are summarized in [Table 5.6-3](#). For each site, the table lists the adjacent alignment(s), site location, measurement details, and the measured noise levels. The results at each site are further described below. Photographs of the noise measurement sites and detailed noise measurement results are included in the appendices of the Noise and Vibration Technical Report (HMMH, Inc., 2012).

The noise measurement results indicate that most areas along the Bottineau Transitway within the study area have an existing noise environment typical of urban and suburban ambient levels, while some areas have ambient levels typical of quiet suburban environments. Noise monitoring sites in more densely populated areas such as downtown Robbinsdale, Penn Avenue, and TH 55 have ambient noise levels ranging from 62 to 68 dBA. This is because most of these sites are near major roadways and heavier commercial activity. Noise levels in Brooklyn Park range from 60 to 66 dBA due to the presence of major roadways and higher roadway speeds. Noise levels are lower for sites in the corridor where there is less roadway traffic and community and commercial activity. This includes sites near Theodore Wirth Regional Park on Alignment D1, with ambient noise levels ranging from 50 to 56 dBA. Some areas along Alignment C that are further from major roadways and commercial activity also experience quieter suburban ambient noise levels. Due to the nature of the FTA noise criteria, areas with lower ambient noise levels are more likely to be affected by noise from the project, and therefore are more likely to have locations with noise impact.

**Table 5.6-3. Summary of Existing Ambient Noise Measurement Results**

Site No.	Alignment	Measurement Location	Measurement Location Description	Start of Measurement		Measurement Duration (hrs)	Noise Exposure (dBA)		Contributing Noise Sources
				Date	Time		L <sub>dn</sub> <sup>1</sup>	L <sub>eq</sub> <sup>2</sup>	
LT-1	A	7700 Boone Avenue North, Brooklyn Park	Back yard of single-family residence	5-14-12	11:00	24	63	59	Traffic on Brooklyn Boulevard and other local roads
LT-2	B (part of the Preferred Alternative)	8745 Oregon Avenue North, Brooklyn Park	Back yard of single-family residence	7-14-11	10:00	24	66	62	Traffic on CSAH 103 and local roads, commercial and community activity
LT-3	B (part of the Preferred Alternative)	7428 75th Circle North, Brooklyn Park	Back yard of duplex residence	5-14-12	13:00	24	60	55	Traffic on CSAH 103 and local roads, commercial and community activity
LT-4	C (part of the Preferred Alternative)	6648 West Broadway Avenue, Brooklyn Park	Back yard of single-family residence	5-15-12	13:00	24	61	61	Traffic on CSAH 8, CSAH 81, and other local roads
LT-5	C (part of the Preferred Alternative)	6288 Louisiana Court North, Brooklyn Park (Waterford Manor)	Back yard of multi-family retirement community	5-14-12	12:00	24	63	57	Freight traffic on the BNSF railroad, traffic on CSAH 81 and other local roads
LT-6	C (part of the Preferred Alternative)	5001 Welcome Avenue North, Crystal	Back yard of single-family residence	7-14-11	15:00	24	54	48	Freight traffic on the BNSF railroad and other nearby rail lines, traffic on local roads, residential community activity
LT-7	C (part of the Preferred Alternative)	4416 Toledo Avenue North, Robbinsdale	Back yard of single-family residence	5-14-12	14:00	24	57	49	Freight traffic on the BNSF railroad, traffic on CSAH 8 and other local roads
LT-8	C (part of the Preferred Alternative)	3954 Noble Avenue North, Robbinsdale	Back yard of single-family residence	7-14-11	14:00	24	66	49	Freight traffic on the BNSF railroad, traffic on local roads, commercial and community activity
LT-9	C (part of the Preferred Alternative)	4400 36th Avenue North, Robbinsdale (Lee Square Co-Op)	Back yard of multi-family retirement community	5-15-12	15:00	24	54	48	Freight traffic on the BNSF railroad, pedestrian and bicycle path traffic, traffic on 36 <sup>th</sup> Avenue North and other local roads
LT-10	D1 (part of the Preferred Alternative)	3230 Kyle Avenue North, Golden Valley	Back yard of single-family residence	5-15-12	14:00	24	51	45	Freight traffic on the BNSF railroad, local roadway traffic, residential community activity
LT-11	D1 (part of the Preferred Alternative)	3912 26th Avenue North, Robbinsdale	Back yard of single-family residence	7-13-11	16:00	24	50	45	Freight traffic on the BNSF railroad, residential community activity
LT-12	D1 (part of the Preferred Alternative)	The Family Partnership – 1501 Xerxes Avenue North, Golden Valley	Back yard of The Family Partnership	7-14-11	17:00	24	55	50	Freight traffic on the BNSF railroad, traffic on local roads, residential and school activity
LT-13	D1 (part of the Preferred Alternative)	623 North Vincent Avenue, Minneapolis	Back yard of duplex residence	5-16-12	17:00	24	56	50	Freight traffic on the BNSF railroad and other nearby rail lines, traffic on local roads
LT-14	D2	3807 Van Demark Avenue, Robbinsdale	Side yard of single-family residence	5-16-12	16:00	24	53	44	Traffic on CSAH 81 and local roads, hospital activity at North Memorial Medical Center
LT-15	D2	3334 Lakeland Avenue North, Robbinsdale	Side yard of single-family residence	7-13-11	14:00	24	62	57	Traffic on CSAH 81 and local roads, hospital activity at North Memorial Medical Center
LT-16	D2	2519 North 27th Avenue, Minneapolis	Side yard of single-family residence	5-16-12	18:00	24	65	61	Traffic on West Broadway Avenue and local roads, community activity
LT-17	D2	1411 Penn Avenue North, Minneapolis	Back yard of duplex residence	7-13-11	15:00	24	68	62	Traffic on Penn Avenue and other local roads, hospital activity at NorthPoint Health and Wellness Center
LT-18	D Common Section (part of the Preferred Alternative)	611 North Oliver Avenue, Minneapolis	Back yard of single-family residence	5-17-12	12:00	24	62	59	Traffic on TH 55 and other local roads
LT-19	D Common Section (part of the Preferred Alternative)	1000 TH 55, Minneapolis (Heritage Park)	Back yard of duplex residence	5-15-12	18:00	24	65	61	Traffic on TH 55 and other local roads
ST-1	A	Arbor Lakes Retirement Community, Maple Grove	Retirement community	5-15-12	7:58	1	50	52	Traffic on Hemlock Lane and Arbor Lakes Parkway

**Table 5.6-3. Summary of Existing Ambient Noise Measurement Results (continued)**

Site No.	Alignment	Measurement Location	Measurement Location Description	Start of Measurement		Measurement Duration (hrs)	Noise Exposure (dBA)		Contributing Noise Sources
				Date	Time		L <sub>dn</sub> <sup>1</sup>	L <sub>eq</sub> <sup>2</sup>	
ST-2	B (part of the Preferred Alternative)	Grace Fellowship Church, Brooklyn Park	Church	5-14-12	17:00	1	54	56	Traffic on US 169 and other nearby roads
ST-3	B (part of the Preferred Alternative)	North Hennepin Community College, Brooklyn Park	Parking lot of school	5-14-12	15:33	1	58	60	Traffic on Broadway Avenue
ST-4	C (part of the Preferred Alternative)	Prince of Peace Church, Brooklyn Park	Church	5-16-12	13:11	1	57	59	Traffic on Broadway Avenue and CSAH 81
ST-5	C (part of the Preferred Alternative)	Becker Park, Crystal	Park	5-17-12	13:51	1	54	56	Traffic on CSAH 81 and Bass Lake Road, community activity
ST-6	D1 (part of the Preferred Alternative)	Theodore Wirth Regional Park, Golden Valley	Park	5-18-12	10:01	1	47	49	Traffic on Theodore Wirth Parkway
ST-7	D1 (part of the Preferred Alternative)	The Chalet at Theodore Wirth Regional Park, Golden Valley	Park	5-18-12	11:20	1	53	55	Traffic on Theodore Wirth Parkway
ST-8	D2	KMOJ Radio Station – Penn Avenue and Broadway Avenue, Minneapolis	Sidewalk next to radio station	7-15-11	13:27	1	68	70	Traffic on Broadway Avenue, Penn Avenue, and McNair Avenue, commercial and community activity
ST-9	D2	Lincoln Junior High – Oliver Street, Minneapolis	Parking lot of school	7-13-11	16:21	1	50	52	Traffic on Oliver Street, community activity
ST-10	D Common Section (part of the Preferred Alternative)	Harrison Education Center, Minneapolis	Park	5-15-12	16:07	1	60	62	Traffic on TH 55 and other local roads
ST-11	D Common Section (part of the Preferred Alternative)	Mary My Hope Children's Center, Minneapolis	Sidewalk next to Children's Center	5-17-12	16:09	1	65	67	Traffic on 7 <sup>th</sup> Avenue, community activity

<sup>1</sup> For sites ST-1 through ST-11, the L<sub>eq</sub> measurements were used to estimate the L<sub>dn</sub> using FTA methodology for estimating noise exposure. This approach tends to be conservative and underestimate the existing noise levels, which can result in higher levels of noise impact for a project.

<sup>2</sup> For sites LT-1 through LT-19, the L<sub>eq</sub> was taken from the quietest hour of the typical peak traffic hours: 6:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m. The lowest peak traffic hour noise level is used to provide a conservative estimate of the noise.

Source: HMMH Inc., 2012

## 5.6.4 Environmental Consequences

### 5.6.4.1 Operating Phase (Long-Term) Impacts

#### No-Build Alternative

While there would be some changes in bus traffic on existing roadways due to future No-Build transit improvements, these would not significantly affect the existing noise levels. Thus, no noise impacts are anticipated within the Bottineau Transitway study area for the No-Build alternative.

#### Enhanced Bus/TSM Alternative

Similar to the No-Build alternative, no significant noise impacts would occur within the Bottineau Transitway study area for the Enhanced Bus/TSM alternative.

#### Build Alternatives

**Table 5.6-4** below summarizes the results of the noise impact assessment by alignment. Comparisons of the existing and future noise levels are presented in **Table 5.6-4**, which includes ranges of results for FTA Category 2 (residential) receptors with both daytime and nighttime sensitivity to noise and Category 3 receptors, consisting of institutional and recreational land uses with primarily daytime and evening use. In addition to the distances to the track and proposed train speeds, **Table 5.6-4** includes the existing noise levels, the projected noise levels from rail operations, the future total noise levels, and the predicted noise increases due to the project within each segment along the corridor. The predicted noise level increase equals the future total noise level minus the existing noise level. Based on a comparison of the predicted noise level increase with the impact criteria, the table also includes an inventory of the number of moderate and severe noise impacts for each alignment option. The impacts for each alignment option are discussed below, and Figures 12 through 40 in **Appendix G** show the locations of projected unmitigated noise impacts. This represents all of the potential impacts along the corridor if no mitigation measures were implemented. The application of mitigation measures would reduce the number of impacted locations and the severity of impacts. The noise impact figures show the entire Bottineau Transitway even though impacts are not projected to occur at all locations along the corridor.

It should be noted that impacts to historic properties as a result of project-related noise are discussed in Section 4.4 and Chapter 8 Section 4(f) Analysis.



**Table 5.6-4. Summary of Unmitigated Noise Impacts by Alignment**

Alignment	Receptor Type	Dist. to Track (ft) <sup>1</sup>	Train Speed (mph)	Existing Noise Level <sup>1</sup> (dBA) <sup>3</sup>	Project Noise Level <sup>1</sup> (dBA) <sup>4</sup>	Total Noise Level <sup>1</sup> (dBA) <sup>5</sup>	Noise Level Increase <sup>2</sup> (dB)			Number of Receptors Impacted	
							Predicted <sup>6</sup>	Impact Criteria			
								Mod.	Sev.	Mod.	Sev.
A	Cat. 2	90 to 890	20 to 55	56 to 63	57 to 61	59 to 65	1.7 to 5.3	1.6 to 2.8	4.1 to 6.4	75	0
	Cat. 3	0		0	0	0	0	0	0	0	0
B (part of the Preferred Alternative)	Cat. 2	65 to 890	20 to 50	56 to 66	57 to 74	59 to 75	1.5 to 11.4	1.3 to 3	3.5 to 6.9	150	8
	Cat. 3	450		56	63	64	7.4	5.8	10.7	1	0
C <sup>7</sup> (part of the Preferred Alternative)	Cat. 2	30 to 770	20 to 55	54 to 68	55 to 83	58 to 83	1.7 to 26.5	1.1 to 3.6	3 to 7.8	689 to 708	481 to 484
	Cat. 3	90 to 610		48 to 49	59 to 75	59 to 75	10.1 to 26	9.4 to 10.2	15.3 to 16.3	4	2
D1 <sup>8</sup> (part of the Preferred Alternative)	Cat. 2	30 to 260	20 to 55	51 to 58	54 to 69	56 to 69	2.9 to 11.9	2.4 to 4.6	5.8 to 9.4	49 to 56	40
	Cat. 3	40 to 115		45 to 50	57 to 64	58 to 64	12.4 to 14.2	9.1 to 12.1	14.9 to 18.6	2	0
D2	Cat. 2	30 to 410	20 to 45	53 to 67	50 to 67	57 to 69	1.5 to 14.4	1.2 to 3.9	3.2 to 8.4	320	40
	Cat. 3	15 to 80		44 to 62	62 to 67	62 to 68	6.5 to 17.9	4.1 to 13	8.2 to 19.7	2	0
D Common Section (part of the Preferred Alternative)	Cat. 2	100	20 to 35	64	61	66	1.8	1.5	4	18	0

<sup>1</sup> Distance to track is based on current alignment location data and has been rounded to the nearest five feet for this summary.

<sup>2</sup> Noise levels for land use category 2 are based on L<sub>dn</sub> and noise levels for land use category 3 are based on one-hour L<sub>eq</sub>; both are measured in dBA.

<sup>3</sup> Existing noise levels are the results of the ambient noise measurements conducted for the project.

<sup>4</sup> Project noise levels are exclusive of ambient noise levels, and includes project noise elements only.

<sup>5</sup> Total noise levels are the cumulative noise levels including both ambient and project noise elements.

<sup>6</sup> Predicted levels include LRV horn and bell noise and wayside crossing bells, where applicable.

<sup>7</sup> Impacts on Alignment C vary due to the use of horn at the 71st Avenue grade crossing with Alignment B and the bell with Alignment A. This assumption is based on speed.

<sup>8</sup> Impacts on Alignment D1 vary depending on use of the Golden Valley Road or Plymouth Avenue/Theodore Wirth Regional Park station options due to differences in speeds and noise sources at different locations on the corridor.

Source: HMMH Inc., 2012

### Alignment A

For Alignment A, no severe noise impact is predicted to occur and moderate noise impact is predicted to occur at 75 residences. There are generally a low number of impacts for this alignment option compared to other alignments due to a low number of noise-sensitive properties, although the presence of multi-family properties results in more residences affected. The impacts in this section are largely due to the use of the LRV high-horn audible warning device. Impacts are also caused by receiver proximity to both the track and to the wayside crossing signals.

### Alignment B (part of the Preferred Alternative)

For Alignment B, severe noise impact is predicted to occur at eight residences and moderate noise impact at 150 residences. Moderate noise impact is also predicted to occur at Prince of Peace Lutheran Church. The impacts in this section are largely due to receiver proximity to the track and wayside crossing signals, as well as proximity to crossovers.

### Alignment C (part of the Preferred Alternative)

For Alignment C, the total number of impacts differs depending on the north alignment option selected (Alignment A or B) as the assumed LRT speed at the 71st Avenue grade crossing is lower with Alignment A due to the proximity to the 71st Avenue station. The noise analysis assumes a bell will be sounded at the 71st Avenue grade crossing with Alignment A and a horn will be sounded with Alignment B. Severe noise impact is predicted to occur at up to 481 residences, and also at Robin Hotel, Doug Stanton Ministries, and Triangle Park. Moderate noise impact is predicted to occur at up to 689 residences, and also at Washburn McReavy Funeral Home, Sacred Heart Church and School, Welcome Park, and Lee Park. The impacts in this section are largely due to the use of the LRV high-horn audible warning device. Impacts are also caused by receiver proximity to the LRT track, the relocated BNSF rail line, and crossovers.

### Alignment D1 (part of the Preferred Alternative)

For Alignment D1, the total number of impacts differs depending on which LRT station option is selected -- the Golden Valley Road station option or the Plymouth Avenue/Theodore Wirth Regional Park station option. This variation is due to changes in LRT speed depending on station location. Severe noise impact is predicted to occur at 40 residences and moderate noise impact is predicted to occur at up to 56 residences, South Halifax Park, and The Family Partnership School. The impacts in this section are largely due to receiver proximity to the track and crossovers. The residential noise impacts occur east of the alignment because the properties to the east are closer to the track and there are fewer residences to the west as the corridor is positioned along Walter Sochacki Park and Theodore Wirth Regional Park.

### Alignment D2

For Alignment D2, severe noise impact is predicted to occur at 40 residences and moderate noise impact is predicted at 320 residences, North Memorial Medical Center and Outpatient Center, and NorthPoint Health and Wellness Center. The impacts in this section are largely due to receiver proximity to the track, crossovers, and track on aerial structure. No impact is predicted at KMOJ Radio Station. A greater number of moderate noise impacts is predicted on the west side of Penn Avenue (this includes homes that front on the east side of Queen Avenue with backyards adjacent to the transitway) than on the east due to the increase in future noise level predicted to result from the shift of Penn Avenue approximately 40 feet to the west. Impacts are due to both the removal of a row of homes facing Penn Avenue and the shift of Penn Avenue to the west.

### Alignment D Common Section (part of the Preferred Alternative)

For the Alignment D Common Section moderate noise impact is predicted to occur at 18 residences. The predicted impacts in this section are due to proximity to the track and crossovers. There are few impacts in this section due to higher existing noise levels in this area as the corridor nears downtown Minneapolis

and the placement of the alignment in the median of TH 55, which is a six-lane roadway along most of the alignment. There is also no predicted use of the high-horn in this section.

### Summary of Impacts by Alternative

**Table 5.6-5** summarizes the predicted noise impact assessment results by Build alternative.

**Table 5.6-5. Summary of Unmitigated Noise Impacts by Alternative**

Alternative	Total Number of Receptors with Moderate Noise Impact	Total Number of Receptors with Severe Noise Impact
<b>No-Build</b>	No noise impacts currently anticipated	
<b>Enhanced Bus/TSM</b>	No noise impacts currently anticipated	
<b>A-C-D1</b>	844 <sup>1</sup> 837 <sup>2</sup>	523
<b>A-C-D2</b>	1,108	523
<b>B-C-D1 (Preferred Alternative)</b>	939 <sup>1</sup> 932 <sup>2</sup>	534
<b>B-C-D2</b>	1,203	534

<sup>1</sup>With Golden Valley Road station option

<sup>2</sup>With Plymouth Avenue/Theodore Wirth Regional Park station option

Source: HMMH Inc., 2012

### Roadway Changes

There would be modifications to existing roadways due to the proposed Bottineau Transitway, which may affect future noise conditions. In particular, Penn Avenue on Alignment D2 would be shifted approximately 40 feet west, and the westbound lanes of TH 55 on Alignment D1 would be shifted approximately 60 feet north over a section approximately 800 feet in length. A noise analysis was conducted to determine the change in future noise levels for nearby sensitive receptors due to the roadway modifications. The noise analysis was based on measured noise levels from these roadways and future roadway alignments. The results indicate that roadway modifications would be expected to cause noise level increases of less than one dB, which would not substantially affect future noise conditions.

### Stations

Noise projections near stations include speed adjustments and consideration of horn and bell noise at these locations. Additional noise from park-and-ride locations has also been included in the noise projections. However, the additional noise from park-and-ride activity does not significantly contribute to the total project noise level at any receptor.

### OMF

The OMF option at the northernmost end of Alignment B at 101st Avenue is not predicted to cause noise impact at any noise-sensitive receptors. The closest receptor to this OMF option is Grace Fellowship church at approximately 1,300 feet from the center of OMF yard activity. The predicted  $L_{eq}$  from yard noise is approximately 45 dBA at this receptor, which results in no increase above the measured existing  $L_{eq}$  of 56 dBA at this location. For the OMF option on Alignment B at 93rd Avenue, the noise levels from yard activity is predicted to contribute to project noise levels at nearby receptors but is not predicted to cause impact.

### TPSS

TPSS have the potential to cause noise impact when they are located proximate to noise-sensitive receptors. The primary noise sources associated with substations are magnetostriction of the transformer core, which causes low-frequency tonal noise (hum), and cooling fans, which typically generate

broadband noise. At most, the potential for noise impacts from substations would be limited to noise-sensitive receptors located within 250 feet, which is the FTA noise impact screening distance for this source. The potential for noise impact from substations will be evaluated in a later phase of the project when sufficient details relating to their design and specific locations become available. Noise impact can be avoided by selecting TPSS sites that are not near noise-sensitive receptors or, if necessary, by including noise limits in the procurement documents.

#### **The Chalet at Theodore Wirth Regional Park**

The Chalet at Theodore Wirth Regional Park is an active-use recreational building. Much of the use in Theodore Wirth Regional Park is active recreational activity, aside from an area of picnic tables that has been included in the noise assessment and is predicted to experience no noise impact under the Build alternatives A-C-D1 and B-C-D1. Minneapolis Parks and Recreation Board, the agency with jurisdiction over Theodore Wirth Region Park, has concurred that the park is meant for active-use and therefore should not be considered for noise sensitive impacts. However, the change in noise level that would be experienced at The Chalet at Theodore Wirth Regional Park due to the project has been considered. The existing noise level measured over a one-hour period at The Chalet near the 10th Hole Tee was 55.4 dBA. According to FTA criteria, a noise level increase due to the project of 6.2 dBA would be the threshold for moderate impact at this location. The future noise level due to the project at this location would be 55.5 dBA with either the Golden Valley Road station option or the Plymouth Avenue/Theodore Wirth Regional Park station option. In either case, virtually no increase in noise level would be experienced at The Chalet under Build alternatives A-C-D1 and B-C-D1.

#### **5.6.4.2 Construction Phase Impacts**

Project-generated construction noise is subject to requirements of local noise ordinances in the following cities in the Bottineau Transitway corridor:

- Minneapolis - Construction/demolition noise is allowed 7:00 a.m. to 6:00 p.m., Monday through Friday. An [After-Hours Work Permit](#) is required for work anytime on Saturday or Sunday.
- Golden Valley – Construction noise is limited to the hours of 7:00 a.m. to 10:00 p.m.
- Robbinsdale – No specific ordinance relative to construction noise
- Crystal - Operating power equipment or machinery is allowed from 7:00 a.m. to 10:00 p.m. on weekdays and 9:00 a.m. to 9:00 p.m. on weekends and holidays.
- Brooklyn Park – Construction noise is limited to the house of 7:00 a.m. to 10:00 p.m.
- Maple Grove - Within 500 feet of any residentially zoned property, construction activities involving the use of manual tools, movement of equipment or power equipment are not allowed at any time other than between the hours of 7:00 a.m. and 9:00 p.m. on weekdays, and 8:00 a.m. and 9:00 p.m. on public holidays, Saturdays, and Sundays.

#### **No-Build Alternative**

No construction-related noise impacts of the Bottineau Transitway are anticipated to result from the No-Build alternative.

#### **Enhanced Bus/TSM Alternative**

No construction-related noise impacts of the Bottineau Transitway are anticipated to result from the Enhanced Bus/TSM alternative.



## Build Alternatives

Temporary noise impacts could result from activities associated with the construction of new tracks and stations, utility relocation, grading, excavation, track work, demolition, and installation of systems components. Such impacts may occur in residential areas and at other noise-sensitive land uses located within several hundred feet of the alignment. The potential for noise impact would be greatest at locations near pile-driving operations for bridges and other structures, pavement breaking, and at locations close to any nighttime construction work.

Construction noise varies greatly depending on the construction process, type and condition of equipment used, and layout of the construction site. Many of these factors are traditionally left to the contractor's discretion. Overall, construction noise levels are governed primarily by the noisiest pieces of equipment. For most construction equipment, the engine, which is usually diesel, is the dominant noise source. This is particularly true of engines without sufficient muffling. For activities such as impact pile driving and pavement breaking, the predominant noise is that generated by the actual process.

**Table 5.6-6** summarizes some available data on noise emissions of construction equipment from the FTA guidance manual, in terms of averages of the L<sub>max</sub> values at a distance of 50 feet. Although the noise levels in the table represent typical values, there can be wide fluctuations in the noise emissions of similar equipment. Construction noise exposure at a given noise-sensitive location depends on the magnitude of noise during each construction phase, the duration of the noise, and the distance from the construction activities.

**Table 5.6-6. Construction Equipment Noise Emission Levels**

Equipment Type	Typical Sound Level at 50 ft. (dBA)
Backhoe	80
Bulldozer	85
Compactor	82
Compressor	81
Concrete Mixer	85
Concrete Pump	82
Crane, Derrick	88
Crane, Mobile	83
Loader	85
Pavement Breaker	88
Paver	89
Pile Driver, Impact	101
Pump	76
Roller	74
Truck	88

Source: Federal Transit Administration, 2006

Projecting construction noise exposure requires an understanding of the equipment likely to be used, the duration of its use, and the way it may be used by an operator (e.g., the percentage of time during operating hours that the equipment operates under full power during each phase). Using typical sound emission characteristics, as given in **Table 5.6-6**, it is possible to estimate L<sub>eq</sub> or L<sub>dn</sub> at various distances from the construction site.

The noise impact assessment for a construction site is based on:

- An estimate of the type of equipment that would be used during each phase of the construction and the average daily duty cycle for each category of equipment

- Typical noise emission levels for each category of equipment such as those in [Table 5.6-6](#)
- Estimates of noise attenuation as a function of distance from the construction site

[Table 5.6-7](#) is an example of the noise projections for equipment that is often used during tie-and-ballast track construction. For the calculations, it is assumed that all the equipment is located at the geometric center of the construction work site. Based on this scenario, an eight-hour  $L_{eq}$  of 88 dBA would be expected at a distance of 50 feet from the geometric center of the work site. This calculation in [Table 5.6-7](#) does not assume any noise mitigation measures or any limits on the contractor about how much noise can be made. With at-grade track construction, the duration of the activities at a specific location along the alignment would be relatively limited, usually a matter of several weeks. As a result, even when there may be noise impacts, the limited duration of the construction can mean that mitigation is not cost effective.

**Table 5.6-7. Typical Equipment List, At-Grade Track Construction**

Equipment Item	Typical Maximum Sound Level at 50 ft. (dBA)	Equipment Utilization Factor (%)	$L_{eq}$ (dBA)
Air Compressor	83	50%	80
Backhoe	80	40%	76
Crane, Derrick	82	10%	72
Dozer	85	40%	81
Generator	81	80%	80
Loader	85	40%	81
Pavement Breaker	84	4%	70
Shovel	80	40%	76
Dump Truck	88	16%	80
<b>Total Workday <math>L_{eq}</math> at 50 feet (8-hour workday)</b>			<b>88</b>

Source: HMMH Inc., 2012

Based on the criteria in Section 3.1.3 of the Noise and Vibration Technical Report (HMMH, Inc., 2012) and the noise projections in [Table 5.6-7](#), and assuming that construction noise is reduced by six decibels for each doubling of distance from the center of the site, screening distances for potential track construction noise impact can be estimated. These estimates suggest that the potential for track construction noise impact would be minimal for commercial and industrial land use, with impact screening distances of 70 feet and 40 feet, respectively. Even for residential land use, the potential for temporary track construction noise impact would be limited to locations within about 125 feet of the corridor. However, the potential for noise impact from nighttime track construction could extend to residences as far as 400 feet.

### 5.6.5 Avoidance, Minimization and/or Mitigation Measures

To mitigate noise impact from train operations, noise control can be considered at the source, along the sound path, or at the receiver. Potential mitigation measures for reducing noise impacts from the proposed project operations in terms of source, path, and receiver are described in [Table 5.6-8](#).

Noise mitigation is considered depending on the need, feasibility, reasonableness, and effectiveness of potential options. The FTA states that in considering potential noise impact, severe impacts should be mitigated if at all practical and effective. At the moderate impact level, more discretion should be used, and other project-specific factors should be included in considering the need for mitigation. These factors include the existing noise level, predicted increase over the existing noise levels, the types and number of noise-sensitive land uses affected, the noise sensitivity of the properties, the acoustic effectiveness of mitigation options, and the cost-effectiveness of mitigating the noise.

**Table 5.6-8. Potential Noise Mitigation Measures for Operational Impacts**

Mitigation Location	Mitigation Option	Description
<b>Source</b>	Establishment of Quiet Zones	An effective option for mitigating noise impacts along the alignment would be to establish “quiet zones” near at-grade crossings. Quiet zones would need to be established in accordance with FRA regulations. In quiet zones, because of safety improvements at the at-grade crossings, train operators would sound horns only in emergency situations rather than as a standard operating procedure. Establishing quiet zones would require cooperative action among the municipalities along the corridor, Minnesota DOT, FRA, BNSF, and the transit agency. The municipalities are key participants in the process, as they must initiate the request to establish quiet zones through application to the FRA. To meet safety criteria, the municipalities may also be required to provide improvements at grade crossings such as modifications to the streets, raised medians, warning lights, and other devices. The FRA regulation also authorizes the use of automated wayside horns at crossings along with flashing lights and gates as a substitute for the train horn. While activated by the approach of trains, these devices are pole-mounted at the grade crossing, thereby limiting the horn noise exposure area to the immediate vicinity of the crossing.
	Modified Use of Audible Warning Devices	An approach for mitigating noise impacts due to LRV and wayside audible warning devices (e.g., horns and bells) would be to modify the design, settings, or use of these devices.
	Special Trackwork	Turnouts are a major source of noise impact when they are located in sensitive areas. If turnouts cannot be relocated away from sensitive areas, other methods can be used to reduce noise impacts such as the use of spring-rail, flange-bearing, or moveable-point frogs in place of standard rigid frogs at turnouts. These devices allow the flangeway gap to remain closed in the main traffic direction for revenue service trains.
	Wheel/Rail Lubrication	There are several options to mitigate potential wheel squeal from small-radius curves, including on-board solid-stick rail lubrication and wayside rail lubrication. Automated wayside top-of-rail friction modifier systems put a small amount of lubricant onto the top of the rail, which maintains a constant coefficient of friction. This type of lubricant has been shown to reduce or eliminate the potential for wheel squeal.
<b>Path</b>	Noise Barriers	This is a common approach to reducing noise impacts from surface transportation sources. The primary requirements for an effective noise barrier are that the barrier must be high enough and long enough to break the line-of-sight between the sound source and the receiver, be of an impervious material with a minimum surface density of four lb/sq. ft., and not have any gaps or holes between the panels or at the bottom. Because numerous materials meet these requirements, the selection of materials for noise barriers is usually dictated by aesthetics, durability, cost, and maintenance considerations. Noise barriers for transit projects typically range in height from eight feet to twelve feet.

**Table 5.6-8. Potential Noise Mitigation Measures for Operational Impacts (continued)**

Mitigation Location	Mitigation Option	Description
Receiver	Building Sound Insulation	Sound insulation of residences and institutional buildings to improve the outdoor-to-indoor noise reduction has been widely applied around airports and in some situations for transit projects. Although this approach has no effect on noise in exterior areas, it may be the best choice for sites where noise barriers are not feasible or desirable and for buildings where indoor sensitivity is of most concern. Substantial improvements in building sound insulation (of 5 to 10 dBA) can often be achieved by adding an extra layer of glazing to the windows, by sealing any holes in exterior surfaces that act as sound leaks, and by providing forced ventilation and air-conditioning so that windows do not need to be opened.

Source: HMMH Inc., 2012

More specific potential noise mitigation measures associated with each alignment are summarized in [Table 5.6-9](#). The table includes the number of impacted receptors that could be benefitted with the implementation of the primary potential mitigation measures listed, as well as the number of noise impacts that would remain. The potential mitigation strategies will be further evaluated in subsequent engineering to determine their feasibility and reasonableness, considering factors such as safety impacts, cost effectiveness, and acceptability to the community.



Table 5.6-9. Potential Noise Mitigation Measures by Alignment

Alignment	Primary Potential Mitigation Measure <sup>1</sup>	Receptors Benefitted with Primary Potential Mitigation Measure	Remaining Noise Impacts		Discussion
			Moderate	Severe	
A	Quiet Zones	65 to 70	5 to 10	0	Potential mitigation could include the implementation of quiet zones from 73rd Avenue to 40th Avenue, sound insulation, and modification to the design, settings, or use of audible warning devices.
B (part of the Preferred Alternative)	Quiet Zones	90 to 95	55 to 60	5 to 10	Potential mitigation could include the implementation of quiet zones from 73rd Avenue to 40th Avenue, sound insulation, and modification to the design, settings, or use of audible warning devices.
C <sup>2</sup> (part of the Preferred Alternative)	Quiet Zones, Noise Barriers, Crossover Mitigation	800 to 830	350 to 355	15 to 20	Potential mitigation could include the implementation of quiet zones from 73rd Avenue to 40th Avenue, modifying or relocating crossovers located between 39th Avenue North and 37th Avenue North, and the potential installation of two noise barriers on the east side of the alignment between Corvallis Avenue North and West Broadway Avenue and between 40th Avenue North and 34th Avenue North. Further potential mitigation includes modifications to the design, settings, and use of audible warning devices at grade crossings, additional noise barriers, or sound insulation.
D1 <sup>3</sup> (part of the Preferred Alternative)	Noise Barriers	70 to 75	25 to 35	0 to 5	Potential mitigation could include three noise barriers on the east side of the alignment between 34th Avenue North and 31 ½ Avenue North, 27th Avenue North and Golden Valley Road, and North Oak Park Avenue and TH 55. Further potential mitigation includes additional noise barriers, sound insulation or modifications to the design, settings or use of audible warning devices.

**Table 5.6-9. Potential Noise Mitigation Measures by Alignment (continued)**

Alignment	Primary Potential Mitigation Measure <sup>1</sup>	Receptors Benefitted with Primary Potential Mitigation Measure	Remaining Noise Impacts		Discussion
			Moderate	Severe	
<b>D2</b>	Noise Barriers, Crossover Mitigation	45 to 50	305 to 310	5 to 10	Potential mitigation could include the installation of a noise barrier on the south side of the alignment between France Avenue North and Abbott Avenue North, as well as modification or relocation of crossovers between 30th Avenue North and 29th Avenue North. Further potential mitigation includes additional noise barriers, sound insulation or modifications to the design, settings or use of audible warning devices.
<b>D Common Section (part of the Preferred Alternative)</b>	—	0	15 to 20	0	Potential mitigation could include sound insulation or relocating or modifying crossovers.

<sup>1</sup> Potential mitigation strategies will be further evaluated during subsequent phases of engineering to determine their feasibility and reasonableness, considering factors such as safety impacts, cost effectiveness, and acceptability to the community.

<sup>2</sup> Properties on C vary depending on the north alignment selected (A or B).

<sup>3</sup> Properties on D1 vary depending on use of the Golden Valley Road or Plymouth Avenue/Wirth Park station options due to differences in speeds and noise sources at different locations on the corridor.

Source: HMMH Inc., 2012

Construction activities would be carried out in compliance with all applicable local noise regulations. A variety of best management practices for noise mitigation will be included in construction contract specification in order to reduce noise effects during construction. These may include:

- Avoiding nighttime (10 p.m. to 7 a.m.) construction in residential neighborhoods
- Using specially quieted equipment with enclosed engines and/or high-performance mufflers
- Requiring all equipment to comply with pertinent EPA equipment noise standards
- Locating stationary construction equipment as far as possible from noise-sensitive sites
- Constructing noise barriers, such as temporary walls or piles of excavated material, between noisy activities and noise-sensitive receivers
- Re-routing construction-related truck traffic along roadways that would cause the least disturbance to residents
- Notifying nearby residents and community stakeholders whenever extremely noisy construction work would occur
- Avoiding impact pile driving near noise-sensitive areas, where possible. Drilled piles or the use of a sonic or vibratory pile driver are quieter alternatives where the geological conditions permit their use. If impact pile drivers must be used, their use would be limited to the periods between 8:00 a.m. and 5:00 p.m. on weekdays.
- Conducting noise monitoring during construction to verify compliance with the limits

## 5.7 Vibration

Information included within this section is based on the information provided in the Noise and Vibration Technical Report (HMMH, Inc., 2012).

### 5.7.1 Regulatory Context and Methodology

#### 5.7.1.1 Regulatory Context

Vibration impact has been assessed according to guidelines specified in FTA's *Transit Noise and Vibration Impact Assessment* guidance manual (FTA Report FTA-VA-90-1003-06, May 2006). This section describes the methodology for assessing potential impact from proposed transit projects such as the Bottineau Transitway Project.

#### 5.7.1.2 Methodology

The methodology for assessing potential long-term vibration impact from transit operations includes:

- Identification of vibration-sensitive land uses within the area of potential effect of the proposed project
- Measurement and characterization of existing vibration conditions at these receptors
- Projections of future vibration levels from transit operations for future Build alternatives
- Assessment of potential long-term vibration impact
- Recommendations for vibration mitigation

The guidance manual also includes the methodology for predicting and assessing potential short-term vibration impact from construction activities. The approach to assessing potential impact from

construction activities is more general than for transit operations since specific construction equipment and methods depend on the contractor's approach and are not typically defined at this stage of the project.

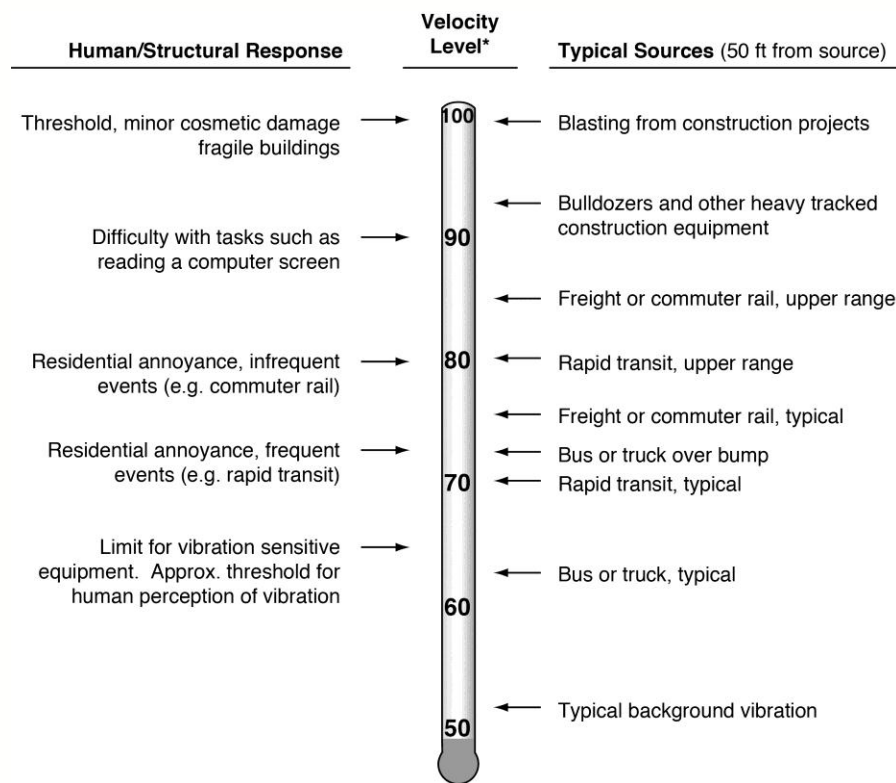
### Ground-Borne Noise and Vibration Fundamentals and Descriptors

Vibration consists of oscillatory waves that generate from the source through the ground to adjacent buildings, and is typically called ground-borne vibration (GBV). Two types of vibration were analyzed for the Bottineau Transitway – vibrations from the operation of the Build alternatives, and vibration that would occur during project construction.

Vibration velocity is usually given in terms of either inches per second or decibels. This analysis utilizes the abbreviation VdB for vibration decibels to minimize confusion with sound decibels.

**Figure 5.7-1** illustrates human and building response to different levels of vibration in VdB. Existing background building vibration is usually in the range of 40 to 50 VdB, which is well below the range of human perception.

**Figure 5.7-1. Typical Ground-Borne Vibration Levels<sup>22</sup>**



\* RMS Vibration Velocity Level in VdB relative to  $10^{-6}$  inches/second

Ground-borne noise (GBN) is perceived as a low frequency rumble and is produced when GBV propagates into a room and radiates noise from the motion of the surfaces. Airborne noise often masks GBN for at-grade and elevated rail systems. Ground-borne noise criteria were applied only to buildings with sensitive interior spaces that are well insulated from exterior noise for the above-ground Bottineau Transitway.

<sup>22</sup> Source: FTA, 2006



## Vibration Impact Criteria

### *Vibration-Sensitive Land Use Categories*

The FTA manual classifies vibration-sensitive land uses into the same three categories as noise. However, since vibration is only assessed inside buildings, outdoor land uses are not considered to be sensitive. In addition to the potential for human annoyance from vibration, vibration impact is also assessed to evaluate potential interference with the use of certain sensitive equipment and interior spaces and to evaluate the potential for damage to building structures.

- **Vibration Category 1:** High Sensitivity: Included in this category are buildings where vibration would interfere with operations. Vibration levels may be well below those associated with human annoyance. These buildings include vibration-sensitive research and manufacturing facilities, hospitals with sensitive equipment, and university research operations. The sensitivity to vibration is dependent on the specific equipment present. Some examples of sensitive equipment include electron-scanning microscopes, magnetic resonance imaging scanners, and lithographic equipment.
- **Vibration Category 2:** Residential: Residences and buildings where people normally sleep. This category includes homes, hospitals, and hotels.
- **Vibration Category 3:** Institutional: This category includes buildings with primarily daytime and evening use. This category includes schools, libraries, and churches.

There are some buildings, such as concert halls, recording studios, and theaters, that can be very sensitive to noise and/or vibration but do not fit into any of the three categories. Due to the sensitivity of these buildings, they usually warrant special attention during the environmental assessment of a transit project.

### *Vibration Impact Criteria*

The FTA vibration and GBN impact criteria are based on land use and train frequency, as shown in [Table 5.7-1](#). [Table 5.7-2](#) gives criteria for acceptable levels of GBV and GBN for various types of special buildings.

**Table 5.7-1. Ground-Borne Noise and Vibration Impact Criteria**

Land Use Category	Ground-Borne Vibration Impact Criteria (VdB re: 1 micro-inch per second)			Ground-Borne Noise Impact Criteria (dBA re: 20 micro-Pascal)		
	Frequent Events <sup>1</sup>	Occasional Events <sup>2</sup>	Infrequent Events <sup>3</sup>	Frequent Events <sup>1</sup>	Occasional Events <sup>2</sup>	Infrequent Events <sup>3</sup>
<b>Category 1:</b> Buildings where low ambient vibration is essential for interior operations	65 VdB <sup>4</sup>	65 VdB <sup>4</sup>	65 VdB <sup>4</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>
<b>Category 2:</b> Residences and buildings where people normally sleep	72 VdB	75 VdB	80 VdB	35 dBA	38 dBA	43 dBA
<b>Category 3:</b> Institutional land uses with primarily daytime use	75 VdB	78 VdB	83 VdB	40 dBA	43 dBA	48 dBA

<sup>1</sup> "Frequent Events" is defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.

<sup>2</sup> "Occasional Events" is defined as 30-70 vibration events of the same kind per day; typical of most commuter rail trunk lines.

<sup>3</sup> "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day; this includes most commuter rail branch lines.

<sup>4</sup> This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration sensitive manufacturing or research would require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.

<sup>5</sup> Vibration-sensitive equipment is generally not sensitive to ground-borne noise.

Source: FTA, 2006

**Table 5.7-2. Ground-Borne Noise and Vibration Impact Criteria for Special Buildings**

Type of Building or Room	Ground-Borne Vibration Impact Criteria (VdB re: 1 micro-inch per second)		Ground-Borne Noise Impact Criteria (dBA re: 20 micro-Pascals)	
	Frequent Events	Occasional or Infrequent Events	Frequent Events	Occasional or Infrequent Events
<b>Concert Halls</b>	65 VdB	65 VdB	25 dBA	25 dBA
<b>TV Studios</b>	65 VdB	65 VdB	25 dBA	25 dBA
<b>Recording Studios</b>	65 VdB	65 VdB	25 dBA	25 dBA
<b>Auditoriums</b>	72 VdB	80 VdB	30 dBA	38 dBA
<b>Theatres</b>	72 VdB	80 VdB	35 dBA	43 dBA

Source: Federal Transit Administration, 2006.

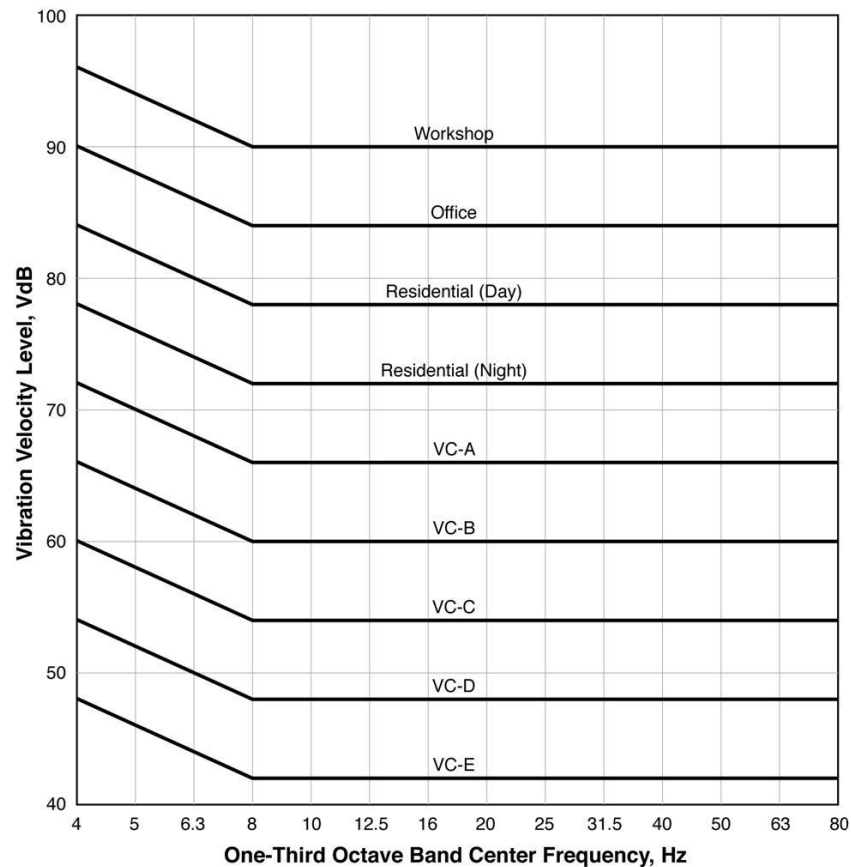
In addition to the criteria provided in [Table 5.7-1](#) and [Table 5.7-2](#) for general assessment purposes, FTA has established more specific criteria for use in detailed analyses. [Table 5.7-3](#) and [Figure 5.7-2](#) show the more detailed vibration criteria and the description of their use.

**Table 5.7-3. FTA Criteria for Detailed Vibration Analysis**

Criterion Curve	Maximum Vibration Level (VdB re: 1 micro-inch per second)	Description of Use
<b>Workshop</b>	90	Distinctly feelable vibration; appropriate to workshops and non-sensitive areas
<b>Office</b>	84	Feelable vibration; appropriate to offices and non-sensitive areas
<b>Residential Day</b>	78	Barely feelable vibration; adequate for computer equipment and low-power optical microscopes (up to 20X)
<b>Residential Night, Operating Rooms</b>	72	Vibration not feelable but ground-borne noise may be audible inside quiet rooms; suitable for medium-power optical microscopes (100X) and other equipment of low sensitivity
<b>VC-A</b>	66	Adequate for medium- to high-power optical microscopes (400X), microbalances, optical balances, and similar specialized equipment
<b>VC-B</b>	60	Adequate for high-power optical microscopes (1000X), inspection and lithography equipment to three micron line widths
<b>VC-C</b>	54	Appropriate for most lithography and inspection equipment to one micron detail size
<b>VC-D</b>	48	Suitable in most instances for the most demanding equipment, including electron microscopes operating to the limits of their capability
<b>VC-E</b>	42	The most demanding criterion for extremely vibration-sensitive equipment

Source: FTA, 2006

Figure 5.7-2. FTA Criteria for Detailed Vibration Analysis<sup>23</sup>



In accordance with FTA guidance, the existing vibration conditions in the corridor have been used to determine the assessment approach for sensitive receptors within an existing freight rail corridor. Because the BNSF railroad corridor in the study area is infrequently-used (fewer than five trains per day), the same approach is used to assess vibration impact for LRT operations as would be used for an alignment not within an existing rail corridor, and the FTA criteria for a detailed vibration analysis are applied. However, potential vibration impact due to the future shift of the BNSF railroad freight operations is assessed separately. For this scenario, the FTA criteria for a general vibration assessment are applied to both the existing and predicted future vibration levels from the freight activity and impact is identified based on the following guidelines:

- If the existing freight vibration levels exceed the general assessment criteria, impact is only identified if the future freight vibration levels are more than three VdB greater than the existing levels.
- If the existing freight vibration levels do not exceed the general criteria, impact is identified if the future freight vibration levels exceed the general assessment criteria.

#### Construction Vibration Impact Criteria

In addition to GBV criteria for humans in residential, institutional, and special buildings and for vibration-sensitive equipment, there are GBV criteria for potential damage to structures. The limits of vibration that structures can withstand are substantially higher than those that affect humans and sensitive equipment.

<sup>23</sup> Source: FTA, 2006

Table 5.7-4 presents the FTA criteria for assessing the potential for vibration damage to structures based on the type of building construction.

**Table 5.7-4. FTA Vibration Criteria for Potential Structural Damage**

Building Category	PPV (in/sec)	Approximate $L_v$ <sup>1</sup>
I. Reinforced-concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

<sup>1</sup> RMS velocity in VdB re: 1 micro-inch/second  
Source: FTA, 2006

#### Vibration Impact Assessment Methodology

The assessment of vibration impact resulting from the Bottineau Transitway Project was based on the following assumptions:

- All modeling projections are consistent with the methodology in the detailed assessment chapters of FTA's *Transit Noise and Vibration Impact Assessment* guidance manual (May 2006).
- Vibration-sensitive land use in the corridor was determined based on parcel data, aerial imagery, and windshield surveys in the field.
- LRT speeds were provided by the project team at 100-foot increments along the corridor. Speeds range from 20 mph to 55 mph along the corridor, and the same speed profile was used for both directions of travel.
- LRT operations were assumed to use three-car trains.
- The operating hours and service frequencies for LRT mode were assumed to be consistent with Metro Transit's Blue Line. For the vibration impact assessment, this assumed schedule corresponds to the criteria for "Frequent Events."
- Locations of aerial structures, crossovers, and embedded track were identified based on conceptual engineering plans available at the time of the assessment.
  - Vibration level increases of up to 10 VdB are assumed for receptors near crossover locations.
  - A vibration level reduction of 10 VdB are assumed for receptors near aerial structures.
  - Structure elevations were based on profile information provided.
- Reference Levels:
  - Vehicle vibration force density levels measured on the Blue Line and reported in *Vibration Measurements and Predictions for Central Corridor LRT Project* (ATS Consulting, 2008) were used in this assessment.
  - A safety factor of three vibration decibels (VdB) was included in the projected vibration levels.
- Assumed property acquisitions were not counted as potential vibration impacts.



- Vibration levels from BNSF freight trains were modeled using the FTA General Vibration Assessment methodology. Maximum vibration levels from diesel locomotive-hauled trains were assumed to follow the Locomotive Powered Passenger or Freight curve in Figure 10-1 of the FTA guidance manual.

Because construction of the Bottineau Transitway in Alignments C and D1 would require the existing BNSF rail line to be shifted to the west, the effect of moving freight operations relative to vibration-sensitive receivers was included in the vibration impact analysis. The prediction of freight train vibration was based on the following assumptions:

- Baseline freight train operations include one daily round trip during the daytime hours.
- All freight trains include two locomotives and 20 cars and operate at a speed of 20 mph.
- The shifted BNSF railroad track will be updated from jointed rail to CWR.
- Wheel impacts at track joints cause vibration level increases of five VdB.

#### Vibration Measurement Locations and Procedures

Vibration propagation measurements were conducted in the project area from May 14 through May 18, 2012.

Vibration propagation testing was performed at eight locations, as shown on [Figure 5.7-3](#). Measurement sites were selected to be representative of the different areas with vibration-sensitive receptors proximate to the proposed project.

#### 5.7.2 Study Area

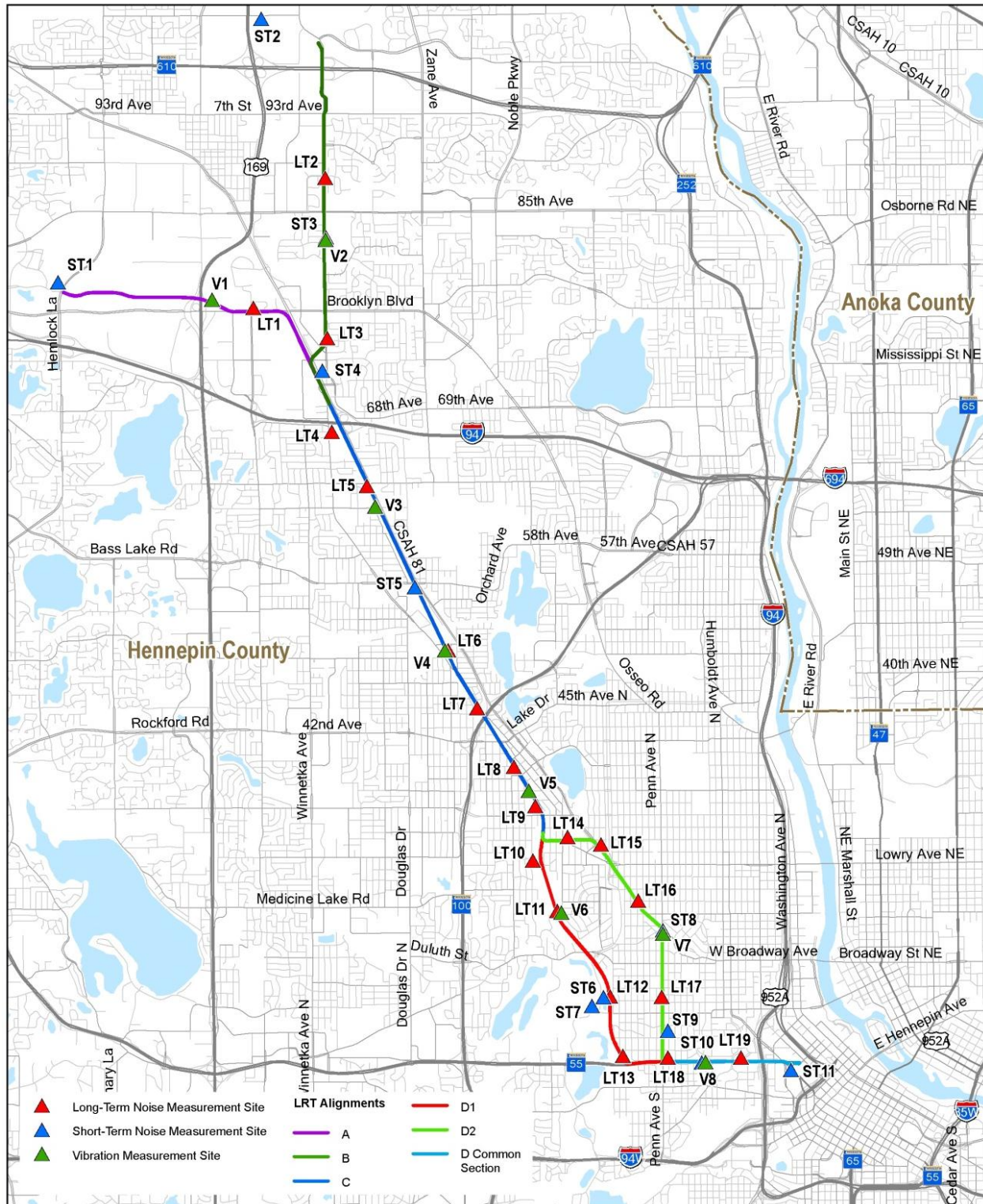
The study area for vibration is based on the screening distances provided in Chapters 4 and 9 of the FTA guidance manual *Transit Noise and Vibration Impact Assessment* (May 2006). Screening distances provided in the FTA manual are based on typical project conditions and were adjusted based on the specific conditions of the Bottineau Transitway Project. All vibration-sensitive land uses within the relevant screening distances were reviewed to identify locations where impacts may possibly occur. Typical screening distances provided by the FTA for light rail transit projects are given in [Table 5.7-5](#).

**Table 5.7-5. FTA Screening Distances for Vibration Assessments**

Type of Project	Critical Distance for Land Use Categories <sup>1</sup> Distance from Right-of-Way or Property Line (ft)		
	Category 1	Category 2	Category 3
Light Rail Transit	450	150	100

<sup>1</sup> The land-use categories are defined in Section 5.6.1.2. Other vibration-sensitive land uses are included in Table 5.6-5. For the screening procedure, vibration sensitive land uses such as TV and radio studios are evaluated as Category 1 receptors.  
Source: FTA, 2006

Figure 5.7-3. Noise and Vibration Measurement Locations



The measurement site locations are shown in [Figure 5.6-6](#). [Table 5.7-6](#) describes the locations of the vibration propagation test sites.

**Table 5.7-6. Ground-Borne Vibration Propagation Measurement Locations**

Measurement Site No.	Alignment	Measurement Location Description
V-1	A	Hennepin Technical College Parking Lot, Brooklyn Park: represents the soil vibration propagation characteristics of the Maple Grove and Brooklyn Park area on Alignment A
V-2	B (part of the Preferred Alternative)	North Hennepin Community College Parking Lot, Brooklyn Park: represents characteristics of the Brooklyn Park area on Alignment B
V-3	C (part of the Preferred Alternative)	6801 62nd Avenue North Adjacent Roadway, Crystal: represents characteristics on Alignment C in Crystal between Interstate 94/694 and 56th Avenue North
V-4	C (part of the Preferred Alternative)	Doyle's Lanes Parking Lot, Crystal: represents the characteristics on Alignment C in Crystal between 56th Avenue North and TH 100 North
V-5	C (part of the Preferred Alternative)	Lee Park, Robbinsdale: represents the characteristics on Alignment C in Robbinsdale between TH 100 North and 34th Avenue North
V-6	D1 (part of the Preferred Alternative)	26th Avenue North and Kewanee Way on Roadway, Golden Valley: represents characteristics on Alignment D1 in Golden Valley between 34th Avenue North and TH 55
V-7	D2	KMOJ Radio Station Parking Lot, Minneapolis: represents characteristics on Alignment D2 in Minneapolis between 34th Avenue North and TH 55
V-8	D Common Section (part of the Preferred Alternative)	Harrison Park Adjacent Roadway, Minneapolis: represents characteristics on the Alignment D Common Section in Minneapolis along TH 55

Source: HMMH Inc., 2012

### 5.7.3 Affected Environment

The Bottineau Transitway Build alternative alignments are located in suburban and urban areas in the greater Minneapolis metropolitan area. The existing vibration environment and sensitive land uses vary among the alignments and are described below by alignment option.

#### Alignment A

This alignment is located along CSAH 130. Existing sources of vibration are limited to vehicular traffic on local roadways. Vibration-sensitive land use includes Arbor Lakes Senior Living, Hennepin Technical College, and several single- and multi-family residences near Boone Avenue North.

#### Alignment B (part of the Preferred Alternative)

This alignment is located along CSAH 103 and CSAH 130. Existing sources of vibration are limited to vehicular traffic on local roadways. Vibration-sensitive land use includes North Hennepin Community College, Step by Step Montessori School, and several single- and multi-family residences north and south of CSAH 109. Vibration-sensitive equipment exists at two commercial properties on this alignment, Northwest EMC and Genmab.

### Alignment C (part of the Preferred Alternative)

This alignment is located within the BNSF railroad corridor from 73rd Avenue North in Brooklyn Park to 36th Avenue North in Robbinsdale. The alignment is located along CSAH 81 starting from the north, and then shifts to run along West Broadway Avenue after crossing the CP railroad tracks. This alignment also passes by Crystal Airport. Existing sources of vibration are limited to vehicular traffic on local roadways and freight train operations on the BNSF railroad. Vibration-sensitive land use includes single- and multi-family residences, schools, churches, and several hotels.

### Alignment D1 (part of the Preferred Alternative)

This alignment is located within the BNSF railroad corridor. The alignment turns east along TH 55 until it reaches downtown Minneapolis. Existing sources of vibration are limited to vehicular traffic on local roadways and freight train operations on the BNSF railroad. Vibration-sensitive land use includes single- and multi-family residences, schools, churches, hotels, and Sumner Library.

### Alignment D2

This alignment runs along CSAH 81 and Penn Avenue and then turns east along TH 55 until it reaches downtown Minneapolis. Existing sources of vibration are limited to vehicular traffic on local roadways. North Memorial Medical Center, NorthPoint Health and Wellness Center, and KMOJ Radio Station are vibration-sensitive land uses that are adjacent to this alignment. Other vibration-sensitive land use includes single- and multi-family residences, schools, churches, hotels, and Sumner Library.

## 5.7.4 Environmental Consequences

### 5.7.4.1 Operating Phase (Long-Term) Impacts

#### No-Build Alternative

While there would be some changes in bus traffic on existing roadways due to other future No-Build transit improvements, these would not significantly affect the existing vibration levels. Thus, no vibration impacts are anticipated within the Bottineau Transitway study area for the No-Build alternative.

#### Enhanced Bus/TSM Alternative

Similar to the No-Build alternative, no significant vibration impacts would occur within the Bottineau Transitway study area for the Enhanced Bus/TSM alternative.

#### Build Alternatives

Maximum ground-borne vibration levels were projected at each of the eight test sites for LRT trains operating at 55 mph (the maximum speed along the corridor) on ballast and tie track, without special trackwork and without any adjustment for vibration coupling between the ground and building foundations. The results show that, beyond approximately 100 feet from the track, the projected maximum vibration levels for light rail trains at the maximum operating speed are all below the FTA residential impact criterion of 72 VdB. Detailed vibration projections at each measurement site are included in Appendix E of the Noise and Vibration Technical Report (HMMH, Inc., 2012).

**Table 5.7-7** summarizes the results of the GBV impact assessment by alignment option for FTA Category 2 (residential) receptors. No Category 3 receptors are impacted by GBV. The table also lists the distance to the near track, and the projected LRT speed at each location. In addition, the predicted project GBV level and the impact criterion level are indicated along with the number of impacts projected for each receptor or receptor group.



**Table 5.7-7. Summary of Ground-Borne Vibration Impacts by Alignment**

Alignment	Receptor Type	Distance to Track (ft) <sup>1</sup>	Train Speed (mph)	Maximum Vibration Velocity Level (VdB) in any 1/3-Octave Band from 4 Hz to 200 Hz <sup>2</sup>		Number of Receptors with GBV Impact
				Projected Vibration Velocity Level	Vibration Impact Criterion	
A <sup>3</sup>	Cat. 2	90	20 to 55	52	72	0
B <sup>3</sup> (part of the Preferred Alternative)	Cat. 2	80	20 to 50	69	72	0
C (part of the Preferred Alternative)	Cat. 2	30 to 80	20 to 55	72 to 90	72	51
D1 <sup>3</sup> (part of the Preferred Alternative)	Cat. 2	60	20 to 55	68	72	0
D2 <sup>3</sup>	Cat. 2	50	20 to 45	71	72	0
D Common Section <sup>3</sup> (part of the Preferred Alternative)	Cat. 2	100	20 to 35	59	72	0

<sup>1</sup> Distance to track is based on current alignment location data and has been rounded to the nearest five feet for this summary.

<sup>2</sup> GBV levels are measured in VdB referenced to 1 µ-in/sec.

<sup>3</sup> Data are for the closest non-impacted residential receptor. There are no vibration impacts in this section.

Source: HMMH Inc., 2012

The GBV impacts for each alignment are discussed below. Figures 12 through 40 in [Appendix G](#) show the locations of projected vibration impacts. The vibration impact figures only show locations of the Bottineau Transitway where impact is projected to occur.

#### Alignment A

Vibration-sensitive receptors adjacent to this alignment are generally no closer than about 85 feet from the near track centerline. No GBV impacts are predicted to occur with this alignment. The maximum vibration velocity level predicted from an LRV passing by the closest receptor (LRT passby) is 52 VdB.

#### Alignment B (part of the Preferred Alternative)

Vibration-sensitive receptors adjacent to this alignment are generally no closer than about 65 feet from the near track centerline. No GBV impacts are predicted to occur with this alignment. The maximum vibration velocity level predicted from LRV passbys at the closest receptor is 69 VdB. In addition, GBV and GBN levels were assessed at Northwest EMC, Genmab, and the Science Building of North Hennepin Community College based on the FTA criteria. No GBV or GBN impact is predicted at any of these receptors.

#### Alignment C (part of the Preferred Alternative)

Vibration-sensitive receptors adjacent to this alignment are generally no closer than about 30 feet from the near track centerline. GBV impacts are predicted to occur at 51 residences with this alignment option. Predicted GBV levels from LRV passbys range from 72 to 90 VdB at impacted receptors.

No vibration impact would occur from the shift of the BNSF freight operations. The shifted freight tracks would not result in an increase of more than three VdB at any sensitive receptors.

### Alignment D1 (part of the Preferred Alternative)

Vibration-sensitive receptors adjacent to this alignment are generally no closer than about 45 feet from the near track centerline. No GBV impacts are predicted to occur with this alignment option. The maximum vibration velocity level predicted from LRV passbys at the closest receptor is 68 VdB.

No vibration impact would occur from the shift of the BNSF freight operations. The shifted freight tracks would not result in an increase of more than three VdB at any sensitive receptors.

### Alignment D2

Vibration-sensitive receptors adjacent to this alignment are generally no closer than about 30 feet from the near track centerline. No GBV impacts are predicted to occur with this alignment option. The maximum vibration velocity level predicted from LRV passbys at the closest receptor is 71 VdB. In addition, GBV and GBN levels were assessed at KMOJ Radio Station based on the FTA criteria, and the results indicate that no GBV or GBN impact is predicted at this location.

### Alignment D Common Section (part of the Preferred Alternative)

Vibration-sensitive receptors adjacent to this alignment are generally no closer than about 95 feet from the near track centerline. No GBV impacts are predicted to occur in for this alignment option. The maximum vibration velocity level predicted from LRV passbys at the closest receptor is 59 VdB.

### Summary of Impacts by Alternative

**Table 5.7-8** summarizes the predicted vibration impact assessment results by alternative.

**Table 5.7-8. Summary of Vibration Impacts By Alternative**

Alternative	Total GBV Impacted Receptors
No-Build	No vibration impacts currently anticipated
Enhanced Bu/TSM	No vibration impacts currently anticipated
A-C-D1	51
A-C-D2	51
B-C-D1 (Preferred Alternative)	51
B-C-D2	51

Source: HMMH Inc., 2012

#### 5.7.4.2 Construction Phase Impacts

Vibration from construction is caused by equipment operations, and is usually highest during pile driving, soil compacting, jack-hammering, and construction related demolition activities. Although it is conceivable for ground-borne vibration from construction to cause building damage, vibration from construction is almost never of sufficient amplitude to cause even cosmetic damage to buildings. The primary concern is that the vibration can be intrusive and annoying to building occupants.

Construction activities can result in vibration effects to surrounding receivers. Major vibration-producing activities would occur primarily during demolition and preparation for new light rail tracks. Activities that have the potential to produce high levels of vibration include pile driving, vibratory shoring, soil compacting, and some hauling and demolition activities. Vibration effects from pile driving or vibratory sheet installations could occur within several hundred feet of sensitive receivers.

#### No-Build Alternative

No construction vibration impacts currently anticipated within the Bottineau Transitway study area for the No-Build alternative.

### Enhanced Bus/TSM Alternative

No construction vibration impacts are anticipated within the Bottineau Transitway study area for the Enhanced Bus/TSM alternative.

### Build Alternatives

Temporary vibration impacts could result from activities associated with the construction of new tracks and stations, utility relocation, grading, excavation, track work, demolition, and installation of systems components. Such impacts may occur in residential areas and at other vibration-sensitive land uses located within several hundred feet of the alignment. The potential for vibration impact would be greatest at locations near pile-driving for bridges and other structures, pavement breaking, and at locations close to vibratory compactor operations.

#### 5.7.5 Avoidance, Minimization, and Mitigation

The vibration assessment assumes that the vehicle wheels and track are maintained in good condition with regular wheel truing and rail grinding. Beyond this, there are several approaches to mitigate predicted vibration impact from LRT operation, as described below in [Table 5.7-9](#).

Potential vibration mitigation measures associated with each alignment are summarized in [Table 5.7-10](#). The table includes the number of receptors that could be benefitted with the implementation of the potential mitigation measure listed. These potential mitigation strategies will be further evaluated during subsequent engineering to determine their feasibility and reasonableness, considering factors such as safety impacts, cost effectiveness, and acceptability to the community.

Construction activities would be carried out in compliance with all applicable local regulations. A variety of best management practices for vibration mitigation will be included in construction contract specifications in order to reduce vibration effects during construction. These may include:

- Re-routing construction-related truck traffic along roadways that would cause the least disturbance to residents.
- Avoiding impact pile driving near vibration-sensitive areas, where possible. Drilled piles or the use of a sonic or vibratory pile driver are alternatives where the geological conditions permit their use.
- Conducting vibration monitoring during construction to verify compliance with the limits.
- Implementing a complaint resolution procedure to rapidly address any problems that may develop during construction.

With the incorporation of appropriate mitigation measures, impacts from construction-generated vibration would be minimized.

**Table 5.7-9. Potential Vibration Mitigation Measures**

Mitigation Option	Description
<b>Ballast Mats</b>	A ballast mat consists of a pad made of rubber or rubber-like material placed on an asphalt or concrete base with the normal ballast, ties, and rail on top. The reduction in GBV provided by a ballast mat is strongly dependent on the vibration frequency content and the design and support of the mat.
<b>Tire Derived Aggregate (TDA)</b>	Also known as shredded tires, a typical TDA installation consists of an underlayment of 12 inches of nominally 3-inch size tire shreds or chips wrapped with filter fabric, covered with 12 inches of sub-ballast and 12 inches of ballast above that to the base of the ties. Tests suggest that the vibration attenuation properties of this treatment are midway between that of ballast mats and floating slab track. This low-cost option has been installed on two US light rail transit systems (San Jose and Denver) for a number of years, and test results have shown this treatment to be very effective at frequencies above about 25 Hz.
<b>Floating Slabs</b>	Floating slabs consist of thick concrete slabs supported by resilient pads on a concrete foundation; the tracks are mounted on top of the floating slab. Most successful floating slab installations are in subways, and their use for at-grade track is less common. Although floating slabs are designed to provide vibration reduction at lower frequencies than ballast mats, they are extremely expensive.
<b>Resiliently Supported Concrete Ties (Under-Tie Pads)</b>	This treatment involves a special soft rubber pad embedded in the base of a concrete tie. The pad serves two purposes: (1) provides a pliable surface to help anchor the ties on ballast and (2) provides vibration isolation between the tie and the ballast. This relatively simple treatment has been used extensively in Europe. Test results have shown this treatment to be very effective at frequencies above about 25 Hz, and its cost is about 1.2 times the cost of a standard concrete tie.
<b>Resilient Rail Fasteners</b>	Resilient fasteners can be used to provide vibration isolation between rails and ties, as well as on concrete slabs for direct fixation track on aerial structures or in tunnels. These fasteners include a soft, resilient element to provide greater vibration isolation than standard rail fasteners in the vertical direction. There are resilient fasteners available that can be used on high axle load transit systems such as locomotive hauled passenger trains. Resilient rail fasteners are effective at frequencies above about 40 Hz.
<b>Special Trackwork</b>	Because the impacts of vehicle wheels over rail gaps at track turnout locations increases GBV by about 10 VdB close to the track, turnouts are a major source of vibration impact when they are located in sensitive areas. If turnouts cannot be relocated away from sensitive areas, another approach is to use spring-rail, flange-bearing or moveable-point frogs in place of standard rigid frogs at turnouts. These devices allow the flangeway gap to remain closed in the main traffic direction for revenue service trains.

Source: HMMH Inc., 2012



**Table 5.7-10. Potential Vibration Mitigation Measures by Alignment**

Alignment Option	Potential Mitigation Measure <sup>1</sup>	Receptors Benefitted with Potential Mitigation Measure	Discussion
<b>A</b>	No Mitigation Required		No GBV impacts are predicted to occur; therefore, no vibration mitigation is required.
<b>B (part of the Preferred Alternative)</b>	No Mitigation Required		No GBV impacts are predicted to occur; therefore, no vibration mitigation is required.
<b>C (part of the Preferred Alternative)</b>	Crossover Mitigation/ Track Vibration Isolation Treatment	51	Potential mitigation could include modification or relocation of crossovers between Corvallis Avenue North and West Broadway Avenue and 40th Avenue and 36th Avenue North, as well as installation of track vibration isolation treatment.
<b>D1 (part of the Preferred Alternative)</b>	No Mitigation Required		No GBV impacts are predicted to occur; therefore, no vibration mitigation is required.
<b>D2</b>	No Mitigation Required		No GBV impacts are predicted to occur; therefore, no vibration mitigation is required.
<b>D Common Section (part of the Preferred Alternative)</b>	No Mitigation Required		No GBV impacts are predicted to occur; therefore, no vibration mitigation is required.

<sup>1</sup> Potential mitigation strategies will be further evaluated during preliminary engineering to determine their feasibility and reasonableness, considering factors such as safety impacts, cost effectiveness, and acceptability to the community.  
Source: HMMH Inc., 2012

## 5.8 Biological Environment (Wildlife Habitat and Endangered Species)

Information included within this section is based on the information provided in the Biological Environment Technical Report (Kimley-Horn and Associates, 2012). The analysis completed for this section was conducted in coordination with the USFWS and DNR regarding the presence of, and potential impacts to, threatened or endangered species and other biological resources in the study area. The Minneapolis Park and Recreation Board was also contacted. See Section 5.8.4 for discussion on the findings. Correspondence letters are included in [Appendix D](#).

This section is subdivided into four parts; endangered species, wildlife habitat, migratory birds and noxious weeds.

### 5.8.1 Regulatory Context and Methodology

#### Endangered Species

Section 7 of the Endangered Species Act (ESA) of 1973 (16 USC 1531-1544) requires that all federal agencies consider and avoid, if possible, adverse impacts to federally listed threatened or endangered species or their critical habitats, which may result from their direct, regulatory, or funding actions. The United States Fish and Wildlife Service (USFWS) is responsible for compiling and maintaining the federal list of threatened and endangered species. Section 7 of the ESA also prohibits the taking of any federally listed species by any person without prior authorization. The term “taking” is broadly defined at the federal level and explicitly extends to any habitat modification that may significantly impair the ability of that species to feed, reproduce, or otherwise survive.

Minnesota’s endangered species law (MN Statute 84.0895) and associated rules (MN Rules 6212.1800-.2300) regulates the taking, importation, transportation, and sale of state endangered or threatened

species. The DNR administers the state law and manages the listing of state rare, threatened, and endangered species.

The USFWS Endangered Species Program website (<http://www.fws.gov/endangered/>) was reviewed to determine if there any federally listed threatened or endangered species that have critical habitat within Hennepin County or within any of the proposed alignments. No critical habitats are located within the study area or potential area of disturbance.

The DNR Natural Heritage Information System (NHIS) Database was used to identify potential federal and state listed species within the study area. The NHIS database comprises locational records of rare plants, rare animals, and other rare sensitive natural resources features including native plant communities, geologic features, and animal aggregations (such as nesting colonies). Per stipulations of the NHIS program, known locations of state species cannot be mapped.

Each proposed alignment was evaluated for preferred habitats of the identified rare species in coordination with state and local agencies, and in accordance with Minnesota's endangered species law (MN Statute 84.0895).

### **Wildlife Habitat**

The proposed Bottineau Transitway is to be constructed largely in areas that have been previously disturbed or developed with impervious surfaces and buildings. Some proposed Build Alternatives, however, run near natural areas or open spaces with vegetation cover that may provide foraging, migrating, or nesting habitat for wildlife. The size and quality of these natural areas or open spaces determines the likelihood of supporting terrestrial and aquatic wildlife.

There are no comprehensive lists or data sources that quantify or list wildlife species present in any given location, and the number potential plants and animals in even urban areas are too numerous and the inventory processes too complex to conduct a project specific inventory. The accepted method for wildlife impact assessment is via wildlife habitat association. Given the largely developed/disturbed nature of the study area, wildlife habitat was generally classified into two categories, terrestrial and aquatic habitat. Aquatic habitat includes plant communities that are dominated by water such as wetlands, lakes, streams, and creeks and support water dependent species such as fish, frogs, turtles, etc. Terrestrial habitat includes all other plant communities, excluding frequently disturbed areas such as mowed/landscaped areas, right of way, and farmland and support species such as white-tailed deer, squirrels, rabbits, and birds. Aquatic habitat is protected by wetland/public waters regulations, as described Section 5.3. There are no specific regulations that provide protection to terrestrial habitats.

Methodology for identifying these habitat types was conducted through review of aerial photography (Minnesota Geospatial Information Office, 2010) and noting undeveloped areas with potentially natural native cover (excluding landscaped areas, farm fields, and right of way. A field review was conducted (April 25, 2012) to refine the aquatic habitats (see Section 5.3) and eliminate disturbed or developed areas not reflected in the aerial photography or NWI maps. Using the defined aquatic and terrestrial habitat types, common habitat/wildlife associations were developed based on references from the DNR and local resources. Because Theodore Wirth Regional Park is a large habitat resource along the D1 alignment, the Minneapolis Park & Recreation Board staff was also contacted in 2012 to determine if any wildlife inventories for the park were available; however, none have been completed recently.

In addition, the Minnesota Land Cover Classification System data for Hennepin County (DNR, 2008) was reviewed to determine the quality of habitat located within the project alignments. The MLCCS provides a general assessment of the quality of native habitat present within each identified natural community ([Table 5.8-1](#)).

As described in the MLCCS Manual (DNR, 2004) The MLCCS quality of native habitat is determined using the following letter grade (A-D). This letter grade is only given to native habitats. Non-native, altered, or disturbed communities were given a non-native ranking (NN or NA).

- A = Highest quality natural community, no disturbances and natural processes intact.
- B = Good quality natural community. Has its natural processes intact, but shows sign of past human impacts. Low levels of exotics.
- C = Moderate condition natural community with obvious past disturbance but is still clearly recognizable as a native community. Not dominated by weedy species in any layer.
- D = Poor condition of natural community. Includes some natives, but is dominated by non-natives and/or is widely disturbed and altered.
- NA = Natives species present in an altered/non-native plant community.
- NN = Altered/non-native plant community. These semi natural communities do not qualify for natural quality ranking.

### **Migratory Bird Act**

The Migratory Bird Treaty Act of 1918 (16 USC 703-712) governs the taking, killing, possession, transportation, and importation of migratory birds including eggs, parts, and nests. Such actions are prohibited unless authorized under a valid permit. This law applies to migratory birds native to the United States and its territories. It does not apply to non-native migratory birds or resident species that do not migrate on a seasonal basis.

The bald eagle is a native migratory bird and is also protected by the Bald Eagle and Golden Eagle Protection Act of 1940 (16 USC 668-668d, 54 Stat. 250) and prohibits the taking, possession, or commerce of these species.

The Minnesota Ornithologist Union's (MOU) Hennepin County checklist was reviewed to determine the number of species within the county. The MOU checklist contains accepted records of every species observed within that particular county. This list does not single out the number of migratory species observed within Hennepin County; therefore, some species on the list are resident bird species.

### **Noxious Weeds**

Invasive species are regulated by federal and state laws. The Federal Noxious Weed Act, Title 7, Chapter 61, Section 2803, regulates federally listed noxious weeds through the U.S. Department of Agriculture (USDA). Under this rule, the sale, purchase, exchange, or receipt of federal noxious weeds is illegal.

The Minnesota Noxious Weed Law (MN Statutes 18.75-18.91) defines a noxious weed as an annual, biennial, or perennial plant that the Commissioner of Agriculture designates to be injurious to public health, the environment, public roads, crops, livestock, or other property. Prohibited noxious weeds must be controlled or eradicated as required in Minnesota Statutes, section 18.78.

The Minnesota Noxious Weed location map was reviewed to identify known noxious weed concentrations within the study area.

## **5.8.2 Study Area**

The study area specifically for rare, threatened, and endangered species included a record search area of a one mile radius from the potential area of disturbance.

The study area for wildlife habitat, migratory birds, and noxious weeds is defined as an area approximately ¼ mile around each of the alignments and associated facilities (OMF and park-and-rides). This distance captures the terrestrial and aquatic habitat, invasive species, and migratory birds that are

directly adjacent to the Bottineau Transitway Project and the wildlife that could potentially be affected by it.

### 5.8.3 Affected Environment

#### Endangered Species

A review of the USFWS Endangered Species Program website identified one species, the Higgins eye pearlymussel (*Lampsilis higginsii*), within Hennepin County. The critical habitat for the Higgins eye pearlymussel can be found within the Mississippi River; however, the recovery plan dated May 2004 identified the critical habitat south of Mississippi River Lock and Dam No. 2 (Hastings, MN). The Bottineau Transitway Project will not impact the Mississippi River; therefore, no impacts are anticipated to any federally listed threatened or endangered species as a result of this project. The USFWS concurred that there is no threatened or endangered species within the study area ([Appendix D](#)).

A review of the DNR NHIS database, which provides information on Minnesota's rare plants, animals, native plant communities, and other sensitive rare natural resources features by county, was conducted. In Hennepin County, there are records for 13 endangered species, 18 threatened species, and 30 special concern species. The species from this list that may be found within the habitats identified in the study area are shown in [Table 5.8-1](#).

**Table 5.8-1. State- and Federal-Listed Species in the Study Area**

Scientific Name	Common Name	State Status	Federal Status	Last Observation Date/Nearest Alignment	Preferred Habitat
<i>Erythronium propullans</i>	Dwarf Trout Lily	E <sup>1</sup>	E <sup>2</sup>	2005 D1, D2, D Common Section	Wooded, north-facing slope above or near a streambed within Maple-Basswood Forests
<i>Ligumia recta</i>	Black Sandshell	SC	-	2007 D Common Section	Medium to large rivers in riffles or raceways in gravel or firm sand
<i>Setophanga citrina</i>	Hooded Warbler	SC	-	1979 D1, D2, D Common Section	Large mature deciduous forest with a dense, shrubby understory and shrub layer
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC	-	2001/A 2005/C	Lakes and rivers with large trees for nesting
<i>Etheostoma microperca</i>	Least Darter	SC	-	1931 C, D1, D2	Natural lakes and deep marshes with permanent water levels with aquatic vegetation
<i>Emydoidea blandingii</i>	Blanding's Turtle	T	-	2000 D1, D2, D Common Section	Shallow water with sandy uplands
<i>Falco peregrinus</i>	Peregrine Falcon	SC	-	3 locations: 2008, 2011/D Common Section	Cliff ledges along rivers or lakes or tall building ledges

E – Endangered, SC – Special Concern, T – Threatened

<sup>1</sup> State-Listed Endangered Species, but there are no known native populations in Hennepin County, MN

<sup>2</sup> Federally-Listed Endangered Species, but there are no known native populations in Hennepin County, MN

Source: Minnesota DNR: National Heritage Database, 19 August 2012



### *Dwarf Trout Lily*

There is one record of Dwarf Trout Lily within the study area located south of TH 55, in Theodore Wirth Regional Park approximately a half mile away from the nearest alignment. The populations in Hennepin County were introduced prior to listing as an endangered species. It is not known to be present north of TH 55 based on the understanding that it was introduced to the park south of TH 55, and the forested areas of the park north of TH 55 are relatively fragmented and have a number of invasive species present.

### *Black Sandshell*

There are two records of Black Sandshell within the banks of the Mississippi River. The recorded locations are over  $\frac{3}{4}$  mile from the nearest alignment. The Bottineau Transitway Project does not cross or directly impact the Mississippi River. All stormwater runoff will be managed according to an erosion and sediment control plan. Therefore, the project is not expected to result in any indirect water quality impacts to the river or this species.

### *Hooded Warbler*

There is one record of Hooded Warbler within the project study area, but it is over 30 years old, and there is no recent evidence known to support a current breeding population. The record was south of TH 55, in Theodore Wirth Regional Park, approximately 0.6 mile from the nearest alignment. This species is not expected to nest in areas that are impacted by the Bottineau Transitway Project. Absence is likely due to a lack of large tracts of mature deciduous forest and adequate nesting habitat.

### *Bald Eagle*

There are two records of bald eagles within the study area. The record from 2005 occurred near Twin Lakes, approximately 0.9 mile from Alignment C. The record from 2001 is near Eagle Lake, approximately 0.9 mile from Alignment A. No evidence of old nests was observed within the potential area of disturbance or nearby tree cover.

### *Least Darter*

One record of a Least Darter was identified in Crystal Lake. The record is located approximately 0.6 mile from the nearest project alignment and is over 70 years old. This species is no longer believed to be present in the area because it has not been observed for over 70 years. This species was most likely affected by deteriorating water quality as the area was developed over the last 70 years.

### *Blanding's Turtle*

There is one record of Blanding's Turtle within the study area. The record is south of TH 55, in Theodore Wirth Regional Park, approximately a half mile away from the nearest alignment. It is possible for these turtles to be present along Bassett Creek and associated wetlands. They are known to travel up to one mile for suitable nesting sites (sand).

### *Peregrine Falcon*

There are three records of the Peregrine Falcon within the study area. These records are within downtown Minneapolis nesting on tall buildings, between 0.4 and 0.7 mile from the project alignment. There are no known nesting locations of this falcon species along any of the project alignments.

The DNR has reviewed and concurred that there is no potential for impact to these species or their preferred habitat except for the Blanding's turtle (ERDB #20120176-003; November 2, 2012).

### **Wildlife Habitat**

Wildlife habitat is present within the study area. The wildlife habitat found within the study area can be categorized into two types, aquatic and terrestrial. The table below describes the different communities that make up each type of habitat (terrestrial and aquatic) within the proposed alignments.

MLCCS data did not identify any natural habitat within the study area of greater than a D letter grade. The majority of the habitat quality was given a grade of NN or NA as the habitat is considered non-native, altered, or disturbed.

**Table 5.8-2. Habitat Types by Alignment**

Alignment	Habitat Type	Community	Wildlife Association	Acres	Total Acres
<b>A</b>	Terrestrial	Unmanicured grassland (non-native), deciduous trees, forested areas	Grey squirrel, raccoon, rabbit, field mice, vole, mole, common songbirds, Canada geese, hawks, owls, white-tailed deer, red fox	22	132
	Aquatic	Wetlands, Shingle Creek	Bald eagles, common reptile and amphibian species, non-game fish species, white-tailed deer, songbirds	110	
<b>B (part of the Preferred Alternative)</b>	Terrestrial	Unmanicured grassland (non-native), deciduous trees, forested areas	Grey squirrel, raccoon, rabbit, field mice, vole, mole, common songbirds, Canada geese, hawks, owls, white-tailed deer, red fox	203.5	267
	Aquatic	Wetlands, Shingle Creek, Mattison Creek, unnamed tributary to Shingle Creek	Bald eagles, common reptile and amphibian species, non-game fish species, white-tailed deer, songbirds	63.5	
<b>C (part of the Preferred Alternative)</b>	Terrestrial	Unmanicured grassland (non-native), deciduous trees, forested areas	Grey squirrel, raccoon, rabbit, field mice, vole, mole, common songbirds, Canada geese, hawks, owls, white-tailed deer, red fox	4	22
	Aquatic	Wetlands	Bald eagles, common reptile and amphibian species, non-game fish species, white-tailed deer, songbirds	18	
<b>D1 (part of the Preferred Alternative)</b>	Terrestrial	Unmanicured grassland (non-native), deciduous trees, forested areas	Grey squirrel, raccoon, rabbit, field mice, vole, mole, common songbirds, Canada geese, hawks, owls, white-tailed deer, red fox	304	405
	Aquatic	Wetlands, unnamed tributary to Bassett Creek, Bassett Creek	Bald eagles, common reptile and amphibian species, non-game fish species, white-tailed deer, songbirds	101	
<b>D2</b>	Terrestrial		N/A	0	2
	Aquatic	Wetlands	Bald eagles, common reptile and amphibian species, non-game fish species, white-tailed deer, songbirds	2	

#### *Alternative A-C-D1*

##### ■ **Terrestrial**

Much of the potential area of disturbance for Alternative A-C-D1 lies within or adjacent to a right-of-way for freight or vehicular traffic. As a result, much of the area surrounding the proposed alternative has been developed, manicured, and maintained.

A portion of this alternative is within the BNSF railroad corridor. Along the D-1 alignment, the area adjacent to the railroad right-of-way is vegetated, open space, or wooded property.

##### ■ **Aquatic**

Some aquatic habitats are located within the potential area of disturbance of this alternative. There are many wetland areas identified (all identified in Section 5.3). No lakes or rivers are located within the study area of this alternative. Shingle Creek and Bassett Creek are also located within the study area; however, through this portion of the study area, the creek is currently channelized.

#### *Alternative A-C-D2*

##### ■ **Terrestrial**

The majority of the area of impact for the A-C-D2 alternative lies within or adjacent to a right-of-way for freight or vehicular traffic with surrounding areas of manicured, and maintained lawns grass and some fallow fields and unmanicured areas adjacent to the freight rail.

##### ■ **Aquatic**

Some aquatic habitats are located within the potential area of disturbance of this alternative. There are many wetland areas identified (all identified in Section 5.3). No lakes or rivers are located within the study area of this alternative. Shingle Creek is also located within the study area; however, through this portion of the study area, the creek is channelized.

#### *Alternative B-C-D1 (Preferred Alternative)*

##### ■ **Terrestrial**

Most of the study area for the B-C-D1 alternative lies within or adjacent to a right-of-way for freight or vehicular traffic with surrounding areas of manicured and maintained lawns.

A portion of this alternative is within the BNSF railroad corridor. Along the D-1 alignment, the area adjacent to the railroad right-of-way is vegetated, open space, or wooded property.

##### ■ **Aquatic**

There are many wetland areas identified (all identified in Section 5.3), and a few stormwater detention ponds along with Shingle Creek, Mattison Creek, Bassett Creek, and an unnamed tributary to Shingle Creek. The creeks through this part of the study area are channelized.

#### *Alternative B-C-D2*

##### ■ **Terrestrial**

The majority of the study areas for the B-C-D2 alternative lies within or adjacent to a right-of-way for freight or vehicular traffic with surrounding areas of manicured and maintained lawns.

##### ■ **Aquatic**

Some aquatic habitats are located within the study area. There are many wetland areas identified (all identified in Section 5.3). No lakes or rivers are located within the study area; however, they are located in the project vicinity (within one mile of the study area). Shingle Creek, an unnamed tributary to Shingle

Creek, and Mattson Creek are also located within the study area; however, the creeks have been modified through this portion of the study area.

### **Migratory Birds**

The MOU Hennepin County checklist identifies 353 bird species within the county. Of the 353 species, 131 species are known to nest in Hennepin County. Not all of the species identified on the checklist are migratory birds. Some on the list are resident species such as hawks, sparrows, cardinals, and other songbird species.

Migratory bird habitat in urban areas is typically defined nesting structure such as trees, shrubs and tall grasses in aquatic and terrestrial habitats. Generally, if construction occurs outside of the nesting season, no impacts to migratory birds are expected.

There are no known eagle, falcon, or swallow nesting sites within the potential area of disturbance, therefore no impacts are anticipated. Swallows are known to use structures such as bridges and large culverts as nesting structure and possibly could be found within the project study area, but could be prevented from nesting during construction if found. Bald eagles are known to nest within Hennepin County; however, the closest nest site to the study area is over a half mile from the proposed transitway. Peregrine falcons are also known to be within the project vicinity (within one mile of transitway); however, they are known to use nesting boxes on tall buildings as suitable habitat to nest. The closest suitable nesting location is outside of the study area.

### **Noxious Weeds**

Invasive species are generally defined as those species that have been introduced, or moved to an area where they have not historically occurred. These species are of concern because they are prone to quickly colonize and dominate disturbance areas, often crowding out native species. Once established, invasive species tend to persist and effective eradication may not be feasible. Given the urban landscape of the study area, invasive species are common. Generally, invasive plant species concentrate within open/undeveloped areas. Given the highly disturbed nature of the project study area, invasive species are prevalent.

The Minnesota and Federal Noxious Weed List (DNR Invasive Species Program, updated March 2013) and known locations of those species were reviewed to determine the prevalence of noxious weeds within the study area. Multiple records of three aquatic noxious weed species were identified within the project study area. Purple Loosestrife (*Lythrum salicaria*, *L. virgatum*), Eurasian watermilfoil (*Myriophyllum spicatum*), and curly-leaf pondweed (*Potamogeton crispus*) were identified within the study area, but outside of the potential area of disturbance. No terrestrial noxious species were identified within the study area.

## **5.8.4 Environmental Consequences**

### **5.8.4.1 Operating Phase (Long-Term) Impacts**

#### **No-Build Alternative**

No adverse impacts to wildlife habitat, including threatened and endangered species, are anticipated to result from the No-Build alternative.

#### **Enhanced Bus/TSM Alternative**

No adverse impacts to wildlife habitat, including threatened and endangered species, are anticipated to result from the Enhanced Bus/TSM alternative.



## Build Alternatives

The Build Alternatives would not result in the construction of any physical barriers that would further restrict the crossing of the corridor by wildlife than existing transportation infrastructure (roads/freight rail tracks) does today, with the potential exception of the proposed station locations. The proposed stations, which would generally be less than 600 feet long, may include some barriers to restrict human crossing of the tracks for limited distances. The spacing of stations would allow wildlife to continue to cross as they do today between the stations.

Potential impacts to migratory birds will be minimal and limited to the potential loss of habitat within the potential area of disturbance of all alternatives.

Three species of noxious weed are known to exist within a number of aquatic habitat locations within the study area; however, no locations of these species were identified within the potential area of disturbance.

Anticipated impacts by alternative are summarized below and illustrated in [Figure 5.8-1](#) through [Figure 5.8-4](#).

### *Alternative A-C-D1*

#### ■ Endangered Species

Blanding's turtles may be found in Bassett Creek and adjacent open water wetland areas in Theodore Wirth Regional Park. The project is anticipated to result in some wetland impacts. Therefore, some potential impact to turtle habitat would be anticipated within Alignment D1.

#### ■ Wildlife Habitat

The A-C-D1 alternative results in a 10.7-acre loss of wildlife habitat.

Due to the urban setting of this alternative, the wildlife that inhabit these areas are generalist species adapted to urbanized conditions. These species are generally more tolerant of human presence and activities, including traffic (pedestrian, rail, and vehicular), and have demonstrated by their presence that they adapt readily to the human environment.

### *Alternative A-C-D2*

#### ■ Endangered Species

No endangered species were identified within the study area for this alternative; therefore, no impact to endangered species is anticipated.

#### ■ Wildlife Habitat

The A-C-D2 alternative results in a three-acre loss of wildlife habitat.

Due to the urban setting of this alternative, the wildlife that inhabit these areas are generalist species adapted to urbanized conditions. These species are generally more tolerant of human presence and activities, including traffic (pedestrian, rail, and vehicular), and have demonstrated by their presence that they adapt readily to the human environment.

### *Alternative B-C-D1 (Preferred Alternative)*

#### ■ Endangered Species

Blanding's turtles may be found in Bassett Creek and adjacent open water wetland areas in Theodore Wirth Regional Park. The project is anticipated to result in some wetland impacts, and therefore there would be some potential impact to turtle habitat anticipated for the Alignment D1 section of this alternative.

#### ■ **Wildlife Habitat**

The B-C-D1 alternative results in a 30.9-acre loss of wildlife habitat if the OMF is located at 101st Avenue or 13.9 acres of lost wildlife habitat if the OMF is located at 93rd Avenue. It should be noted that Alignment D1 runs adjacent to the west side of Theodore Wirth Regional Park, which provides a relatively large area of natural and manicured maintained open space as well as wetland areas ([Figure 5.8-4](#)).

Due to the urban setting of this alternative, the wildlife that inhabit these areas are generalist species adapted to urbanized conditions. These species are generally more tolerant of human presence and activities, including traffic (pedestrian, rail, and vehicular), and have demonstrated by their presence that they adapt readily to the human environment.

#### *Alternative B-C-D2*

#### ■ **Endangered Species**

No endangered species were identified within the study area for this alternative; therefore, no impacts are anticipated

#### ■ **Wildlife Habitat**

The B-C-D2 alternative results in a 23.2 acre loss of wildlife habitat if the OMF is located at 101st Avenue or 6.2 acres of lost natural/open habitat if the OMF is located at 93rd Avenue.

Due to the urban setting of this alternative, the wildlife are considered generalist species adapted to urbanized conditions. These species are generally more tolerant of human presence and activities, including traffic (pedestrian, rail, and vehicular), and have demonstrated by their presence that they adapt readily to the human environment.

#### *Summary of Impacts*

Wildlife habitat impacts are anticipated to result from all Build Alternatives. However, due to the urban setting of the Bottineau Transitway Project, and the low quality of the existing habitat, the wildlife that inhabit these areas are generalist species adapted to urbanized conditions. These species are generally more tolerant of human presence and activities, including traffic (pedestrian, rail, and vehicular), and have demonstrated by their presence that they adapt readily to the human environment.

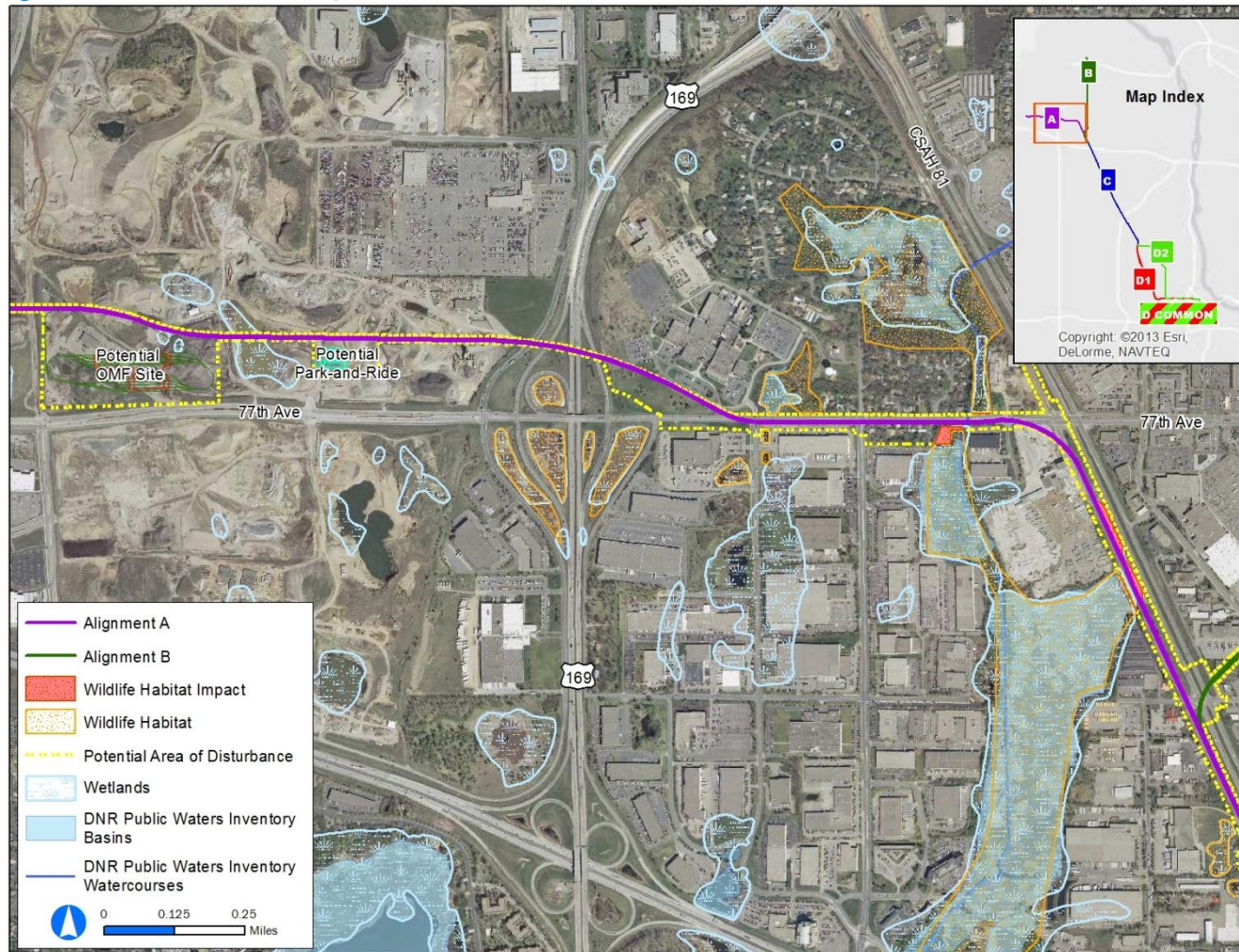
Generally, the amount of wildlife habitat that would be impacted by any Build Alternative is less than two percent of the available habitat in the study area, resulting in a negligible impact on terrestrial and aquatic wildlife overall. The two largest areas of aquatic habitat that may be impacted would be at the OMF site option at 101st and along Alignment D1 (potential for Blanding's turtles). See summary of impacts in [Table 5.8-3](#) and [Table 5.8-4](#).

#### **TPSS**

TPSS sites would be placed within the existing railroad right-of-way or on publicly-owned lands where possible. Additionally, impacts to wooded, wetland, and fallow land would also be minimized and/or avoided to the extent possible.

There are no known threatened, endangered, or special concern species within the 500-ft radius study areas for the proposed TPSS sites along all alignments; therefore, negligible impacts to habitat and wildlife would be associated with TPSS placement (see [Appendix D](#)).

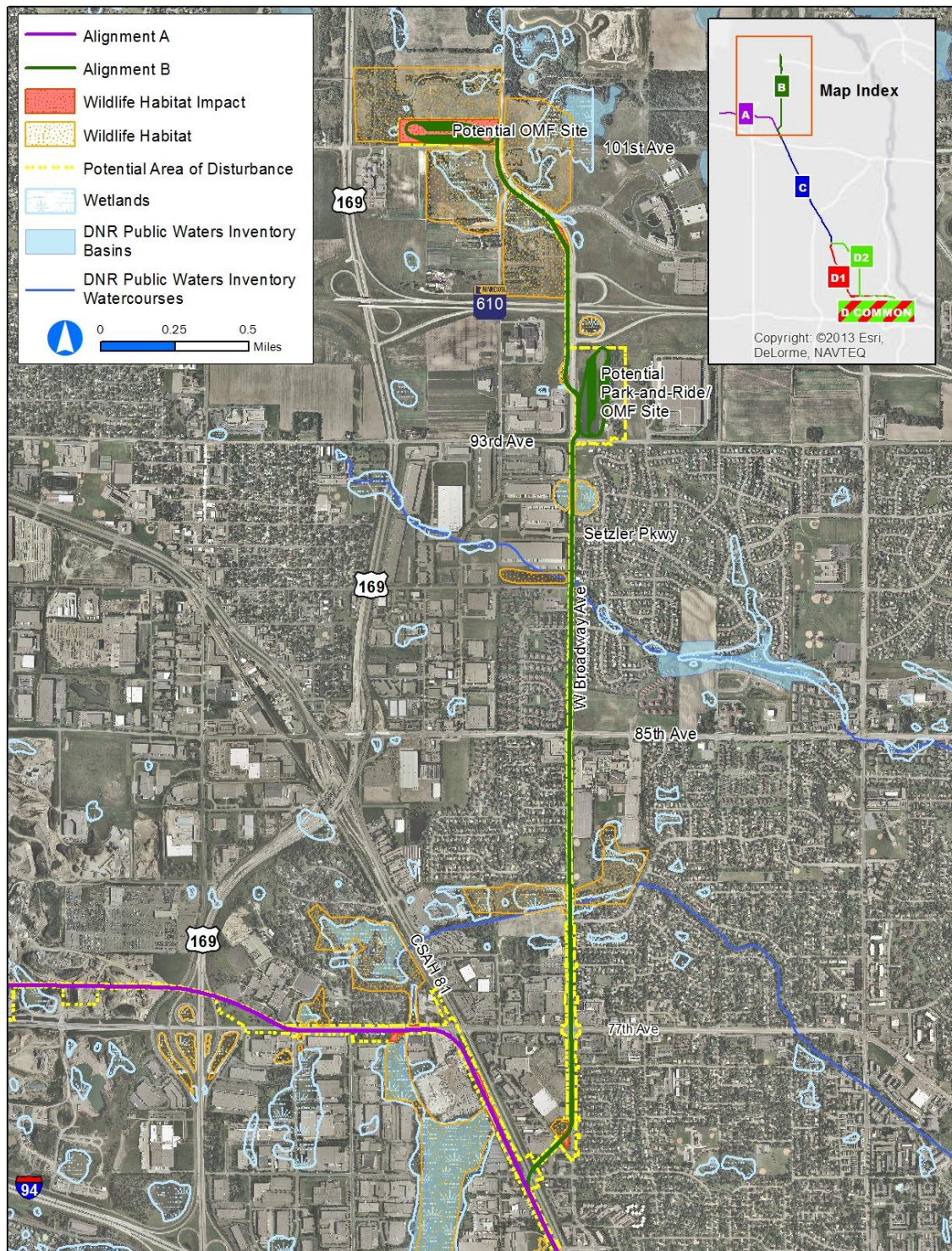
Figure 5.8-1. Alignment A Wildlife Habitat Impact<sup>24</sup>



<sup>24</sup> Sources: Aerial: Minnesota Geospatial Information Office, 2010; Wildlife Habitat: Kimley-Horn and Associates, 2012



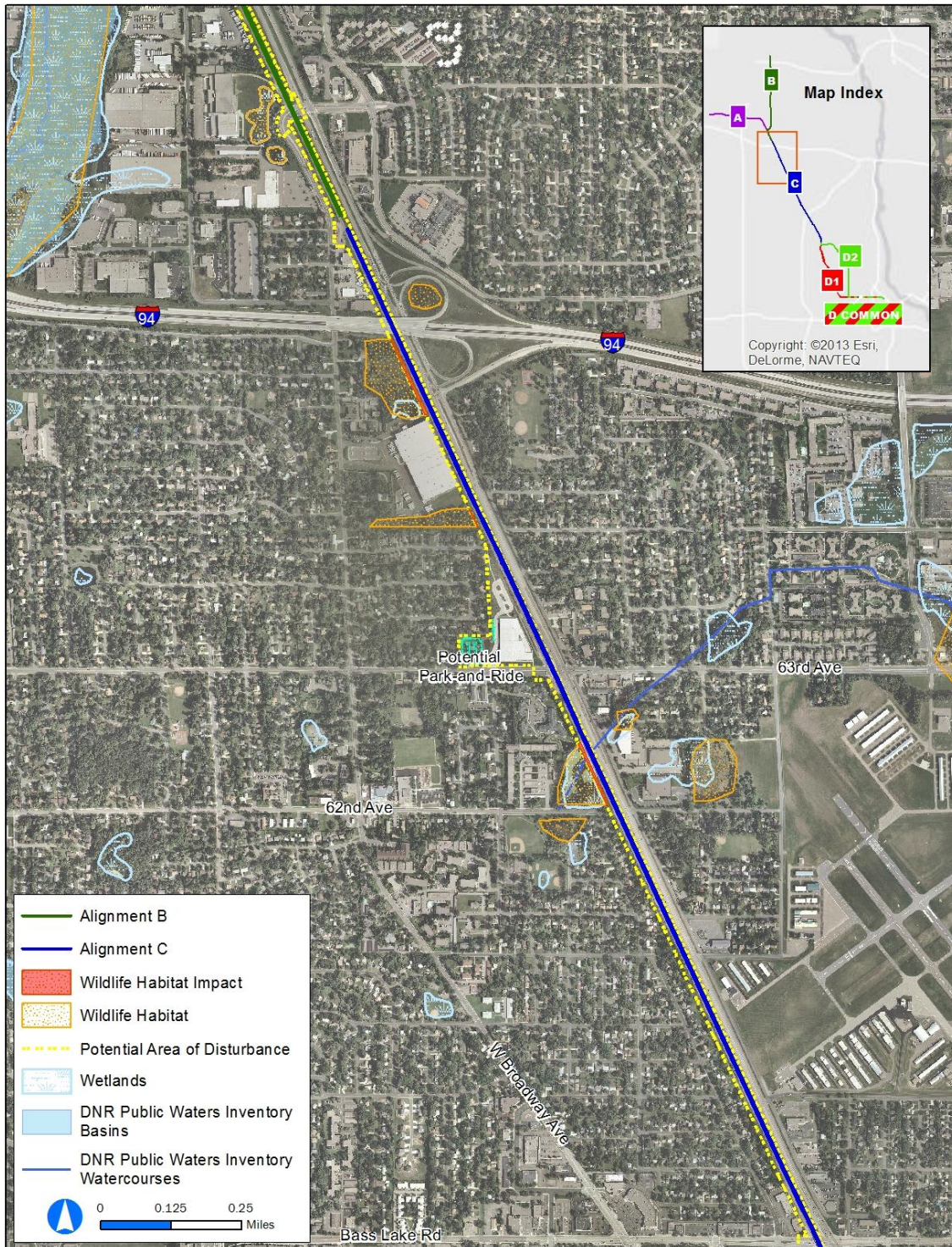
Figure 5.8-2. Alignment B Wildlife Habitat Impact<sup>25</sup>



<sup>25</sup> Sources: Aerial: Minnesota Geospatial Information Office, 2010; Wildlife Habitat: Kimley-Horn and Associates, 2012



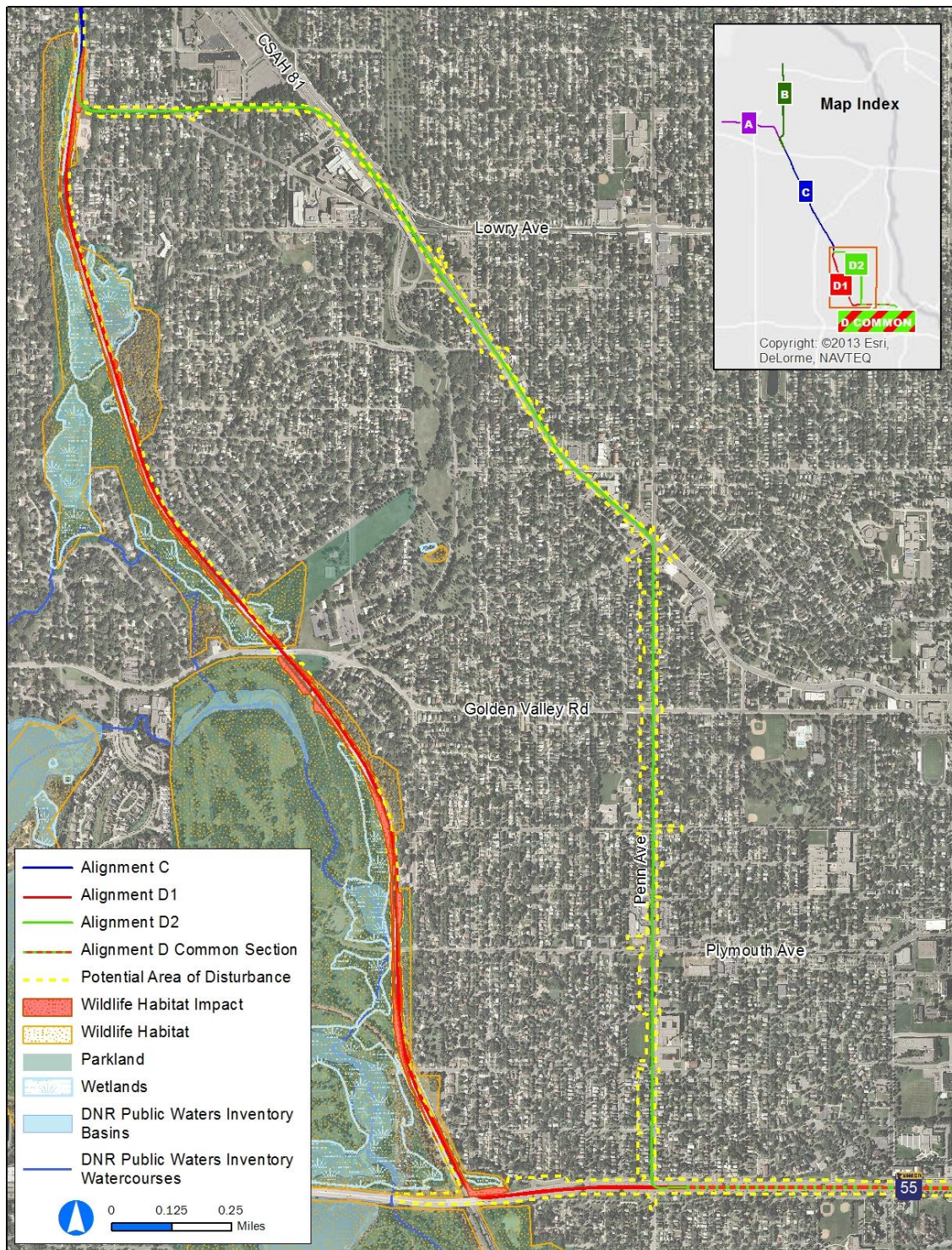
Figure 5.8-3. Alignment C Wildlife Habitat Impact<sup>26</sup>



<sup>26</sup> Sources: Aerial: Minnesota Geospatial Information Office, 2010; Wildlife Habitat: Kimley-Horn and Associates, 2012



Figure 5.8-4. Alignments D1, D2, and D Common Section Wildlife Habitat Impacts<sup>27</sup>



<sup>27</sup> Sources: Aerial: Minnesota Geospatial Information Office, 2010; Wildlife Habitat: Kimley-Horn and Associates, 2012



## Habitat

**Table 5.8-3. Wildlife Habitat Impacts by Alignment**

Alignment	Alignment/Station Impact (acres)	Park-and-Ride Impact	OMF Impact	Total Habitat Impact Area (acres)
A	1.8	0	0	1.8
B (part of the Preferred Alternative)	4.8	0.1	93rd Avenue option: 0 <sup>1</sup>	4.9
			101st Avenue option: 17.0	21.9
C (part of the Preferred Alternative)	0.8	0	N/A	0.8
D1 (part of the Preferred Alternative)	8.2 <sup>2</sup>	N/A	N/A	8.2
D2	0.5	N/A	N/A	0.5
D Common Section (part of the Preferred Alternative)	0	N/A	N/A	0

<sup>1</sup> Wildlife habitat impacts are included under the 93rd Avenue park-and-ride.

<sup>2</sup> There was no discernible difference in impact between the Golden Valley Road and Plymouth Avenue/Theodore Wirth Regional Park station options.

**Table 5.8-4. Wildlife Habitat Impacts by Alternative**

Alternative	Wildlife Habitat within 1/4 mile of Alternative	Alignment/Station Impact (acres)	Park-and-Ride Impact	OMF Impact	Total Habitat Impact Area (acres)
No-Build	N/A	0	0	0	0
Enhanced Bus/TSM	N/A	0	0	0	0
A-C-D1	559	10.7 <sup>1</sup> (2%)	0	0	10.7
A-C-D2	156	3.2(2%)	0	0	3.2
B-C-D1 (Preferred Alternative)	694	13.8 <sup>1</sup> (2%)	0.1	93rd Avenue option: 0 <sup>2</sup>	13.9 <sup>2</sup>
				101st Avenue option: 17.0	30.9
B-C-D2	291	6.1 (2%)	0.1	93rd Avenue option: 0 <sup>1,2</sup>	6.2
				101st Avenue option: 17.0	23.2

<sup>1</sup> There was no discernible difference in impact between the Golden Valley Road and Plymouth Avenue/Wirth Park station options.

<sup>2</sup> Wildlife habitat impacts are included under the 93rd Avenue park-and-ride.

## Endangered Species

Of the species identified as rare in the database search, only two of the species (bald eagle and Blanding's turtle) were determined to have the potential to be present in the study area. The bald eagle has known nesting sites within approximately one mile of Alignments A and C. The distance of these nest sites from project activities (greater than the nest impact zone of 660 feet) would result in no impact on eagle nesting, based on eagle management guidelines (National Bald Eagle Management Guidelines, US Fish and Wildlife Service, 2007).

Blanding's turtles are found in urban wetland areas more commonly today than when initially listed as rare species. As a result, the DNR has provided best management practices for avoiding impacts to turtles during construction, resulting in no measureable impact to turtles (DNR, 2008). These measures would be implemented where there are activities within or near shallow water wetlands ([Appendix D](#)).

No impacts to known rare features would result from any of the Build alternatives.

#### **5.8.4.2 Construction Phase Impacts**

Construction phase impacts are generally those that would be above and beyond the impacts described in the previous section and would occur for a short period of time coincident with the installation/construction of the project.

##### **No-Build Alternative**

No short-term construction impacts would result from the No-Build alternative.

##### **Enhanced Bus/TSM Alternative**

No short-term construction impacts would result from the Enhanced Bus/TSM alternative.

##### **Build Alternatives**

Short-term construction impacts to wildlife would result from the Build Alternatives due to construction activities, including use of heavy equipment and silt fence/construction barriers. These impacts may cause temporary disruption to wildlife; however, they would be temporary and limited to active construction areas. The number of active construction areas must be the minimum number needed to construct the project as required by construction permits, and inactive disturbed areas must be stabilized with seeding and other forms of erosion control BMPs.

#### **5.8.5 Avoidance, Minimization, and Mitigation**

There were no impacts identified to state or federal listed threatened, endangered, and special concern species as a result of the Build Alternatives (alignments, stations, OMF, park-and-rides, or TPSS sites). Therefore, no long-term mitigation measures are warranted.

During or prior to construction, there are a number of measures that can be taken to avoid or minimize impacts to bald eagle or turtle habitat. Construction BMPs, as discussed in the Stormwater Technical Report (Kimley-Horn and Associates, 2012,) would serve to minimize impacts to both terrestrial and aquatic habitats. As discussed in the Biological Environmental Technical Report (Kimley-Horn and Associates, 2012), standard guidelines for avoiding impacts to bald eagle nesting sites include keeping limiting construction activity at least within 330 feet away from of the nesting habitat and limiting clearing of vegetation within 660 -feet of the nest site during the nesting season (February – July). Eagle nest surveys would be conducted during final design to determine if any nests are present at that time, and, if so, the standard guidelines would be followed.

Similarly, in areas with potential for Blanding's turtle habitat, the DNR has established standard BMPs for construction, which would be implemented as needed. These BMPs consist of measures such as using overlapping silt fence that allows turtles to bypass the fencing while still capturing the sediment; providing identification information to the contractor to facilitate avoidance of turtles if observed in the construction zone; and removing silt fence after stabilization of the site to remove barriers to turtle movements. Additionally, BMP and permanent stormwater controls will reduce sedimentation to a level that is acceptable for an NPDES permit and therefore would have no adverse impact on aquatic habitat and associated aquatic wildlife.

During the early stages of final design, bridge structures, and forested areas within the construction limits would be field checked in compliance with the Migratory Bird Treaty Act to determine whether swallow or



other species nests are present. If active nests are documented, appropriate mitigation measures would be implemented during construction, such as seasonal work windows or nest and tree removal during the non-nesting season. The measures selected for construction mitigation would be made in consultation with the appropriate agencies.

Prior to construction, measures to reduce the spread of noxious weed species and seeds (cleaning equipment prior to bringing equipment onsite or leaving the site) would be done in accordance with standards in Minnesota Rule 6126.0250 to minimize the spread of noxious weeds within the potential area of disturbance.

## 5.9 Water Quality and Stormwater

Water quality and stormwater information included within this section is based on the information provided in the Stormwater Technical Report (Kimley-Horn and Associates, 2012). The analysis completed for this section was conducted in coordination with the Bassett Creek Watershed Management Commission, the Mississippi Watershed Management Organization, and the Shingle Creek and West Mississippi Water Management Organization.

### 5.9.1 Regulatory Context and Methodology

Potential stormwater impacts are studied by quantifying the potential changes to impervious surfaces as a result of project implementation. Impervious surfaces are typically roadway and parking lot pavements, sidewalks, rooftops, or other hard surfaces that are impenetrable to water, eliminating rainwater infiltration and natural groundwater and surface water recharge. Seasonal water (rain/snowmelt) instead runs off and can pick up pollutants before entering a nearby waterbody.

For the purposes of this analysis, LRT guideway segments that include ballasted track are assumed to be impervious in order to account for the worst-case scenario in calculating impacts. Track ballast is material (often crushed stone) used to support the track and facilitate drainage. Coordination with the regulating Watershed Management Organizations (WMOs) and cities would be required to determine whether ballasted track is considered an impervious or pervious surface for regulatory purposes.

Five agencies play a role in stormwater management within the study area:

- Bassett Creek Watershed Management Commission (BCWMC)
- Mississippi Watershed Management Organization (MWMO)
- Shingle Creek and West Mississippi Watershed Management Organization (SCWMO/WMWMO)
- MPCA
- Cities of Minneapolis, Golden Valley, Robbinsdale, Crystal, Brooklyn Park, and Maple Grove

Physical infrastructure (storm sewer) associated with stormwater management is discussed in Section 5.1.

Regulatory and permitting authority for stormwater management falls to the cities, the MPCA, and in most cases also the WMOs. In the case of stormwater management facilities constructed on Minneapolis Park & Recreation Board (MPRB) property in either Minneapolis or Golden Valley, permits will be needed from the MPRB and applicable regulations will be those of the city in which the property is located. Each watershed organization is governed by the Joint Powers Agreement that is held between the watershed organization and the communities/ members that are located within the boundaries of the WMO. See [Figure 5.9-1](#) for WMO and Watershed Management Commission (WMC) boundaries. Regulations change from time to time, and the project will be subject to regulations in effect when the design is submitted for approval by the permitting authorities, which will occur when the project is in final design, to capture the most accurate anticipated impacts.

Wellhead protection is a way to prevent drinking water from becoming polluted by managing potential sources of contamination in the area which supplies water to a public well. Wellhead protection areas are areas identified as having additional regulatory requirements to protect a well. Additional guidance will be required from the Minnesota Department of Health to evaluate proposed stormwater infiltration projects that are located within vulnerable wellhead protection areas.

Impaired waters are waters that do not meet quality standards for one or more water quality parameters. The EPA maintains a list of impaired waters based on input from each state.

### 5.9.2 Study Area

The study area for stormwater is defined as the potential area of disturbance for each alternative and the receiving waters within and immediately adjacent to the project. The study area for impaired waters includes impaired waters that are located within one mile on either side of the alignment and which would receive stormwater discharge from the project as per state regulation and shown in [Figure 5.9-2](#).

### 5.9.3 Affected Environment

The study area is generally urbanized, highly altered as compared to natural conditions, and characterized by commercial, industrial, or residential development. The intensity of development ranges from suburban to urban and also includes a large gravel mining area in Maple Grove and existing farmland located in the northern part of Alignment B. [Figure 5.9.2](#) identifies the receiving waters, including impaired waters, located within the study area including Bass Creek, Bassett Creek, the Mississippi River, Sweeney Creek, Cedar Island Lane, Crystal Lake, Eagle Lake, Lower Twin Lake and Wirth Lake. [Table 5.9-1](#) provides specific information on the impairment and Total Maximum Daily Load (TMDL) status.

**Table 5.9-1. Downstream Impaired Waters within One Mile of Proposed Alignment**

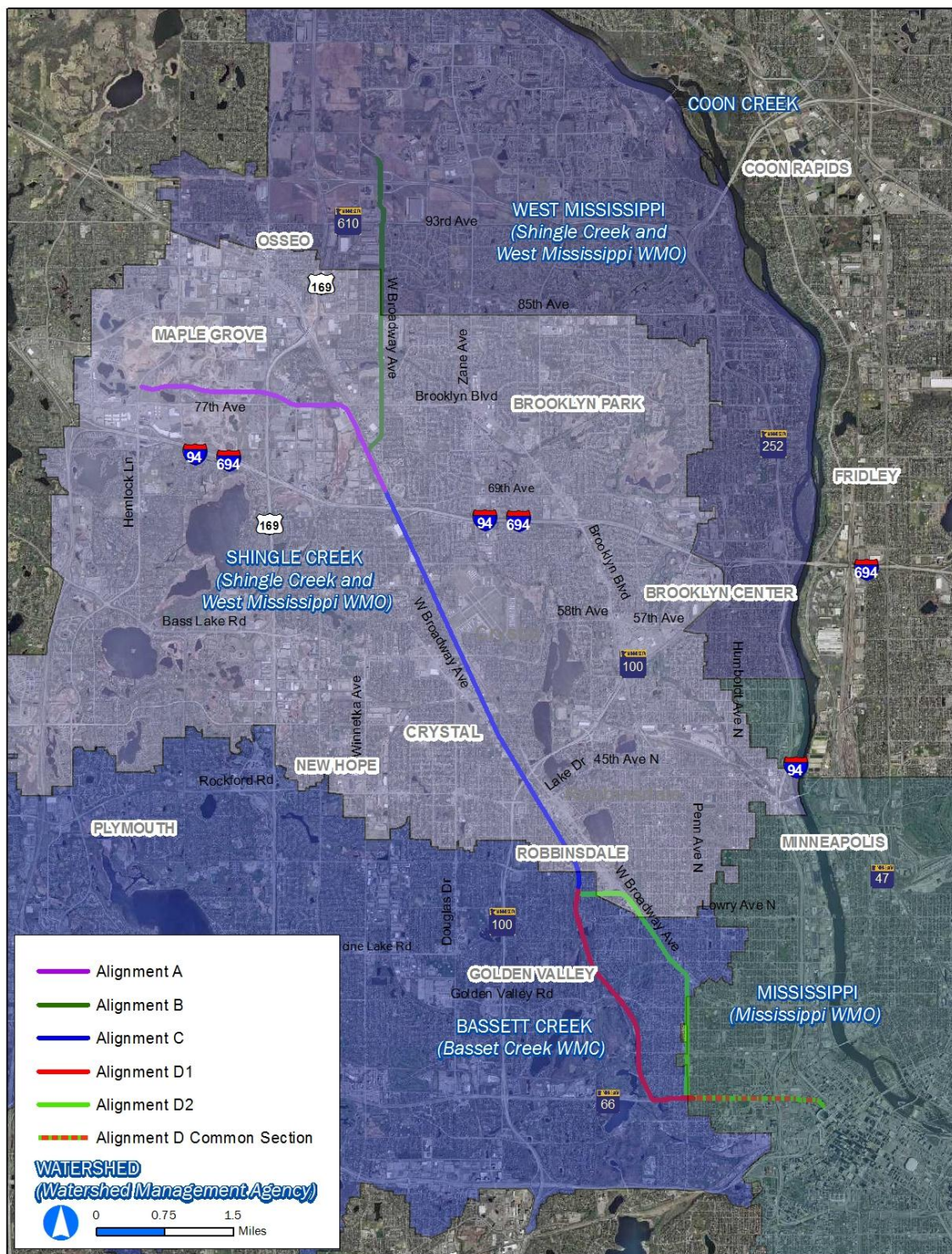
Name	Impairment	TMDL Status
Wirth Lake <sup>1,2</sup>	Nutrients, Mercury (Hg)	No action
Bassett Creek (Medicine Lake to Mississippi River) <sup>1</sup>	Chloride, Fecal Coliform, Fish Bioassessments	No action
Mississippi River (Coon Creek to Upper St. Anthony Falls) <sup>1,2</sup>	Fecal Coliform, Polychlorinated biphenyl (PCB), Hg	No action
Crystal Lake <sup>1,2</sup>	Nutrients	EPA approved TMDL plan for Nutrients
Shingle Creek <sup>1</sup>	Aquatic Macroinvertebrate Bioassessment, Chloride, Dissolved Oxygen (DO)	EPA approved TMDL plan for biotic integrity/ dissolved oxygen

<sup>1</sup> Impaired waters located within drainage areas affected by the Bottineau Transitway Project

<sup>2</sup> Impaired waters receiving indirect discharge from existing drainage areas



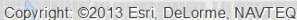
**Figure 5.9-1. Bottineau Transitway: Watershed Management Areas<sup>28</sup>**



<sup>28</sup> Sources: Aerial: Minnesota Geospatial Information Office, 2010; Watershed: DNR Data Deli, 2003



**Figure 5.9-2. Impaired Waters Within the Study Area<sup>29</sup>**



<sup>29</sup> Sources: Impaired Waters: Minnesota Pollution Control Agency, 2012



Currently much of the study area for Alignments A, C, D1, and portions of the D Common Section have no formal stormwater treatment to meet current water quality regulatory requirements. Stormwater typically flows directly into surrounding vegetated ditches, which provide water quality benefits such as sediment stabilization and filtering out waterborne sediments, and existing wetlands (see Section 5.3), conveying the water into adjacent watercourses, some of which are impaired (Figure 5.9-2). Less commonly in Alignments B, D2, and portions of the D Common Section, runoff is piped directly to watercourses through existing curb and gutter. Table 5.9-2 includes a summary of the WMC, WMO, and city regulatory requirements; detailed descriptions of the regulatory requirements of the various agencies can be found in the Stormwater Technical Report (Kimley-Horn and Associates, 2012).

**Table 5.9-2. WMC, WMO, and City Stormwater Management Requirements Summary**

WMC/ WMO	Detention Requirements				Infiltration BMP Requirements	
	Permanent Pool Volume	Permanent Pool Depth	Flood Pool Volume	Slopes	Volume	Drawdown Time
<b>BCWMC</b>	Runoff from 2.5-inch, 24-hour storm over the contributing drainage area  100-year storm discharge < existing conditions	4-10 feet  3-10 feet for small ponds (less than 3 acre-feet)	5-year and 100-year storm peak discharge rate < existing conditions	1:3 above the NWL and below the safety bench  10-foot wide safety bench at slope 1:10 below the NWL	0.5 inch of runoff from tributary impervious surfaces	48 hours, up to 72 hours if justified
<b>SCWMO/ WMWO</b>	Runoff from 2.5-inch storm event over the contributing drainage area	Use Minnesota Stormwater Manual	Two-year, 10-year, and 100-year critical storm events < existing conditions	1:3 above the NWL and below the safety bench  10-foot wide safety bench at slope 1:10 below the NWL	0.5 inch of runoff from the tributary impervious surfaces (likely changing to 1 inch)	48 hours
<b>MPCA (Cities)</b>	1800 cubic feet per acre of surface area drained	3-10 feet	5.66 cubic feet per second, per acre of surface area	1:3 above the NWL and below benches  10-foot wide bench at slope 1:10 above and below the NWL	0.5 inch of runoff from the new impervious surfaces	48 hours

## 5.9.4 Environmental Consequences

### 5.9.4.1 Operating Phase (Long-Term) Impacts

#### No-Build Alternative

No stormwater operating phase (long-term) impacts would be associated with the No-Build alternative.

#### Enhanced Bus/TSM Alternative

A proposed transit center and park-and-ride facility in Brooklyn Park along West Broadway Avenue near TH 610 would be constructed as part of the Enhanced Bus/TSM alternative. The proposed park-and-ride site is located on an existing pervious site and approximate estimates indicate that the impervious surface could increase by up to 60 percent with the addition of a paved park-and-ride site. The addition of the impervious area within the park-and-ride site, along with a drainage system (i.e. curbs, gutters, and storm drain pipes) will increase the volume of stormwater runoff from the site.

#### Build Alternatives

The Bottineau Transitway Project will result in an increase in the impervious area located within the limits of construction, with the percent of impervious surface increasing between 23 and 60 percent, depending on the alternative ([Table 5.9-3](#)). Impervious surfaces within each Build alternative include construction of ballasted track, platforms, park-and-ride facilities, an OMF, aerial structures for the LRT guideway, roadway, and sidewalk improvements. These additional impervious surfaces and drainage systems (i.e., curbs, gutters, and storm drain pipes) will increase the volume of stormwater runoff from sites located within each Build alternative.

**Table 5.9-3. Impervious Surface Increase by Alternative<sup>1</sup>**

Alternative	Percent Impervious Increase			
	Alignment/Station Impact	Park-and-Ride Impact	OMF Impact	Total Impact
<b>No-Build</b>	0%	0%	0%	0%
<b>Enhanced Bus/TSM</b>	0%	60% <sup>2</sup>	0%	60%
<b>A-C-D1</b>	39% <sup>3</sup>	48%	25%	38%
<b>A-C-D2</b>	31%	48%	25%	29%
<b>B-C-D1 (Preferred Alternative)</b>	30% <sup>3</sup>	53%	25% <sup>4</sup>	31%
<b>B-C-D2</b>	20%	53%	25% <sup>4</sup>	23%

<sup>1</sup> Percent over existing; impacts represent the total area that is located within the potential area of disturbance of the project.

<sup>2</sup> Percent impervious increase value to be confirmed with design development of Enhanced Bus/TSM park-and-ride facility.

<sup>3</sup> There was no discernible difference in impact between the Golden Valley Road and Plymouth Avenue/Theodore Wirth Regional Park station options.

<sup>4</sup> 25% represents the impervious amount for either the 93<sup>rd</sup> Avenue or 101<sup>st</sup> Avenue OMF options..

There will also be several culvert extensions necessary to accommodate the project. These extensions will be coordinated with the BCWMC. Other culvert extensions related to stream crossings are discussed in Section 5.3.

#### TPSS

There are 27 potential TPSS locations along the proposed alignments. The majority of the TPSS would be located on the east side of the proposed LRT tracks, with some associated with the LRT platforms and stations. Individually, TPSS sites would generally not need to meet the various watershed requirements due to the small size of the sites (less than 10,000 square feet). TPSS are included as part of the overall

Bottineau Transitway Project when considering various WMO and/or city requirements for addressing stormwater.

#### **5.9.4.2 Construction Phase Impacts**

##### **No-Build Alternative**

No stormwater impacts are anticipated.

##### **Enhanced Bus/TSM Alternative**

Construction activities would disturb soils and cause runoff that could potentially erode slopes and drainage ways, form gullies, and deposit sediment in adjacent water bodies at the proposed transit center and park-and-ride facility in Brooklyn Park along West Broadway Avenue near TH 610. Stormwater and transported sediments may contain pollutants. Stormwater runoff and erosion could destabilize slopes and affect water quality.

##### **Build Alternatives**

Construction activities associated with constructing utilities, ballasted track platforms, park-and-ride facilities, an OMF, aerial structures for the LRT guideway, roadway, and sidewalk improvements within each Build alternative would disturb soils and cause runoff that could potentially erode slopes and drainage ways, form gullies, and deposit sediment in adjacent water bodies. This could destabilize slopes and affect water quality if temporary BMPs, required through the permitting process, are not in place prior to a storm event.

For those sections in the project area served by piped stormwater conveyance, construction activities could disturb soils and affect water quality by carrying sediment in runoff discharging to storm drains if temporary BMPs, required through the permitting process, are not in place prior to a storm event.

#### **5.9.5 Avoidance, Minimization, and/or Mitigation Measures**

An NPDES Construction Stormwater Permit from the MPCA would be required because the project will disturb one acre or more of land. Other Minnesota agencies requiring permits might include watershed districts, municipalities, and soil and water conservation districts. The NPDES permit requires that a Stormwater Pollution Prevention Plan (SWPPP) be developed and implemented during construction.

Short-term mitigation measures would include the development of erosion and sediment control plans to control runoff and reduce erosion and sedimentation during construction, limiting the amount of sediment carried into lakes, streams, and rivers by stormwater runoff. These plans, in combination with the SWPPP, would identify how to control runoff, stabilize slopes and exposed soils, and limit the movement of soils into drainage systems and natural areas. Construction activities would be phased in so as to disturb as minimal an amount of area as possible at any one time.

Long-term mitigation measures would include the design and construction of permanent BMPs, such as detention and infiltration facilities, which would control and treat stormwater runoff caused by an increase in impervious surfaces as a result of the project. Due to the linear nature of the project, BMPs that are compatible with linear corridors would be used to the extent possible without the need to purchase additional right-of-way. A list of BMPs, including ponds and infiltration areas, are summarized below:

**Stormwater treatment ponds** provide rate control and water quality treatment. General pond locations for each alignment are discussed below and in [Table 5.9-4](#). Ponds should be sited near low points or adjacent to outfalls that are located within the proposed right-of-way. Opportunities to collaborate with corridor cities on combined stormwater management may also be considered as the selected alternative is developed and specific mitigation needs are refined.

**Infiltration or filtration BMPs** are used to provide volume control and water quality treatment. Certain areas may be suitable for infiltration BMPs based on soil types at the sites. Based on the “National Cooperative Soil Survey” from the US Department of Agriculture Natural Resources Conservation Service, a large portion of the corridor contains soils appropriate for this type of BMP. Infiltration basins and infiltration trenches that are integrated into the guideway and sidewalk areas in urban areas would be considered in preliminary and final design. In areas where infiltration is not feasible (contaminated soils or low soil porosity), filtration BMPs would be considered instead of infiltration.

**Filtration BMPs** can be utilized in locations where poorly draining soils or proximity to groundwater precludes the use of infiltration BMPs. They can also be used at treatment pond locations, by using the 10-foot bench above the normal water level as a filtration bench. This would allow a certain volume of water in the pond to filtrate through engineered soil and be collected in a drain tile that would flow to the pond outfall. Soil borings would be taken during preliminary and final design to determine where infiltration or filtration BMPs are appropriate.

Outside ditches along the proposed railway corridor can be used for infiltration/filtration of stormwater. Ditch blocks would be installed along the east side of the railway corridor to provide storage capacity.

**Table 5.9-4** includes a summary of the BMPs that could be utilized to meet the stormwater requirements for each alignment, as defined by the WMC or WMO in which the alignment is located. To the extent feasible, additional BMPs would be considered during preliminary engineering and final design. See **Figure 5.9-3** for potential pond locations at park-and-ride facilities.

**Table 5.9-4. Proposed BMPs**

Alignment	Section	Proposed BMPs
<b>Enhanced Bus / TSM Alternative</b>	West Broadway / TH 610 Transit Center / Park-and-Ride Facility	Construct on-site pond and infiltration BMPs to meet rate control, volume control, and water quality requirements
	Roadway Section West of US 169	BMPs for the roadway and LRT guideway would be constructed as part of the roadway project.
	Hemlock Lane Park-and-Ride	Construct on-site pond and infiltration BMPs to meet rate control, volume control, and water quality requirements
	Revere Lane Park-and-Ride	Construct on-site pond and infiltration BMPs to meet rate control, volume control, and water quality requirements
	OMF Facility	Construct on-site pond and infiltration BMPs to meet rate control, volume control, and water quality requirements
	Brooklyn Blvd	<ul style="list-style-type: none"> <li>■ Utilize existing Brooklyn Boulevard BMPs to the extent feasible and construct additional BMPs to meet rate control, volume control, and water quality requirements</li> <li>■ Proposed improvements have a discharge point within one mile of, and flows to, Shingle Creek and may require additional BMPs as required by the NPDES permit</li> </ul>
	Freight Rail Corridor	<ul style="list-style-type: none"> <li>■ Construct infiltration areas within adjacent ditches</li> <li>■ Proposed improvements have a discharge point within one mile of, and flows to, Shingle Creek and may require additional BMPs as required by the NPDES permit</li> </ul>



**Table 5.9-4. Proposed BMPs (continued)**

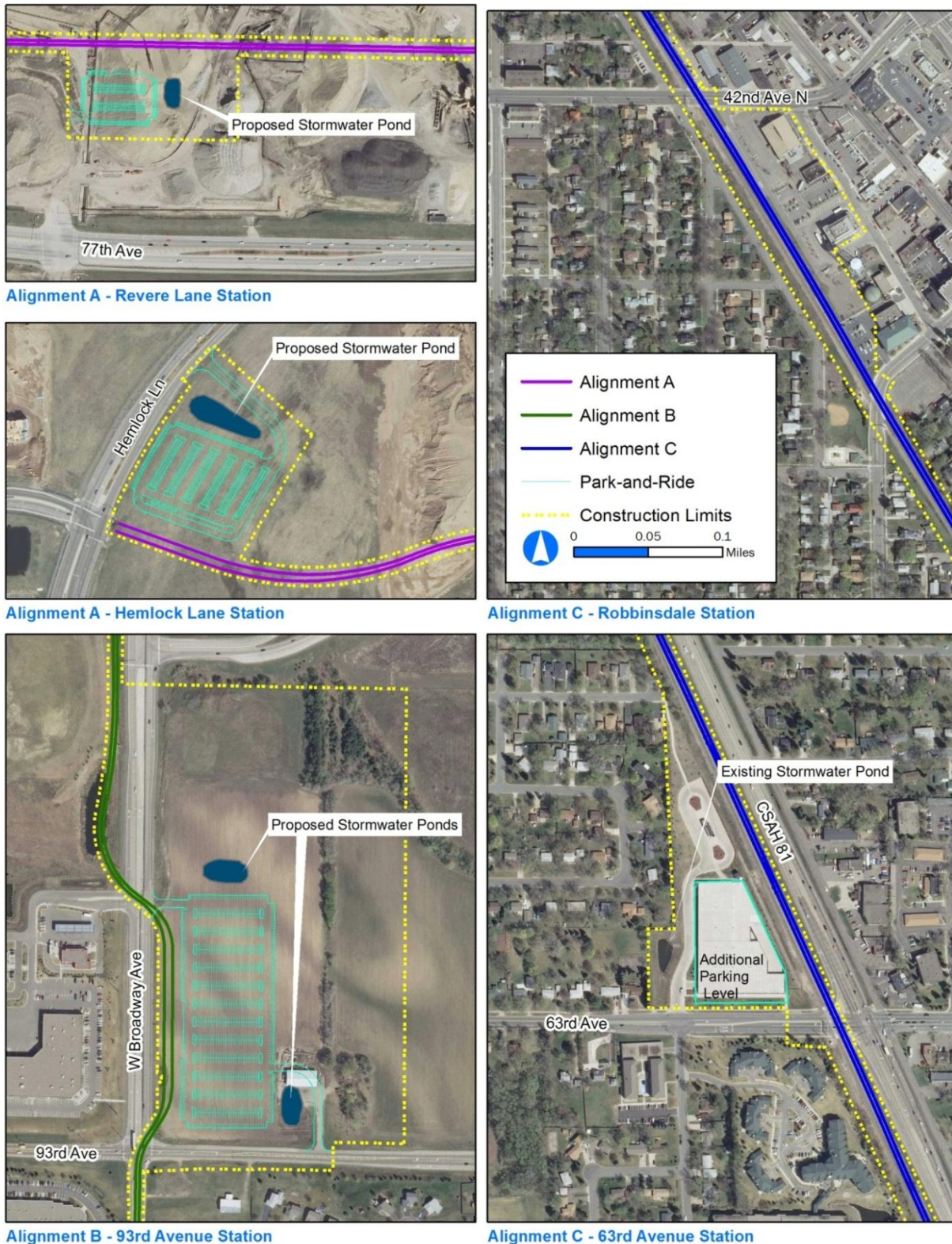
Alignment	Section	Proposed BMPs
<b>B (part of the Preferred Alternative)</b>	93rd / 101st Avenue OMF Facility	Construct on-site pond and infiltration BMPs to meet rate control, volume control, and water quality requirements
	93rd Avenue Park-and-Ride	Construct on-site pond and infiltration BMPs to meet rate control, volume control, and water quality requirements
	Roadway Section between 93rd Avenue and Candlewood Drive	BMPs for the roadway and LRT guideway would be constructed as part of the roadway project.
	Roadway Section south of Candlewood Drive	<ul style="list-style-type: none"> <li>■ Utilize existing West Broadway BMPs to the extent feasible and construct additional BMPs to meet rate control, volume control, and water quality requirements</li> <li>■ Proposed improvements have a discharge point within one mile of, and flows to, Shingle Creek and may require additional BMPs as required by the NPDES permit</li> </ul>
	BNSF Railroad Corridor	Construct infiltration areas within adjacent ditches; Proposed improvements have a discharge point within one mile of, and flows to, Shingle Creek and may require additional BMPs as required by the NPDES permit
<b>C (part of the Preferred Alternative)</b>	63rd Avenue Park-and-Ride	No additional BMPs anticipated
	Robbinsdale Park-and-Ride	Construct on-site pond and infiltration BMPs to meet rate control, volume control, and water quality requirements
	BNSF Railroad Corridor	Construct infiltration areas within adjacent ditches; avoid existing well areas near the Robbinsdale station
<b>D1<sup>1</sup> (part of the Preferred Alternative)</b>	BNSF Railroad Corridor	<ul style="list-style-type: none"> <li>■ Construct infiltration areas within adjacent ditches</li> <li>■ Proposed improvements have a discharge point within one mile of, and flows to, Bassett Creek, Sweeney Lake and Wirth Lake and may require additional BMPs as required by the NPDES permit</li> </ul>
<b>D2<sup>2</sup></b>	34th Avenue	<ul style="list-style-type: none"> <li>■ Construct pond and infiltration BMPs to meet rate control, volume control, and water quality requirements, consistent with the Crystal Lake TMDL plan</li> <li>■ Proposed improvements have a discharge point within one mile of, and flows to, Crystal Lake and may require additional BMPs as required by the NPDES permit</li> </ul>
	West Broadway	No additional BMPs anticipated for this portion of the corridor
	Penn Avenue	Construct pond and infiltration BMPs to meet rate control, volume control, and water quality requirements
<b>D Common Section<sup>2</sup> (part of the Preferred Alternative)</b>	TH 55	<ul style="list-style-type: none"> <li>■ Construct pond and infiltration BMPs to meet rate control, volume control, and water quality requirements</li> <li>■ Proposed improvements have a discharge point within one mile of, and flows to, the Mississippi River and may require additional BMPs as required by the NPDES permit</li> </ul>

<sup>1</sup> Regarding station sites, there would be no discernible difference in stormwater impact between the Golden Valley Road and Plymouth Avenue/Theodore Wirth Regional Park station options.

<sup>2</sup> Due to the right-of-way constraints, infiltration trenches within the LRT guideway and adjacent sidewalk areas would be considered to provide additional infiltration capacity.

<sup>3</sup> Erosion control and sedimentation control BMPs will be required at all locations to meet the requirements of the cities and MPCA NPDES permits.

Figure 5.9-3. Proposed Stormwater Ponds at Park-and-Ride Locations





## 5.10 Air Quality

Information included within this section is based on the information provided in the Air Quality Technical Report (SRF Consulting Group, 2012). Coordination with MPCA occurred as described below.

Motorized vehicles affect air quality by emitting airborne pollutants. Changes in traffic volumes, travel patterns, and roadway locations affect air quality by changing the number of vehicles and the congestion levels in a given area. The air quality impacts from the Bottineau Transitway Project are analyzed by addressing criteria pollutants, a group of common air pollutants regulated by the EPA on the basis of information on health and/or environmental effects of pollution. A qualitative evaluation of Mobile Source Air Toxics (MSATs) has also been performed for this project. The scope and methods of these analyses were developed in collaboration with MPCA, Hennepin County, the Metropolitan Council, MnDOT, and FHWA.

### 5.10.1 Regulatory Context and Methodology

Air quality is evaluated as part of the National Environmental Policy Act (NEPA) review process for large projects receiving federal funding or approvals. This is done in accordance with the Federal Clean Air Act (CAA) of 1970 and the Clean Air Act Amendments (CAAA) of 1977 and 1990. The EPA regulates air quality and delegates this authority to the State of Minnesota, where it is monitored and enforced by the MPCA.

Air quality impacts are defined as an exceedance of established regulatory thresholds for certain pollutants. The criteria pollutants identified by the EPA are ozone, particulate matter, carbon monoxide, nitrogen dioxide, lead, and sulfur dioxide. Potential impacts resulting from these pollutants are assessed by comparing projected concentrations for the Build alternatives to National Ambient Air Quality Standards (NAAQS).

The EPA designates geographic areas based on measurements of criteria pollutant concentrations compared to NAAQS. An attainment designation indicates that concentrations are below NAAQS, nonattainment designation denotes concentrations exceeding NAAQS, and maintenance areas are those recently re-designated as attainment from non-attainment. No areas in Minnesota are designated as nonattainment for criteria pollutants. Hennepin County, where the proposed project is located, is designated as a maintenance area for carbon monoxide (CO). As a result, the Transportation Conformity Rule (40 CFR 93) requires this project to demonstrate compliance with the State Implementation Plan (SIP) to eliminate or reduce NAAQS violations. Therefore, an evaluation of carbon monoxide impacts has been performed.

In addition to the criteria air pollutants, the EPA also regulates air toxics. There are seven compounds with significant contributions from mobile sources identified by the EPA as Mobile Source Air Toxics (MSATs): acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. The FTA accepts the FHWA guidance for the assessment of MSAT effects for transportation projects in the NEPA process.

### 5.10.2 Study Area

A study area for evaluation of air quality effects was established for this project in cooperation with MPCA. The analysis performed includes consideration of carbon monoxide and MSATs. The evaluation of these pollutants is typically considered in the immediate project area where traffic volumes, travel patterns, and roadway locations affect air quality. Therefore, all roadway segments adjacent to and crossing the transitway alignments currently under consideration were included in the evaluation of air quality impacts.

### 5.10.3 Affected Environment

Air quality is evaluated based on impacts to humans in the impacted environment. Humans experience air quality impacts by breathing unsafe concentrations of airborne pollutants. Exposure to carbon

monoxide and MSATs emitted from motor vehicles, the pollutants evaluated for this project, can occur in homes, businesses, and recreation facilities located adjacent to affected roadway segments or on pedestrian facilities along project-area roadways. Other pollutants, such as ozone, are regional pollutants and are not attributable to a single transportation facility or project.

## 5.10.4 Environmental Consequences

### 5.10.4.1 Operating Phase (Long-Term) Impacts

#### National Ambient Air Quality Standards

Potential impacts resulting from criteria pollutants were assessed by comparing projected concentrations to National Ambient Air Quality Standards (NAAQS). Results of the analyses for each criteria pollutant are described in the Air Quality Technical Report (SRF Consulting Group, 2012), including descriptions of each pollutant.

#### Carbon Monoxide (CO)

Carbon monoxide (CO) is a traffic-related pollutant that has been of concern in the Twin Cities Metropolitan Area. In 1999, the EPA re-designated all of Hennepin, Ramsey, Anoka, and portions of Carver, Scott, Dakota, Washington, and Wright Counties as a maintenance area for CO. This means the area was previously classified as a nonattainment area but was found to be in attainment and is now classified as a maintenance area. Maintenance areas are required to undertake actions to demonstrate continuing compliance with CO standards. Since the Bottineau Transitway Project is located in Hennepin County, evaluation of CO for assessment of air quality impacts is required for environmental approval in NEPA documents.

#### Air Quality Conformity

The 1990 Clean Air Act Amendments (CAAA) require that SIPs must demonstrate how states with nonattainment and maintenance areas will meet federal air quality standards.

The EPA issued final rules on transportation conformity (40 CFR 93, Subpart A) which describe the methods required to demonstrate SIP compliance for transportation projects. It requires that transportation projects must be part of a conforming Long Range Transportation Plan (LRTP) and four-year Transportation Improvement Program (TIP). The Bottineau Transitway is part of the 2030 Transitway System shown in Metropolitan Council's *2030 Transportation Policy Plan (TPP)* (Figure 7-43, November 10, 2010). The proposed project is not included in the 2012-2015 Transportation Improvement Program (September 28, 2011) because it is not scheduled to be constructed until after year 2015. The TPP was found to be in conformity by FHWA on February 23, 2011. (FHWA acts as the executive agent for the FTA for purposes of determining conformity of metropolitan transportation plans.)

The *2030 TPP* supports expansion of transit services as a means of improving regional air quality. Chapter 7: Transit of the *2030 TPP* references changing federal policies that lead to coordinated investments in housing and transit service that can improve air quality through fewer vehicle miles traveled in private cars. Appendix F: Clean Air Act Conformance of the *2030 TPP* includes "Public Transit Strategies" in the list of "Timely Implementation of Transportation Control Measures." In sum, the proposed transitway improvements are consistent with the Metropolitan Council's goal of improving regional air quality.

On November 8, 2010, the EPA approved a request for a limited maintenance plan for the Twin Cities maintenance area. Under a limited maintenance plan, the EPA has determined that there is no requirement to estimate projected emissions over the maintenance period and that "emissions budgets in limited maintenance plan areas may be treated as essentially not constraining for the length of the initial maintenance period because it is unreasonable to expect that such an area will experience so much growth in that period that a violation of the CO NAAQS would result" (EPA Limited Maintenance Plan



Option for Nonclassifiable CO Nonattainment Areas, October 6, 1995). Therefore, no regional modeling analysis for the LRTP and TIP is required; however, federally funded and state funded projects are still subject to isolated intersection-level, or "hot spot" analysis, requirements. The limited maintenance plan adopted in 2010 determines that the level of CO emissions and resulting ambient concentrations will continue to demonstrate attainment of the CO NAAQS. Therefore, no regional emissions modeling was completed as part of the evaluation of the current project; however, hot spot analysis has been completed, as required, and is summarized below.

### *Conformity Analysis*

The effects of the proposed project on air quality were examined through analysis of the predicted impacts on CO concentrations. The following section discusses the CO analysis modeling methods and results.

To assess CO concentration changes, background concentrations were measured and adjusted for future background traffic growth and changes in vehicle emissions. Potential CO impacts on air quality were analyzed with respect to intersection conditions for the proposed Bottineau Transitway Project. Forecast year 2030 traffic was used to model future CO concentrations as the worst-case conditions. The analysis methods and procedures and the scope of this analysis were developed in collaboration with MPCA.

Air quality modeling was performed using current versions of EPA CO emission (MOBILE 6.2) and dispersion modeling (CAL3QHC) software. All methods and procedures used in the air quality analyses are generally approved as industry-standard analytical methods by the EPA and MPCA.

### *Intersection Carbon Monoxide Analysis*

Carbon monoxide concentrations were calculated for five intersections in the study area, one representing the worst-case condition along each of the alignments under consideration. These locations were identified from the Traffic Technical Report (Kimley-Horn and Associates, 2012) as the intersections with the highest traffic volumes and poorest levels of service and are expected to result in the worst-case CO concentrations. The rationale for this approach is to evaluate whether any of the proposed alignments might be expected to result in carbon monoxide concentrations exceeding NAAQS allowable limits. This methodology was developed based on input from MPCA and Hennepin County. The intersections selected for evaluation were:

- Alignment A: CSAH 81 & CSAH 130
- Alignment B: CSAH 103 & CSAH 130 (part of the Preferred Alternative)
- Alignment C: CSAH 81 & CSAH 10 (Bass Lake Road) (part of the Preferred Alternative)
- Alignment D1: TH 55 & Penn Ave (part of the Preferred Alternative)
- Alignment D2: CSAH 81 & Penn Ave

Background CO concentrations are needed for air quality analysis purposes to represent conditions without the influence of nearby vehicles. By definition, the background CO concentration in any particular area is that concentration which exists independently of direct contributions from nearby traffic.

The background concentrations are added to intersection-scale modeled results to yield predicted CO levels. To represent worst-case conditions, no background reduction factor to account for future emissions-control improvements was used, which likely results in overestimations of ambient background CO concentrations. Results of background CO monitoring and the adjustment calculations are presented in [Table 5.10-1](#).

**Table 5.10-1. Background Carbon Monoxide Concentrations**

Grove Academy, St. Louis Park, MN	1-Hour	8-Hour
March 2011 maximum concentrations <sup>1</sup>	0.56	0.49
Holzworth Correction Factor (Spring)	1.53	1.53
2011 background CO concentration (ppm)	0.86	0.75
Background traffic growth – 2011 to 2030	1.3	1.3
Adjusted background CO concentration (ppm) - 2030	1.12	0.98

Source: MnDOT Background Carbon Monoxide Monitoring Report, February 17 through March 4, 2011

#### *Evaluation Results*

The intersection CO modeling results are shown in [Table 5.10-2](#). These results are the worst-case results from the CAL3QHC dispersion model, showing the location of the highest expected concentration, the value of the highest one-hour and eight-hour concentrations, and the wind angle that produced these concentrations. The CO results provided represent background CO concentrations plus modeled intersection CO concentrations. The worst-case was identified at the intersection of CSAH 81 and CSAH 130.

**Table 5.10-2. Carbon Monoxide Modeling Results (Listed in parts-per-million (ppm))**

Alignment	Highest CO Receptor Location	1-Hour Average Concentration	8-Hour Average Concentration	Wind Direction
A: CSAH 81 & CSAH 130	SE Quadrant	2.52	1.96	310°
B: CSAH 103 & CSAH 130 (part of the Preferred Alternative)	SW Quadrant	2.12	1.68	300°
C: CSAH 81 & CSAH 10 (part of the Preferred Alternative)	NW Quadrant	2.22	1.75	110°
D1: TH 55 & Penn Ave (part of the Preferred Alternative)	SW Quadrant	2.42	1.89	70°
D2: CSAH 81 & Penn Ave	NW Quadrant	1.52	1.26	170°

#### *Discussion and Conclusions*

Intersection-level CO modeling was performed for the worst operating intersection under worst-case conditions. The highest predicted concentrations are expected to occur near the intersection of CSAH 81 and CSAH 130, with one-hour and eight-hour concentrations of 2.52 and 1.96 ppm, respectively. Based on these results, concentrations of CO in the study area would not exceed the federal one-hour standard of 35 ppm, the Minnesota one-hour standard of 30 ppm, and the federal eight-hour standard of nine ppm.

These CO modeling results show that the Bottineau Transitway Project is not expected to cause CO concentrations that exceed state or federal standards. Based on the qualitative assessment presented at the beginning of this section, the project would not cause exceedances of the other criteria pollutants.

#### **Mobile Source Air Toxics**

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (<http://www.epa.gov/ncea/iris/index.html>).

In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (<http://www.epa.gov/ttn/atw/nata1999>). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.

FHWA provides guidance on evaluation of MSATs for highway projects as part of the NEPA process. This guidance specifies a tiered approach for MSAT evaluation:

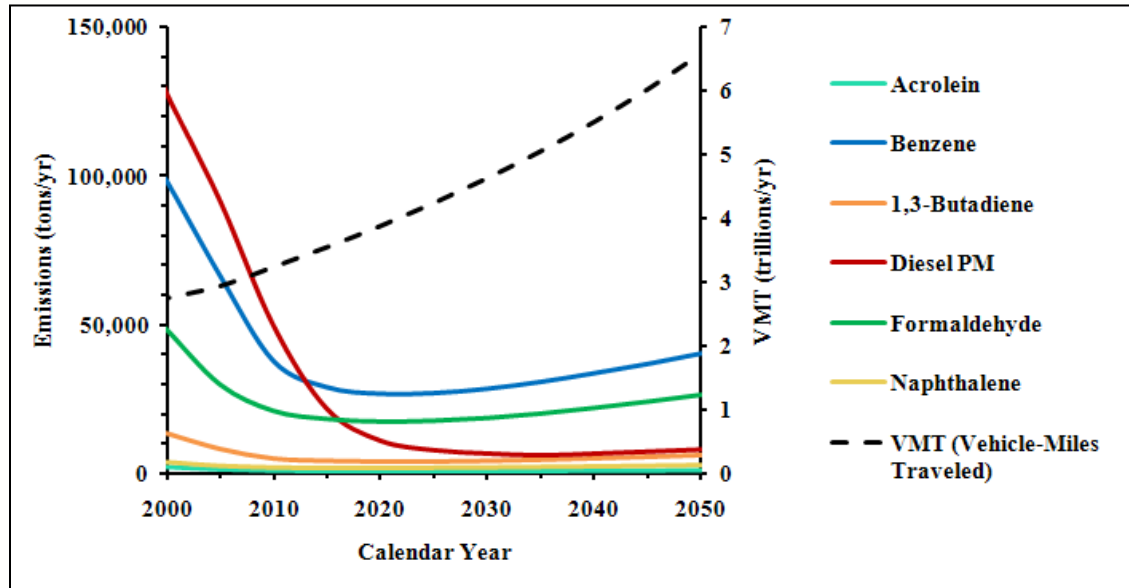
- No analysis is required for projects with no meaningful MSAT effects. These are projects qualifying as a categorical exclusion under 23 CFR 771.117(c), that are exempt under the CAA conformity rule, or have no meaningful impacts on traffic volumes or vehicle mix.
- Qualitative analysis is prescribed for projects with low potential MSAT effects. Most projects fall into this category if they do not meet the criteria for the other two categories.
- Quantitative analysis is required for major highway capacity projects on facilities with more than 140,000 to 150,000 vehicles per day or impact freight terminals with high levels of diesel particulate matter.

According to the FHWA guidance, a qualitative evaluation of MSAT impacts has been completed for the Bottineau Transitway Project. This is appropriate based on the scope of improvements contemplated as part of this project, particularly modifications to roadways and intersections through the project area. FHWA guidance states that the qualitative assessment should compare, in narrative form, the expected effect of the project on traffic volumes, vehicle mix, or routing of traffic and the associated changes in MSATs for the project alternatives, including No-Build, based on traffic volumes, vehicle mix, and speed. It should also discuss national trend data projecting substantial overall reductions in emissions due to stricter engine and fuel regulations issued by EPA.

#### *Summary of MSAT Information*

The 2007 EPA rule further requires controls that would dramatically decrease MSATs emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles traveled (VMT)) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSATs is projected from 1999 to 2050, as shown in [Figure 5.10-1](#).

Figure 5.10-1. National MSAT Emission Trends 1999 - 2050 for Vehicles Operating On Roadways Using EPA's MOBILE 6.2 Model



<sup>1</sup> Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.

<sup>2</sup> Trends for specific locations may be different, depending on locally derived information on vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

Source: U.S. Environmental Protection Agency. MOBILE6.2 model run 20 August 2009.

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSATs exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSATs exposure should be factored into project-level decision-making within the context of NEPA.

Information is incomplete or unavailable to credibly predict project-specific health impacts due to changes in MSATs emissions associated with a proposed set of transportation alternatives. The FHWA, EPA, Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSATs emissions associated with transportation projects. However, available technical tools do not enable us to predict the project-specific health impacts of MSATs emissions. In compliance with 40 CFR 1502.22(b), FHWA has provided a discussion demonstrating that scientific techniques, tools, and data are not sufficient to accurately estimate human health impacts that could result from a transportation project in a way that would be useful to decision-makers.

### Qualitative MSATs Analysis

For each alternative considered, the amount of MSATs emitted would be proportional to the average daily traffic (ADT), assuming that other variables, such as fleet mix, are the same for each alternative. All of the Build alternatives are expected to serve approximately 26,000 transit trips by year 2030. Current air quality levels are considered acceptable and are expected to remain at acceptable levels under the Build alternatives. Changes in ADT between alternatives differ among the various alignments. Each alignment is evaluated individually and discussed below.

#### Alignment A

The proposed operations of the Bottineau Transitway along Alignment A are not expected to have a significant impact on vehicular traffic. The transitway would be largely separated from the adjacent



roadways of CSAH 81 and CSAH 130. As a result, the ADT estimated for the A-C-D1 and A-C-D2 Build alternatives does not differ from that for the No-Build alternative. Since ADT does not differ, no changes in MSATs emissions for the Build alternatives along the corridor are expected.

The realigned travel lanes contemplated as part of Alignment A would have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, under the Build alternatives there may be localized areas where ambient concentrations of MSATs could be higher under the Build alternatives than the No-Build alternative. The localized increases in MSATs concentrations would likely be most pronounced along the expanded roadway sections that would be built along CSAH 130 (Elm Creek Boulevard) between Northland Drive and CSAH 81. However, the magnitude and the duration of these potential increases compared to the No-Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSATs health impacts.

#### ***Alignment B (part of the Preferred Alternative)***

The ADT estimated for the B-C-D1 and B-C-D2 Build alternatives along Alignment B is not expected to change compared to the No-Build alternative. It is possible that the presence of the transitway along CSAH 103 (Broadway Avenue) would be expected to impact the efficiency of the roadway and result in longer queues at intersections and more idling vehicles. This would lead to higher MSATs emissions for the Build alternatives along Alignment B because lower speeds are associated with higher MSATs emission rates; according to EPA's MOBILE6.2 model, emissions of all of the priority MSATs except for diesel particulate matter increase as speed decreases. The extent of these speed-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

The realigned travel lanes contemplated as part of Alignment B would have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, under the Build alternatives containing Alignment B there may be localized areas where ambient concentrations of MSATs could be higher under the Build alternatives than the No-Build alternative. The localized increases in MSATs concentrations would likely be most pronounced along the expanded roadway sections that would be built along CSAH 103 (Broadway Avenue) between Oak Grove Parkway and 75th Avenue. However, the magnitude and the duration of these potential increases compared to the No-Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSATs health impacts.

#### ***Alignment C (part of the Preferred Alternative)***

The ADT estimated along Alignment C (all Build alternatives) is not expected to change compared to the No-Build alternative. It is possible that the presence of the transitway along CSAH 81 would be expected to impact the efficiency of the roadway and result in longer queues at intersections and more idling vehicles. This would lead to higher MSATs emissions for the Build alternatives along Alignment C because lower speeds are associated with higher MSATs emission rates; according to EPA's MOBILE6.2 model, emissions of all of the priority MSATs except for diesel particulate matter increase as speed decreases. The extent of these speed-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

#### ***Alignment D1 (part of the Preferred Alternative)***

Changes in ADT are not a relevant measure for the segments of Alignment D1 passing near Theodore Wirth Park. This is because the Bottineau Transitway would operate on exclusive right-of-way with little or no impact to vehicular traffic. As a result, no changes in MSATs emissions would be expected for the Build alternatives incorporating the D1 alignment (A-C-D1 or B-C-D1) compared to the No-Build alternative.

#### ***Alignment D2***

The ADT estimated for the Build alternatives along Alignment D2 is not expected to change compared to the No-Build alternative. It is possible that the presence of the transitway along 34th Avenue, CSAH 81, and CSAH 2 (Penn Ave) would be expected to impact the efficiency of the roadway and result in longer

queues at intersections and more idling vehicles. This would lead to higher MSATs emissions for the Build alternatives along Alignment D2 because lower speeds are associated with higher MSATs emission rates; according to EPA's MOBILE6.2 model, emissions of all of the priority MSATs except for diesel particulate matter increase as speed decreases. The extent of these speed-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

The realigned travel lanes contemplated as part of the Build alternatives would have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, under the Build alternatives utilizing Alignment D2 there may be localized areas where ambient concentrations of MSATs could be higher than the No-Build alternative. The localized increases in MSATs concentrations would likely be most pronounced along the expanded roadway sections that would be built along 34th Avenue, CSAH 81, and CSAH 2 (Penn Ave) between the 34th Avenue railroad crossing and TH 55 (Olson Memorial Highway). However, the magnitude and the duration of these potential increases compared to the No-Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSATs health impacts. Also, MSATs would be lower in other locations when traffic shifts away from them.

#### ***Alignment D Common Section (part of the Preferred Alternative)***

The ADT estimated for the Build alternatives along the Alignment D Common Section is not expected to change compared to the No-Build alternative. It is possible that the presence of the transitway along TH 55 would be expected to impact the efficiency of the roadway and result in longer queues at intersections and more idling vehicles. This would lead to higher MSATs emissions for the Build alternatives along the Alignment D Common Section because lower speeds are associated with higher MSATs emission rates; according to EPA's MOBILE6.2 model, emissions of all of the priority MSATs except for diesel particulate matter increase as speed decreases. The extent of these speed-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

#### ***All Alternatives***

Under each of the proposed alternatives (No-Build, Enhanced Bus/TSM, and Build alternatives) emissions would likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSATs emissions by 72 percent between 1999 and 2050. On a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSATs levels to be significantly lower than today. The magnitude of the EPA-projected reductions is so great (even after accounting for traffic growth) that MSATs emissions in the study area are likely to be lower under a wide variety of future conditions.

#### **5.10.4.2 Construction Phase Impacts**

##### **No-Build Alternative**

No air quality impacts are associated with construction under the No-Build alternative.

##### **Enhanced Bus/TSM Alternative**

Construction activities under the Enhanced Bus/TSM alternative are limited to the development of a proposed transit center at Oak Grove Parkway. Construction activities under the Enhanced Bus/TSM alternative could result in higher concentrations of air pollutants. Construction equipment powered by fossil fuels emits the same air pollutants as do highway vehicles. Exposed earthen materials can also produce increased particulate matter when they are moved or disturbed by wind. BMPs described in Section 5.10.5 will ensure that concentrations of air pollutants are kept at the lowest possible levels during the construction phase.

## Build Alternatives

The construction of each of the alignments under consideration would affect traffic volumes and operations along roadways in and around the study area. During construction, some intersections may need to temporarily operate with reduced capacities or be temporarily closed. Under these conditions, traffic would be expected to detour to parallel roadway facilities near the project area. This increased traffic may result in increased emissions and higher concentrations of air pollutants near homes and businesses.

In addition to traffic-related emissions increases, construction activities can also result in higher concentrations of air pollutants. Construction equipment powered by fossil fuels emits the same air pollutants as highway vehicles. Exposed earthen materials can also produce increased particulate matter when they are moved or disturbed by wind. BMPs described in Section 5.10.5 will ensure that concentrations of air pollutants are kept at the lowest possible levels during the construction phase.

### 5.10.5 Avoidance, Minimization, and/or Mitigation Measures

#### 5.10.5.1 Operating Phase (Long-Term) Impacts

The analysis presented in this document demonstrates there will be no anticipated exceedances of air pollutant concentrations during the operating phase (long-term) of the proposed project; therefore, no mitigation measures are necessary. The State of Minnesota does not require permits related to air quality for projects of this type.

#### 5.10.5.2 Construction Phase Impacts

This analysis also demonstrates that there will be no anticipated exceedances during the construction phase. However, a series of BMPs would be implemented during construction to control dust. This may include the following preventive and mitigative measures:

- Minimization of land disturbance during site preparation
- Use of watering trucks to minimize dust
- Covering of trucks while hauling soil/debris off-site or transferring materials
- Stabilization of dirt piles if they are not removed immediately
- Use of dust suppressants on unpaved areas
- Minimization of unnecessary vehicle and machinery idling
- Revegetation of any disturbed land post-construction

Traffic control measures would be developed in subsequent stages of the project to address detours and flow of traffic.

#### 5.10.5.3 Summary of Impacts and Mitigation Measures

**Table 5.10-3** summarizes the general air quality impacts of the Build alternatives proposed for the Bottineau Transitway Project. This table is meant to give a snapshot of the types of impacts that may be anticipated. It is not anticipated that adverse air quality impacts would result from the No-Build or Enhanced Bus/TSM alternatives.

**Table 5.10-3. Summary of Air Quality Impacts and Mitigation Measures**

Impact Category	Impacts of Build Alternatives	Avoidance, Minimization, and/or Mitigation Measures
<b>Operating Phase (Long-Term) Air Quality – CO Hot Spot Analysis</b>	None of the alternatives under consideration would be expected to result in CO concentrations exceeding state or federal standards.	None required
<b>Operating Phase (Long-Term) Air Quality – MSATs Analysis</b>	While there may be localized areas where MSATs emissions would increase, EPA vehicle and fuel regulations, coupled with fleet turnover, would result in substantial reductions that, over time, would result in significantly lower region-wide MSATs than those found today.	None required
<b>Construction Impacts of Build Alternatives on Air Quality</b>	Construction of the proposed Bottineau Transitway may also cause increased concentrations of dust and air pollutants. When roads are closed or operating with reduced capacity, detoured traffic would result in increased traffic on parallel roadways near the project area. Increased emissions would also be produced by construction equipment, and particulate matter can enter the air from exposed earthen materials. However, it is expected that ambient concentrations of increased air pollutants would remain below state and federal standards.	BMPs would be implemented during construction to control dust and manage equipment. Traffic control measures would be developed in subsequent stages of the project to address detours and flow of traffic.

## 5.11 Energy

### 5.11.1 Regulatory Context and Methodology

This section reports the estimated changes in regional energy consumption resulting from the Bottineau Transitway Project. The analysis results are reported in British Thermal Units (BTUs) per mile as calculated from the vehicle miles traveled (VMT) reported for each alternative by the Twin Cities Regional Travel Demand Model. A BTU is a commonly used unit of energy and represents the amount of heat energy needed to raise the temperature of one pint of water by one degree Fahrenheit. Energy consumption factors will be based on estimates of average energy consumption rates.

The energy impacts of the Build alternatives were determined by comparing total energy consumption of each Build alternative with the No-Build and Enhanced Bus/TSM alternatives. The amount of energy used per mile by each mode of transportation is presented in [Table 5.11-1](#). By multiplying these energy-use factors by the total miles traveled, annual energy use can be estimated.



**Table 5.11-1. Energy Consumption Factors**

Mode	Factor (BTU/Vehicle Mile)
Light Rail Transit	61,645
Heavy Duty Vehicles	21,463
Bus	35,958
Passenger Vehicles	5,692

Source: Transportation Energy Data Book: Edition 31 (July 2012) USDOE Oak Ridge National Laboratory

### 5.11.2 Study Area

The study area for energy includes anticipated changes in travel patterns and bus operations within the various alternatives proposed for study in this Draft EIS. The focus is on direct energy use. That is, the energy consumed in the operation of vehicles including autos, buses, and trucks.

### 5.11.3 Affected Environment

The study area is primarily urban with small amounts of agricultural land at the northern end of one of the project alignments. Development along the proposed Bottineau Transitway includes residential, business, industrial, institutional, agricultural, park, and transportation uses. Existing land uses along the proposed alignment options are identified and described in Section 4.1 of this Draft EIS.

### 5.11.4 Environmental Consequences

#### 5.11.4.1 Operating Phase (Long-Term) Impacts

Long-term operational effects are presented in [Table 5.11-2](#) and are discussed below.

##### No-Build Alternative

The annual regional direct energy consumption for the No-Build alternative would be approximately 224.214 trillion BTUs annually, based on output from the Twin Cities Regional Travel Demand Model, as modified for the Bottineau Transitway Project.

##### Enhanced Bus/TSM Alternative

The estimated annual regional direct energy consumption for the Enhanced Bus/TSM alternative would be 224.163 trillion BTUs annually.

##### Build Alternatives

All of the Build alternatives have slightly lower energy consumption as compared to the No-Build alternative. Energy consumption is similar across all Build alternatives, with Alternative A-C-D1 having the lowest annual regional direct energy consumption. Estimated annual energy consumption for each of the Build alternatives is listed below.

- **A-C-D1:** 224.092 trillion BTUs
- **A-C-D2:** 224.096 trillion BTUs
- **B-C-D1 (Preferred Alternative):** 224.112 trillion BTUs
- **B-C-D2:** 224.116 trillion BTUs

**Table 5.11-2. Estimated Energy Use of Alternatives by 2030**

Vehicle Type	No-Build	Enhanced Bus/TSM	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2
<b>2030 Annual VMT (in thousands) <sup>1, 2</sup></b>						
Light Rail	3,383	3,383	5,446	5,464	5,552	5,570
Heavy Duty Vehicle	1,552,081	1,551,515	1,550,707	1,550,720	1,550,811	1,550,827
Bus	46,200	48,017	47,129	47,129	46,904	46,904
Passenger Car	33,210,046	33,191,741	33,165,612	33,166,037	33,168,976	33,169,507
Total	34,811,710	34,794,656	34,768,893	34,769,349	34,772,243	34,772,808
<b>2030 Annual Energy Consumption (billion BTUs)</b>						
Light Rail	209	209	336	337	342	343
Heavy Duty Vehicle	33,312	33,300	33,283	33,283	33,285	33,285
Bus	1,661	1,727	1,695	1,695	1,687	1,687
Passenger Car	189,032	188,927	188,779	188,781	188,798	188,801
Total	224,214	224,163	224,092	224,096	224,112	224,116
Difference from No-Build	--	(51)	(122)	(118)	(102)	(98)

<sup>1</sup> Source: Annual VMT for No-Build (auto and truck) is estimated and calibrated based on MnDOT 2010 VMT figures for the 7-County Twin Cities Metropolitan Area.

<sup>2</sup> Source: SRF Consulting Group, Inc. (2011)

#### 5.11.4.2 Construction Phase Impacts

##### No-Build Alternative

There would be no project-related construction energy use for the No-Build alternative.

##### Enhanced Bus/TSM Alternative

Limited short-term energy use would likely be required for implementation of the Enhanced Bus/TSM alternative through the construction of a proposed transit center and park-and-ride facility near Oak Grove Parkway and West Broadway Avenue, north of TH 610. However, such energy use would be much less than for the Build alternatives.

##### Build Alternatives

Energy would be required for construction of the Build alternatives, for the production of the raw materials used in construction, and for the operation of construction equipment. Energy use would be localized and temporary. Compared to the energy consumption of the entire Twin Cities Metropolitan Area, the construction of the Build alternatives would not have a substantial impact on regional energy consumption.

#### 5.11.5 Avoidance, Minimization, and Mitigation Measures

Implementation of any of the Build alternatives would result in a decrease in total energy used annually by a small amount compared to the No-Build alternative. No mitigation has been identified or recommended.

Although the analysis indicates that the project would not increase energy consumption, there are additional opportunities to decrease energy consumption. Potential opportunities include construction of energy efficient structures such as stations and the operation and maintenance facility. Further evaluation of these opportunities would occur during project design and development.

## 6.0 Indirect Effects and Cumulative Impacts

### 6.1 Introduction

This chapter of the Draft EIS addresses potential indirect and cumulative impacts of the Bottineau Transitway project.

Indirect effects are those that are caused by the proposed action (in this case the Bottineau Transitway Build alternatives) but occur later in time and/or proximity while being reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in land use patterns, population density, or growth rate, and related effects on air and water and other natural systems and the built environment.

Cumulative impacts result from “the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR § 1508.7). The purpose of a cumulative impacts analysis “is to ensure that federal decisions consider the full range of consequences of actions” (CEQ 1997). Cumulative impacts could occur through the combination of a Build alternative’s direct and indirect effects, combined with other development that is not directly related to the Build alternative.

### 6.2 Methodology

#### 6.2.1 General Approach

The indirect and cumulative impact assessment follows the National Environmental Policy Act (NEPA) (40 CFR 1500-12508) and the following specific guidance documents:

- Considering Cumulative Effects Under the National Environmental Policy Act (Council on Environmental Quality (CEQ), 1997)
- Consideration of Cumulative Impacts in EPA Review of NEPA Documents (Environmental Protection Agency, 1999)
- Interim Guidance: Questions and Answers Regarding Indirect and Cumulative Impact Considerations in the NEPA Process (Federal Highway Administration, 2003)
- Guidance on the Consideration of Past Actions in Cumulative Effects Analysis (CEQ, 2005)
- Desk Reference for Estimating Indirect Effects of Proposed Transportation Projects (National Cooperative Highway Research Program (NCHRP) Report 466)

While the methodology and level of detail for indirect and cumulative impacts analyses are not dictated by NEPA, FHWA guidance specifies that “*the document needs to present a reasonably complete and accurate picture of the probable consequences involved in implementation of a proposed project, commensurate with the potential for adverse impacts. . .*”. The FHWA guidance further specifies that the analysis must be of sufficient detail to be “*useful to the decisionmaker in deciding whether, or how, to alter the program to lessen cumulative impacts.*” The analysis and discussion in this chapter has been prepared with this guidance in mind.



## 6.2.2 Methods

### 6.2.2.1 Indirect Effects

#### Analysis Methods

Given the urban and suburban nature of the Bottineau Transitway study area, the assessment of indirect effects focuses on changes in land use and the intensity of development that could occur around the project and impacts that may follow from these changes. Although no residential, commercial, or industrial development is proposed by the project, transitway development is known to serve as a catalyst for residential and commercial development, in particular in areas surrounding stations.

In the study area, this type of development is desired and the local and regional governments have prepared for and enabled it with corresponding land use plans and zoning regulations. So while secondary impacts from new development are identified, the new development itself may be considered positive.

Specific potential indirect impacts were identified qualitatively using the following methodology.

- **Existing Conditions and Trends:** Review and analyze the existing condition of each potentially affected resource as described in the chapters on the Draft EIS. The review focused on understanding the status, viability, and historical context of each resource to determine the relative vulnerability of the resource to secondary impacts. The existing conditions analysis also provides an understanding of the condition of the resources over a broader geographic area, which is critical to assessing the potential for indirect impacts that may be separated in both space and time. The existing conditions analysis methods used were quantitative and qualitative, depending on the approach in each relevant Draft EIS section.
- **Project Impacts:** Review and analyze the impacts from the proposed action (Bottineau Transitway Build alternatives) on each resource, as described in the chapters of the Draft EIS. In order to anticipate how the project might result in indirect impacts, this review focused on outcomes – the state of the resource assuming the project (the various Build alternatives) has been implemented. The understanding of project impacts combined with existing conditions and past trends was used to provide an understanding of the state of each resource and its likely vulnerability to any secondary impacts identified.
- **Indirect impacts:** Identify potential indirect impacts and estimate their magnitude based on understanding of existing conditions and trends and project impacts. The indirect effects analysis used a qualitative understanding of the causal nature of impacts to the built and natural environment likely to result from development, drawing on analyses for similar projects locally and elsewhere. This included a checklist approach, reviewing each resource area described in the Draft EIS for potential physical, spatial and ecological (system) interactions. The descriptions of potential impacts are by necessity qualitative. Rather than attempting a complex analysis to quantify potential impacts, the emphasis of the analysis is on being comprehensive with respect to potentially affected resources and estimating potential magnitude.

Differences between and among alternatives with respect to their potential indirect impacts are noted as relevant in the discussion in Section 6.4. However, for both indirect and cumulative impacts there is relatively little differentiation among the build alternatives. Although the Build alternatives are differentiated in some of their direct impacts, they all are located in the same general corridor and are subject to the same land use and development controls and other regulations. With respect to cumulative impacts, the alternatives are all subject to the same set of reasonably foreseeable future actions.

## Geographic Boundary

The analysis for indirect effects focuses on a half-mile radius around each of the proposed transit stations (Figure 6.2-1). This approach is supported by the National Cooperative Highway Research Program (NCHRP) Report 466: *Desk Reference for Estimating Indirect Effects of Proposed Transportation Projects* which states, “development effects are most often found up to one-half mile around a transit station.”

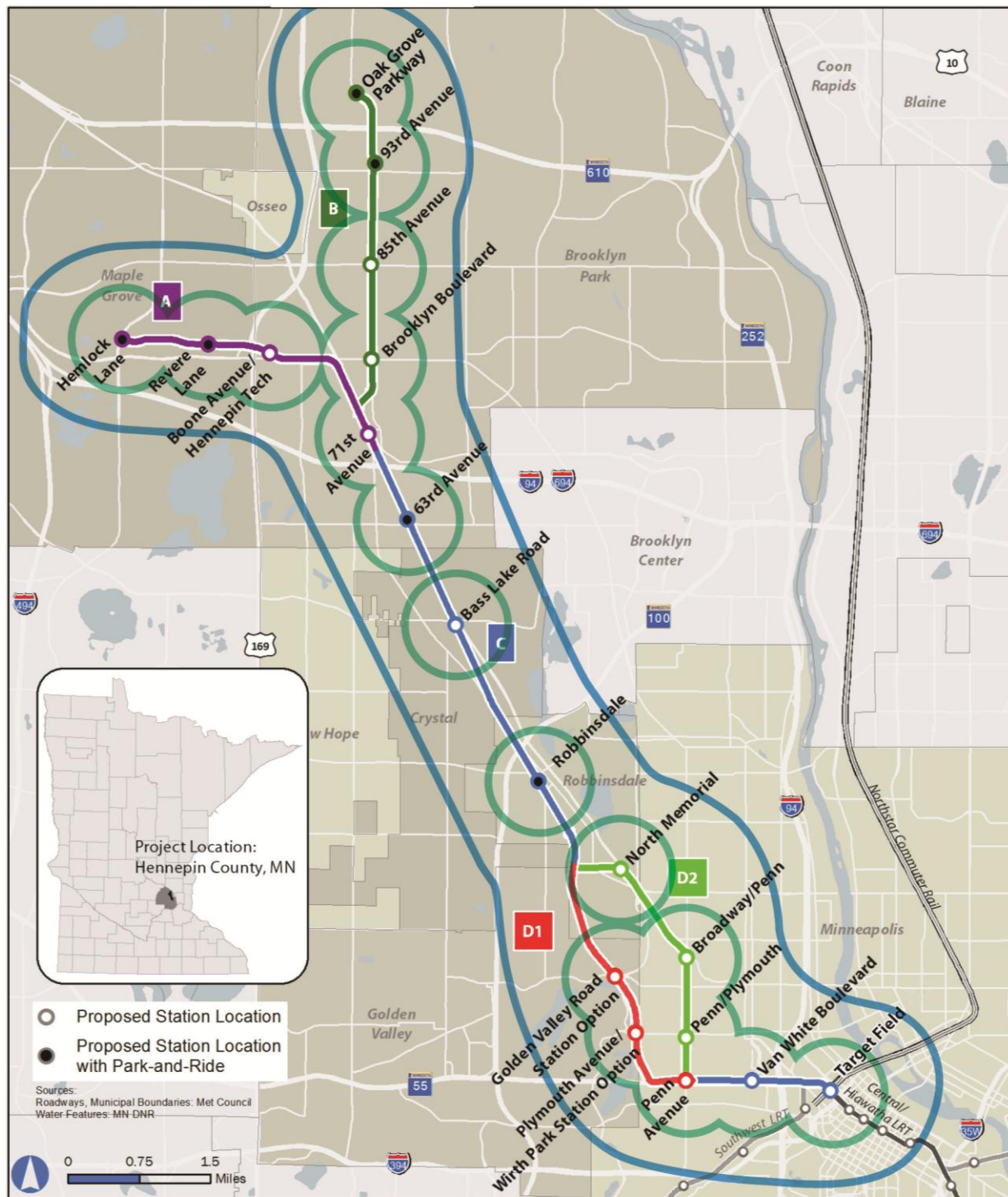
Indirect effects of the Bottineau Transitway (such as induced development) would be most likely to occur in the areas around stations because of the improved access to those locations provided by the new transit service. Beyond a half-mile, new development induced by the project is less likely. However, secondary development impacts beyond a half-mile radius of the stations are possible. For example, new development in a station area could have natural resource impacts that follow the resource itself for a given distance rather than the half-mile boundary relevant to the build environment. To address this, potential natural resource impacts were analyzed following natural resource boundaries (e.g., wetland complex, waterway, floodplain, habitat).

### 6.2.2.2 Cumulative Impacts

Consistent with regulatory guidance for a cumulative impacts analysis, the development actions considered for the cumulative impacts analyses include those that are past, present, and reasonably foreseeable. For the purpose of this analysis, development actions were considered according to the following three categories and time horizons:

- Past: Past actions are summarized in the existing conditions section of each issue area in the Draft EIS (Chapters 3, 4, and 5) and reflect the current state of the resource within the boundaries of this analysis.
- Present: Present actions are those projects by local, state, or federal agencies just completed or under construction; or private development projects known to local jurisdictions.
- Future: Reasonably foreseeable future actions (see Section 6.3) are those that have reached some local, state, or federal government approval (including private development approvals) and thus could be under construction anytime between the present through the year 2030, the planning horizon for the Bottineau Transitway traffic and other impacts analysis.

Figure 6.2-1 Primary Study Areas for Indirect and Cumulative Impacts



- Indirect impacts primary study area (1/2-mile around transit stations)
- Cumulative impacts primary study area (1 mile around project alternatives)

## Analysis Methods

The following specific methods were used in the analysis of cumulative impacts.

- **Existing Conditions and Trends:** Review and analyze the existing condition of each potentially affected resource as described in the chapters on the Draft EIS. The assessment of existing conditions conducted for each resource by definition includes the impact of past actions on the condition of the resource. Thus, the review focused on understanding the status, viability, and historical context of each resource to determine the relative vulnerability of the resource to cumulative impacts. The existing conditions analysis methods used were quantitative and qualitative, depending on the approach in each relevant Draft EIS section.
- **Project Impacts:** Review and analyze the impacts from the proposed action (Bottineau Transitway build alternatives) on each resource, as described in the chapters of the Draft EIS. In order to anticipate how the project would contribute to cumulative impacts, this review focused on outcomes – the state of the resource assuming the project (the various Build alternatives) has been implemented. The understanding of project impacts combined with existing conditions and past trends was used to provide an understanding of the state of each resource and its likely vulnerability to impacts from other present or reasonably foreseeable future actions.
- **Impacts of Other Actions:** Identify other present actions and reasonably foreseeable future actions and their possible impacts to each resource. These actions and the process used to identify them are discussed in Section 6.3. Potential impacts from each action were identified using a checklist approach to consider each project area resource in relation to each action. For example, many of the reasonably foreseeable future actions are residential or commercial development projects. The understanding of the status of the existing resources (provided in the existing conditions analysis) combined with knowledge of the types of impacts typical from land development allows one to describe qualitatively the resources that likely would be affected. The result is a listing of each resource that is anticipated to be potentially affected by these actions.
- **Cumulative Impact:** Identify potential cumulative impacts to each resource by considering the combination of existing conditions and trends, project impacts, and the impacts of other present actions and other reasonably foreseeable future actions. As with the other steps, this was completed using a checklist approach to ensure that all potentially affected resources were considered. Professional judgment was used to reach conclusions as to the potential magnitude of cumulative impacts, taking into account the frequency, duration, magnitude, and extent of potential past, present, and future impacts. The results of the analysis (Section 6.4-1) are generally qualitative, reflecting the general lack of available data on other present and future actions. However, the lack of quantification does not prevent the analysis from considering potential magnitude of the impact and is not considered to limit the value or thoroughness of the analysis.

## Geographic Boundary

The primary study area for the analysis of cumulative impacts is an area of one mile on each side of the proposed Build alternative alignments ([Figure 6.2-1](#)). This area was selected based on guidance documents and the study areas used in the Draft EIS. However, the boundary varies by the resource being considered. For example, air, water and habitat impacts could be greater depending on the location of the resource and the degree of impact. Thus, the potential degree of spatial impact was considered for each resource within this basic framework.

## 6.3 Reasonably Foreseeable Future Actions

The actions listed in [Table 6.3-1](#) are projects and developments currently anticipated through state and local plans, known private development actions, and planned and funded roadway and other infrastructure projects generally within the boundaries of analysis described above. These actions were



identified through coordination with the local agency partners serving on the project Advise, Review, and Communicate Committee (ARCC). The members of the ARCC include the cities of Brooklyn Park, Crystal, Golden Valley, Maple Grove, Minneapolis and Robbinsdale; Hennepin County; MnDOT; and the Metropolitan Council/Metro Transit.

None of these future actions are the result of the Bottineau Transitway Project; their implementation is not dependent on whether or not the project is implemented. These actions are reasonably foreseeable in that they are likely to occur by virtue of being funded, approved, or part of an officially adopted planning document.

It should be noted that future station area planning other future planning initiatives may identify other actions that are not included in the reasonably foreseeable future actions identified at this time.

**Table 6.3-1. Reasonably Foreseeable Future Actions<sup>1</sup> by Alignment**

Action	Estimated Construction Timing	Description	Potential Environmental Impacts of Action
<b>Alignment A (Maple Grove)</b>			
MCES Interceptor Sewer	2012-2015	Creation of large central park for events	Parklands, water resources, stormwater, community facilities
Donegal Mixed-Use Development Plan	2012-2017	139 units of single-family residential 230 units of multi-family residential 55,230 s.f. of retail	Transportation, stormwater, water resources, wetlands, visual, land use, business impacts
Hemlock Apartments	2012-2013	100 affordable apartments	Construction, visual, stormwater, environmental justice
Maple Grove Gravel Mining Special Area Plan (GMASAP)	2012-2030	116 units of low density residential 1,878 units of medium density residential 1,118 units of high density residential 11,000,000 s.f. of regional mixed use, non-retail focus 483,000 s.f. of regional mixed use 3,782,248 s.f. of office/light industrial/warehouse/manufacturing	Transportation, stormwater, water resources, wetlands, visual, land use, business impacts
SilverCrest Communities	2013-2014	400+ units of senior housing	Construction, visual, stormwater, environmental justice
Skye at Arbor Lakes	2012-2013	467 market rate apartments	Construction, visual, stormwater, environmental justice

**Table 6.3-1. Reasonably Foreseeable Future Actions<sup>1</sup> by Alignment (continued)**

Action	Estimated Construction Timing	Description	Potential Environmental Impacts of Action
<b>Alignment B (Brooklyn Park)</b>			
CSAH 103/West Broadway Project (93rd Avenue to Candlewood)	2014-2015	Roadway upgrade to four-lane divided urban section, with trails	Transportation, stormwater, right-of-way, visual, construction
Target North Campus AUAR Update	Near-term 2015; long-term 2030	1,700,000 s.f. of office, 300,000 s.f. of commercial & 130,600 s.f. of tech/data support buildings	Transportation, stormwater, water resources, wetlands, visual, construction
TH 610 extension to I-94 EIS	Contingent on funding	Planning stage (unfunded) Prior segment completed in 2012	Transportation, stormwater, right-of-way, visual, water resources, construction
TH 81/TH 169 Landscaping	2014	Landscape the right-of-way of the new project	No anticipated impacts
TH 169/CSAH 30 Interchange Project	2013	Half-diamond type interchange	Transportation, stormwater, right-of-way, visual, construction
TH 169/CSAH 109 Landscape Project	2013	Right-of-way landscaping	No anticipated impacts
<b>Alignment C (BNSF)</b>			
Phased Improvements for CSAH 81	Ongoing	Reconstruction of roadway from TH 100 to CSAH 30 with capacity and stormwater management upgrades	Transportation, stormwater, right-of-way, visual, construction
The Cavanagh Senior Housing	2013-2014	130 units of affordable senior housing	Construction, visual, stormwater, environmental justice
Crystal Lake Regional Trail Master Plan	To be determined	Master plan for 11-mile paved multi-use trail to connect to regional trail network	Transportation, stormwater, construction, community facilities
Proposed Robbinsdale Wastewater Treatment Facility	To be determined	Construction of new treatment plant adjacent to the BNSF corridor Project currently in planning stage	Water quality, construction
<b>Alignments D1, D2, and D Common Section (Robbinsdale/Golden Valley/Minneapolis)</b>			
Theodore Wirth Regional Park Master Plan	2012-2014	Master plan to guide over \$5 million in improvements	Community facilities, wildlife
Target Field Station	2012 – 2014	Multimodal transportation hub in downtown Minneapolis	Construction, land use, stormwater, traffic and transportation, business impacts

**Table 6.3-1. Reasonably Foreseeable Future Actions<sup>1</sup> by Alignment (continued)**

Action	Estimated Construction Timing	Description	Potential Environmental Impacts of Action
Green Line (Southwest) LRT	2017 opening	15-mile LRT line between Minneapolis and Eden Prairie	Stormwater, right-of-way, visual, construction, land use, business impacts, transportation (transit use, traffic patterns, freight rail traffic)
Northern Lights Express	To be determined	New 110-mph passenger rail service between downtown Minneapolis and Duluth	Construction, transportation (travel patterns, freight rail operations), stormwater
Green Line (Central) LRT	2014 opening	9.5-mile LRT line on University Avenue between Minneapolis and St. Paul	Stormwater, right-of-way, visual, construction, land use, business impacts, transportation (transit use, traffic patterns)
Midwest High Speed Rail	To be determined	High speed rail service between Minneapolis and Chicago	Stormwater, right-of-way, visual, construction, land use, business impacts, transportation (transit use, traffic patterns)
Heritage Park Master Plan	Ongoing	Redevelopment of 145-acre former public housing development into sustainable, affordable urban neighborhood	Stormwater, water resources, wetlands, visual, land use, community facilities, environmental justice
Van White Bridge	Dec 2013	New bridge over BNSF rail tracks/Basset Creek connecting north and south Minneapolis	Construction, stormwater, traffic and transportation
Public and private development, downtown Minneapolis	Ongoing	Multiple office, residential and mixed use development projects in North Loop and adjacent neighborhoods in downtown Minneapolis	Construction, stormwater, business impacts, traffic and transportation

<sup>1</sup> Reasonably foreseeable future actions are identified through the year 2030, the planning horizon for the Bottineau Transitway Project.

## 6.4 Potential Indirect Effects and Cumulative Impacts

This section describes the potential for indirect effects that might result from the Bottineau Transitway Project, and cumulative impacts that also might result from the Bottineau Transitway Project are considered. These are considered in combination with past trends and the reasonably foreseeable future actions described in Section 6.3. The discussion is summarized in [Table 6.4-1](#).

### 6.4.1 Transportation

#### Indirect

The areas of potential indirect effects of the project on transportation include transit, roadway (including autos, transit vehicles, and freight), bicycle, and pedestrian modes and facilities. Ridership forecasts for

the project show an increase in new transit trips, which is associated with a decrease in auto trips as a result of people switching from auto to transit for the first time. While the intent of implementing a transitway is to attract new riders, it is nevertheless an indirect effect, in that people may choose to use the new facility once it is constructed based on its benefits in relation to their transportation needs.

Implementation of the Bottineau Transitway also would result in ridership on and operational changes to the existing local bus system as trips are redistributed once the transitway is operational. Trips via bicycle and pedestrian modes would increase in direct relation to the increase in transit trips, as a certain number of transit riders would access the transit system by foot and/or bicycle. It is likely that demand for pedestrian and bicycle access to transit stations would increase as an indirect result of the project.

### Cumulative

Continued development of transit and transportation facilities in the project area over time, combined with future actions and the direct and indirect effects of the Bottineau Transitway Project, would be expected to increase demand for transportation as a whole, as activity and development density increase. The decrease in auto trips as a result of the project would reduce the cumulative demand on the roadway system while increasing the demand on transit, bicycle, and pedestrian facilities, compared to trends without the project. Future station area planning activities would be expected to address needs for enhanced station area pedestrian and bicycle connections in correlation with future development/redevelopment plans.

### Mitigation

Because the indirect effects and cumulative impacts identified above are consistent with the comprehensive plans of the communities affected, as well as county and regional plans, no mitigation is required.

## 6.4.2 Land Use

### Indirect

Land use is guided by local jurisdiction zoning and comprehensive plans. Changes in land use designation (for example, change from single family to multi-family residential or change from residential to commercial) typically must be approved through a local planning process.

A major public investment such as the Bottineau Transitway often provides momentum and market changes that prompt new development or redevelopment. Assuming such development is consistent with existing approved land uses, this in and of itself does not constitute an indirect land use impact, as the designated land use would not change. However, such development pressures can lead to pressure to change zoning, typically in the form of increasing the intensity of allowed development. Thus, the Bottineau Transitway could indirectly result in land use changes, particularly in station areas, in the form of intensified uses. In many of the station areas, such change is already anticipated and approved in local comprehensive plans, and other additional changes may be addressed under station area planning activities.

### Cumulative

Continued development of transit and transportation facilities in the project area over time combined with future actions and the direct and indirect effects of the Bottineau Transitway Project could cumulatively result in land use changes in the study area, most likely in the form of increased residential and commercial densities or other intensification of land use. These trends likely would continue until demands for housing, retail, office, and/or industrial needs are met.



### Mitigation

The cities in the corridor have planned for future growth and development with their individual comprehensive plans. Potential indirect and cumulative impacts on land use are compatible with these plans and plans for the region, which state the desire for transit to alleviate traffic and congestion. No mitigation is required.

## 6.4.3 Community Character, Services, and Facilities

### Indirect

As described elsewhere, a potential indirect effect of the project would be that new businesses and residential developments are attracted to locate in the station areas. This new development could in turn result in increased use of and demand for community services (parks for example) and facilities (recreation centers, for example) and changes in community character (a quiet area becomes busier). For locations where comprehensive plans call for mixed-use development, such changes in character would be consistent with planned growth and development.

### Cumulative

Over time, continued development of transit and transportation facilities in the project area, combined with future actions and the direct and indirect effects of the Bottineau Transitway Project, would place increased demands on community services and facilities and would change community character. For locations where comprehensive plans call for mixed-use development, such changes in character would be consistent with planned growth and development.

### Mitigation

The types of indirect and cumulative impacts identified are typically consistent with and governed by applicable land use plans. No mitigation is required.

## 6.4.4 Displacement of Residents and Businesses

### Indirect

New development at Bottineau Transitway station areas could potentially result in the displacement of existing residents and/or businesses. Any such displacements would be guided by applicable laws and would need to be consistent with zoning and comprehensive plans. Given the focus on more compact mixed-use and transit-oriented development in applicable land use plans, any such displacements would be likely to result in a net increase in development densities (impacts discussed in other sections).

### Cumulative

Continued development of transit and transportation facilities in the project area over time, combined with future actions and the direct and indirect effects of the Bottineau Transitway Project, could cumulatively result in displacements of residents and/or businesses. However, the land uses in the station areas are guided by individual community comprehensive plans and typically show level or increasing development densities. The need for additional transportation infrastructure to support new development could result in additional displacements.

### Mitigation

As described above, the project could result in a cumulative impact on residences and businesses through acquisition and displacement. However, new development, along with available housing in the corridor, would likely create more jobs and housing opportunities than what would be lost. No mitigation is required for indirect or cumulative impacts.

#### 6.4.5 Cultural Resources

##### Indirect

Development and redevelopment associated with the proposed transit stations could change the setting, context, and land use in the station areas (typically within a half-mile radius or less from the station). Such changes could have indirect effects on existing historic resources, such as changing the visual quality of the setting by adding a new (modern) building, adding a transportation facility, or increasing the density of the area. It is also possible the development induced by the project could directly affect historic properties through demolition, change in property values, or other impacts.

##### Cumulative

Over time, continued development of transit and transportation facilities in the project area, combined with future actions and the direct and indirect effects of the Bottineau Transitway Project including new development induced by the project in the station areas, could result in changes that diminish the integrity of a historic property's or district's location, feeling, or association. Some properties could be converted or demolished to take advantage of development or redevelopment opportunities.

##### Mitigation

All indirect and cumulative impacts to historic properties are subject to the protections and regulations of Section 106. Any committed mitigation is documented in the Section 106 Memorandum of Agreement for the Bottineau Transitway Project.

#### 6.4.6 Visual and Aesthetic Resources

##### Indirect

The primary contributor to indirect impacts on visual and aesthetic resources would be from changes to development that might result indirectly from the project. Typically, this would take the form of construction of a new building, the development of which would be in some way catalyzed by construction of the Bottineau Transitway. Development induced by the project would most likely occur within a half mile of stations, as described above. The type and degree of impact would depend on the location, size, and context of any new development. For example, a new building in a developed neighborhood that is in keeping with the scale and character of the existing neighborhood would typically be seen as a positive impact on visual resources, whereas a new building that does not fit in with the existing character could be seen as a negative impact. Generally, impacts would be minor given the already developed nature of most of the study area.

##### Cumulative

Continued development of transit and transportation facilities in the project area over time, combined with future actions and the direct and indirect effects of the Bottineau Transitway Project, would cumulatively change views in the project area over time. Specifically, views would become more organized and urbanized; wide-open views would, in some cases, become more closed. These changes are consistent with adopted comprehensive plans for the study area communities, which call for continued development of transportation infrastructure and land.

##### Mitigation

Development that occurs in response to the Bottineau Transitway and future actions would likely have a visual impact on the corridor. All development is regulated through applicable municipal codes and land use plans. No additional mitigation is required.

#### 6.4.7 Parklands and Open Space

##### Indirect

Parks and open spaces are important community resources and are considered an asset in the study area; regional parks (such as Theodore Wirth Regional Park, which would be directly accessible by Alternatives A-C-D1 and B-C-D1) are also potential generators of new transit trips. Greater levels of park and open space use could result from the increased accessibility provided by the project and by new populations who could be attracted to the project area as a result of the project. Greater use of park and open space resources could in turn create strain on facilities and increased maintenance levels.

##### Cumulative

Continued development of transit and transportation facilities in the project area over time, combined with future actions, natural population growth, and the direct and indirect effects of the Bottineau Transitway Project, would cumulatively increase use of parks and open spaces in the project area over time. Without attentive management and adequate funding, overuse and/or degradation of facilities or resources could result. Because cities and park jurisdictions typically forecast and plan for future population growth over time, such potential impacts would be expected.

##### Mitigation

The Metropolitan Council and the municipalities in the corridor have plans to expand and enhance parks and open spaces in the area to meet the demand of population growth over time. No additional mitigation is required.

#### 6.4.8 Business Impacts

##### Indirect

Adverse indirect impacts to businesses could result from displacement as a result of new development (see Section 6.4.4). Potential positive indirect impacts could include improved access to customers and employees as a result of the improved connectivity provided by the Bottineau Transitway.

##### Cumulative

Continued development of transit and transportation facilities in the project area over time, combined with future actions and the direct and indirect effects of the Bottineau Transitway Project, may cumulatively strengthen the business climate by providing improved transportation access to customers and employees. While individual businesses could be affected negatively, the overall (cumulative) result would be expected to be positive.

##### Mitigation

Development that occurs in response to the Bottineau Transitway and the reasonably foreseeable future actions would be expected to increase access to businesses in the area and expand the base of potential local consumers. No additional mitigation is required.

#### 6.4.9 Safety and Security

##### Indirect

It is possible that the increased development density and intensity anticipated around new transit stations would affect law enforcement and security providers. New planned concentrations of residential, commercial, and other uses would put more transit riders, pedestrians, and bicyclists in proximity with transit vehicles, tracks, crossings, and freight rail, potentially creating safety conflicts. This could in turn place greater demands on security providers and/or require changes in current patrol routes, schedules, and equipment needs.

### Cumulative

The continued development of transit and transportation facilities in the project area over time, combined with future actions, natural population growth, and the direct and indirect effects of the Bottineau Transitway Project, may cumulatively add to the demands on law enforcement and security providers, potentially affecting staffing levels and budgets over the long-term.

### Mitigation

Safety and security measures to address induced development and future actions would be planned for by the local municipalities, counties, and emergency service providers. Metro Transit will provide security at and around the stations, and transit rider, pedestrian, and bicycle safety features will be incorporated into design and maintained/enforced over time. No additional mitigation is required.

## 6.4.10 Environmental Justice

### Indirect

Potential indirect effects on environmental justice populations could result from increased development and redevelopment in the station areas. While not every station area is likely to see significant change in the short-term, those where demand for new development is stronger would be likely to experience increased property values and corresponding increases in rents and real estate taxes. While these impacts would be experienced by all populations within the study area, low-income persons may experience them to a greater extent and, particularly if they rent rather than own property, more likely as an adverse impact.

### Cumulative

Development around station areas in combination with future actions could result in increased property values and corresponding increases in rents and real estate taxes. While these impacts could be experienced by all populations in the study area, low-income persons are more likely to experience them as adverse.

### Mitigation

No mitigation is identified.

## 6.4.11 Public Utilities

### Indirect

It is possible that the increased development density and intensity anticipated around new transit stations would affect utility providers. New planned concentrations of residential, commercial, and other uses could cause changes in the patterns and level of demand for utilities in the area. Typically, utility fees charged to users offset net new costs to provide more service. In some cases, such changes could be beneficial to providers because higher density land use typically results in more efficient distribution of services.

### Cumulative

The continued development of transit and transportation facilities in the project area over time, combined with future actions, natural population growth, and the direct and indirect effects of the Bottineau Transitway Project, may cumulatively add to the demands on and customer base of utilities in the study area. The efficiencies of more compact development patterns (anticipated in station areas) would be expected to provide operating efficiencies to the utility providers over the long-term.



### **Mitigation**

To meet any increased demand on utilities from induced development and future actions, providers would plan appropriately through their regular planning processes that address population growth and service demand. No additional mitigation is required.

## **6.4.12 Hydrology and Floodplains**

### **Indirect**

New development induced by the project may adversely affect hydrology and floodplains without the implementation of best management practices (BMPs).

### **Cumulative**

Continued development of transit and transportation facilities in the project area over time, combined with future actions and the direct and indirect effects of the Bottineau Transitway Project, may cumulatively affect hydrology and floodplains without the implementation of BMPs.

### **Mitigation**

All permanent impacts on hydrology and floodplains caused by induced development and future actions would be mitigated according to applicable regulations. No additional mitigation is required.

## **6.4.13 Wetlands**

### **Indirect**

Indirect impacts on wetlands from the Bottineau Transitway would be possible to the extent that any new development induced by the project results in wetland impacts. This is less likely if typical BMPs are followed.

### **Cumulative**

Continued development of transit and transportation facilities in the project area over time, combined with future actions and the direct and indirect effects of the Bottineau Transitway Project, could cumulatively affect wetlands, in particular without the implementation of BMPs.

### **Mitigation**

All permanent impacts on wetlands caused by induced development and future actions would be mitigated according to applicable regulations. No additional mitigation is required.

## **6.4.14 Geology, Soils, and Topography**

### **Indirect**

No indirect impacts to geology, soils, or topography are anticipated from the Bottineau Transitway Project.

### **Cumulative**

Direct impacts to geology and soils will occur solely during construction; no long-term impacts are anticipated. No direct impacts to topography are identified. Given the lack of impact and/or temporary impact only, no cumulative impacts to these resources are anticipated.

### **Mitigation**

Given the lack of identified impacts, no mitigation is required.

#### 6.4.15 Hazardous Materials Contamination

##### Indirect

Anticipated development and redevelopment around transit stations could affect hazardous materials sites if proper BMPs (which are legally required) are not employed. Contaminated sites would be required to be cleaned up as development occurs.

##### Cumulative

Continued development of transit and transportation facilities in the project area over time, combined with future actions and the direct and indirect effects of the Bottineau Transitway Project, would contribute to the remediation of hazardous materials sites, as such sites would be required to be cleaned up as a condition of development or redevelopment.

##### Mitigation

Developers and agencies involved in future actions and induced development would be required to follow all state and federal laws concerning hazardous materials. No additional mitigation is required.

#### 6.4.16 Noise and Vibration

##### Indirect

Anticipated development around transit stations would expose more people to transit noise and noise potentially generated by park-and-ride facilities. Some reductions in automobile-related noise could occur as a result of people using transit and/or walking and bicycling instead of using automobiles. Similarly, new development induced by the project also could result in an increase in the number of residential land uses exposed to ground-borne vibration from LRT, automobiles, and buses at transit stations and in station areas.

##### Cumulative

As population growth in the study area continues and the trend toward more density puts more people near transportation corridors, the number of people exposed to road and transit noise would increase. The Bottineau Transitway Project would add a new noise source to the impact area, but it would also allow for and encourage the use of alternative modes of transportation and might reduce total trip length (and thus transportation noise) through compact development.

The Bottineau Transitway Project would contribute to increases in ground-borne vibration events along its alignment, and cumulative effects could occur where this project is near other public transportation vibration sources in downtown Minneapolis, such as at The Interchange at Target Field multimodal transportation hub where buses and other LRT and commuter rail lines are planned to converge.

##### Mitigation

Noise or vibration impacts caused by development or future actions would be assessed for mitigation on a project-by-project basis. No additional mitigation is required.

#### 6.4.17 Habitat and Endangered Species

##### Indirect

The Bottineau Transitway alternatives have the potential to cause indirect impacts to habitat and endangered species if proper BMPs are not followed. However, the planned use of BMPs and the limited amount of adjacent natural habitats in the study area would result in limited to no indirect impacts to biota (animal and plant life) and habitat. Other indirect effects could occur if development induced around the station areas results in direct impacts to natural habitat. However, the amount of these habitat effects would be limited, as the station areas are located within already urbanized and

suburbanized areas, and the species present tend to be generalized species adapted to urban conditions. In addition, any such new development would be required to follow applicable permitting and other regulatory requirements related to protection of natural resources.

#### **Cumulative**

Future actions would be anticipated to have minor effects on habitat and endangered species similar to the indirect effects from the induced development because they are located in already urbanized and suburbanized areas with limited amounts of natural habitat. The planned projects would be expected to adhere to BMPs during construction in order to limit indirect impacts to aquatic habitats, and no adverse cumulative impacts are anticipated.

#### **Mitigation**

No mitigation is required.

### **6.4.18 Water Quality and Stormwater**

#### **Indirect**

The anticipated development and redevelopment activities around station areas likely would involve temporary soil disturbance and possible increases in impervious surfaces, which could indirectly affect water resources. However, these activities would be subject to current water quality regulations, and installation of required BMPs would protect water quality.

#### **Cumulative**

Cumulative impacts from future actions in the project-area watersheds could include increased sediment and pollutant load. However, future actions are subject to the same water quality regulations as the Bottineau Transitway and would use similar BMPs during construction and operation. Thus, no cumulative adverse impacts to water quality are anticipated.

#### **Mitigation**

Potential impacts from induced development and future actions on stormwater and water quality would be addressed by implementing BMPs. No additional mitigation is required.

### **6.4.19 Air Quality**

#### **Indirect**

The Bottineau Transitway is expected to result in shifts from single-occupant vehicles to transit, an indirect impact of which would be a beneficial reduction in air pollutant emissions in the project area and the region.

#### **Cumulative**

Continued transportation and land development in the project area could result in increased air pollutant emissions. When combined with the Bottineau Transitway, which is expected to reduce the overall air pollutant load due to less automobile use, the cumulative impact on air quality could be an improvement over conditions without the project.

#### **Mitigation**

No mitigation is required.

## 6.4.20 Energy

### Indirect

The Bottineau Transitway is expected to result in shifts from single-occupant vehicles to transit, an indirect impact of which would be a reduction in energy use in the project area and the region over the long-term. New development in the station areas could result in greater demand for electricity in these locations; however, this type of new urban development is typically more energy efficient than existing or less dense development.

### Cumulative

Continued transportation and land development in the project area could result in increased energy use. When combined with the Bottineau Transitway, which is expected to use less energy than the No-Build alternative, the cumulative impact on energy use would likely be an improvement over conditions without the project.

### Mitigation

No mitigation is required.

**Table 6.4-1. Summary of Indirect Effects and Cumulative Impacts**

Resource	Indirect Effects	Cumulative Impacts	Mitigation
<b>Transportation</b>	Travel by transit, pedestrian, and bicycle modes would increase and single occupant vehicles would decrease as a result of the project.	The Build alternatives in combination with the reasonably foreseeable future actions would increase overall transportation demand. Increases in demand for auto travel would be reduced as a result of the transitway project.	Because the indirect effects and cumulative impacts identified are consistent with the comprehensive plans of the communities affected, as well as county and regional plans, no mitigation is required.
<b>Land Use</b>	Potential for market-driven development that could lead to more dense and intensely used spaces along the corridor.	Reasonably foreseeable future actions would likely increase the density and intensity of development in the corridor.	The cities in the corridor have planned for future growth and development with their individual comprehensive plans. Potential indirect and cumulative impacts on land use are compatible with these plans and plans for the region, which state the desire for transit to alleviate traffic and congestion. No mitigation is required.



**Table 6.4-1. Summary of Indirect Effects and Cumulative Impacts (continued)**

Resource	Indirect Effects	Cumulative Impacts	Mitigation
<b>Community Character, Services, and Facilities</b>	Transit-oriented development (TOD) in station areas would likely lead to denser land use patterns, attracting more development to the area, which could change community character.	The Build alternatives in combination with the reasonably foreseeable future actions would have the potential to change the character of neighborhoods in the study area. Lower income neighborhoods along the D2 portions of Alternatives A-C-D2 and B-C-D2 would be particularly susceptible to gentrification.	The types of indirect and cumulative impacts identified are typically consistent with and governed by applicable land use plans. No mitigation is required.
<b>Displacements of Residences and Businesses</b>	New station area development could result in displacements of existing uses, limited by zoning and comprehensive plans.	Additional transportation investments in the corridor to service induced development along with the reasonably foreseeable future actions could lead to the acquisition of right-of-way and the relocation of residents and businesses.	While there could be cumulative impacts from the acquisition and displacement of residents and businesses, induced development, along with available housing in the corridor, would likely create more jobs and housing opportunities than what would be lost. No mitigation is required for indirect or cumulative impacts.
<b>Cultural Resources</b>	More dense and intense development could affect the context of cultural resources.	Induced development associated with the Build alternatives in combination with the reasonably foreseeable future actions could cumulatively have an impact on cultural resources.	All indirect and cumulative impacts are subject to protections and regulations of Section 106. Any committed mitigation will be documented in the Section 106 Memorandum of Agreement.
<b>Visual and Aesthetic Resources</b>	Induced development around the stations would likely change the views of the area.	Induced development associated with the Build alternatives and additional transportation facilities in combination with the reasonably foreseeable future actions would change the views in neighborhoods and have a cumulative impact on aesthetics.	Development that occurs in response to the Bottineau Transitway and future actions would likely have a visual impact on the corridor. All development is regulated through applicable municipal codes. No additional mitigation is required.

**Table 6.4-1. Summary of Indirect Effects and Cumulative Impacts (continued)**

Resource	Indirect Effects	Cumulative Impacts	Mitigation
<b>Parklands and Open Space</b>	Greater accessibility could lead to higher usage rates of parklands and open space along the corridor.	Induced development associated with the Build alternatives in combination with the reasonably foreseeable future actions and natural population growth would likely place a greater demand on parkland and open space and result in a cumulative impact.	The Metropolitan Council and the municipalities in the corridor have plans to expand and enhance parks and open spaces in the area to meet the demand of population growth. No additional mitigation is required.
<b>Business Impacts</b>	Transit accessibility improvements would likely lead to higher densities and more intense land use. Businesses would be better connected to both employees and consumers in the corridor.	Induced development associated with the Build alternatives in combination with the reasonably foreseeable future actions would likely increase the number of potential customers in the corridor.	Development that occurs in response to the Bottineau Transitway and the reasonably foreseeable future actions might increase access to businesses in the area and expand the base of potential local consumers. No additional mitigation is required.
<b>Safety and Security</b>	Increased development densities around stations could place greater demands on safety and security personnel and systems.	Increased development associated with the Build alternatives in combination with the reasonably foreseeable future actions may require more service personnel and could cumulatively strain local provider's capacity to deliver services.	Safety and security measures to address induced development and future actions would be planned for by cities, counties, and emergency service providers. Metro Transit will provide security at and around the stations. Transit rider, pedestrian, and bicycle safety features will be incorporated into design and maintained/enforced over time. No additional mitigation is required.
<b>Environmental Justice</b>	Demand for property would likely cause an increase in property values at some station areas. Over time, this could lead to gentrification.	Induced development associated with the Build alternatives in combination with the reasonably foreseeable future actions could have an impact on low income and minority populations through the gentrification of neighborhoods.	None required

**Table 6.4-1. Summary of Indirect Effects and Cumulative Impacts (continued)**

Resource	Indirect Effects	Cumulative Impacts	Mitigation
<b>Public Utilities</b>	Induced development would put a greater demand on the existing utilities in the corridor.	Induced development associated with the Build alternatives in combination with the reasonably foreseeable future actions would likely put a greater demand on utilities in the corridor.	To meet any increased demand of utilities from induced development and future actions, utility providers would plan appropriately through their regular planning processes. No additional mitigation is required.
<b>Hydrology and Floodplains</b>	Induced development may affect hydrology and floodplains without the implementation of BMPs.	Induced development associated with the Build alternatives in combination with the reasonably foreseeable future actions could have a cumulative impact unless BMPs are implemented.	BMPs would be followed. Impacts would be mitigated according to applicable regulations. No additional mitigation is required.
<b>Wetlands</b>	Induced development may affect wetlands without the implementation of BMPs.	Induced development associated with the Build alternatives in combination with the reasonably foreseeable future actions could have a cumulative impact unless BMPs are implemented.	BMPs would be followed. Impacts would be mitigated according to applicable regulations. No additional mitigation is required.
<b>Geology, Soils and Topography</b>	No indirect impacts are anticipated.	No cumulative impacts are anticipated.	N/A (no indirect or cumulative impacts)
<b>Hazardous Materials Contamination</b>	If BMPs are followed, no adverse indirect impacts should occur; beneficial impacts would occur through remediation.	Induced development associated with the Build alternatives in combination with the reasonably foreseeable future actions would have a positive impact on remediation of contaminated sites.	Parties involved would be required to follow all state and federal laws concerning hazardous materials.
<b>Noise and Vibration</b>	Changes in development density and intensity would bring more people into contact with noise and vibration produced by LRT. Mode shifting could lead to a reduction in noise related to automobile traffic in the corridor.	Induced development associated with the Build alternatives in combination with the reasonably foreseeable future actions would likely result in more people and traffic in the area. This could cause a cumulative increase in noise levels. Cumulative vibration impacts could occur at transit hub in downtown Minneapolis.	Noise or vibration impacts caused by development or other future actions would be assessed for mitigation on a project-by-project basis. No additional mitigation is required.

**Table 6.4-1. Summary of Indirect Effects and Cumulative Impacts (continued)**

Resource	Indirect Effects	Cumulative Impacts	Mitigation
<b>Habitat and Endangered Species</b>	New development induced by the project unlikely to result in impacts on habitat and endangered species.	Induced development associated with the Build alternatives in combination with the reasonably foreseeable future actions would not likely have a cumulative impact on habitat or endangers species due to the urbanized nature of the corridor.	None required (assumes BMPs followed for both indirect and cumulative)
<b>Water Quality and Stormwater</b>	No indirect impacts are anticipated with the use of BMPs.	Induced development associated with the Build alternatives in combination with the reasonably foreseeable future actions could increase the amount of impervious surfaces in the corridor and have a cumulative effect on water quality and stormwater without the use of BMPs.	Implementation of BMPs to reduce potential cumulative impacts from induced development
<b>Air Quality</b>	Mode shift away from automobiles would result in fewer cars and less congestion, resulting in positive impact on air pollution.	The project's positive contribution to air quality would improve cumulative conditions over what they would be without the project.	None required
<b>Energy</b>	Mode shift to LRT would likely lead to an operational efficiency in passenger transport and reduced energy use.	Induced development associated with the Build alternatives in combination with the reasonably foreseeable future actions could increase the amount of transit riders and cumulatively reduce the amount of energy consumed for transportation.	None required



## 7.0 Environmental Justice

### 7.1 Introduction and Regulatory Overview

Executive Order 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 1994), requires the U.S. Department of Transportation (DOT) and the Federal Transit Administration (FTA) to make environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of programs, policies, and activities on minority populations and/or low-income populations (collectively “EJ populations”). Environmental justice at FTA includes incorporation of environmental justice and non-discrimination principles into transportation planning and decision-making processes and project-specific environmental reviews. Furthermore, U.S. DOT order 5610.2(a) sets forth steps to prevent disproportionately high and adverse effects to minority or low-income populations through Title VI analyses and environmental justice analyses conducted as part of Federal transportation planning and National Environmental Policy Act (NEPA) provisions.

The NEPA requires federal agencies such as FTA to consider the environmental effects of projects proposed for federal funding if there is a potential for significant environmental effects. Agencies must consider whether a federally funded project will have an EJ impact regardless of the NEPA class of action. Consistent with the NEPA, the Executive Order, and the USDOT Order, FTA and the Hennepin County Regional Railroad Authority (HCRRA) have considered three principles of environmental justice throughout the development of the Bottineau Transitway Project:

- (1) To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects of the Bottineau Transitway Project, on minority and low-income populations;
- (2) To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process; and
- (3) To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

The environmental justice analysis presented in this chapter is based on the framework outlined in *FTA Circular 4703.1* (August 2012) for execution of an EJ analysis within the NEPA environmental review process and consists of:

- An explanation of the methodology used to identify EJ populations using socioeconomic data and a description of the EJ populations within the study area affected by the project;
- Documentation of the Bottineau Transitway Project’s engagement with EJ populations during the NEPA process;
- Definition of the burdens and benefits of the Bottineau Transitway Project, as described by EJ populations; and
- Determination of impacts to EJ populations.

## 7.2 Methodology for the Bottineau Transitway EJ Analysis

### 7.2.1 Study Area

A geographic information systems (GIS) platform was used to draw a half-mile buffer<sup>1</sup> around each Bottineau Transitway alternative. For the analysis of minority populations, each census block that intersects with the half-mile buffer or is completely within the half-mile buffer was included in the study area. For the analysis of low-income populations, each census block-group that intersects with the half-mile buffer or is completely within the half-mile buffer was included in the study area.

### 7.2.2 Data Sources

Decennial census data were used as a primary source for mapping and locating minority populations in the Bottineau Transitway. The U.S. Census, mandated by Article I, Section 2 of the Constitution, takes place every 10 years and counts every resident in the United States. The census also collects information on homeownership, sex, age, race, and ethnicity.<sup>2</sup> Year 2010 U.S. Census data were used to quantify minority populations at the block level, which is the smallest geographic unit for which race and ethnicity data are available.

American Community Survey (ACS) 2007-2011 data were used as a primary source for mapping low-income populations in the Bottineau Transitway. The ACS is an ongoing survey that provides data on age, sex, race, family and relationships, income and benefits, health insurance, education, veteran status, disabilities, where people work and how they get there, and where people live and how much people pay for some essentials. The purpose of the ACS is to provide an annual data set that enables communities, state governments, and federal programs to plan investments and services.<sup>3</sup> In general, ACS estimates are period estimates that describe the average characteristics of population and housing over a period of data collection. The ACS is administered continually and, unlike the census, is a random sampling of people from all counties and county-equivalents in the United States.<sup>4</sup> ACS 2007-2011 5-Year Estimates were used to quantify low-income populations at the block group level, which is the smallest geographic unit for which low-income population data are available.

### 7.2.3 Identifying Minority and Low-Income Populations

As defined in *FTA Circular 4703.1*, minority populations are any readily identifiable group or groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed or transient persons such as migrant workers or Native Americans who will be similarly affected by the proposed project. Minority includes persons who are American Indian and Alaska Native, Asian, Black, or African American, Hispanic or Latino, and Native Hawaiian and other Pacific Islander.

2010 Census data were used to map the percentage of minorities in each census block in the Bottineau Transitway study area. In addition, the presence of minority populations in the corridor were further recognized and documented through engagement work by the Corridors of Opportunity grantee organizations, extensive public engagement in the corridor as part of the NEPA process, interviews and outreach as part of the *Bottineau Transitway Health Impact Assessment (HIA)*, and data analysis, outreach, and research as part of Bottineau Station Area Pre-Planning. Please see Section 7.4.1 for more information on these efforts.

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<sup>1</sup> One half-mile is the industry standard for the maximum distance that a transit user will walk to a station. FTA uses one half-mile catchment areas around transitway stations to measure population and employment in the station areas. Use of the half-mile buffer for this EJ analysis is consistent with corridor demographic measurements throughout the Draft EIS.

<sup>2</sup> US Census Explore the form: <http://www.census.gov/2010census/about/interactive-form.php>

<sup>3</sup> About the American Community Survey: [http://www.census.gov/acs/www/about\\_the\\_survey/american\\_community\\_survey/](http://www.census.gov/acs/www/about_the_survey/american_community_survey/)

<sup>4</sup> American Community Survey Multiyear Accuracy of the Data (2009-2011 ACS 3-year and 2007-2011 ACS 5-year), October 2012. [http://www.census.gov/acs/www/Downloads/data\\_documentation/Accuracy/MultiyearACSAccuracyofData2011.pdf](http://www.census.gov/acs/www/Downloads/data_documentation/Accuracy/MultiyearACSAccuracyofData2011.pdf)

As defined in *FTA Circular 4703.1*, a low-income person is one whose median household income is at or below the Department of Health and Human Services poverty guidelines.<sup>5</sup> A low-income population is any readily identifiable group of low-income persons who live in geographic proximity, and if circumstances warrant, geographically dispersed or transient persons such as migrant workers or Native Americans who will be similarly affected by the proposed project.

ACS data were used to map the percentage of low-income residents in each census block in the Bottineau Transitway study area. Similarly to minority populations, engagement work by the Corridors of Opportunity grantee organizations, extensive public engagement in the corridor as part of the NEPA process, interviews and outreach as part of the *Bottineau Transitway HIA*, and data analysis, outreach, and research as part of Bottineau Station Area Pre-Planning, contributed to discerning and documenting low-income populations in the Bottineau Transitway. Please see Section 7.4.1 for more information on these engagement efforts.

### 7.3 Environmental Justice Populations in the Study Area

**Figure 7.3-1** maps the percentage of minority populations in the Bottineau Transitway study area. For broader context and reference, the Bottineau Transitway study area was compared with Hennepin County, the Twin Cities Metropolitan Area, and the state of Minnesota. The Bottineau Transitway study area has a higher percentage of minority populations than the state of Minnesota, the seven-county Twin Cities Metropolitan Area, and Hennepin County, as shown in **Table 7.3-1** below.

**Table 7.3-1. Minority Population by State, Region, County, and Corridor**

	Total Population	Non-Minority Population	Minority Population	Percent Minority
<b>Minnesota</b>	5,303,925	4,405,142	898,783	16.9%
<b>Seven-County Twin Cities Metropolitan Area</b>	2,846,567	2,173,221	673,346	23.7%
<b>Hennepin County</b>	1,152,425	826,670	325,755	28.3%
<b>Bottineau Transitway<sup>1</sup></b>	74,099	35,266	38,833	52.4%

<sup>1</sup> Minority populations living within a half mile of the corridor are included in this table.  
Source: 2010 U.S. Census, block-level data

Minority populations were further analyzed to identify individual minority statistics. While census data identify African Americans, Asian Americans, and Latino populations shown in **Figures 7.3-2 through 7.3-4**, community engagement and Corridors of Opportunity grantee organizations have facilitated a more nuanced understanding of study area populations. A significant part of the African American population in the study area is comprised of new immigrants primarily from Somalia and Ethiopia, and Hmong and Lao are distinct Asian American communities in the corridor. Further discussion of minority populations, Corridors of Opportunity, and community engagement is in Section 7.4.

**Figure 7.3-5** maps the percentage of low-income residents in the Bottineau Transitway study area. The Bottineau Transitway also has a higher percentage of low-income populations than the state of Minnesota, the seven-county Twin Cities Metropolitan Area, and Hennepin County, as shown in **Table 7.3-2**.

<sup>5</sup> US Department of Health and Human Services. 2013 Poverty Guidelines. <http://aspe.hhs.gov/poverty/13poverty.cfm>

**Table 7.3-2. Low-Income Population by State, Region, County, and Bottineau Transitway**

	Total Population for whom Poverty is Determined	Population Living Above the Poverty Line	Population Living Below the Poverty Line	Percent in Poverty
<b>Minnesota</b>	5,155,949	4,590,795	565,154	10.9%
<b>Seven-County Twin Cities Metropolitan Area</b>	3,084,447	2,775,636	308,811	10.0%
<b>Hennepin County</b>	1,124,293	986,035	138,258	12.3%
<b>Bottineau Transitway<sup>1</sup></b>	98,951	80,966	17,985	18.1%

<sup>1</sup> Low-income populations living within a half mile of the corridor are included in this table.  
Source: 2007-2011 American Community Survey 5-Year Estimates, block group-level data



Figure 7.3-1. Minority Population in the Bottineau Transitway Study Area by Block

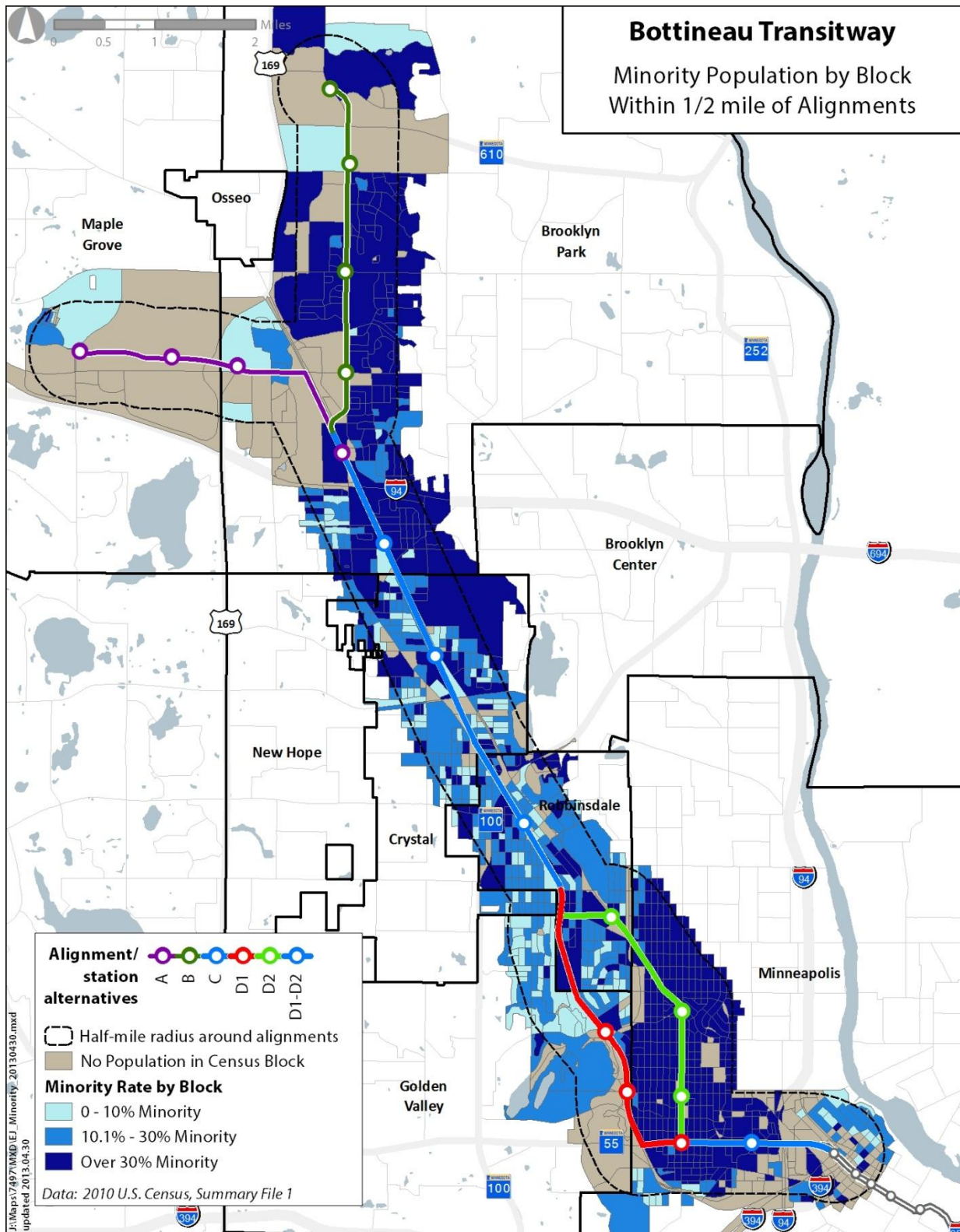


Figure 7.3-2. African American Population in the Bottineau Transitway Study Area by Block

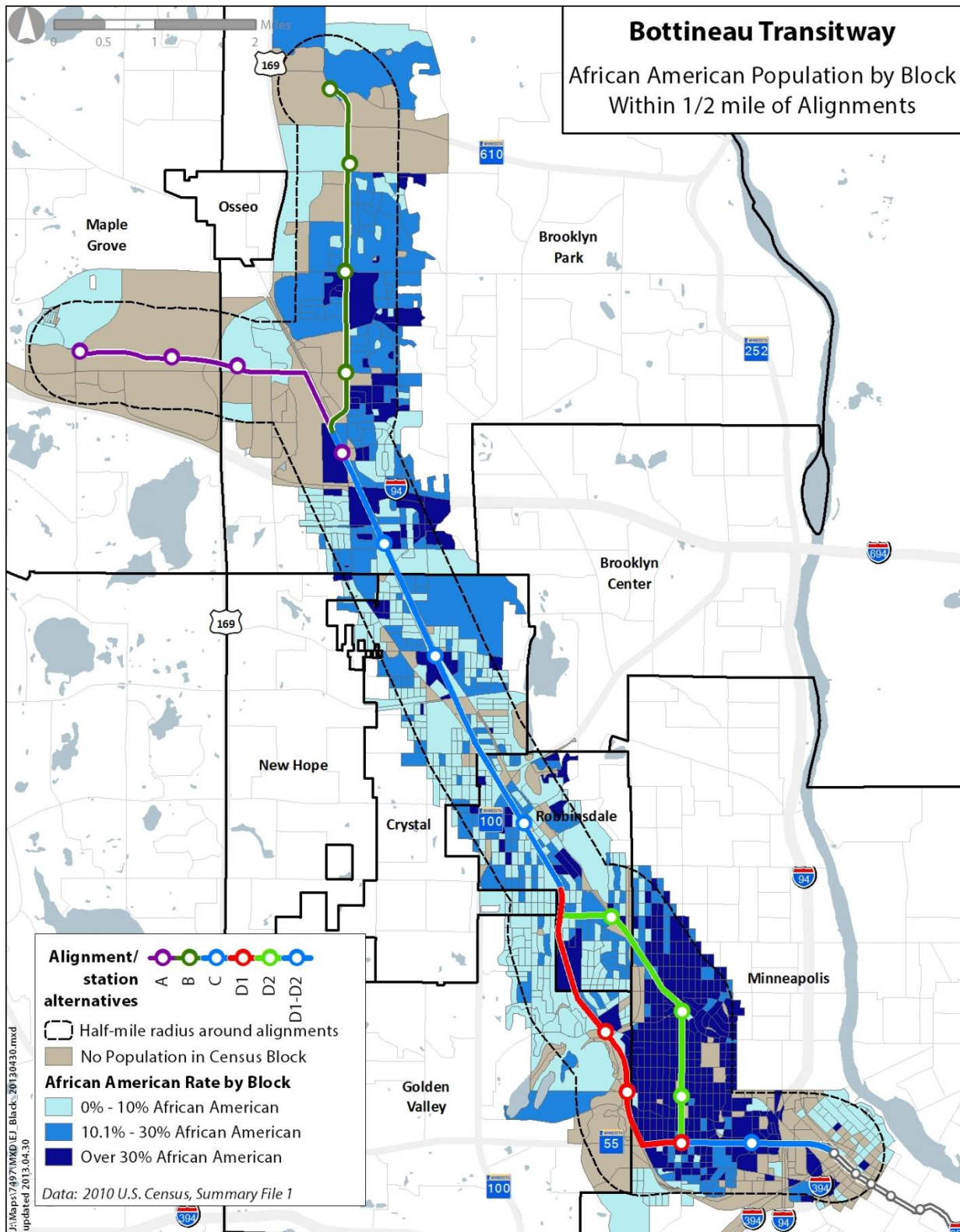




Figure 7.3-3. Asian American Population in the Bottineau Transitway Study Area by Block

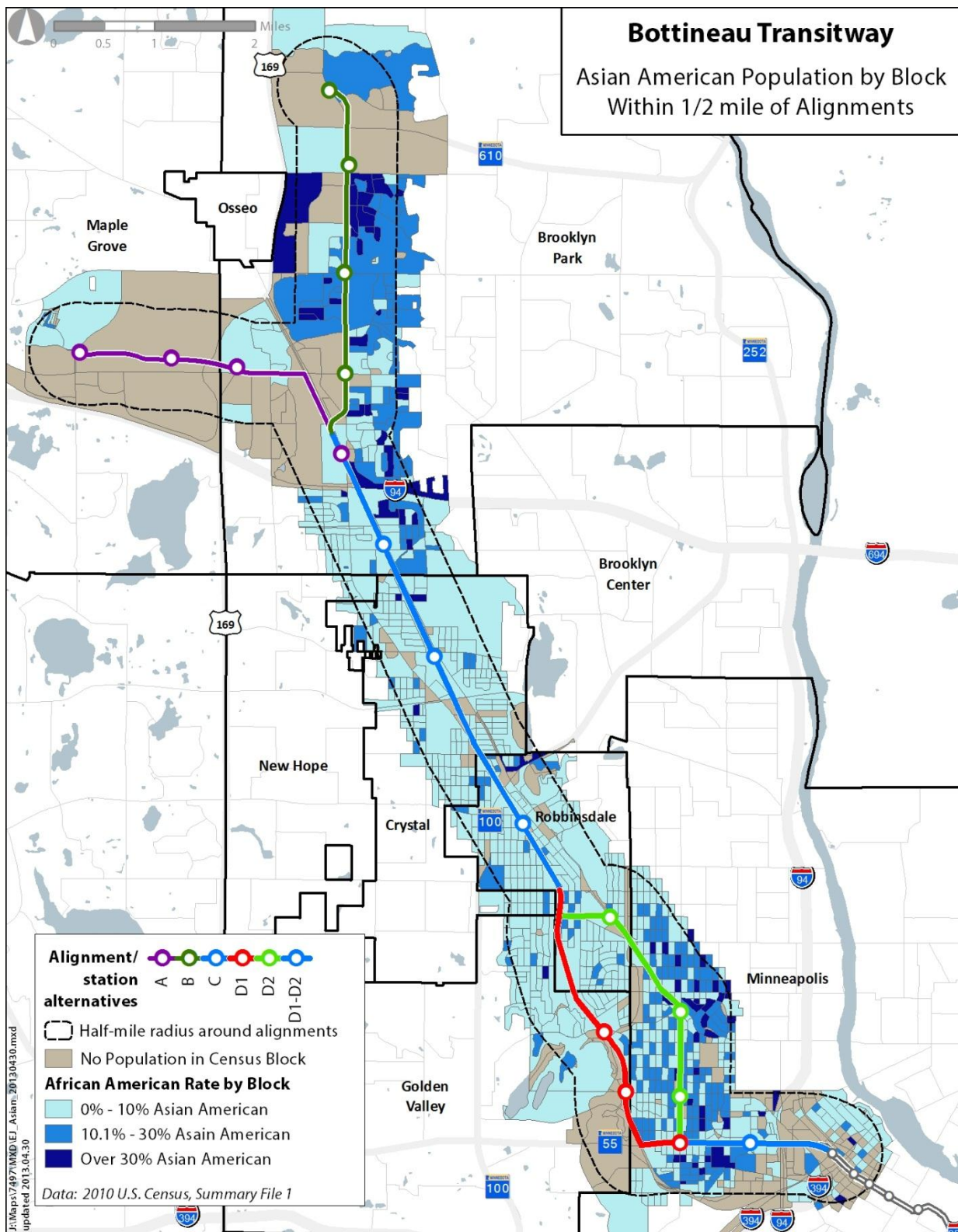
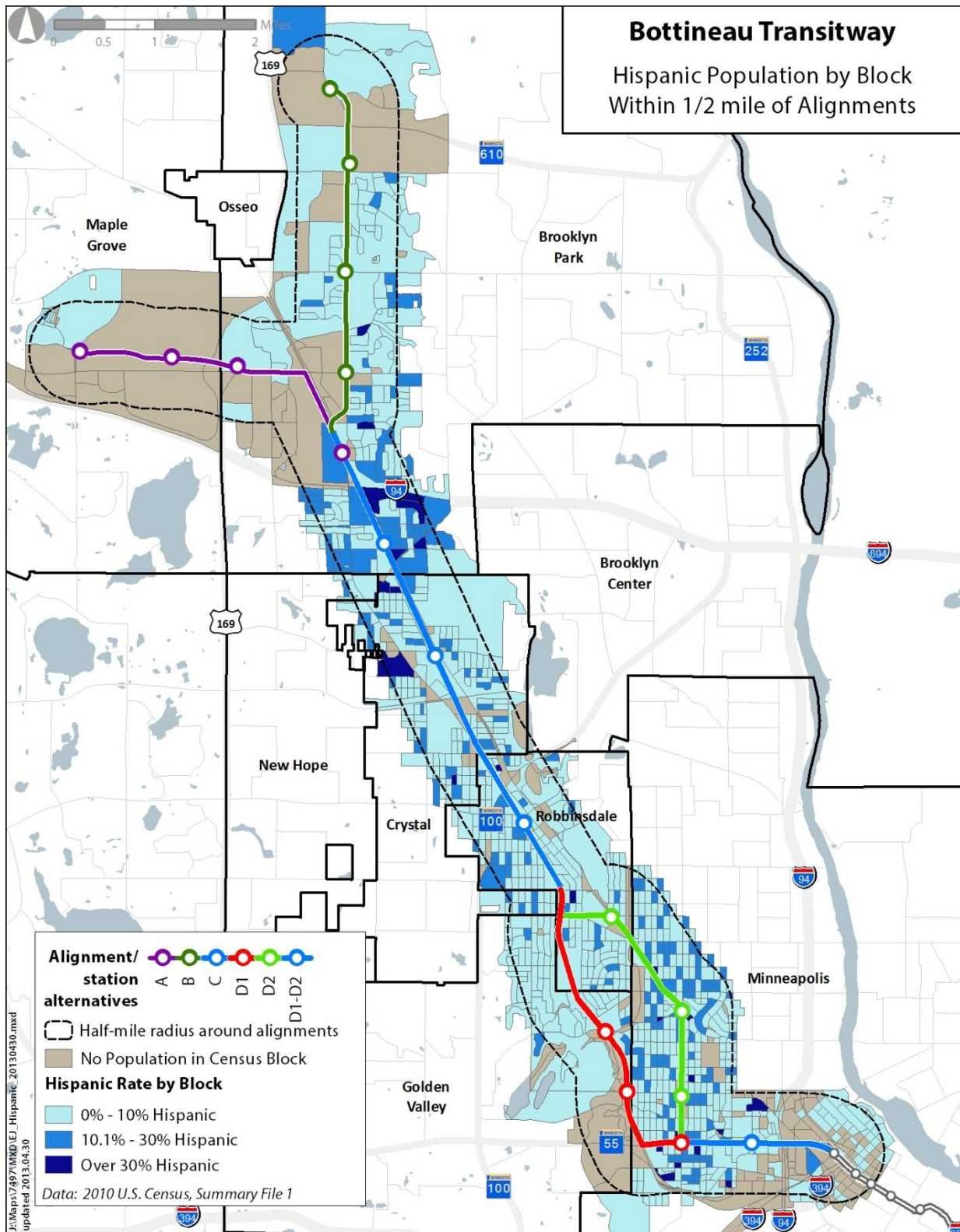


Figure 7.3-4. Hispanic American Population in the Bottineau Transitway Study Area by Block







## 7.4 Public Engagement

### 7.4.1 Project Engagement Efforts

Engagement efforts throughout the Bottineau Transitway Draft EIS process built upon local knowledge of the project and processes as well as outreach efforts carried out through the Alternatives Analysis phase of project development. Station area pre-planning and *Bottineau Transitway HIA* outreach efforts coincided with outreach on the Draft EIS and provided additional opportunities for residents and businesses in the corridor to learn more about the project. Committee meetings, interviews, focus groups, and data gathered as part of station area pre-planning and the *HIA* provided additional information to the HCRRA, Metropolitan Council, and FTA regarding low-income and minority populations in the study area.

Throughout project development and the NEPA process, the project has used several avenues of communication and outreach to engage minority and low-income communities affected by the project.

First, project staff has reached out to established neighborhood groups, community leaders, and private organizations comprised of and connected to low-income and minority communities in the Bottineau Transitway such as:

- **Corridors of Opportunity grantee organizations:** As part of the Metropolitan Council Corridors of Opportunity Initiative and in an effort to engage underrepresented communities (low-income, communities of color, immigrant communities, persons with disabilities) in project planning throughout the region, the Metropolitan Council awarded grants to ten community-based non-profit organizations that engage and involve underrepresented communities in the Bottineau Transitway. Each of these organizations has worked in unique ways to engage their communities in participation, decision-making, and leadership roles related to Bottineau Transitway planning and implementation. Details on each of the Corridors of Opportunity grantee organizations and their connection to the Bottineau Transitway Project are in Section 7.4.2.<sup>6</sup>
- **Community Advisory Committee:** The Community Advisory Committee (CAC) is an established long-standing forum for community input and dissemination of project information. The Bottineau Transitway CAC has been meeting on a regular basis since 2008<sup>7</sup> and includes resident representatives from each city and key business and institutional representatives. Area residents and interested advocacy group representatives often attend CAC meetings to obtain information and provided input. Recently, representatives from each Corridors of Opportunity grantee organization have joined the CAC in an effort to maintain the connection and stream of information between the grantee organizations and the project long after the grant period has ended. Meetings are open to the public and meeting dates, locations, and materials are available on the project website. Members of the public who do not sit on the CAC often attend the meetings to receive project information and talk with staff. The public is also welcome to sign up for an email distribution list to receive CAC announcements and meeting materials.
- **Project staff has been active participants in Bottineau Transitway events** sponsored by several community and neighborhood organizations. See [Table 7.4-1](#) for details.

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<sup>6</sup> Corridors of Opportunity is a broad-based initiative to accelerate the build out of a regional transit system for the Twin Cities while advancing economic development and ensuring that people of all incomes and backgrounds share in resulting opportunities. Corridors of Opportunity is funded by a three year \$5 million Sustainable Communities grant from the Federal Department of Housing and Urban Development, in partnership with the Department of Transportation and the Environmental Protection Agency. Since grant funds will expire at the end of 2013, the Initiative has created a Community Engagement Steering Committee to evaluate and recommend improvements to existing community engagement structures so that best practices continue beyond the life of Corridors of Opportunity to future transitway projects.

<sup>7</sup> The Bottineau CAC was convened in April 2008, however many CAC members are familiar with corridor issues as they served on advisory committees for the reconstruction of Bottineau Boulevard and the Bottineau Bus Rapid Transit initiative in the mid-2000s.

Second, project staff routinely communicate project information, decisions, and upcoming opportunities for participation in a number of ways:

- Via the project's e-mail based list serve, which has nearly 950 recipients;
- Distributing hardcopy newsletters, posters, and flyers to community gathering places along the corridor;
- Specifically notifying Corridors of Opportunity grantee organizations of all project meetings;
- Providing requested Bottineau Transitway informational materials and exhibits;
- On one occasion, distributing flyers door-to-door in several Minneapolis neighborhoods to announce a meeting regarding alignment options in those neighborhoods.

Finally, in addition to traditional open houses, project staff has provided many opportunities for public input to the project, such as:

- Project staff is accessible and available to the general public via email, phone, and have attended dozens of one-on-one meetings with individuals, business owners and managers, and organizations and agencies in the corridor.
- Project staff participates in Corridors of Opportunity grantee organization-led events such as meetings and tours and often attend neighborhood association meetings to provide information and updates.
- During the Draft EIS Scoping phase, HCRRA was interested in providing an opportunity for more extensive community discussion regarding the potential benefits as well as the potential impacts of the Bottineau Transitway. A roundtable event was held in September, 2011, at the Brookdale Library in Brooklyn Center to share outcomes from similar transit projects throughout the country as well as to provide a forum for smaller group interaction about the potential for economic development and other benefits in the Bottineau Transitway. Representatives of neighborhood associations, community organizations, foundations, and business groups, as well as people with known interest in the project were invited to attend. Representation included each city along the alternatives under consideration.
- To specifically engage nearby residents in refining the D2 alignment, a public open house was held in October 2011 at the Urban Research & Outreach-Engagement Center (UROC) in Minneapolis. HCRRA distributed flyers door-to-door in the surrounding neighborhoods and posted announcements at key community locations to ensure nearby residents received information about the meeting. The purpose of this open house was to share detailed information on the benefits and costs of the various Alignment D2 options under consideration (D2A, D2B, and D2C) and to obtain community input as to which of these options should be evaluated in the Draft EIS. A survey was provided to attendees and also made available online for those unable to attend the open house. A total of 83 survey responses were received, which provided insight into the community's perceptions of the positives and negatives the various D2 alignments.
- The Policy Advisory Committee (PAC), comprised of elected officials from Hennepin County and the corridor cities, the corridor legislative delegation, a Metropolitan Council member, and senior staff from Metro Transit, MnDOT, and several large employers and schools in the corridor, meets on a regular basis. Noticed on the project website and open to the public, PAC meetings allow for direct input to committee members and are public forums for receipt of technical, financial, and political information about the project.
- Comment cards and project email are available for written input during the scoping process and throughout project development.
- Public hearings/meetings were held during the Draft EIS scoping period by HCRRA, as well as during the Locally Preferred Alternative selection process by the PAC, HCRRA, Metropolitan Council, and

corridor cities.

- Project staff receives reports from Corridors of Opportunity grantees African Career Education and Resource, Inc., Northside Transportation Network, and the Harrison Neighborhood Association documenting the perspectives articulated by participants in their engagement activities.
- Project staff preparing the *Bottineau Transitway HIA* conducted and documented one-on-one interviews with stakeholder organizations:
  - Lao Assistance
  - Summit Academy
  - Asian Economic Development Association
  - Northwest Hennepin Human Services Council
  - Healthy Together Northwest Network
  - North Point Health and Human Services Center
  - Harrison Neighborhood Association
  - Neighborhood Hub, Jordan Neighborhood
  - Transportation Equity Partnership
  - African Career, Education, and Resource, Inc.
  - Redeemer Center for Life
- Bottineau Transitway HIA Advisory Committee met six times throughout preparation of the *HIA* and provided input on the scope of the document and important health issues in the corridor as they relate to the Bottineau Transitway.
- The Bottineau Transitway website [www.bottineautransitway.org](http://www.bottineautransitway.org) provides staff contact information and a corridor email address for people to submit comments on the project and requests for information. The website also includes general project information, a project library with maps and studies, notices of upcoming meetings and past meeting materials, information on project committees and decision-making, land use and economic development information, descriptions of other efforts in the corridor such as Corridors of Opportunity, links to relevant transit data/studies and frequently asked questions.

All of these outreach activities and engagement efforts contribute to HCRRA, Metropolitan Council, and FTA's understanding of the communities in the corridor and how the Bottineau Transitway will affect them. HCRRA used suggestions and information gathered during public outreach activities to identify issues and concerns to be studied in the Draft EIS. More specifically, results from the survey regarding Alignment D2 options administered online and to attendees of the October 2011 open house assisted in the narrowing of D2 options and the identification of additional issue areas that would be studied in the Draft EIS.



#### **7.4.2 Corridors of Opportunity Grantee Organization Community Engagement Efforts**

The Corridors of Opportunity Initiative awards grants to place-based organizations that work with underrepresented communities<sup>8</sup> to educate and organize communities around transit corridor decision-making, planning, and implementation opportunities important to them.

Ten Corridors of Opportunity grantee organizations have engaged minority and low-income populations in the Bottineau Transitway. Organizing work is carried out independently from the Metropolitan Council, HCRRA, and FTA, but has enabled effective dissemination of project information, and enhanced agencies' understanding of the communities in the corridor. These organizations and their engagement efforts related to the Bottineau Transitway are described in the following sections.

##### **African Career, Education, and Resource, Inc. (ACER)**

ACER is a volunteer-driven, community-based organization founded in 2008 in Brooklyn Park to close the resource and information disparities within Minnesota's communities of African descent and help those communities achieve societal and economic independence. ACER's efforts have been focused on Alignments A, B, and C affecting Maple Grove, Osseo, Brooklyn Park, New Hope, Crystal, Brooklyn Center, and Robbinsdale.

ACER has used their two \$30,000 Corridors of Opportunity grants to organize a range of events that engaged their members and networks in Bottineau Transitway planning: community forums, a tour of the Blue Line (Hiawatha) LRT, the Red Line (Cedar Avenue) BRT, and the Bottineau Transitway; a run-walk-bike event in the corridor; and an interactive panel with Bottineau Transitway staff. ACER also partnered with North Hennepin Community College and the Neighborhood Development Center to implement a 12-week Entrepreneur Training Program designed to match the entrepreneurial interests and goals of community members with the potential for business development and growth that may come with construction and operation of the Bottineau Transitway.

##### **La Asamblea de Derechos-Civiles (La Asamblea)**

La Asamblea is a faith-based community organization in the Twin Cities and St. Cloud, MN. La Asamblea aims to bring Latino immigrants to the table to develop a collective vision around the transitway corridors and make their voice heard to ensure they benefit from decisions that affect their lives.

La Asamblea partnered with Saint Alphonsus Church in Brooklyn Park along the Bottineau Transitway to organize Latino immigrants from Catholic faith communities and host public forums, conduct community surveys, provide leadership training for community members, and organize meetings between residents and decision makers.

##### **Asian Economic Development Association (AEDA)**

Created by Asian business owners along University Avenue in St. Paul, AEDA is a nonprofit grassroots economic development organization focusing on several priority low-income Asian Minnesotan communities. AEDA provides access to resources, training, advocacy, and community-driven planning.

AEDA hired a community organizer and two culturally competent "Community Outreach Ambassadors" to organize and work with the Southeast Asian communities along the Bottineau Transitway to identify and address issues related to the development of transit in the study area.

##### **Asian Media Access**

Led by Asian Media Access, the Asian Pacific American Community Network (APA ComMNet) coalition has worked together since 2005 to challenge Asian American Pacific Islanders' cultural and linguistic barriers

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<sup>8</sup> The Corridors of Opportunity Initiative defines underrepresented communities as people of color, low income communities, and people with disabilities.

to engagement on state and local initiatives, and provide access to information and services for health and well-being issues in the AAPI community.

Asian Media Access received a \$30,000 grant in 2011 to use media and technology for engaging communities, institutions, and businesses, especially under-represented Asians along the Bottineau Transitway. Asian Media Access produced a video to that featured Asian youth and their travels in the study area and informed people about the Bottineau Transitway alignment decision in their neighborhoods.

#### **Centro de Trabajadores Unidos en la Lucha (CTUL)**

CTUL is a low-wage Latino immigrant-led organization that organizes for fair wages and working conditions for all workers in the Twin Cities metro area. CTUL has partnered with thousands of low-wage immigrant workers regarding their rights in the workplace, and currently has around 160 members (all low-wage workers).

CTUL researches current working conditions in the corridors including job opportunities emerging from these projects, educates members on transit corridor development process, identifies and builds relationships with organizations interested in job development, educates workers on right to organize and fair wages, including building worker leadership, and trains members to participate in development processes.

#### **Cleveland Neighborhood Association**

The Cleveland Neighborhood Association serves the residents in the Cleveland Neighborhood of north Minneapolis, a diverse community of about 3,000 residents. The neighborhood is bordered by the commercial corridors of Penn, Lowry and Dowling Avenues and Victory Memorial Parkway. Nearly 800 of the residents are under the age of 18. Further, nearly a quarter of residents live below the Census-defined poverty level and about 20 percent are transit dependent (do not own a vehicle).

CNA has engaged transit-dependent, low-income, people of color in the Cleveland neighborhood by creating a “bus shelter workshop toolkit” to inform them about transit development (LRT, streetcars, bus, etc.) and connects them with the neighborhood organization to empower those residents to have a voice in the decision making process.

#### **Harrison Neighborhood Association on behalf of the Transit Equity Partnership (TEP)**

The TEP consists of three organizations: Harrison Neighborhood<sup>9</sup>, Heritage Park Neighborhood<sup>10</sup>, and Lao Assistance Center of Minnesota<sup>11</sup>, controlled by underrepresented communities committed to creating a transit system that equitably benefits the diverse racial, cultural and economic groups in North Minneapolis.

The Harrison Neighborhood Association on behalf of TEP was awarded \$45,000 grants in both 2011 and 2012 for their efforts to build a common understanding between diverse communities. The TEP has used workshops, presentations and community story-telling to build the capacity of grassroots leaders to engage and speak for themselves and their communities. The TEP has also worked with their constituencies to arrive upon positions that are reflective of the hopes and needs of the constituents and ensure that decision-makers are responsive to the community. The TEP works ensure a high level of community participation in the Bottineau Draft EIS using the gathered input and the positions developed and approved by community. This has been done in the following ways: (1) Training existing leaders and

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<sup>9</sup> Harrison neighborhood is a racially diverse community consisting of 40% African American residents; 28% White; 17% Southeast Asian (Lao and Hmong); 9% Latino and 5% Somali and other. The median household income is a little more than \$25,000.

<sup>10</sup> Heritage Park is 35% Somali, 30% African American, 11% Native American, 6% Asian, 5% Ethiopian, 4% Latino, and 3% White. The median household income is approximately \$16,000.

<sup>11</sup> There are 25,000 Lao in Minnesota, 70% live in Hennepin County of which 30% live in North Minneapolis.

recently emerged leaders on how to advocate on behalf of the recently developed community position; (2) Forming a Van White Station Stakeholders group that will consist of the TEP, property owners and key organizations located in the ¼ mile of the Station with the purpose of implementing community equity goals; (3) Training and preparing resident leaders to advocate for their community in the Draft EIS process and in the County sponsored HIA process; (4) Developing community priorities and positions for the Bottineau line between Van White and Penn Avenue; and (5) Connecting local leaders to Corridor-wide efforts and processes.

#### **Masjid An-Nur**

Masjid An-Nur is located in North Minneapolis and is home to an organization called Al-Maa'uun which serves approximately 500 families per month via its food shelf. Individuals who benefit from Al-Maa'uun and Masjid An-Nur's services are largely people of color, immigrants from West Africa, and/or Muslim.

Masjid An-Nur was awarded \$10,000 in 2012 for a Bottineau Transitway awareness and education campaign for the North Minneapolis community served by Masjid An-Nur and Al-Maa'uun.

#### **Minneapolis Interfaith Coalition on Affordable Housing (MICA)**

MICA organizes communities of faith throughout the metropolitan region around the vision that everyone, without exception, has a safe, decent, and affordable home

MICA works with three other organizations in the Bottineau Transitway study area: Zion Baptist Church, Bethesda Missionary Baptist Church, and Discussions that Encounter. MICA held training for community members in the fall of 2012 regarding transitway development process, decision making, and the relationship between transit and changes to the built environment. MICA also facilitated meetings between constituents and political policy makers to build relationships and support for issue priorities. Electronic and social media were also used.

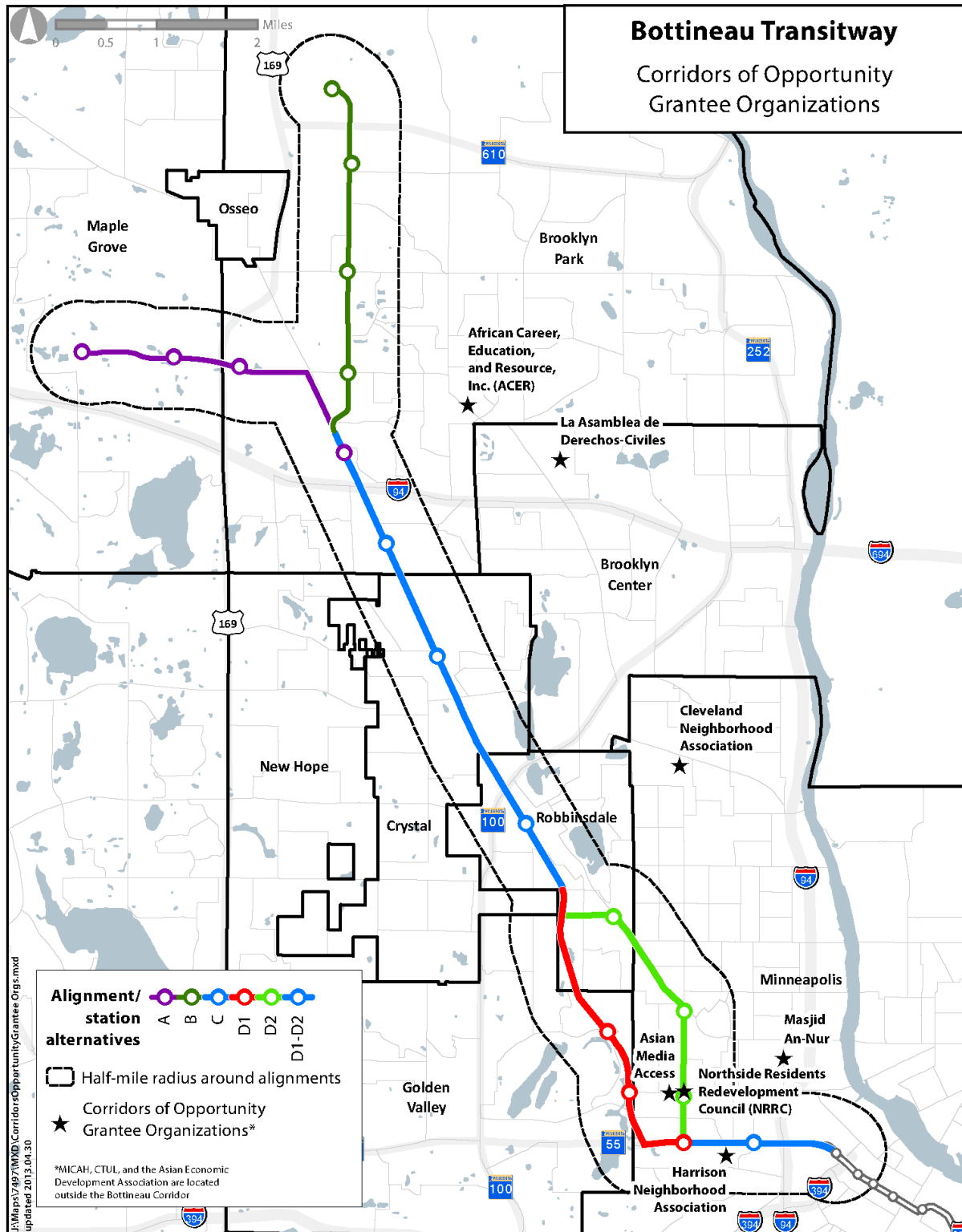
#### **Northside Residents Redevelopment Council (NRRC)**

NRRC incorporated as a 501(c)3 in 1969 and stands as the oldest neighborhood organization in Minneapolis. NRRC's active transportation committee, the Northside Transportation Network, was started in 2010 to focus on access to public transit for underrepresented populations.

NRRC and NTN were awarded a \$30,000 grant in 2012 to facilitate extensive outreach to engage under represented communities in Bottineau Transitway planning. NTN hosts monthly meetings that are open to and well attended by community members and routinely include Bottineau Transitway Project updates and information from HCRRA staff. NRRC and NTN have also hosted several community-wide open houses about the Bottineau Transitway. NRRC and NTN consistently notify their members and network about upcoming HCRRA-sponsored meetings, need for input, and decision points.

**Figure 7.4-1** maps the locations of the Corridors of Opportunity grantee organizations working in the Bottineau Transitway.

Figure 7.4-1. Corridors of Opportunity Grantee Organizations Working in the Bottineau Transitway Study Area





### 7.4.3 Environmental Justice-Related Outreach Efforts and Outcomes

**Table 7.4-1** presents Bottineau Transitway meetings held throughout the preparation of the Draft EIS. Meetings ranged from public open houses held by HCRRA that were widely advertised and open to the public, to individual meetings that HCRRA staff attended at the request of business owners and resident groups in the Corridor. Neighborhood organizations and Corridors of Opportunity grantee organizations sponsored a number of Bottineau Transitway meetings and events that were attended by HCRRA staff, also noted in **Table 7.4-1**.

**Table 7.4-1. Environmental Justice-Related Outreach Efforts**

Date	Meeting	Meeting Location	Meeting Characteristics
General Open Houses			
6-7-2011	Public open house	Zanewood Community Center	Bottineau Transitway staff distributed project information and provided opportunities to talk to staff. For convenience and optimal attendance, informational open houses were held on six different evenings at six transit and ADA-accessible locations throughout the corridor.
6-9-2011	Public open house	Robbinsdale	
6-14-2011	Public open house	Courage Center	
6-15-2011	Public open house	Crystal	
6-16-2011	Public open house	Hennepin Technical College	
6-28-2011	Public open house	UROC North Minneapolis	
Roundtable			
9-15-2011	Roundtable discussions	Brookdale Library	HCRRA held a roundtable to provide a forum for smaller group interaction about the potential for economic development and other benefits in the Bottineau Transitway and balancing impacts/benefits in project decisions.
D2 Alignment-Specific Open House			
10-6-2011	Public open house	UROC North Minneapolis	HCRRA held a special public open house in North Minneapolis to discuss the D2 alignment options. HCRRA gained an understanding of the community's perceived benefits and costs of the D2 alignments, which are reflected in this analysis.
Scoping Open Houses			
1-23-2012	Public open house	Theodore Wirth Park	Scoping open houses were held on four evenings in four locations along the corridor to collect input that would define the scope of the Draft EIS.
1-24-2012	Public open house	Brooklyn Park	
1-25-2012	Public open house	UROC North Minneapolis	
1-31-2012	Public open house	Robbinsdale	
Corridors Of Opportunity Grantee Organization-Sponsored Meetings & Events			
12-2-2011	Public open house	Heritage Park Neighborhood	Bottineau Transitway staff often attend meetings and events at the invitation of Corridors of Opportunity grantees to give updates on the
12-3-2011	Public open house	Harrison Neighborhood	

**Table 7.4-1. Environmental Justice-Related Outreach Efforts (continued)**

Date	Meeting	Meeting Location	Meeting Characteristics
2-9-2012	Lao Open House	Harrison Neighborhood	project and hear from community members.
3-22-2012	Northside Transportation Network	City of Lakes Community Land Trust	
3-24-2012	ACER-sponsored panel discussions and interactive tours	Hiawatha LRT, Cedar Ave. BRT, and Bottineau Corridors	
4-9-2012	Public open house	Heritage Park Neighborhood	
4-23-2012	Public open house	Heritage Park Neighborhood	
5-9-2012	Harrison Neighborhood Developers Meeting	Harrison Community Center	
5-31-2012	Northside Transportation Network Open House	UROC	
9-8-2012	ACER-sponsored run-walk-bike event to promote active living along the Bottineau Transitway corridor	Bottineau Transitway	
9-20-2012	Hiawatha LRT tour for Robbinsdale residents	Hiawatha Corridor	
9-20-2012	Northside Transportation Network	City of Lakes Community Land Trust	
9-22-2012	Hiawatha LRT tour for Robbinsdale residents	Hiawatha Corridor	
10-18-2012	Northside Transportation Network	City of Lakes Community Land Trust	
11-29-2012	Northside Transportation Network Open House	UROC	
2-28-2013	Northside Transportation Network	City of Lakes Community Land Trust	
Community Advisory Committee Meetings			
5-5-2011	CAC Meeting	Crystal City Hall	CAC members represent communities, businesses, and institutions in the Bottineau Transitway study area. The CAC meets regularly and is a conduit for integrating the values and
7-21-2011	CAC Meeting	Brookdale Library	
10-27-2011	CAC Meeting	Crystal City Hall	
11-17-2011	CAC Meeting	Brookdale Library	
12-15-2011	CAC Meeting	Brookdale Library	
2-9-2012	CAC Meeting	Crystal City Hall	

**Table 7.4-1. Environmental Justice-Related Outreach Efforts (continued)**

Date	Meeting	Meeting Location	Meeting Characteristics
4-19-2012	CAC Meeting	Crystal City Hall	perspectives of citizens, communities, businesses, and institutions into the Bottineau Transitway development process.
5-24-2012	CAC Meeting	Crystal City Hall	
12-6-2012	CAC Meeting	Crystal City Hall	
2-21-2013	CAC Meeting	NorthPoint Health and Wellness Center	
Media Events			
4-21-2012	Two radio appearances on KMOJ FM 89.9, “African Roots Connection”	KMOJ studios	Promote the project and engage targeted community members
Public Hearings			
5-10-2012	Public Hearing	Brooklyn Park City Hall	Policy Advisory Committee LPA decision
Environmental Justice Event			
10-23-2012	EJ Forum	Hallie Q. Brown Center	Bottineau Transitway staff participated in planning and executing a regional EJ policy forum that involved EJ community organizations and residents, as well as representatives from the US Environmental Protection Agency.
10-23-2012	EJ Stakeholder meeting	Central Corridor Resource Center	
Health Impact Assessment Outreach <sup>1</sup>			
5-31-2012	Bottineau HIA Advisory Committee	NorthPoint Health and Wellness Center	The HIA Advisory Committee met six times throughout preparation of the <i>HIA</i> and provided input on the scope of the document and important health issues in the corridor as they relate to the Bottineau Transitway investment.
7-24-2012	Bottineau HIA Advisory Committee	NorthPoint Health and Wellness Center	
11-2-2012	Bottineau HIA Advisory Committee	NorthPoint Health and Wellness Center	
2-13-2013	Bottineau HIA Advisory Committee	NorthPoint Health and Wellness Center	
4-10-2013	Bottineau HIA Advisory Committee	NorthPoint Health and Wellness Center	
6-7-2013	Bottineau HIA Advisory Committee	NorthPoint Health and Wellness Center	

**Table 7.4-1. Environmental Justice-Related Outreach Efforts (continued)**

Date	Meeting	Meeting Location	Meeting Characteristics
Public Forums			
11-14-2012	Brooklyn Park City Council	Brooklyn Park City Hall	Bottineau Transitway staff responded to questions and heard discussion at and City Council and Parks and Recreation Board meetings. Meetings are open to the public and agendas and minutes are posted online.
11-28-2012	Golden Valley City Council	Golden Valley City Hall	
12-18-2012	Golden Valley City Council	Golden Valley City Hall	
2-27-2013	Minneapolis Parks and Recreation Board Meeting	MPRB Headquarters	
3-2-2013	Minneapolis Parks and Recreation Board Meeting	MPRB Headquarters	
One On One Meetings With Corridor Stakeholders			
9-14-2011	One-on-one with Plymouth Christian Youth Center staff	Plymouth Christian Youth Center	Share information/updates on the Bottineau Alternatives Analysis process, expected environmental review process timeline, and expected station area planning process/timeline; discuss the project as it relates to the business or organization.
9-15-2011	One-on-one with Estes staff	Estes Funeral Home	
9-21-2011	One-on-one with Food Bank staff	North Minneapolis	
9-26-2011	One-on-one with Urban League staff	Urban League, Minneapolis	
11-15-2012	City of Lakes Community Land Trust	Northside Transportation Network-sponsored meeting	
1-18-2012	Brooklyn Park Property Owners' Coalition	The Willows Apartments	

<sup>1</sup> The Bottineau Transitway HIA was published in December 2013 and is available at <http://www.hennepin.us/bottineauhia>.

As shown in [Table 7.4-1](#), outreach efforts for the Bottineau Transitway project spanned many different types of meetings held in locations throughout the corridor. The outcome of the public engagement efforts as a whole are that people who live and work in the corridor are aware of the project, have provided insightful comments to both staff and elected officials to influence major project decisions, and are connected to the project so that they can continue to participate through future design and construction phases.

Corridors of Opportunity grantee organizations as well as neighborhood organizations and advocacy groups have facilitated participation in the project by many members of environmental justice communities, some of whom would not have learned about or participated in the Bottineau Transitway project through more conventional approaches. As a result, Bottineau Transitway project staff have developed relationships with member environmental justice communities and are plugged into a network of people, organizations, and events that have been and will continue to be effective at disseminating project information and soliciting project input from low-income and minority communities.

The diversity of project meetings, materials, and information sources has resulted in involvement of environmental justice communities in many different ways:



- Corridors of Opportunity organizations, neighborhood organizations, and advocacy groups have organized their own meetings and events regarding the Bottineau Transitway and have used their contacts and networks to attract new participants and make the most of opportunities related to the transitway investment.
- Members of environmental justice communities serve on the Community Advisory Committee for the project and have become knowledgeable and invested stakeholders in the project. They are informed and help to share project information within their communities.
- Throughout the Draft EIS, members of environmental justice communities have met with staff to resolve individual property or business issues related to the project.
- Project staff consistently hold Bottineau Transitway public meetings and open houses in environmental justice communities, and members of environmental justice communities attend these meetings. Staff have become acquainted with people who live and work in the corridor and have gained a nuanced view of people's issues and concerns.

Finally, some members of environmental justice communities stay up to date on the project by monitoring the project website and subscribing to the project email list.

Input received and information disseminated at individual and committee meetings, open houses, tours, and public hearings have affected the Bottineau Transitway in a number of significant ways:

- Changes were made to the design of the project. For example, in response to concerns identified with the D2 alignment on West Broadway and Penn Avenues in North Minneapolis, several additional D2 alignments (D2A, D2B, D2C) were developed and evaluated.
- Community members aided in defining the scope of the Draft EIS through robust participation in the scoping process.
- Community members have access to Bottineau Transitway information in many places in their communities, as well as online.
- The corridor communities reached consensus on the Locally Preferred Alternative for the project in December, 2012 and the Metropolitan Council amended the region's *Transportation Policy Plan* to include the LPA in May, 2013.

## 7.5 Environmental Justice Impacts Analysis

### 7.5.1 Operating Phase (Long-Term) Impacts

A multi-step process was used to identify the potential for disproportionately high and adverse effects on Environmental Justice populations.

First, impact categories were selected including land use, traffic, parking, community character and facilities (including parks), right-of-way and relocations, visual quality, safety and security, noise, vibration, air quality, traction power substations (TPSS), and operations and maintenance facilities (OMFs). These categories were selected because the impacts in these categories tend to be localized and have the potential for high or disproportionate impact to environmental justice populations. Other categories evaluated in this Draft EIS were not considered because they either presented no impacts, or their effects would be experienced by all populations living in the study area, regardless of race, ethnicity, or socioeconomic status.

Each Bottineau Transitway alternative was then evaluated in each category, as shown in [Table 7.5-1](#). The evaluation is based on the results documented in Chapter 3 Transportation Analysis,<sup>12</sup> Chapter 4 Community and Social Analysis,<sup>13</sup> and Chapter 5 Physical and Environmental Analysis.<sup>14</sup> Categories with potential effects were then carried forward to another level of analysis to determine whether those effects were high or disproportionate to environmental justice populations.

#### 7.5.1.1 No-Build Alternative

The No-Build alternative would not result in disproportionately high and adverse effects to environmental justice populations. However, the positive effects of the project would also not be realized, such as improved transit travel times, frequency of service, and improved transfers, as well as quality pedestrian access to high speed transit that connects to the largest job concentrations in the region, many educational institutions, health services, and healthy food sources.

#### 7.5.1.2 Enhanced Bus/TSM Alternative

The Enhanced Bus/TSM alternative would include a transit center and park-and-ride facility near Oak Grove Parkway and West Broadway Avenue, north of TH 610. The facility would be located in an area that is currently undeveloped and would not result in adverse effects to environmental justice populations. The Enhanced Bus/TSM alternative would expand and enhance transportation opportunities for all populations along the Bottineau Transitway. There are no high and adverse effects to environmental justice populations in the Enhanced Bus/TSM alternative.

#### 7.5.1.3 Build Alternatives: Potential Impacts Analysis

Potential effects, as documented in Chapter 3 Transportation Analysis,<sup>15</sup> Chapter 4 Community and Social Analysis,<sup>16</sup> and Chapter 5 Physical and Environmental Analysis,<sup>17</sup> are identified by alternative below in [Table 7.5-1](#). Categories with no effects are not carried forward for further analysis. Categories with potential effects are considered for their potential for Disproportionately High and Adverse Effects on EJ communities in [Table 7.5-2](#).

**Table 7.5-1. Operating Phase: Potential Impacts by Alternative**

Impact Categories	Potential Effects by Alternative				Analyze for Potential High & Adverse Effects to EJ populations
	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2	
Land Use	No	No	No	No	No
Vehicular Traffic	No	No	No	No	No
Pedestrian and Bicycle Facilities	No	Yes	No	Yes	Yes
Parking	No	Yes	No	Yes	Yes
Community Facilities/Community Character and Cohesion	No	Yes	No	Yes	Yes

<sup>12</sup> Please see Chapter 3 for a full analysis of vehicular traffic, pedestrian and bicycles, and parking impacts.

<sup>13</sup> Please see Chapter 4 for a full analysis of land use, community facilities/community character, displacement of residents and businesses, visual/aesthetics, and safety and security impacts.

<sup>14</sup> Please see Chapter 5 for a full analysis of noise, vibration, and air quality impacts.

<sup>15</sup> Please see Chapter 3 for a full analysis of vehicular traffic, pedestrian and bicycles, and parking impacts.

<sup>16</sup> Please see Chapter 4 for a full analysis of land use, community facilities/community character, displacement of residents and businesses, visual/aesthetics, and safety and security impacts.

<sup>17</sup> Please see Chapter 5 for a full analysis of noise, vibration, and air quality impacts.

**Table 7.5-1. Operating Phase: Potential Impacts by Alternative (continued)**

Impact Categories	Potential Effects by Alternative				Analyze for Potential High & Adverse Effects to EJ populations
	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2	
Displacement of Residents and Businesses	Yes	Yes	Yes	Yes	Yes
Visual/Aesthetics	Yes	Yes	Yes	Yes	Yes
Safety and Security	No	No	No	No	No
Noise	Yes	Yes	Yes	Yes	Yes
Vibration	Yes	Yes	Yes	Yes	Yes
Air Quality	No	No	No	No	No
TPSS	No	No	No	No	No
OMF	N/A	N/A	No	No	No

Note: N/A = Not Applicable

The following categories will not be carried forward for further analysis, as they do not have any potential effects.

#### Land Use

As determined in the Land Use Plan Compatibility Technical Report (SRF Consulting Group, 2012), all Build alternatives would be compatible with land use planning policy documents. Since no adverse impacts resulting from the Bottineau Transitway alignments were identified, there is no potential for any high and adverse impacts to be disproportionately borne by environmental justice populations.

#### Vehicular Traffic

No adverse impact to traffic operations is anticipated as a result of the Bottineau Transitway. Analysis assumptions and results are documented in the Traffic Technical Report (Kimley-Horn and Associates, 2012). Since no adverse impacts resulting from the Bottineau Transitway were identified, there is no potential for any high and adverse impacts to be disproportionately borne by environmental justice populations.

#### Safety and Security

Safety and security measures would be implemented for all alignments and all stations along the Bottineau Transitway. Adherence to design guidelines as well as appropriate lighting, fencing, and other measures would maintain the safety of commuters, students, and children. A greater level of security may be provided at specific locations if an assessment of security threats to facilities or data showing higher levels of criminal activity at certain facilities determined that additional security measures were warranted.

No adverse effects to environmental justice populations are anticipated because a similar level of safety and security would be provided for all alignments and stations. Since no adverse impacts resulting from the Bottineau Transitway were identified, there is no potential for any high and adverse impacts to be disproportionately borne by environmental justice populations.

#### Air Quality

Under each of the proposed alternatives (No-Build, Enhanced Bus/TSM, and Build alternatives) emissions would likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual Mobile Source Air Toxics (MSATs) emissions by 72 percent between

1999 and 2050. On a regional basis, EPA's vehicle and fuel regulations coupled with fleet turnover will, over time, cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today. The magnitude of the EPA-projected reductions is so great (even after accounting for traffic growth) that MSAT emissions in the study area are likely to be lower in the under a wide variety of future conditions. Additional discussion of this analysis is provided in the Air Quality Technical Report (SRF Consulting Group, 2012).

No adverse air quality impacts are anticipated for the Bottineau Transitway Project. Since no adverse impacts were identified, there is no potential for any high and adverse impacts to be disproportionately borne by environmental justice populations.

### TPSS

There are 27 potential TPSS locations along the proposed alignments. The majority of the TPSS stations would be located on the east side of the proposed LRT track with some being associated with the LRT platforms and stations.

TPSS stations have the potential to cause noise impact when they are located close to noise-sensitive receptors. The primary noise sources associated with substations are magnetostriction of the transformer core, which causes low-frequency tonal noise (hum), and cooling fans, which typically generate broad-band noise. The potential for noise impact from substations would be evaluated in a later phase of the project when details relating to their design and specific locations become available. However, it should be noted that noise impact from substations can often be avoided by including noise limits in the procurement documents.

TPSS stations do not require a large area and could be constructed at locations that would avoid or minimize impacts to environmental justice populations. Since no adverse impacts resulting from the Bottineau Transitway alignments were identified, there is no potential for any high and adverse impacts to be disproportionately borne by environmental justice populations.

### OMF

Three potential OMF location options have been identified, one along Alignment A in Maple Grove and two along Alignment B in Brooklyn Park. Only one OMF would be constructed as part of the Bottineau Transitway Project. The OMF at Hemlock Lane in Maple Grove and the OMF at 101st Avenue in Brooklyn Park are located in undeveloped areas where no environmental justice populations have been identified. The OMF at 93rd Avenue in Brooklyn Park is located north of a residential development where a minority population (not low-income) has been identified in the southeast quadrant of West Broadway Avenue and 93rd Avenue. Although there may be a potential for adverse operational impacts for relatively few residential properties, they are not anticipated to be severe.

Since no high and adverse impacts resulting from the operation of any of the OMFs were identified, there is no potential for any high and adverse impacts to be disproportionately borne by environmental justice populations.

#### 7.5.1.4 Build Alternatives: Potential Disproportionately High and Adverse Impacts Analysis

As [Table 7.5-2](#) shows, the potential for high and disproportionate impacts to EJ communities would occur only along the D-2 alignment of the Bottineau Transitway. Specifically, on-street operations on Penn Avenue would result in high and disproportionate impacts on parking, community facilities/ community character and cohesion, visuals and aesthetics, and displacement of residents and businesses. These impacts were identified by a technical analysis of each impact category described below, as well as through intense public outreach and discussion regarding D-2 alignment options. As noted in [Section 7.4.1](#), HCRRA administered a survey of residents in the area to better understand community impacts of the D-2 alignment. The results of the survey show a high level of concern in the adjacent low-



income and minority community with neighborhood access to front doors of residences and businesses, closing of intersections, pedestrian and bicycle access, property impacts and acquisitions, and displaced traffic on neighborhood streets. The technical analysis described for each impact category below further explains the rationale for identification of these impacts. These impacts are compared to the impacts borne by non-environmental justice populations.

**Table 7.5-2. Operating Phase: Disproportionately High and Adverse Impacts by Alternative**

Impact Categories	Potentially High or Disproportionate Impacts			
	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2
<b>Pedestrian and Bicycle Facilities</b>	No	Yes	No	Yes
<b>Parking</b>	No	Yes	No	Yes
<b>Community Facilities/Community Character and Cohesion</b>	No	Yes	No	Yes
<b>Displacement of Residents and Businesses</b>	No	Yes	No	Yes
<b>Visual/Aesthetics</b>	No	Yes	No	Yes
<b>Noise</b>	No	No	No	No
<b>Vibration</b>	No	No	No	No

#### **Pedestrian and Bicycle Facilities**

As determined in the Transportation Technical Report (Kimley-Horn and Associates & SRF Consulting Group, 2012) and documented in Chapter 3 of this Draft EIS, none of the alternatives would affect bicycle facilities. While the Bottineau Transitway would result in closure of pedestrian crossings for safety and operational reasons, impacts to pedestrian facilities are expected to be minor, generally requiring a diversion of  $\frac{1}{8}$  mile or less. The exception is along the D2 alignment, where a number of street-crossing closures on West Broadway and Penn Avenues, as well as the interruption to the street grid system in north Minneapolis, collectively contribute to decreased walkability and accessibility to and within the neighborhoods surrounding this area of the alignment.

#### **Preliminary Finding**

The closing of a number of street-crossings as well as interruption to the street grid system in north Minneapolis would result in a disproportionately high and adverse impact to the surrounding low-income and minority populations along Alignment D2.

#### **Parking**

The net loss of 270 existing on-street parking spaces is anticipated along Alignment D2 to accommodate the Bottineau Transitway. As shown in [Table 7.5-3](#) no loss of on-street parking is anticipated for any other alignments. Further discussion of parking is provided in the Transportation Technical Report (Kimley-Horn and Associates & SRF Consulting Group, 2012).

**Table 7.5-3. Number of Parking Spaces Lost by Alignment**

Alignment	Net Number of Parking Spaces Lost
<b>A</b>	0
<b>B (part of the Preferred Alternative)</b>	0
<b>C (part of the Preferred Alternative)</b>	0

**Table 7.5-3. Number of Parking Spaces Lost by Alignment (continued)**

Alignment	Net Number of Parking Spaces Lost
<b>D1 (part of the Preferred Alternative)</b>	0
<b>D2</b>	270 (34th Avenue, West Broadway Avenue, and Penn Avenue)
<b>D Common Section (part of the Preferred Alternative)</b>	0

*Preliminary Finding*

The loss of on-street parking spaces would result in a disproportionately high and adverse impact to the surrounding low-income and minority population along Alignment D2. The loss of 270 parking spaces is disproportionate to other alignment options, given that other alignments would not lose any existing on-street parking. Public comments provided during the Scoping process indicated high level of concern regarding the loss of existing street parking. The public has expressed concerns that loss of nearby parking would be particularly detrimental to the elderly and people with disabilities.

**Community Facilities/Community Character and Cohesion**

No high and adverse effects to community facilities or community character and cohesion are anticipated for Alignments A, B, C, D1, and the D Common Section. The effects of access changes, right-of-way acquisitions, increased noise, and changes in visual character would be confined to limited areas and are not expected to affect the overall character, nor do they present a substantial physical or social barrier affecting community cohesion. Therefore, there is no potential for any high and adverse impacts to be disproportionately borne by environmental justice populations.

Changes in community character are expected for neighborhoods surrounding Alignment D2. The Willard-Hay neighborhood would experience a change in community character due to the removal of residential properties and loss of on-street parking, as well as visual changes to NorthPoint Health and Wellness Center, a funeral chapel, an athletic field, and a church.

Changes in access across Penn Avenue, which would be necessary to maintain pedestrian safety, are expected to affect community cohesion. The closure of nine crossings along Penn Avenue, as well as the interruption to the street grid system in north Minneapolis, would collectively contribute to decreased walkability and accessibility to and within the neighborhoods surrounding this area of Alignment D2.

*Preliminary Finding*

Changes in community character due to removal of residential properties and community facilities, access changes, and the loss of on-street parking would result in a disproportionately high and adverse impact on the low-income minority community surrounding Alignment D2. Changes in community character and cohesion resulting from the other alignments would be notably less and would not be considered high and adverse.

**Displacement of Residents and Businesses**

**Table 7.5-4** summarizes residential and commercial displacements for each alignment.

**Table 7.5-4. Number of Displaced Residential and Commercial Properties by Alignment**

Alignment	Residential	Commercial
<b>A</b>	8	0
<b>B (part of the Preferred Alternative)</b>	8	1
<b>C (part of the Preferred Alternative)</b>	0	2
<b>D1 (part of the Preferred Alternative)</b>	0	0

**Table 7.5-4. Number of Displaced Residential and Commercial Properties by Alignment (continued)**

Alignment	Residential	Commercial
D2	105	3
D Common Section (part of the Preferred Alternative)	0	0

The greatest number of residential displacements is anticipated along Alignment D2. Most of the residential displacements are anticipated on the west side of Penn Avenue between McNair Avenue and TH 55. As a significant percentage of the population in this area has been identified as low-income, it is assumed that much of the replacement housing would need to be affordable to low-income households and include both ownership as well as rental units. Investigation of currently available housing, using MLS (Multiple Listing Service), indicates that it may be challenging to find affordable properties for displaced homeowners and tenants along Alignment D2. Adequate housing is expected to be available for displaced residents along Alignments A, B, and C.

A search of the MLS was conducted to assess the future potential for identifying suitable replacement properties for residents and businesses whose properties may be acquired for the Bottineau Transitway. The number of displaced properties was compared with the number of comparable properties available, assuming similar properties may be available at the time of construction. MLS search results were also used to assess the availability of suitable residential or commercial properties in or near the community where displacements are anticipated to occur.<sup>18</sup>

The greatest number of commercial displacements is anticipated for Alignment D2, with three displacements. Adequate commercial properties are expected to be available for commercial relocations along Alignments B, C, and D2.

#### *Preliminary Finding*

Alignment D2 would result in a disproportionately high and adverse impact on the surrounding low-income minority community. Displacement resulting from the other alignments is notably less and is relatively consistent among comparable alignment choices and therefore is not considered high and adverse.

#### **Visual/Aesthetics**

Each alignment was analyzed to assess the degree of effect to existing visual features. In many areas, construction of the transitway would occur within existing railroad and highway rights-of-way and would have minimal to moderate effects. In some instances, transitway design requires the acquisition of adjacent properties or significant structures that would have a higher degree of effect. Further discussion of visual/aesthetic resources is provided in the Visual Quality Technical Report (SRF Consulting Group, 2012).

Minimal effects are anticipated along Alignment A, as much of the gravel mining area in Maple Grove is undeveloped. Minimal to moderate effects are expected for Alignments B, C, and D1 as described in detail in Chapter 4. Removal of approximately 100 residential properties along Alignment D2 would result in disproportionately high and adverse visual effects.

#### *Preliminary Finding*

Alignment D2 would result in a disproportionately high and adverse impact on the surrounding low-income minority community due to the removal and replacement of approximately 100 residential

<sup>18</sup> This MLS exercise was conducted only to assess the ability to relocate displaced residents and businesses. Should the Bottineau Transitway project proceed to construction, displaced residents and businesses would receive individual relocation assistance in accordance with the Uniform Relocation Act. Please refer to Chapter 4 Section 3 for greater detail.

properties with LRT tracks in the center with a through lane, parking lane, boulevard, and sidewalk on either side. Visual impacts resulting from the other alignments are notably less and are not considered high and adverse.

## Noise

No noise impacts are expected along Alignment A or the Alignment D Common Section. Of the four alignments with noise impacts (Alignments B, C, D1, and D2), the greatest number of severe unmitigated noise impacts are anticipated along Alignment C and vary depending on whether Alignment A or B is included in the alternative definition. Section 5.6 Noise provides more detail relative to potential noise mitigation measures associated with each alignment.

### *Preliminary Finding*

With recommended mitigation, no severe noise impacts are anticipated for the Bottineau Transitway. No high and adverse impacts are anticipated because severe noise impacts would be mitigated.

## Vibration

Ground borne vibration (GBV) impacts associated with the operation of the transitway are predicted to occur at 51 residences along Alignment C and would therefore occur for all alternatives. No residual impacts<sup>19</sup> are predicted to occur if the recommended mitigation measures are implemented.

### *Preliminary Finding*

With recommended mitigation, no severe GBV impacts are anticipated for the Bottineau Transitway. No high and adverse impacts are anticipated because vibration impacts would be mitigated.

## 7.5.2 Construction Phase Impacts

Like the process for identifying operating effects, a multi-step process was used to identify the potential for disproportionately high and adverse effects on Environmental Justice populations.

First, a range of impact categories were selected including land use, traffic, parking, community character and facilities (including parks), right-of-way and relocations, business impacts, visual quality, safety and security, noise, vibration, air quality, traction power substations (TPSS), and operations and maintenance facilities (OMFs). These categories were selected because the impacts in these categories tend to be localized and have the potential for high or disproportionate impact to environmental justice populations. Other categories evaluated in this Draft EIS were not considered because they either presented no impacts, or their effects would be experienced by all populations living in the study area, regardless of race, ethnicity, or socioeconomic status.

Each Bottineau Transitway alternative was then evaluated in each category, as shown in [Table 7.5-5](#). The evaluation is based on the results documented in Chapter 3 Transportation Analysis,<sup>20</sup> Chapter 4 Community and Social Analysis,<sup>21</sup> and Chapter 5 Physical and Environmental Analysis.<sup>22</sup> Categories with potential effects were then carried forward to another level of analysis to determine whether those effects were high or disproportionate to environmental justice populations.

### 7.5.2.1 No-Build Alternative

The No-Build alternative would not result in construction phase impacts and would not result in disproportionately high and adverse effects to environmental justice populations.

<sup>19</sup> Residual impacts refers to the number of impacts remaining after the recommended mitigation is implemented.

<sup>20</sup> Please see Chapter 3 for a full analysis of vehicular traffic, pedestrian and bicycles, and parking impacts.

<sup>21</sup> Please see Chapter 4 for a full analysis of land use, community facilities/community character, displacement of residents and businesses, visual/aesthetics, and safety and security impacts.

<sup>22</sup> Please see Chapter 5 for a full analysis of noise, vibration, and air quality impacts.



### 7.5.2.2 Enhanced Bus/TSM Alternative

Construction phase impacts would occur at the location of a transit center and park-and-ride facility near Oak Grove Parkway and West Broadway Avenue, north of TH 610. The facility would be located in an area that is currently undeveloped and would not result in disproportionately high and adverse effects to environmental justice populations.

### 7.5.2.3 Build Alternatives: Potential Impacts Analysis

Potential effects, as documented in Chapter 3 Transportation Analysis,<sup>23</sup> Chapter 4 Community and Social Analysis,<sup>24</sup> and Chapter 5 Physical and Environmental Analysis,<sup>25</sup> are identified by alternative below in [Table 7.5-5](#). Categories with no effects are not carried forward for further analysis. Categories with potential effects are considered for their potential for Disproportionately High and Adverse Effects on EJ communities in [Table 7.5-6](#).

**Table 7.5-5. Construction Phase: Potential Impacts by Alternative**

Impact Categories	Potential Impacts by Alternative				Analyze for Potential High & Adverse Effects to EJ populations
	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2	
Land Use	No	No	No	No	No
Vehicular Traffic	Yes	Yes	Yes	Yes	Yes
Pedestrian and Bicycle Facilities	Yes	Yes	Yes	Yes	Yes
Parking	No	Yes	No	Yes	Yes
Community Facilities/Community Character and Cohesion	No	Yes	No	Yes	Yes
Displacement of Residents and Businesses	N/A	N/A	N/A	N/A	No
Business Impacts	Yes	Yes	Yes	Yes	Yes
Visual/Aesthetics	No	No	No	No	No
Safety and Security	No	No	No	No	No
Noise	Yes	Yes	Yes	Yes	Yes
Vibration	Yes	Yes	Yes	Yes	Yes
Air Quality	No	No	No	No	No
TPSS	No	No	No	No	No
OMF	No	No	No	No	No

Note: N/A = Not Applicable

<sup>23</sup> Please see Chapter 3 for a full analysis of vehicular traffic, pedestrian and bicycles, and parking impacts.

<sup>24</sup> Please see Chapter 4 for a full analysis of land use, community facilities/community character, displacement of residents and businesses, visual/aesthetics, and safety and security impacts.

<sup>25</sup> Please see Chapter 5 for a full analysis of noise, vibration, and air quality impacts.

The following categories will not be carried forward for further analysis, as they do not have any potential effects:

### **Land Use**

No short-term impacts to conformance with land use policies have been identified. Since no adverse impacts resulting from the Bottineau Transitway alignments were identified, there is no potential for any high and adverse impacts to be disproportionately borne by environmental justice populations.

### **Displacements of Residents and Businesses**

Residential and commercial displacements are addressed under Operational Phase Impacts.

### **Visual/Aesthetics**

Construction activities would occur along all alignments. Anticipated visual construction phase effects would be similar to the appearance of most typical roadway and infrastructure projects including the temporary presence of heavy equipment, traffic control measures, and construction activity. Travelers on routes that intersect the transitway would encounter the construction of both grade-separated and at-grade crossings. Where the transitway passes along residential neighborhoods, the construction activity could be perceived as visually disruptive in areas such as parks and residential neighborhoods.

#### *Preliminary Finding*

As construction-related visual impacts anticipated are typical of any transportation construction projects, these short-term impacts are not expected to be disproportionately high and adverse. Because these impacts would occur equally among all Bottineau Transitway alignments, there is no potential for any high and adverse impacts to be disproportionately borne by environmental justice populations.

### **Safety and Security**

Worker safety and public safety during construction would be implemented for all alignments. Public safety is particularly important in construction areas with pedestrians, bicyclists, area business staff, and spectators. Because safety and security would be addressed equally among all alignments, there is no potential for any high and adverse impacts to be disproportionately borne by environmental justice populations.

### **Air Quality**

The construction of each of the alignments under consideration would affect traffic volumes and operations along roadways in and around the study area. During construction, some intersections may need to temporarily operate with reduced capacities or be temporarily closed. Under these conditions, traffic would be expected to detour to parallel roadway facilities near the study area. This increased traffic may result in increased emissions and higher concentrations of air pollutants near homes and businesses. These emissions levels would not be expected to result in localized concentrations that would exceed any state or federal air quality standards.

In addition to traffic-related emissions increases, construction activities can also result in higher concentrations of air pollutants. Construction equipment powered by fossil fuels emits the same air pollutants as highway vehicles. Exposed earthen materials can also produce increased particulate matter when they are moved or disturbed by wind. It is not expected that concentrations of these air pollutants would exceed any state or federal standards, in part due to the Best Management Practices that would be implemented.

#### *Preliminary Finding*

No adverse impacts are anticipated as traffic emissions levels and construction-related air pollutants are not expected to exceed state or federal air quality standards. Since no adverse impacts resulting from the

Bottineau Transitway alignments were identified, there is no potential for any high and adverse impacts to be disproportionately borne by environmental justice populations.

#### TPSS

Installation of TPSS stations would result in temporary noise and vibration impacts associated with construction activities. The impacts would be localized and not of extended duration, and loud construction activities such as pile driving are not anticipated.

Impacts are expected to be localized and minor. Since no adverse impacts resulting from the Bottineau Transitway alignments were identified, there is no potential for any high and adverse impacts to be disproportionately borne by environmental justice populations.

#### OMF

Three OMF location options have been identified, one along Alignment A in Maple Grove and two along Alignment B in Brooklyn Park. Only one OMF would be constructed as part of the Bottineau Transitway project. Since no adverse impacts resulting from the construction of any of the OMFs were identified, there is no potential for any high and adverse impacts to be disproportionately borne by environmental justice populations.

#### 7.5.2.4 Build Alternatives: Potential Disproportionately High and Adverse Impacts Analysis

High and disproportionate impacts to EJ communities during construction of the Bottineau Transitway would occur only along the D-2 alignment. Specifically, construction of the on-street transitway on Penn Avenue would result in high and disproportionate impacts on vehicular traffic, parking, community facilities/ community character and cohesion, and visuals and aesthetics. These impacts were identified by a technical analysis of each impact category described below.

**Table 7.5-6. Construction Phase: Disproportionately High and Adverse Impacts by Alternative**

Impact Categories	Potentially High or Disproportionate Impacts			
	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2
<b>Vehicular Traffic</b>	No	Yes	No	Yes
<b>Pedestrian and Bicycle Facilities</b>	No	No	No	No
<b>Parking</b>	No	Yes	No	Yes
<b>Community Facilities/Community Character and Cohesion</b>	No	Yes	No	Yes
<b>Business Impacts</b>	No	Yes	No	Yes
<b>Noise</b>	No	No	No	No
<b>Vibration</b>	No	No	No	No

#### Vehicular Traffic

Short-term impacts to traffic are anticipated during construction. No high and adverse effects associated with vehicular traffic are anticipated for Alignments A, B, C, D1, or the D Common Section. Alignment D2 is expected to impact vehicular traffic to a greater degree as this is the only alignment where the transitway would be substantially constructed within active street right-of-way and displacing vehicular traffic. Analysis assumptions and results are documented in the Traffic Technical Report (Kimley-Horn and Associates, 2012).

### *Preliminary Finding*

Disproportionately high and adverse effects to environmental justice populations proximate to Alignment D2 are anticipated due to the high level of disruptions to traffic flow and access anticipated during construction of this alignment.

### **Pedestrian and Bicycle Facilities**

For all alignments, temporary closures or detours are anticipated to affect bicycle and pedestrian facilities. Safe access for non-motorized users, as a result of detours, closures, and other inconveniences during the construction phases, would be included in phasing plans. Depending on how construction activities would impact sidewalk areas, special facilities (such as handrails, fences, barriers, ramps, walkways, and bridges) may be required to maintain bicyclist and pedestrian safety.

If crosswalks are temporarily closed, pedestrians would be directed to use alternate crossings nearby. Every effort would be made not to close adjacent crosswalks at the same time to allow for continued pedestrian movement across streets. All sidewalks and crosswalks would be required to meet minimum standards for accessibility and be free of slipping and tripping hazards. Sidewalk closures would be discouraged but, if required, would be done in such a way as to minimize impacts.

### *Preliminary Finding*

Given measures to mitigate construction impacts, no adverse effects are anticipated. Since no adverse impacts resulting from the Bottineau Transitway alignments were identified, there is no potential for any high and adverse impacts to be disproportionately borne by environmental justice populations.

### **Parking**

No high and adverse effects associated with parking are anticipated for Alignments A, B, C, D1, or the D Common Section. Similar to vehicular traffic, short-term impacts to on-street parking are anticipated during construction and are expected to be high and adverse for Alignment D2 due to the level of street disruption.

### *Preliminary Finding*

Disproportionately high and adverse effects to environmental justice populations proximate to Alignment D2 are anticipated due to loss of parking and access anticipated during construction of this alignment.

### **Community Facilities/Community Character and Cohesion**

No high and adverse effects associated with community facilities, character, or cohesion are anticipated for Alignments A, B, C, D1, or the D Common Section. Construction of the Bottineau Transitway along Alignment D2 is expected to require traffic detours that would result in traffic increases through residential areas. Additional construction impacts would include noise, dust, and visual impacts.

### *Preliminary Finding*

Disproportionately high and adverse effects to environmental justice populations proximate to Alignment D2 are anticipated due to the high level of disruptions to traffic flow and access, as well as noise, dust, and visual impacts associated with construction of this alignment.

### **Business Impacts**

No high and adverse effects to businesses are anticipated for Alignments A, B, C, D1, or the D Common Section. Construction of the Bottineau Transitway along Alignment D2 is expected to require short-term impacts to on-street parking and traffic detours that could result in reduced convenience for customers and reduced traffic to businesses. Additional construction impacts would include noise, dust, and visual impacts.



### *Preliminary Finding*

Disproportionately high and adverse effects to businesses that are owned by or serve environmental justice populations proximate to Alignment D2 are anticipated due to the high level of disruptions to on-street parking, traffic flow and access, as well as noise, dust, and visual impacts associated with construction of this alignment.

### **Noise**

Temporary noise impacts could result from activities associated with the construction of new tracks and stations, utility relocation, grading, excavation, track work, demolition, and installation of systems components. Such impacts may occur in residential areas and at other noise-sensitive land uses located within several hundred feet of the alignment. The potential for noise impact would be greatest at locations near pile-driving operations for bridges and other structures, pavement breaking, and at locations close to any nighttime construction work.

Estimates suggest that the potential for noise impacts related to track construction would be minimal for commercial and industrial land uses. For residential land use, the potential for temporary noise impact related to track construction would be limited to locations within about 125 feet of the corridor. However, the potential for noise impact from nighttime track construction could extend to residences as far as 400 feet from the tracks.

### *Preliminary Finding*

Construction activities would be carried out in compliance with all applicable local noise regulations. Noise control measures would be implemented for all alignments. No high and adverse impacts are anticipated because noise impacts would be mitigated.

### **Vibration**

Temporary vibration impacts could result from activities associated with the construction of new tracks and stations, utility relocation, grading, excavation, track work, demolition, and installation of systems components. Such impacts may occur in residential areas and at other vibration-sensitive land uses located within several hundred feet of the alignment. The potential for vibration impact would be greatest at locations near pile-driving for bridges and other structures, pavement breaking, and at locations close to vibratory compactor operations.

### *Preliminary Finding*

With the incorporation of appropriate mitigation measures, impacts from construction-generated vibration would be minimized and would be implemented for all alignments. No high and adverse impacts are anticipated because vibration impacts would be mitigated.

## **7.5.3 Offsetting Project Benefits**

### **7.5.3.1 Increased Transit Service**

Community members have identified providing affordable, accessible, and equitable transportation to low-income and minority residents so that they can have access to financial opportunities (jobs), educational opportunities, health services, and healthy food sources as one of the benefits of the Bottineau Transitway Project.<sup>26</sup> The *Bottineau Transitway HIA* also identified that reliable, accessible public transportation could decrease reliance on automobiles, reducing household transportation costs and making the combined costs of housing and transportation more affordable in this corridor.

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<sup>26</sup> Benefits list generated from the Scoping Summary Report; 30 comments were received regarding providing transportation to low-income and minority residents.

The Bottineau Transitway would provide significant increase in safe, reliable, and efficient transportation options for minority and low-income populations located along all proposed alignments. [Table 7.5-7](#) summarizes the daily hours of user benefits that would accrue to new and existing (as accounted for in the Enhanced Bus/TSM alternative) transit riders as a result of each alternative. User benefits reflect travel time savings compared to the Enhanced Bus/TSM alternative, including factors such as walk access, service frequency, travel speed, and connections at transfer points. See the Transportation Technical Report (Kimley-Horn and Associates & SRF Consulting Group, 2012) Section 3.0 for additional information.

**Table 7.5-7. Daily (Weekday) Hours of User Benefits (2030)**

	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2
<b>Daily User Benefit Hours</b>	9,460	9,000	8,520	7,940

Research indicates that transit provides a positive role in promoting social equity. A recent study<sup>27</sup> by the University of Minnesota Center for Transportation Studies investigated the role of transitways in improving job accessibility for socio-economically disadvantaged workers. The study found that low-income workers use transit considerably more than their higher-wage counterparts do and that their transit use patterns differ. Analysis of the Blue Line, which was completed in 2004, demonstrated positive changes in low-wage transit employment accessibility. Study results revealed that low-wage workers, as well as low-wage employers, relocated closer to light rail.

Increased transit service would provide minority and low-income populations along the Bottineau Transitway access to parks and recreational amenities and networks. It would also support public transit “trip chaining,” a series of trips using one or several modes of transportation (e.g., Bottineau Transitway, to regional trail, to destination).

### 7.5.3.2 Operational Phase Economic Benefits

Each of the Bottineau Transitway alternatives is anticipated to create jobs and additional earnings as a result of Operations and Maintenance (O&M) expenditures. Although these O&M expenses would originate from local sources, they represent spending that would not take place except for the implementation of this service. The expansion of transit service associated with the alternatives creates an expansion of economic activity in the counties of the Minneapolis-St. Paul-Bloomington Metropolitan Statistical Area (MSA), thus generating recurring net economic impacts (long-term). Other potential sources of federal funding for maintenance exist as grants and could be applied to preventative maintenance in later years. If future federal funds are received and applied to maintenance activities, they could generate additional net economic effects to the local and state economies through increased employment and earnings. Community members also identified economic development, increased business investments, and revitalization in north Minneapolis and Brooklyn Park as a potential benefit of the Bottineau Transitway project.<sup>28</sup>

For the Minneapolis-St. Paul-Bloomington MSA, the effect of local O&M spending for the alternatives would result in an estimated range of \$24.4 million to \$25.7 million in local annual wages and salaries (2011 dollars). Implementation of any of the four alternatives, and their associated increased earnings, is anticipated to result in positive economic impacts to the local economy, both through direct hiring to fill

<sup>27</sup> Impact of Twin Cities Transitways on Regional Labor Market Accessibility: A Transportation Equity Perspective. Dr. Yingling Fan, Andrew Guthrie, and Rose Teng, Center for Transportation Studies, University of Minnesota, 2010.

<sup>28</sup> Benefits list generated from the Scoping Summary Report; 18 comments were received regarding spurring economic development.

transit jobs and indirectly as these transit workers spend their earnings, thus creating additional consumer demand and jobs to meet that demand.

#### **7.5.3.3 Construction Economic Benefits**

It is estimated that construction of the alternatives would generate \$285 million to \$323 million in additional employment earnings for households and payroll expansion and generate from 6,785 to 7,700 person-year jobs for all industries in the Minneapolis-St. Paul-Bloomington MSA. Thus, due to its higher anticipated capital expenditures, Alternative A-C-D2 would demonstrate the greatest economic impacts to the local economy during construction activities of all four alternatives, with Alternative A-C-D1 resulting in the least economic benefit.

#### **7.5.3.4 Avoidance, Minimization, and/or Mitigation Measures**

Given that all high and disproportionate effects to environmental justice populations are associated with the D2 alignment, impacts to these populations could be avoided by selection of alternatives that do not include the D2 alignment. However, potential project benefits would also be lost to the same populations. The alternatives development process sought to minimize impacts to the greatest degree possible while preserving project benefits. For example:

- Several D2 alignments (D2A, D2B, D2C) were considered to avoid, minimize, or mitigate effects from other D2 alignments that were identified by the community, and many changes were made to the design of these alternatives to avoid impacts to certain areas
- The D2 alignment was reconfigured to improve access to North Memorial Hospital
- Pedestrian access points at signalized crossings were added to the design of the D2 alignment along Penn Avenue

Further minimization efforts are not expected to substantially reduce the high and disproportionate benefits of the D2 alignment.

Potential mitigation measures related to parking, community character/cohesion, displacements, and visual/aesthetics will be addressed under the respective sections of the Draft EIS.

## **7.6 Environmental Justice Analysis Conclusions**

### **7.6.1 Alternative A-C-D1**

This alternative does not impose disproportionately high and adverse human health or environmental effects on EJ populations.

### **7.6.2 Alternative A-C-D2**

#### **7.6.2.1 Operations**

##### **Community Cohesion**

Changes in community character due to removal of residential properties and community facilities, closure of nine street crossings along Penn Avenue and interruption to the street grid system in north Minneapolis, as well as the loss of on-street parking would result in a disproportionately high and adverse impact on the low-income minority community surrounding the D2 alignment of Alternative A-C-D2.

##### **Displacement of Residents and Businesses**

Most residential displacements are anticipated on the west side of Penn Avenue between McNair Avenue and TH 55 along the D2 alignment of Alternative B-C-D2. As a significant percentage (45-50 percent) of the population in this area has been identified as low-income, much of the replacement housing would

need to be affordable to low-income households and include both ownership as well as rental units. Investigation of currently available housing, using MLS (Multiple Listing Service), indicates that it may be challenging to find affordable properties for displaced homeowners and tenants.<sup>29</sup> Residential displacement would result in a disproportionately high and adverse impact on the low-income minority community surrounding the D2 alignment of Alternative A-C-D2.

Five commercial displacements are anticipated for Alternative A-C-D2; however, adequate commercial properties are expected to be available for commercial relocations in the corridor.

### **Visual and Aesthetics**

Removal of approximately 100 residential properties along Alignment D2 would result in disproportionately high and adverse visual and aesthetic impacts to the low-income minority community surrounding the D2 alignment of Alternative A-C-D2.

#### **7.6.2.2 Construction**

##### **Vehicular Traffic**

Disproportionately high and adverse effects to environmental justice populations proximate to Alignment D2 of Alternative A-C-D2 are anticipated due to the high level of disruptions to traffic flow and access anticipated during construction of Alignment D2 within active street right-of-way. Analysis assumptions and results are documented in the Traffic Technical Report (Kimley-Horn and Associates, 2012).

##### **Parking**

Similar to vehicular traffic, disproportionately high and adverse effects to environmental justice populations proximate to the D2 alignment of Alternative A-C-D2 are anticipated due to loss of parking and access anticipated during construction of this alignment.

##### **Community Facilities/Community Character and Cohesion**

Disproportionately high and adverse effects to environmental justice populations proximate to Alignment D2 of Alternative A-C-D2 are anticipated due to the high level of disruptions to traffic flow and access, as well as noise, dust, and visual impacts associated with construction of this alignment.

#### **7.6.3 Alternative B-C-D1 (Preferred Alternative)**

This alternative does not impose disproportionately high and adverse human health or environmental effects on EJ populations.

#### **7.6.4 Alternative B-C-D2**

##### **7.6.4.1 Operations**

##### **Community Cohesion**

Changes in community character due to removal of residential properties and community facilities, closure of nine street crossings along Penn Avenue and interruption to the street grid system in north

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<sup>29</sup> A search of the MLS was conducted to assess the future potential for identifying suitable replacement properties for residents and businesses whose properties may be acquired for the Bottineau Transitway. The number of displaced properties was compared with the number of comparable properties available, assuming similar properties may be available at the time of construction. MLS search results were also used to assess the availability of suitable residential or commercial properties in or near the community where displacements are anticipated to occur. This MLS exercise was conducted only to assess the ability to relocate displaced residents and businesses. Should the Bottineau Transitway project proceed to construction, displaced residents and businesses would receive individual relocation assistance in accordance with their needs and current market availability.



Minneapolis, as well as the loss of on-street parking would result in a disproportionately high and adverse impact on the low-income minority community surrounding the D2 alignment of Alternative B-C-D2.

### **Displacement of Residents and Businesses**

Most residential displacements are anticipated on the west side of Penn Avenue between McNair Avenue and TH 55 along the D2 alignment of Alternative B-C-D2. As a significant percentage (45-50 percent) of the population in this area has been identified as low-income, much of the replacement housing would need to be affordable to low-income households and include both ownership as well as rental units. Investigation of currently available housing, using MLS (Multiple Listing Service), indicates that it may be challenging to find affordable properties for displaced homeowners and tenants.<sup>30</sup> Residential displacement would result in a disproportionately high and adverse impact on the low-income minority community surrounding the D2 alignment of Alternative B-C-D2.

Six commercial displacements are anticipated for Alternative B-C-D2; however, adequate commercial properties are expected to be available for commercial relocations in the corridor.

### **Visual and Aesthetics**

Removal of approximately 100 residential properties along Alignment D2 would result in disproportionately high and adverse visual and aesthetic impacts to the low-income minority community surrounding the D2 alignment of Alternative B-C-D2.

## **7.6.4.2 Construction**

### **Vehicular Traffic**

Disproportionately high and adverse effects to environmental justice populations proximate to Alignment D2 of Alternative B-C-D2 are anticipated due to the high level of disruptions to traffic flow and access anticipated during construction of Alignment D2 within active street right-of-way. Analysis assumptions and results are documented in the Traffic Technical Report (Kimley-Horn and Associates, 2012).

### **Parking**

Similar to vehicular traffic, disproportionately high and adverse effects to environmental justice populations proximate to the D2 alignment of Alternative B-C-D2 are anticipated due to loss of parking and access anticipated during construction of this alignment.

### **Community Facilities/Community Character and Cohesion**

Disproportionately high and adverse effects to environmental justice populations proximate to Alignment D2 of Alternative B-C-D2 are anticipated due to the high level of disruptions to traffic flow and access, as well as noise, dust, and visual impacts associated with construction of this alignment.

The findings resulting from the environmental justice analysis for environmental justice populations living within the study area of the Bottineau Transitway project are summarized in [Table 7.6-1](#).

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<sup>30</sup> A search of the MLS was conducted to assess the future potential for identifying suitable replacement properties for residents and businesses whose properties may be acquired for the Bottineau Transitway. The number of displaced properties was compared with the number of comparable properties available, assuming similar properties may be available at the time of construction. MLS search results were also used to assess the availability of suitable residential or commercial properties in or near the community where displacements are anticipated to occur. This MLS exercise was conducted only to assess the ability to relocate displaced residents and businesses. Should the Bottineau Transitway project proceed to construction, displaced residents and businesses would receive individual relocation assistance in accordance with their needs and current market availability.

**Table 7.6-1. Environmental Resource Impacts to Environmental Justice Populations by Alternative**

Alternative	Analysis Finding
<b>No-Build</b>	No disproportionately high and adverse effects anticipated
<b>Enhanced Bus/TSM</b>	No disproportionately high and adverse effects anticipated
<b>A-C-D1</b>	No disproportionately high and adverse effects anticipated
<b>A-C-D2</b>	Disproportionately high and adverse effects anticipated: <ul style="list-style-type: none"> <li>■ Parking</li> <li>■ Community Facilities/Community Character and Cohesion</li> <li>■ Displacement of Residents and Businesses</li> <li>■ Visual/Aesthetics</li> <li>■ Vehicular Traffic (construction phase only)</li> <li>■ Business Impacts (construction phase only)</li> </ul>
<b>B-C-D1 (Preferred Alternative)</b>	No disproportionately high and adverse effects anticipated
<b>B-C-D2</b>	Disproportionately high and adverse effects anticipated: <ul style="list-style-type: none"> <li>■ Parking</li> <li>■ Community Facilities/Community Character and Cohesion</li> <li>■ Displacement of Residents and Businesses</li> <li>■ Visual/Aesthetics</li> <li>■ Vehicular Traffic (construction phase only)</li> <li>■ Business Impacts (construction phase only)</li> </ul>

## 8.0 Draft Section 4(f) Evaluation

This chapter provides documentation necessary to support determinations required to comply with the provision of 23 USC 138 and 49 USC 303, hereinafter referred to as “Section 4(f).” This evaluation has been prepared in accordance with legislation established under the Department of Transportation Act of 1966 (49 USC 303, 23 USC 138) and the joint Federal Highway Administration (FHWA)/Federal Transportation Administration (FTA) regulations for Section 4(f) compliance codified as 23 CFR 774. Additional guidance was obtained from FHWA Technical Advisory T6640.8A (FHWA, 1987b) and the revised *FHWA Section 4(f) Policy Paper* (FHWA, 2012).

The Section 4(f) Evaluation identifies properties in the project study area protected by Section 4(f), evaluates the use of these properties by the Build alternatives, and presents documentation required for FTA to approve the use of Section 4(f) properties. FTA will make its Section 4(f) determination in the Final Environmental Impact Statement (EIS)/Record of Decision (ROD) for the project, after its consideration of public and agency comments on this Draft Section 4(f) Evaluation. The public comment period for the Draft Section 4(f) Evaluation is 45 days, concurrent with the public comment period for the Draft EIS.

This Draft Section 4(f) Evaluation provides notification of FTA’s intent to pursue *de minimis* use determinations for two park and recreation properties and historic sites that would be affected by the construction and operation of the Bottineau Transitway project, Rush Creek Regional Trail and Grand Rounds Historic District – Theodore Wirth Segment. A 4(f) use of the Rush Creek Regional Trail would only occur with the selection of the 101st Avenue location for the operations and maintenance facility (OMF).

The proposed *de minimis* use determinations are based on coordination with the officials with jurisdiction. The officials with jurisdiction are federal, state, or local agencies that own and/or administer the affected portion of the property protected by Section 4(f). The officials have been notified of FTA’s intent to make a *de minimis* use determination. Should the officials with jurisdiction concur, FTA will issue determinations of *de minimis* use as part of the Final Section 4(f) Evaluation in the Final EIS/ROD. Pursuant to 23 CFR 774.5(b)(2), notice is hereby provided of the proposed *de minimis* use determinations, which are made available in this document for public review and comment.

Comments regarding the proposed Section 4(f) *de minimis* use determinations may be submitted to FTA and Hennepin County during the 45-day comment period on this Draft EIS, the details of which are posted on the project website ([www.bottineautransitway.org](http://www.bottineautransitway.org)). Correspondence to date with officials with jurisdiction is included in [Appendix D](#).

### 8.1 Section 4(f) Overview

#### 8.1.1 Types of Section 4(f) Properties

The Bottineau Transitway, as described in Chapter 2, may receive federal funding; therefore, compliance with Section 4(f) of the US Department of Transportation Act of 1996, 49 USC 303(c) is required. Section 4(f) requires consideration of:

- Parks and recreational areas of national, state, or local significance that are both publicly owned and open to the public
- Publicly-owned wildlife and waterfowl refuges of national, state, or local significance that are open to the public to the extent that public access does not interfere with the primary purpose of the refuge
- Historic sites of national, state, or local significance in public or private ownership regardless of whether they are open to the public

### 8.1.2 Section 4(f) Determinations

FTA may not approve the use of a Section 4(f) property, as defined in 23 CFR 774.17, unless it determines the following:

- There is no feasible and prudent avoidance alternative, as defined in Section 774.1, to the use of land from the property; **and**
- The action includes all possible planning, as defined in Section 774.17, to minimize harm to the property resulting from such use.

### 8.1.3 Section 4(f) Use Definitions

To determine whether Section 4(f) applies to the proposed project alternatives, Section 4(f) properties must be assessed to determine whether a use of the property is anticipated. The “use” of a protected Section 4(f) property, as defined in 23 CFR 774.17, occurs when any of the conditions discussed below are met.

#### ■ Direct Use

A direct use of a Section 4(f) resource occurs when property is permanently incorporated into a proposed transportation facility. Direct use may occur as a result of partial or full acquisition or a permanent easement that allows permanent access onto the property for maintenance or other transportation-related purposes.

#### ■ Constructive Use

A constructive use of a Section 4(f) resource occurs when a transportation project does not permanently incorporate land from the resource, but the project’s proximity results in impacts so severe that the protected activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only if the protected activities, features, or attributes of the resource are substantially diminished.

#### ■ Temporary Occupancy

Temporary occupancy results when Section 4(f) property, in whole or in part, is required for project construction-related activities. The property is not permanently incorporated into a transportation facility, but the activity is considered to be adverse in terms of the preservation purpose of Section 4(f). 23 CFR 774.13(d) provides the conditions under which “temporary occupancies of land... are so minimal as to not constitute a use under the meaning of Section 4(f).” If all of the conditions in Section 774.13(d) are met, the temporary occupancy does not constitute a use. These five conditions are:

- Duration must be temporary, i.e., less than the time needed for construction of the project, and there should be no change in ownership of the land;
- Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal;
- There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;
- The land being used must be fully restored, i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project; and
- There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions.



#### 8.1.4 *De minimis* Impact Determinations

When impacts to a Section 4(f) property are minor, as agreed to by the agency with jurisdiction over that property, Section 4(f) regulations can be satisfied through a “*de minimis*” use determination.

*De minimis* impact is defined in 23 CFR 774.17 as follows:

- For parks, recreational areas, and wildlife and waterfowl refuges, a *de minimis* impact is one that would not adversely affect the activities, features, or attributes qualifying the property for protection under Section 4(f).
- For historic sites, *de minimis* impact means that the FTA has determined, in accordance with 36 CFR 800, that no historic property is affected by the project or the project would have “no adverse effect” on the property in question. The State Historic Preservation Office (SHPO) and Advisory Council on Historic Preservation (ACHP), if involved, must be notified that the FTA intends to enter a *de minimis* finding for properties where the project results in “no adverse effect.”

The officials with jurisdiction must concur in writing with a *de minimis* determination. For recreational or refuges properties, concurrence from the officials having jurisdiction over the properties is required. For historic sites, concurrence from the SHPO on FTA’s “No Adverse Effect” determination is required.

## 8.2 Alternatives Evaluation and Description of the Project

### 8.2.1 Alternatives Evaluation

Chapter 2 of this Draft Environmental Impact Statement (EIS) documents how alternatives were developed, evaluated, and refined during the Alternatives Analysis and EIS Scoping process. Refer to Chapter 2, as appropriate, for more detail.

The Alternatives Analysis (AA) Study for the Bottineau Transitway was initiated in 2008 and completed in 2010. The AA Study developed and evaluated a No-Build alternative, an Enhanced Bus/Transportation System Management (TSM) alternative, and a broad range of transitway Build alternatives. Screening criteria were developed to identify those initial alternatives with potential to address the project needs, goals, and objectives.

The AA Study advanced five alternatives including the three most promising LRT alternatives, a fourth LRT alternative considered in the study that was less promising but still of interest, and a refined BRT alternative.

The AA Study identified two alignments in Minneapolis for further study: the D1 alignment located in the Burlington Northern Santa Fe (BNSF) railroad right-of-way and the D2 alignment located on West Broadway Avenue and Penn Avenue. Investigation of the D2 alignment occurred after publication of the AA Study in March 2010 and continued through November 2011, just prior to the publication of the Bottineau Transitway Draft EIS Scoping Booklet. Three D2 options were considered for the segment between West Broadway Avenue and TH 55. Based on the results of the D2 investigation, the alignment that widens Penn Avenue to allow LRT and north- and southbound traffic to operate on Penn Avenue was carried forward.

Based on the findings from the AA Study and D2 investigation, the following alternatives were presented in the EIS Scoping process:

- No-Build alternative
- Enhanced Bus/TSM alternative
- LRT A-C-D1 (Maple Grove to Minneapolis via BNSF/ TH 55)
- LRT B-C-D1 (Brooklyn Park to Minneapolis via BNSF/TH 55)

- LRT A-C-D2 (Maple Grove to Minneapolis via West Broadway Avenue/Penn Avenue/TH 55)
- LRT B-C-D2 (Brooklyn Park to Minneapolis via West Broadway Avenue/Penn Avenue/TH 55)
- BRT B-C-D1 (Brooklyn Park to Minneapolis via BNSF/TH 55)

Based on the results of the Scoping process, a No-Build alternative, Enhanced Bus/TSM alternative, and four LRT Build alternatives were advanced for further study in this Draft EIS. Study of the BRT was eliminated.

## 8.2.2 Description of the Project

The proposed Bottineau Transitway Project is a 13-mile corridor of transportation improvements that extends from downtown Minneapolis to the northwest, serving north Minneapolis, Golden Valley, Robbinsdale, Crystal, New Hope, Osseo, Brooklyn Park, and Maple Grove. This section provides an overview of the Enhanced Bus/TSM alternative as well as the four LRT Build alternatives. A detailed description of the Bottineau Transitway alternatives is provided in Section 2.5 of this Draft EIS.

The TSM alternative and four LRT Build alternatives under consideration in this Draft EIS are described below. Alternative B-C-D1 has been identified as the Preferred Alternative.

### 8.2.2.1 Enhanced Bus/TSM Alternative

The purpose of the Enhanced Bus/TSM alternative is to provide a comparable transit service to the LRT Build alternatives without the significant capital investment of building a transitway. The Enhanced Bus/TSM alternative includes:

- A new transit center and park-and-ride facility in Brooklyn Park
- Additional limited stop bus routes 731 and 732
- Service frequency improvements to existing transit routes
- Restructuring of existing bus routes in the corridor

### 8.2.2.2 LRT Build Alternatives

The alignment and major features of each LRT Build alternative is summarized in [Table 8.2-1](#). All four LRT Build alternatives would connect to the regional system at the Target Field Station in downtown Minneapolis, a project completed independently of the Bottineau Transitway and to be operational in 2014.

Each LRT Build alternative is comprised of several alignment options, which are described below and illustrated in [Figure 2.2-1](#) in Chapter 2. There are two alignment options at the north end of the corridor and two alignment options at the south end of the corridor.

- **Alignment A**, one of the northern alignment options, begins in Maple Grove at Hemlock Lane/Arbor Lakes Parkway and follows the future Arbor Lakes Parkway and Elm Creek Boulevard to the BNSF railroad corridor located on the west side of Bottineau Boulevard.
- **Alignment B**, one of the northern alignment options, begins in Brooklyn Park near the Target North Campus (located just north of TH 610), follows West Broadway Avenue, and crosses Bottineau Boulevard at 73rd Avenue to enter the BNSF railroad corridor.
- **Alignment C**, situated in the middle of the corridor, is common to all alternatives. Just south of 71st Avenue, both the A and B alignments would transition to the C alignment in the BNSF railroad corridor on the west side of Bottineau Boulevard through southern Brooklyn Park, Crystal, and Robbinsdale.

- **Alignment D1**, one of the southern alignment options, continues along the BNSF railroad corridor to TH 55, and then follows TH 55 to downtown.
- **Alignment D2**, one of the southern alignment options, exits the BNSF railroad corridor near 34th Avenue, joins West Broadway Avenue, and travels on Penn Avenue to TH 55 and into downtown.

**Table 8.2-1. Summary of LRT Build Alternatives**

	Alternatives			
	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2
<b>Northern Terminus</b>	Maple Grove	Maple Grove	Brooklyn Park	Brooklyn Park
<b>Length<sup>1</sup></b>	12.6 miles	12.7 miles	13.3 miles	13.4 miles
<b>Route</b>	Maple Grove to Minneapolis via BNSF/TH 55	Maple Grove to Minneapolis via West Broadway Avenue/Penn Avenue/TH 55	Brooklyn Park to Minneapolis via BNSF/TH 55	Brooklyn Park to Minneapolis via West Broadway Avenue/Penn Avenue/TH 55
<b>Stations</b>	10 stations <sup>2</sup>	11 stations	10 stations <sup>2</sup>	11 stations
<b>Key Bridge Structures</b>	5 new 8 existing bridges modified	8 new 3 existing bridges modified	4 new 8 existing bridges modified	7 new 3 existing bridges modified
<b>Operations and Maintenance Facility (OMF) Alternatives</b>	For the alternatives that include Alignment A, the OMF facility would be located at the northern end of the alternative in Maple Grove on a parcel currently within a gravel mining area west of US 169.		For the alternatives that include Alignment B, the OMF facility would be located at the northern end of the alternative in Brooklyn Park on one of two potential sites: 93rd Avenue park-and-ride or in the northwest quadrant of the Winnetka Avenue (CSAH 103) and 101st Avenue intersection.	
<b>Traction Power Substations</b>	18 proposed	18 proposed	19 proposed	19 proposed

<sup>1</sup> The length represents the full end-to-end length of the proposed alternatives.

<sup>2</sup> The Draft EIS evaluates a Golden Valley Road and Plymouth Avenue/Theodore Wirth Regional Park station options on the D1 alignment. It is anticipated only one station location will advance due to low ridership demand.

## 8.3 Identification of Section 4(f) Properties

### 8.3.1 Methodology

#### 8.3.1.1 Parks and Recreational Areas/Wildlife and Waterfowl Refuges

Various methods were used to identify Section 4(f) properties near the Bottineau Transitway and to assess the potential use of those properties. Maps, aerial photography, and local comprehensive plans were consulted to determine the location of parks and recreational lands as well as wildlife and waterfowl refuges. The proximity of Section 4(f) properties to the proposed transitway, based on property ownership boundaries and preliminary construction limits, was evaluated to determine the potential for direct use and temporary occupancy. Potential constructive use was assessed based on the proximity of the proposed transitway and the potential effects to the activities, features, and attributes of the property. Field visits and coordination with local jurisdictions provided additional information for evaluating the potential use of Section 4(f) properties.

### 8.3.1.2 Historic Properties

Cultural resources studies of historic properties for the Bottineau Transitway have been completed under Section 106 of the National Historic Preservation Act (Section 106). The historic properties included in this Section 4(f) evaluation are those for which there is a direct use of the property and/or where there is potential for an adverse effect determination under Section 106. (See Section 4.4 of this Draft EIS for further discussion of historic property identification and assessment of effects under Section 106.)

It is important to recognize the difference between Section 4(f) *use* of historic properties, discussed below, and Section 106 project *effects* to historic properties, which are discussed in Section 4.4 of this Draft EIS. Section 4(f) and Section 106 are similar in that they both mandate consideration of historic sites in the planning of a federal undertaking. Section 4(f) applies to the actual use or occupancy of a historic site, while Section 106 involves an assessment of adverse effects of an action on historic properties. The Section 106 process is integral to the Section 4(f) process when historic sites are involved. Conversely, the Section 4(f) process is not integral to the Section 106 process.

While some effects on historic properties can be clearly understood at this time (e.g., construction activities, building demolition), many potential effects can only be estimated for this Draft EIS given the level of engineering currently completed. The proximity of these historic properties to the proposed transitway, based on parcel boundaries and preliminary construction limits, was used to determine the potential for direct use and temporary occupancy. Potential constructive use was based on determinations of potential adverse effect as discussed in Section 4.4.5.

Following the provisions of the Section 106 review process, ways to avoid, minimize, and mitigate adverse effects to historic properties will continue to be explored through consultation with the SHPO, Section 106 consulting parties, other interested parties and the public. The Advisory Council on Historic Preservation (ACHP) may also join in this consultation. Measures for avoidance, minimization, and mitigation will be stipulated in a Section 106 Agreement signed by the FTA, the SHPO, the ACHP (if participating), and other consulting parties. FTA will execute a Section 106 agreement prior to the Final EIS/ROD. The project will be implemented in accordance with the stipulations in the Section 106 agreement.

### 8.3.2 Park and Recreational Properties

A total of twenty park and recreational properties were identified adjacent to the LRT alternatives. [Figure 8.3-1](#) illustrates the location of these properties. Detailed maps of these resources are provided in subsequent sections of the Section 4(f) evaluation, as appropriate.

[Table 8.3-1](#) lists the property name, description, and jurisdiction, and indicates Section 4(f) use (direct use, temporary occupancy, or no use). Per the methodology described in Section 8.3.1, construction limits were overlaid with resource boundaries to assess potential Section 4(f) use. Direct use was identified for three properties and temporary occupancy was identified for four properties.

Potential direct use of the following park properties is addressed in Section 8.4.1:

- Rush Creek Regional Trail (*De minimis*)
- Theodore Wirth Regional Park
- Minneapolis Public Schools Athletic Field

Potential temporary occupancy of the following park properties is addressed in Section 8.6:

- Sochacki Park
- Mary Hills Nature Area

Properties that were determined to have no direct use or temporary occupancy are discussed in Section 8.5.1 under potential constructive use.



Public school playgrounds, ball fields, and recreational areas are potential Section 4(f) properties if they are open to the public for recreational use. Although access to the Minneapolis Public Schools athletic field is not permitted to the entire public during normal hours of operation (the property is fenced), the field may be used by the public by obtaining a permit. The athletic field is being considered Section 4(f) property for the purposes of this evaluation.

Several publicly owned properties are adjacent to the Bottineau Transitway and, in some cases, may provide existing or future recreational opportunities. For various reasons, these properties are not considered Section 4(f) resources. A brief discussion of these properties is provided below.

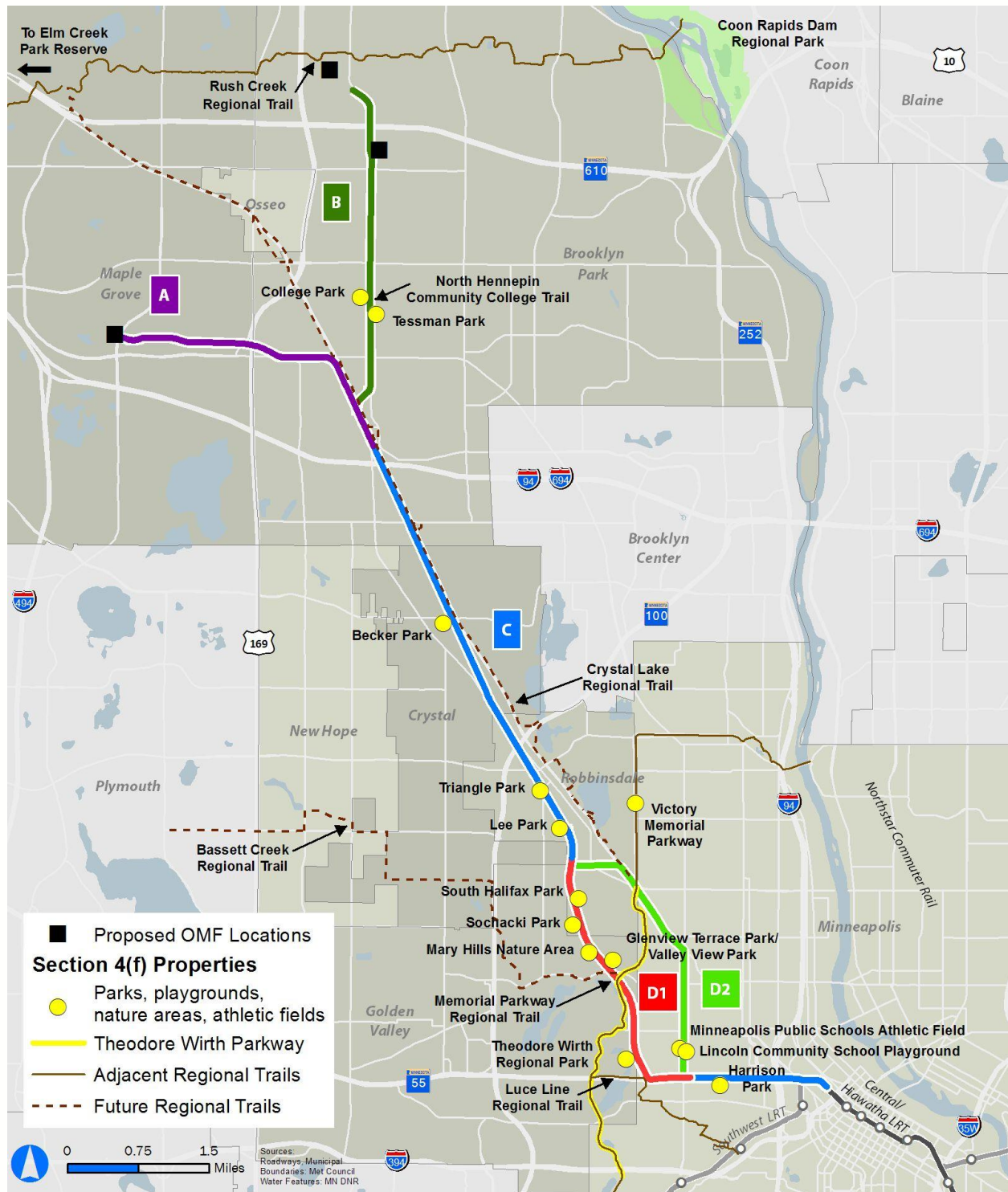
The *North Hennepin Community College ball fields* are located at the southern boundary of the 75-acre campus. The two ball fields occupy the area east of West Broadway Avenue and south of Campus Park Drive. Although public use of the ball fields is not prohibited, arrangements must be made with the facilities manager. According to athletic department staff, the ball fields are seldom used by the public and special arrangements are required. Therefore, the ball fields are not considered a Section 4(f) resource.

Two *Conservancy Districts* are identified in the Brooklyn Park Zoning Map (revised October 2012). One parcel is located along Alignment B (west of West Broadway Avenue and south of 82nd Avenue) and one parcel is located along Alignment C (west of CSAH 81 and north of 62nd Avenue). According to the City's zoning code, the *Conservancy District is intended to provide for a district for areas that contain valuable environmental qualities which are to be preserved as park or open space amenities and to prevent the over-crowding of land, to avoid undue concentration of population, a specific public purpose, and/or alleviate the burden of development from environmentally sensitive lands. These areas may also have been found to be unsuitable for residential, commercial, or industrial development due to flooding or bad drainage, slope, adverse soil conditions, rock formations, and/or unique natural features.* The properties located adjacent to the Bottineau Transitway function as drainage control and the City's comprehensive plan does not identify them as recreational lands. Therefore, they are not considered Section 4(f) resources.

*On-road bicycle trails* are present along Bass Lake Road, Plymouth Avenue, 26th Avenue, and Lowry Avenue. These on-road trails serve primarily a transportation purpose rather than a recreational function. Therefore, they are not considered Section 4(f) resources.

The *Grand Rounds National Scenic Byway* consists of a network of parkways, regional parks, and regional trails that encircle Minneapolis. The Grand Rounds was designated a National Scenic Byway by the Federal Highway Administration in 1998. Interior trails (not part of the Grand Rounds National Scenic Byway) exist within Theodore Wirth Regional Park providing facilities for bicyclists and walkers. It is noteworthy that the designation of a road as a scenic byway is not intended to create a park or recreation area within the meaning of 49 USC 303 or 23 USC 138. Further the Grand Rounds Scenic Byway is a separate designation from the Grand Rounds Historic District. Therefore, the Grand Rounds Scenic Byway is not identified as a Section 4(f) resource in regards to park and recreational lands. The Grand Rounds Historic District – Victory Memorial Drive and Theodore Wirth Parkway Segments are eligible for the National Register of Historic Places (NRHP) and, therefore, are evaluated as a Section 4(f) resource. The historic aspects of the Grand Rounds are discussed in Section 8.4.2.

Figure 8.3-1. Park and Recreational Properties adjacent to the Bottineau Transitway



**Table 8.3-1. Publicly Owned Park and Recreational Properties Adjacent to the Bottineau Transitway**

Property	Description and Jurisdiction	Adjacent Alignment	Section 4(f) Use
<b>Rush Creek Regional Trail</b>	The 6.4 mile trail is located north of, and generally parallel to, 101st Avenue between Elm Creek Park Reserve in Hennepin County and Coon Rapids Dam Regional Park in Anoka County. The primary trail is a 10-foot wide multi-use paved trail. A secondary turf trail is situated south of and roughly parallel to the paved trail. The trail is owned and operated by Three Rivers Park District.	B	Direct use <i>De minimis</i>
<b>Future Crystal Lake Regional Trail</b>	The future trail originates at Victory Memorial Parkway at the boundary of Minneapolis and Robbinsdale. The 11-mile trail will extend to Elm Creek Park Reserve along CSAH 81 and cross the transitway at 73rd Avenue. Currently, the area of the trail crossing is within existing CSAH 81 right-of-way. The trail will be under the jurisdiction of Three Rivers Park District.	A, C, D2	No use
<b>College Park</b>	The park is located west of West Broadway Avenue and between 82nd Avenue and North College Park Drive in Brooklyn Park. The six-acre park has a playground, skating rink, a picnic pavilion, and park activity building. The park is under the jurisdiction of the City of Brooklyn Park.	B	No use
<b>North Hennepin Community College Trail</b>	The trail, which is on College property, connects to Tessman Park immediately to the south. Brooklyn Park's Park and Trail map includes this resource as part of its trail network.	B	No use
<b>Tessman Park</b>	The park is located directly south of North Hennepin Community College in Brooklyn Park. The 16-acre park has a playground and picnic area at the southeast end. There is a trail along the north side of Shingle Creek, which flows through the park. The park is under the jurisdiction of the City of Brooklyn Park.	B	No use
<b>Becker Park</b>	The park is located south of Bass Lake Road adjacent to the west side of the BNSF railroad corridor in Crystal. The 12.4-acre park offers athletic fields, tennis courts, basketball courts, horseshoe courts, playground equipment, trails, and activity center. The park is under the jurisdiction of the City of Crystal.	C	No use
<b>Triangle Park</b>	The park is located west of Broadway Avenue in Robbinsdale. The one-acre park is bordered by Orchard Avenue on the west and 40th Avenue on the south. Park amenities include a ball field, playground equipment, picnic area, and a wading pool. The park is under the jurisdiction of the City of Robbinsdale.	C	No use

**Table 8.3-1. Publicly Owned Park and Recreational Properties Adjacent to the Bottineau Transitway (continued)**

Property	Description and Jurisdiction	Adjacent Alignment	Section 4(f) Use
<b>Lee Park</b>	The park is situated between 36th Avenue and 38th Avenue in Robbinsdale. The park is bordered by the BNSF railroad corridor on the east. The 6.7-acre park has a ball field, playground equipment, picnic area, picnic pavilion, skating rink, and a path/trail that connects with June Avenue to the south. The park is under the jurisdiction of the City of Robbinsdale.	C	No use
<b>Sochacki Park</b>	The park is situated between 26th Avenue and 34th Avenue in Robbinsdale. The park is bordered by June Avenue and residential backyards on the west, and the BNSF railroad corridor on the east. The 37.4-acre park has a picnic area, picnic pavilion, and a gravel surface trail. This trail provides a continuous linkage with the gravel surface trail in Mary Hills Nature Area to the south. The park is under the jurisdiction of the City of Robbinsdale.	D1	Temporary occupancy
<b>South Halifax Park</b>	The park is located south of Lowry Avenue and west of Halifax Avenue in Robbinsdale. The BNSF railroad corridor forms the western boundary of the park. The four-acre park has playground equipment, half-court basketball, a picnic area, and trails. The park is under the jurisdiction of the City of Robbinsdale.	D1	No use
<b>Mary Hills Nature Area</b>	The nature area is located between Golden Valley Road and 26th Avenue in Golden Valley. The BNSF railroad corridor borders the east side of the park. The 15.7-acre wooded park has trails, picnic areas, and benches. A meandering trail system connects Mary Hills Park with Sochacki Park to the north. The park is under the jurisdiction of the City of Golden Valley.	D1	Temporary occupancy
<b>Glenview Terrace Park /Valley View Park</b>	The 17.5-acre park is located south of Manor Drive in Golden Valley. Park amenities include walkways/trails, play equipment, and tennis court. Although the entire park property is owned by the Minneapolis Park & Recreation Board (MPRB), Glenview Terrace Park is operated by Golden Valley.	D1	No use
<b>Theodore Wirth Regional Park</b>	The northern two-thirds of the 759-acre park lie within the municipal boundary of Golden Valley, while the southern third of the park lies within the city of Minneapolis. It is the largest park in the Minneapolis Park System and is owned and operated by the MPRB.	D1	Direct use
<b>Theodore Wirth Parkway</b>	The parkway extends approximately 3.5 miles from I-394 north to Lowry Avenue. Theodore Wirth Parkway, an element of the Minneapolis Parkway System and part of the Grand Rounds Scenic Byway, is under the jurisdiction of the MPRB.	D1	No use



**Table 8.3-1. Publicly Owned Park and Recreational Properties Adjacent to the Bottineau Transitway (continued)**

Property	Description and Jurisdiction	Adjacent Alignment	Section 4(f) Use
<b>Future Bassett Creek Regional Trail</b>	When fully constructed, the trail will measure approximately 7 miles from French Regional Park, through the cities of Plymouth, New Hope, Crystal, and Golden Valley to the Minneapolis Grand Rounds at Theodore Wirth Regional Park. The trail will be under the jurisdiction of Three Rivers Park District.	D1	No use
<b>Memorial Parkway Regional Trail</b>	The trail is part of the Grand Rounds National Scenic Byway and is under the jurisdiction of the MPRB. The trail runs along Theodore Wirth Parkway and Victory Memorial Parkway.	D1, D2	No use
<b>Luce Line Regional Trail</b>	The trail runs easterly from Theodore Wirth Parkway along the north side of TH 55 then passes under TH 55 and travels through Bassett's Creek Valley Park. This portion of the trail is owned and operated by the MPRB.	D1	No use
<b>Victory Memorial Parkway</b>	Victory Memorial Parkway is a 2.8 mile long linear park located in the northwest corner of Minneapolis and in eastern Robbinsdale. The parkway, which is part of the Minneapolis Parkway System, extends north from Lowry Avenue to 45th Avenue then east to Humboldt Avenue. Victory Memorial Parkway combines recreation and open space, is part of the Grand Rounds Scenic Byway, and is a nationally important World War I memorial. The parkway is under the jurisdiction of the MPRB.	D2	No use
<b>Lincoln Community School Playground</b>	The playground is owned by the Minneapolis Board of Education (Special School District #1) and is located east of Penn Avenue between 12th Avenue and Oak Park Avenue. The school property has a fenced playground on the southern portion of the 3.6-acre property. The playground is open to the public.	D2	No use
<b>Minneapolis Public Schools Athletic Field</b>	The athletic field is located west of Penn Avenue between 12th Avenue and Oak Park Avenue. The three-acre property is owned by the Minneapolis Board of Education. The school district uses the field for soccer and football. The Lincoln Peace Garden is located in the northeast corner of the athletic field.	D2	Direct use
<b>Harrison Park</b>	The park is located south of the TH 55 service road and west of Irving Avenue. Amenities provided by this 6.9-acre park include baseball, softball, football, and soccer fields, a basketball court, biking and walking paths, a picnic area, restroom facilities, a wading pool, and a playground. The park is under the jurisdiction of the MPRB.	D Common	No use

### 8.3.3 Wildlife and Waterfowl Refuges

No wildlife or waterfowl refuges were identified within a half mile from the alternative alignments.

### 8.3.4 Historic Properties

Seven historic districts and 17 historic properties were identified within the architectural area of potential effect (APE), which is defined in Section 4.4.3 of Chapter 4 Community and Social Analysis. (See Section 4.4.4 of this Draft EIS for a detailed discussion of the identification of historic properties.)

One area was identified around 5th Avenue North, between 4th Street North and 5th Street North with potential for historic archaeological resources. At this time, no project related work is expected in this area. Should work in the area be proposed, further archaeological investigation may be warranted. The archaeological APE is defined in Section 4.4.3 of Chapter 4 Community and Social Analysis.

If archaeological resources are inadvertently encountered during construction, and are determined to be eligible for the NRHP and warrant preservation in place, separate Section 4(f) evaluations will be prepared for such resources. State laws specific to archaeological resources are identified in Section 4.4.

**Figure 8.3-2** illustrates the location of historic properties adjacent to the LRT alternatives. Detailed maps of these resources are provided in subsequent sections of the Section 4(f) evaluation, as appropriate.

**Table 8.3-2** lists the historic properties within the Section 106 Area of Potential Effect identified as listed in, or eligible for listing in, the NRHP and evaluated for Section 4(f) use. This table indicates whether there is Section 4(f) use of the property using the methodology discussed in Section 8.3.1 and further discussed in Section 8.3.4 and 8.5.2.

The following historic properties have no potential for Section 4(f) use as there is no permanent incorporation of land, no temporary occupancy, or potential for adverse effects findings under Section 106. Therefore, no further evaluation of the following historic properties is provided in this Draft EIS:

- Northwestern Knitting Company Factory
- Minneapolis Warehouse District
- St. Paul Minneapolis & Manitoba/GN Railway Historic District (Minneapolis)

Direct use of the following historic properties is discussed in Section 8.4.2:

- Homewood Historic District
- Grand Rounds Historic District – Theodore Wirth Segment

Historic sites and districts for which no direct use was determined are discussed in Section 8.5.2 under potential constructive use.

**Table 8.3-2. Historic Properties Evaluated for Section 4(f) Use**

ID <sup>1</sup>	Resource Name	Section 4(f) Use <sup>2</sup>
--	West Broadway Residential Historic District	No direct use
--	Grand Rounds Historic District	Direct use
--	Homewood Historic District	Direct use
--	Minneapolis Warehouse District	No direct use
--	Osseo Branch, St. Paul Minneapolis & Manitoba/GN Railway Historic District	No direct use <sup>3</sup>
--	Minneapolis & Pacific /Soo Line Railway Historic District	No direct use
--	St. Paul Minneapolis & Manitoba/GN Railway Historic District	No direct use

**Table 8.3-2. Historic Properties Evaluated for Section 4(f) Use (continued)**

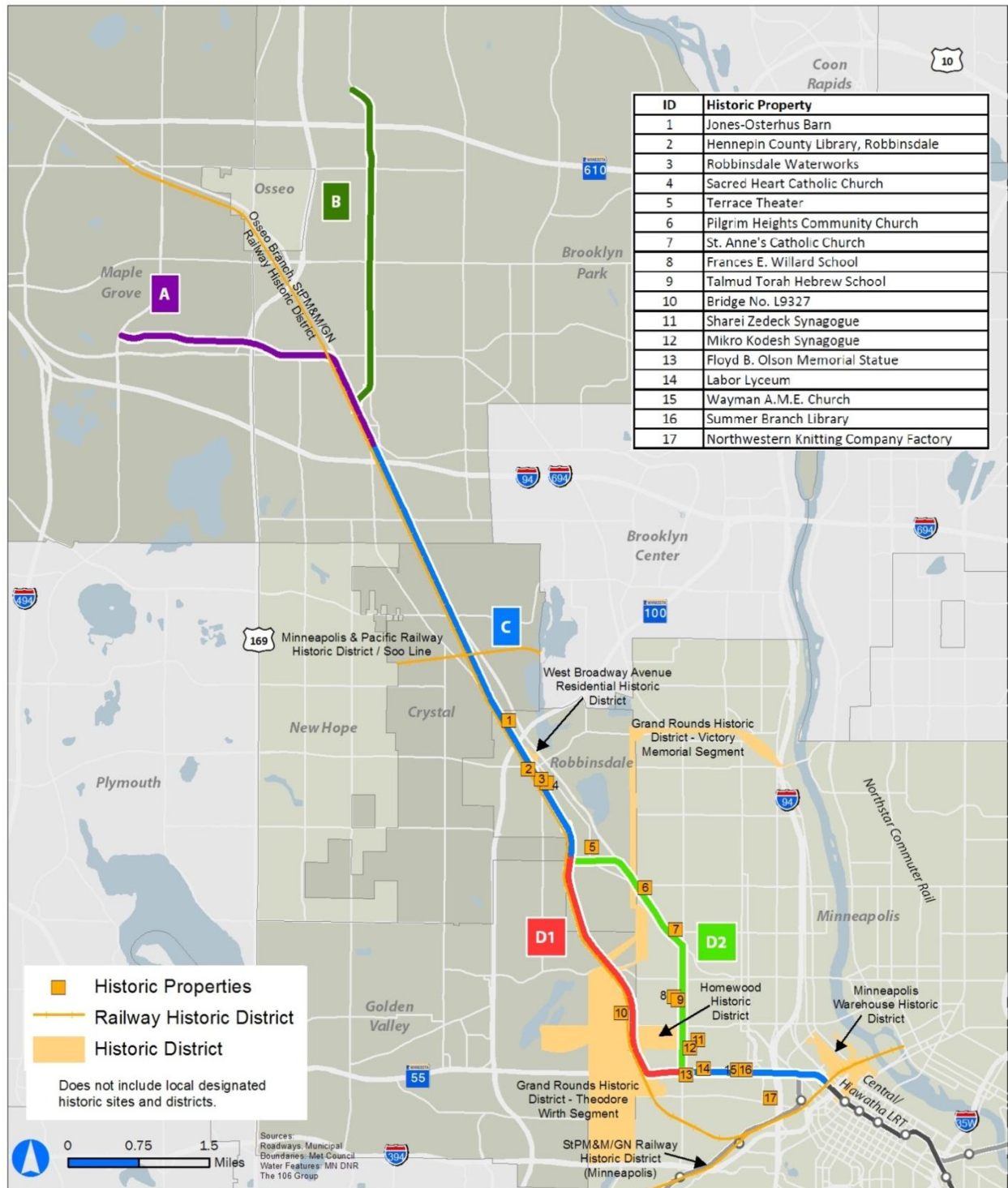
ID <sup>1</sup>	Resource Name	Section 4(f) Use <sup>2</sup>
	(Minneapolis)	
1	Jones-Osterhus Barn	No direct use
2	Hennepin County Library – Robbinsdale Branch	No direct use
3	Robbinsdale Waterworks	No direct use
4	Sacred Heart Catholic Church	No direct use
5	Terrace Theater	No direct use
6	Pilgrim Heights Community Church	No direct use
7	St. Anne’s Catholic Church	No direct use
8	Frances E. Willard School	No direct use
9	Talmud Torah Hebrew School	No direct use
10	Bridge No. L9327	No direct use
11	Sharei Zedeck Synagogue	No direct use
12	Mikro Kodesh Synagogue	No direct use
13	Floyd B. Olson Memorial Statue	No direct use
14	Labor Lyceum	No direct use
15	Wayman A.M.E. Church	No direct use
16	Sumner Branch Library	No direct use
17	Northwestern Knitting Company Factory	No direct use

<sup>1</sup>Historic districts are not numbered in Figure 8.3-2.

<sup>2</sup>Historic properties identified as having no direct use were also reviewed in Section 8.5.2 for potential constructive use.

<sup>3</sup>While construction activities will occur within the boundaries of this historic property, as a transportation facility it is exempt from Section 4(f) unless there is an adverse effect finding under Section 106. SHPO has determined there is no adverse effect on the Osseo Branch, St. Paul Minneapolis & Manitoba/GN Railway Historic District; therefore, there is no 4(f) use.

Figure 8.3-2. Historic Properties adjacent to the Bottineau Transitway





## 8.4 Direct Use of Section 4(f) Properties

This section describes the park and recreational resources and historic properties for which direct use is anticipated by the project. The analysis includes a description of the property and its significance, an evaluation of Section 4(f) use, identification of measures to minimize harm, a summary of agency coordination and consultation, whether the use would qualify as a *de minimis* impact, and the preliminary Section 4(f) finding.

### 8.4.1 Direct Use of Park and Recreational Properties

The Bottineau Transitway project Build alternatives would use portions of three parks and recreation areas: Rush Creek Regional Trail, Theodore Wirth Regional Park, and a Minneapolis Public Schools Athletic Field.

#### 8.4.1.1 Rush Creek Regional Trail (Alignment B – part of the Preferred Alternative)

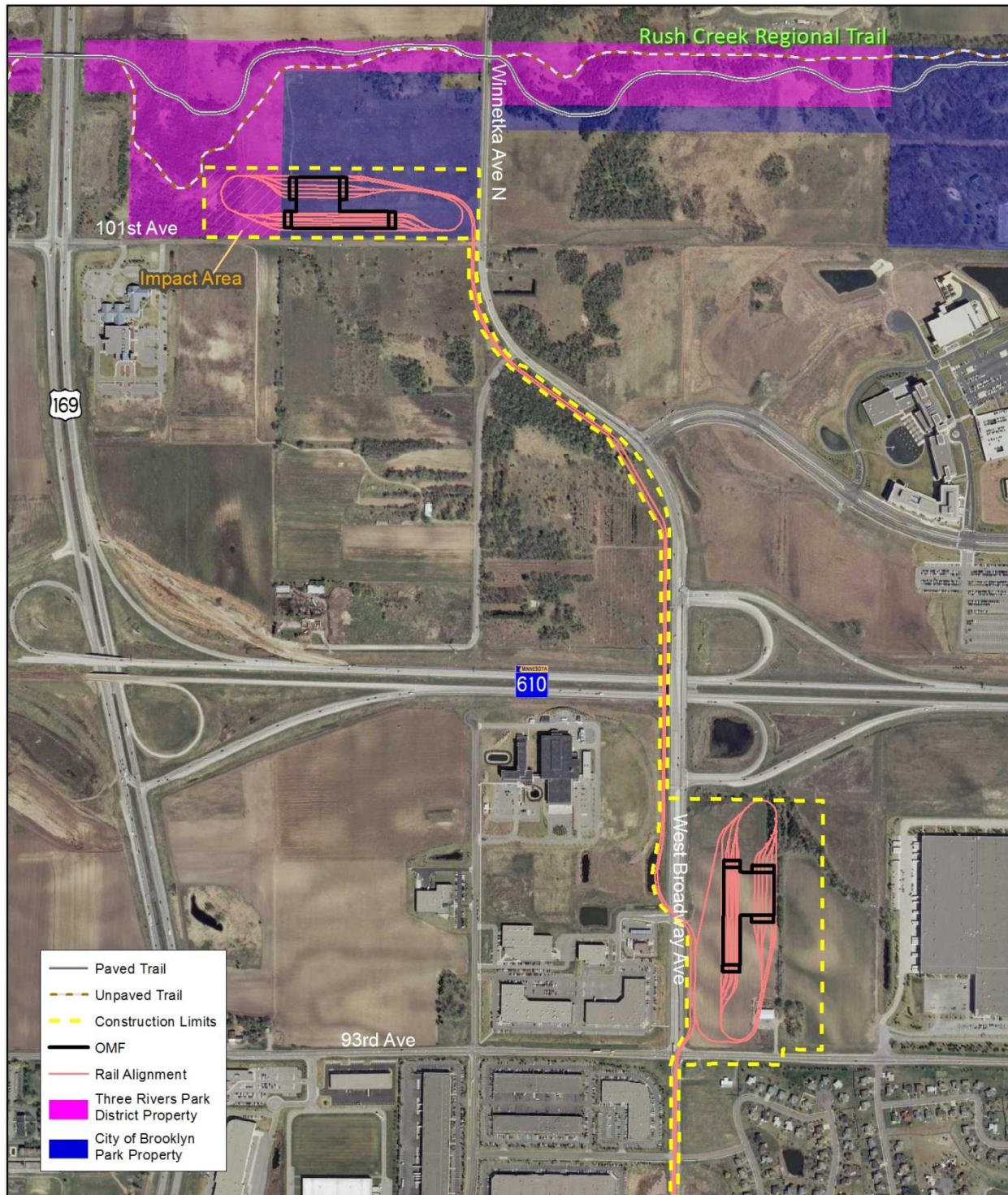
##### *Description and Significance of Property*

Rush Creek Regional Trail is located north of, and generally parallel to, 101st Avenue between Elm Creek Park Reserve in Hennepin County and Coon Rapids Dam Regional Park in Anoka County. Refer to [Figure 8.3-1](#) for the location of the trail in relation to the B-C-D1 and B-C-D2 alternatives. The 6.4-mile trail segment has an east-west orientation and connects Elm Creek Park Reserve (to the west) to Coon Rapids Dam Regional Park (to the east). There is an additional 3.2 miles of existing regional trail within Elm Creek Park Reserve, for a total existing regional trail length of 9.6 miles. Elm Creek Park Reserve and Coon Rapids Regional Park serve as trailheads for Rush Creek Regional Trail. Neighborhood trail connections allow users to access the trail at multiple locations along the route.

Three Rivers Park District owns approximately 251 acres along the Rush Creek Regional Trail Corridor between Elm Creek Park Reserve and Coon Rapids Dam Regional Park. Some portions of the trail pass through parkland owned by the City of Brooklyn Park. The primary trail is a 10-foot-wide multi-use paved trail used by bicyclists, walkers, runners, dog-walkers, and in-line skaters. A secondary turf trail generally parallels the paved trail and is used by visitors preferring to walk, run, or bicycle on a non-paved surface. The location of the trails in relation to the proposed OMF north of 101st Avenue is depicted in [Figure 8.4-1](#).

- **Existing Facilities:** The Rush Creek Regional Trail Corridor is significantly wider than most other regional trails. Its corridor width expands greater than 1,000 feet in several locations, gradually weaving across the corridor and incorporating significant variety in the trail while enhancing user experience. The available corridor width incorporates several large mowed turf areas adjacent to the paved trail. The *Rush Creek Regional Trail Master Plan* (2008) recommends that the Three Rivers Park District periodically reevaluate the turf trail to determine if the benefits of providing a secondary turf trail outweigh the potential environmental impacts associated with that trail. Vegetative plantings visually and physically separate the surrounding residential development from the trail. Rest areas with benches are provided at two-mile intervals.
- **Planned Facilities:** The Rush Creek Regional Trail Master Plan (2008) identifies a future 11.1-mile extension of Rush Creek Regional Trail west of Elm Creek Park Reserve. The proposed trail corridor extension is located in north-central Hennepin County, between Elm Creek Park Reserve and Crow-Hassan Park Reserve, within the cities of Maple Grove, Dayton, and Rogers in Hennepin County. There will be no impact to the future planned trail west of Elm Creek Park Reserve, as it is located more than three miles from the OMF site at 101st Avenue.

Figure 8.4-1. Alignment B OMF Locations and Rush Creek Regional Trail Area of Potential Use





#### Section 4(f) Evaluation

As illustrated in [Figure 8.4-1](#), two OMF sites have been identified for the Preferred Alternative (on Alignment B). A third OMF site is associated with Alignment A. No Section 4(f) use is anticipated for the southerly OMF location along Alignment B or for the OMF site along Alignment A. Construction of an OMF north of 101st Avenue along Alternative B-C-D1 or Alternative B-C-D2 would use approximately five acres of land owned by the Three Rivers Park District, within which Rush Creek Regional Trail west of Winnetka Avenue is located. Construction of the OMF at 101st Avenue would also require the use of a small portion of a turf trail that is part of the Rush Creek Regional Trail system in this segment. The paved trail, which runs roughly parallel to the turf trail, would remain unaffected. The land adjacent to this OMF site is currently undeveloped open space predominantly occupied by grasslands along with wetlands and wooded areas. While the OMF design is conceptual at this time, and use of the Rush Creek Regional Trail may be avoided through further design efforts, use of Three Rivers Park District property is assumed for this draft Section 4(f) Evaluation.

#### Measures to Minimize Harm

Potential mitigation (avoidance, minimization, and compensation efforts) for this resource include:

- **Design of the OMF site to avoid or minimize impacts to the 4(f) resource.** Measures to reduce the footprint of the OMF will be explored during preliminary and final project design and development. Reconfiguration of the OMF may avoid or minimize impacts to the turf trail located south of the paved Rush Creek Regional Trail.
- **Relocation of affected park facilities (turf trail).** If necessary, the turf trail would be realigned to create a greater distance between the turf trail and the proposed OMF. Trees and shrubs would be planted to provide visual screening between the realigned turf trail and the OMF. If design refinements determine that the turf trail would not need to be realigned, plantings could still be added to provide visually screening.
- **Provision of replacement land for land required by the OMF.** Construction of the proposed OMF at 101st Avenue would require partial acquisition of a parcel owned by Three Rivers Park District. Acquisition of an adjacent undeveloped property to the east would also be necessary. Only the southern portion of the undeveloped parcel, owned by the City of Brooklyn Park, would be needed to construct the OMF. City land dedicated to parkland adjacent to the Rush Creek Regional Trail north of the proposed OMF could be considered for mitigation purposes, should the portion of the Three Rivers Park District property be converted to transportation use. Three Rivers Park District has not reviewed this land mitigation proposal but indicates intent to coordinate with project staff to evaluate the potential natural resource and recreation impacts and identify creative mitigation solutions.

#### Agency Coordination and Consultation

Three Rivers Park District owns and operates Rush Creek Regional Trail. Three Rivers Park District has reviewed relevant technical reports associated with the Bottineau Transitway Project and provided input regarding potential *de minimis* use of park property for the OMF at 101st Avenue.

Coordination with Three Rivers Park District has identified restrictive covenants associated with the trail. The property was purchased by the Park District with Metropolitan Council funding in the late 1970s. Under certain circumstances, the Metropolitan Council will release restrictive covenants if equally valuable land or facility is provided in exchange for the released parkland. Three Rivers Park District also provided information regarding the Park District Board of Commissioners (Board) policy. A coordination meeting with Three Rivers Park District, and a subsequent letter from the District dated September 9, 2013 provided the following information:

- Restrictive covenants associated with Rush Creek Regional Trail
- A description of Rush Creek Regional Trail and its contextual setting

- A description of Crystal Lake Regional Trail (existing and planned segments)
- A description of Bassett Creek Regional Trail (existing and planned segments)
- General comments related to the Section 4(f) evaluation

The Three Rivers Park District letter is provided in [Appendix D](#). Communication with Three Rivers Park District is ongoing and a more formalized review and recommendation by the Park District Board of Commissioners will be sought as required.

#### *Preliminary Section 4(f) Finding*

FTA is proposing a *de minimis* determination for Rush Creek Regional Trail for construction of the OMF located north of 101st Avenue along Alignment B (Alternative B-C-D1 or Alternative B-C-D2). Approximately five acres of the 251 total acres of property occupied by Rush Creek Regional Trail (between Elm Creek Park Reserve and Coon Rapids Dam Regional Park) would be required from Three Rivers Park District's Rush Creek Regional Trail corridor property. The area of use includes five acres of undeveloped open space and a small portion of the turf trail that is situated south of the paved trail, as illustrated in [Figure 8.4-1](#). After taking into account measures to minimize harm, the Bottineau Transitway is not expected to adversely affect the activities, features, or attributes that qualify the trail for protection under Section 4(f).

Further coordination with Three Rivers Park District will occur as the Bottineau Transitway Project proceeds and as engineering details are developed.

#### **8.4.1.2 Theodore Wirth Regional Park (Alignment D1 – part of the Preferred Alternative)**

##### *Description and Significance of Property*

Theodore Wirth Regional Park (3201 Glenwood Avenue North) is located generally between a line extending along France Avenue on the west (France Avenue is discontinuous and exists north and south of the park only), Xerxes Avenue on the east, I-394 to the south, and Golden Valley Road on the north. At 759 acres, Theodore Wirth Regional Park is the largest park in the Minneapolis Park System. The northern two-thirds of the park lie within the municipal boundary of Golden Valley, while the southern third of the park lies within the city of Minneapolis. The park can be accessed from the north and south by Theodore Wirth Parkway and Cedar Lake Parkway. From the east and west, the park can be accessed via Glenwood Avenue North (three bus stops), Plymouth Avenue, Golden Valley Road, and the Luce Line Trail.

Theodore Wirth Park is recognized for its variety of year round recreational activities as well as its natural resource features. The park has trails for walking, running, dog walking, biking, off-road biking, and skiing. Summer activities include picnicking, swimming, basketball, tennis, volleyball, golf, and disc golf. Winter activities include snowboarding, sledding, tubing, cross-country skiing, and snowshoeing. The park's natural amenities include wetlands, prairie, and woodland resources. Within these natural areas, Theodore Wirth Regional Park provides opportunities for quietude and nature observation, particularly in the peaceful setting along portions of the park's western boundary. These natural areas of Theodore Wirth Regional Park are consistent with historic and current master plans for the park.

The Eloise Butler Wildflower Garden, the oldest public wildflower garden in the nation, is located within the southern portion of the park. Theodore Wirth Regional Park is also the site of the Quaking Bog, a five-acre acid bog that is one of the southernmost bogs in Minnesota. [Figure 8.4-2](#) shows the location of the Eloise Butler Wildflower Garden and the Quaking Bog. The wildflower garden and bog are situated about a half mile southwest of where Alignment D1 transitions from the BNSF railroad corridor to TH 55.



- **Existing Facilities:** Theodore Wirth Regional Park has the following existing natural amenities and facilities: Bassett Creek, Wirth Lake and Birch Pond, a fishing pier and boat launch, a swimming beach, a floating boardwalk, volleyball courts, a half basketball court, tennis court, a playground, picnic facilities, indoor picnic pavilion, restrooms, a snowboard park, a Swiss chalet-style clubhouse, 18-hole and par-three golf courses, an 18-hole disc golf course, and the J.D. Rivers' Children's Garden. The Eloise Butler Wildflower Garden and Bird Sanctuary, the Quaking Bog, and Birch Pond are situated at the south end of the park. The woodland area on the west edge of the rail corridor, proximate to the proposed Golden Valley station option, may be a high quality stand of trees with oaks. The locations of existing park facilities are illustrated in [Figure 8.4-2](#). Winter trails in the northern portion of the park (walking and cross-country skiing) are shown in [Figure 8.4-3](#).
- **Planned Facilities:** Theodore Wirth Regional Park is in the process of developing a Master Plan that will be presented for public comment in 2014. The Theodore Wirth Park Regional Park Concept Plan (revised June 2012) depicts proposed future amenities including walking paths, an off-road cycling trail, a tubing hill, and an event cycling trail and stadium.

#### *Section 4(f) Evaluation*

The Bottineau Transitway would require the use of less than one acre from the 759-acre Theodore Wirth Regional Park. The potential areas of use near Golden Valley Road and Plymouth Avenue are shown in [Figure 8.4-2](#). The MPRB has indicated that the woodland on the west edge of the rail corridor proximate to the proposed Golden Valley station option includes high quality old growth oaks and that impacts in this area are of high concern. The areas of potential direct use along the eastern edge of the park are considered valuable for their quietude and opportunity for nature appreciation, whereas other park edges do not share this characteristic. Loss of land in this area could diminish the setting, and thereby the park user experience, in this area of the park. A bicycle path and walking path are located along the north side of Theodore Wirth Parkway near Alignment D1 at Golden Valley Road. There is also a walking path near the west side of Alignment D1 at Plymouth Avenue. Although the Bottineau Transitway would not preclude the use of these paths, it is anticipated that users of the walking path west of Alignment D1 at Plymouth Avenue would experience changes that would include the sights and sounds of the Bottineau Transitway.

There are two potential station locations within Theodore Wirth Regional Park: the Plymouth Avenue/Theodore Wirth Regional Park station option or the Golden Valley Road station option under consideration with the Preferred Alternative (B-C-D1) as well as Alternative A-C-D1. Further discussion regarding station locations is provided in Chapter 2. Construction of a station at either location along Alternative A-C-D1 or Alternative B-C-D1 would require direct use of park property. Permanent and temporary easements would be required near the Plymouth Avenue bridge, whether or not a station is constructed at that location, although the amount of easement required is less if the station is not in this location. Temporary easements are discussed in Section 8.6.

Right-of-way would be needed from Theodore Wirth Regional Park in the area of Golden Valley Road, whether or not a station is constructed in this location. Between Golden Valley Road and Theodore Wirth Parkway, the BNSF track is very close to the railroad right-of-way limits on the west, necessitating grading within park property and outside of the BNSF right-of-way. Alignment D1 cannot be moved farther away from the park at this location due to the need to align LRT and BNSF tracks with portals at the existing Golden Valley Road and Theodore Wirth Parkway bridges. The Parkway bridge has been identified as historic and the assumptions regarding potential use of Theodore Wirth Parkway are predicated on its remaining in place. Refer to [Figure 8.4-4](#) and [Figure 8.4-5](#) for potential use areas.

In addition to the direct use described above, Theodore Wirth Regional Park may also incur minor permanent impacts related to the mitigation of floodplain impacts. As indicated in Section 5.2.5 of this Draft EIS, potential on-site or project specific floodplain storage mitigation has been preliminarily evaluated for the Bottineau Transitway (low areas adjacent to the existing floodplain). As illustrated in [Figure 8.4-6](#), there are two areas within Theodore Wirth Regional Park that could meet the storage

volume replacement requirement. One location is south of Golden Valley Road between Theodore Wirth Parkway and Alignment D1. The other parcel is situated adjacent to properties that are under two different jurisdictions, the MPRB and the railroad. Floodplain storage outside of the park was considered and subsequently dismissed because it would require construction of conveyance under Alignment D1 at a minimum depth of 50 feet.

The details of how these areas would be designed to meet floodplain replacement requirements would be coordinated with the MPRB, the landowner (if different), and the approving agencies (city, Minnesota Department of Natural Resources, and the Water Management Organization). The size of the floodplain mitigation (based on preliminary estimates of the area needed to compensate for fill within the floodplain) is anticipated to be small, ranging from an eighth to a quarter acre, depending on the depth needed to satisfy elevation requirements. The mitigation areas would be designed to be compatible with the existing landscape based on input from the MPRB. Refer to Section 5.2.5 of this Draft EIS for additional details related to floodplain mitigation. Wetland mitigation would be accomplished outside park boundary through the purchase of wetland banking credits.

Temporary (construction) easements would also be required near the two potential station locations within Theodore Wirth Regional Park. Temporary easements would be required near the Plymouth Avenue bridge, whether or not a station is constructed at that location. Additional temporary easements would be needed to construct the Golden Valley Road station option.

Areas of temporary use would also occur directly adjacent to Theodore Wirth Parkway along the far eastern border of the park. Between 16th and 17th Avenues, the BNSF track alignment shifts closer to the west BNSF right-of-way line. Construction activity is expected to extend a short distance into park property to accommodate grading, requiring temporary occupancy at this location and north of Oak Park Avenue.

**Figure 8.4-2** depicts a walking trail that runs along the west side of the BNSF railway corridor from north of Plymouth Avenue south to its junction with the Great Northern Railroad. **Figure 8.4-3** shows the location of cross-country ski trails just west of the BNSF railway corridor and north of TH 55. Although the walking trail and cross-country ski trails are near the Bottineau Transitway alternative alignment, use of the trails would not be substantially affected, given that these trails are also near existing busy roadways. The areas of temporary occupancy are relatively small and are not anticipated to substantially affect the activities, features, and attributes of the park.

Theodore Wirth Regional Park is owned and operated by the MPRB. Hennepin County has undertaken coordination efforts with the MPRB as well as the Cities of Minneapolis and Golden Valley to minimize impacts to Theodore Wirth Regional Park. Coordination efforts with the MPRB will continue through the preliminary engineering phase to avoid, minimize, and/or mitigate park impacts as the D1 alignment is included in the Preferred Alternative for the project.

Figure 8.4-2. Locations of Theodore Wirth Regional Park Facilities

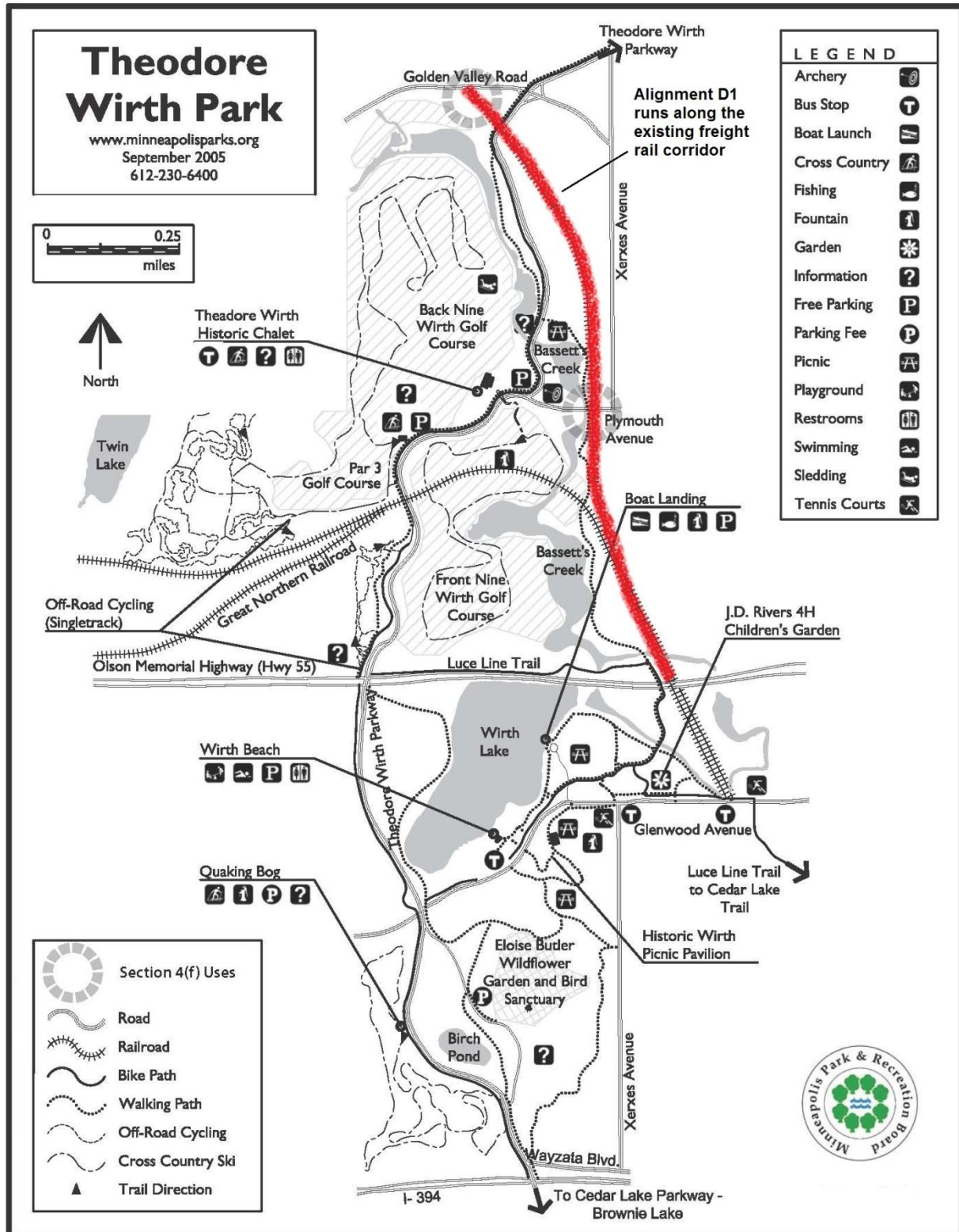




Figure 8.4-3. Location of Winter Trails within the Northern Portion of Theodore Wirth Regional Park

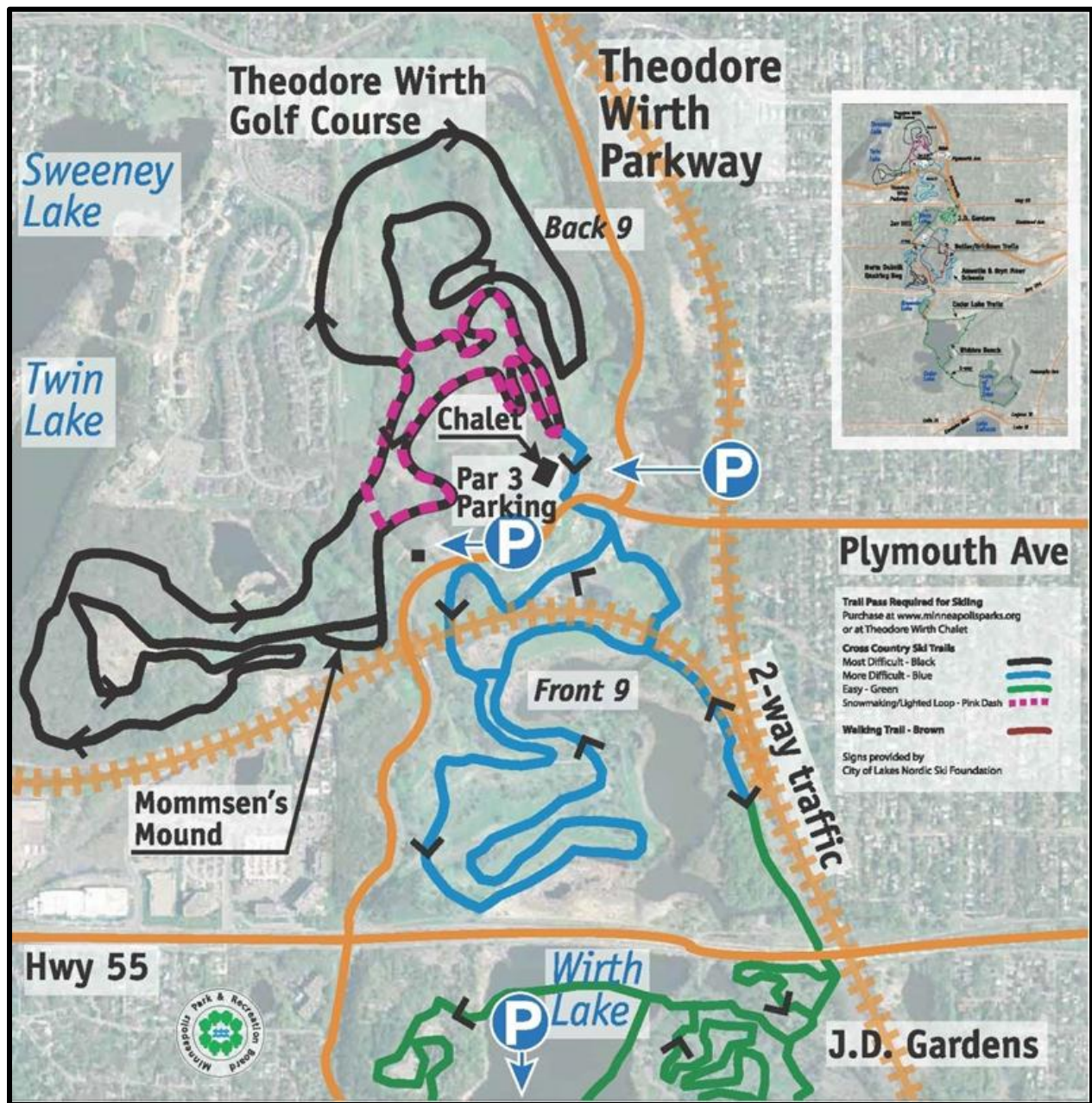




Figure 8.4-4. Plymouth Avenue Station Option – Potential Areas of Direct Use





Figure 8.4-5. Golden Valley Road Station Option – Potential Areas of Direct Use

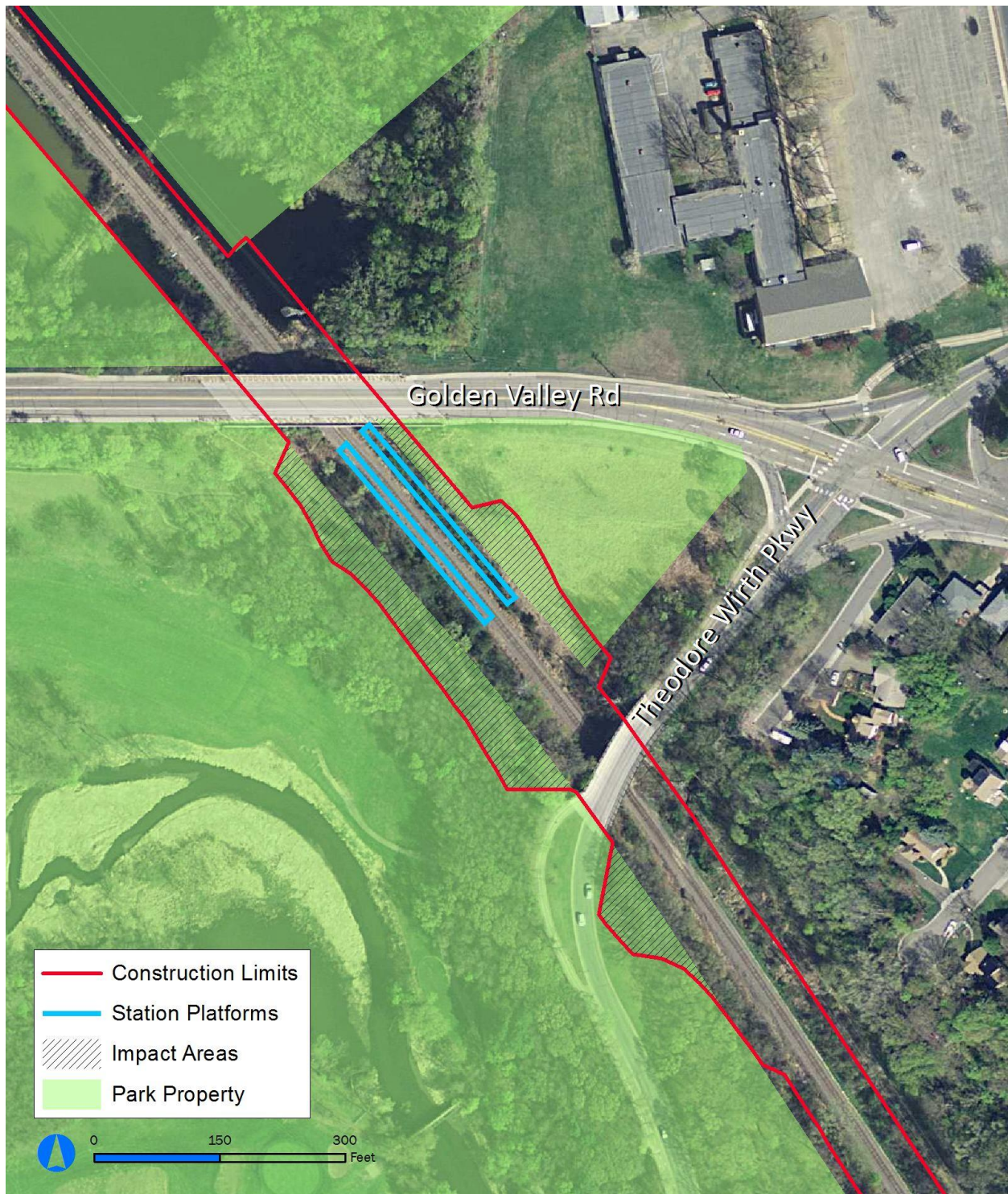




Figure 8.4-6. Theodore Wirth Regional Park: Areas of Potential Use





### *Avoidance Alternatives*

FTA approvals of Section 4(f) resources must demonstrate that there are no “prudent and feasible” alternatives to the Section 4(f) use. Feasible and prudent avoidance alternatives are those that avoid using any Section 4(f) property and do not cause other severe problems of a magnitude that substantially outweigh the importance of protecting the Section 4(f) property (23 CFR 774.17). Three potential avoidance alternatives were considered, the No-Build alternative, Alternative A-C-D2, and Alternative B-C-D2. The No-Build alternative is feasible but it is not prudent because it does not meet the purpose and need of the project, as discussed in Chapter 11.

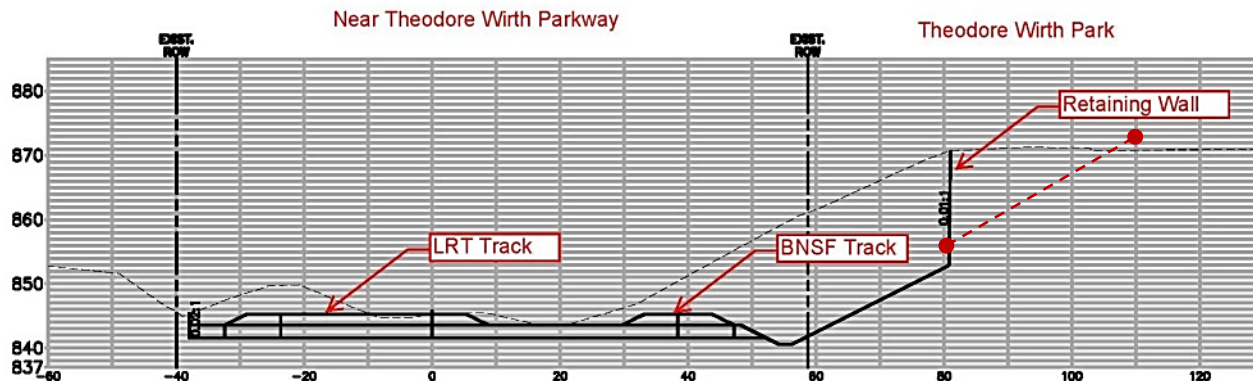
Alternatives A-C-D2 and B-C-D2 are also feasible. However, these alternatives are not prudent due to their degree of adverse impacts on neighboring properties along the D2 alignment in north Minneapolis. Alternative A-C-D2 would require the full acquisition of 143 parcels and partial acquisition of 50 additional parcels. Alternative B-C-D2 would require the full acquisition of 144 parcels and partial acquisition of 77 additional parcels. Most of the acquisitions are associated with the D2 alignment, occurring along Penn Avenue where a row of houses would need to be acquired for about one mile of residential frontage. Alternatives A-C-D2 and B-C-D2 also have the potential for disproportionately high and adverse impacts on minority and/or low-income communities in relation to the following resources: bicycle/pedestrian facilities, parking, community facilities, residential and business displacements, and visual resources. In addition, these alternatives are not prudent because they would result in the use of two other Section 4(f) resources, the Minneapolis Public Schools athletic field and the Homewood Historic District.

### *Measures to Minimize Harm*

Use of park property is due to the need to grade the slopes near Plymouth Avenue and Golden Valley Road and to address floodplain storage issues. Use of park property would occur at these locations with or without station construction. Overall, the location of the transitway alignment within the existing freight rail corridor was developed to reduce the amount of right-of-way required from Theodore Wirth Regional Park and minimize other natural resource impacts. The presence of physical constraints along Alignment D1 influences the location of the transitway and BNSF tracks. Alignment D1 was positioned to avoid bridges, high voltage power lines, and adjacent properties. For example, at Golden Valley Road, the transitway and freight rail alignments shift westward to avoid impacts to the Theodore Wirth Parkway bridge, a historic structure, that passes over the existing freight rail corridor. As previously noted, the BNSF track would be closer to the railroad right-of-way limits between Golden Valley Road and Theodore Wirth Parkway than at other locations adjacent to the park property. This would necessitate grading within park property and outside of the BNSF right-of-way. As depicted in [Figure 8.4-7](#), a retaining wall may be constructed in lieu of grading. In the figure, the dashed line represents the existing grade. The figure illustrates a potential area of impact extending approximately 30 feet into the park without construction of a retaining wall. This potential area of impact is indicated by the dashed line that extends between the two dots. If a retaining wall were constructed, it would need to be built on park property due to the small horizontal distance between the BNSF track and right-of-way limits.



Figure 8.4-7. Alignment of LRT and BNSF tracks near Theodore Wirth Parkway



Along the D1 alignment adjacent to the park, the transitway and freight rail alignments were shifted within the existing BNSF right-of-way to minimize wetland, floodplain, and park impacts. Cross sections were minimized to the greatest extent possible to keep the transitway within the existing rail right-of-way as much as possible. Additional measures to reduce the use of park property will be explored during preliminary engineering.

#### *Agency Coordination and Consultation*

Theodore Wirth Regional Park is owned and operated by the MPRB.<sup>1</sup> Hennepin County has undertaken coordination efforts with the MPRB as well as the Cities of Minneapolis and Golden Valley to minimize right-of-way takings as well as other indirect impacts to Theodore Wirth Regional Park.

Coordination with Master Plan efforts currently underway for Theodore Wirth Regional Park resulted in identification of the Plymouth Avenue/Theodore Wirth Regional Park station option as an alternative to the Golden Valley Road station option during project Scoping. The Plymouth Avenue/Theodore Wirth Regional Park station option could provide more direct access to park facilities. This alternative station location is being studied as part of this Draft EIS.

A letter from the MPRB, received during the EIS Scoping process, identified a number of concerns associated with Alignment D1. In response to the concerns raised in this letter, Hennepin County Regional Railroad Authority (HCRRA) actively coordinated with the MPRB staff and board members to provide information regarding potential impacts and benefits to surrounding MPRB parklands along the Bottineau Transitway. As a result of the on-going coordination, the MPRB provided a letter affirming their commitment to work with the project team as the project progresses.

The MPRB reviewed relevant technical reports associated with the Bottineau Transitway Project during Draft EIS preparation and provided input regarding potential use of park property. Coordination efforts with the MPRB would continue through the preliminary engineering phase to avoid, minimize, and/or mitigate park impacts.

In response to a coordination meeting held on September 12, 2013, MPRB provided a letter requesting refinements to the Draft Section 4(f) evaluation and clarifying future expectations regarding coordination:

- Theodore Wirth Parkway should be considered a Section 4(f) resource

<sup>1</sup> The nine-member [Board of Commissioners](#) is an independently elected, semi-autonomous body responsible for maintaining and developing the Minneapolis Park system to meet the needs of citizens of Minneapolis. This unique structure allows independent decision-making so the MPRB can efficiently oversee a diverse system of land and water. Every four years commissioners are elected to this Board: one from each of the six park districts within the city and three that serve at-large. [The MPRB's organizational structure](#) provides administration, planning, programs, development, maintenance and police protection for the city's park and recreational facilities.

- Description of Theodore Wirth Regional Park should reflect its quiet character
- Floodplain and wetland mitigation areas need to be identified and defined
- The woodland near the Golden Valley Road station option includes high quality, old-growth oaks
- The Grand Rounds description should acknowledge its cultural landscape qualities

The MPRB letter is provided in [Appendix D](#).

#### *Preliminary Section 4(f) Finding*

Direct use of Theodore Wirth Regional Park is anticipated to affect the activities, features, and attributes qualifying the property for protection under Section 4(f). However, no prudent and feasible avoidance alternative exists for this park property. Although Alternatives A-C-D2 and B-C-D2 are feasible, they are not prudent due to their adverse effects on neighboring properties along Alignment D2 in north Minneapolis. Therefore, FTA is proposing approval of this use. The effects associated with each alternative are described in Chapter 11.

#### **8.4.1.3 Minneapolis Public Schools Athletic Field (Alignment D2)**

##### *Description and Significance of Property*

The three-acre Minneapolis Public Schools Athletic Field (1123 Penn Avenue North) is located between Penn Avenue on the east and Queen Avenue on the west in Minneapolis. The north side of the field is bordered by 12th Avenue. The athletic field can be accessed through gates at the north end and west side. Parking is available on local streets.

The athletic field is surrounded by chain link fencing. There is a pair of goal posts on the north and south end of the field and a small set of bleachers on the west and east sides of the athletic field. A portable toilet is located at the north end of the field. A row of coniferous trees borders the east side of the field.

The Minneapolis Public Schools Athletic Field functions primarily as an athletic field for soccer and football. The field is the home site for North High School soccer (and Henry High School when North High School does not have enough players and they combine teams). The field is used by 20 middle schools for tackle and flag football. Lincoln, Franklin, and Cityview Middle Schools host all their middle school games at this field. The athletic field is occasionally used by the local community; however, permits are required to use the field.

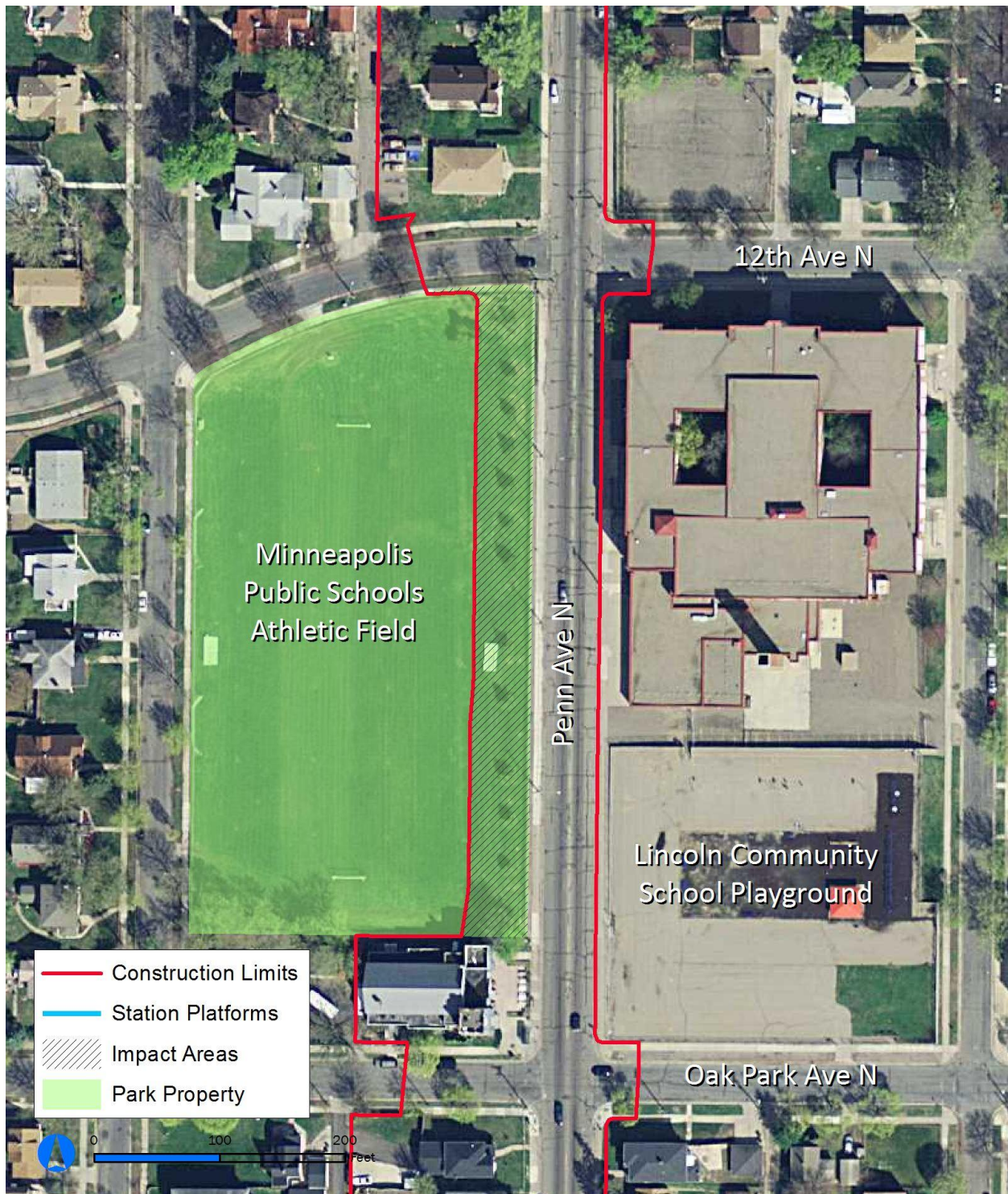
The Lincoln Peace Garden is located in the northeast corner of the athletic field. The garden is open during athletic events or while it is being maintained. The garden was started around 1996 by north Minneapolis gardeners with the aid of Lincoln School teachers. It was dedicated to Charles Johnson, who died in a bus accident in May 1996. Charles was a student at Franklin Middle School and lived close to the athletic field.

##### *Section 4(f) Evaluation*

Construction of the Bottineau Transitway would require the acquisition of permanent right-of-way to construct the guideway along Penn Avenue. Although Alternative B-C-D1 would not require use of the athletic field, Alternatives A-C-D2 and B-C-D2 would require a permanent strip of land approximately 43 feet wide on the eastern edge of the property. The total area of use is estimated at 0.56 acre, which represents about 18 percent of the field's total area. Although the resource could still function as a football field, it would no longer be wide enough to accommodate a full-size soccer field (80 yards by 120 yards). A row of coniferous trees along the eastern boundary of the field would need to be removed. In addition, more than half of the Lincoln Peace Garden would be removed. [Figure 8.4-8](#) depicts the area of anticipated use.



Figure 8.4-8. Minneapolis Public Schools Athletic Field Area of Potential Direct Use



### *Measures to Minimize Harm*

Measures to minimize harm to the Minneapolis Public Schools Athletic Field include:

- **Replacement of the fencing along the east side of the athletic field**
- **Reconstruction of the athletic field to provide another recreational purpose.** Although athletic field would no longer accommodate a full-size soccer field, it is anticipated the field could still function as a football field and/or smaller soccer field.
- **Provision of a full-size soccer field in another location.** Providing a parcel that could accommodate a full size soccer field may satisfy the needs of the Minneapolis Public Schools athletic program. Alternatively, a smaller soccer field could be enlarged to provide a full-size facility.

### *Agency Coordination and Consultation*

Communication with Minneapolis Public Schools Athletic Department confirmed that the athletic field is actively used by the public schools. It is the desire of the Athletic Department to maintain a full-size soccer field at this location to maximize the potential use of the field. Communication with the Minneapolis Public Schools Community Education staff confirmed that the community uses the athletic field on an occasional basis. Because Alignment D2 is not included in the Preferred Alternative for the Bottineau Transitway, no further coordination with Minneapolis Public Schools will occur.

### *Preliminary Section 4(f) Finding*

The Bottineau Transitway would result in the direct Section 4(f) use of the Minneapolis Public Schools athletic field with Alternative A-C-D2 or Alternative B-C-D2. However, the Preferred Alternative (B-C-D1) is a prudent and feasible avoidance alternative to this use. Therefore, FTA is not proposing approval of the 4(f) use of this resource.

As previously stated, the athletic field would no longer be wide enough to accommodate a full-size soccer field. Replacement of the field at another location in the neighborhood would be challenging, as land use in this area is primarily single-family residential with few large open spaces.

## **8.4.2 Direct Use of Historic Properties**

As discussed in Section 8.3.4, direct use has been identified for two properties.

### **8.4.2.1 Homewood Historic District (Alignment D2)**

#### *Description and Significance of Property*

The Homewood Historic District encompasses a large, rectangular-shaped, 80-acre, hilly area that is eight blocks by two blocks in size. The district includes 254 parcels, which were primarily developed from 1910 to 1946, and 12 extant stone entrance markers around the perimeter of the district. The residences within the district were constructed in a variety of popular architectural styles from the early twentieth century, including Tudor Revival, Colonial Revival, French Eclectic, and Spanish Colonial Revival. A number of houses in the area were also designed by noted Minneapolis architecture firm Liebenberg & Kaplan. The Homewood Historic District attracted a large number of prominent upper-middle class Jewish residents beginning in the mid-1910s. Many synagogues were built around the district as a result. The Homewood Historic District has been determined eligible for listing in the NRHP under Criterion A for the significant role it played in the development of the western portion of North Minneapolis as the second location of a Jewish community in North Minneapolis, which was occupied by primarily Jewish residents from 1911 until the late 1960s.

#### *Section 4(f) Evaluation*

Under Alignment D2 (Alternatives A-C-D2 and B-C-D2), the physical incorporation of a portion of the Homewood Residential Historic District would be required west of Penn Avenue between Plymouth



Avenue and Oak Park Avenue. The proposed demolition of several contributing buildings within the historic district, as well as shifting the original curb/sidewalk to the west, would affect the entire east edge of the district. Project design of the Penn/Plymouth Station and guideway (including the LRT tracks, poles, and catenary) would have a potential effect on the district and its setting. Station area planning and development related to the Penn/Plymouth Station, including transit-related traffic and parking, would also have a potential effect on the district and its setting. Alternatives A-C-D1 and B-C-D1 would avoid acquisition of property and demolition of buildings within this historic district. The boundaries of the historic district, as well as the area of direct use associated with this property, are depicted in [Figure 8.4-9](#).

#### *Measures to Minimize Harm*

Measures to minimize harm to the Homewood Historic District may include:

- **Recordation of the removed properties and sensitive design of the new east “edge” of the historic district with Alternatives A-C-D2 and B-C-D2**
- **Integration of historic properties into station area planning for the Penn/Plymouth Station**
- **Minimization of potential use through measures to avoid, reduce, or mitigate noise for all alternatives.** Refer to Section 5.6 for a detailed discussion about noise.

#### *Agency Coordination and Consultation*

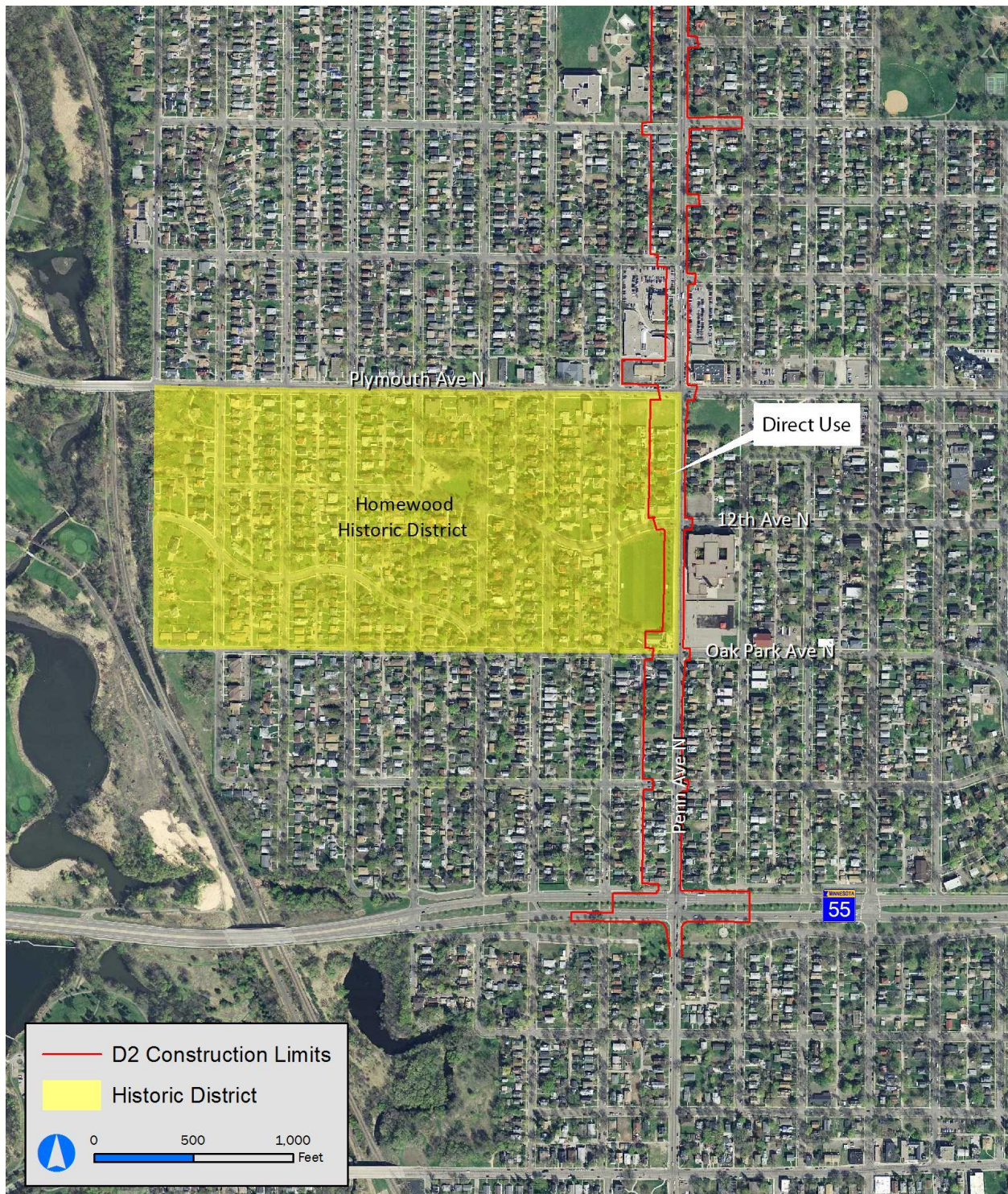
The SHPO has concurred with the assessment that the D2 alignment (Alternatives A-C-D2 and B-C-D2) would have a potential adverse effect on the Homewood Historic District and no effect with the D1 alignment (Alternatives A-C-D1 and B-C-D1) providing that indirect impacts to the district can be avoided through the Section 106 Agreement. The effects of the D1 alignment are much less severe and may be avoidable through further consultation on design, noise, and traffic issues. (See letters dated August 7, 2013 and October 9, 2013 in [Appendix D](#).)

#### *Preliminary Section 4(f) Finding*

The Bottineau Transitway would result in the direct Section 4(f) use of the Homewood Historic District with Alternative A-C-D2 or Alternative B-C-D2. The SHPO’s concurrence with an adverse effect confirms a Section 4(f) use of the Homewood Historic District with the D2 alignment; no 4(f) use would occur under the D1 alignment. The Preferred Alternative (B-C-D1) is a prudent and feasible avoidance alternative to the use of the Homewood Historic District. Therefore, FTA is proposing to not approve a 4(f) use of this resource for Alternative A-C-D2 and Alternative B-C-D2, and finds that there would be no 4(f) use of this property under the Preferred Alternative pending the Section 106 Agreement.



Figure 8.4-9. Homewood Historic District: Area of Potential Direct Use





#### **8.4.2.2 Grand Rounds Historic District – Theodore Wirth Segment (Alignment D1 – part of the Preferred Alternative)**

##### *Description and Significance of Property*

In 1883, Horace Cleveland, a landscape architect, brought his idea for a continuous green necklace of parkway and open space around Minneapolis to the newly formed Board of Park Commissioners (renamed the Minneapolis Park & Recreation Board in 1969). The Grand Rounds was subsequently acquired and built over many years by the Board of Park Commissioners primarily during the late nineteenth and early twentieth century. Theodore Wirth, Superintendent of Parks from 1906 until 1935, had a prominent role in the acquisition of lands and development of the Grand Rounds. Comprised of seven districts, the Grand Rounds passes through almost every part of Minneapolis. Each of the seven segments was acquired and developed at a different time and contributes its own history and significance to the Grand Rounds as a whole. The seven districts include a dozen lakes and ponds, four golf courses, two waterfalls, natural and planned gardens, creek and river views, and 50.1 miles of trails. There are also more than 50 identified interpretive sites. The Grand Rounds has been determined eligible for listing in the NRHP as a superb example of an urban byway and park system.

The Grand Rounds Historic District – Theodore Wirth Segment, which includes Theodore Wirth Regional Park, is adjacent to the A-C-D1 and B-C-D1 alternatives. The historic qualities of the Grand Rounds Historic District – Theodore Wirth Segment are related to its cultural landscape qualities including its scenic value, topography, vegetation, and the experiential qualities of Theodore Wirth Parkway. The park was acquired in the early 1900s, largely for its inspiring natural qualities. At that time, the acquisition and preservation of natural landscapes within a city park of this size was very unusual. The natural character of Theodore Wirth Regional Park continues to be its primary identity and the park contains premier natural resources within the MPRB system.

##### *Section 4(f) Evaluation*

Alternative A-C-D1 and Alternative B-C-D1 would require the conversion of less than one acre from the 759-acre Theodore Wirth Regional Park, a contributing element of the district, to a transportation use. It has been concluded that there is a potential for Section 4(f) use with either the Golden Valley Road or Plymouth Avenue/Theodore Wirth Regional Park station options under these alternatives; however, this cannot be definitely determined until further engineering work is completed.

The boundaries of the Grand Rounds Historic District – Theodore Wirth Segment are illustrated in [Figure 8.4-10](#). The boundary of Grand Rounds Historic District – Theodore Wirth Segment generally coincides with the boundary of Theodore Wirth Regional Park. [Figure 8.4-10](#) also shows the locations of direct use, temporary occupancy, and potential floodplain mitigation sites within the historic district with Alternatives A-C-D1 and B-C-D1. Refer to [Figure 8.4-4](#) and [Figure 8.4-5](#) in Section 8.4.1 for a detailed depiction of the direct uses anticipated at the Plymouth Avenue/Theodore Wirth Regional Park and Golden Valley Road station options.

The design of the Golden Valley Road/Plymouth Avenue station, the guideway (including the LRT tracks, poles, and catenary) and the TH 55 bridge extension could have a potential effect on the Grand Rounds Historic District and its setting. Further, station area redevelopment activities, including transit-related parking, may also have a potential effect on the district and its setting. These effects may include visual effects (including those from lighting), noise, and transit-related traffic effects. Due to the proximity of the Plymouth Avenue station option to key elements of the Grand Rounds Historic District, avoidance of potential impacts may be more feasible with the Golden Valley Road station option. However, a final determination as to whether these effects are adverse under Section 106 cannot be made until further engineering has been completed. Alternatives A-C-D2 and B-C-D2 would avoid potential adverse effects within this historic district.

### *Measures to Minimize Harm*

Measures to minimize harm to the Grand Rounds Historic District – Theodore Wirth Segment include:

- **Minimization of lighting and visual impacts through station design.** Refer to Section 4.5 for a detailed discussion about the visual/aesthetic characteristics of the study area.
- **Minimization of potential effects to the historic district by integrating historic properties into station area planning**
- **Minimization of potential effects through the adoption of measures to avoid, reduce, or mitigate noise.** Refer to Section 5.6 for a detailed discussion about noise.

### *Agency Coordination and Consultation*

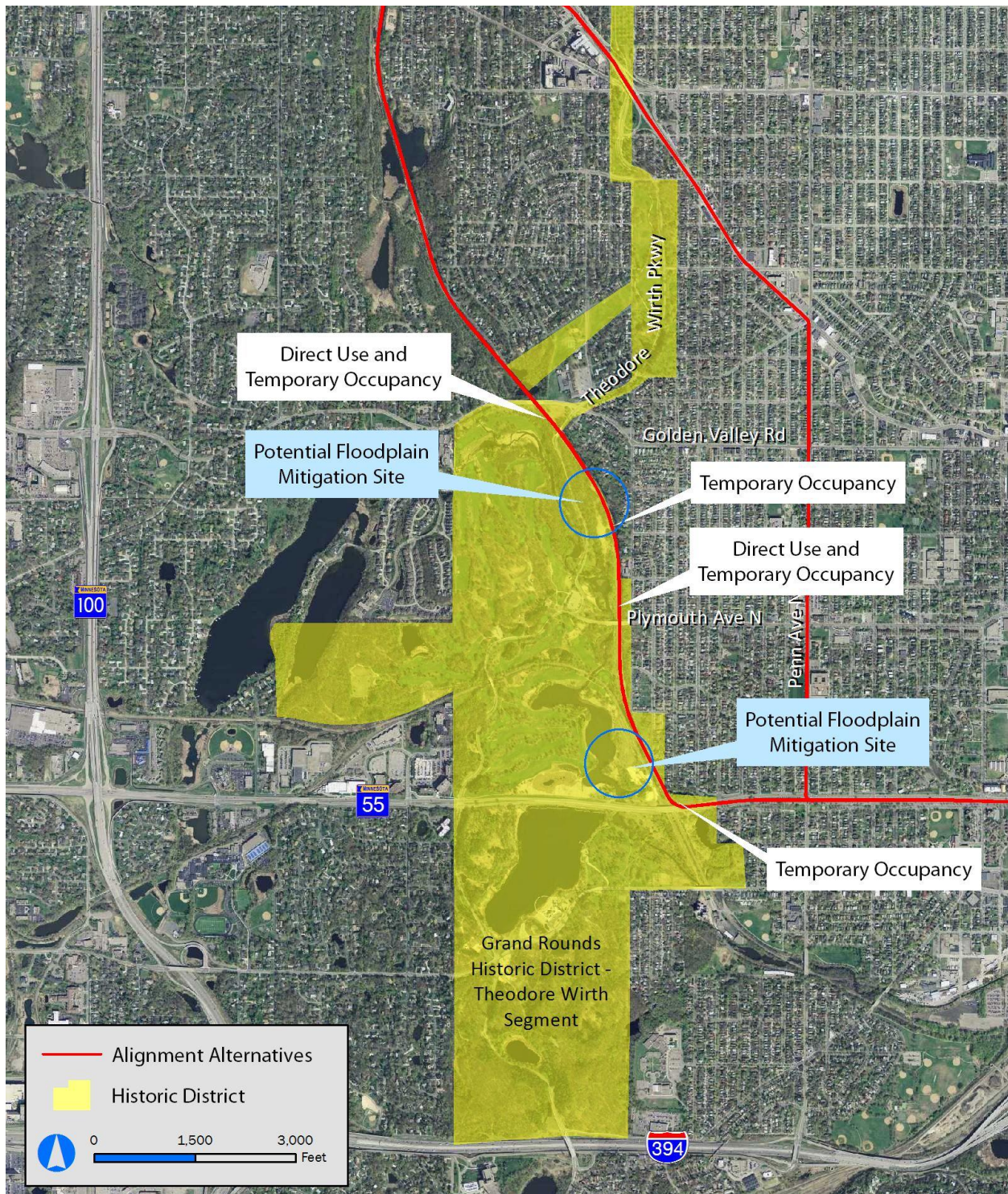
The SHPO has concurred with the assessment that the D1 alignment (A-C-D1 and B-C-D1 alternatives) would have a potential effect on this district and its setting, including effects related to noise and light. Additionally, station area planning and redevelopment related to the Golden Valley Road station option or the Plymouth Avenue/Wirth Park station option would have a potential effect on the district and its setting. (See letter dated August 7, 2013 in [Appendix D](#)). Coordination with the MPRB as the agency with park jurisdiction is addressed in Section 8.4.1 under the discussion of Theodore Wirth Regional Park.

### *Preliminary Section 4(f) Finding*

**Figure 8.4-10** shows potential areas of use within Theodore Wirth Regional Park, which is a contributing element of the Grand Rounds Historic District – Theodore Wirth Segment. The SHPO has concurred with the assessment that the D1 alignment (Alternatives A-C-D1 and B-C-D1) would have potential effects on the district and its setting; however, after taking into account measures to minimize harm under the Section 106 Agreement, it is anticipated that potential use of the Grand Rounds Historic District – Theodore Wirth Segment would be avoided and would not affect the features and attributes of the historic district. The Bottineau Transitway is not anticipated to impair the historic district's associations that contribute to its NRHP eligibility. Therefore, FTA is proposing a *de minimis* determination for the Grand Rounds Historic District – Theodore Wirth Segment, assuming a no adverse effect determination under the Section 106 agreement (see Section 4.4.3.4 for discussion of the Section 106 agreement).



Figure 8.4-10. Grand Rounds Historic District – Theodore Wirth Segment: Areas of Potential Impacts





## 8.5 Evaluation of Constructive Use of Section 4(f) Properties

This section defines constructive use per 23 CFR 774.15 and NRHP eligibility criteria as they apply to park and recreational lands and historic sites.

### 8.5.1 Park and Recreational Properties

This section evaluates potential constructive use of the 14 park and recreational properties, as defined in Section 8.1.2. This analysis considered visual, noise, and vibration impacts resulting from the Bottineau Transitway to determine if any rose to a level of significance that would result in a Section 4(f) constructive use. Detailed discussions of potential visual, noise, and vibration impacts are provided in Section 4.5, Section 5.6, and Section 5.7, respectively. **None of the Section 4(f) properties discussed below were determined to have a constructive use after this evaluation was completed as there would be no substantial impairment to the activities, features, or attributes that qualify the properties for protection under Section 4(f).** The properties evaluated are depicted in [Figure 8.3-1](#) and discussed individually below.

#### ■ Future Crystal Lake Regional Trail (Alignments A, B, C, and D2 – part of the Preferred Alternative)

As depicted by the dashed line in [Figure 8.3-1](#), the future Crystal Lake Regional Trail route generally extends northwest along the east side of Bottineau Boulevard passing through the cities of Robbinsdale, Crystal, and Brooklyn Park. The regional trail would cross the transitway at 73rd Avenue. Accommodations for a safe trail crossing would be provided at 73rd Avenue under the Preferred Alternative (B-C-D-1). At 79th Avenue in Brooklyn Park, the trail route crosses to the west side of Bottineau Boulevard and extends northwest under TH 169 to 85th Avenue where it crosses back to the east side of Bottineau Boulevard. From this point, the trail route extends to the west through Osseo and Maple Grove to the northern terminus at Elm Creek Park Reserve. The completed trail, which would be used for commuting and recreation, will be approximately 11 miles long and will be under the jurisdiction of Three Rivers Park District. The *Crystal Lake Regional Trail Master Plan* (2012) states that many of the areas within two miles of the proposed trail are fully developed. The future trail would be constructed within an existing transportation corridor that already includes the presence of freight rail. The Bottineau Transitway would not substantially impair the attributes of the existing urban setting of the planned trail. Therefore, constructive use of the trail would not occur.

#### ■ College Park (Alignment B – part of the Preferred Alternative)

The six-acre park is located west of West Broadway Avenue and south of North College Park Drive. The park, which is under the jurisdiction of the City, provides opportunities for active recreation and features a playground, skating rink, a picnic pavilion, and park activity building. The Bottineau Transitway would run along the eastern boundary of College Park. With the exception of the skating rink, the park's outdoor recreation facilities are set back from the B-C-D1 and B-C-D2 alternative alignments by more than 300 feet. The park's features and recreational opportunities, identified above and shown within the park's approximate boundaries, would not be substantially impaired. Therefore, there would be no constructive use of the property.



■ **North Hennepin Community College Trail (Alignment B – part of the Preferred Alternative)**

The short trail (0.2 mile) runs along the west side of the college ball fields in Brooklyn Park. The trail, which is on North Hennepin Community College property, connects to Tessman Park immediately to the south (see photo of Tessman Park trail below). Because the B-C-D1 and B-C-D2 alternative alignments would not substantially impair trail use, there would be no constructive use of the trail.

■ **Tessman Park (Alignment B – part of the Preferred Alternative)**

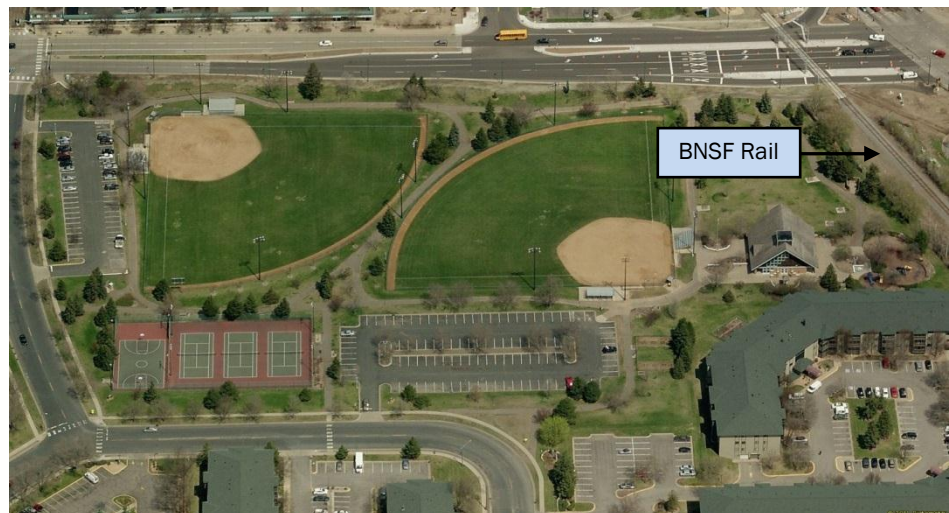
The 16-acre park is located east of West Broadway Avenue and directly south of North Hennepin Community College ball fields in Brooklyn Park. The park, which is under the jurisdiction of the City, features a playground and picnic area at its southeast end (which is more than a half mile east of West Broadway Avenue and not shown in the photo). There is a trail along the north side of Shingle Creek (shown in yellow in the photo) that flows through the park. The B-C-D1 and B-C-D2 alternative alignments would not



substantially impair the playground and picnic area as they are located more than a half mile from the proposed transitway. Therefore, there would be no constructive use of this property.

■ **Becker Park (Alignment C – part of the Preferred Alternative)**

The 12.4-acre park is located in the southwest quadrant of Bottineau Boulevard and Bass Lake Road in Crystal. Becker Park, which is under the jurisdiction of the City, is adjacent to all alternative alignments. The park provides opportunities for active recreation and features two softball fields, three tennis courts, a basketball court, four horseshoe courts, playground equipment, trails, picnic tables, benches, and an activity center with stage. The east side of the park is bordered by the BNSF



railroad corridor. The existing fencing that provides a barrier between the east side of the park and the railroad corridor would remain in the same location. Becker Park is located near the intersection of two busy roadways and is surrounded by commercial and residential development, which would not be greatly altered by the Bottineau Transitway. The transitway would not substantially impair the recreational facilities and opportunities that contribute to the enjoyment of the park. Therefore, there would be no constructive use of the Section 4(f) property.



■ **Triangle Park (Alignment C – part of the Preferred Alternative)**

The one-acre park is located west of Broadway Avenue near downtown Robbinsdale. Triangle Park, which is under jurisdiction of the City, is adjacent to all alternative alignments. The small triangular urban park is used for active play and its features include a ball field, playground equipment, picnic area, and a wading pool. The perimeter of the park is bounded by chain-link fencing, which separates the park from the existing BNSF railroad corridor along its northeast border. The fencing provides a buffer between the park and the Bottineau Transitway. As indicated in Section 5.6, noise impacts have been identified at this location. With noise mitigation, no substantial impacts to the activities and features identified above would occur. Therefore, no constructive use of this property would result.



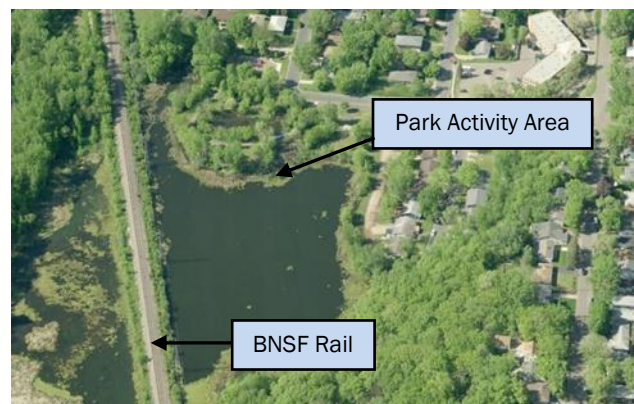
■ **Lee Park (Alignment C – part of the Preferred Alternative)**

The 6.7-acre park is situated between 36th Avenue and 38th Avenue in Robbinsdale and is surrounded by residential development. Lee Park, which is owned by the City, is adjacent to all alternative alignments. The park provides opportunities for active recreation and features a ball field, playground equipment, picnic area, picnic pavilion, skating rink, and a path/trail that connects with June Avenue to the south. The park is bordered by the existing BNSF railroad corridor on the east with fencing providing a barrier between railroad corridor and the park boundary. No substantial impacts to the activities and facilities identified above are anticipated. Therefore, no constructive use of this property would result.



■ **South Halifax Park (Alignment D1 – part of the Preferred Alternative)**

The four-acre park is located south of Lowry Avenue and west of Halifax Avenue in Robbinsdale. The park, which is owned by the City, provides opportunities for active recreation and features playground equipment, half-court basketball, a picnic area, and trails. The BNSF railroad corridor forms the western boundary of the park. The railroad corridor currently bisects Grimes Pond, half of which is located within the boundary of South Halifax Park. Deciduous

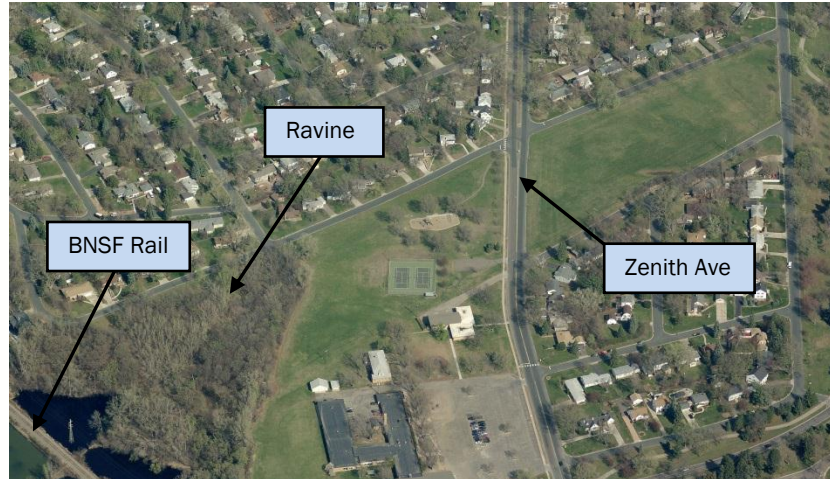




vegetation provides some screening of the existing railroad corridor for residents along Indiana Avenue. Given the park's proximity to the A-C-D1 and B-C-D1 alternative alignments, moderate visual impacts are possible. Refer to Section 4.5 for further details about visual quality. However, the park's facilities and recreational opportunities identified above would not be substantially affected. Therefore, there would be no constructive use of this property.

■ **Glenview Terrace/Valley View Park (Alignment D1 – part of the Preferred Alternative)**

The 18-acre park is located south Manor Drive in Golden Valley. The entire park property is owned by the MPRB. Glenview Terrace, located west of Zenith Avenue, is operated by the City of Golden Valley. The park provides opportunities for active recreation and features playground equipment, two lighted tennis courts, and walkways. The BNSF railroad corridor forms the southwestern boundary of the park. Active uses of the park are buffered



from the A-C-D1 and B-C-D1 alternative alignments by a ravine and wooded area. Because park facilities and recreational activities that contribute to the enjoyment of the park would not be substantially affected by the Bottineau Transitway, no constructive use would occur.

■ **Theodore Wirth Parkway (Alignment D1 – part of the Preferred Alternative)**

The parkway extends from I-394 north to Lowry Avenue for a distance of approximately 3.5 miles. The majority of the parkway runs through or along Theodore Wirth Regional Park. The parkway, an element of the Minneapolis Parkway System and part of the Grand Rounds Scenic Byway, is under the jurisdiction of the MPRB. The B-C-D1 alternative would not substantially impair the open space or recreational opportunities that contribute to the enjoyment of Theodore Wirth Parkway. Therefore, no constructive use of the property is anticipated.

■ **Future Bassett Creek Regional Trail (Alignment D1 – part of the Preferred Alternative)**

The Bassett Creek Trail, when fully constructed, will measure approximately seven miles from French Creek Regional Park, through the cities of Plymouth, New Hope, Crystal, and Golden Valley to the Grand Rounds at Theodore Wirth Regional Park. The Bassett Creek Regional Trail is planned to connect to Theodore Wirth Regional Park along Golden Valley Road and will provide an opportunity to access light rail and the regional park and trail network, providing potential opportunities for multi-modal trip chaining. Three Rivers Park District anticipates operating and maintaining the trail in road right-of-way. The future trail would cross over Alignment D1, which currently accommodates freight rail. Because Alternative B-C-D1 would not substantially impair enjoyment or use of the future Bassett Creek Regional Trail, there would be no constructive use of the trail.

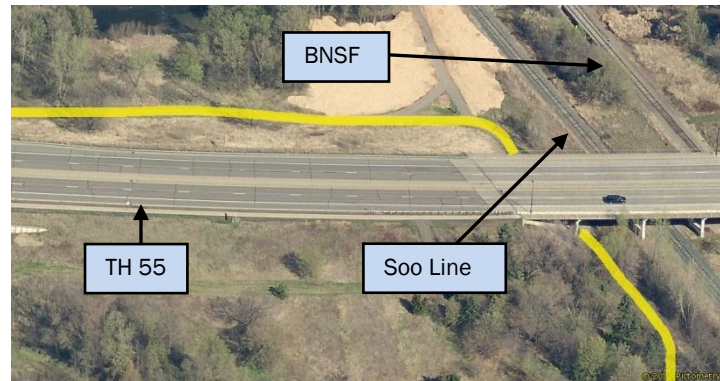
■ **Memorial Parkway Regional Trail (Alignments D1 and D2 – part of the Preferred Alternative)**

The regional trail runs along Theodore Wirth Parkway and Victory Memorial Parkway and crosses the Bottineau Transitway at two locations. The trail crosses over the BNSF railroad corridor (Alignment D1) south of Golden Valley Road. The trail also crosses under West Broadway Avenue (Alignment D2) at a grade-separated crossing and then continues northward along the west side of Victory Memorial Parkway.

The Bottineau Transitway would not substantially impair trail use. Therefore, there would be no constructive use of the trail.

■ **Luce Line Regional Trail (Alignment D1 – part of the Preferred Alternative)**

The Luce Line Regional Trail,<sup>2</sup> shown in yellow in the photo, runs easterly from Theodore Wirth Parkway along the north side of TH 55 then passes under TH 55 and travels west of the Soo Line track. The A-C-D1 and B-C-D1 alternative alignments are east of the Soo Line track and would not substantially impair any of the features or attributes that contribute to the enjoyment of the trail. Therefore, there would be no constructive use of the trail.



■ **Victory Memorial Parkway (Alignment D2)**

Victory Memorial Parkway is a 2.8-mile long linear park located in the northwest corner of Minneapolis and in eastern Robbinsdale. The parkway, which is part of the Minneapolis Parkway System, extends north from Lowry Avenue to 45th Avenue then east to Humboldt Avenue. Victory Memorial Parkway combines recreation and open space, and is a nationally important World War I memorial. The A-C-D2 and B-C-D2 alternative alignments would not substantially impair any of the open space or recreational opportunities that contribute to the enjoyment of the parkway. Therefore, there would be no constructive use of the property.

■ **Lincoln Community School Playground (Alignment D2)**

The Lincoln Community School is located east of Penn Avenue. The 3.6-acre property, owned by the Minneapolis Board of Education (Special School District #1) has a fenced playground on the south end. The playground, which is surrounded by pavement, is open to the public. The chain-link fencing surrounding the playground provides a barrier to Penn Avenue and the proposed transitway. Playground activities would not be substantially affected by the A-C-D2 and B-C-D2 alternative alignments. Therefore, no constructive use of the property would occur.



<sup>2</sup> MPRB owns and maintains the Luce Line Regional Trail east of Theodore Wirth Parkway. Three Rivers Park District operates the Luce Line Regional Trail west of Theodore Wirth Parkway.

■ **Harrison Park (Alignment D Common Section – part of the Preferred Alternative)**

The 6.9-acre park is located south of TH 55 and west of Irving Avenue. Harrison Park, which is under jurisdiction of the MPRB, is adjacent to all alternative alignments. Features and recreational opportunities provided by this facility include a baseball field, two softball fields, one lighted football field, a soccer field, a basketball court, biking and walking paths, a picnic area, restroom facilities, a wading pool, and a playground. A frontage road buffers Harrison Park from eastbound TH 55 and the proposed alignment. The Bottineau Transitway would not substantially impair any of the features or recreational opportunities that contribute to the enjoyment of Harrison Park. Therefore, no constructive use would occur.



### 8.5.2 Historic Section 4(f) Properties

This section evaluates historic sites listed in, or determined eligible for listing in, the NRHP to determine if potential effects could rise to the level of “substantial impairment” (as defined under Section 106 regulations) thereby constituting a constructive use under Section 4(f). Constructive use of an historic site occurs when “the proximity impact(s) will substantially impair the features or attributes that contribute to the NRHP eligibility of the historic site.”<sup>3</sup> Eligibility for the NRHP is based on specific criteria, and not every proximity effect substantially impairs these features and attributes; therefore, proximity to a resource alone is not enough for a constructive use to be present. Because impacts resulting in constructive use must be both “substantial” and focused on “impairing” a specific set of features or attributes, constructive uses are rare and different from adverse effects under Section 106.<sup>4</sup>

**No constructive use of historic properties is anticipated given the potential effects that have been identified to date (see Section 4.4.5.1 for further discussion);** however, this determination will need to be confirmed as determination of effects under Section 106 is finalized (see Section 4.4.3.4 for discussion of process).

### 8.5.3 Summary of Evaluation of Constructive Use of Section 4(f) Properties

The Bottineau Transitway is not anticipated to result in a constructive use of any Section 4(f) park or recreational property.

The park and recreational properties evaluated for constructive use do not derive a substantial part of their value through their visual setting. These park and recreational resources include facilities for sports, active play, biking, walking, picnicking, and parking. The Bottineau Transitway would not substantially impair these activities. While visual impacts would occur, the impacts of the transitway are not so severe that the protected activities, features, and attributes that qualify the property for protection under Section 4(f) are substantially impaired. Furthermore, quietude is not an integral component of any of these park

<sup>3</sup> FHWA Section 4(f) Policy Paper. July 20, 2012. (Question 7B)

<sup>4</sup> It is important to recognize the difference between Section 4(f) **use** of historic properties, discussed below, and Section 106 project **effects** to historic properties, which are discussed in Section 4.4 of this Draft EIS. Section 4(f) and Section 106 are similar in that they both mandate consideration of historic sites in the planning of a federal undertaking. Section 4(f) applies to the actual use or occupancy of a historic site, while Section 106 involves an assessment of adverse effects of an action on historic properties. The Section 106 process is integral to the Section 4(f) process when historic sites are involved. Conversely, the Section 4(f) process is not integral to the Section 106 process.



and recreational facilities (as with facilities such as an outdoor amphitheater or campground). Therefore, vibration and noise impacts would not rise to the level of substantial impairment.

The constructive use analysis considered all historic properties for which potential effects were identified and where there would be no direct use of the property. It is not anticipated that the Bottineau Transitway would substantially impair the features or attributes of the historic properties that contribute to the NRHP listing or eligibility of any of the properties considered.

## 8.6 Temporary Occupancy of Section 4(f) Properties

Temporary occupancy occurs when Section 4(f) property is required for construction activities related to a transportation project. Section 8.1.3 describes the conditions under which temporary occupancy does not constitute a use. For all park properties identified below, the duration of occupancy would be temporary, the scope of work would be minor, there would be no permanent adverse physical impacts, the property would be restored to the same or better condition, and agreement from officials with jurisdiction over the properties regarding these conditions will be obtained.

The potential for temporary occupancy of four park properties, all located adjacent to Alignment D1 (Alternatives A-C-D1 and B-C-D1), is described below. The location of these properties in relation to the Bottineau Transitway alternative alignments is shown in [Figure 8.3-1](#). The areas of potential temporary occupancy are shown in [Figures 8.6-1](#) through [8.6-4](#).

### ■ Sochacki Park

Temporary occupancy of Sochacki Park in Robbinsdale is anticipated, as preliminary construction limits extend beyond park boundaries and into park property. Minor amounts of grading within park boundaries would be necessary due to the current rail elevation and the adjacent elevation. Estimates indicate that a temporary easement of less than half an acre is anticipated along the far eastern boundary of the park. Adjustments would likely be made during future design phases to minimize the extent of temporary occupancy. Concurrence with the City of Robbinsdale regarding temporary occupancy of Sochacki Park will be pursued as project design and construction details are further developed.

### ■ Mary Hills Nature Area

Temporary occupancy of Mary Hills Nature Area in Golden Valley is expected because preliminary construction limits extend beyond park boundaries and into park property. As with Sochacki Park, minor amounts of grading within park boundaries would be necessary due to the current rail elevation and the adjacent elevation. The area required for temporary easements is estimated to be less than a half an acre along the far eastern boundary of the nature area. Adjustments would likely be made during future design phases to minimize the extent of this temporary occupancy. Concurrence with the City of Golden Valley regarding temporary occupancy of Mary Hills Nature Area will be pursued as Project design and construction details are further developed.



Figure 8.6-1. Sochacki Park: Areas of Potential Temporary Occupancy





Figure 8.6-2. Mary Hills Nature Area: Areas of Potential Temporary Occupancy





Figure 8.6-3. Theodore Wirth Regional Park: Areas of Potential Temporary Occupancy





## 8.7 Preliminary Determination of Section 4(f) Use

Use of a Section 4(f) property may not be approved unless it is determined that there is no feasible and prudent avoidance alternative to the use of land from the property *and* the action includes all possible planning to minimize harm to the property resulting from such use, *or* it is determined that the action will have a *de minimis* impact (23 CFR 447.3).

As indicated in [Table 8.7-1](#), five Section 4(f) uses have been identified for the Bottineau Transitway. Two of these uses, Rush Creek Regional Trail and the Grand Rounds Historic District – Theodore Wirth Segment, are proposed as *de minimis* uses. The remaining three were evaluated to determine whether there is a feasible and prudent alternative: Theodore Wirth Regional Park, Minneapolis Public Schools Athletic Park, and the Homewood Historic District. This evaluation concludes that:

- **There is no prudent and feasible alternative for Theodore Wirth Regional Park.** As discussed in Chapter 11, while Alternatives A-C-D2 and B-C-D2 are feasible, they are not prudent because of their degree of adverse impact on neighboring properties along the D2 alignment in north Minneapolis. Additionally, these alternatives result in the use of two other Section 4(f) resources, the Minneapolis Public Schools athletic field and the Homewood Historic District.
- **Feasible and prudent avoidance alternatives do exist for the use of the Minneapolis Public Schools athletic field and the Homewood Historic District.** As discussed in Section 11.2 and Section 11.3 of Chapter 11, Alternative B-C-D1 has been identified as the Locally Preferred Alternative (LPA) and the Preferred Alternative. As a prudent and feasible alternative exists, FTA should not approve the Section 4(f) use of the athletic field or the historic district.

**Table 8.7-1. Use of Section 4(f) Properties, by Alternative**

Section 4(f) Property	Alternatives			
	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2
Rush Creek Regional Trail	No use	No use	De minimis Use <sup>1</sup>	De minimis Use <sup>1</sup>
Theodore Wirth Regional Park	Direct Use	No use	Direct Use	No use
Minneapolis Public Schools Athletic Field	No use	Use	No use	Use
Homewood District	No use	Use	No use	Use
Grand Rounds Historic District	De minimis use	No use	De minimis use	No use
<b>Total instances of Direct Use (includes <i>de minimis</i>)</b>	2	2	2 or 3 <sup>1</sup>	2 or 3 <sup>1</sup>

<sup>1</sup> 101st Avenue OMF site option only

Considering this Draft Section 4(f) Evaluation of the Bottineau Transitway's use of Section 4(f) properties, and considering that FTA and Hennepin County are coordinating with the officials with jurisdiction regarding the preliminary findings of this Section 4(f) Evaluation, FTA preliminarily concludes that there is no prudent avoidance alternative to the use of land from one recreational property. As described in the Draft Section 4(f) Evaluation, the project includes all possible planning to minimize harm to this Section 4(f) property. In addition, the project would have a *de minimis* impact on one recreational property and one historic property. Measures to minimize harm, such as avoidance, minimization, and mitigation, are proposed and subject to agreement by the officials with jurisdiction over the properties. FTA has coordinated with these officials prior to proposing its *de minimis* determination. Finally, balancing all the factors discussed in Section 8.4, FTA has preliminarily determined that the Bottineau Transitway



Preferred Alternative would cause the least overall harm in light of the Section 4(f)'s preservation purpose.

## 9.0 Consultation and Coordination

Planning for the Bottineau Transitway Project involved extensive outreach and coordination with the affected public, which included not only the community members residing in the project corridor, but individuals, businesses, groups, clubs, civic organizations, and others interested in the project. Agencies were also engaged in the process, including local governments and state and federal agencies with regulatory oversight and permitting responsibilities. This chapter summarizes the efforts and outcomes of the various consultation and coordination efforts made for the Bottineau Transitway Project.

### 9.1 Public Outreach Approach

In 2008, Hennepin County Regional Railroad Authority (HCRRA) initiated the Alternatives Analysis (AA) Study to investigate transit improvement alternatives along the Bottineau Transitway. The study considered a range of alternatives that would improve regional mobility and meet long-range transit needs. Early in the study process, the project team established a framework for stakeholder outreach that engaged nearly 1,000 stakeholders through public meetings, open houses, stakeholder presentations, email, website visits, and phone calls. Further information can be found in the *Bottineau Transitway Alternatives Analysis Study* (2010).

As the project moved into the Environmental Impact Statement (EIS) phase, a Public Involvement Plan (PIP) was developed to clarify the goals for public outreach. The Bottineau Transitway PIP also describes strategies for encouraging public input and outlines opportunities for early and ongoing public involvement in the project development process. The PIP identifies key stakeholders and defines the roles of decision-making and advisory bodies. It also identifies communication methods and outlines the anticipated sequencing of public involvement activities.

#### 9.1.1 Public Outreach Goal and Objectives

The goal of public outreach for the Bottineau Transitway as stated in the PIP is “...to continue project momentum and facilitate stakeholder engagement, input, and understanding through a meaningful public involvement process.” The objectives set forth in the PIP to achieve this goal include:

- Build confidence and credibility into the Scoping and environmental processes by assuring the public they will be heard and understood
- Build consent for a locally preferred alternative through stakeholder education, ongoing discussion, and open evaluation of alternative trade-offs
- Ensure process credibility by providing and encouraging participation in engagement opportunities for all stakeholders in the project corridor

#### 9.1.2 Public Outreach Activities Framework

In keeping with the public outreach goal and objectives, the following framework was used to organize public outreach activities:

- Continue the Advisory Committees initiated during the AA Study
- Engage the community informally during EIS Scoping to identify issues and inform alternatives refinement
- Support other community organizations in their efforts to facilitate discussion about the project
- Conduct formal public comment opportunities in a manner that allows for meaningful input

### 9.1.3 Communication Methods

A variety of electronic and “traditional” (hard copy) communication methods were employed for the Bottineau Transitway Project. While electronic communications may to some appear inappropriate for a project area with significant low-income residents, area organizers advised that electronic media remains an effective method of outreach to low-income communities. Computers at area libraries are well used and “smart” phones are increasingly being used to access websites and other social networking applications. Communication methods are summarized below. Specific outreach efforts to target environmental justice populations are summarized in Chapter 7, Environmental Justice.

#### 9.1.3.1 Project Website

The website that was maintained during the AA Study was updated as the project moved into the Scoping and Draft EIS phases. The primary function of the updated [www.bottineautransitway.org](http://www.bottineautransitway.org) website (launched in the fall of 2011) is to serve as a resource for upcoming meetings, provide project development information, facilitate contact with project staff, and provide a forum for submitting comments. The website includes general project information, a project library with maps and studies, notices of upcoming meetings and past meeting materials, information on project committees and decision-making, land use and economic development information, descriptions of other efforts in the corridor such as Corridors of Opportunity, links to relevant transit data/studies, frequently asked questions, and a contact page. The website homepage is displayed in [Figure 9.1-1](#).

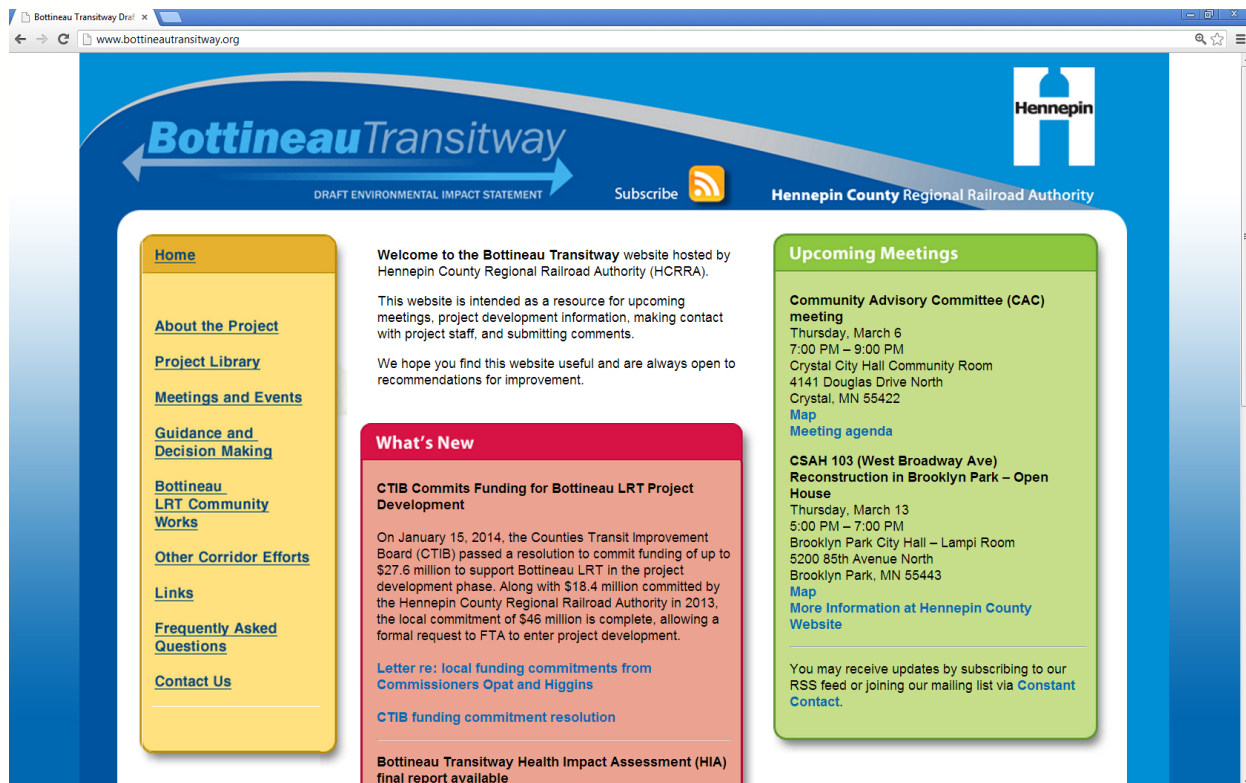
#### 9.1.3.2 City Websites

Cities within the Bottineau Transitway project boundaries provided links to the project website and provided updates on project development and upcoming meetings.

#### 9.1.3.3 Email List

An email list was created to provide project updates and advertise upcoming open houses and other public events. The email list was generated through open house sign-ins, comments and requests received by project staff, and through the project website. Local media contacts, elected officials, and agency representatives were also added to the email list. The list was, and will continue to be, used throughout the project to notify stakeholders about new or updated project information, upcoming meeting information, and opportunities for public comment. The emails provide links to the project website to facilitate quick and easy access to project materials. A summary of notices is included in [Table 9.1-1](#).

Figure 9.1-1 Bottineau Transitway Project Website



#### 9.1.3.4 Distribution of Newsletters, Posters, and Flyers

Hardcopy newsletters, posters, and flyers were distributed to community gathering places along the Bottineau Transitway to provide project information and notify the public about upcoming events. These materials also provided information as to how to obtain further project information via either the project website or contacting project staff. Materials were provided at libraries, community centers, and churches along the corridor alignments. Public libraries included:

- Maple Grove Library, 8001 Main Street, Maple Grove, MN
- Osseo Library, 415 Central Avenue, Osseo, MN
- Brooklyn Park Library, 8600 Zane Avenue N, Brooklyn Park, MN
- Brookdale Library, 6125 Shingle Creek Parkway, Brooklyn Center, MN
- Rockford Road Library, 6401 42nd Avenue N, Crystal, MN
- North Regional Library, 1315 Lowry Avenue N, Minneapolis, MN
- Sumner Library, 611 Van White Memorial Boulevard, Minneapolis, MN
- Minneapolis Central Library, 300 Nicollet Mall, Minneapolis, MN

Examples of public information materials can be found in [Appendix H](#).



**Table 9.1-1. Summary of Notices and Flyers**

Date	Activity	Distribution
May 2011	Distribution of posters in community facilities to announce June 2011 open houses	Approximately 40 corridor-wide
Aug 2011	Email invitation to Roundtable Discussions held September 15, 2011	Email
Sept 2011	Door-to-door distribution of flyers announcing D2 Open House held October 6, 2012	>500 in neighborhoods surrounding D2 alignments
Sept 2011	Distribution of posters in community facilities to announce D2 Open House held October 6, 2012	Approximately 40 corridor-wide
Dec 2011	Distribution of Scoping Booklet and poster announcing Scoping meetings	Corridor-wide, 327 hard copies of Scoping Booklet and approximately 50 posters

#### 9.1.3.5 Press Releases

Hennepin County-issued press releases were used to distribute information regarding the time, location, and purpose of open houses and other project events. Releases were sent to approximately 200 media contacts, including all the major print, broadcast, radio, and web outlets in the Twin Cities, including specific media in the project area. Specific local outlets included neighborhood newspapers, local radio station KMOJ, neighborhood association websites, neighborhood web mail lists, and Cable Channel 12. The following press releases have been issued since the Scoping/Draft EIS process began:

- June 1, 2011 – providing notice of the June 2011 open houses
- September 6, 2011 – providing public notice of the September 15, 2011 roundtable discussions
- September 30, 2011 – providing notice of the October 6, 2011 D2 open house
- December 23, 2011 – providing notice of the January 2012 Scoping meetings
- May 16, 2012 – providing notice of the June 12, 2012 HCRRA public hearing for LPA recommendations

## 9.2 Summary of Public Outreach Activities

Key stakeholder outreach activities conducted during EIS Scoping and the development of the Draft EIS are summarized below.

### 9.2.1 Advisory Committees

#### 9.2.1.1 Advise, Review, and Communicate Committee (ARCC)

ARCC members are technical staff from agencies convened to advise project development. The ARCC provides advice regarding local governmental perspectives, issues of concern, technical methodologies, and study process details. The ARCC is comprised of staff from Hennepin County; the cities of Brooklyn Park, Crystal, Golden Valley, New Hope, Maple Grove, Minneapolis, Osseo, and Robbinsdale; Minneapolis Park & Recreation Board; Metro Transit; Maple Grove Transit; the Metropolitan Council; the Minnesota Department of Transportation; and project consultants.

The ARCC has met on an approximately monthly basis to advise development of the alternatives and aid in the alternatives evaluation. ARCC meeting summaries can be found on the project website, [www.bottineautransitway.org](http://www.bottineautransitway.org).

#### 9.2.1.2 Policy Advisory Committee (PAC)

PAC members are elected officials, key policy leaders for participating agencies, business leaders, and institutional leaders, convened to review and advise on policy decisions during the development of the Bottineau Transitway Project.

The PAC has met on an approximately quarterly basis to advise key project decisions including refinement of the D2 alignment, EIS Scoping, and LPA recommendations. PAC meeting summaries can be found on the project website, [www.bottineautransitway.org](http://www.bottineautransitway.org).

#### 9.2.1.3 Community Advisory Committee (CAC)

The CAC, established during the AA Study, is comprised of representatives from the cities as well as businesses and institutions in the Bottineau Transitway study area. Members provide a conduit for integrating the values and perspectives of citizens, communities, businesses, and institutions into the study process.

The CAC has met on several occasions to identify project issues and advise on refinement of the alternatives. CAC meeting summaries can be found on the Project Website, [www.bottineautransitway.org](http://www.bottineautransitway.org).

### 9.2.2 Informal Community Outreach During the EIS Scoping Process

Public meetings were held to gather input during EIS Scoping to inform decisions regarding the range of alternatives proposed for analysis in the Draft EIS, to identify potential project issues and concerns, and engage interested members of the public, individuals, and groups, as well as representatives of affected Native American tribes, and local, state, and federal agencies in discussions about the Bottineau Transitway Project. However, the EIS Scoping process began months prior to the official comment period, through several outreach activities intended to engage the public in refining practical and feasible alternatives and shaping what would be in the Scoping Booklet. These outreach activities are discussed below.

#### 9.2.2.1 Open Houses to Initiate EIS Scoping

Open houses were held in communities throughout the project corridor in June 2011. The purpose of these meetings was to:

- Inform the public that the project was entering the next project phase
- Prepare the public for critical upcoming project decisions
- Obtain preliminary feedback regarding the issues to be studied as part of Scoping and the Draft EIS

Six different meetings were held on different dates in Brooklyn Park (two locations), Robbinsdale, Golden Valley, Crystal, and Minneapolis. The meetings consisted of an open house review of materials relating to the AA Study, a presentation discussing upcoming Scoping and Draft EIS activities, and an open discussion on the question ***“What is important to you as we look at the analysis and consider key decisions for this project?”*** Approximately 100 people attended these meetings and shared their thoughts on the anticipated benefits and concerns of a transitway in their communities.

#### 9.2.2.2 Roundtable Discussion

During the EIS Scoping phase, HCRRA was interested in providing an opportunity for more extensive community discussion regarding the potential benefits as well as the potential impacts of the Bottineau Transitway. A Roundtable event was conducted to share outcomes from similar transit projects throughout the country as well as provide a forum for smaller group interaction about the potential for economic development and other benefits in the Bottineau Transitway. The Roundtable event was held on Thursday September 15, 2011 from 6:00 to 8:00 p.m. at the Brookdale Library in Brooklyn Center.

Representatives of neighborhood associations, community organizations, foundations, and business groups, as well as people with known interest in the project, were invited to attend. Representation included each city along the proposed alignments under consideration. The event was also open to the public.

The roundtable event included a brief presentation of transitways in other communities and small group discussions about balancing impacts/benefits in project decisions. As HCRRA moved forward with EIS Scoping, notes from each discussion group were reviewed and considered, helping to formulate EIS approaches.

#### **9.2.2.3 Open House and Survey on Alignment D2 Options**

To specifically engage nearby residents in refining the D2 alignment, a public open house was held on October 6, 2011 at the Urban Research & Outreach-Engagement Center (UROC) in Minneapolis. HCRRA distributed flyers door-to-door in the surrounding neighborhoods and posted announcements at key community locations to ensure nearby residents received information about the meeting. The purpose of this open house was to share detailed information on the benefits and costs of the various Alignment D2 options under consideration (D2A, D2B, and D2C) and to obtain community input as to which of these options should be evaluated in the Draft EIS. A survey was provided to attendees and also made available online for those unable to attend the open house. A total of 83 survey responses were received, which provided insight into the community's perceptions of the positives and negatives the various D2 alignments. This information assisted in the narrowing of D2 options and the identification of issue areas that would be studied in the Draft EIS.

#### **9.2.3 Support for Community Organization Outreach Efforts**

There are several community groups which are actively relaying information to their respective members. HCRRA and Metropolitan Council have worked with these groups to provide information, as summarized below.

For specific engagement relating to environmental justice communities, please see Chapter 7 Environmental Justice.

##### **9.2.3.1 Northside Transportation Network Participation**

The community also initiated its own engagement process through Northside Transportation Network (NTN), a coalition of north Minneapolis residents and businesses. Throughout 2010 and 2011, NTN was actively involved in a process of engaging and informing Northside residents and stakeholders regarding the Bottineau Transitway. This included regular meetings, a three-day workshop in September 2011, and a NTN-hosted community meeting on November 3, 2011. The NTN engagement process included valuable dialogue regarding community needs; benefits, impacts, costs, and opportunities of D2 alignment options (D2A, D2B, and D2C); exploratory conversations around additional concepts that might minimize and/or dissipate impacts; and conversations regarding the best overall transitway fit for the community.

At the November 2011 NTN meeting, a poll was taken regarding the D2 options under consideration. This information, along with other public input, was used by HCRRA in the narrowing of D2 options. A detailed discussion of D2 alignment options can be found in Technical Memorandum: Segment D2 Options - Investigation of Penn/Oliver Avenue Concepts (Kimley-Horn and Associates, October 2011).

##### **9.2.3.2 Corridors of Opportunity**

Corridors of Opportunity is an initiative to promote sustainable, vibrant, and healthy communities in the Twin Cities region, using the region's emerging transitway system as a development focus. The initiative

funds projects in seven corridors within the system of existing and planned transitways in the region, including Bottineau Transitway.

Through Corridors of Opportunity, the Community Engagement Team (CET) is responsible for recommending grants to community groups that support innovative and effective place-based initiatives that engage and involve underrepresented communities (low-income, communities of color, immigrant communities, persons with disabilities) in participation, decision-making, and leadership roles related to transit corridor planning and implementation. Through the fall of 2012, a total of 12 Outreach and Engagement grants have been awarded to organizations that provide outreach and community engagement activities and services to residents in the Bottineau Transitway. These organizations include:

- African Career, Education, and Resource, Inc. (ACER) (two grants)
- Asian Economic Development Association (AEDA)
- Asian Media Access
- Harrison Neighborhood Association (two grants)
- Cleveland Neighborhood Association
- Masjid An-Nur
- Northside Residents Redevelopment Council
- La Asambela de Derechos-Civiles
- Centro de Trabajadores Unidos En La Lucha (CTUL)
- Metropolitan Interfaith Council on Affordable Housing (MICAH)

A description of specific activities to be performed by these organizations under these grants is available at <http://www.metrocouncil.org/planning/COO/CommEngage.htm>.

#### **9.2.4 Formal Public Comment Opportunities**

##### **9.2.4.1 Scoping Public Comment Period**

The EIS Scoping process is required under both federal and state environmental review and is the first step in preparing a Draft EIS. Under Minnesota Rules, EIS Scoping includes an official public comment period as well as formal Scoping Meetings during this comment period. To inform the public on the Scoping process, a Scoping Booklet was prepared. The Bottineau Transitway Scoping Booklet identified potential alternatives for evaluation and the issues to be studied in the Draft EIS. The Scoping Booklet was provided to all parties required under the Minnesota Environmental Review Program, as well as members of the Bottineau Transitway project committees and other interested stakeholders on the extensive project mailing list. To reach as many affected parties as possible, HCRRRA also provided the following:

- Posting of the Scoping Booklet on the project website
- Hard copy distribution to libraries, city halls, and community centers in the project area
- Email notice of Scoping Open Houses to Maple Grove Transit riders and posters at the transit station
- Scoping Open House notices sent to more than 500 property owners in proximity of alignments in Robbinsdale

The official Scoping public comment period extended from December 26, 2011 to February 17, 2012. During this time, the project was discussed at four public Scoping Open Houses and one Interagency



Scoping Meeting. [Table 9.2-1](#) shows the meeting place, time, date, and number of attendees for each meeting.

The Interagency Scoping Meeting took place on January 19, 2012 as part of the formal Scoping comment period. Specific invitations were sent to government agency representatives at the state and federal levels. Thirteen representatives from nine different local and state agencies were in attendance to be introduced to the proposed project and discuss potential areas of concern.

**Table 9.2-1. Open House Meeting Participation**

Location of Open House	Time	Date	Attendees*
Theodore Wirth Chalet 1301 Theodore Wirth Parkway, Minneapolis	4:30 to 6:30 p.m.	Jan. 23, 2012	127
Brooklyn Park City Hall 5200 85th Avenue N, Brooklyn Park	6:00 to 8:00 p.m.	Jan. 24, 2012	44
Urban Research and Outreach/Engagement Center 2001 Plymouth Avenue N, Minneapolis	5:30 to 7:30 p.m.	Jan. 25, 2012	47
Robbinsdale City Hall 4100 Lakeview Avenue N, Robbinsdale	6:00 to 8:00 p.m.	Jan. 31, 2012	165
<b>Total</b>	<b>–</b>	<b>–</b>	<b>383</b>

\* Number of people who signed the sign-in sheet

Open house attendees were encouraged to provide input on the purpose and need for the project, the alternatives proposed for the study, and the project impacts or benefits that should be evaluated, along with any other areas of interest or concern. A Scoping video was also prepared and made available on the project website for people who could not attend the open houses.

Nearly 300 comments from the general public, organizations, groups, municipalities, and agencies were received via comment forms, verbal comments, and written comments (both hard copy and electronic). Local, regional, state, and federal agencies which provided comments included: City of Crystal, City of Brooklyn Park, City of Robbinsdale, City of Golden Valley, City of Maple Grove, City of Minneapolis, Minneapolis Park & Recreation Board, Metropolitan Council's Transportation Accessibility Advisory Committee, Minnesota Pollution Control Agency (MPCA), U.S. Fish and Wildlife Service, Mille Lacs Band of Ojibwe, Shingle Creek Watershed Management Commission, and Bassett Creek Watershed Commission.

The primary issues of public and agency concern, as reflected in the comments, were related to social and economic impacts and relocations. Noise and vibration, natural resources, and parks rounded out the top four topics brought forth in comments. Public comments were considered alongside technical data and analysis to inform project decisions and shape the content of the Draft EIS. Responses to public comments and documentation of the outcome of the Scoping process were included in the *Bottineau Transitway Scoping Decision Document* (June 2012).

### 9.2.5 Public Participation in LPA Selection

The information collected in the Scoping phase of the project, along with technical analysis, also helped to identify a potential Locally Preferred Alternative (LPA). The selection of an LPA tells the FTA which alternative local agencies expect to be the most competitive in achieving support at the local, regional, and federal levels. Identification of an LPA is a critical step to pursue federal funding. The selection of an LPA for the Bottineau Transitway and amendment of it into the region's long-range transportation plan marks the end of the AA process. Concluding the AA process allows the project to pursue federal funding under the federal transportation program. The LPA is evaluated alongside other Build alternatives in the Draft EIS.

The PAC held a public hearing on an LPA for the Bottineau Transitway on May 10, 2012. Utilizing input from this public hearing and feedback from the CAC and ARCC, at its May 30, 2012 meeting the PAC made the recommendation to HCRRA that Alternative B-C-D1 be considered as the LPA. The PAC recommended Alignment D1 over Alignment D2 because Alignment D1 would result in significantly less property and neighborhood impacts, improved travel time and greater cost effectiveness, and less disruption of roadway traffic operations. The PAC recommended Alignment B over Alignment A because Alignment B would provide better service to people who depend on transit and to key civic and educational destinations, as well as access to greater numbers of new jobs and development. On June 12, 2012, HCRRA held a public hearing to solicit input on which alternative should be considered as the LPA.

At its meeting on June 26, 2012, following the PAC public hearing and recommendation, and passage of resolutions of support from the cities of Minneapolis, Robbinsdale, Crystal, and Brooklyn Park, and a HCRRA-sponsored LPA public hearing, the HCRRA passed a resolution recommending Alternative B-C-D1 as the LPA for the Bottineau Transitway. The City of Golden Valley followed with its resolution in December 2012. On May 8, 2013, the Metropolitan Council formally adopted amendments to the 2030 *Transportation Policy Plan (TPP)* – the region’s long-range transportation plan – to include the Bottineau Transitway LPA as Alternative B-C-D1. This action, which concludes the LPA process, followed a public comment period and input from the Metropolitan Council’s Transportation Advisory Board (TAB).

## 9.3 Agency Coordination

The Notice of Intent (NOI) to prepare an EIS on the proposed Bottineau Transitway was published on Tuesday, January 10, 2012 in the Federal Register (Vol. 77, No. 6). The environmental process began with a Scoping effort to solicit agency and public comment on transportation alternatives, as documented in previous sections. This section focuses specifically on the role of local, regional, state, and federal agencies in the early stages of the environmental review process, outside of the formal Scoping period.

It should be noted that coordination relative to specific areas of agency jurisdiction is discussed in each applicable impact area in Chapters 3, 4, 5, 7, and 8.

### 9.3.1 Cooperating and Participating Agencies

Applicable federal, state, regional, and local agencies were invited to be involved in the EIS process by becoming a cooperating or participating agency via an invitation letter issued in March 2012. FTA was responsible for inviting Native American tribes (discussed more in Section 8.4) and federal agencies, and HCRRA invited state, regional, and local agencies.

Based on responses to the initial letters and subsequent follow-up, the agencies listed in [Table 9.3-1](#) are considered cooperating or participating agencies in the EIS process.

Participating agencies are agencies with an interest in the project. Cooperating agencies have a more specific role and will participate in the permitting and/or jurisdictional determination process for impacts related to the project. They will work cooperatively with the lead agencies to resolve issues that could result in denial of regulatory approvals required for the project. Cooperating agencies were also granted a preliminary review of the Draft EIS.

Cooperating and participating agencies began active participation early in the EIS process. Responsibilities of both types of agencies included the following:

- Identifying the project’s potential environmental and socioeconomic impacts and potential mitigation measures
- Providing input on the project purpose and need, how impacts to resources will be evaluated, how project alternatives will be evaluated, and the level of detail to be used in the analysis of alternatives

- Providing written comments on other project deliverables

**Table 9.3-1. Cooperating and Participating Agencies in the Environmental Process**

Agency	Type of Participation
<b>Federal Agencies</b>	
U.S. Department of Transportation (DOT), Federal Highway Administration	Cooperating
U.S. Army Corps of Engineers	Cooperating
U.S. DOT, Federal Aviation Administration	Cooperating
U.S. Department of Housing and Urban Development	Participating
U.S. Department of Interior, Office of Environmental Policy and Compliance	Participating
U.S. Environmental Protection Agency	Participating
U.S. Department of Homeland Security/Federal Emergency Management Agency	Participating
<b>State Agencies</b>	
Minnesota Department of Transportation	Cooperating
Minnesota Department of Natural Resources	Participating
Minnesota Pollution Control Agency	Participating
Minnesota Department of Health	Participating
Minnesota Department of Agriculture	Participating
<b>Regional and Local Agencies</b>	
Three Rivers Park District	Participating
Minneapolis Park and Recreation Board	Participating
Bassett Creek Watershed Management Commission	Participating
Shingle Creek and West Mississippi Watershed Management Commission	Participating
City of Minneapolis	Participating
City of Golden Valley	Participating
City of Robbinsdale	Participating
City of Crystal	Participating
City of New Hope	Participating
City of Brooklyn Park	Participating
City of Osseo	Participating
City of Maple Grove	Participating
Maple Grove Transit	Participating

### 9.3.2 Permits and Approvals

**Table 9.3-2** below presents a preliminary list of the permits that are anticipated to be required for project construction.

**Table 9.3-2. Permits/Approvals Required**

Permit/ Decision	Jurisdiction
<b>Federal Approvals</b>	
Record of Decision	Federal Transit Administration
Section 4(f) Determination	Federal Transit Administration
Section 106 Programmatic Agreement (PA) or Memorandum Of Agreement (MOA)	Federal Transit Administration, Advisory Council on Historic Preservation
Section 404 Wetland Permit	U.S. Army Corps of Engineers

**Table 9.3-2. Permits/Approvals Required (continued)**

Permit/ Decision	Jurisdiction
Letter of No Objection for use within Runway Protection Zone (RPZ)	Federal Aviation Administration
<b>Minnesota State Approvals</b>	
Section 106 Programmatic Agreement (PA) or Memorandum Of Agreement (MOA)	State Historic Preservation Office
Right-of-Way Permit	Minnesota Department of Transportation
Application for Drainage Permit	Minnesota Department of Transportation
Application for Utility Accommodation on Trunk Highway Right-of-Way	Minnesota Department of Transportation
Application for Miscellaneous Work on Trunk Highway Right-of-Way	Minnesota Department of Transportation
National Pollutant Discharge Elimination System Permit	Minnesota Pollution Control Agency
Section 401 Water Quality Certification	Minnesota Pollution Control Agency
Public Waters Wetland Permit	Minnesota Department of Natural Resources
Water Appropriation Permit	Minnesota Department of Natural Resources
Hazardous Materials Management Plan	Minnesota Pollution Control Agency
Noxious Weed Management Plan	Minnesota Department of Agriculture
<b>Local Approvals</b>	
EIS Adequacy Determination	Metropolitan Council
Road Crossing/Right-of-Way Permits	Hennepin County, Brooklyn Park, Crystal, Golden Valley, Maple Grove, Minneapolis, Robbinsdale
Utility Permits	Brooklyn Park, Crystal, Golden Valley, Maple Grove, Minneapolis, Robbinsdale
Building Permits	Brooklyn Park, Crystal, Golden Valley, Maple Grove, Minneapolis, Robbinsdale
Sediment and Erosion Control Permits	Brooklyn Park, Crystal, Golden Valley, Maple Grove, Minneapolis, Robbinsdale, Mississippi Watershed Management Organization, Bassett Creek Watershed Management Commission, Shingle Creek and West Mississippi Watershed Management Organization
Wetland Conservation Act Permit	Brooklyn Park, Crystal, Golden Valley, Maple Grove, Minneapolis, Robbinsdale, Mississippi Watershed Management Organization, Bassett Creek Watershed Management Commission, Shingle Creek Watershed Management Commission, and West Mississippi Watershed Management Commission
Municipal Approval	Minneapolis, Golden Valley, Robbinsdale, Crystal, and Brooklyn Park

## 9.4 Section 106 Coordination

### 9.4.1 Section 106 Process

The Section 106 process consists of:

- Steps for identifying and evaluating historic properties



- Assessing the effects of a proposed project on historic properties
- Consultation for methods to avoid, minimize, or mitigate adverse effects

The goal of the Section 106 process is to avoid adverse effects to historic properties. Where avoidance cannot be accomplished, measures to mitigate adverse effects are undertaken. Adverse effects occur when the project results in changes to the property, its setting, or its use that affect the National Register of Historic Places (NRHP) characteristics of the property in a manner that diminishes the integrity of its location, design, setting, materials, workmanship, feeling, or association.

Methods for avoidance, minimization, or mitigation of impacts to historic property (any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the NRHP) will be developed by FTA in consultation with the Minnesota State Historic Preservation Office (SHPO) and other interested parties. The Advisory Council on Historic Preservation (ACHP) may also participate. The Minnesota Department of Transportation Cultural Resources Unit (MnDOT CRU) is carrying out many aspects of the Section 106 process on behalf of FTA.

The Section 106 process tasks conducted thus far have focused on identifying historic properties (buildings, structures, sites, districts, and objects) within the project's area of potential effect (APE) and identifying locations where the proposed project would have a potential adverse effect on those properties. Consultation began with SHPO in September 2011, and there have been a series of letters and responses submitted since that time, including transmittal of draft reports and recommendations for SHPO review and concurrence (see [Appendix D](#)). Consultation with SHPO and the findings of the cultural resources investigation to date are further detailed in Section 4.4, Cultural Resources.

If adverse effects to a historic property cannot be avoided in the design process, mitigation will be considered. Measures for avoidance, reduction, and mitigation will be addressed through the development of a Section 106 Agreement among the FTA, ACHP (if participating), Minnesota SHPO, Metropolitan Council, and other interested parties during the development of the Final EIS.

Local governments are entitled to participate in the Section 106 process as consulting parties, along with SHPO, Indian tribes, and other interested organizations and individuals. Consulting parties are able to share their views, receive and review pertinent information, offer ideas, and consider possible solutions together with the FTA and other parties. Consulting parties play an important role in determining how potential effects on historic properties will be avoided or mitigated during the planning and implementation of a project. In September 2011, letters were sent by MnDOT CRU on behalf of FTA, extending invitations to each city in the corridor to participate in the Section 106 review process as a consulting party. Each city, and the Minneapolis Park & Recreation Board, accepted and identified a contact person for the Section 106 process. Consulting party documentation can be found in [Appendix D](#).

#### 9.4.2 Tribal Consultation

In January 2012, FTA sent coordination letters to Native American tribes that may have an interest in the Bottineau Transitway project. The letters requested that tribes identify any historic, cultural, archaeological, or other concerns regarding the project, and invited them to public Scoping meetings scheduled later that month. It also invited tribes to let FTA know if they would prefer to schedule a separate meeting to discuss any specific tribal issues and concerns. Letters were sent to the following tribes:

- |  |   |
|--|---|
| ■ Fond du Lac Reservation Tribal Council   | ■ Upper Sioux Indian Community          |
| ■ Grand Portage Reservation Council and Tribal Historic Preservation Office (THPO) | ■ Standing Rock Sioux Tribe             |
| ■ Mille Lacs Band of Ojibwe  | ■ White Earth Tribal Council            |
|  | ■ Bois Forte Reservation Tribal Council |

- Prairie Island Indian Community Council
- Lower Sioux Indian Community Council
- Red Lake Tribal Council
- Shakopee Dakota Community Council
- Three Affiliated Tribes
- Bad River Band of Lake Superior Chippewa
- Flandreau Santee Community
- Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin
- Lac du Flambeau Band of Lake Superior Chippewa Indians of Wisconsin
- Lac Vieux Desert Band Ketegitigaaning Ojibwe Nation
- Red Cliff Band of Lake Superior Chippewa Indians
- Sokaogon Chippewa (Mole Lake)
- Spirit Lake Tribal Council
- St. Croix Chippewa Indians of Wisconsin
- Turtle Mountain Band of Chippewa
- Northern Cheyenne Tribe
- Fort Peck Tribes
- Leech Lake Band of Ojibwe
- Santee Sioux Nation
- Sisseton-Wahpeton Oyate of the Lake Travers Reservation

No requests for separate meetings were made. An example of an invitation letter can be found in [Appendix D](#). The FTA will continue to explore additional coordination opportunities with tribal representatives as the project continues.

## 9.5 Section 404/NEPA Merger Process

As a cooperating agency, the United States Army Corps of Engineers (USACE) has the ability to adopt the Draft EIS for its own NEPA compliance and have a more formal role and input into project development. This helps the USACE determine whether the proposed project is in compliance with the Clean Water Act (CWA), which allows them to issue a permit. USACE has its own process for determining the Least Environmentally Damaging Preferred Alternative (LEDPA), known as the NEPA/Section 404 permit (404) merger process. As part of this process, USACE evaluates the project and issues four points of concurrence on the project:

- 1) Purpose and Need and Alternative Screening Criteria
- 2) Alternatives to be Evaluated in Detail
- 3) Preferred Alternative and LEDPA
- 4) Permit Application and Compensatory Mitigation.

To facilitate this process, the project team provided USACE with a copy of the Water Resources Technical Report (Kimley-Horn and Associates, 2012) and other documentation demonstrating the evaluation of alternatives. A meeting was held with USACE on February 15, 2013, to review the project and discuss in greater detail the expectation for the process. As a follow-up to that meeting, the project team provided a number of project documents to assist USACE staff in its determination, including:

- Scoping Booklet (December 2011)
- Coordination Plan (October 2012)
- Scoping Decision Document (June 2012)
- Administrative draft chapters 1 (Purpose and Need) and 2 (Alternatives) of the Draft EIS
- Alternatives Analysis Study (March 2010)
- Locally Preferred Alternative (LPA) graphic

Additional meetings with USACE were held April 18, 2013 and July 9, 2013 to discuss specific alignments and share technical information comparing the alignments.

To date, USACE has provided concurrence with Points #1, 2, and 3. Specific to Point #1, in a letter dated June 19, 2013 ([Appendix D](#)), USACE reviewed and concurred with the purpose and need statement for use in NEPA documentation for the Bottineau Transitway Project. USACE also concurred on the array of alternatives considered for the Bottineau Transitway Project, and the alternatives that had been carried forward for further review (Point #2). In a letter dated October 1, 2013, USACE made the determination that Alternative B-C-D1 is the LEDPA, completing Point #3. Point #4 (permitting and mitigation) will occur prior to project implementation.

## 10.0 Financial Considerations

This chapter provides a summary of the financial considerations for the Bottineau Transitway alternatives, including a summary of capital costs, operations and maintenance (O&M) costs, and sources of funding.

### 10.1 Capital Cost Estimate

This section presents the capital cost estimates for the four light rail transit (LRT) alternatives under evaluation in this Draft Environmental Impact Statement (EIS). The capital cost estimates were developed based on the conceptual engineering plans dated September 5, 2012. [Table 10.1-1](#) provides a summary of the capital costs for each alternative evaluated.

#### 10.1.1 Projected Capital Expenditures

Capital cost estimates were prepared using the format and procedures currently required for project evaluation by the Federal Transit Administration (FTA). Standard cost categories (SCC) were used to group costs by various components such as guideway, stations, operations and maintenance facilities, site work, signalization and communications systems, right-of-way acquisition, and vehicles. “Soft costs or professional/technical services” are included for items such as engineering, construction services, insurance, and owner’s costs. Cost contingencies for uncertainty in both the estimating process and the scope of the project are also included.

##### Base Parameters

- Base Year – Year 2013
- Forecast Year – Year 2017 (approximate midpoint of the capital cost expenditures)
- Allocated Contingencies – Allocated contingencies are contingencies that are associated with individual cost estimate categories. These contingencies are intended to compensate for unforeseen items of work, quantity fluctuations, and variances in unit costs that develop as the project progresses through the various stages of design development. The level of allocated contingency applied to each cost category reflects the relative potential variability of those estimates. The following allocated contingencies were applied to the capital cost estimates:
  - SCC 10 – SCC 50: Infrastructure – 20 percent
  - SCC 60: Right-of-Way – 30 percent
  - SCC 70: Vehicles – five percent
- Unallocated Contingency – An unallocated contingency of 25 percent is included in the capital cost estimates. This contingency is applied to the total estimated capital cost for each alternative (SCC 10 through 70) and is added to any specific estimating contingencies that are included or allocated to the various cost categories.
- Escalation Factor – An annual escalation factor of three percent is used to inflate capital cost estimates from the base year to the forecast year.



**Table 10.1-1. Capital Cost Estimate Summary ('000s)**

SCC <sup>1</sup>	Description	Cost (\$ Million)							
		LRT A-C-D1		LRT A-C-D2		LRT B-C-D1 (Preferred Alternative)		LRT B-C-D2	
		2013\$	2017\$	2013\$	2017\$	2013\$	2017\$	2013\$	2017\$
10	Guideway & Track Elements	170,251	191,619	176,202	198,316	145,908	164,221	151,859	170,919
20	Stations	30,900	34,778	36,091	40,621	30,900	34,778	36,091	40,621
30	Operations & Maintenance Facility	49,440	55,645	49,440	55,645	49,440	55,645	49,440	55,645
40	Sitework & Special Conditions	84,570	95,184	80,943	91,101	98,418	110,770	94,790	106,687
50	Systems	130,527	146,910	140,435	158,061	140,667	158,321	150,575	169,473
<b>Construction Subtotal (10 - 50)</b>		<b>465,688</b>	<b>524,136</b>	<b>483,111</b>	<b>543,745</b>	<b>465,333</b>	<b>523,736</b>	<b>482,755</b>	<b>543,346</b>
60	Right-of-Way	61,354	69,054	108,697	122,340	51,118	57,533	98,461	110,819
70	Vehicles (LRT)	92,036	103,587	104,040	117,098	104,040	117,098	112,044	126,106
80	Prof. Services	135,840	152,889	151,807	170,860	134,074	150,902	149,813	168,616
90	Unallocated Contingency <sup>2</sup>	130,730	147,138	146,323	164,688	131,546	148,056	146,186	164,534
100	Finance Charges	0	5,000	0	5,000	0	5,000	0	5,000
<b>Subtotal (10 - 90)</b>		<b>885,648</b>	<b>1,001,804</b>	<b>993,978</b>	<b>1,123,731</b>	<b>886,111</b>	<b>1,002,326</b>	<b>989,259</b>	<b>1,118,420</b>

<sup>1</sup>Standard Cost Categories (SCC)

<sup>2</sup>An unallocated contingency of 25% is included in the capital cost estimates. This contingency is applied to the total estimated capital cost before allocated contingencies are added to the various cost categories. The following allocated contingencies were also applied with the capital cost estimates:

- SCC 10 – 50: Infrastructure – 20%
- SCC 60: Right-of-Way – 30%
- SCC 70: Vehicles – 5%

## Construction Costs

Construction costs for project elements that are included in SCC 10 – 50 were developed by multiplying measured quantities by a unit cost. Allowances were created to develop costs for elements that are not fully designed at this stage of the project, such as utility and communication systems.

### ■ SCC 10 – Guideway

This category includes costs associated with track, civil, and structural elements that are directly associated with construction of the guideway structures, roadbed, pavement, or track.

- Ballasted track is provided on Alignments A, B, C, D1, the northerly portion of Alignment D2, and within the median on TH 55 (Alignment D Common Section).
- Embedded track is provided on the West Broadway and Penn Avenue portions of Alignment D2 and at all grade crossings.
- Direct fixation track is provided on aerial structures.
- Costs associated with relocating the existing BNSF track approximately 25 feet from its current location are included as part of the guideway cost.
- Guideway aerial structures are included as part of the guideway cost.

### ■ SCC 20 – Stations

This category includes costs associated with station platforms, ramps, platform fixtures, canopies, and passenger amenities, along with costs for vertical circulation (elevators, escalators, and stairs) to the platform.

### ■ SCC 30 – Support Facilities

This category includes costs associated with the construction of an operations and maintenance facility (OMF). Approximately 14 acres will be required on site for an OMF that is accessible for each LRT alternative evaluated.

### ■ SCC 40 – Sitework and Special Conditions

This category includes costs associated with roads, parking lots, retaining/sound walls, pedestrian/bike accessways, landscaping, utility work, environmental mitigation, hazardous material, and soil contamination.

SCC 40 costs for each alignment were calculated using the cost categories such as common excavation, contaminated soil removed, bridge modifications, landscaping, sidewalk, pavement, curb and gutter, fence, park-and-ride (surface and structured), and traffic control. Some of these categories were further defined as “high,” “medium,” and “low” costs to account for differences between the various alignment configurations. Within Alignment D1, the guideway conflicts with an existing Xcel Energy Transmission line. To the extent feasible at this time, Alignment D1 cost estimates include this potential utility line relocation.

### ■ SCC 50 – Systems

This category includes costs associated with train control signals, communication systems, central control hardware and software, traction power substations, overhead catenary systems (OCS), underground ductbanks, automated fare collection, grade crossing protection, and roadway traffic signal systems.

SCC 50 costs for each alignment were calculated using the cost categories identified below. These costs are based on either the route length or quantity of proposed signalized intersections.

- Signal System Allowance
- Signal/Communication Ductbank Allowance
- Grade Crossing Protection (LRT Only Crossings)
- Traffic Signal (Small, Medium, Large)
- BNSF Crossing Protection (Combined BNSF – LRT Crossings)
- Traction Power Substations ( $\frac{3}{4}$ - to 1-mile spacing)
- Traction Electrification Ductbank Allowance
- OCS Foundation Allowance
- OCS Simple Catenary Allowance
- Communications Allowance
- Station Communication Allowance
- Central Control Allowance

#### Right-of-Way Costs

Right-of-way costs identified in SCC 60 were developed by reviewing tax-assessed values for each of the impacted properties throughout the corridor. Tax assessed values were increased to develop appropriate acquisition costs to account for relocation and potential damages costs for partial takes, full takes, and temporary easements. An appraisal was completed in 2012 to determine costs associated with constructing and operating within the BNSF right-of-way. These costs have been included in the updated capital cost estimate. The appraised value was based on an across the fence (ATF) value multiplied by a corridor enhancement factor, which is defined as the premium above and beyond the ATF value, to determine the right-of-way cost that was included in the capital cost estimate. The corridor enhancement factor is used to account for the advantages gained by a buyer through purchasing or locating on an existing corridor versus constructing a replacement corridor.

#### Vehicles

The number of light rail vehicles purchased is based on the most current operating and ridership information and includes a 15 percent spare ratio.

#### Professional Services

Costs for professional services were generated by applying the following percentages to the applicable SCC categories.

- SCC 10 – SCC 50: Infrastructure: – 30 percent
- SCC 60: Right-of-Way – 30 percent
- SCC 70: Vehicles – six percent

#### 10.1.2 Refinements

Capital cost refinements will occur as the project progresses through development and into implementation. Capital cost estimates will be updated as assumptions and the proposed project elements are refined. Capital cost contingencies will also be revisited accordingly as the level of design advances.

## 10.2 Operations and Maintenance Costs

O&M costs include an estimation of the annual cost to operate, maintain, and administer a transit system for a given set of service indicators. O&M costs are expressed as the annual total of employee earnings and fringe benefits, contract services, materials and supplies, utilities, and other day-to-day expenses incurred in the operation and maintenance of a transit system. O&M costs for the Bottineau Transitway Project are described in this section.

### 10.2.1 Operations and Maintenance Costs

The FTA requires the use of a resource-driven allocated cost model for O&M cost estimates in a New Starts project. Resource-driven models assign specific costs to specific service characteristics (e.g., train operator costs assigned to annual revenue train-hours). Costs for that particular item (e.g., train operators) are then determined by each alternative's service characteristics (e.g., annual revenue train-hours).

Transit operations affected by the project alternatives include Metro Transit, Metropolitan Council-funded routes, and Maple Grove Transit.

#### Cost Model Parameters

Annual O&M costs were developed for the No-Build, Enhanced Bus/Transportation Systems Management (TSM), and Build alternatives using resource build-up cost models. These models were developed for the Bottineau Transitway Project based on 2010 actual expenditures for Metro Transit bus and LRT, Metropolitan Council-funded bus routes, and Maple Grove Transit bus service. Per FTA guidance, a detailed description of the O&M cost model is provided separately in the project's Operating & Maintenance Cost Methodology Report (Connetics Transportation Group, 2012).

O&M costs depicted in this section are based on actual 2010 expenses, consumption, and productivity factors (see the Operating & Maintenance Cost Results Report, Connetics Transportation Group, 2012) and inflated to 2013 dollars using an annual inflation factor of three percent.

#### Cost Model Inputs

Annual operating statistics (model inputs) were developed for the No-Build, Enhanced Bus/TSM, and Build alternatives for bus and LRT services based on the project's proposed operations plans and O&M cost methodology, as referenced above. Those operating statistics are presented in this project's Transit Operations Plans Report (Connetics Transportation Group, 2012). It is important to note that all model inputs for the alternatives reflect the Bottineau Transitway portion of regional transit, rather than system-wide service.

The Bottineau Transitway O&M cost includes the following bus and LRT inputs:

#### ■ Metro Transit Bus Input Variables

- Annual Revenue Bus-Hours (all buses)
- Annual Revenue Bus-Miles (non-articulated bus)
- Annual Revenue Bus-Miles (articulated bus)
- Peak Buses (all buses)
- Transit Centers
- Operating Garages (buses dispatched into service)
- Total Garages (includes heavy maintenance facility)



#### ■ Metro Transit LRT Input Variables

- Peak Cars
- Annual Revenue Car-Miles
- Annual Revenue Train-Hours
- Passenger Stations (stations with, and without, park-and-ride facilities)
- End-of-Line Stations
- Fixed Guideway Directional Route Miles
- Maintenance Facilities

#### ■ Metropolitan Council-Funded Bus Input Variables

- Annual Revenue Bus-Hours
- Annual Revenue Bus-Miles
- Peak Buses

#### ■ Maple Grove Transit Fixed Route Input Variables<sup>1</sup>

- Annual Revenue Bus-Hours
- Annual Revenue Bus-Miles
- Peak Buses

### O&M Cost Estimate Summary

**Table 10.2-1** summarizes the No-Build alternative's cost. The No-Build alternative, with its modest service improvements, will add \$6.24 million over the annual O&M cost of existing service in the Bottineau Transitway.

**Table 10.2-1. No-Build Alternative Operations & Maintenance Cost (in 2013 dollars over Existing Service)**

Inputs	No-Build
Metro Transit Bus	\$4,769,208
Met Council (Contracted) Bus	\$243,982
Maple Grove Transit Bus	\$1,225,434
LRT <sup>2</sup> - Bottineau Transitway Only	\$0
<b>Total</b>	<b>\$6,238,624</b>

<sup>1</sup> O&M costs depicted in this section are based on actual 2010 expenses, consumption, and productivity factors and inflated to 2013 dollars using an annual inflation factor of three percent.

<sup>2</sup> Does not include costs related to Hiawatha LRT operations

**Table 10.2-2** summarizes cost estimates for the Enhanced Bus/TSM and Build alternatives by transit operator and mode, presented as an incremental cost over the No-Build alternative.

<sup>1</sup> Maple Grove Transit includes statistics for two contracted transit providers. Refer to the *O&M Cost Methodology Report* for more detail.

**Table 10.2-2. Operations & Maintenance Cost Summary (in 2013 dollars<sup>1</sup> over No-Build)**

Inputs	Enhanced Bus/TSM	A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2
Metro Transit Bus	\$14,188,393	\$3,617,476	\$3,617,476	\$2,314,283	\$2,314,283
Met Council (Contracted) Bus	\$876,646	\$1,005,793	\$1,005,793	\$876,646	\$876,646
Maple Grove Transit Bus	\$2,228,636	\$2,949,539	\$2,949,539	\$2,228,636	\$2,228,636
LRT <sup>2</sup> – Bottineau Transitway Only	\$0	\$25,201,860	\$26,657,641	\$27,120,249	\$28,254,739
<b>Total</b>	<b>\$17,293,675</b>	<b>\$32,774,668</b>	<b>\$34,230,449</b>	<b>\$32,539,814</b>	<b>\$33,674,304</b>

<sup>1</sup> O&M costs depicted in this section are based on actual 2010 expenses, consumption, and productivity factors and inflated to 2013 dollars using an annual inflation factor of three percent.

<sup>2</sup> Does not include costs related to Hiawatha LRT operations

## 10.3 Sources of Funding

This section presents a summary of the funding sources identified for the Bottineau Transitway as identified in this Draft EIS. The following provides a description of the federal, state, and local funding project partners, and the capacity of the partners to fund the project.

### 10.3.1 Capital Funding

The Metropolitan Council's *2030 Transportation Policy Plan (TPP)* assumes that federal New Starts funding will be secured for 50 percent of the project cost. In addition to New Starts funding, it is anticipated that the remaining 50 percent of the project cost will be funded through the Counties Transit Improvement Board (CTIB) sales tax revenues (30 percent), State of Minnesota General Obligation bonds (10 percent), and the Hennepin County Regional Railroad Authority (HCRRA) (10 percent) (see [Table 10.3-1](#)).

**Table 10.3-1. Funding by Source**

Source	Share	Funding by Source (\$ Million)			
		A-C-D1	A-C-D2	B-C-D1 (Preferred Alternative)	B-C-D2
Federal Transit Administration (FTA)	50%	\$500,902	\$561,866	\$501,163	\$559,210
County Transit Improvement Board (CTIB)	30%	\$300,541	\$337,119	\$300,698	\$335,526
State of Minnesota	10%	\$100,180	\$112,373	\$100,233	\$111,842
Hennepin County Regional Railroad Authority (HCRRA)	10%	\$100,180	\$112,373	\$100,233	\$111,842
<b>Total</b>	<b>100%</b>	<b>\$1,001,804</b>	<b>\$1,123,731</b>	<b>\$1,002,326</b>	<b>\$1,118,420</b>

### Federal Funding

HCRRA is intending to seek Capital Investment Grant Program (CIG) funding from FTA for the Preferred Alternative examined in this NEPA document. The CIG program, more commonly known as the New Starts, Small Starts, and Core Capacity program, involves a multi-year, multi-step process that project sponsors

must complete before a project is eligible for funding. The steps in the process and the basic requirements of the program can be found on FTA's website at [www.fta.dot.gov](http://www.fta.dot.gov).

FTA must evaluate and rate proposed projects seeking funding from the Capital Investment Grant Program on a set of project justification and local financial commitment criteria specified in law. The criteria evaluate the merits of the project and the projects sponsor's ability to build and operate it as well as the existing transit system. FTA assigns ratings from low to high based on information that project sponsors submit on the project cost, benefits, requested amount of Capital Investment Grant Program funds, and overall financial plan. Projects must receive a medium or better overall rating to advance through the steps in the process and be eligible for funding from the program. As projects proceed through the steps in the process, information concerning costs, benefits, and impacts is refined and the ratings are updated to reflect new information.

Changes in federal law instituted by MAP 21 will require FTA to evaluate and rate the project for federal funding after the completion of the NEPA process.

## State and Local Funding

### State

Transitway projects are funded through the state general fund and are made available through appropriations by the state legislature. The appropriations that are made available each year varies. General funds may be used for transitway operations but are typically not used for capital investments. Capital investments are funded through appropriations or State bonds. Specific Minnesota appropriation language may include additional restrictions on the uses of these funds.

### CTIB

In April 2008, a joint powers board, which was comprised of representatives from Anoka, Dakota, Hennepin, Ramsey, and Washington Counties, known as the Counties Transit Improvement Board (CTIB), was created under authorizing legislation contained in Minnesota Statute 297A.99. CTIB implemented a quarter-cent sales tax and a \$20 motor vehicle sales tax to fund transitway projects within these counties, which may be used for capital and operating costs. CTIB sales tax revenues cannot be used to fund more than 30 percent of total transitway capital costs, though an individual component of the overall project may receive more than 30 percent if approved by CTIB. A minimum of 10 percent local (non-state) match and 10 percent state match is required for CTIB funding.

A CTIB grant application was submitted in 2012 requesting a total of \$4.0 million, 60 percent (\$2.4 million) from CTIB and 40 percent (\$1.6 million) in local match funds. In the future, CTIB's financial contribution will be balanced at 30 percent of the overall Bottineau Transitway project cost.

### Hennepin County Regional Railroad Authority

Hennepin County Regional Railroad Authority (HCRRA) has the power to impose a property tax levy not to exceed 0.04835 percent of the market value of all taxable property within HCRRA boundary per Minnesota Statute 398A.04. Bonds, per Minnesota Statute 398A.07, may be issued by HCRRA to fulfill its purpose and provide funds for operating expenses in anticipation of revenues or for capital expenditures in anticipation of other funds.

HCRRA funds can be used for the Alternatives Analysis (AA) phase of development, environmental processes, and right-of-way acquisition, or for the local match in rail projects. However, pursuant to state statute, HCRRA funds will comprise no more than 10 percent of the Bottineau Transitway locally preferred alternative's total estimated capital costs.

### 10.3.2 Operations and Maintenance Funding

To finance the O&M of the Bottineau Transitway, the financial plan will estimate revenues from a variety of potential sources. Operating resources for the project will come from passenger fares, CTIB revenues, and state assistance. A plan for operating resources will be updated and included in the Final EIS.



## 11.0 Evaluation of Alternatives

This chapter presents a summary evaluation of the alternatives presented in the Bottineau Transitway Draft EIS, including the No-Build, Enhanced Bus/Transportation System Management (TSM), and all Build alternatives considered. This summary focuses on information presented in the Draft EIS that distinguishes the alternatives from each other and is most relevant for project decision making. The results are intended to inform the identification of the environmentally preferred alternative under the National Environmental Policy Act (NEPA) and the Minnesota Environmental Policy Act (MEPA).

### 11.1 Evaluation Framework and Methods

As described in Chapter 1 Purpose and Need, the Bottineau Transitway project development and evaluation process responds to the requirements of NEPA, MEPA, and the Federal Transit Administration (FTA) New Starts process.

**The purpose of the Bottineau Transitway is to provide transit service, which will satisfy the long-term regional mobility and accessibility needs for businesses and the traveling public.**

The Bottineau Transitway project is needed to effectively address long-term regional transit mobility and local accessibility needs while providing efficient, travel-time competitive transit service that supports economic development goals and objectives of local, regional, and statewide plans.

As described in detail in Chapter 1 Purpose and Need, residents and businesses in the Bottineau Transitway project area need improved access to the region's activity centers to fully participate in the region's economy. Access to jobs in downtown Minneapolis and northbound reverse commute transit options to serve jobs in the growing suburban centers are crucial to continued economic vitality. Moreover, traffic congestion is expected to intensify in the Twin Cities Metropolitan Area through the year 2030, and fiscal conditions limit the ability of the region to address demand through highway capacity investment. Current transit options in the Bottineau Transitway project area offer a limited number of travel-time competitive alternatives to the single-occupant vehicle. Without major transit investments, it will be difficult to effectively meet the transportation needs of people and businesses in the corridor, manage highway traffic congestion in the project area, and achieve the region's 2030 goal, as identified in the Metropolitan Council's *2030 Transportation Policy Plan (TPP)* as doubling transit ridership by 2030.

Five factors contribute to the need for the Bottineau Transitway project:

- Growing travel demand resulting from continuing growth in population and employment
- Increasing traffic congestion and limited fiscal resources
- People who depend on transit
- Limited transit service to suburban destinations (reverse commute opportunities) and time-efficient transit options
- Regional objectives for growth stated in the Regional Development Framework

The project's goals and objectives, which were derived from the project purpose and need statement, are summarized in [Table 11.1-1](#). Developed early in the project, the goals and objectives served as a framework for developing project alternatives, as well as for evaluating alternatives later in the process. Goals 1, 2, and 3 reflect the core purpose and need of the project; Goals 4 and 5 reflect broader community goals.

The Bottineau Transitway alternatives have been evaluated based on the ability to meet the project's purpose and need and the balance between benefits and impacts.

**Table 11.1-1. Bottineau Transitway Goals and Objectives**

<b>Goal 1: Enhance Regional Access to Activity Centers</b>	
<b>Objectives</b>	
1	Maximize total transit riders
2	Improve service to people who depend on transit
3	Expand reverse commute and off-peak transit opportunities
4	Increase transit system linkages, access to regional destinations, and multimodal transportation opportunities
5	Maximize transit access to housing, employment, schools, community services, health care facilities, and activity centers
<b>Goal 2: Enhance the Effectiveness of Transit Service within the Corridor</b>	
<b>Objectives</b>	
6	Maximize new transit riders
7	Maximize passengers per hour of revenue service
8	Maximize traveler time savings
<b>Goal 3: Provide a Cost-Effective and Financially Feasible Transit System</b>	
<b>Objectives</b>	
9	Balance project costs and benefits
10	Minimize project capital and operating cost
11	Maximize long-term investment in the regional transit system
12	Maximize flexibility to efficiently expand the transit investment to accommodate transitway demand beyond 2030 weekday travel demand forecasts
<b>Goal 4: Promote Sustainable Development Patterns</b>	
<b>Objectives</b>	
13	Promote land development and redevelopment that supports sustainable transportation policies
14	Ensure compatibility with local and regional comprehensive plans
15	Support economic development and redevelopment efforts
<b>Goal 5: Support Healthy Communities and Sound Environmental Practices</b>	
<b>Objectives</b>	
16	Minimize impacts on wetlands/water/floodplains, parks, visual resources, noise/vibration, and historic/cultural resources
17	Minimize short- and long-term impacts to property, property access, and on-street parking
18	Maximize cohesion, preservation, and enhancement of Bottineau Transitway communities
19	Maximize pedestrian and bicycle connections to the Bottineau Transitway
20	Maximize health, environmental, and economic benefits to the Bottineau Transitway communities
21	Minimize disproportionately high and adverse impacts on the region's minority and/or low-income communities
22	Minimize area traffic impacts

## 11.2 Alternative Key Differentiators

The discussion below describes the No-Build, Enhanced Bus/TSM, and Build alternatives and summarizes the differentiating adverse impacts and benefits of each, according to the disciplines addressed in the Draft EIS and the project purpose and need. While the Draft EIS as a whole presents a comprehensive discussion of each discipline, the discussion here focuses on the impacts and benefits that best distinguish the alternatives from each other. This information is summarized in [Table 11.2-1](#), which shows a subset of the full set of measures used in the comprehensive analysis conducted as part of the EIS process. The measures in this table are considered key differentiators among alternatives. Based on the information in [Table 11.2-1](#) and the analysis of each alternative, each alternative was rated on how well it performs with respect to purpose and need and project goals, adverse impacts, benefits, and overall performance. One of three ratings was assigned:

- Good: Good performance against goals and objectives and/or minor adverse impacts
- Fair: Fair performance against goals and objectives and/or moderate adverse impacts
- Poor: Poor performance against goals and objectives and/or severe adverse impacts.

Summary rating results are shown in [Table 11.2-2](#). If a “poor” rating is assigned to any of the first three categories (purpose and need, adverse impacts, benefits), then the overall performance is automatically rated as “poor.” In other words, a “poor” rating in one area cannot be overcome by “fair” or “good” performance in other areas with respect to the overall rating.

**Table 11.2-1. Bottineau Transitway Key Differentiators Evaluation Summary<sup>1</sup>**

Draft EIS Section	Topic	Goal <sup>2</sup>	Objective	Measure	No-Build	Enhanced Bus/TSM	LRT A-C-D1	LRT A-C-D2	LRT B-C-D1 (Preferred Alternative)	LRT B-C-D2
3.1	Transit Conditions	1	1. Maximize total transit riders	Average weekday project boardings	N/A	18,300 (Route 731/732)	27,600	27,200	27,000	26,000
3.1	Transit Conditions	2	6. Maximize new transit riders	New transit riders (compared to No-Build)	N/A	7,350	15,750 <sup>3</sup>	15,150 <sup>3</sup>	14,500	13,800
3.1	Transit Conditions	2	8. Maximize travel time savings	Transportation system daily user benefit hours	N/A	N/A	9,460 (compared to TSM)	9,000 (compared to TSM)	8,520 (compared to TSM)	7,940 (compared to TSM)
3.1	Transit Conditions	2	8. Maximize travel time savings	End-to-end travel time (southern terminus at 5th and Marquette/Nicollet)	N/A	48:44/50:50 (Route 731/732)	29:20	33:19	32:47	36:46
3.5	Parking	5	17. Minimize short- and long-term impacts to on-street parking	Loss of on-street parking	0	0	0	270 spaces	0	270 spaces
4.3	Displacement of Residents and Businesses	5	17. Minimize short- and long-term impacts to property, property access	Right-of-way acquisition through full takes (parcels (acres))	0	0	17 (7.0)	142 (26.7)	18 (8.3)	143 (28.0)
4.3	Displacement of Residents and Businesses	5	17. Minimize short- and long-term impacts to property, property access	Right-of-way acquisition through partial takes (parcels (acres))	0	0	28-30 (13.9-14.3)	50 (15.8)	55-57 (8.5-8.9)	77 (10.4)
4.4	Cultural Resources <sup>4</sup>	5	16. Minimize impacts to the natural and built environment	Impacts on historic and cultural resources	None	None	0 adverse 14 potential adverse	1 adverse 19 potential adverse	0 adverse 14 potential adverse	1 adverse 19 potential adverse
4.5	Visual/Aesthetics	5	16. Minimize impacts to the natural and built environment	Impacts on visual resources	None	Minimal	Moderate	High	Moderate	High
4.6	Business Impacts	5	17. Minimize short- and long-term impacts to property, property access	Loss of street access directly in front of property	None	Limited (from park-and-ride)	Limited; some construction impacts	Greater impacts (right-of-way, parking loss); construction impacts	Limited; some construction impacts	Greater impacts (right-of-way, parking loss); construction impacts
5.2 5.3	Floodplains Wetlands	5	16. Minimize impacts to the natural and built environment	Impacts on wetlands, water, and floodplains	None	None	Wetland fill: 8.6 acres Floodplain fill: 17,250 cubic yards	Wetland fill: 3.2 acres Floodplain fill: 6,250 cubic yards	Wetland fill: 9.4 to 10.2 acres Floodplain fill: 18,700 cubic yards	Wetland fill: 4.0 to 4.8 acres Floodplain fill: 7,700 cubic yards
5.6	Noise <sup>5</sup>	5	16. Minimize impacts to the natural and built environment	Mitigated Noise Impacts (# of receptors)	No significant impacts	No significant impacts	<u>Moderate Impacts</u> Alignment A: 5-10 Alignment C: 350-355 Alignment D1: 25-35 D Common: 15-20  <u>Severe Impacts</u> Alignment A: 0 Alignment C: 15-20 Alignment D1: 0-5	<u>Moderate Impacts</u> Alignment A: 5-10 Alignment C: 350-355 Alignment D2: 305-310 D Common: 15-20  <u>Severe Impacts</u> Alignment A: 0 Alignment C: 15-20 Alignment D2: 5-10	<u>Moderate Impacts</u> Alignment B: 55-60 Alignment C: 350-355 Alignment D1: 25-35 D Common: 15-20  <u>Severe Impacts</u> Alignment B: 5-10 Alignment C: 15-20 Alignment D1: 0-5	<u>Moderate Impacts</u> Alignment B: 55-60 Alignment C: 350-355 Alignment D2: 305-310 D Common: 15-20  <u>Severe Impacts</u> Alignment B: 5-10 Alignment C: 15-20 Alignment D2: 5-10



**Table 11.2-1. Bottineau Transitway Key Differentiators Evaluation Summary<sup>1</sup> (continued)**

Draft EIS Section	Topic	Goal <sup>2</sup>	Objective	Measure	No-Build	Enhanced Bus/TSM	LRT A-C-D1	LRT A-C-D2	LRT B-C-D1 (Preferred Alternative)	LRT B-C-D2
7.6	Environmental Justice	5	21. Minimize disproportionately high and adverse impacts on the region's minority and/or low-income communities		None	None	No disproportionately high or adverse impacts	Potentially high or disproportionate impacts (ped/bike, parking, community facilities, displacements, visual)	No disproportionately high or adverse impacts	Potentially high or disproportionate impacts (ped/bike, parking, community facilities, displacements, visual)
10.1	Financial Considerations (Capital Costs)	3	10. Minimize project capital and operating cost	Project capital cost (\$2017)	N/A	N/A	\$1,002 million <sup>6</sup>	\$1,124 million <sup>5</sup>	\$1,002 million	\$1,118 million

<sup>1</sup> The performance measures in this table are a subset of the full set of measures used in the comprehensive analysis conducted as part of the EIS process. The measures here are considered key differentiators among the alternatives.

<sup>2</sup> No objectives under Goal 4 (Promote Sustainable Development Patterns) were identified as key differentiators























































<sup>3</sup> Maple Grove Transit currently provides excellent transit service to its commuter express market. There is some uncertainty as to whether or not commuter express riders would chose to move from express bus service to LRT service.

<sup>4</sup> Following the provisions of the Section 106 review process, ways to avoid, minimize, and mitigate adverse effects to historic properties will continue to be explored through consultation with the SHPO, Section 106 consulting parties, other interested parties, and the public. The Advisory Council on Historic Preservation (ACHP) may also join in this consultation. Measures for avoidance, minimization, and mitigation will be stipulated in a Section 106 Agreement signed by the FTA, the SHPO, the ACHP (if participating), and other consulting parties. FTA will execute a Section 106 agreement prior to the Final EIS/Record of Decision (ROD). The project will be implemented in accordance with the stipulations in the Section 106 agreement.




<sup>5</sup> Noise mitigation is considered depending on the need, feasibility, reasonableness, and effectiveness of potential options. The FTA states that in considering potential noise impact, severe impacts should be mitigated if at all practical and effective. At the moderate level, more discretion should be used, and other project specific factors should be included in considering the need for mitigation. These factors include the existing noise level, predicted increase over the existing noise levels, the types and number of noise sensitive land uses affected, the noise sensitivity of the properties, the acoustic effectiveness of mitigation options, and the cost effectiveness of mitigation the noise.

<sup>6</sup> The capital cost estimates for Alignment A assume significant cooperation from current landowners to prepare the corridor for transit service. Alignment A requires construction of a new roadway, Arbor Lakes Parkway, separate from the transitway project and through the gravel mining area in Maple Grove, in a way that would accommodate LRT and provide access to the future development.

Table 11.2-2. Summary Performance Ratings of Alternatives

Performance Category	No-Build	Enhanced Bus/TSM	LRT A-C-D1	LRT A-C-D2	LRT B-C-D1 (Preferred Alternative)	LRT B-C-D2
<b>Purpose and Need</b>						
Goal 1: Enhance Access to Regional Activity Centers						
Goal 2: Enhance the Effectiveness of Transit Service within the Corridor						
Goal 3: Provide a Cost-effective and Financially Feasible Transit System						
Goal 4: Promote Sustainable Development Patterns						
Goal 5: Support Healthy Communities and Sound Environmental Practices						
<b>Adverse Impacts</b>						
<b>Benefits</b>						
<b>Overall Performance<sup>1</sup></b>						

**RATINGS KEY:**

-  Good Performance and/or Minor Adverse Impacts
-  Fair Performance and/or Moderate Adverse Impacts
-  Poor Performance and/or Severe Adverse Impacts

1. Note: If a “poor” rating is assigned to any of the first three categories (purpose and need, adverse impacts, benefits), then the overall performance is automatically rated as “poor.” In other words, a “poor” rating in one area cannot be overcome by “fair” or “good” performance in other areas with respect to the overall rating.

### 11.2.1 No-Build Alternative

The No-Build alternative reflects existing and committed improvements to the regional transit network for the horizon year of 2030. Primary among these are the other regional transitway projects (Green Line LRT, Red and Orange Line BRT) and associated bus service changes in these corridors. The full list of projects is described in Chapter 2 Alternatives. The purpose of the No-Build alternative is to provide a benchmark against which project Build alternatives can be compared.

#### Relation to Purpose and Need/Goals and Objectives

The No-Build alternative would not meet the purpose and need for the project. It would not effectively address the long-term regional transit mobility and local accessibility needs, nor would it provide efficient, travel-time competitive transit service to support the land use and economic development goals of local, regional, and statewide plans. While it meets some individual project objectives, the No-Build alternative would not satisfy four of the five project goals.

#### Summary of Differentiating Impacts and Benefits

The No-Build alternative has only minor adverse impacts related to the committed improvements included in it. However, the No-Build alternative does not provide measurable transportation benefits compared to existing conditions nor does it address the Bottineau Transitway transportation goals and objectives.

#### Performance Summary

The overall performance of the No-Build alternative is poor. It does not meet the project purpose and need.

### 11.2.2 Enhanced Bus/TSM Alternative

The Enhanced Bus/TSM alternative is defined as enhancements and upgrades to the existing transportation system in the corridor. It represents an attempt to meet the project's purpose and need as much as possible without a major transit capital investment. It includes service improvements intended to provide transit service comparable to the Build alternatives without the significant capital investment of building a transitway. It includes adding a proposed park-and-ride facility on West Broadway near TH 610, new limited stop bus routes, and increased service on existing routes.

#### Relation to Purpose and Need/Goals and Objectives

The Enhanced Bus/TSM alternative would not meet the project purpose and need. While the Enhanced Bus/TSM alternative provides additional transit service, it does not meet the project goals of enhancing access to regional activity centers, enhancing the effectiveness of transit services within the corridor, or promoting sustainable development patterns.

#### Summary of Differentiating Impacts and Benefits

The Enhanced Bus/TSM alternative has only minor adverse impacts resulting from the new park-and-ride and additional bus routes and service that make up the alternative.

The Enhanced Bus/TSM alternative provides poor to fair transportation performance:

- Transit Ridership: 18,300 total weekday boardings (Route 731/732) and 7,350 new transit riders compared to the No-Build
- Travel Time: Estimated end-to-end travel time of 48-50 minutes

While the alternative would generate new riders, its travel time performance is poor, given that service would be provided by buses operating in mixed-traffic. Therefore, this alternative does not support Bottineau Transitway Goal 1 (Enhance Regional Access to Activity Centers), Goal 2 (Enhance the

Effectiveness of Transit Service within the Corridor), or Goal 4 (Promote Sustainable Development Patterns).

### Performance Summary

The overall performance of the Enhanced Bus/TSM alternative is poor. While the alternative has only minor adverse impacts, it provides relatively little benefit and does not meet the project purpose and need. For these reasons, the Enhanced Bus/TSM alternative is not recommended as the environmentally preferred alternative for the Bottineau Transitway.

#### 11.2.3 Alternative A-C-D1

Alternative A-C-D1 would provide LRT service between Maple Grove and Minneapolis via the future Arbor Lakes Parkway, Brooklyn Boulevard, the BNSF railroad, and TH 55.

#### Relation to Purpose and Need/Goals and Objectives

The assessment of Alternative A-C-D1 against the five project goals results in a fair performance rating. The justification for this rating is provided in the discussion below.

#### Summary of Differentiating Impacts and Benefits

Alternative A-C-D1 has moderate impacts. Key differentiators are as follows:

- Wetlands and Floodplains: Alternative A-C-D1 has impacts on wetlands (8.6 acres) and floodplains (17,250 cubic yards).
- Cultural Resources: Alternative A-C-D1 has no determined adverse effect on historic resources and potential adverse effect on 14 resources.
- Environmental Justice: Alternative A-C-D1 has no disproportionately high or adverse impacts on environmental justice communities.

The relative lack of adverse physical impacts of Alternative A-C-D1 is due partly to the location of a portion of the alternative in the BNSF railroad corridor or on roadway right-of-way. The railroad corridor is either below the street grade or is at grade with limited street crossings and is physically separated from the street network and most development, which helps minimize adverse physical impacts.

Despite the relative lack of adverse physical impacts, several factors place Alternative A-C-D1 at a distinct disadvantage from a cost and implementation perspective. The northern segment of Alternative A-C-D1 is located in an area of the city of Maple Grove that is currently in use for gravel mining. While the area is zoned for future mixed-use development, there is no timeline established for this land use transition to occur. The capital cost estimate for Alternative A-C-D1 assumes significant cooperation in this location and elsewhere in the corridor from private landowners to transition the corridor from industrial (mining) operations to transit services. In addition, construction of the northern segment of Alternative A-C-D1 requires construction of a new roadway (Arbor Lakes Parkway), separate from the transitway project, to accommodate LRT and provide access to future development. These factors in combination are substantial disadvantages with respect to timely implementation of Alternative A-C-D1 and realization of anticipated land use, economic development, and ridership benefits. Of the adverse impacts of Alternative A-C-D1, these are the most substantial and support the poor performance rating with respect to adverse impacts.

Alternative A-C-D1 would deliver moderate transportation benefits:

- Transit Ridership: 27,600 total weekday project boardings and 15,750 new transit riders compared to the No-Build



- User Benefit: 9,460 daily user benefit hours
- Travel Time: Estimated end-to-end travel time of 29:20

While Alternative A-C-D1 would have generally good transportation performance, there is uncertainty as to whether or not existing commuter express riders would choose to move from the current Maple Grove express bus service to LRT service, given the high quality of that current service. If this were the case, not all of the ridership benefits might be realized.

### Performance Summary

Alternative A-C-D1 would deliver a fair performance overall. Despite its good performance in most benefit areas and relatively minor adverse physical impacts, construction of the north end of the alternative in Maple Grove could be delayed or made more expensive, as much of the adjacent land is in active use for gravel mining. Infrastructure and land use development investments (including the future Arbor Lakes Parkway and land use development around station areas) outside of the transitway project are required for implementation of the transitway. This also puts Alternative A-C-D1 at a disadvantage with respect to short-term economic development benefit. These factors, combined with the availability of an alternative with similar levels of benefit without such short-term implementation challenges, are the reasons why Alternative A-C-D1 is not recommended as the environmentally preferred alternative for the Bottineau Transitway.

#### 11.2.4 Alternative A-C-D2

Alternative A-C-D2 would provide LRT service between Maple Grove and Minneapolis via the future Arbor Lakes Parkway, Brooklyn Boulevard, the BNSF railroad, West Broadway Avenue, Penn Avenue, and TH 55.

### Relation to Purpose and Need/Goals and Objectives

The assessment of Alternative A-C-D2 against the five project goals results in a poor performance rating. The justification for this rating is provided in the discussion below. The alternative satisfies four of the five goals of the transitway project. Because of its degree of adverse impact on neighboring properties along the D2 alignment in north Minneapolis, Alternative A-C-D2 does not meet project Goal 5 (Support Healthy Communities and Sound Environmental Practices).

### Summary of Differentiating Impacts and Benefits

There is a wide range of adverse impacts associated with Alternative A-C-D2, with many of them occurring in the Penn/Broadway Avenue portion. Impacts include:

- Wetlands and Floodplains: Alternative A-C-D2 has impacts on wetlands (3.2 acres) and floodplains (6,250 cubic yards)
- Property impacts: Alternative A-C-D2 would require the full acquisition of 143 parcels and partial acquisition of 50 additional parcels, most of them on Penn Avenue where a row of houses would need to be acquired for about one mile of residential frontage.
- Noise: The alternative would have greater noise impacts (following mitigation) than the Build alternatives that include the D1 alignment, with moderate noise impacts to over 300 receptors in the D2 alignment.
- Visual: The alternative would result in high visual impact.
- Cultural Resources: Alternative A-C-D2 has a determined adverse effect on one historic resource and potential adverse effect on an additional 19 resources.

- **Parking:** There would be an estimated loss of 270 on street parking spaces.
- **Access impacts:** The alternative would result in loss of street access to business and residential properties.
- **Lack of public support:** The possibility of constructing LRT on Penn/Broadway Avenues has been a major concern to area residents and other stakeholders.
- **Environmental Justice:** The alternative also has the potential for disproportionately high and adverse impacts on minority and/or low-income communities in relation to the following resources: bicycle/pedestrian facilities, parking, community facilities, residential and business displacements, and visual resources.

At its north end, Alternative A-C-D2 has distinct disadvantages with respect to cost and implementation. The northern segment of Alternative A-C-D2 is located in an area of the city of Maple Grove that is currently in use for gravel mining. While the area is zoned for future mixed-use development, there is no timeline established for this land use transition to occur. The capital cost estimate for Alternative A-C-D2 assumes significant cooperation in this location and elsewhere from private landowners to transition the corridor from industrial (mining) operations to transit services. In addition, construction of the northern segment of Alternative A-C-D2 requires construction of a new roadway (Arbor Lakes Parkway), separate from the transitway project, to accommodate LRT and provide access to future development. These factors in combination are substantial disadvantages with respect to timely implementation of Alternative A-C-D2 and realization of anticipated economic development and ridership benefits.

Given the adverse impacts described above, Alternative A-C-D2 does not meet project Goal 5 (Support Healthy Communities and Sound Environmental Practices).

Alternative A-C-D2 delivers good performance with respect to transportation benefits. Key differentiating benefits are summarized as follows:

- **Transit Ridership:** 27,200 total weekday project boardings and 15,150 new transit riders compared to the No-Build
- **User Benefit:** 9,000 daily user benefit hours
- **Travel Time:** Estimated end-to-end travel time of 33:19

While Alternative A-C-D2 would have generally good transportation performance, there is uncertainty as to whether or not existing commuter express riders would choose to move from the current Maple Grove express bus service to LRT service, given the high quality of that current service. If this were the case, not all of the ridership benefits might be realized.

The southern part of Alternative A-C-D2 (Alignment D2) would run on Penn Avenue in north Minneapolis. This has advantages related to the transit-oriented nature of the existing development patterns and the proximity of the alignment to dense urban neighborhoods. This results in strong potential for transit-oriented development and multimodal connections via the existing street grid and sidewalk system.

### Performance Summary

Alternative A-C-D2 would deliver poor performance overall due to the severe adverse impacts it would have on properties and communities in north Minneapolis. While Alternative A-C-D2 has good transportation benefits, the adverse physical and community impacts described above demonstrate that it does not meet Goal 5 (Support Healthy Communities and Sound Environmental Practices). For these reasons, it is not recommended as the environmentally preferred alternative for the Bottineau Transitway.

### 11.2.5 Alternative B-C-D1 (Preferred Alternative)

Alternative B-C-D1 would provide LRT service between Brooklyn Park and Minneapolis via West Broadway (in Brooklyn Park), the BNSF railroad, and TH 55. Alternative B-C-D1 has been adopted by the Metropolitan Council as the Locally Preferred Alternative (LPA) in the *TPP* as the culmination of the Bottineau Transitway Alternatives Analysis process.

#### Relation to Purpose and Need/Goals and Objectives

Alternative B-C-D1 meets the project purpose and need in that it would effectively address long-term regional transit mobility and local accessibility needs while providing efficient, travel-time competitive transit service that supports the economic development goals of local, regional, and statewide plans. The alternative satisfies all five of the goals of the transitway project and receives a good performance rating.

#### Summary of Differentiating Impacts and Benefits

Alternative B-C-D1 has moderate impacts. Key differentiators are as follows:

- Wetlands and Floodplains: Alternative B-C-D1 has impacts on wetlands (9.4-10.2 acres) and floodplains (18,700 cubic yards).
- Cultural Resources: Alternative B-C-D1 has no determined adverse effect on historic resources and potential adverse effect on 14 resources.
- Environmental Justice: Alternative B-C-D1 has no disproportionately high or adverse impacts on environmental justice communities.

The relatively minor adverse physical impacts of Alternative B-C-D1 are largely due to the location of a portion of the alternative in the BNSF railroad corridor or on roadway right-of-way. The railroad corridor is either below the street grade or is at grade with limited street crossings and is physically separated from the street network and most development, which helps minimize adverse physical impacts.

Alternative B-C-D1 delivers good performance with respect to transportation benefits:

- Transit Ridership: 27,000 total weekday project boardings and 14,500 new transit riders compared to the No-Build
- User Benefit: 8,520 daily user benefit hours
- Travel Time: Estimated end-to-end travel time of 32:47

Alternative B-C-D1 stands out for its existing and near-term development potential at the north end, in Brooklyn Park (Alignment B). Here, the active expansion of the Target North Campus near the Oak Grove Parkway Station is expected to serve as a major anchor for near-term and future development. Target Corporation is currently building out 650,000 square feet of space, anticipated to include 3,900 employees over the next two years. The City of Brooklyn Park's transportation plan assumes development of an additional 1,600 acres of undeveloped property by 2030. While the timing of such development is uncertain, the immediate availability of undeveloped land provides opportunity for new development and transit-oriented development in the future.

#### Performance Summary

Overall, Alternative B-C-D1 would deliver good performance. This is due to its relatively minor adverse impacts and its strong benefits.

Alternative B-C-D1 is recommended as the environmentally preferred alternative based on its strong transportation benefits, its land use and short-term economic development potential at the north end (Brooklyn Park), its ability to be implemented, and its relatively moderate adverse impacts.

#### **11.2.6 Alternative B-C-D2**

Alternative B-C-D2 would provide LRT service between Brooklyn Park and Minneapolis via West Broadway (in Brooklyn Park), the BNSF railroad, West Broadway Avenue/Penn Avenue, and TH 55.

##### **Relation to Purpose and Need/Goals and Objectives**

The assessment of Alternative B-C-D2 against the five project goals results in a poor performance rating. The justification for this rating is provided in the discussion below. The alternative satisfies four of the five project goals. Because of its degree of adverse impact on neighboring properties on the D2 alignment, Alternative B-C-D2 does not meet project Goal 5 (Support Healthy Communities and Sound Environmental Practices).

##### **Summary of Differentiating Impacts and Benefits**

There are a wide range of adverse impacts associated with the Penn/Broadway Avenue portion of Alternative B-C-D2, primarily resulting from the physical impact and placement of the alternative. Adverse impacts include:

- Wetlands and Floodplains: Alternative B-C-D2 has impacts on wetlands (4.0-4.8 acres) and floodplains (7,700 cubic yards)
- Property impacts: Alternative B-C-D2 would require the full acquisition of 144 parcels and partial acquisition of 77 additional parcels, most of them on Penn Avenue where a row of houses would need to be acquired for about one mile of residential frontage.
- Noise: The alternative would have greater noise impacts (following mitigation) than the Build alternatives that include the D1 alignment, with moderate noise impacts to over 300 receptors in the D2 alignment.
- Visual: The alternative would result in high visual impact.
- Cultural Resources: Alternative B-C-D2 has a determined adverse effect on one historic resource and potential adverse effect on an additional 19 resources.
- Parking: There would be an estimated loss of 270 on-street parking spaces.
- Access impacts: The alternative would result in loss of street access to business and residential properties.
- Lack of public support: The possibility of constructing LRT on Penn/Broadway Avenues has been a major concern to area residents and other stakeholders.
- Environmental Justice: The alternative also has the potential for disproportionately high and adverse impacts on minority and/or low-income communities in relation to the following resources: bicycle/pedestrian facilities, parking, community facilities, residential and business displacements, and visual resources.

The adverse physical and community impacts described above demonstrate that Alternative B-C-D2 does not meet Goal 5 (Support Healthy Communities and Sound Environmental Practices).



Alternative B-C-D2 delivers fair performance with respect to transportation benefits (ridership, travel time, user benefit hours), summarized as follows:

- Transit Ridership: 26,000 total weekday project boardings and 13,800 new transit riders compared to the No-Build
- User Benefit: 7,940 daily user benefit hours
- Travel Time: Estimated end-to-end travel time of 36:46

Alternative B-C-D2 stands out for its existing and near-term development potential at the north end, in Brooklyn Park (Alignment B). In this location, the anticipated expansion of the Target North Campus near the Oak Grove Parkway Station would serve as a major anchor for near-term and future development. Target Corporation is currently building out 650,000 square feet of space, anticipated to include 3,900 employees over the next two years. The City of Brooklyn Park's transportation plan assumes development of an additional 1,600 acres of undeveloped property by 2030. While the timing of such development is uncertain, the immediate availability of undeveloped land provides opportunity for new development and transit-oriented development in the future.

The southern part of Alternative B-C-D2 (Alignment D2) would run on Penn Avenue in north Minneapolis. This has advantages related to the transit-oriented nature of the existing development patterns and the proximity of the alignment to dense urban neighborhoods. This results in strong potential for transit-oriented development and multimodal connections via the existing street grid and sidewalk system.

### Performance Summary

Alternative B-C-D2 would deliver poor performance overall due to the severe adverse impacts it would have on properties in north Minneapolis combined with only fair transportation performance. For these reasons, this alternative is not the environmentally preferred alternative for the Bottineau Transitway.

## 11.3 Environmentally Preferred Alternative

### 11.3.1 Balancing Benefits and Impacts

The Draft EIS has described the transportation, economic, community, and environmental impacts associated with the construction and operation of the Bottineau Transitway Project. The effects of the No-Build, Enhanced Bus/TSM, and Build alternatives have been evaluated across a range of subject areas related to the built and natural environment.

As described in this chapter, Alternative B-C-D1 meets the purpose and need of the Bottineau Transitway project and is the environmentally preferred alternative because it will cause the least damage to the biological and physical environment and it best protects, preserves, and enhances historic, cultural, and natural resources.

Identifying the environmentally preferred alternative included extensive public and stakeholder outreach in addition to technical analysis of issues identified during NEPA Scoping. The identification process considered the transitway alternatives in their component pieces (Alignments A, B, C, D1, and D2). Ultimately, the adverse physical and community impacts of Alignment D2 (LRT on Penn/Broadway Avenues) resulted in a decision not to advance Alternatives A-C-D2 and B-C-D2 in the process. The remaining decision, between Alternatives A-C-D1 and B-C-D1, focused on the differentiators between Alignment A (Maple Grove) and Alignment B (Brooklyn Park). Alignment B is the environmentally preferred alternative because it would provide transit service to the large existing and future populations of people in households with low incomes, provide transit service to many activities at North Hennepin Community College and the new Hennepin County library, provide transit access to more jobs than Alignment A, and does not have the same potential short-term implementation challenges experienced with Alignment A.

Specifically, under Alignment A construction could be delayed or made more expensive as much of the adjacent land is in active use for gravel mining. While the area is zoned for future mixed-used development, there is no timeline established for this land use transition to occur. Infrastructure and land use development investments (including the future Arbor Lakes Parkway and land use development around station areas) outside of the transitway project are required for implementation of the transitway.

The United States Army Corps of Engineers (USACE) has its own process for determining the Least Environmentally Damaging Preferred Alternative (LEDPA). In a letter dated June 19, 2013, the USACE issued concurrence on the purpose and need and array of alternatives considered for the Bottineau Transitway Project, as well as the alternatives evaluated in this Draft EIS (Concurrence Points #1 and #2 under the NEPA/404 merger process). In a letter dated October 1, 2013, USACE issued concurrence on the identification of the selected alternative (Concurrence Point #3) (see [Appendix D](#)).

Throughout the development of the environmentally preferred alternative, Hennepin County Regional Railroad Authority (HCRRA), in cooperation with the Metropolitan Council, the affected communities, and the public, has refined the design and alignment, where feasible, to avoid, minimize, or mitigate adverse effects. However, some adverse effects cannot be overcome due to the design and safety standards that must be met for the project; the developed character of the communities the Bottineau Transitway is intended to serve; and the need to design the project to be compatible with future operations of other transportation facilities in the corridor. Consequently, the environmentally preferred alternative involves recognizing and understanding that there are trade-offs between the benefits and the effects of the Bottineau Transitway.

Where adverse effects of the environmentally preferred alternative remain, FTA, HCRRA, and the Metropolitan Council have identified mitigation measures intended to offset remaining effects to the natural and human environment. Mitigation measures are described in this Draft EIS and will be finalized in the Final EIS/Record of Decision (ROD).

## 11.4 Next Steps

The Draft EIS will be distributed to appropriate local, regional, state, and federal agencies as well as the public for their review and comment. Public comment on the Draft EIS will be considered and addressed in the combined Final EIS/ROD.

Local elected officials and the public have been and will continue to be involved in the project throughout design and construction through public meetings, advisory committee and stakeholder meetings, and individual briefings.

## APPENDIX A

### LIST OF RECIPIENTS

### **Federal Agencies**

Advisory Council on Historic Preservation

US Department of Homeland Security, Federal Emergency Management Agency, Region 5

Federal Highway Administration, Minnesota Division

Federal Railroad Administration

Federal Transit Administration

Federal Aviation Administration, Great Lakes Regional Office and Minneapolis Airports District Office

US Army Corps of Engineers, St. Paul District

US Department of Agriculture

US Department of Commerce

US Department of Energy

US Department of Housing & Urban Development, Region V

US Department of Interior

US Department of Public Safety

US Environmental Protection Agency, Region 5

US Fish & Wildlife Service

National Park Service

Surface Transportation Board

### **State Agencies**

Minnesota Board of Water and Soil Resources

Minnesota Department of Agriculture

Minnesota Department of Commerce

Minnesota Department of Health

Minnesota Department of Natural Resources

Minnesota Department of Public Service

Minnesota Department of Transportation

Minnesota Environmental Quality Board

Minnesota Historical Society

Minnesota Indian Affairs Council

Minnesota Office of the State Archaeologist

Minnesota Pollution Control Agency



Minnesota State Historic Preservation Office

#### **County Agencies**

Hennepin County

Hennepin County Regional Railroad Authority

Hennepin Conservation District

#### **Local Municipalities**

City of Brooklyn Park

City of Crystal

City of Golden Valley

City of Maple Grove

City of Minneapolis

City of New Hope

City of Osseo

City of Robbinsdale

#### **Libraries**

Brookdale Library

Brooklyn Park Library

Golden Valley Library

Maple Grove Library

Hennepin County Library – Minneapolis Central

North Regional Library

Osseo Library

Rockford Road Library

Sumner Library

Legislative Reference Library

#### **Local and Regional Agencies**

Bassett Creek Watershed Management Commission

Maple Grove Transit

Metropolitan Airports Commission (MAC)

Metropolitan Council/Metro Transit

Minneapolis Heritage Preservation Commission

Minneapolis Park & Recreation Board

Minneapolis Regional Chamber of Commerce

Mississippi Watershed Management Organization

Shingle Creek and West Mississippi Watershed Management Commission

Three Rivers Park District

#### **Other**

Burlington Northern Santa Fe Railroad

Canadian Pacific Railroad

#### **Notification of Draft EIS Availability**

Bottineau Transitway Policy Advisory Committee

Bottineau Transitway Community Advisory Committee

Bottineau Transitway Advise, Review, & Communicate Committee

APPENDIX B  
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## APPENDIX C

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## APPENDIX D

### AGENCY COORDINATION

Cooperating and Participating Agency response and comment letters

Section 106 Consulting Party letters

Coordination with Minnesota State Historic Preservation Office

Example Tribal Consultation Letter

USACE Section 404/NEPA Merger Process letters

Endangered Species Correspondence

Coordination with the Federal Railroad Administration

Coordination with Minneapolis Park and Recreation Board

Coordination with Three Rivers Park District

Miscellaneous Coordination

## Cooperating Agency Response and Comment Letters





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**ST. PAUL MINNESOTA 55101-1678**

**MAR 22 2012**

REPLY TO  
ATTENTION

Operations  
Regulatory (2012-01051-MMJ)

Ms. Marisol Simon  
Regional Administrator  
U.S. Department of Transportation  
Federal Transit Administration  
200 West Adams Street, Suite 320  
Chicago, Illinois 60606-5253

Dear Ms. Simon:

We recently received your invitation to become a cooperating agency in the preparation of an Environmental Impact Statement (EIS) for the Bottineau Transitway Project, located in Hennepin County, Minnesota. As you mentioned in your letter, the Corps of Engineers does have jurisdiction and expertise with respect to wetlands and waters of the U.S. in proximity to the Bottineau Transitway. Therefore, in accordance with the Council on Environmental Quality's regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA), we accept your invitation to become a cooperating agency, and look forward to participating in the review of the draft EIS and other NEPA documents for this project.

We have reviewed the Environmental and Community Impact Assessment (the assessment) that was conducted as part of the Bottineau Transitway Alternatives Analysis Study, dated January 2010. This assessment included a wetland determination to identify potential waters of the U.S. located within the project corridor of all seven of the proposed alternatives for the Bottineau Transitway Project. The wetland determination identified a total of approximately 10.94 acres of potential wetland located within the entire project area. Depending on which route or alternative is chosen, the project may result in the discharge of fill material over approximately 2 to 9 acres of wetland. The assessment notes that the wetlands in the project area have not been formally delineated per the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual – Midwest Supplement, and that a formal wetland delineation would be completed during future project development activities. We look forward to reviewing the wetland delineation for this project.

As you are aware, if your proposal involves discharge of dredged or fill material into waters of the United States, it may be subject to the Corps of Engineers' jurisdiction under Section 404 of the Clean Water Act (CWA Section 404). Waters of the United States include navigable waters, their tributaries, and adjacent wetlands (33 CFR § 328.3). CWA Section 301(a) prohibits discharges of dredged or fill material into waters of the United States, unless the

work has been authorized by a Department of the Army permit under Section 404. Information about the Corps permitting process can be obtained online at <http://www.mvp.usace.army.mil/regulatory>.

Similar to your responsibilities as the lead federal agency for this project, the Corps' evaluation of a Section 404 permit application involves multiple analyses, including (1) evaluating the proposal's impacts in accordance with the National Environmental Policy Act (NEPA) (33 CFR part 325), (2) determining whether the proposal is contrary to the public interest (33 CFR § 320.4), and (3) in the case of a Section 404 permit, determining whether the proposal complies with the Section 404(b)(1) Guidelines (Guidelines) (40 CFR part 230).

If the proposal requires a Section 404 permit application, the Guidelines specifically require that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences" (40 CFR § 230.10(a)). Time and money spent on the proposal prior to applying for a Section 404 permit cannot be factored into the Corps' decision whether there is a less damaging practicable alternative to the proposal.

We look forward to working with you in order to determine the least environmentally damaging practicable alternative for the Bottineau Transitway Project. Please address all future correspondence for this project to Melissa Jenny. Also, please feel free to call or email with any updates or questions at (651) 290-5363 or [Melissa.m.jenny@usace.army.mil](mailto:Melissa.m.jenny@usace.army.mil).

Sincerely,



Tamara E. Cameron  
*for* Chief, Regulatory Branch

Copy furnished:

Lois Kimmelman, FTA  
Joseph Gladke, HCRRA  
Mary Karlsson, Metropolitan Council  
Jeanne Witzig, Kimley-Horn & Associates



U.S. Department  
of Transportation  
Federal Highway  
Administration

Minnesota Division

April 27, 2012

380 Jackson Street  
Galtier Plaza, Suite 500  
St. Paul, MN 55101-4802

651.291.6100  
Fax 651.291.6000

[www.fhwa.dot.gov/mndiv](http://www.fhwa.dot.gov/mndiv)

Marisol Simon  
Regional Administrator  
Federal Transit Administration – Region V  
200 West Adams Street, Suite 320  
Chicago, IL 60606-5253

Re: Bottineau Transitway – Response to FTA Cooperating Agency Request

Dear Ms. Simon:

This letter is in response to your March 9, 2012, letter inviting the Federal Highway Administration (FHWA) to be a cooperating agency for the Bottineau Transitway Environmental Impact Statement (EIS).

The requirements of the FHWA National Environmental Policy Act (NEPA) and Fiscal Constraint policy do not appear to be met at this time because there is not a post-NEPA project phase programmed in the Minnesota Statewide Transportation Improvement Program (STIP). Therefore, FHWA is not requesting to be a joint-lead in the NEPA process for this project.

We do, however, agree to be a Cooperating Agency in the Bottineau Transitway NEPA process.

Please include both Emeka Ezekwemba ([nnamemeka.ezekwemba@dot.gov](mailto:nnamemeka.ezekwemba@dot.gov) /651-291-6108) and me ([phil.forst@dot.gov](mailto:phil.forst@dot.gov) / 651-291-6110) on any distribution lists, such as for meeting notices and distribution of meeting minutes.

Sincerely,

Philip Forst  
Environmental Specialist

PJF/jer

cc: 1 FTA- Kimmelman, e-copy, [lois.kimmelman@dot.gov](mailto:lois.kimmelman@dot.gov)  
1 FHWA – Ezeekwemba – e-copy, [Nnaemeka.ezekwemba@dot.gov](mailto:Nnaemeka.ezekwemba@dot.gov)  
DMS – [MN DOC LIBRARY-#33620-Bottineau Transitway - Response to FTAs Request to Be a Cooperating Agency - Anoka County](#)





U.S. Department  
of Transportation  
Federal Aviation  
Administration

Great Lakes Region  
2300 E. Devon Avenue  
Des Plaines, Illinois 60018

MAY 16 2012

Ms. Marisol Simon  
Regional Administrator  
Federal Transit Administration  
200 West Adams Street - Suite 320  
Chicago, IL 60606

Dear Ms. Simon:

Thank you for your letter dated March 14, 2012, requesting that the Federal Aviation Administration (FAA) serve as a cooperating agency with the Federal Transit Administration (FTA) within the context of the Environmental Impact Statement (EIS) being prepared for the proposed Bottineau Transitway Project.

We welcome the opportunity to become a participating agency, in accordance with the National Environmental Policy Act of 1969, as amended, and the implementing regulations. This project has the potential to impact the Crystal Airport. We will work with the FTA during this process and provide guidance where necessary.

The FAA Minneapolis Airports District Office (ADO) will be the primary contact for environmental matters related to this proposal. I have forwarded a copy of this letter and your letter to the ADO manager, Steve Obenauer. He can be contacted directly at 612-253-4630 or by email at [Steve.Obenauer@faa.gov](mailto:Steve.Obenauer@faa.gov); and the Environmental Protection Specialist, Kandice Krull, who can be contacted directly at 612-253-4639 or by email at [Kandice.Krull@faa.gov](mailto:Kandice.Krull@faa.gov).

We look forward to working with the FTA on this project. Please contact Kandice Krull for further coordination.

Sincerely,

Barry D. Cooper  
Regional Administrator  
Great Lakes Region

cc: Gene Scott, Minneapolis Department of Transportation-Aeronautics  
Bridget Rief, Metropolitan Airport Commission



U.S. Department  
of Transportation  
**Federal Transit  
Administration**

REGION V  
Illinois, Indiana,  
Michigan, Minnesota,  
Ohio, Wisconsin

200 West Adams Street  
Suite 320  
Chicago, IL 60606  
312-353-2789  
312-886-0351 (fax)

October 22, 2013

Mr. Barry D. Cooper  
Regional Administrator  
Great Lakes Region  
Federal Aviation Administration  
O'Hare Lake Office Center  
2300 East Devon Avenue  
Des Plaines, IL 60018

Re: Invitation to Change Status from Participating to Cooperating Agency for the Bottineau Transitway Project in Hennepin County, Minnesota

Dear Mr. Cooper:

The Federal Transit Administration (FTA), the Hennepin County Regional Railroad Authority (HCRRA), and the Metropolitan Council have initiated the environmental review process for the Bottineau Transitway project. Federal funding will be pursued for this project from the FTA. As a result, the FTA – designated as the lead federal agency for this project – is required to undertake environmental review in compliance with the National Environmental Policy Act (NEPA). As the local public agency sponsoring the project, HCRRA and Metropolitan Council must also comply with the requirements of the Minnesota Environmental Policy Act. The FTA, HCRRA, and Metropolitan Council have determined that the Bottineau Transitway project may have significant environmental impacts. To satisfy both federal and state requirements, an Environmental Impact Statement (EIS) is being prepared for the Bottineau Transitway project.

In a letter dated March 14, 2012, the FTA invited the Federal Aviation Administration (FAA) to become a Participating Agency for the Bottineau Transitway project. The FAA accepted with a letter dated May 16, 2012 (*see Attachments*).

The Bottineau Transitway is a proposed light rail transit project that is located in Hennepin County, Minnesota, extending approximately 13 miles from downtown Minneapolis to the northwest through north Minneapolis, and the suburbs of Golden Valley, Robbinsdale, Crystal, New Hope, Brooklyn Park, Maple Grove, and Osseo. The project will be utilizing Burlington Northern Santa Fe (BNSF) Railroad right-of-way for a portion of the transitway alignment. A segment of the proposed Bottineau Transitway, within the existing BNSF right-of-way, traverses through the runway protection zone (RPZ) for Runway 6L of Crystal Airport. Crystal Airport is owned and operated by the Metropolitan Airports Commission and is categorized as a reliever airport. The HCRRA in consultation with the Metropolitan Council has completed a runway protection zone alternative analysis for Runway 6L-24R at Crystal Airport (*see Attachments*).

The FAA has jurisdiction and expertise with respect to the potential issue of compatible land uses within a RPZ. With this letter, and subsequent to our initial request for the FAA to become a participating agency, FTA is requesting that the FAA change its designation from a Participating to a Cooperating Agency for the Bottineau Transitway EIS, in compliance with sections of the CEQ Regulations addressing cooperating agency status (40 CFR 1501.6 and 40 CFR 1508.5).

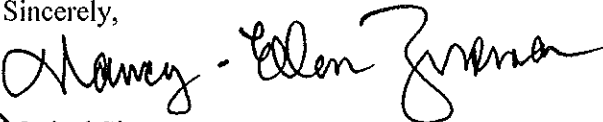
By becoming a Cooperating Agency, we invite the FAA to become more directly involved in the development of the Bottineau Transitway in the following ways:

1. Provide timely review and written comments, as the Draft EIS and other documents are developed;
2. Participate in coordination meetings, conference calls, and joint field reviews, as appropriate; and
3. Pursuant to 40 CFR 1506.3, the FAA may adopt without re-circulating the Draft EIS or Final EIS when, after an independent review, the FAA concludes that its comments and suggestions have been satisfied.

Please respond to FTA in writing an acceptance or denial of the invitation prior to November 21, 2013. If the FAA elects not to become a Cooperating Agency, the FAA must decline this invitation in writing, indicating the reason for declining, specifically that the FAA has no jurisdiction or authority with respect to this project, has no expertise or information relevant to the project, and does not intend to submit comments on the project. The acceptance or declination of this invitation may be sent electronically to William Wheeler, Community Planner, at [William.Wheeler@dot.gov](mailto:William.Wheeler@dot.gov); please include the title of the official responding. Please contact Mr. Wheeler at 312-353-2639 if you have any questions or would like to discuss the project in more detail.

Thank you for your cooperation and interest in this project.

Sincerely,

*Acting for*  
  
Marisol Simon  
Regional Administrator

cc: Maya Sarna, FTA  
William Wheeler, FTA  
Joseph Gladke, HCRRA  
Kathryn O'Brien, Metropolitan Council

Attachments

Alternatives Analysis Runway 6L, October 2013  
March 14, 2012 letter from FTA to FAA  
May 16, 2012 letter from FAA to FTA



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Great Lakes Region  
2300 E. Devon Avenue  
Des Plaines, Illinois 60018

**NOV 19 2013**

Ms. Marisol Simon  
Regional Administrator  
Federal Transit Administration  
Region V  
200 West Adams Street  
Chicago, IL 60606-5253

Dear Ms. Simon:

Thank you for your letter dated October 22, 2013, requesting that the Federal Aviation Administration (FAA) change status from a Participating Agency to a Cooperating Agency with the Federal Transit Administration (FTA) for the Environmental Impact Statement (EIS) considering improvements referred to as the Bottineau Transitway project.

We welcome the opportunity to become a Cooperating Agency in accordance with the National Environmental Policy Act of 1969, as amended, and the implementing regulations. This project has the potential to impact airport design surfaces for the Crystal Airport. We will work with the FTA during this process and provide guidance where necessary.

The FAA Minneapolis Airports District Office (ADO) is the primary contact for this project. Please contact Mr. Chris Hugunin, ADO Manager, at 612-253-4630 or by email at [chris.hugunin@faa.gov](mailto:chris.hugunin@faa.gov).

We look forward to working with the FTA on this project.

Sincerely,



Barry D. Cooper  
Regional Administrator  
Great Lakes Region

cc: Chris Hugunin, Manager, Minneapolis Airports District Office  
Bridget Rief, Metropolitan Airport Commission  
Cassandra Issackson, Director, Minnesota Department of Transportation - Aeronautics





U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

January 23, 2014

Mr. Brent Rusco, Senior Professional Engineer  
Hennepin County  
Housing, Community Works & Transit  
Engineering and Transit Planning  
701 Fourth Avenue South, Suite 400  
Minneapolis, MN 55415-1843

Mr. Brent Rusco:

As a Cooperating Agency for the Bottineau Transitway Project, thank you for the opportunity to provide our preliminary review comments on the Bottineau Transitway Draft EIS.

The Draft EIS identifies four Light Rail Transit (LRT) Alternatives, an Enhanced Bus/TSM Alternative, and a No-Build Alternative. Please clarify in Section 3.0 Transportation Analysis whether the Enhanced Bus/TSM and the No-Build Alternatives result in new transportation facilities being introduced into one of the Crystal Airport Runway Protection Zone(s) (RPZ) (e.g. additional travel lanes, wider shoulders, or other improvements). If new transportation facilities are introduced into the RPZ, please include a discussion of the new transportation facilities in the Draft EIS and the RPZ Alternatives Analysis. As of the date of this letter, we have not received a complete RPZ Alternatives Analysis for us to evaluate. As a result, we are not able to provide our complete comments or concur with the findings in the Bottineau Transitway Draft EIS.

If you have any questions or would like to discuss this information further, please feel welcome to contact Gina Mitchell, Community Planner, at (612) 253-4641 or [gina.mitchell@faa.gov](mailto:gina.mitchell@faa.gov).

Sincerely,

Chris Hugunin, Manager  
Minneapolis Airports District Office

cc Maya Sarna, FTA (by email)  
Bridget Rief, Metropolitan Airports Commission (by email)  
Barry Cooper, Regional Administrator, FAA Great Lakes Region (by email & mail)  
Jesse Carriger, Planning & Programming Manager, FAA Great Lakes Airports  
Division (by email)



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

February 13, 2014

Mr. Brent Rusco, Senior Professional Engineer  
Hennepin County  
Housing, Community Works & Transit  
Engineering and Transit Planning  
701 Fourth Avenue South, Suite 400  
Minneapolis, MN 55415-1843

Mr. Brent Rusco:

As a Cooperating Agency for the Bottineau Transitway Project, thank you for the opportunity to provide our review comments on the Bottineau Transitway Draft EIS.

The Draft EIS identifies four Light Rail Transit (LRT) Alternatives, an Enhanced Bus/Transportation System Management (Enhanced Bus/TSM) Alternative, and a No-Build Alternative. Please clarify in Section 3.0 Transportation Analysis the following considerations

1. Table 3.0-1 – clarify within the aviation resource whether the No-Build and/or the Enhanced Bus/TSM Alternatives include construction limits within the Crystal Airport Runway Protection Zone(s) (RPZ).
2. Section 3.6.4.1 and Section 3.6.4.2 – clarify the No-Build and/or the Enhanced Bus/TSM Alternatives will not result in new transportation facilities being introduced into one of the RPZs (e.g. additional travel lanes, wider shoulders, passenger stops, or other improvements). If new transportation facilities are introduced into the RPZ, please include a discussion of the new transportation facilities in the Draft EIS and the RPZ Alternatives Analysis.
3. Section 3.6.5 – clarify the RPZ Alternatives Analysis (RPZ AA) has been performed and forwarded to FAA. Update the section to acknowledge the Minneapolis Airports District Office will advance the RPZ AA and preliminary recommendations to the FAA Regional Office and Headquarters for concurrence.

The FAA cannot concur with the findings in the Bottineau Transitway Draft EIS until we have completed our review of the RPZ AA and made a determination.

If you have any questions or would like to discuss this information further, please feel welcome to contact Gina Mitchell, Community Planner, at (612) 253-4641 or [gina.mitchell@faa.gov](mailto:gina.mitchell@faa.gov).

Sincerely,



Chris Hugunin, Manager  
Minneapolis Airports District Office

cc    Maya Sarna, FTA (by email)  
      Bridget Rief, Metropolitan Airports Commission (by email)  
      Barry Cooper, Regional Administrator, FAA Great Lakes Region (by email & mail)  
      Lindsay Butler, Acting Planning & Programming Manager, FAA Great Lakes  
          Airports Division (by email)



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

February 19, 2014

Mr. Brent Rusco, Senior Professional Engineer  
Hennepin County  
Housing, Community Works & Transit  
Engineering and Transit Planning  
701 Fourth Avenue South, Suite 400  
Minneapolis, MN 55415-1843

Mr. Brent Rusco:

This purpose of this letter is to clarify comments that FAA provided as a Cooperating Agency for the Bottineau Transitway Project Draft EIS on February 13, 2014.

The last paragraph of that letter stated:

“The FAA cannot concur with the findings in the Bottineau Transitway Draft EIS until we have completed our review of the RPZ AA and made a determination.”

FAA Minneapolis Airports District Office (ADO) supports publishing the Draft EIS while we continue to seek FAA Regional and Headquarters concurrence on the conclusions of the February 10, 2014 Crystal Airport Runway Protection Zone Alternatives Analysis (RPZ AA). We apologize for our miscommunication. When the Final EIS is available, the FAA ADO will want to ensure the proposed transportation project is consistent with the findings of the RPZ AA.

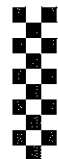
If you have any questions or would like to discuss this information further, please feel welcome to contact Gina Mitchell, Community Planner, at (612) 253-4641 or [gina.mitchell@faa.gov](mailto:gina.mitchell@faa.gov).

Sincerely,

Chris Hugunin, Manager  
Minneapolis Airports District Office

cc Maya Sarna, FTA (by email)  
Bridget Rief, Metropolitan Airports Commission (by email)  
Barry Cooper, Regional Administrator, FAA Great Lakes Region (by email & mail)  
Lindsay Butler, Acting Planning & Programming Manager, FAA Great Lakes  
Airports Division (by email)





Apr. 11. 2012 9:33AM Environmental Stewardship  
Minnesota Department of Transportation  
395 John Ireland Boulevard  
Saint Paul, MN 55155

No. 0264 P. 1

April 10, 2012

Marisol Simon  
Regional Administrator  
US Department of Transportation  
Federal Transit Administration  
200 West Adams Street  
Chicago, IL 60606-5253

RE: Invitation to Become a Cooperating Agency for the Bottineau Transitway Project

Dear Ms. Simon:

The Minnesota Department of Transportation, Environmental Stewardship Office accepts your invitation to become a cooperating agency for the Bottineau Transitway Project in Minneapolis and some of the surrounding suburbs. We look forward to reviewing the draft EIS and other NEPA documents for this project.

Sincerely,

Frank Pafko  
Director and Chief Environmental Officer  
Office of Environmental Stewardship

cc: Bryan Dodds  
Pat Bursaw

04-11-12 RC7D 0127

An Equal Opportunity Employer



## Participating Agency Response Letters



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

APR 12 2012

mailcode E-19J  
REPLY TO THE ATTENTION OF:

Marisol Simon  
Regional Administrator, Region 5  
Federal Transit Administration  
200 West Adams Street, Suite 2410  
Chicago, IL 60604

**RE: Federal Transit Administration (FTA) Request for the EPA to be a  
Participating Agency for the Minneapolis Bottineau Transitway Project**

Dear Ms. Simon:

The United States Environmental Protection Agency, Region 5 (EPA) has received your invitation letter of March 14, 2012, regarding the above project. Because EPA has expertise concerning the nation's natural resources and National Environmental Policy Act (NEPA) documents, we do have an interest in this project.

Pursuant to the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and in keeping with our responsibilities under the NEPA and Section 309 of the Clean Air Act, we accept the invitation to be a participating agency for this project, to the degree time and resources permit, in the manner you requested, specifically, we will:

1. provide meaningful early input to defining the purpose and need,  
the range of alternatives to be considered in detail, methodologies and  
level of detail for alternatives analysis;
2. Participate in coordination meetings and appropriate field reviews;
3. Provide timely review and comment on pre-draft and subsequent environmental  
documents.

We look forward to continuing discussion of the issues involved in this project along with the preparations for and review of the draft Environmental Impact Statement. Feel free to contact me at 312-886-2910 / westlake.kenneth@epa.gov or Norm West, my staff member, at 312-353-5692 / west.norman@epa.gov, with further information or inquiries regarding this project.

Sincerely,

Kenneth A. Westlake  
Chief, NEPA Implementation Section  
Office of Enforcement and Compliance Assurance

04-18-12 RCVD 0162



**U.S. Department of Housing and Urban Development**

Minneapolis Field Office  
920 Second Avenue South, Suite 1300  
Minneapolis, Minnesota 55402-4012

March 28, 2012

Ms. Marisol Simon  
Regional Administrator  
Federal Transit Administration  
U.S. Department of Transportation  
200 West Adams Street, Suite 320  
Chicago, IL 60606-5253

Dear Ms. Simon:

**Re: Bottineau Transitway Project in Hennepin County, MN**

Thank You for your letter of March 26, 2012 inviting HUD's participation in the Bottineau Transitway Project.

Dale Darrow, the Minneapolis HUD Field Office Sustainability Officer will be the primary contact for our office on this matter. I will be the alternate contact. Mr. Darrow has prior experience working with state and local governments on corridor and regional transportation planning activities as a Program and Planning Analyst with the Wisconsin Department of Transportation, and as the Transportation Team Leader for the Wisconsin Department of Natural Resources' Air Management Program. Mr. Darrow's contact information follows:

Dale A. Darrow, Sustainability Officer  
Minneapolis Field Office  
U.S. Department of Housing and Urban Development  
920 Second Avenue South, Suite 1300  
Minneapolis, MN 55402  
Telephone: 612-370-3000 ext 2280  
Email [Dale.A.Darrow@hud.gov](mailto:Dale.A.Darrow@hud.gov)

In the event Mr. Darrow is not able to attend a specific meeting, I will attend the meeting(s) in his absence.

04-03-12 RCVD 0076



We appreciate the opportunity to work with the Federal Transit Administration, the Metropolitan Council, and Hennepin County, Minnesota in this capacity.

Sincerely,

A handwritten signature in blue ink, appearing to read 'D. Sidney', with a stylized, cursive script.

Dexter J. Sidney  
Director

cc: Dale Darrow, HUD  
Lois Kimmelman, FTA  
William Wheeler, FTA  
Cyrell McLemore, FTA

## Haase, Rachel

---

**From:** Witzig, Jeanne  
**Sent:** Friday, March 21, 2014 9:13 AM  
**To:** Haase, Rachel  
**Subject:** FW: Bottineau Transitway DEIS (participating agency)

From: <[lois.kimmelman@dot.gov](mailto:lois.kimmelman@dot.gov)>  
To: <[David\\_Sire@ios.doi.gov](mailto:David_Sire@ios.doi.gov)>  
Cc: <[William.Wheeler@dot.gov](mailto:William.Wheeler@dot.gov)>, <[Joseph.Gladke@co.hennepin.mn.us](mailto:Joseph.Gladke@co.hennepin.mn.us)>, <[Cyrell.McLemore@dot.gov](mailto:Cyrell.McLemore@dot.gov)>  
Date: 05/01/2012 10:35 AM  
Subject: RE: Bottineau Transitway DEIS (participating agency)

---

That's fine, David. We look forward to continuing the dialog with USDOJ about this project.

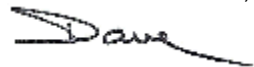
Thanks.

Lois

Lois Kimmelman  
Environmental Protection Specialist  
Federal Transit Administration, Region 5  
200 West Adams St., Suite 320  
Chicago, IL 60606  
312-353-4060

**From:** Sire, David E [[mailto:David\\_Sire@ios.doi.gov](mailto:David_Sire@ios.doi.gov)]  
**Sent:** Tuesday, May 01, 2012 10:25 AM  
**To:** Kimmelman, Lois (FTA)  
**Subject:** RE: Bottineau Transitway DEIS

Lois,  
Yes, Interior accepts your invitation to be a participating agency. However, the person who would have been the regional contact recently retired and the position has not yet been filled. If it is alright with you, I will forward your request to regional contacts at the various Interior bureaus and ask them to identify themselves to you. Some bureaus will be more relevant than others, so you won't hear from all of them.



**Dave Sire**  
Natural Resources Management Team  
Office of Environmental Policy and Compliance  
U.S. Department of the Interior  
(202) 208-6661  
Cell (202) 256-3113

**From:** [lois.kimmelman@dot.gov](mailto:lois.kimmelman@dot.gov) [<mailto:lois.kimmelman@dot.gov>]  
**Sent:** Monday, April 30, 2012 4:35 PM  
**To:** Sire, David E

**Cc:** [William.Wheeler@dot.gov](mailto:William.Wheeler@dot.gov)

**Subject:** Bottineau Transitway DEIS

David:

Per your phone message last week, I am emailing you the invitation from FTA to USDOJ to be a participating agency in the Bottineau Transitway DEIS project which we sent to you in March.

We hope you will agree to be a participating agency in this project. If you do, please let us know who the regional contact will be.

Thank you very much. Please call me if you have any questions.

Lois

Lois Kimmelman  
Environmental Protection Specialist  
Federal Transit Administration, Region 5  
200 West Adams St., Suite 320  
Chicago, IL 60606  
312-353-4060

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## Haase, Rachel

---

**From:** Haase, Rachel  
**Sent:** Friday, March 21, 2014 9:26 AM  
**To:** Haase, Rachel  
**Subject:** Bottineau Transitway DEIS (participating agency)

**From:** Kimmelman, Lois (FTA)  
**Sent:** Monday, April 30, 2012 2:00 PM  
**To:** 'nicholas.mueller@dhs.gov'  
**Cc:** Wheeler, William (FTA)  
**Subject:** Bottineau Transitway DEIS

Nick:

To follow up on our phone conversation today, I understand that FEMA Region 5 will be a participating agency in the Bottineau Transitway DEIS project, and that while you are the Acting Regional Environmental Officer, you will be the contact for the region.

We look forward to your participation in this project.

Thank you very much.

Lois

Lois Kimmelman  
Environmental Protection Specialist  
Federal Transit Administration, Region 5  
200 West Adams St., Suite 320  
Chicago, IL 60606  
312-353-4060

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Bottineau Transitway Participating Agency  
Leitheiser, Aggie (MDH)

to:

brent.rusco@co.hennepin.mn.us

04/06/2012 02:57 PM

Cc:

"Ehlinger, Ed (MDH)", "Koppel, Jim (MDH)", "Ayers, Jeanne (MDH)"

Show Details

Dear Mr. Rusco:

Please accept this belated reply to your invitation for the Minnesota Department of Health to be a participating agency for the Bottineau Transitway Project. We are very interested in the health and public health aspects related to developing the expanded transit options and how they could benefit area and metro-wide residents.

Please let us know of the meeting schedule and topics so we can determine the best staff to represent our interests.

Aggie Leitheiser, RN, MPH  
Assistant Commissioner  
Minnesota Department of Health  
625 Robert St. N. St. Paul, MN 55164

651-201-5711

Aggie.Leitheiser@state.mn.us

# Minnesota Department of Natural Resources

500 Lafayette Road • St. Paul, MN • 55155-40\_\_



April 12, 2012

Ms. Lois Kimmelman  
U.S. Department of Transportation  
Federal Transit Administration  
Region V Headquarters  
200 West Adams Street, Suite 320  
Chicago, IL 60606-5253

RE: Invitation to become a Cooperating Agency for the Bottineau Transitway Project in Minneapolis, Minnesota, and the Following Suburbs: Golden Valley, Robbinsdale, Crystal, New Hope, Brooklyn Park, Maple Grove, and Osseo

Dear Ms. Kimmelman:

The Minnesota Department of Natural Resources (MDNR) thanks the Federal Transit Administration for this invitation to become a Cooperating Agency in the preparation of an Environmental Impact Statement for the Bottineau Transitway project. We are happy at this time to be a participating agency in the project. However, because this project is in an already-developed corridor and because of staffing limitations, we believe it is best that MDNR not become a Cooperating Agency for this EIS. We believe Participating Agency status will give us sufficient opportunity to review documents and provide information in a timely fashion.

I am providing the following contacts for a few key MDNR staff, in case consultation is needed during scoping or EIS preparation on issues that we regulate or manage.

#### State-Listed Plant and Animal Species

Lisa Joyal, Natural Heritage Environmental Review Coordinator  
(651) 259-5109  
[Lisa.joyal@state.mn.us](mailto:Lisa.joyal@state.mn.us)

#### Water Permitting

Kate Drewry, Area Hydrologist  
(651) 259-5753  
[Kate.drewry@state.mn.us](mailto:Kate.drewry@state.mn.us)

#### Ecological Resources, Fish and Wildlife

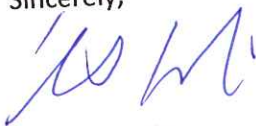
Melissa Doperalski  
Regional Environmental Assessment Ecologist  
(651) 259-5738  
[Melissa.doperalski@state.mn.us](mailto:Melissa.doperalski@state.mn.us)

04-17-12 RCVD 0157

Ms. Lois Kimmelman  
April 12, 2012  
Page 2

Thanks again for the invitation. Please contact me if I can provide any further assistance on MDNR participation in developing the Bottineau EIS.

Sincerely,



Steven Colvin  
Environmental Review Supervisor  
Division of Ecological and Water Resources  
(651) 259-5082  
[Steve.colvin@state.mn.us](mailto:Steve.colvin@state.mn.us)

C: L. Joyal  
K. Drewry  
M. Doperalski

March 26 Letter  
Jeffrey Dahl  
to:  
Brent.Rusco  
03/29/2012 11:10 AM  
Cc:  
"Al Lindquist"  
Show Details

Brent,

I am in receipt of your letter dated March 26 regarding Bottineau Transitway Project.

The City would like to participate in this process. In the future since I will be leaving the City on Wednesday, April 4, 2012, please send communication to Interim City Administrator Doug Reeder ([dreeder@ci.osseo.mn.us](mailto:dreeder@ci.osseo.mn.us)) and Mayor Al Lindquist ([alindquist@ci.osseo.mn.us](mailto:alindquist@ci.osseo.mn.us)).

Please let me know if you have any questions.

Jeffrey J. Dahl, AICP  
City Administrator  
City of Osseo

Mobile: 612.242.2070  
Office: 763.425.1454



Participating Agency  
Peter Vickerman  
to:  
'Brent.Rusco@co.hennepin.mn.us'  
03/30/2012 02:42 PM  
[Show Details](#)

Hi Brent,

The City of Maple Grove will accept the invitation to become a Participating Agency for the Bottineau Transitway Project.

Sincerely,

Peter Vickerman  
City Planner  
LEED Green Associate  
763-494-6046



4141 Douglas Drive North • Crystal, Minnesota 55422-1696

Tel: (763) 531-1000 • Fax: (763) 531-1188 • [www.crystalmn.gov](http://www.crystalmn.gov)

March 31, 2012

Brent Rusco  
Bottineau Transitway Project Manager  
701 Fourth Ave South Ste 400  
Minneapolis MN 55415-1843

Subject: Response to Invitation to become a Participating Agency for the Bottineau  
Transitway Project

Dear Brent:

This is to inform you that the City of Crystal accepts your invitation to become actively  
involved as a Participating Agency for the Bottineau Transitway Project.

Thank you.

Sincerely,

  
Anne L. Norris  
City Manager

cc: Patrick Peters, Community Development Director

participating agency query

Marcia Glick

to:

'Brent.Rusco@co.hennepin.mn.us'

03/30/2012 03:25 PM

Show Details

Robbinsdale does choose to accept the invitation to become a participating agency in Bottineau Transitway Project.

Please let me know if you need this answer to be more detailed.

Marcia Glick

Robbinsdale City Manager

763-531-1258



April 4, 2012

Brent Rusco  
Bottineau Transitway Project Manager  
Hennepin County  
701 Fourth Avenue South, Ste. 4003  
Minneapolis, MN 55415

**Re: Invitation to Become a Participating Agency for the Bottineau Transitway Project**

Dear Mr. Rusco;

Thank you for the formal invitation to become a participating agency in the Bottineau Transitway Project. The City of Golden Valley appreciates the opportunity to be involved in defining the purpose and need for the project, as well as determining the range of alternatives to be considered and methods to be used for Impact assessment.

Please consider this letter as Golden Valley's official acceptance of the opportunity to be partner in the Bottineau Transitway Project. Please contact me at 763-593-8002 if you have any questions or would like additional information.

Sincerely,

Thomas D. Burt  
City Manager



CITY OF MINNEAPOLIS  
CERTIFICATION

STATE OF MINNESOTA )  
COUNTY OF HENNEPIN ) SS  
CITY OF MINNEAPOLIS )

I, Casey Joe Carl, City Clerk of the City of Minneapolis, in the County of Hennepin, State of Minnesota, certify that I have examined the attached copy of a **Transportation & Public Works Committee Report, concerning the Bottineau Transitway Draft Environmental Impact Statement (DEIS)**, adopted February 15, 2012, approved by the Mayor February 15, 2012, and to be officially published February 18, 2012, and have carefully compared the same with the original on file in this office, and that the attached copy is a true, correct and complete copy of the original.



IN WITNESS WHEREOF, I have signed and  
affixed the city seal on **February 17, 2012.**

  
City Clerk

**T&PW** - Your Committee, having under consideration the Bottineau Transitway Draft Environmental Impact Statement (DEIS) process, which was referred back to the Transportation and Public Works Committee by the City Council on February 10, 2012, now recommends:

- a) Accepting the invitation that the City of Minneapolis become a participating agency for the Bottineau Transitway Draft Environmental Impact Statement process; and
- b) Approval and submittal of comments, dated February 14, 2012, on the scope of issues to be studied in the Bottineau Transitway Draft Environmental Impact Statement.

Certified as an official action of the City Council: *PM*

RECORD OF COUNCIL VOTE (X INDICATES VOTE)													
COUNCIL MEMBER	AYE	NAY	NOT VOTING	ABSENT	VOTE TO OVERRIDE	VOTE TO SUSTAIN	COUNCIL MEMBER	AYE	NAY	NOT VOTING	ABSENT	VOTE TO OVERRIDE	VOTE TO SUSTAIN
Reich	X						Glidden	X					
Gordon	X						Schiff	X					
Hofstede	X						Tuthill				X		
Johnson	X						Quincy	X					
Samuels	X						Colvin Roy	X					
Lilligren	X						Hodges	X					
Goodman				X									

ADOPTED FEB 15, 2012  
DATE

ATTEST *Cheryl R. Rybak*  
CITY CLERK

☒ APPROVED ☐ NOT APPROVED ☐ VETOED  
*[Signature]*  
MAYOR RYBAK  
FEB 15 2012  
DATE

Confirming Interest in Bottineau Transitway  
Ringold, Jennifer B.  
to:  
Brent.Rusco@co.hennepin.mn.us  
03/29/2012 08:35 AM  
[Show Details](#)

Brent

Thank you for including the MPRB as a participating agency in the Bottineau Transitway project. I am writing to confirm our interest in being a participating agency in the process. Let me know if you need any additional action or information to confirm this role.

Best, jbr

Jennifer Ringold  
Manager of Public Engagement and Citywide Planning  
Minneapolis Park & Recreation Board  
2117 West River Road  
Minneapolis, MN 55411

Phone: 612-230-6464  
Cell: 612-516-0727

Bottineau Transitway Project: Participating Agency  
Ann Rexine  
to:  
Brent.Rusco  
03/29/2012 02:28 PM  
Show Details

Brent,

An invitation was sent via our superintendent Cris Gears regarding participation with the Bottineau Transitway Project. Three Rivers Park District (Park District) would like to be involved in the process and I will be the contact. If there are specific items that require decision making authority, I will channel that information to the right folks.

Thanks,

**Ann Rexine**  
Planner

Three Rivers Park District  
3000 Xenium Lane North  
Plymouth, MN 55441  
T: 763.694.1103  
F: 763.557.5248  
[arexine@threeriversparkdistrict.org](mailto:arexine@threeriversparkdistrict.org)



Please consider the environment before printing this email.



## Section 106 Consulting Party Letters



Minnesota Department of Transportation

395 John Ireland Boulevard  
Saint Paul, Minnesota 55155-1899

November 7, 2011

Jamie Verbrugge, City Manager  
City of Brooklyn Park  
5200 85th Ave N  
Brooklyn Park, MN. 55443

RE: Consulting party status; Section 106 historic review of proposed Bottineau Transitway project

Dear Mr. Verbrugge:

On behalf of the Federal Transit Administration (FTA), I am extending an invitation to the City of Brooklyn Park to participate in the Section 106 review process for the Bottineau Transitway project as a consulting party. The Bottineau Transitway is a proposed transit project sponsored by the Hennepin County Regional Rail Authority. The project will study various alignments and modes, including light rail, transit and bus rapid transit, to connect the northwest suburbs along an approximately 20 mile corridor to Minneapolis (see attached map). The Cultural Resources Unit at the Minnesota Department of Transportation is acting on behalf of FTA in carrying out many aspects of this project review.

Section 106 of the National Historic Preservation Act of 1966, as amended, requires federal agencies to take into account the effects of their projects on historic properties. When there are potential adverse effects to properties which are listed in, or eligible for, the National Register of Historic Places, the Section 106 process seeks ways to avoid, reduce, or mitigate those effects. The result is often a Section 106 agreement, which stipulates measures to be taken to address project effects.

Local governments are entitled to participate in the Section 106 process as consulting parties, along with the State Historic Preservation Office (SHPO), Indian tribes, and other interested organizations and individuals. Consulting parties are able to share their views, receive and review pertinent information, offer ideas, and consider possible solutions together with the Federal agency and other parties. Consulting parties play an active and important role in determining how potential effects on historic properties will be avoided or mitigated during the planning and implementation of a project. For more information, see: <http://www.achp.gov/docs/CitizenGuide.pdf>

We would welcome the involvement of the City of Brooklyn Park in the Section 106 consultation process for the Bottineau Transitway project. If you would like to participate, please let us know of your interest, in writing. If you have any questions, please contact me at (651)366-3615.

Sincerely,

A handwritten signature in cursive script that reads "Garneth O. Peterson".

Garneth O. Peterson, AICP  
Cultural Resources Unit  
Minnesota Department of Transportation

CC: Lois Kimmelman, Federal Transit Administration  
Joe Gladke, Hennepin County Regional Rail Authority  
Jeanne Witzig, Kimley-Horn  
Joe Hudak, Minnesota Department of Transportation  
Mary Ann Heidemann, Minnesota State Historic Preservation Office



## Office of the City Manager

5200 85th Ave. N., Brooklyn Park, MN 55443-4301 • Phone 763-424-8000 • Fax 763-493-8391  
TDD 763-493-8392

**JAMES VERBRUGGE**  
City Manager  
763-493-8002

December 19, 2011

Garneth O. Peterson,  
Cultural Resources Unit  
Minnesota Dept of Transportation  
395 John Ireland Blvd  
Saint Paul, MN 55155-1899

Dear Ms. Peterson,

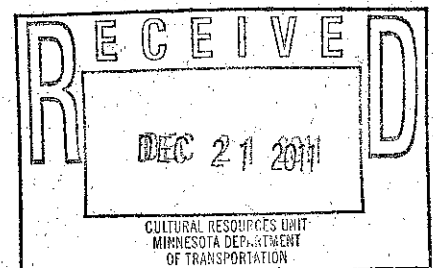
This letter is to confirm our participation in the Section 106 consultation process for the Bottineau Transitway project. Please coordinate our participation through Mr. Todd Larson, Senior Planner of the City of Brooklyn Park. Todd can be reached by phone at 763-493-8069 and via email at [Todd.Larson@brooklynpark.org](mailto:Todd.Larson@brooklynpark.org).

Sincerely,



James Verbrugge  
City Manager

cc: Todd Larson, Senior Planner  
Michael Sable, Acting Director of Community Development  
Cindy Sherman, Planning Director







Minnesota Department of Transportation

395 John Ireland Boulevard  
Saint Paul, Minnesota 55155-1899

November 7, 2011

Mr. Al Madsen, City Administrator  
12800 Arbor Lakes Pkwy  
P.O. Box 1180  
Maple Grove, MN 55311

RE: Consulting party status; Section 106 historic review of proposed Bottineau Transitway project

Dear Mr. Madsen:

On behalf of the Federal Transit Administration (FTA), I am extending an invitation to the City of Maple Grove to participate in the Section 106 review process for the Bottineau Transitway project as a consulting party. The Bottineau Transitway is a proposed transit project sponsored by the Hennepin County Regional Rail Authority. The project will study various alignments and modes, including light rail, transit and bus rapid transit, to connect the northwest suburbs along an approximately 20 mile corridor to Minneapolis (see attached map). The Cultural Resources Unit at the Minnesota Department of Transportation is acting on behalf of FTA in carrying out many aspects of this project review.

Section 106 of the National Historic Preservation Act of 1966, as amended, requires federal agencies to take into account the effects of their projects on historic properties. When there are potential adverse effects to properties which are listed in, or eligible for, the National Register of Historic Places, the Section 106 process seeks ways to avoid, reduce, or mitigate those effects. The result is often a Section 106 agreement, which stipulates measures to be taken to address project effects.

Local governments are entitled to participate in the Section 106 process as consulting parties, along with the State Historic Preservation Office (SHPO), Indian tribes, and other interested organizations and individuals. Consulting parties are able to share their views, receive and review pertinent information, offer ideas, and consider possible solutions together with the Federal agency and other parties. Consulting parties play an active and important role in determining how potential effects on historic properties will be avoided or mitigated during the planning and implementation of a project. For more information, see: <http://www.achp.gov/docs/CitizenGuide.pdf>

We would welcome the involvement of the City of Maple Grove in the Section 106 consultation process for the Bottineau Transitway project. If you would like to participate, please let us know of your interest, in writing. If you have any questions, please contact me at (651)366-3615.

Sincerely,

A handwritten signature in cursive script that reads "Garneth O. Peterson".

Garneth O. Peterson, AICP  
Cultural Resources Unit  
Minnesota Department of Transportation

CC: Lois Kimmelman, Federal Transit Administration  
Joe Gladke, Hennepin County Regional Rail Authority  
Jeanne Witzig, Kimley-Horn  
Joe Hudak, Minnesota Department of Transportation  
Mary Ann Heidemann, Minnesota State Historic Preservation Office



12800 Arbor Lakes Parkway, P.O. Box 1180, Maple Grove, MN 55311-6180 763-494-6000

December 20, 2011

Garneth Peterson  
Minnesota Department of Transportation  
395 John Ireland Boulevard  
St. Paul, MN 55155-1899

**RE: Section 106 Historic Review Consulting Party Status**

Dear Garneth:

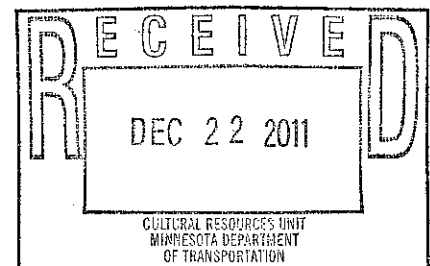
With our interest in the Bottineau Corridor Transitway project, the City of Maple Grove would officially like to be a consulting party under the Section 106 review process of the National Historic Preservation Act of 1966 as amended.

Should you have any questions, please feel free to contact me at 763-494-6040.

Sincerely,

Peter Vickerman  
City Planner

CC: Bottineau Corridor File



**"Serving Today, Shaping Tomorrow"**

AN EQUAL OPPORTUNITY EMPLOYER



Minnesota Department of Transportation

395 John Ireland Boulevard  
Saint Paul, Minnesota 55155-1899

November 7, 2011

Anne Norris, City Manager  
City Hall  
4141 Douglas Drive N  
Crystal, MN 55422

RE: Consulting party status; Section 106 historic review of proposed Bottineau Transitway project

Dear Ms. Norris:

On behalf of the Federal Transit Administration (FTA), I am extending an invitation to the City of Crystal to participate in the Section 106 review process for the Bottineau Transitway project as a consulting party. The Bottineau Transitway is a proposed transit project sponsored by the Hennepin County Regional Rail Authority. The project will study various alignments and modes, including light rail, transit and bus rapid transit, to connect the northwest suburbs along an approximately 20 mile corridor to Minneapolis (see attached map). The Cultural Resources Unit at the Minnesota Department of Transportation is acting on behalf of FTA in carrying out many aspects of this project review.

Section 106 of the National Historic Preservation Act of 1966, as amended, requires federal agencies to take into account the effects of their projects on historic properties. When there are potential adverse effects to properties which are listed in, or eligible for, the National Register of Historic Places, the Section 106 process seeks ways to avoid, reduce, or mitigate those effects. The result is often a Section 106 agreement, which stipulates measures to be taken to address project effects.

Local governments are entitled to participate in the Section 106 process as consulting parties, along with the State Historic Preservation Office (SHPO), Indian tribes, and other interested organizations and individuals. Consulting parties are able to share their views, receive and review pertinent information, offer ideas, and consider possible solutions together with the Federal agency and other parties. Consulting parties play an active and important role in determining how potential effects on historic properties will be avoided or mitigated during the planning and implementation of a project. For more information, see: <http://www.achp.gov/docs/CitizenGuide.pdf>

We would welcome the involvement of the City of Crystal in the Section 106 consultation process for the Bottineau Transitway project. If you would like to participate, please let us know of your interest, in writing. If you have any questions, please contact me at (651)366-3615.

Sincerely,

A handwritten signature in cursive script that reads "Garneth O. Peterson".

Garneth O. Peterson, AICP  
Cultural Resources Unit  
Minnesota Department of Transportation



CC: Lois Kimmelman, Federal Transit Administration  
Joe Gladke, Hennepin County Regional Rail Authority  
Jeanne Witzig, Kimley-Horn  
Joe Hudak, Minnesota Department of Transportation  
Mary Ann Heidemann, Minnesota State Historic Preservation Office



4141 Douglas Drive North • Crystal, Minnesota 55422-1696

Tel: (763) 531-1000 • Fax: (763) 531-1188 • [www.ci.crystal.mn.us](http://www.ci.crystal.mn.us)

November 15, 2011

Garneth O. Peterson  
MnDOT - Cultural Resources Unit  
395 John Ireland Blvd  
Saint Paul MN 55155-1899

Dear Ms. Peterson:

I am in receipt of your November 7, 2011 letter in which you offer the city of Crystal the opportunity to participate as a consulting party in the 106 review process for the Bottineau Transitway project.

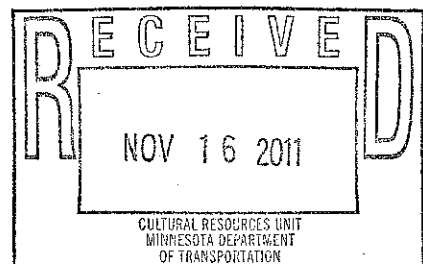
By this letter I am acknowledging the city's willingness to participate as a consulting party. Your contact at the city for this effort is Patrick Peters, Community Development Director. He may be reached by email at [patrick.peters@ci.crystal.mn.us](mailto:patrick.peters@ci.crystal.mn.us) or by phone at 763.531.1130.

Thank you.

Sincerely,

Anne L. Norris  
City Manager

cc: Patrick Peters, Community Development Director





Minnesota Department of Transportation

395 John Ireland Boulevard  
Saint Paul, Minnesota 55155-1899

November 7, 2011

Marcia Glick, City Manager  
City of Robbinsdale  
4100 Lakeview Avenue North  
Robbinsdale, MN 55422

RE: Consulting party status; Section 106 historic review of proposed Bottineau Transitway project

Dear Ms. Glick:

On behalf of the Federal Transit Administration (FTA), I am extending an invitation to the City of Robbinsdale to participate in the Section 106 review process for the Bottineau Transitway project as a consulting party. The Bottineau Transitway is a proposed transit project sponsored by the Hennepin County Regional Rail Authority. The project will study various alignments and modes, including light rail, transit and bus rapid transit, to connect the northwest suburbs along an approximately 20 mile corridor to Minneapolis (see attached map). The Cultural Resources Unit at the Minnesota Department of Transportation is acting on behalf of FTA in carrying out many aspects of this project review.

Section 106 of the National Historic Preservation Act of 1966, as amended, requires federal agencies to take into account the effects of their projects on historic properties. When there are potential adverse effects to properties which are listed in, or eligible for, the National Register of Historic Places, the Section 106 process seeks ways to avoid, reduce, or mitigate those effects. The result is often a Section 106 agreement, which stipulates measures to be taken to address project effects.

Local governments are entitled to participate in the Section 106 process as consulting parties, along with the State Historic Preservation Office (SHPO), Indian tribes, and other interested organizations and individuals. Consulting parties are able to share their views, receive and review pertinent information, offer ideas, and consider possible solutions together with the Federal agency and other parties. Consulting parties play an active and important role in determining how potential effects on historic properties will be avoided or mitigated during the planning and implementation of a project. For more information, see: <http://www.achp.gov/docs/CitizenGuide.pdf>

We would welcome the involvement of the City of Robbinsdale in the Section 106 consultation process for the Bottineau Transitway project. If you would like to participate, please let us know of your interest, in writing. If you have any questions, please contact me at (651)366-3615.

Sincerely,

A handwritten signature in cursive script that reads 'Garneth O. Peterson'.

Garneth O. Peterson, AICP  
Cultural Resources Unit  
Minnesota Department of Transportation

CC: Lois Kimmelman, Federal Transit Administration  
Joe Gladke, Hennepin County Regional Rail Authority  
Jeanne Witzig, Kimley-Horn  
Joe Hudak, Minnesota Department of Transportation  
Mary Ann Heidemann, Minnesota State Historic Preservation Office



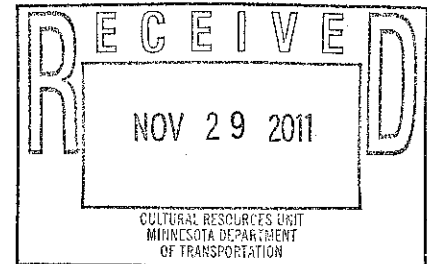


## City of Robbinsdale

4100 Lakeview Avenue North • Robbinsdale • Minnesota • 55422-2280  
Phone (763)531-1258 • Fax (763)531-1291  
Website [www.robbsdalemn.com](http://www.robbsdalemn.com)

November 28, 2011

Garneth O. Peterson, AICP  
Cultural Resources Unit  
Minnesota Department of Transportation  
395 John Ireland Boulevard  
St Paul, MN 55155-1899



RE: Consulting party status; Section 106 historic review of proposed Bottineau Transitway

Dear Ms. Peterson,

This letter is to indicate our interest in participating in the Section 106 consultation process for the Bottineau Transitway project. I would be available as would other members of my staff as needed related to any special areas of expertise.

Please free to contact me at [mglick@ci.robbsdale.mn.us](mailto:mglick@ci.robbsdale.mn.us) or 763-531-1258 or by letter at the above address.

Thank you for including us in this process.

Sincerely,

Marcia Glick  
Robbinsdale City Manager



Minnesota Department of Transportation

395 John Ireland Boulevard  
Saint Paul, Minnesota 55155-1899

November 7, 2011

Tom Burt, City Manager  
City of Golden Valley  
7800 Golden Valley Rd  
Golden Valley, MN 55427

RE: Consulting party status; Section 106 historic review of proposed Bottineau Transitway project

Dear Mr. Burt:

On behalf of the Federal Transit Administration (FTA), I am extending an invitation to the City of Golden Valley to participate in the Section 106 review process for the Bottineau Transitway project as a consulting party. The Bottineau Transitway is a proposed transit project sponsored by the Hennepin County Regional Rail Authority. The project will study various alignments and modes, including light rail, transit and bus rapid transit, to connect the northwest suburbs along an approximately 20 mile corridor to Minneapolis (see attached map). The Cultural Resources Unit at the Minnesota Department of Transportation is acting on behalf of FTA in carrying out many aspects of this project review.

Section 106 of the National Historic Preservation Act of 1966, as amended, requires federal agencies to take into account the effects of their projects on historic properties. When there are potential adverse effects to properties which are listed in, or eligible for, the National Register of Historic Places, the Section 106 process seeks ways to avoid, reduce, or mitigate those effects. The result is often a Section 106 agreement, which stipulates measures to be taken to address project effects.

Local governments are entitled to participate in the Section 106 process as consulting parties, along with the State Historic Preservation Office (SHPO), Indian tribes, and other interested organizations and individuals. Consulting parties are able to share their views, receive and review pertinent information, offer ideas, and consider possible solutions together with the Federal agency and other parties.

Consulting parties play an active and important role in determining how potential effects on historic properties will be avoided or mitigated during the planning and implementation of a project. For more information, see: <http://www.achp.gov/docs/CitizenGuide.pdf>

We would welcome the involvement of the City of Golden Valley in the Section 106 consultation process for the Bottineau Transitway project. If you would like to participate, please let us know of your interest, in writing. If you have any questions, please contact me at (651)366-3615.

Sincerely,

A handwritten signature in cursive script that reads "Garneth O. Peterson".

Garneth O. Peterson, AICP  
Cultural Resources Unit  
Minnesota Department of Transportation

CC: Lois Kimmelman, Federal Transit Administration  
Joe Gladke, Hennepin County Regional Rail Authority  
Jeanne Witzig, Kimley-Horn  
Joe Hudak, Minnesota Department of Transportation  
Mary Ann Heidemann, Minnesota State Historic Preservation Office



November 17, 2011

Garneth O. Peterson, AICP  
Cultural Resources Unit  
Minnesota Department of Transportation  
395 John Ireland Boulevard  
Saint Paul, MN 55155

7800 Golden Valley Road  
Golden Valley, MN 55427

Re: Consulting Party Status; Section 106 Historic Review of Proposed Bottineau  
Transitway Project

Dear Ms. Peterson:

Thank you for extending the opportunity for the City of Golden Valley to participate in the historic review of the proposed Bottineau Transitway. I have participated on the Bottineau Advise, Review and Communicate Committee (ARCC) since its inception in 2007. I would be interested in representing Golden Valley as a consulting party for the historic review of the Bottineau corridor.

My contact information is as follows:

Joseph Hogeboom, City Planner

Phone: 763-593-8099

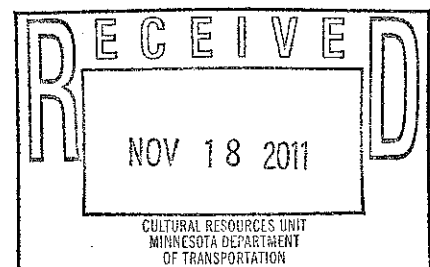
Email: [jhogeboom@goldenvalleymn.gov](mailto:jhogeboom@goldenvalleymn.gov)

Please let me know if you require any additional information from me at this time. I look forward to working with you on this project.

Sincerely,

A handwritten signature in cursive script that reads "Joseph S. Hogeboom".

Joseph S. Hogeboom  
City Planner



C: Council Member Paula Pentel, Bottineau Policy Advisory Committee Member  
Thomas D. Burt, City Manager





**Minnesota Department of Transportation**

395 John Ireland Boulevard  
Saint Paul, Minnesota 55155-1899

November 7, 2011

Mr. Steven Bosaker, City Coordinator  
City Hall  
350 S 5<sup>th</sup> St, Room 301M  
Minneapolis, MN 55415

RE: Consulting party status; Section 106 historic review of proposed Bottineau Transitway project

Dear Mr. Bosacker:

On behalf of the Federal Transit Administration (FTA), I am extending an invitation to the City of Minneapolis to participate in the Section 106 review process for the Bottineau Transitway project as a consulting party. The Bottineau Transitway is a proposed transit project sponsored by the Hennepin County Regional Rail Authority. The project will study various alignments and modes, including light rail, transit and bus rapid transit, to connect the northwest suburbs along an approximately 20 mile corridor to Minneapolis (see attached map). The Cultural Resources Unit at the Minnesota Department of Transportation is acting on behalf of FTA in carrying out many aspects of this project review.

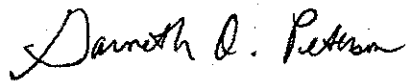
Section 106 of the National Historic Preservation Act of 1966, as amended, requires federal agencies to take into account the effects of their projects on historic properties. When there are potential adverse effects to properties which are listed in, or eligible for, the National Register of Historic Places, the Section 106 process seeks ways to avoid, reduce, or mitigate those effects. The result is often a Section 106 agreement, which stipulates measures to be taken to address project effects.

Local governments are entitled to participate in the Section 106 process as consulting parties, along with the State Historic Preservation Office (SHPO), Indian tribes, and other interested organizations and individuals. Consulting parties are able to share their views, receive and review pertinent information, offer ideas, and consider possible solutions together with the Federal agency and other parties. Consulting parties play an active and important role in determining how potential effects on historic properties will be avoided or mitigated during the planning and implementation of a project. For more information, see:  
<http://www.achp.gov/docs/CitizenGuide.pdf>

We note that the City of Minneapolis has a Heritage Preservation Commission established by city ordinance. In such cases, it is possible for both the City and the Heritage Preservation Commission to participate as separate consulting parties, if they so choose.

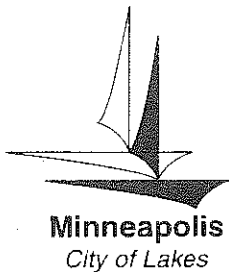
We would welcome the involvement of the City of Minneapolis in the Section 106 consultation process for the Bottineau Transitway project. If you would like to participate, please let us know of your interest, in writing. If you have any questions, please contact me at (651)366-3615.

Sincerely,

A handwritten signature in cursive script, reading "Garneth O. Peterson".

Garneth O. Peterson, AICP  
Cultural Resources Unit  
Minnesota Department of Transportation

CC: Jack Byers, Minneapolis HPC  
Lois Kimmelman, Federal Transit Administration  
Joe Gladke, Hennepin County Regional Rail Authority  
Jeanne Witzig, Kimley-Horn  
Joe Hudak, Minnesota Department of Transportation  
Mary Ann Heidemann, Minnesota State Historic Preservation Office



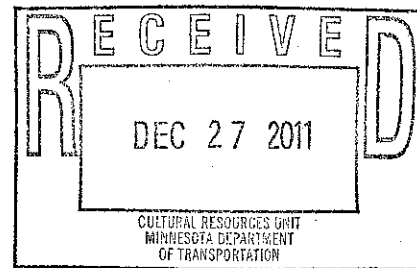
Community Planning &  
Economic Development  
Planning Division

250 South 4th Street - Room 110  
Minneapolis MN 55415

Office 612 673-2597  
Fax 612 673-2728  
TTY 612 673-2157

December 22, 2011

Garneth Peterson  
Cultural Resources Unit  
Office of Environmental Services  
Minnesota Department of Transportation  
395 John Ireland Boulevard  
St. Paul, MN 55155



**RE: Bottineau Transitway Project Section 106: Consulting Party  
Status for the City of Minneapolis**

Dear Ms. Peterson,

Thank you for your letter dated November 7, 2011 regarding the City of Minneapolis's role as a consulting party to the Section 106 Review for the Bottineau Transitway Project. The City of Minneapolis agrees to be a consulting party for the Section 106 historic review of the proposed Bottineau Transitway Project.

The Planning Division within the Minneapolis Community Planning and Economic Development Department (CPED) provides staff services to the Minneapolis Heritage Preservation Commission. With that in mind, CPED-Planning has been and will continue to represent both the City of Minneapolis and the Minneapolis Heritage Preservation Commission on this and all other preservation matters related to the Bottineau Corridor Transitway Project.

Brian Schaffer is the preservation planner assigned to this project. His contact information is noted below:

Brian Schaffer, Senior Planner  
City of Minneapolis - CPED-Planning  
250 South 4th Street - Room 300 PSC  
Minneapolis, MN 55415  
Phone: (612) 673-2670  
Fax: (612) 673-2526  
[brian.schaffer@ci.minneapolis.mn.us](mailto:brian.schaffer@ci.minneapolis.mn.us)

Brian will report out on the progress of this project both within CPED and periodically, as necessary to the HPC. When the timing makes sense to you and other project partners, Brian will seek formal action of the HPC as needed.



Garneth Peterson  
December 22, 2010  
Page Two

Also, to avoid any possible confusion, please keep in mind that CPED's overall lead representative on Bottineau Transitway Project is Jim Voll.

If I can be of further assistance on this project at any time, please do not hesitate to contact me.

Sincerely,



Jack Byers, Planning Manager  
Preservation and Design Team

cc: Steven Bosacker, City Coordinator, City of Minneapolis  
Mike Christenson, Executive Director CPED, City of Minneapolis  
Jason Wittenberg, Planning Director  
Chad Larson, Chair, Minneapolis Heritage Preservation Commission  
Brian Schaffer, Senior Planner  
Jim Voll, Principal Planner  
Anna Flintoft, Transportation Planner, City of Minneapolis Department of Public Works





**Minnesota Department of Transportation**

**Office of Environmental Stewardship**

Mail Stop 620

395 John Ireland Boulevard

St. Paul, MN 55155

Office Tel: (651) 366-4292

Fax: (651) 366-3603

E-Mail: [dennis.gimmestad@state.mn.us](mailto:dennis.gimmestad@state.mn.us)

4 October 2012

Ms. Jayne Miller, Superintendent  
Minneapolis Park and Recreation Board  
2117 West River Road  
Minneapolis, MN 55411

RE: Consulting party status; Section 106 historic review of proposed Bottineau Transitway project

Dear Ms. Miller:

On behalf of the Federal Transit Administration (FTA), I am extending an invitation to the Minneapolis Park and Recreation Board to participate in the Section 106 review process for the Bottineau Transitway project. As you know, Bottineau Transitway is a proposed transit project between Minneapolis and the northwest suburbs, sponsored by the Hennepin County Regional Rail Authority and the Metropolitan Council, with funding from the FTA. The Cultural Resources Unit at the Minnesota Department of Transportation is acting on behalf of FTA in carrying out many aspects of the 106 review.

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their projects on historic properties. When there are potential adverse effects to properties which are listed in, or eligible for, the National Register of Historic Places, the agency seeks ways to avoid, reduce, or mitigate those effects. The result is often a Section 106 agreement, which stipulates measures to be taken to address project effects.

Local governments are entitled to participate in the Section 106 process as consulting parties, along with the State Historic Preservation Office, Indian tribes, and other interested organizations and individuals. Consulting parties are able to share their views, receive and review pertinent information, offer ideas, and consider possible solutions together with the Federal agency and other parties. Consulting parties play an active and important role in determining how potential effects on historic properties will be avoided or mitigated during the planning and implementation of a proposed project. For more information, see: <http://www.achp.gov/docs/CitizenGuide.pdf>

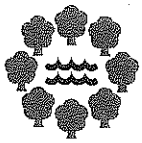
We would welcome the involvement of the Minneapolis Park and Recreation Board in the Section 106 consultation process for the Bottineau Transitway project. If you would like to participate, please let us know of your interest, in writing. If you have any questions, please contact me at 651-366-4292.

Sincerely,

A handwritten signature in black ink, reading "Dennis A. Gimmestad". The signature is written in a cursive style with a large, stylized "D" and "G".

Dennis A. Gimmestad  
Cultural Resources Unit  
Minnesota Department of Transportation

cc: William Wheeler, Federal Transit Administration  
Joe Gladke, Hennepin County  
Mary Ann Heidemann, Minnesota State Historic Preservation Office  
Jeanne Witzig, Kimley-Horn



**Minneapolis  
Park & Recreation Board**

October 29, 2012

*Administrative Offices*  
2117 West River Road  
Minneapolis, MN 55411-2227

*Operations Center*  
3800 Bryant Avenue South  
Minneapolis, MN 55409-1000

*Phone*  
612-230-6400

*Fax:*  
612-230-6500

[www.minneapolisparks.org](http://www.minneapolisparks.org)

Dennis Gimmestad  
Cultural Resources Unit  
Minnesota Department of Transportation  
Office of Environmental Stewardship  
Mail Stop 620  
395 John Ireland Boulevard  
St. Paul, MN 55155

Dear Mr. Gimmestad,

Thank you for your October 4, 2012 letter inviting the Minneapolis Park and Recreation Board to participate in the Section 106 review process for the proposed Bottineau Transitway project. We accept the invitation to participate as a consulting party in the process.

Jennifer Ringold, Manager of Public Engagement and Citywide Planning, will be your contact for the project. She can be reached at 612-230-6464 or [jringold@minneapolisparks.org](mailto:jringold@minneapolisparks.org).

Again, thank you for the invitation to participate in this important aspect of the proposed Bottineau Transitway project.

*President*  
John Erwin

*Vice President*  
Liz Wielinski

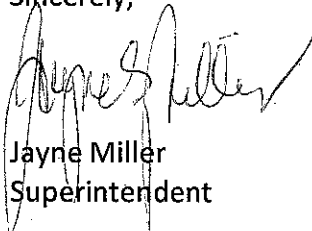
*Commissioners*  
Brad Bourn  
Bob Fine

Carol A. Kummer  
Jon C. Olson  
Anita Tabb  
Scott Vreeland  
M. Annie Young

*Superintendent*  
Jayne Miller

*Secretary to the Board*  
Michael P. Schmidt

Sincerely,



Jayne Miller  
Superintendent



U.S. Department  
of Transportation  
Federal Transit  
Administration

REGION V  
Illinois, Indiana,  
Michigan, Minnesota,  
Ohio, Wisconsin

200 West Adams Street  
Suite 320  
Chicago, IL 60606-5253  
312-353-2789  
312-866-0351 (fax)

December 13, 2012

Ms. Jayne Miller, Superintendent  
Minneapolis Park and Recreation Board  
2117 West River Road  
Minneapolis, MN 55411-2227

RE: Consulting Party Status for the Bottineau Transitway Project

Dear Ms. Miller:

In your letter of October 29, 2012 to the Minnesota Department of Transportation, you accepted consulting party status for the Section 106 review of the Bottineau Transitway Project. This letter serves as our acknowledgment of your decision.

The Federal Transit Administration, the Hennepin County Regional Railroad Authority and the Metropolitan Council are working together on this project, and will share copies of Section 106 documents with consulting parties as the project proceeds. The Cultural Resources Unit at the Minnesota Transportation (MnDOT CRU) is coordinating many aspects of the 106 process.

If you have any questions, please contact Bill Wheeler of my staff at (312) 353-2639 or Dennis Gimmestad, Historian, at MnDOT CRU at (651) 366-4292.

Sincerely,

Marisol R. Simon  
Regional Administrator

cc: Joe Gladke, Hennepin County  
Brent Rusco, Hennepin County  
Mary Karlsson, Metropolitan Council  
Mary Ann Heidemann, Minnesota SHPO  
Dennis Gimmestad, MnDOT CRU





January 24, 2013

Dennis Gimmestad  
Minnesota Department of Transportation- Cultural Resources Unit  
Mail Stop 620  
395 John Ireland Boulevard  
St. Paul, MN 55155

**Community Planning &  
Economic Development**

105 5th Avenue South - Suite 200  
Minneapolis MN 55401-2534

Office 612 673-5095  
Fax 612 673-5100  
TTY 612 673-5154

**RE: Bottineau Transitway Project, Hennepin County, Minnesota; Phase IA  
Archaeological Assessment; Phase I/Phase II Architecture History Survey  
(SHPO#2011-3773)**

Dear Mr. Gimmestad:

Thank you for providing the results of the survey work. The City of Minneapolis CPED-Planning Division submits the following comments on behalf the Minneapolis HPC, a consulting party to the Section 106 review.

Regarding the phase IA archaeological assessment CPED-Planning concurs with the report finding that no further archeological investigation is needed, with the exception of the area of 5<sup>th</sup> Avenue North between 4<sup>th</sup> and 5<sup>th</sup> Streets North. CPED-Planning concurs with your comment that this area is outside of the project work area.

Regarding the phase I/II architecture/history survey, CPED-Planning concurs with your list of identified properties in the National Register of Historic Places (NHRP):

- Sumner Branch Library (HE-MPC-8081), 611 Emerson Ave. No.
- Northwestern Knitting Company Factory (HE-MPC-8125), 718 Glenwood Ave.
- Minneapolis North Loop Warehouse District (HE-MPC-0441)

Regarding properties previously evaluated to be eligible for the NRHP, with SHPO concurrence, CPED-Planning notes that the Regan Brothers Bakery (HE-MPC-16274) was approved for demolition by the Minneapolis Heritage Preservation Commission at its meeting of August 21, 2012 (our file number BZH-27395).

Regarding the new eligibility determinations you sent for properties in Minneapolis, CPED-Planning concurs with your recommendation that the following properties are eligible for listing in the NRHP:

- St. Anne's Catholic Church (HE-MPC-8251)
- Talmud Torah Hebrew School (HE-MPC-7612)
- Sharei Zedeck Synagogue (HE-MPC-8211)
- Homewood Historic District (HE-MPC-12101)
- Floyd B. Olson Memorial Statue (HE-MPC-9013)
- Labor Lyceum (HE-MPC-7553)
- Wayman A.M.E Church (HE-MPC-8290)

The following properties, within the area of potential effect (APE), are mentioned as properties recommended for further survey and research in the *Historic Resources Inventory in the Central Core Area* prepared by Mead & Hunt in 2011, but do not appear to be addressed in the phase I/phase II architecture history survey:

- Bethune Community School (HE-MPC-9893), 917 Emerson Ave. No.
- Northwestern National Bank (HE-MPC-9894), 615 7<sup>th</sup> St. No.
- Bridge No. 27782 (HE-MPC-9831), 7<sup>th</sup> Street over I-94



If they are in the APE, we encourage investigation of these properties or a discussion of why they were not included in the survey.

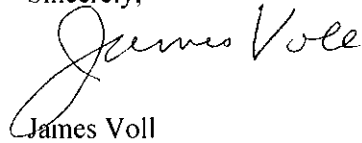
Regarding the properties listed in Table 5, Phase II Architectural History Properties, we concur that they are not eligible for listing in the NRHP based on the information presented in the survey. However, they may be eligible based on the results of further investigation as part of a city-wide context for these resources. For example, a designation of schools or mid-century ecclesiastical buildings resulting from a context study of these properties city-wide. The properties listed as not eligible in Table 5 that could be considered as a part of this type of study in the future include:

- Finnish Apostolic Lutheran Church (HE-MPC-7570), 1922 4<sup>th</sup> Ave. No.
- Abraham Lincoln Junior High School (HE-MPC-8291), 2131 12<sup>th</sup> Ave. No.
- St. Anne's Catholic Church complex (HE-MPC-10548), 2300 Block of 26<sup>th</sup> Ave. No.
- Hebrew Free School (HE-HPC-7555), 1229 Logan Ave. No.
- I.L. Peretz Community Center (HE-MPC-7571), 2418 Plymouth Ave.
- Talmud Tohrah Hebrew School (HE-MPC-7612), 1616 Queen Ave. No.
- Pilgrim Heights Community Church (HE-MPC-8277), 3120 Washburn Av. No.
- Fire Station 25 (HE-MPC-8034), 2229 West Broadway

We concur with your conclusion that the remaining are not eligible for listing in the National Register of Historic Places. Further investigation may reveal that they are eligible for local designation.

CPED-Planning appreciates the high quality and organization of this extensive study.

Sincerely,



James Voll

Principal City Planner, AICP, LEED-AP  
City of Minneapolis - CPED-Long Range Planning  
105 5<sup>th</sup> Avenue South - Room 200 Crown Roller Mill  
Minneapolis, MN 55401  
Phone: (612) 673-3887  
Fax: (612) 673-2526  
[james.voll@minneapolismn.gov](mailto:james.voll@minneapolismn.gov)

cc: Mary Ann Heidemann, MN SHPO (via email)  
Jack Byers, Minneapolis CPED - Long Range Planning (via email)  
Don Pflaum, Minneapolis Public Works (via email)



**Minneapolis**  
City of Lakes

**Community Planning &  
Economic Development**

105 5th Avenue South - Suite 200  
Minneapolis MN 55401-2534

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Fax 612 673-5100  
TTY 612 673-5154

February 25, 2013

Dennis Gimmestad  
Minnesota Department of Transportation- Cultural Resources Unit  
Mail Stop 620  
395 John Ireland Boulevard  
St. Paul, MN 55155

**RE: Bottineau Transitway Project, Hennepin County, Minnesota; Phase IA  
Archaeological Assessment; Phase I/Phase II Architecture History Survey  
(SHPO#2011-3773)**

Dear Mr. Gimmestad:

This letter is a follow-up to the City of Minneapolis CPED-Long Range Planning Division comment letter on behalf the Minneapolis HPC, a consulting party to the Section 106 review, dated January 24, 2013.

In that letter I wrote that we concur with your recommendation that the Talmud Torah Hebrew School (HE-MPC-7612) is eligible for listing in the National Register of Historic Places (NRHP).

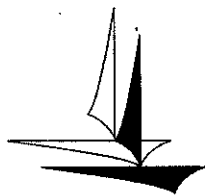
Later in the letter I listed a group of properties that we concurred were not eligible for NRHP, but could be eligible for a local designation as part of a city-wide context study. In this list I inadvertently included the Talmud Torah Hebrew School. My intent was to indicate that it could be part of a local designation, not that it should be excluded from considered for the NRHP. We concur with your recommendation that it is eligible for the NRHP. I apologize for any confusion this may have caused.

Sincerely,

James Voll  
Principal City Planner, AICP, LEED-AP  
City of Minneapolis - CPED-Long Range Planning  
105 5<sup>th</sup> Avenue South - Room 200 Crown Roller Mill  
Minneapolis, MN 55401  
Phone: (612) 673-3887  
Fax: (612) 673-2526  
[james.voll@minneapolismn.gov](mailto:james.voll@minneapolismn.gov)



cc: Mary Ann Heidemann, MN SHPO (via email)  
Jack Byers, Minneapolis CPED - Long Range Planning (via email)  
Don Pflaum, Minneapolis Public Works (via email)



August 9, 2013

**Minneapolis**  
City of Lakes

**Community Planning &  
Economic Development**

105 5th Avenue South - Suite 200  
Minneapolis MN 55401-2534

Dennis Gimmestad  
Minnesota Department of Transportation- Cultural Resources Unit  
Mail Stop 620  
395 John Ireland Boulevard  
St. Paul, MN 55155

Office 612 673-5095  
Fax 612 673-5100  
TTY 612 673-5154

**RE: Bottineau Transitway Project, Hennepin County, Minnesota; Supplemental Architecture/History Survey; assessment of Potential Effects, Inventory Form amendments (SHPO#2011-3773)**

Dear Mr. Gimmestad:

The City of Minneapolis CPED-Long-Range Planning Division submits the following comments on behalf the Minneapolis HPC, a consulting party to the Section 106 review.

We have not received a copy of survey report of supplemental architecture/history survey. Please send me a copy for review. We will then be able to comment on this report and recommendations.

We note that the Pilgrim Heights Community Church at 3120 Washburn Avenue North (HE-MPC-8277) has been changed from ineligible to eligible.

We have received the Potential Effects on Historic Properties document and in general agree with the potential agreement measures, but will work with all parties on the actual measures to be adopted or agreed upon.

For any maps for the 106 review that area adopted into the DEIS/FEIS, we would recommend that a note or disclaimer be added that there are also several locally eligible or designated properties not shown on the map that the City will also evaluate with future development and planning.

Sincerely,

James Voll  
Principal City Planner, AICP, LEED-AP  
City of Minneapolis - CPED-Long Range Planning  
105 5<sup>th</sup> Avenue South - Room 200 Crown Roller Mill  
Minneapolis, MN 55401  
Phone: (612) 673-3887  
Fax: (612) 673-2526  
[james.voll@minneapolismn.gov](mailto:james.voll@minneapolismn.gov)



cc: Mary Ann Heidemann, MN SHPO (via email)  
Joe Gladke, Hennepin County (via email)  
Brent Rusco, Hennepin County (via email)  
Jack Byers, Minneapolis CPED - Long Range Planning (via email)  
Don Pflaum, Minneapolis Public Works (via email)



Coordination with Minnesota State Historic Preservation Office

October 9, 2013

Mr. Dennis Gimmestad  
Cultural Resources Unit  
MN Dept. of Transportation  
395 John Ireland Boulevard, Mail Stop 620  
St. Paul, MN 55155-1899

RE: Bottineau Transitway Project  
Multiple Communities, Hennepin County  
SHPO Number: 2011-3773

Dear Mr. Gimmestad:

Thank you for submitting further information regarding this project. It has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and implementing federal regulations at 36 CFR 800. Our responses are provided below.

#### Inventory Forms

Thank you for submitting the updated inventory forms for the property at 1128 Vincent Avenue North (HE-MPC-9411), the Homewood Residential Historic District (HE-MPC-12101), the Osseo Branch Line (HE-RRD-002), and a non-contributing railroad bridge along the Osseo Branch Line (HE-MPC-5286).

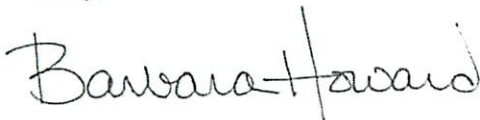
#### Assessment of Effects

Thank you for clarifying your findings of effect in regards to the Osseo Branch Line and the Homewood Residential Historic District. We concur with your determination that this project will have **no adverse effect** on the Osseo Branch Line or the railroad bridge, which is a non-contributing structure along the line. We look forward to further design review on this aspect of the project (including the new bridge design) as the project proceeds. We also concur with your determination that Alignment D2 will have an **adverse effect** on the Homewood Residential Historic District, as it removes several contributing houses and shifts the entire eastern edge of the district. We look forward to further consultation regarding Alignment D1, which runs along the western edge of the historic district. At this point it is felt that the effects are much less severe and may be avoidable through consultation on design, noise, and traffic issues.

We look forward to further consultation in regards to resolution of potential effects and a Section 106 Agreement for this project.

Please contact Kelly Gragg-Johnson, Review and Compliance Specialist, at 651-259-3455 with any questions regarding our review.

Sincerely,



Barbara Howard  
Deputy State Historic Preservation Officer

cc: Bill Wheeler, FTA  
Kathryn O'Brien, Metropolitan Council  
Jenny Bring, The 106 Group

August 7, 2013

Mr. Dennis Gimmestad  
MnDOT Cultural Resources Unit  
395 John Ireland Boulevard, Mail Stop 620  
St. Paul, MN 55155-1899

RE: Bottineau Transitway  
Multiple Communities, Hennepin County  
SHPO Number: 2011-3773

Dear Mr. Gimmestad:

We have received and reviewed your letter and package dated July 8, 2013, including additional and revised Phase I and II property evaluations, along with a preliminary determination of project effect. These materials have been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966, the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act.

Our comments are provided below, arranged according to the numbered sections of your July 8 letter.

1. We concur with all the contributing/non-contributing determinations made for newly surveyed properties within the Homewood Historic District except for 1128 Vincent. You have labeled this property as non-contributing, due to "fair" integrity associated with window replacement. As a matter of equity and consistency, we note that 1240 Upton and 1216 Vincent are both labeled as "fair" integrity due to similar window replacement, and yet are still recommended as contributing. We suggest changing the status of 1128 Vincent to "contributing." Regarding the additional Phase I properties surveyed outside of the Homewood Historic District, we agree they are all not eligible. Finally, we appreciate the supplemental information supplied on the Carl Graffunder house, especially the historic photo. Based on the new information, we agree that the house is not eligible.
2. The assessments of effect that you sent us are helpful, even if preliminary, because they explain the basis for your thinking on the subject. In general, we agree with your assessments, with one notable exception (see below). We agree with your assessment that Alignments D1 and D2 will have an unavoidably adverse effect on the Homewood Historic District. We also agree with the wide range of less severe but still important potential adverse effects spelled out in the chart, but we have hopes that many of these adverse effects can be minimized or avoided through careful planning and design. Therefore, we believe it is too early to finalize the determination of effect. It is not too early, however, to point out one area of major disagreement on effect that concerns the historic Osseo Branch rail corridor. You have determined that light rail use as proposed will have an adverse effect on this resource, due to adding the additional lines, equipment and



station stops associated with light rail traffic and operations. **We disagree**. The very first point of the Secretary of Interior's Standards advises maintaining an historic property for its historic purpose. What better use for an historic rail corridor than maintaining rail traffic? We do not agree that the additional tracks, equipment and stations are adverse, because these items are common elements in rail corridors, and are (in our view) a normal part of an adaptive re-use of the corridor. In comparison, we have routinely labeled re-use of rail corridors for asphalt bike trails as not adverse, when in my mind that use is a much greater alteration of materials, setting, feeling and association than the light rail proposal involves. Because of the importance of this issue, and my upcoming departure from the MN Historical Society, I have reviewed this matter with Barbara Mitchell Howard, our Deputy SHPO. We are in agreement with each other, but in disagreement with you. We just don't see the logic of calling re-use of a rail corridor for rail purposes adverse. If there are adverse effects, we don't believe they relate directly to historic preservation. Clearly, this matter will require further discussion and we will try to keep an open mind.

3. Thank you for responding to our comments and suggestions from the last letter by making the various revisions and amendments we requested. We now agree with all the determinations laid out in items 3A through 3G.

We look forward to continuing cooperation and consultation between our offices as this project unfolds. Thanks to you and your consulting team for your hard work on a daunting task. Incidentally, it was wonderful to hear about the survey logistics for this project during our recent Compliance Seminar.

On a personal note, I want to thank you for all the assistance you have given me over the past three and a half years. Your generosity in taking the time to answer questions and explain past projects was a tremendous help in getting me up to speed with SHPO compliance duties. Furthermore, it was wonderful to be able to bounce ideas around, even when (or especially when) we did not immediately agree. Your knowledge, experience and wisdom is much appreciated.

All my best for a bright and fulfilling future,



Mary Ann Heidemann, Manager  
Government Programs & Compliance

cc: The 106 Group  
Hilary Dvorak, Minneapolis HPC  
Barbara Mitchell Howard





**Minnesota Department of Transportation**

**Office of Environmental Stewardship**

Mail Stop 620  
395 John Ireland Boulevard  
St. Paul, MN 55155

Office Tel: (651) 366-4292

Fax: (651) 366-3603

E-Mail: dennis.gimmestad@state.mn.us

8 July 2013

Mary Ann Heidemann  
Minnesota State Historic Preservation Office  
345 Kellogg Boulevard West  
St. Paul, MN 55102

RE: Bottineau Transitway Project, Hennepin County, Minnesota; Supplemental Architecture/History Survey; Assessment of Potential Project Effects, Inventory Form Amendments (SHPO # 2011-3773)

Dear Dr. Heidemann:

We are writing to continue consultation on the Bottineau Transitway Project. We last wrote you about this project on 4 December 2012. Thank you for your response of 29 January 2013. We also appreciate the comments submitted by the City of Minneapolis, a Section 106 consulting party, on 24 January 2013.

This transmittal includes the following:

- The survey report of the supplemental architecture/history survey.
- Assessments of potential effects for all historic properties, with detailed information on two potential adverse effects.
- Miscellaneous inventory corrections, additions, and clarifications (based on comments from your office [19 October 2012 and 29 January 2013] and from the City of Minneapolis [24 January 2013]).

**1. Survey report of the supplemental architecture/history survey.**

This report supplements the November 2012 Phase I/II Architecture/History Survey Report. The report has two sections.

- A. The first section addresses the survey of a quarter mile APE around the proposed Plymouth Avenue Station, which was a later addition to the project. Portions of this APE were included in the original survey, but other portions needed supplemental survey. The survey area included fifty properties located in the eligible Homewood Historic District; these properties had not been individually inventoried because they were outside

the original APE. The properties are considered eligible as part of the district. None of the other phase I inventoried properties included in the supplemental survey meet National Register criteria. *The survey report and inventory forms are enclosed.*

- B. The second section addresses the Phase II evaluation of the Carl Graffunder House (HE-GVC-322) at 1719 Xerxes Avenue in Golden Valley. You requested additional consideration of this property in your letter of 19 October 2012, and we discussed the Phase II evaluation during our 6 November 2012 field inspection. Based on the eligibility assessment in the survey report, we conclude that this property does not meet National Register criteria. *A Phase II inventory form for this property is enclosed.*

## **2. Assessment of potential effect for all identified historic properties.**

This information is presented in table format, organized by project alignments (A, B, C, D1, and D2). Keep in mind that the DEIS project alternatives (A-C-D1, A-C-D2, B-C-D1, and B-C-D2) are comprised various combinations of these individual alignments. (B-C-D1 has been identified as the locally preferred alternative.) These effect assessments are based on the conceptual engineering plans, and many details of the project design, including the specific locations of some project elements, are not yet developed. Therefore, the table suggests continued consideration of historic properties as the engineering/design process moves forward.

That said, adverse effects on two properties, based on fundamental aspects of the conceptual engineering plans, are clear at this point. These properties are the Osseo Branch Line of the StPM&M Railroad, and the Homewood Historic District. Adverse effects to these properties are acknowledged in the table, and are discussed in greater detail in two separate attachments.

The following materials related to project effects are enclosed:

- *Potential Effects on Historic Properties (table, organized by project alignments).*
- *Map of each project alignment (A, B, C, D1, D2) showing locations of historic properties*
- *Adverse Effect documentation for Osseo Branch Line, StPM&M Railroad (all project alignments)*
- *Adverse Effect documentation for Homewood Residential Historic District (alignment D2)*
- *Conceptual engineering plans for areas of the project with historic properties, showing greater detail of the conceptual engineering design.*

### 3. Miscellaneous inventory corrections, additions, and clarifications.

- A. Your letter of 19 October 2012 requested additional consideration of eligibility for 4705 Lakeland (HE-CRC-178) in Crystal, and of 4145 Quail Ave. (HE-RBC-363) in Robbinsdale. Although the Lakeland property is relatively early and the Quail property displays some handsome detailing, neither property is particularly distinctive within its context. Based on our 6 November 2012 field inspection and discussion, no further evaluation was completed for either building.
- B. Your letter of 19 October 2012 requested an inventory form for the Mary Hills Subdivision. A form for this subdivision was included in the original Phase I inventory (HE-GVC-284). The Mary Hills Subdivision, while characteristic of Golden Valley development, is not particularly distinctive. Based on our 6 November 2012 field inspection and discussion, no further evaluation was completed.
- C. We have completed an additional Phase I survey form for the Noble Grove subdivision (HE-GVC-375). Several properties in this subdivision were included in the previously-reviewed Phase I and Phase II inventories; none of those evaluations resulted in NRHP eligibility. A separate form for Noble Grove has been prepared to retain the general information on the subdivision/plat in the inventory. *One new Phase I inventory form enclosed.*
- D. Your letter of 19 October 2012 requested additional evaluation for 1721 York Avenue North (HE-GVC-334) in Golden Valley and for 3530 Zenith Avenue North (HE-RBC-1442) in Robbinsdale, as examples of mid-century modern design. Based on our 6 November 2012 field inspection and discussion, we have completed a new Phase I survey form for each. Neither property was carried to Phase II work. *Two new enhanced Phase I inventory forms enclosed, to **replace** the original forms.*

(Note that Phase II work on 1719 Xerxes [HE-GVC-322] in Golden Valley is discussed as part of the supplemental architecture/history survey under #1, above.)

- E. Your letter of 29 January 2013 requested changes in the inventory information for several properties in the eligible Homewood Residential Historic District (HE-MPC-20201).
- The status of the following properties has been changed from contributing to non-contributing: 1015 Queen Ave. N (HE-MPC-11128), 1243 Russell Ave. N. (HE-MPC-11284), 1247 Russell Ave. N (HE-MPC-11286), 1251 Russell Ave. N. (HE-MPC-11288), 1001 Penn Ave. N. (Calvary Methodist) (HE-MPC-8239). *Five updated inventory forms enclosed for **attachment** to original form.*

- The status of the following property has been changed from non-contributing to contributing: 1114 Russell Ave. N. (HE-MPC-11268). *One updated inventory form enclosed for **attachment** to original form.*
- An updated form for the Homewood Residential Historic District (HE-MPC-12101) has been prepared to reflect the new contributing/non-contributing counts. *One updated inventory form enclosed for **attachment** to original form.*
- The rarity of residential duplexes as a property type in the district has been noted for the following property: 1238 Sheridan Ave. N. (HE-MPC-11418). *One updated inventory form enclosed for **attachment** to original form.*
- The original inventory forms for the following properties included a reference to a potential subdistrict of properties associated with architects Liebenberg and Kaplan: 1015 Washburn Ave. N. (HE-MPC-7624), 1025 Washburn Ave. N. (HE-MPC-7625), 1035 Washburn Ave. N. (HE-MPC-7635), 1045 Washburn Ave. N. (HE-MPC-7645), and 1010 Washburn Ave. N. (HE-MPC-11919). This subdistrict was not evaluated in the survey report, and the reference in the forms has been removed. *Five new inventory forms enclosed, to **replace** the original forms.*

F. Your letter of 29 January 2013 indicated your conclusion that two churches, originally determined ineligible, do meet NRHP criteria. We are changing our determination from ineligible to eligible for both properties.

- Pilgrim Heights Community Church, 3120 Washburn Ave. N. (HE-MPC-8277). *One updated inventory form enclosed for **attachment** to original form.*
- Sacred Heart Catholic Church, 4087 West Broadway (HE-RBC-795). *One updated inventory form enclosed for **attachment** to original form.*

G. The City of Minneapolis's letter of 24 January 2013 requested further discussion of three Phase I properties.

- Northwestern National Bank, 615 7<sup>th</sup> St. N. (HE-MPC-9894). This property, completed c. 1969, was evaluated in 2011 as part of the survey of the Interchange project. The property was determined ineligible to the NRHP, with SHPO concurrence.
- Bethune Community School, 917 Emerson Ave. N. (HE-MPC-9893). This school was completed in 1968, and is not yet 50 years of age. It does appear that it would meet NRHP Criteria Consideration G for properties newer than 50 years. We also note that the property is located at the northern edge of the Bottineau project's area of potential effect, and that no project effects in this area are anticipated.



- Bridge 27782, 7<sup>th</sup> Street over I-94 (HE-MPC-9831). This bridge was completed in 1979, and is not yet 50 years of age. It does appear that it would meet NRHP Criteria Consideration G.

Please submit comments on the supplemental survey and on the effect assessments within 30 days of this letter.

We look forward to continuing to work with you and other consulting parties as the planning process for this project proceeds. Please do not hesitate to contact me at 651-366-4292 with any questions or concerns.

Sincerely,



Dennis Gimmestad  
MnDOT Cultural Resources Unit

cc (via email):

Bill Wheeler, Federal Transit Administration  
Maya Sarna, Federal Transit Administration  
Joe Gladke, Hennepin County  
Brent Rusco, Hennepin County  
Kathryn O'Brien, Metropolitan Council  
Jack Byers, City of Minneapolis  
Jim Voll, City of Minneapolis  
Joseph Hogeboom, City of Golden Valley  
Marcia Glick, City of Robbinsdale  
Patrick Peters, City of Crystal  
Todd Larson, City of Brooklyn Park  
Peter Vickerman, City of Maple Grove  
Jennifer Ringold, Minneapolis Park and Recreation Board  
Jeanne Witzig, Kimley-Horn  
Jenny Bring, The 106 Group  
Beth Bartz, SRF



Minnesota  
Historical Society

STATE HISTORIC PRESERVATION OFFICE

January 29, 2013

Mr. Dennis Gimmestad  
MnDOT Cultural Resources Unit  
395 John Ireland Boulevard, Mail Stop 620  
St. Paul, MN 55155-1899

RE: Bottineau Transitway  
Multiple Communities, Hennepin County  
SHPO Number: 2011-3773

Dear Mr. Gimmestad:

Thank you for sending us the Phase 1a Archaeological Assessment for this project, along with additional Phase I and II property evaluations. These have been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966, the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act.

Our archaeologist has reviewed the Phase 1a Archaeological Assessment, and agrees that no further investigations are warranted, except for the area of North 5<sup>th</sup> Avenue, between 4<sup>th</sup> and 5<sup>th</sup> Streets North. We understand that according to current plans, this area will not be affected by the project. If plans should change in ways that will cause an effect in the area of concern, please consult with us further.

- 1 For architectural and above-ground historic properties, we concur that the following National Register listed properties exist in the Area of Potential Effect (APE) for this project:

- A. Hennepin County Library, Robbinsdale Branch
- B. Sumner Branch of the Minneapolis Public Library
- C. Northwestern Knitting Company Factory
- D. Minneapolis Warehouse Historic District

- 2 We further concur that numerous properties exist within the APE which have previously been determined eligible for listing in the National Register, as follows:

- A. Osseo Branch, St. Paul, Minneapolis and Manitoba Railway Historic District
- B. St. Paul, Minneapolis and Manitoba Railway Historic District
- C. Minneapolis & Pacific Railway Historic District
- D. Jones Osterhus Barn
- E. West Broadway Residential Historic District
- F. Terrace Theater
- G. Grand Rounds Historic District
- H. Bridge No. L 9327
- I. Frances E Willard School
- J. Mikro Kodesh Synagogue
- K. Regan Brothers Bakery

(Note: We agree that the Chucker Dental Office is not eligible based on new information)

- 3 Based on the current survey findings, we further concur that the following properties meet National Register criteria and are therefore considered to be **eligible for listing in the National Register**:
- A. Robbinsdale Waterworks
  - B. St. Anne's Catholic Church
  - C. Talmud Torah Hebrew School
  - D. Sharei Zedeck Synagogue
  - E. Homewood Historic District (Note: We agree with the eligibility and proposed boundaries but do not agree with a few of the contributing/non-contributing designations; see below)
  - F. Floyd B. Olson Memorial Statue
  - G. Labor Lyceum (Note: Please correct the date of construction to 1915. Also, we don't believe that Criterion Consideration B needs to apply, because the use is integral to the District, the use is continuous, and the building was moved during the period of significance)
  - H. Wayman A.M.E. Church
- 4 For the Homewood Historic District, we agree with the contributing/non-contributing designations provided, except for the following:
- A. We do not agree that the Calvary Methodist Church (HE-MPC-8239) is a contributing resource in the Homewood Historic District, as presently described. The historic context provided for this district revolves around the social and cultural development of the Jewish community in Minneapolis. No case has been made that ties this church into the historic context of the District.
  - B. There are several properties we believe are **non-contributing** based on a lack of physical integrity owing to replacement siding, windows and non-sympathetic additions, including:
    - a. 1015 Queen Avenue North (HE-MPC-11128)
    - b. 1243 Russell Avenue North (HE-MPC-11284)
    - c. 1247 Russell Avenue North (HE-MPC-11286)
    - d. 1251 Russell Avenue North (HE-MPC-11288)
  - C. We believe that the property at 1114 Russell Avenue is **contributing**, despite rear additions and selected window replacements.
- 5 There are two properties outside the Homewood Historic District that you recommended as not eligible for the National Register. However, we believe that the two mid-century modern churches listed below are **eligible for the Register under Criterion C**, as important mid-century contributions to the development of mid-century modern ecclesiastical architecture.
- A. Pilgrim Heights Community Church (HE-MPC-8277)
  - B. Sacred Heart Catholic Church (HE-RBC-1462) Note: The existing inventory forms are conflicting, as the individual property form recommends it as eligible, while text in the discussion of the potential Sacred Heart Church and school complex recommends the church as not eligible. Please resolve this conflict by showing the Church as eligible and the complex as not eligible.
- 6 Miscellaneous Corrections:
- A. Please note that the property at 1238 Sheridan Ave. N is a residential duplex, as this seems to be a rare property type in the Homewood Historic District.

- B. The inventory forms for the properties at 1010, 1025 and 1035 Washburn Avenue North still describe a Criterion C Historic District within the Homewood Historic District, based on French provincial residential design by the architects Liebenberg & Kaplan. While we agree that these are important contributing properties to the Homewood Historic District, we do not see the need or support for a second sub-district. While I understand that reference to the recommended sub-district has been removed from the report text, it needs to be removed from the inventory forms as well.

Except as indicated by the comments provided above, we agree that all other properties surveyed as part of this submittal are **not eligible for listing in the National Register of Historic Places**. We do acknowledge and agree with the comments received from the City of Minneapolis on behalf of the Heritage Preservation Commission, indicating that future research and context development could show some of the current "non-eligible" properties to meet criteria for local historic designation.

Please note that our comments on eligibility should not be taken as criticism, because they are minor in comparison to the monumental efforts put forth on historic research for this project. Once again, please extend my compliments to MnDOT CRU and The 106 Group for a very well-organized and easy to follow submittal, which lessened the burden of reviewing a massive amount of information.

If you have any follow-up questions about our review, please call me at 651-259-3456.

Sincerely,



Mary Ann Heidemann, Manager  
Government Programs & Compliance

cc: The 106 Group  
Hilary Dvorak, Minneapolis HPC





Minnesota Department of Transportation

Office of Environmental Stewardship

Mail Stop 620  
395 John Ireland Boulevard  
St. Paul, MN 55155

Office Tel: (651) 366-4292

Fax: (651) 366-3603

E-Mail: dennis.gimmestad@state.mn.us

4 December 2012

Mary Ann Heidemann  
Minnesota State Historic Preservation Office  
345 Kellogg Boulevard West  
St. Paul, MN 55102

RE: Bottineau Transitway Project, Hennepin County, Minnesota; Phase IA  
Archaeological Assessment; Phase I/Phase II Architecture History Survey (SHPO #  
2011-3773)

Dear Dr. Heidemann:

We are writing to continue consultation on the historic property surveys for the  
Bottineau Transitway Project.

This letter transmits the report of the phase IA archaeological assessment (one  
volume) and the report of the phase I/II architecture/history survey (two volumes).  
These surveys have been completed by The 106 Group. The phase II  
architecture/history inventory forms are also included.

The phase I architecture/history inventory forms were previously submitted to your  
office, and we thank you for your comments of 19 October 2012. Based on our  
subsequent discussion and field review on 6 November 2012, we are currently  
completing an additional Phase II evaluation of the Carl Graffunder House (HE-GVC-  
322) at 1719 Xerxes Avenue. This evaluation will be included in the supplemental  
survey report of the expanded APE around a potential station at Plymouth Avenue,  
which has been added to the project. The supplemental survey is currently underway.  
We will also submit amended Phase I forms for the other properties included in your  
19 October 2012 comments.

With regard to the phase IA archaeological assessment:

1. With one exception (see below), the report does not recommend any further  
archaeological investigation of the project area.
2. The report cites one area along Fifth Avenue North, between Fourth Street  
North and Fifth Street North, which was identified as having archaeological  
potential during the previous archaeological investigation of the Interchange  
project. Based on the conceptual engineering plans, it does not appear that the  
Bottineau project will include any work along this portion of Fifth Avenue  
North.

With regard to the phase I/II architecture/history survey, we have made the following determinations:

1. The following properties are listed in the National Register of Historic Places (NRHP):

- A. **Hennepin County Library, Robbinsdale Branch** (HE-RBC-024), 4915 42<sup>nd</sup> Ave. N., Robbinsdale
- B. **Sumner Branch Library** (HE-MPC-8081), 611 Emerson Ave. N., Minneapolis
- C. **Northwestern Knitting Company Factory** (HE-MPC-8125), 718 Glenwood Ave., Minneapolis
- D. **Minneapolis Warehouse Historic District** (HE-MPC-0441), Minneapolis

2. The following properties have been previously evaluated as eligible to the NRHP, with SHPO concurrence:

- A. **Osseo Branch, St. Paul Minneapolis & Manitoba Railway Historic District** (XX-RRD-010 [*including HE-BPC-0084, HE-CRC-0238, HE-RBC-0304, and HE-MPC-16389*]), Brooklyn Park, Crystal, Robbinsdale, Golden Valley, Minneapolis
- B. **St. Paul Minneapolis & Manitoba Railway Historic District** (XX-RRD-010 [*including HE-MPC-16387*]), Minneapolis
- C. **Minneapolis & Pacific Railway Historic District (Soo Line)** (HE-CRC-199), Crystal
- D. **Jones Osterhus Barn** (HE-RBC-264), 4510 Scott Ave. N., Robbinsdale
- E. **West Broadway Residential Historic District** (HE-RBC-158), Robbinsdale
- F. **Terrace Theater** (HE-RBC-200), Broadway and 36<sup>th</sup> Ave. N., Robbinsdale
- G. **Grand Rounds Historic District** (Theodore Wirth Parkway Segment and Victory Memorial Drive Segment) (XX-PRK-0001), Robbinsdale, Golden Valley, Minneapolis
- H. **Bridge No. L9327** (HE-GVC-0050), Wirth Pkwy. over Bassett's Creek, Golden Valley
- I. **Frances E. Willard School** (HE-MPC-8249), 1615 Queen Ave. N., Minneapolis
- J. **Mikro Kodesh Synagogue** (HE-MPC-8227), 1000 Oliver Ave. N., Minneapolis
- K. **Regan Brothers Bakery** (HE-MPC-16274), 643 N. 5<sup>th</sup> St., Minneapolis

(Note: The Chucker Dental Office (HE-RBC-240), 4614 41½ Ave. N., Robbinsdale, was previously determined eligible, but additional phase II work completed as part of this survey has evaluated the property as not eligible.)

3. The following properties meet NRHP criteria, based on the survey findings:

- A. **Robbinsdale Waterworks** (HE-RBC-286), 4127 Hubbard Ave. N., Robbinsdale, criterion A (politics/government). The water tower and pump house/well no. 1, built 1938, are significant within the context of the multiple property documentation form *Federal Relief Construction in Minnesota, 1933-1941*. Pump house/well no. 2 (1945), the cistern (1957), and the filtration plant (1963) contribute to an extended story of citizen involvement in this municipal water facility.
- B. **St. Anne's Catholic Church** (HE-MPC-8251), 2306 26<sup>th</sup> Ave. N., Minneapolis, criterion C (architecture), and criteria consideration A (religious properties). The building is a well-executed and distinctive example of an Italian Renaissance church. (The other buildings in the complex lack architectural distinction and do not meet criteria consideration A.)
- C. **Talmud Torah Hebrew School** (HE-MPC-7612), 1616 Queen Ave. N., Minneapolis, criterion A (social history) and criteria consideration A (religious properties). The building played a central cultural role in the final two decades of the north Minneapolis Jewish community.
- D. **Sharei Zedeck Synagogue** (HE-MPC-8211), 1119 Morgan Ave. N., Minneapolis, criterion A (social history) and criteria consideration A (religious properties). This synagogue is one of several which together reflect the range and persistence of ethnic/cultural origins of members of the north Minneapolis Jewish community.
- E. **Homewood Historic District** (HE-MPC-12101), Minneapolis, criterion A (social history). The Homewood subdivision was a prominent residential area within the north Minneapolis Jewish community beginning in 1909 through the 1960s. The plat layout and individual building requirements gave the area a distinctive presence within the larger neighborhood. However, the plat and the building restrictions, in-and-of-themselves, do not appear particularly unusual for the period. Therefore, we conclude that the district is significant under social history, but not under community planning and development.
- F. **Floyd B. Olson Memorial Statue** (HE-MPC-9013), Olson Memorial Hwy. at Penn Ave. N., Minneapolis, criterion C (art) and criteria considerations B (moved properties) and F (commemorative properties). This outdoor sculpture is an important work of noted St. Paul sculptor Carlo Brioschi. Erected on a plaza in the median of Olson Memorial Highway in 1940, it was relocated in 1988 to a nearby location on the south side of the highway.
- G. **Labor Lyceum** (HE-MPC-7553), 1800 Olson Memorial Hwy., Minneapolis, criterion A (social history) and criteria consideration B (moved properties). This meeting hall provided a focus for labor interests and Yiddish culture in the north Minneapolis Jewish community from 1915 through c. 1948. The building was relocated within the same neighborhood as part of a highway project in 1938.

H. **Wayman A.M.E. Church** (HE-MPC-8290), 1221 7<sup>th</sup> Ave. N., Minneapolis, criterion C (architecture), criteria consideration A (religious properties). A distinctive modernist church built by an African American congregation in 1966. *(Note: This building will be 50 years old in 2016, during the anticipated period of the planning and construction of the Bottineau Transitway project. So that it may receive proper consideration during the Section 106 review of the project, we have evaluated its eligibility at this time exclusive of criterion consideration G.)*

4. The following properties are recommended as NRHP eligible in the survey report; it is our determination that they *do not* meet the criteria:

A. **Better Bilt Manufacturing** (HE-CRC-585), 5182 W. Broadway Ave., Crystal. The evaluation recommends the Quonset building as eligible under criterion C (architecture and engineering), and the boxcar as an eligible contributing element of the overall property for its reuse as a storage shed. We conclude that the property is not NRHP eligible. The use of Quonset buildings to house a variety of purposes, including manufacturing, was a common practice, and there is no indication that the structure or the use of this Quonset was particularly significant. The evaluation points out that Quonsets used for commercial purposes often utilized an attached façade at one end to add "curb appeal"; however, there is not an adequate basis to substantiate the significance of this particular practice (and its various expressions) under NRHP criterion C. We also note that all of the front windows and door have been replaced, as indicated in the evaluation, and that the entire façade is now covered with brick, instead of the original block with quoins and trim as shown in the 1958 photograph.

B. **Robbinsdale Water Tower No. 2, Well No. 3, and Filtration Plant** (HE-RBC-1280), 3310 Oakdale Ave. N., Robbinsdale. The evaluation recommends the tower as eligible under criterion C (engineering) characterizing the design as a distinctive combination of elements, with a hemispherical bottom tank of unusual capacity. We conclude that the property is not NRHP eligible. The fact that a structure is a non-standard or unusual design is not necessarily significant unless that design itself is significant (as evidenced by such factors as its performance or its influence on future designs). The capacity for Tower No. 2 is not unusual among other towers of standard and non-standard designs from the period.

5. The remaining Phase I and Phase II properties in the architecture history survey of the Bottineau Transitway do not meet NRHP criteria, with the possible exception of properties included in the supplemental survey discussed in the third paragraph of this letter. The report of the supplemental survey will be submitted for review when complete.



Please submit comments on these surveys and determinations within 30 days of this letter. We look forward to continuing to work with you as the planning process for this project proceeds. Contact me at 651-366-4292 with any questions or concerns.

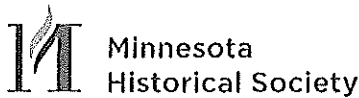
Sincerely,

A handwritten signature in black ink that reads "Dennis Gimmestad". The signature is fluid and cursive, with the first name "Dennis" and last name "Gimmestad" clearly legible.

Dennis Gimmestad  
MnDOT Cultural Resources Unit

cc (via email):

Bill Wheeler, Federal Transit Administration  
Joe Gladke, Hennepin County  
Brent Rusco, Hennepin County  
Jack Byers, City of Minneapolis  
Jim Voll, City of Minneapolis  
Joseph Hogeboom, City of Golden Valley  
Marcia Glick, City of Robbinsdale  
Patrick Peters, City of Crystal  
Todd Larson, City of Brooklyn Park  
Peter Vickerman, City of Maple Grove  
Jennifer Ringold, Minneapolis Park and Recreation Board  
Jeanne Witzig, Kimley-Horn  
Paul Danielson, Kimley-Horn  
Jenny Bring, The 106 Group  
Beth Bartz, SRF



STATE HISTORIC PRESERVATION OFFICE

October 19, 2012

Mr. Dennis Gimmestad  
MnDOT- Cultural Resources Unit  
Transportation Building  
395 John Ireland Boulevard, Mail Stop 620  
St. Paul, MN 55155-1899

RE: Bottineau Transitway  
Multiple Communities, Hennepin County  
SHPO Number: 2011-3773

Dear Mr. Gimmestad:

Thank you for meeting with SHPO staff on October 18 to discuss National Register eligibility issues for properties within the Area of Potential Effect for the above-referenced project. The Phase I property evaluations you sent to us (all proposed non-eligible properties within the APE) have been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966, the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act.

Based on the Phase I property information provided, along with our discussions at yesterday's meeting, we can concur that **all properties in this submittal are not eligible for listing in the National Register of Historic Places, except for the following, where we request additional information as noted below:**

Route C

- Please reconsider the potential eligibility of 4705 Lakeland Ave. N. in Crystal (HE-CRC-178), based on Criterion A, as the first post-war house built in Crystal.
- Please reconsider the potential eligibility of 4145 Quail Ave. N. in Robbinsdale (HE-RBC-363), based on Criterion C, for master craftsmanship.

Route D1

- Please prepare a Phase I survey and evaluation form for the Mary Hills Subdivision, to help determine if a possible National Register historic district may exist in the area (boundaries to be determined).
- Please prepare either an enhanced Phase I survey and evaluation form (better photos and more detailed evaluation) or a Phase II evaluation for two homes in Golden Valley: 1719 Xerxes Ave. N. (HE-GVC-322) and 1721 York Avenue N. (HE-GVC-334), as possible examples of mid-century modern residential design.

Route D2:

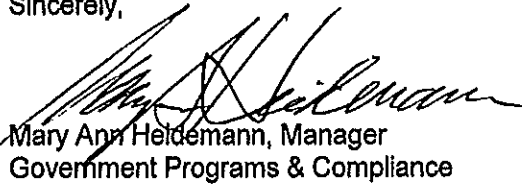
- Please prepare either an enhanced Phase I survey and evaluation form (better photos and more detailed evaluation) or a Phase II evaluation for 3530 Zenith Ave. North in Robbinsdale, as a possible example of mid-century modern residential design.

Please extend my compliments to MnDOT CRU and The 106 Group for a very well-organized and easy to follow submittal, which lessened the burden of reviewing a massive amount of information.

We look forward to reviewing the remaining survey information for this project, and working with you to determine eligibility status, when that information is available. If you feel it would be helpful to field review selected properties, feel free to contact me about dates and availability for a field visit.

Meanwhile, if you have any follow-up questions about our review, give me a call at 651-259-3456.

Sincerely,



Mary Ann Heidemann, Manager  
Government Programs & Compliance

cc: The 106 Group



Minnesota Department of Transportation

Office of Environmental Stewardship  
Mail Stop 620  
395 John Ireland Boulevard  
St. Paul, MN 55155

Office Tel: (651) 366-4292  
Fax: (651) 366-3603  
E-Mail: dennis.gimmestad@state.mn.us

6 September 2012

Mary Ann Heidemann  
Minnesota State Historic Preservation Office  
345 Kellogg Boulevard West  
St. Paul, MN 55102

RE: Bottineau LRT Project, Hennepin County, Minnesota; Phase I Architecture  
History Evaluations (SHPO # 2011-3773)

Dear Dr. Heidemann:

We are writing to continue consultation on the Bottineau LRT project. Our office last wrote you on this project on 23 September 2011. Thank you for your response of 26 October 2011.

The phase I architecture/history inventory work for the project is now substantially complete. At this time, we are transmitting the phase I inventory forms for those properties which have been found ineligible to the National Register. As discussed with your office, we are submitting these forms in advance of the phase I-II report and forms. The forms are organized by LRT route (A, B, C, D1, and D2). Included in the boxes for each route are a table of properties currently undergoing phase II evaluations, and a table of properties which were found ineligible during the phase I survey (with the inventory forms).

Note that, generally, properties previously listed or previously determined eligible do not appear in the above-referenced tables. These properties will be acknowledged in the phase I-II survey report.

It is our determination that the phase I properties included in this transmittal do not meet National Register criteria.

Your letter of 26 October 2011 acknowledged the potential need to modify the APE boundaries and, indeed, we are currently working on some adjustments. This revised APE will be submitted to your office in the near future. A noise and vibration study is being completed as part of the DEIS and the information on these potential effects will be incorporated into the APE and assessment of effects as appropriate. We also note that additional phase I survey (not included with this submittal) is currently underway to address some recent modifications to the APE, particularly with the addition of a potential station location at Plymouth Avenue in Route D1.



Your letter of 26 October 2011 also addressed public involvement. During the winter of 2012, staff from the MnDOT Cultural Resources Unit participated in a series of public meetings to introduce the Section 106 process. These meetings were held in Brooklyn Park, Robbinsdale, Golden Valley, and Minneapolis. CRU will also continue to participate in the Advice, Review, and Communicate Committee (ARCC), which facilitates coordination among the various agencies and units of government involved in project planning. Your willingness to attend key meetings as planning moves forward is greatly appreciated.

We also note that the cities of Minneapolis, Golden Valley, Robbinsdale, Crystal, Brooklyn Park, and Maple Grove are participating in the Section 106 process as consulting parties.

We look forward to continuing to work with you as the cultural resources survey, evaluation, and planning process for this project proceed. Call me at 651-366-4292 with any questions or concerns.

Sincerely,

A handwritten signature in black ink that reads "Dennis Gimmestad". The signature is written in a cursive, slightly slanted style.

Dennis Gimmestad  
MnDOT Cultural Resources Unit

cc (via email):

Bill Wheeler, Federal Transit Administration  
Lois Kimmelman, Federal Transit Administration  
Joe Gladke, Hennepin County  
Brent Rusco, Hennepin County  
Jack Byers, City of Minneapolis  
Jim Voll, City of Minneapolis  
Joseph Hogeboom, City of Golden Valley  
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Patrick Peters, City of Crystal  
Todd Larson, City of Brooklyn Park  
Peter Vickerman, City of Maple Grove  
Jeanne Witzig, Kimley-Horn  
Paul Danielson, Kimley-Horn  
Jenny Bring, The 106 Group



Minnesota  
Historical Society

STATE HISTORIC PRESERVATION OFFICE

October 26, 2011

Ms. Garneth Peterson  
MnDOT- Cultural Resources Unit  
Transportation Building, Mail Stop 620  
395 John Ireland Boulevard  
St. Paul, MN 55155-1899

RE: Bottineau Transitway  
Multiple Communities, Hennepin County  
SHPO Number: 2011-3773

Dear Ms. Peterson:

Thank you for initiating consultation for the above project, on behalf of the Federal Transit Administration. The project material has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966, the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act and the Field Archaeology Act.

The Alternatives Analysis Study appears to be appropriate, and has presented alternate routes in a manner that will allow identification of historic resources and assessment of potential impacts to these resources. We are not requesting any changes in this document.

Working from the routes identified in the Alternatives Analysis, we have reviewed the proposed research design for Cultural Resources. The Area of Potential Effect (APE) for archaeological and architectural resources that is identified and mapped in this document appears appropriate, but we do consider the APE to be a draft based on current information. As routes may change, or as more definite plans emerge for "ancillary facilities," we recognize that the boundaries of the APE may need to be modified. While indirect visual and noise effects are mentioned, I did not see a firm reference to potential vibration effects. Will there be a noise/vibration study prepared as part of this project?

I see that a great deal of public outreach has already occurred about this project, prior to initiation of consultation with the SHPO. That is reasonable, given the years of prior studies on transit alternatives in this sector of the Metro area. However, I feel it is important at some point early in the outreach effort to explain the Sec. 106 review process and the SHPO role to stakeholder groups, so it won't come as a surprise later on.

There appear to be a wide variety of advisory groups and committees already formed and in action. I do not have additional groups to suggest. On the contrary, I have concerns about how all the input from various groups will feed back into the decision-making process. In particular, I note that a "locally preferred alternative" will be formulated. That's fine, so long as the stakeholder groups realize that regulatory input related to Sec. 106 concerns may result in tweaking any preferred alternate in order to avoid, minimize or mitigate potential adverse effects to historic resources. I am sure the MnDOT Cultural Resource Unit (CRU) can get this message across. In this regard, I would appreciate knowing which of the various outreach and/or technical committees will be attended by MnDOT CRU staff. As you are aware, the SHPO does not have the ability to serve on such committees on a regular basis, but if there are key meetings where our presence would be essential to Sec. 106 review of the project, please let us know.

Meanwhile, we look forward to reviewing cultural resource survey results when they are available. Feel free to contact me at (651) 259-3456 with any questions or suggestions you may have about our review role for this project.

Sincerely,

  
Mary Ann Heidemann, Manager  
Government Programs & Compliance

Minnesota Historical Society, 315 Kellogg Boulevard West, Saint Paul, Minnesota 55102  
651-259-3000 • 888-727-8386 • www.mnhs.org



STATE HISTORIC PRESERVATION OFFICE

October 19, 2012

Mr. Dennis Gimmestad  
MnDOT- Cultural Resources Unit  
Transportation Building  
395 John Ireland Boulevard, Mail Stop 620  
St. Paul, MN 55155-1899

RE: Bottineau Transitway  
Multiple Communities, Hennepin County  
SHPO Number: 2011-3773

Dear Mr. Gimmestad:

Thank you for meeting with SHPO staff on October 18 to discuss National Register eligibility issues for properties within the Area of Potential Effect for the above-referenced project. The Phase I property evaluations you sent to us (all proposed non-eligible properties within the APE) have been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966, the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act.

Based on the Phase I property information provided, along with our discussions at yesterday's meeting, we can concur that **all properties in this submittal are not eligible for listing in the National Register of Historic Places, except for the following, where we request additional information as noted below:**

Route C

- Please reconsider the potential eligibility of 4705 Lakeland Ave. N. in Crystal (HE-CRC-178), based on Criterion A, as the first post-war house built in Crystal.
- Please reconsider the potential eligibility of 4145 Quail Ave. N. in Robbinsdale (HE-RBC-363), based on Criterion C, for master craftsmanship.

Route D1

- Please prepare a Phase I survey and evaluation form for the Mary Hills Subdivision, to help determine if a possible National Register historic district may exist in the area (boundaries to be determined).
- Please prepare either an enhanced Phase I survey and evaluation form (better photos and more detailed evaluation) or a Phase II evaluation for two homes in Golden Valley: 1719 Xerxes Ave. N. (HE-GVC-322) and 1721 York Avenue N. (HE-GVC-334), as possible examples of mid-century modern residential design.

Route D2:

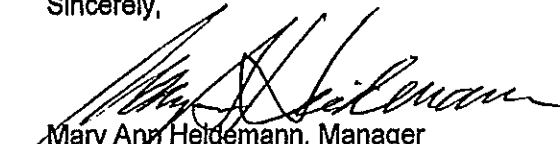
- Please prepare either an enhanced Phase I survey and evaluation form (better photos and more detailed evaluation) or a Phase II evaluation for 3530 Zenith Ave. North in Robbinsdale, as a possible example of mid-century modern residential design.

Please extend my compliments to MnDOT CRU and The 106 Group for a very well-organized and easy to follow submittal, which lessened the burden of reviewing a massive amount of information.

We look forward to reviewing the remaining survey information for this project, and working with you to determine eligibility status, when that information is available. If you feel it would be helpful to field review selected properties, feel free to contact me about dates and availability for a field visit.

Meanwhile, if you have any follow-up questions about our review, give me a call at 651-259-3456.

Sincerely,



Mary Ann Heidemann, Manager  
Government Programs & Compliance

cc: The 106 Group





**Minnesota Department of Transportation**

---

**Office of Environmental Stewardship**

Mail Stop 620

395 John Ireland Boulevard

St. Paul, MN 55155

Office Tel: (651) 366-4292

Fax: (651) 366-3603

E-Mail: [dennis.gimmestad@state.mn.us](mailto:dennis.gimmestad@state.mn.us)

6 September 2012

Mary Ann Heidemann  
Minnesota State Historic Preservation Office  
345 Kellogg Boulevard West  
St. Paul, MN 55102

RE: Bottineau LRT Project, Hennepin County, Minnesota; Phase I Architecture  
History Evaluations (SHPO # 2011-3773)

Dear Dr. Heidemann:

We are writing to continue consultation on the Bottineau LRT project. Our office last wrote you on this project on 23 September 2011. Thank you for your response of 26 October 2011.

The phase I architecture/history inventory work for the project is now substantially complete. At this time, we are transmitting the phase I inventory forms for those properties which have been found ineligible to the National Register. As discussed with your office, we are submitting these forms in advance of the phase I-II report and forms. The forms are organized by LRT route (A, B, C, D1, and D2). Included in the boxes for each route are a table of properties currently undergoing phase II evaluations, and a table of properties which were found ineligible during the phase I survey (with the inventory forms).

Note that, generally, properties previously listed or previously determined eligible do not appear in the above-referenced tables. These properties will be acknowledged in the phase I-II survey report.

It is our determination that the phase I properties included in this transmittal do not meet National Register criteria.

Your letter of 26 October 2011 acknowledged the potential need to modify the APE boundaries and, indeed, we are currently working on some adjustments. This revised APE will be submitted to your office in the near future. A noise and vibration study is being completed as part of the DEIS and the information on these potential effects will be incorporated into the APE and assessment of effects as appropriate. We also note that additional phase I survey (not included with this submittal) is currently underway to address some recent modifications to the APE, particularly with the addition of a potential station location at Plymouth Avenue in Route D1.

Your letter of 26 October 2011 also addressed public involvement. During the winter of 2012, staff from the MnDOT Cultural Resources Unit participated in a series of public meetings to introduce the Section 106 process. These meetings were held in Brooklyn Park, Robbinsdale, Golden Valley, and Minneapolis. CRU will also continue to participate in the Advice, Review, and Communicate Committee (ARCC), which facilitates coordination among the various agencies and units of government involved in project planning. Your willingness to attend key meetings as planning moves forward is greatly appreciated.

We also note that the cities of Minneapolis, Golden Valley, Robbinsdale, Crystal, Brooklyn Park, and Maple Grove are participating in the Section 106 process as consulting parties.

We look forward to continuing to work with you as the cultural resources survey, evaluation, and planning process for this project proceed. Call me at 651-366-4292 with any questions or concerns.

Sincerely,

A handwritten signature in black ink that reads "Dennis Gimmestad". The signature is written in a cursive, slightly slanted style.

Dennis Gimmestad  
MnDOT Cultural Resources Unit

cc (via email):

Bill Wheeler, Federal Transit Administration  
Lois Kimmelman, Federal Transit Administration  
Joe Gladke, Hennepin County  
Brent Rusco, Hennepin County  
Jack Byers, City of Minneapolis  
Jim Voll, City of Minneapolis  
Joseph Hogeboom, City of Golden Valley  
Marcia Glick, City of Robbinsdale  
Patrick Peters, City of Crystal  
Todd Larson, City of Brooklyn Park  
Peter Vickerman, City of Maple Grove  
Jeanne Witzig, Kimley-Horn  
Paul Danielson, Kimley-Horn  
Jenny Bring, The 106 Group



Minnesota  
Historical Society

STATE HISTORIC PRESERVATION OFFICE

October 26, 2011

Ms. Garneth Peterson  
MnDOT- Cultural Resources Unit  
Transportation Building, Mail Stop 620  
395 John Ireland Boulevard  
St. Paul, MN 55155-1899

RE: Bottineau Transitway  
Multiple Communities, Hennepin County  
SHPO Number: 2011-3773

Dear Ms. Peterson:

Thank you for initiating consultation for the above project, on behalf of the Federal Transit Administration. The project material has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966, the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act and the Field Archaeology Act.

The Alternatives Analysis Study appears to be appropriate, and has presented alternate routes in a manner that will allow identification of historic resources and assessment of potential impacts to these resources. We are not requesting any changes in this document.

Working from the routes identified in the Alternatives Analysis, we have reviewed the proposed research design for Cultural Resources. The Area of Potential Effect (APE) for archaeological and architectural resources that is identified and mapped in this document appears appropriate, but we do consider the APE to be a draft based on current information. As routes may change, or as more definite plans emerge for "ancillary facilities," we recognize that the boundaries of the APE may need to be modified. While indirect visual and noise effects are mentioned, I did not see a firm reference to potential vibration effects. Will there be a noise/vibration study prepared as part of this project?

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There appear to be a wide variety of advisory groups and committees already formed and in action. I do not have additional groups to suggest. On the contrary, I have concerns about how all the input from various groups will feed back into the decision-making process. In particular, I note that a "locally preferred alternative" will be formulated. That's fine, so long as the stakeholder groups realize that regulatory input related to Sec. 106 concerns may result in tweaking any preferred alternate in order to avoid, minimize or mitigate potential adverse effects to historic resources. I am sure the MnDOT Cultural Resource Unit (CRU) can get this message across. In this regard, I would appreciate knowing which of the various outreach and/or technical committees will be attended by MnDOT CRU staff. As you are aware, the SHPO does not have the ability to serve on such committees on a regular basis, but if there are key meetings where our presence would be essential to Sec. 106 review of the project, please let us know.

Meanwhile, we look forward to reviewing cultural resource survey results when they are available. Feel free to contact me at (651) 259-3456 with any questions or suggestions you may have about our review role for this project.

Sincerely,

Mary Ann Heidemann, Manager  
Government Programs & Compliance

## Example Tribal Consultation Letter





U.S. Department  
of Transportation  
**Federal Transit  
Administration**

REGION V  
Illinois, Indiana,  
Michigan, Minnesota,  
Ohio, Wisconsin

200 West Adams Street  
Suite 320  
Chicago, IL 60606-5253  
312-353-2789  
312-886-0351 (fax)

January 13, 2012

Mr. Gordon Thayer, Chairperson  
Lac Courte Oreilles Band of Lake  
Superior Chippewa Indians of Wisconsin  
13394 W. Trapania Rd.  
Bldg No. 1  
Hayward, WI 54843

Re: Bottineau Transitway Project Draft Environmental Impact Statement  
Minneapolis, Golden Valley, Robbinsdale, Crystal, Brooklyn Park, and Maple Grove,  
Minnesota

Dear Mr. Thayer:

The Federal Transit Administration (FTA), Hennepin County Regional Railroad Authority (HCRRA), and Metropolitan Council have initiated the environmental evaluation process for the Bottineau Transitway project. The Bottineau Transitway Draft Environmental Impact Statement (DEIS) is exploring transit improvement alternatives for people who live in and travel to destinations in the Bottineau Transitway Corridor. The modes of transportation under study include Light Rail Transit (LRT) and Bus Rapid Transit (BRT).

The Bottineau Transitway Corridor extends between downtown Minneapolis and North Minneapolis through the northwest suburbs of the Twin Cities, including Golden Valley, Robbinsdale, Crystal, Brooklyn Park and Maple Grove. (A map of the Bottineau Corridor is included with this letter.)

The purpose of this letter is twofold: 1) to request Tribal input regarding historic, cultural, and archaeological resources in the Bottineau Transitway Corridor; and 2) to invite Tribal representatives to upcoming public meetings regarding the Bottineau Transitway project.

We would appreciate any comments you may have about historic, cultural, and archaeological resources along with other concerns regarding the Bottineau Transitway Project. Our study schedule anticipates completion of the DEIS by the end of 2012 or the beginning of 2013.

In addition, you are invited to attend a series of open houses in January 2012 involving the Bottineau Transitway Project. The project is in what is called the "scoping phase" and we are currently soliciting public comment through Feb. 17, 2012, on the following topics:

- The history of, and purpose and need for the project;
- Transportation alternatives under consideration for study and other issues that will be covered in the DEIS; and
- Potential environmental impacts of the project.

The open houses, also known as public scoping meetings, will be hosted by HCRRA and will take place on the following dates in January 2012:

- Monday, Jan. 23, 4:30 – 6:30 p.m., Theodore Wirth Chalet, 1301 Theodore Wirth Parkway, Minneapolis
- Tuesday, Jan. 24, 6:00 – 8:00 p.m., Brooklyn Park City Hall, 5200 85<sup>th</sup> Ave. N., Brooklyn Park
- Wednesday, Jan. 25, 5:30 – 7:30 p.m., Urban Research and Outreach/Engagement Center (UROC), 2001 Plymouth Ave. N., Minneapolis
- Tuesday, Jan. 31, 6 – 8 p.m., Robbinsdale City Hall, 4100 Lakeview Ave. N., Robbinsdale

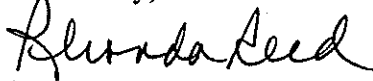
All meeting locations are accessible to persons with disabilities. Project information, including the Project scoping booklet and other meeting materials, is available on the project website at [www.bottineautransitway.org](http://www.bottineautransitway.org).

If you have any questions or require additional information regarding the Project, please contact Brent Rusco, Bottineau Transitway Project Manager, Hennepin County, 417 North 5<sup>th</sup> Street, Minneapolis, MN 55401, Phone: 612.543.0579, Email: [Brent.rusco@co.hennepin.mn.us](mailto:Brent.rusco@co.hennepin.mn.us).

Also, please let us know if you would prefer to schedule a separate meeting to discuss specific issues and concerns for your Tribe.

Thank you for your attention to this request for input and invitation to public meetings.

Sincerely,

  
for Marisol Simon  
Regional Administrator

Attachment: Map of the Bottineau Corridor

cc: Lois Kimmelman, FTA  
Bill Wheeler, FTA  
Joseph Gladke, Hennepin County Regional Railroad Authority

USACE Section 404/NEPA Merger Process Letters



REPLY TO  
ATTENTION

**DEPARTMENT OF THE ARMY**  
**ST. PAUL DISTRICT, CORPS OF ENGINEERS**  
**180 FIFTH STREET EAST, SUITE 700**  
**ST. PAUL MINNESOTA 55101-1678**

**JUN 19 2013**

Operations  
Regulatory (2012-01051-MMJ)

Mr. Brent Rusco  
Senior Professional Engineer  
Hennepin County  
Housing, Community Works & Transit  
Engineering and Transit Planning  
701 Fourth Avenue South, Suite 400  
Minneapolis, MN 55415-1843

Dear Mr. Rusco:

We have reviewed the documents you recently provided regarding the Bottineau Transitway Project. As a cooperating agency in the preparation of the Environmental Impact Statement (EIS) for this project, this letter contains comments on Chapters 1 and 2 (1.16.13 version) of the Bottineau Transitway Preliminary Draft EIS (PDEIS). This letter is also intended to provide Corps concurrence with Points 1 (Purpose and Need) and 2 (Alternatives Carried Forward) for the Bottineau Transitway Project, as outlined in the National Environmental Policy Act (NEPA) / Section 404 Clean Water Act (404) merger process.

Chapter 1 of the PDEIS discusses the purpose and need for the Bottineau Transitway Project, and states: "The purpose of the Bottineau Transitway is to provide transit service which will satisfy the long-term regional mobility and accessibility needs for businesses and the traveling public." The project need is described as: "the Bottineau Transitway project is needed to effectively address long-term regional transit mobility and local accessibility needs while providing efficient, travel-time competitive transit service that supports economic development goals and objectives of local, regional, and statewide plans.

The Corps concurs with the abovementioned purpose and need statements for use in Bottineau Transitway Project NEPA documentation. Chapter 1 has also provided us with sufficient information to determine the overall project purpose for the Bottineau Transitway Project. As described in the 404(b)(1) Guidelines (Guidelines) of the Clean Water Act, the overall project purpose is what the Corps uses to direct the range of reasonable alternatives to be considered in our 404 permit application review process. We suggest the following overall project purpose, which also includes a more defined geographic boundary: "to provide high-capacity, competitive transit service within the Bottineau Transitway study area."

Our suggested overall project purpose coincides with the transit alternatives that were considered and advanced for further study in the Bottineau Transitway Alternatives Analysis Study Final Report (AA Study), as described in Chapter 2 of the PDEIS. Therefore, the Corps concurs with the array of



alternatives considered for this project, as well as the alternatives that were carried forward for further review, as described below.

The AA Study considered a wide range of transit modes and alignments within the Bottineau Transitway study area. The study progressively narrowed the transitway build alternatives to a set of 21 alternatives (9 light rail transit (LRT) and 12 bus rapid transit (BRT) alignments) to be studied in more detail. Those alternatives were then evaluated against a set of defined goals and evaluating criteria, and 4 LRT alternatives (A-C-D1, B-C-D1, A-C-D2, & B-C-D2), and 1 BRT alternative (B-C-D1) were carried forward for consideration as the Locally Preferred Alternative (LPA). After additional evaluation of the remaining alternatives, the Draft EIS for the Bottineau Transitway Project will be recommending LRT alternative B-C-D1 as the LPA.

To comply with the Guidelines, the alternatives analysis must consider ways to avoid and minimize impacts to waters of the U.S. (WOUS) so that the least environmentally-damaging practicable alternative (LEDPA) can be identified. The Guidelines specifically require that “no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences” (40 CFR § 230.10(a)). Per the Guidelines, a practicable alternative is defined as available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose. Time and money spent on the proposal prior to applying for a Section 404 permit cannot be factored into the Corps decision regarding whether a less damaging practicable alternative is available.

We have reviewed the draft Water Resources Technical Report prepared for the Bottineau Transitway Project, as well as the technical memorandums, dated May 7, 2012, specifically comparing Alignments A versus B, and Alignments D1 versus D2. Following is a summary of estimated impacts to WOUS that would result from the alignments currently being considered for this project: Alignment A - 1.8 acres of wetland impact, Alignment B - 5.9 acres of wetland impact, Alignment C - 0.7 acre of wetland impact, Alignment D1 - 6.1 acres of wetland impact, and Alignment D2 - 0.7 acre of wetland impact. Alignment C is a common segment to all alternatives. As described, Alternative A-C-D2 would result in the least amount of impacts to WOUS.

You have provided sufficient information describing the limiting factors associated with Alignment D2, and we agree with the selection of Alignment D1 as a portion of the LPA. However, we currently do not have enough information to make a determination regarding Alignments A versus B, mainly because the location of the Operations and Maintenance Facility (OMF) at the northern end of Alternative B has yet to be determined, and the aquatic impacts associated with the alternate locations vary considerably.

Without knowing the final location or the potential impacts to WOUS associated with the OMF, we cannot determine if the entire LPA (B-C-D1) would qualify as the LEDPA, as defined in the Guidelines. Therefore, we are currently unable to comment on concurrence point 3 of the NEPA/404 merger process.


The burden of proof to demonstrate compliance with the Guidelines rests with the applicant; where insufficient information is provided to determine compliance, the Guidelines require that no

permit be issued. If you plan to move forward with Alternative B-C-D1 as the LPA, please submit additional information to support your decision to eliminate Alignment A from consideration.

Thank you for the opportunity to comment on Chapters 1 and 2 of the Bottineau Transitway Preliminary Draft EIS. We are committed to continuing coordination with you and the local Bottineau Transitway project team on concurrence point 3 of the NEPA/404 merger process, through technical review of the DEIS chapters, and through evaluation of impact avoidance measures. For further information, please contact Melissa Jenny, the Corps project manager for Hennepin County, at 651-290-5363 or [Melissa.m.jenny@usace.army.mil](mailto:Melissa.m.jenny@usace.army.mil).

Sincerely,



 Tamara E. Cameron  
Chief, Regulatory Branch

Copy furnished:  
Maya Sarna, Federal Transit Authority  
Kathryn O'Brien, Metro Transit  
Joseph Gladke, Hennepin County Regional Rail Authority  
Jeanne Witzig, Kimley-Horne  
Beth Kunkle, Kimley-Horne



REPLY TO  
ATTENTION

**DEPARTMENT OF THE ARMY**  
ST. PAUL DISTRICT, CORPS OF ENGINEERS  
180 FIFTH STREET EAST, SUITE 700  
ST. PAUL MINNESOTA 55101-1678

OCT 01 2013

Operations  
Regulatory (2012-01051-MMJ)

Mr. Brent Rusco  
Senior Professional Engineer  
Hennepin County  
Housing, Community Works & Transit  
Engineering and Transit Planning  
701 Fourth Avenue South, Suite 400  
Minneapolis, MN 55415-1843

Dear Mr. Rusco:

We have reviewed the documents you provided in response to our request for additional information regarding the Bottineau Transitway Project. After reviewing this additional information we can now concur with Point 3 (Identification of the Selected Alternative) for the Bottineau Transitway Project, as outlined in the National Environmental Policy Act (NEPA) / Section 404 Clean Water Act (404) merger process.

As stated in our earlier letter, to comply with our 404(b)(1) Guidelines (Guidelines), the alternatives analysis for the Bottineau Transitway must consider ways to avoid and minimize impacts to waters of the U.S. (WOUS) so that the least environmentally damaging practicable alternative (LEDPA) can be identified. Per the Guidelines, a practicable alternative is defined as available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose.

Numerous alignment configurations or alternatives were considered for this project. After reviewing the preliminary wetland impact calculations completed for each alignment, we determined that project alternative A-C-D2 would result in the least amount of impact to WOUS. However, the Locally Preferred Alternative (LPA) for the Bottineau Transitway Project is alternative B-C-D1. At the time of our last letter, you had provided enough information for us to determine that alignment D2 is not a practicable alternative for this project, and we agreed that alignment D1 would be acceptable as part of the LEDPA. You have now provided sufficient information to demonstrate that alignment A is also not a practicable alternative. Therefore, we have made a preliminary determination that the selected alternative B-C-D1 is the LEDPA.

As is typical of a NEPA/404 merger process, if substantial new information regarding alternative B-C-D1 is brought forward later in the project development process, we may revisit this decision and our concurrence that the selected alternative is the LEDPA. In addition, we anticipate further opportunity for avoidance and minimization of impacts to WOUS as the LPA is further refined during the design phase.

We look forward to reviewing the Draft EIS for this project. For further information, please contact Melissa Jenny, the Corps project manager for Hennepin County, at 651-290-5363 or [Melissa.m.jenny@usace.army.mil](mailto:Melissa.m.jenny@usace.army.mil).

Sincerely,

A handwritten signature in black ink, appearing to read "Tamara E. Cameron". The signature is fluid and cursive, with a long horizontal stroke at the end.

Tamara E. Cameron  
Chief, Regulatory Branch

Copy furnished:  
Maya Sarna, Federal Transit Authority  
Kathryn O'Brien, Metro Transit  
Joseph Gladke, Hennepin County Regional Rail Authority  
Jeanne Witzig, Kimley-Horne  
Beth Kunkle, Kimley-Horne



## Endangered Species Correspondence

**From:** "[Brent.Rusco@co.hennepin.mn.us](mailto:Brent.Rusco@co.hennepin.mn.us)" <[Brent.Rusco@co.hennepin.mn.us](mailto:Brent.Rusco@co.hennepin.mn.us)>  
**To:** "[Andrew.Horton@fws.gov](mailto:Andrew.Horton@fws.gov)" <[Andrew.Horton@fws.gov](mailto:Andrew.Horton@fws.gov)>  
**Cc:** "[Lisa.Treichel@ios.doi.gov](mailto:Lisa.Treichel@ios.doi.gov)" <[Lisa.Treichel@ios.doi.gov](mailto:Lisa.Treichel@ios.doi.gov)>, "[Nick.Rowse@fws.gov](mailto:Nick.Rowse@fws.gov)" <[Nick.Rowse@fws.gov](mailto:Nick.Rowse@fws.gov)>, "[Stephanie.Nash@fws.gov](mailto:Stephanie.Nash@fws.gov)" <[Stephanie.Nash@fws.gov](mailto:Stephanie.Nash@fws.gov)>, "[Tony.Sullins@fws.gov](mailto:Tony.Sullins@fws.gov)" <[Tony.Sullins@fws.gov](mailto:Tony.Sullins@fws.gov)>, Beth Bartz <[bbartz@srfconsulting.com](mailto:bbartz@srfconsulting.com)>, "[Joseph.Gladke@co.hennepin.mn.us](mailto:Joseph.Gladke@co.hennepin.mn.us)" <[Joseph.Gladke@co.hennepin.mn.us](mailto:Joseph.Gladke@co.hennepin.mn.us)>  
**Sent:** Thu, Feb 16, 2012 23:42:13 GMT+00:00  
**Subject:** Re: Bottineau Transitway

Mr. Horton,

Thanks very much for your scoping input on the Bottineau Transitway. We look forward to continued coordination on the important issues you identified in your email.

Brent Rusco  
Senior Professional Engineer  
Hennepin County  
Housing, Community Works & Transit  
Engineering and Transit Planning  
701 Fourth Avenue South, Suite 400  
Minneapolis, MN 55415-1843  
Direct: 612.543.0579

**From:** [Andrew.Horton@fws.gov](mailto:Andrew.Horton@fws.gov)  
**To:** [brent.rusco@co.hennepin.mn.us](mailto:brent.rusco@co.hennepin.mn.us)  
**Cc:** [Stephanie.Nash@fws.gov](mailto:Stephanie.Nash@fws.gov), [Lisa.Treichel@ios.doi.gov](mailto:Lisa.Treichel@ios.doi.gov), [Tony.Sullins@fws.gov](mailto:Tony.Sullins@fws.gov), [Nick.Rowse@fws.gov](mailto:Nick.Rowse@fws.gov)  
**Date:** 02/16/2012 03:58 PM  
**Subject:** Bottineau Transitway

Mr. Rusco,

Thank you for the opportunity to provide comments on the Tier 2 Scoping Document for the Bottineau Transitway. Higgins eye pearlymussel (*Lampsilis higginsii*) is the only endangered species listed under the Endangered Species Act for Hennepin County, MN. This species is found in the Mississippi River, outside of the action area for this project. There are no federal lands of concern for areas near the proposed light rail line.

Wetlands are a Trust Resource identified by the Service. The proposed D1 alignment has the potential for wetland impacts along Theodore Wirth Park. The Fish and Wildlife Service (Service) would like to see a detailed discussion of anticipated wetland impacts and mitigation to such impacts to be included in the alternatives analysis for the Draft EIS. Moving the Golden Valley Station from Golden Valley Road to Plymouth Avenue also has the potential for wetland impacts. At this time we encourage Hennepin County to look closely at all possible alignment alternatives and rail station locations to avoid or reduce wetland impacts to the greatest extent practicable.

There are no known eagle nests within the action area, however, data in the Minnesota Department of Natural Resources Natural Heritage database might not be current for Hennepin County. We do have records of bald eagles frequenting Theodore Wirth Park (near

Segment D1) and there may be nests in the area. If Segment D1 continues as a viable option, eagle nest surveys should be incorporated in the EIS for any forested areas planned for development. Surveys can consist of visual observation of the forest canopy within a 1/2 mile surrounding buffer of the proposed project area and are most easily done when foliage is absent (fall, winter, or early spring). If possible, these surveys should be performed for a few years prior to construction. Bald eagles often build new nests in early spring and we recommend that a nest survey also be completed in mid-March preceding any construction occurring between March and August. If eagle nest's are discovered, construction timetables should be designed to do much of the work outside the eagle nesting season or outside a 660 foot buffer from the nest. The Fish and Wildlife Services has generated The National Bald Eagle Management Guidelines (<http://www.fws.gov/midwest/eagle/guidelines/guidelines.html>), which are intended to help landowners minimize disturbance to bald eagles, thereby benefiting bald eagles and protecting landowners. The Fish and Wildlife Services strongly encourages adherence to these guidelines.

Please keep these recommendations in mind when considering the preferred alternative for this project. As this project progresses into the Draft EIS stage, there may be a need for greater coordination with the Service to mitigate for any impacts to wetlands or bald eagles. Thank you for your cooperation in meeting our joint responsibilities under NEPA and the Endangered Species Act. If you have any further questions, please contact me at (612) 725-3548 x2208.

Sincerely,  
Andrew Horton

Andrew Horton  
Fish and Wildlife Biologist  
U.S. Fish and Wildlife Service  
Twin Cities ES Field Office  
4101 American Blvd East  
Bloomington, MN 55425-1665  
(612) 725-3548 ext. 2208

## Haase, Rachel

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**From:** Joyal, Lisa (DNR) <Lisa.Joyal@state.mn.us>  
**Sent:** Friday, November 02, 2012 2:07 PM  
**To:** Payne, Ashley  
**Subject:** Bottineau Transitway

I have reviewed your assessment of the potential for the above project to impact rare features, and concur with your assessment. The reference number for this correspondence is ERDB #20120176-003.

Thank you for notifying us of this project, and for the opportunity to provide comments.

Sincerely,

*Lisa Joyal*

~~~~~  
Lisa Joyal  
Endangered Species Review Coordinator  
NHIS Data Distribution Coordinator  
Division of Ecological and Water Resources  
Minnesota Department of Natural Resources  
500 Lafayette Road, Box 25  
St. Paul, MN 55155

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## Coordination with the Federal Railroad Administration



**U.S. Department  
of Transportation**

Federal Railroad  
Administration

1200 New Jersey Avenue, SE  
Washington, DC 20590

**SEP 19 2013**

Mr. Joseph Gladke, P.E.  
Manager of Engineering & Transit Planning  
Hennepin County Regional Railroad Authority  
701 Fourth Avenue South, Suite 400  
Minneapolis, MN 55415-1843

Mr. Mark W. Fuhrmann  
New Starts Program Director–Metro Transit  
Metropolitan Council  
390 Robert Street North  
St. Paul, MN 55101-1805

Re: Federal Railroad Administration Safety Jurisdiction–Proposed Bottineau Transitway

Dear Mr. Gladke and Mr. Fuhrmann:

I write in response to the Hennepin County Regional Railroad Authority (HCRRA) and Metropolitan Council's (Met Council) request for a preliminary jurisdiction determination concerning the proposed Bottineau Transitway, described as a light rail transit (LRT) extension to its METRO system in the Minneapolis-St. Paul Twin Cities region of Minnesota. Based upon the information that HCRRA provided in its letters dated February 7, 2012, June 17, 2013, and August 1, 2013, the Federal Railroad Administration (FRA) has concluded that the proposed Bottineau Transitway will be an urban rapid transit (URT) operation; therefore, FRA will not exercise its safety jurisdiction over the Bottineau Transitway, except to the extent that it is necessary to ensure railroad safety at any limited shared connections between the Bottineau Transitway and other railroad carriers that operate on the general railroad system of transportation (general system),<sup>1</sup> as discussed below.

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<sup>1</sup> The "general railroad system of transportation" is defined as "the network of standard gage track over which goods may be transported throughout the nation and passengers may travel between cities and within metropolitan and suburban areas." Appendix A to 49 C.F.R. Part 209. Portions of the network that lack a physical connection may still be part of the general system by virtue of the nature of the operations that occur. See *id.*

## **I. General Factual Background**

The Met Council's Metro Transit operating division operates and maintains the METRO system (described by Met Council and HCRRA as a LRT system) that serves the Minneapolis-St. Paul twin cities region of Minnesota. The existing METRO system consists of one line (the Hiawatha or Blue Line) that is 12 miles in length with 19 stations between Target Field in downtown Minneapolis and the Mall of America in Bloomington. In 2014, a second line (the Central Corridor or Green Line) will open between Target Field and downtown St. Paul, sharing 5 stations with the Blue Line and bringing the METRO system total to 23 miles of exclusive right-of-way and 37 stations. The Southwest Line (expected to open in 2018) is a proposed extension of the Green Line from Eden Prairie to downtown Minneapolis, which would add approximately 15.8 miles in length and 17 new stations to the METRO system.

## **II. Summary of the Bottineau Transitway**

Based upon the written correspondence from HCRRA and the Met Council, FRA has the following understanding of the Bottineau Transitway. The Bottineau Transitway is a proposed 13-mile extension to the Hiawatha (Blue Line), connecting to the Blue Line at the Target Field/Interchange station in the central business district of downtown Minneapolis and terminating at 97<sup>th</sup> Avenue, the site of Target Corporation's north campus. The Bottineau Transitway will add approximately 13 miles of standard gage revenue service track and 10 new stations to the region's transit system. The Bottineau Transitway will be located completely within Hennepin County, Minnesota, extending northwest from downtown Minneapolis and serving the suburbs of Golden Valley, Robbinsdale, Crystal, and Brooklyn Park.

The Bottineau Transitway service is proposed to operate 21 hours per day, 7 days per week. The Bottineau Transitway will provide service every 7½ minutes during peak periods on weekdays, every 10 minutes in the midday, every 15 minutes in the evening, and every 30 minutes in the early morning and in the late evening. On weekends, the service will have 10-minute headways between 9 a.m. and 6 p.m., with 15-minute headways on mornings before 9 a.m. and evenings after 6 p.m.

Ten rail stations will be located on the Bottineau Transitway. HCRRA and the Met Council chose the station locations based primarily on strong connections to arterial bus service, compatibility with existing and future land uses, as well as for the potential for transit-oriented development. HCRRA and the Met Council estimate that the non-work-related trips<sup>2</sup> on the Bottineau Transitway will constitute approximately 53 percent of the total trips, while it estimates that the work-related trips<sup>3</sup> will constitute the remaining 47 percent of the total trips.

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<sup>2</sup> These trips will be comprised of non-home-based errands, shopping, and entertainment-related trips.

<sup>3</sup> These trips will originate at the passenger's home and will terminate at the passenger's work or at a university campus.



Approximately 8 miles of the proposed Bottineau Transitway alignment, between Trunk Highway 55 and 73<sup>rd</sup> Avenue, will be constructed adjacent to operating BNSF Railway Company's (BNSF) freight rail tracks. BNSF currently has freight track in this location, and the corridor right-of-way is owned by BNSF.<sup>4</sup> The Bottineau Transitway will not share track with railroad carriers that operate on the general system. There will be no shared stations between the Bottineau Transitway and BNSF, and no shared rail-rail crossings at grade. Rather, the Bottineau Transitway's vehicles will operate on their own tracks, which will be 30 feet (measured from center line to center line) at its nearest point from the tracks of BNSF, but 36 to 44 feet in most areas of the shared right-of-way.

There are presently 10 highway-rail grade crossings over which BNSF operates in the corridor that it will share with the Bottineau Transitway. The highway-rail grade crossings that will be shared between BNSF and the Bottineau Transitway will be located at 73<sup>rd</sup> Avenue, 71<sup>st</sup> Avenue, 63<sup>rd</sup> Avenue, Bass Lake Road, Corvallis Avenue, West Broadway Avenue, 45-½ Avenue, 42<sup>nd</sup> Avenue, 41<sup>st</sup> Avenue, and 39-½ Avenue. At the crossings at 73<sup>rd</sup> Avenue, 71<sup>st</sup> Avenue, 63<sup>rd</sup> Avenue, and Bass Lake Road, the Bottineau Transitway will have a traffic signal with gates. The crossings at Corvallis Avenue, West Broadway Avenue, 45-½ Avenue, 42<sup>nd</sup> Avenue, 41<sup>st</sup> Avenue, and 39-½ Avenue, will be signalized crossings with gates. A single set of gate arms and flashing lights will be used at each crossing for protection of both the BNSF and Bottineau Transitway operations.<sup>5</sup>

At the shared highway-rail grade crossings, it is proposed that the active crossing warning devices will be tied into the signal systems of both the Bottineau Transitway and BNSF. Train detection circuitry on BNSF's tracks will be interfaced with the Bottineau Transitway's grade crossing warning system at the shared crossings. Similarly, train detection circuitry on the Bottineau Transitway's tracks will be interfaced with the BNSF grade crossing warning system at the shared crossings. HCRRA and the Met Council plan to have a single set of gate arms and flashing lights to protect each highway-rail grade crossing shared by BNSF and the Bottineau Transitway. Crossing details will be evaluated and further refined during the Project Development phase. BNSF currently has maintenance responsibilities for the highway-rail grade crossing warning systems.<sup>6</sup> There will be a cable between the crossing warning system instrument cases to facilitate the connection of interface relays for the operation of both sets of flashing lights and gates for rail traffic on the BNSF's and the Bottineau Transitway's tracks. BNSF currently has 2 to 3 trains scheduled

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<sup>4</sup> HCRRA has been coordinating with BNSF on plans to reconstruct the freight rail tracks within the shared 100-foot right-of-way, shifting the tracks in order to provide adequate space for its rail transit operations.

<sup>5</sup> The existing signal control at the highway-rail grade crossings is composed of flashing lights at all crossing locations, but only three locations currently have gate arms (71<sup>st</sup> Avenue, Bass Lake Road, and 41<sup>st</sup> Avenue).

<sup>6</sup> It is proposed that maintenance responsibilities for the highway-rail grade crossing warning systems will be shared by the Bottineau Transitway and BNSF. It is proposed that BNSF will provide and maintain the active warning devices for BNSF's tracks. Similarly, it is proposed that the Bottineau Transitway will provide and maintain the active warning devices for its tracks. Negotiations with BNSF regarding future maintenance responsibilities on the shared crossings and which entity will provide and maintain the active warning devices will occur during the Project Development phase.



per week operating over the existing tracks along the proposed alignment, carrying predominantly construction-related materials. The maximum authorized speed for the BNSF trains next to the Bottineau Transitway operations (through the Monticello Subdivision) is 25 miles per hour.

HCRRA and the Met Council have worked closely with Federal Transit Administration (FTA) Region V staff and representatives of BNSF and FRA to work out the details and design of the Bottineau Transitway. Per 49 C.F.R. Part 659, the Minnesota Department of Public Safety<sup>7</sup> will provide State oversight regarding the operation of the Bottineau Transitway.

### **III. The Legal Framework for FRA's Safety Jurisdiction Policy**

The Federal railroad safety laws apply to "railroad carriers." A "railroad carrier" is defined as a person providing railroad transportation. See 49 U.S.C. § 20102(3). The term "railroad" is defined broadly and includes any form of nonhighway ground transportation that runs on rails or electromagnetic guideways. See 49 U.S.C. § 20102(2)(A). The lone exception is for rapid transit operations in an urban area that are not connected to the general system. See id. at § 20102(2)(B). Outside of this one exception, and minor exceptions related to the applicability of the safety appliance laws, see id. at § 20301(b), FRA has safety jurisdiction, delegated from the Secretary of Transportation, over any type of railroad carrier (railroad), regardless of the type of equipment that it uses or its connection to the general system. See 49 C.F.R. § 1.89. Commuter and other short-haul railroads are railroads within FRA's jurisdiction, even if they are not connected to other railroads. See 49 U.S.C. § 20102(2)(A)(i); see also Appendix A to 49 C.F.R. Part 209. Moreover, commuter and other short-haul railroads are considered to be part of the general system, regardless of their connections to the general system. See Appendix A to 49 C.F.R. Part 209.

Because Congress did not provide definitions for the statutory terms "commuter or other short-haul" and "rapid transit operations in an urban area," FRA has set forth its policy on how it will apply those terms in its "Statement of Agency Policy Concerning Jurisdiction over the Safety of Railroad Passenger Operations and Waivers Related to Shared Use of the Tracks of the General Railroad System by Light Rail and Conventional Equipment." See 65 Fed. Reg. 42,529 (July 10, 2000) (amending Appendix A to 49 C.F.R. Part 209) (FRA's Policy Statement).<sup>8</sup> In FRA's Policy Statement, FRA establishes certain presumptions regarding passenger rail operations. First, if Congress has enacted a law that describes a passenger rail system as commuter rail, FRA will follow that mandate. No such statutory mandate, however, exists with respect to the Bottineau Transitway. Second, if an operation is a subway or elevated system that has its own separate track system, has no highway-rail

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<sup>7</sup> The Minnesota Department of Public Safety, the State Safety Oversight Agency (SSOA) in Minnesota, oversees all fixed guideway transit systems in the State that are not part of the general system. The SSOA has not been involved with the project to date, but will be involved once FTA begins New Starts Project Development activities.

<sup>8</sup> See also Appendix A to 49 C.F.R. Part 211, "Statement of Agency Policy Concerning Waivers Related to Shared Use of Trackage or Rights-of-Way by Light Rail and Conventional Operations."

grade crossings, and moves passengers from station to station within an urban area, then FRA will presume that the system is URT. The Bottineau Transitway will not be a subway or elevated operation, and it will have 10 highway-rail grade crossings. Therefore, it is not presumptively URT. As a result, in situations such as this when neither presumption applies, FRA looks at "all of the facts pertinent to a particular operation to determine its proper characterization."<sup>9</sup> Appendix A to 49 C.F.R. Part 209.

According to FRA's Policy Statement, the proper characterization of a rail system depends upon three general factors: (1) the geographic scope of the rail operation; (2) the primary function of the rail operation; and (3) the frequency of the rail operation's service. In general, FRA will consider an operation to be a commuter railroad if its primary function involves transporting commuters to and from their work within a metropolitan area. Moving people from point to point within a city's boundaries is, at most, an incidental portion of a commuter railroad's operations. A commuter railroad serves an urban area, its suburbs, and more distant outlying communities in the greater metropolitan area. A key indicator of a commuter system is that the vast majority of the system's trains are operating in the morning and evening peak periods, with only a small number of trains operating at other hours.

By contrast, FRA will consider an operation to be URT if that operation serves an urban area, and a primary function of the operation is moving people from point to point within the boundaries of the urban area, where there are multiple station stops for that purpose. Additionally, URT operations typically provide frequent train service, even outside of the morning and evening peak periods. Finally, while the type of equipment used by such a system is not determinative of its status, the equipment ordinarily associated with street railways, trolleys, subways, and elevated railways is the equipment that is most often used in URT operations.

Even if FRA determines that an operation is URT, FRA will exercise jurisdiction over the URT operation, to the extent that it is connected to the general system. See Appendix A to 49 C.F.R. Part 209. In situations in which a URT operation has a minor connection to the general system, FRA will exercise limited jurisdiction over the URT system and only to the extent necessary to ensure safety at the points of connection for that system, the general system railroad, and the public. For example, when a URT operation shares highway-rail grade crossings with a railroad that operates on the general system, FRA will exercise limited jurisdiction over the URT operation at the points of connection—the highway-rail grade crossings. This occurs because such a connection presents sufficient intermingling between the URT system and the general system railroad to pose hazards to either or both operations and to the motoring public. As a result, in those situations, FRA expects the URT system to comply with FRA's grade crossing regulations, as well as any other applicable regulations that are necessary to ensure safety at the crossings, as further specified below.

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<sup>9</sup> Of course, if a system does not clearly fall within either category, it may be "other short-haul service" and be subject to FRA's jurisdiction. That is not the case with respect to the Bottineau Transitway because, as described below, it has the characteristics of a URT operation.



#### **IV. Application of FRA's Jurisdiction Policy to the Bottineau Transitway**

FRA's review of all of the relevant materials indicates that the Bottineau Transitway is intended to be, and will function as, a URT operation with limited connections to the general system. Several factors, which are discussed below, support this determination.

##### **A. Geographic Scope of the Bottineau Transitway**

One of the characteristics of a URT system is that it serves an urban area. HCRRA and the Met Council's correspondence make it clear that the Bottineau Transitway will provide service to a single urban area, not a sprawling metropolitan region. The Bottineau Transitway will be located completely within Hennepin County, Minnesota, extending northwest from downtown Minneapolis, and serving the suburbs of Golden Valley, Robbinsdale, Crystal, and Brooklyn Park. The Bottineau Transitway is a proposed 13 mile extension to the Blue Line, connecting at the Target Field/Interchange station in the central business district of downtown Minneapolis and terminating at 97<sup>th</sup> Avenue, the site of Target Corporation's north campus. The Bottineau Transitway will add approximately 13 miles of standard gage revenue service track and 10 new stations to the region's transit system. Stations will be spaced between 0.6 and 2.9 miles apart.

The Bottineau Transitway will service an urban area—the twin cities of Minneapolis-St. Paul—in which there will be multiple station stops for moving people from point to point within the cities. The Bottineau Transitway will serve the Twin Cities in a similar fashion and within the range of other transit systems that FRA considers to be URT. Consequently, FRA has determined that the geography of the Bottineau Transitway is consistent with the geography of a URT operation.

##### **B. Function of the Bottineau Transitway**

The second characteristic of a URT system is its function of moving passengers from station to station within an urban area. HCRRA and the Met Council's description of the Bottineau Transitway establishes that its focus will be moving passengers from station to station within the Twin Cities region, while also connecting walkable urban neighborhoods with multiple activity centers. Based upon this description, FRA concludes that the function of the Bottineau Transitway is similar to the functions of other URT systems.

URT operations differ from commuter operations, in part, by the substantial number of trips that are made on the system for purposes other than traveling to and from places of employment. Not unlike other URT operations, the Bottineau Transitway will provide passengers with access to centers of employment. However, transporting passengers to and from work will not be the sole function of the Bottineau Transitway. The alignment is also designed to serve a large number of activity centers and neighborhoods and to facilitate the movement of people among those activity centers and neighborhoods. HCRRA and the Met Council have explained that those activity centers and neighborhoods include transit-supported neighborhoods with access to recreational facilities and with mixed commercial,

residential, and industrial uses,<sup>10</sup> as well as connections to the north end of downtown Minneapolis.<sup>11</sup> HCRRA and the Met Council estimate that the non-work-related trips<sup>12</sup> on the Bottineau Transitway will constitute approximately 53 percent of the total trips, while it estimates that the work-related trips<sup>13</sup> will constitute the remaining 47 percent of the total trips.

The station environment for the Bottineau Transitway will also be oriented towards providing passengers with non-work-related service throughout the day. HCRRA and the Met Council intend to develop stations along the alignment with limited public parking. Only three of the proposed ten stations will have park-and-ride lots. The other seven proposed stations will be “walk-up” stations, which will be accessed by pedestrians, bicyclists, or passengers transferring from other transit modes (primarily bus service). “Walk-up” stations are more conducive to urban environments because they facilitate the support for walkable neighborhoods, activity centers, and other future transit-oriented development opportunities. Additionally, the constraint on public parking will be consistent with a URT operation that has substantial station-to-station travel, rather than one-directional commuter travel for work-related trips. Moreover, with only three park-and-ride lots proposed for the alignment, as well as primarily non-motorized access to the stations, it will be less likely that suburban commuters will use the Bottineau Transitway as an intermediate or final leg of a much longer journey to and from work.

Finally, the type of equipment that will be used on the Bottineau Transitway supports its function as a URT operation. While the type of equipment used on a system is not determinative of a rail system’s characterization, it is relevant. Here, HCRRA and the Met Council plan to operate electric light rail vehicles<sup>14</sup> to take advantage of the greater acceleration and deceleration rates and the increased ability to negotiate steeper gradients.

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<sup>10</sup> Station stops include access to public libraries, city halls, museums, galleries, multiple shopping centers (including retail stores, restaurants, coffee shops, salons, grocery stores, banks, post offices, and pharmacies), health care providers, fitness centers, public parks (including baseball diamonds, golf, hiking, and picnic facilities), and land designated as future mixed office/retail/residential use.

<sup>11</sup> The Bottineau Transitway terminates at the Target Field/Interchange station (developed as part of a separate project currently under construction), which provides access to multiple attractions, such as Target Field (the Minnesota Twins Major League Baseball stadium) and Target Center (a concert arena and professional basketball arena for the National Basketball Association Timberwolves and the Women’s National Basketball Association Lynx). Other destinations along the Blue Line, of which the Bottineau Transitway is an extension, include the Minnesota Vikings National Football League stadium, the Hennepin County Government Center, and the Minneapolis City Hall. The Bottineau Transitway will also offer a one-seat ride to the Minneapolis-St. Paul International Airport, Veterans Administration Medical Center, and the Mall of America. Passengers who transfer will be able to ride the future Green Line to the University of Minnesota and to downtown St. Paul.

<sup>12</sup> These trips will be comprised of non-home-based errands, shopping, and entertainment-related trips.

<sup>13</sup> These trips will originate at the passenger’s home and will terminate at the passenger’s work or at a student’s university campus.

<sup>14</sup> Electric light rail vehicles would run on two new sets of tracks (northbound and southbound) within the eastern half of the 100-foot BNSF-owned right-of-way, and separate from BNSF’s freight rail tracks. Electric light rail vehicles may include those currently in use on the Blue Line, such as Bombardier Flexity Swift and



The overall characteristics of the Bottineau Transitway's function indicate that it has been designed primarily to ease the movement of passengers throughout the Twin Cities for a variety of non-work-related reasons. In light of the percentage of non-work-related destinations located along the Bottineau Transitway, a station environment that encourages travel between stations, and the implementation of LRT technology, FRA concludes that the function of the Bottineau Transitway reflects a URT operation.

### C. Frequency of Operations for the Bottineau Transitway

The final characteristic of a URT system is the frequency of its service. The Bottineau Transitway will operate on a frequency of service that is more indicative of URT service than commuter service.

The Bottineau Transitway will operate 7 days per week, 21 hours per day. Service for the Bottineau Transitway will include: 7½-minute headways during the peak periods;<sup>15</sup> 10-minute headways in the midday periods;<sup>16</sup> 15-minute headways during the evening periods;<sup>17</sup> and 30-minute headways during the early morning and late evening periods.<sup>18</sup> On weekends, the service will have 10-minute headways between 9 a.m. and 6 p.m., with 15-minute headways on weekend mornings before 9 a.m. and evenings after 6 p.m. Based upon this proposed schedule, it is clear that the Bottineau Transitway will provide frequent train service, even outside of the morning and evening peak periods.

Additionally, the above intervals are similar to other transit systems in the United States that are treated by FRA as URT systems. For example, the Valley Metro in Phoenix, Arizona, the Blue Line in Charlotte, North Carolina, and Triangle Transit's URT system in Wake County, North Carolina all operate with headways of 10 minutes peak and 20 minutes off peak. Additionally, the Santa Clara Valley Transportation Authority in San Jose, California operates with headways of 15 minutes peak and 30 minutes off peak.

The frequency of service of the Bottineau Transitway is consistent with the frequency of service of other URT systems. Consequently, FRA concludes that the Bottineau Transitway meets the duration and frequency-of-service characteristics of a URT operation.

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Siemens S70 vehicles.

<sup>15</sup> The peak period runs from 6 a.m. to 9 a.m. and from 3:00 p.m. to 6:30 p.m. on weekdays.

<sup>16</sup> The midday period runs from 9 a.m. to 3 p.m. on weekdays.

<sup>17</sup> The evening period runs from 6:30 p.m. to 10:00 p.m. on weekdays.

<sup>18</sup> The early morning period runs from opening until 6 a.m. The late evening period runs from 10 p.m. until closing.

#### D. The Bottineau Transitway's Connections to the General System

All of the factors described above support a conclusion that the Bottineau Transitway, if built and operated as proposed, will be a URT system. The proposed system will move its passengers within one urban area—the Minneapolis-St. Paul Twin Cities region of Minnesota. Additionally, the system will focus on moving passengers from station to station within that urban area, and there will be multiple station stops for that purpose. Finally, the Bottineau Transitway will provide frequent train service, even outside of the morning and evening peak periods.

Although the Bottineau Transitway will be a URT operation, it will have limited connections to the general system; the Bottineau Transitway will share ten highway-rail grade crossings with a railroad that operates on the general system (BNSF).<sup>19</sup> FRA does not, however, consider these connections sufficient to warrant a full assertion of its jurisdiction on the entirety of the Bottineau Transitway. Rather, FRA's Policy Statement provides that this type of connection simply requires an assertion of FRA's jurisdiction that will be sufficient to ensure safety at the points of connection. To that end, FRA will exercise jurisdiction only over the portion of the Bottineau Transitway that will have the connection with the general system. Moreover, the relevant FRA regulations that will apply to the Bottineau Transitway will apply only to its operations that occur at those limited connections with the general system. At all other locations on the Bottineau Transitway, FRA's regulations will not apply.

Here, the points of connection will be the ten shared highway-rail grade crossings at 73<sup>rd</sup> Avenue, 71<sup>st</sup> Avenue, 63<sup>rd</sup> Avenue, Bass Lake Road, Corvallis Avenue, West Broadway Avenue, 45-½ Avenue, 42<sup>nd</sup> Avenue, 41<sup>st</sup> Avenue, and 39-½ Avenue. Consequently, FRA's highway-rail grade crossing regulations (49 C.F.R. Part 234) will apply to the Bottineau Transitway, as well as any regulations that would govern movements at the highway-rail grade crossings, including the following: FRA's radio communication regulations (49 C.F.R. Part 220), FRA's train horn regulations (49 C.F.R. Part 222), FRA's accident reporting regulations (49 C.F.R. Part 225), FRA's signal regulations (49 C.F.R. Parts 233, 235, and 236) and FRA's locomotive headlights and auxiliary lights regulations (49 C.F.R. § 229.125). Moreover, anyone performing maintenance, inspections, or tests on the highway-rail grade crossing warning devices must comply with the hours of service laws and regulations (49 U.S.C. chapter 211 and 49 C.F.R. Part 228),<sup>20</sup> the roadway worker

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<sup>19</sup> These ten shared highway-rail grade crossings are the only connections that the Bottineau Transitway will have with the general system. As mentioned above, the Bottineau Transitway will not share track with a railroad that operates on the general system. In fact, at grade, the horizontal track separation between the Bottineau Transitway and the nearest freight track will be at least 30 feet (from center line to center line). Moreover, there will be no shared stations between the Bottineau Transitway and the freight operation, and there will be no rail-rail crossings at grade.

<sup>20</sup> FRA expects that Bottineau Transitway dispatchers will have direct communications (such as through a radio) with BNSF dispatchers and/or BNSF train crews. Bottineau Transitway dispatchers would also be expected to comply with 49 U.S.C. chapter 211, 49 C.F.R. Part 228, and 49 C.F.R. Part 220 while at those connections to the general system.



protection regulations (49 C.F.R. Part 214), and the alcohol and drug regulations (49 C.F.R. Part 219).

However, as mentioned above, FRA will only apply these regulations to the Bottineau Transitway at the ten shared highway-rail grade-crossings; these regulations will not apply at any other locations on the Bottineau Transitway. For example, FRA's accident reporting regulations will only apply for accidents or incidents that occur at the shared highway-rail grade crossings.<sup>21</sup> To the extent that an accident or incident occurs elsewhere on the Bottineau Transitway, HCRRA and the Met Council would not have to comply with FRA's accident reporting regulations.

Despite FRA's limited assertion of jurisdiction over the Bottineau Transitway, HCRRA and the Met Council may petition FRA to waive the regulations that will apply to it. Pursuant to FRA's regulations, FRA may waive regulatory requirements when a waiver is in the public interest and consistent with railroad safety. In doing so, FRA often imposes conditions designed to ensure safety. If HCRRA and the Met Council believe that there are some requirements applicable to the Bottineau Transitway that should be waived, it may petition for a waiver under the procedures set forth in 49 C.F.R. Part 211. Any such petition should specify why HCRRA and the Met Council believe that they should not have to comply with the regulation(s) and what alternative measures it will take to ensure safety. See 49 C.F.R. § 211.9. If FRA's Railroad Safety Board (Safety Board) determines that HCRRA and the Met Council can provide, through alternative procedures, the same level of safety that the FRA regulations provide, then the Safety Board may grant the waiver.<sup>22</sup>

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<sup>21</sup> For example, when reporting the train miles, the worker hours, and the number of passengers transported on Form FRA F 6180.55, pursuant to the section entitled "Operational Data & Accident Incident Counts for Report Month," the Bottineau Transitway should only submit data that corresponds to the highway-rail grade crossings that are shared between BNSF and the Bottineau Transitway. FRA understands that it may be difficult to determine the actual train miles, the worker hours, and the number of passengers transported across the shared highway-rail grade crossings. To minimize such difficulties, FRA requests that the Bottineau Transitway estimate the portion of the Bottineau Transitway's connection with the general system at the subject highway-rail grade crossings as a percentage of the entirety of the Bottineau Transitway, and then calculate the requisite operational data based upon this percentage.

<sup>22</sup> FRA's Safety Board's decision to restrict the exercise of FRA's regulatory authority in no way constrains the exercise of FRA's statutory emergency order authority under 49 U.S.C. § 20104. That authority was designed to address imminent hazards not dealt with by existing regulations and orders and/or so dangerous as to require immediate, *ex parte* action on the Government's part.

**V. Conclusion**

FRA has concluded that, under the Federal railroad safety laws, the Bottineau Transitway will be a URT system with limited connections to the general system. As a result, HCRRA and the Met Council will be subject to certain FRA regulations, including 49 C.F.R. Parts 214, 219, 220, 222, 225, 228, 233, 234, 235, and 236, and 49 C.F.R. § 229.125, as well as the hours of service laws, at the points of connection between the Bottineau Transitway and the general system. Additionally, as mentioned above, HCRRA and the Met Council may petition the Safety Board for a waiver of those regulations under the procedures set forth in 49 C.F.R. Part 211. Finally, if the scope, function, geography, or frequency of the Bottineau Transitway changes in any meaningful manner, FRA expects HCRRA and the Met Council to advise FRA, in a timely manner, of those changes so that FRA may determine whether additional action is necessary.

We appreciate your cooperation in this dialogue. Should you have any questions, please do not hesitate to contact Ms. Veronica Chittim at 202-493-0273.

Sincerely,

A handwritten signature in cursive script, appearing to read "Melissa L. Porter".

Melissa L. Porter  
Chief Counsel





**Hennepin County**  
Regional Railroad Authority

701 Fourth Avenue South, Suite 400  
Minneapolis, MN 55415-1843

612-348-9260  
Fax: 612-348-1842  
[www.hennepin.us/hcrra](http://www.hennepin.us/hcrra)

June 17, 2013

Veronica Chittim  
Trial Attorney  
U.S. Department of Transportation  
Federal Railroad Administration  
1200 New Jersey Avenue, SE  
Mail Stop 10  
Washington, DC 20590

**Re: Preliminary Jurisdictional Determination**

Dear Ms. Chittim:

This application for a preliminary jurisdictional determination from the Federal Railroad Administration (FRA) is being made jointly on behalf of the Hennepin County Regional Railroad Authority (HCRRRA) and the Metropolitan Council. In addition, we are seeking from FRA a confirmation of the Bottineau Transitway's type of passenger operation. These requests are being made pursuant to the terms of the FRA/FTA joint policy concerning shared use of tracks.

This letter follows on a February 2012 letter from HCRRRA seeking FRA guidance on a preliminary jurisdictional determination. Since that time, the Metropolitan Council, which acts as the Twin Cities' Metropolitan Planning Organization (MPO) and is the region's largest transit provider, has adopted a locally preferred alternative (LPA) for the Bottineau Transitway. The LPA identified and adopted in the region's long-range Transportation Policy Plan is light rail transit (LRT) operating in dedicated right-of-way.

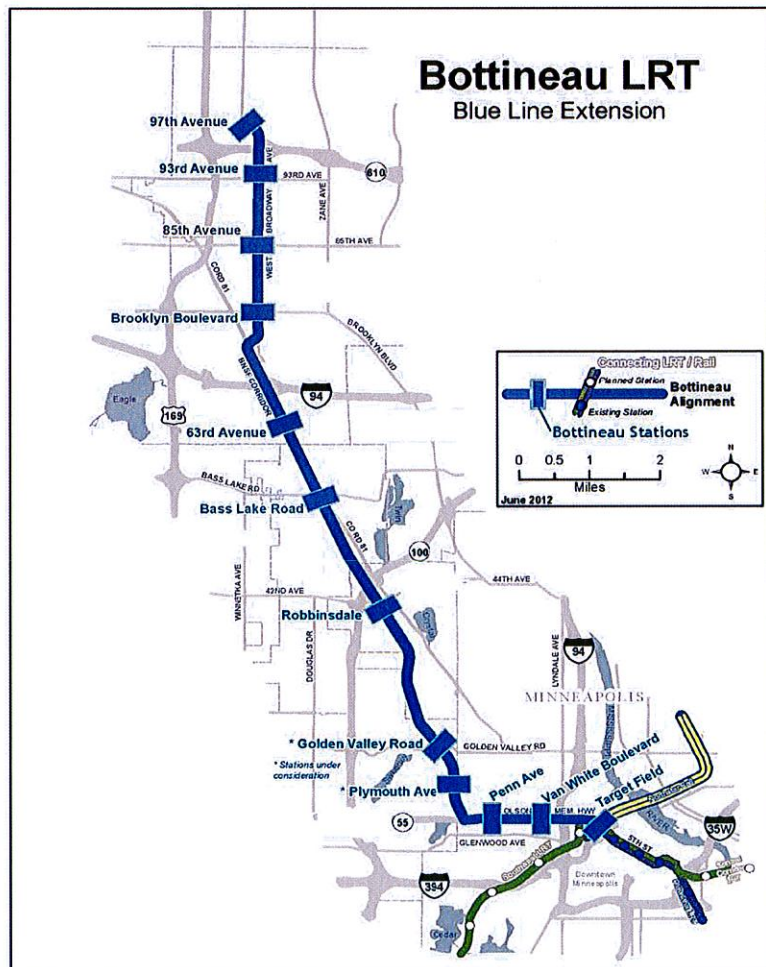
HCRRRA and the Metropolitan Council will continue to work in close partnership preparing the project for entry into the Federal Transit Administration's (FTA) New Starts Program. Upon entry into the New Starts program, the Met Council will be primary local project sponsor. The Met Council's Metro Transit operating division will be solely responsible for eventual passenger operations in the Bottineau Transitway.

The Bottineau Transitway project is located in the Minneapolis-St. Paul "Twin Cities" region of Minnesota. Approximately 8 miles of the proposed LRT alignment between Trunk Highway 55 and 73<sup>rd</sup> Avenue will be adjacent to operating BNSF freight rail. BNSF currently has one freight track in this location and the corridor right-of-way is owned by BNSF. Hennepin County has been coordinating with BNSF on plans to reconstruct the freight rail tracks within the shared 100-foot right-of-way, shifting them in order to provide adequate space for LRT operations. If the LRT line is considered to be

“urban rapid transit”, we understand that FRA may exercise jurisdiction over “significant points of connection” to the general railroad system, with the remainder of the project subject to FTA jurisdiction. Shared at-grade, highway-rail crossings within segments of BNSF-owned right-of-way may constitute these significant points of connection. There are currently 10 at-grade highway-freight rail crossings in this corridor. As currently planned, the Bottineau Transitway project will not add any new at-grade LRT-freight rail crossings nor are there any shared stations between the LRT line and freight rail. No other shared points of connection between the Bottineau Transitway and the freight railroad are proposed.

## A. Project Information

The Bottineau Transitway is a proposed extension of the existing Hiawatha LRT or Blue Line, beginning service at the Target Field/Interchange station in downtown Minneapolis, adding approximately 13 miles of revenue service track and 10 new LRT stations to the region's light rail system (see alignment map on next page). The Bottineau Transitway would provide frequent, reliable, and bi-directional transit service within the northwest region of the Twin Cities and link to other transit lines to provide connections to major destinations throughout the region.



## 1. Type of Passenger Operation

We anticipate the Bottineau Transitway will be considered urban rapid transit (URT) per FRA's definition because of:

- The geographic scope of the LRT operation: the operation serves developed urban areas.
- The primary function of the LRT operation: moving passengers from station to station within the urban boundaries and there are multiple station stops within the corridor for that purpose.
- The frequency of the rail operation's service: the system provides frequent train service outside the morning and evening peak periods approximately 21 hours per day.

### a. Station Locations

Ten proposed LRT stations would be located along the proposed 13-mile Bottineau Transitway route. Station locations were selected based on strong connections to arterial bus service, compatibility with existing and future land uses, and the potential for transit-oriented development. Three of the proposed ten stations will have park-and-ride lots. The other seven proposed stations will be walk-up stations, which will be accessed by pedestrians, bicyclists, or passengers transferring from other transit modes (primarily buses).

The following is a summary of proposed LRT station locations:

| Station                    | Distance from Previous Station | Adjacent Land Uses                                                                         | Park & Ride/# of Spaces            |
|----------------------------|--------------------------------|--------------------------------------------------------------------------------------------|------------------------------------|
| 97 <sup>th</sup> Avenue    | -                              | Site of Target Corporation north campus                                                    | -                                  |
| 93 <sup>rd</sup> Avenue    | 0.6 mile                       | Business parks to the west; residential to the south                                       | 806                                |
| 85 <sup>th</sup> Avenue    | 1.1 mile                       | Residential to the north; North Hennepin Community College to the SE; commercial to the SW | -                                  |
| Brooklyn Blvd              | 1.0 mile                       | Commercial                                                                                 | -                                  |
| 63 <sup>rd</sup> Avenue    | 1.9 mile                       | Industrial and commercial with some high-density residential                               | Existing parking ramp              |
| Bass Lake Rd               | 1.1 mile                       | High-density residential and large-scale commercial with some park use                     | -                                  |
| Robbinsdale Transit Center | 1.9 mile                       | Downtown Robbinsdale to the east, residential to the west                                  | Existing Metro Transit bus station |
| Golden Valley Road*        | 2.3 mile                       | Regional park to the south; institutional/residential to the east and west                 | -                                  |
| Plymouth Ave*              | 2.9 mile                       | Close to recreational facilities within park; residential to the east                      | -                                  |
| Penn Avenue                | 1.5 or 0.9 mile                | Medium-density residential                                                                 | -                                  |



|                             |          |                                                                                      |   |
|-----------------------------|----------|--------------------------------------------------------------------------------------|---|
| Van White                   | 0.7 mile | Mix of residential land uses, including medium- and high-density housing             | - |
| Target Field/ Interchange** | 0.7 mile | North end of downtown Minneapolis; commercial and industrial uses; ballpark adjacent | - |

Exhibit 2 includes conceptual drawings depicting station locations in more detail. Please note that drawings are conceptual in nature and not indicative of final design.

*\*Selection of either Golden Valley Road or Plymouth Avenue station to be made during Preliminary Engineering.*

*\*\*Target Field/Interchange station constructed as a part of a separate project currently under construction.*

#### b. Number and Frequency of Trips, Hours of Operation

Trains are proposed to run every 7.5 minutes during peak times (6–9 a.m. and 3–6:30 p.m.), every 10 minutes in the midday, every 15 minutes in the evening (6:30–10 p.m.) and every 30 minutes early morning and late evening. LRT is proposed to run 21 hours per day, 7 days per week. Although two-car train consist operations are currently planned based on projected ridership, platforms and stations are being designed to accommodate three-car train consists.

#### c. Ridership and Work-Related Trips

Year 2030 ridership is projected to be about 27,000 trips per day with an estimated 47% work-related trips and 53% non-work-related trips.

## 2. Operations

#### a. Planned Operations

LRT is proposed to operate on its own exclusive guideway and would **not** share tracks with BNSF freight operations. However, LRT would be adjacent to and share right-of-way with freight operations for a portion of the alignment. This would require the shift of approximately 8 miles of BNSF freight track from the center of the existing 100 foot wide right-of-way (owned by BNSF) to the western 50 feet of the right-of-way (the freight track would move 25 feet to the west of existing). The centerline distance between freight and LRT tracks would be approximately 30 feet at the nearest point, and 36-44 feet in most areas of the shared right-of-way. See Exhibit 1 for a typical section of the shared freight-LRT corridor.

BNSF currently has 2 to 3 trains per week using the existing tracks along the proposed alignment. Commodities carried by BNSF on the freight rail are predominantly construction-related materials.

#### b. Speeds of Operation

LRT operations are proposed next to freight rail through the Monticello Subdivision. This area has existing Class 2 freight track with a maximum speed of 25 mph. The proposed LRT would have a maximum operating speed of 55 mph through this area.



c. Type of Equipment

Electric light rail vehicles would run on two new sets of tracks (northbound and southbound) within the eastern half of the 100-foot BNSF-owned right-of-way, and separate from BNSF freight rail tracks. LRT vehicles may include vehicles currently in use on the Blue Line, including Bombardier Flexity Swift and Siemens S70 vehicles. New vehicles would need to be purchased to accommodate Bottineau Transitway operations. Given the state of project development (conceptual engineering / NEPA clearance not yet received), procurement details for the purchase of Bottineau Transitway light rail vehicles are not available at this time.

d. Shared Highway-Rail Crossings

No at-grade freight rail-LRT crossings are proposed. However, LRT is proposed to share ten existing at-grade highway-rail crossings with freight rail.

It is currently envisioned that a single set of gate arms will be used at each crossing for protection of both freight and LRT crossings. A range of noise mitigation strategies will be considered, including quiet zones. Crossing details and noise mitigation requirements will be evaluated and further refined during Project Development.

| SHARED AT-GRADE HIGHWAY-RAIL CROSSINGS |                                                                                                  |                                |                             |
|----------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------|
| Location                               | Type of Crossing                                                                                 | Signal Control                 | See Sheet #<br>in Exhibit 2 |
| 73 <sup>rd</sup> Avenue                | LRT crossing through 73 <sup>rd</sup> Ave/CR 81 intersection; BNSF crosses 73 <sup>rd</sup> only | Traffic signal with gates      | 29                          |
| 71 <sup>st</sup> Avenue                | BNSF and LRT road crossing at grade                                                              | Traffic signal with gates      | 30                          |
| 63 <sup>rd</sup> Avenue                | BNSF and LRT road crossing at grade                                                              | Traffic signal with gates      | 47                          |
| Bass Lake Road                         | BNSF and LRT road crossing at grade                                                              | Traffic signal with gates      | 50                          |
| Corvallis Avenue                       | BNSF and LRT road crossing at grade                                                              | Signalized crossing with gates | 51                          |
| West Broadway Ave                      | BNSF and LRT road crossing at grade                                                              | Signalized crossing with gates | 51                          |
| 45-½ Avenue                            | BNSF and LRT road crossing at grade                                                              | Signalized crossing with gates | 52                          |
| 42 <sup>nd</sup> Avenue                | BNSF and LRT road crossing at grade                                                              | Signalized crossing with gates | 54                          |
| 41 <sup>st</sup> Avenue                | BNSF and LRT road crossing at grade                                                              | Signalized crossing with gates | 54                          |
| 39-½ Avenue                            | BNSF and LRT road crossing at grade                                                              | Signalized crossing with gates | 55                          |

See Exhibit 2 for conceptual layouts showing at-grade crossings and bridges.

e. Relocation of Other Existing Freight Operations

In addition to the shift of 8 miles of BNSF freight track between Trunk Highway 55 and 73<sup>rd</sup> Avenue, the following freight rail modifications are also proposed as a part of the project:

- Reconstruction of a short segment of Canadian Pacific freight rail track and the relocation of an existing diamond crossing with BNSF track (see Sheet 50 of Exhibit 2)
- Construction of a new bridge for LRT over the Canadian Pacific track (see Sheets 50 and 51 of Exhibit 2)
- Construction of a new bridge over Trunk Highway 100 to exclusively accommodate the realigned BNSF track (see Sheets 52 and 53 of Exhibit 2)
- Relocation of an existing Canadian Pacific crossover just north of Trunk Highway 55 (see Sheet 81 of Exhibit 2)

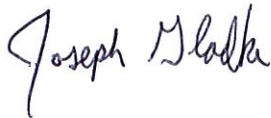
**B. Request for Preliminary Jurisdictional Determination and Type of Passenger Operation**

Moving forward with next steps in the project development process, which includes publication of the project's Draft Environmental Impact Statement (DEIS), we are seeking feedback from FRA regarding a preliminary jurisdictional determination and confirmation of the Bottineau Transitway as an urban rapid transit line.

If FRA has any questions regarding the Bottineau Light Rail Transit line or information contained herein, please contact Joe Gladke at 612-348-2134 or Mark Fuhrmann at 651-602-1942.

Thank you for your assistance on the Bottineau Transitway project.

Respectfully,



Joseph Gladke, P.E.  
Manager of Engineering & Transit Planning  
Hennepin County



Mark W. Fuhrmann  
New Starts Program Director  
Metro Transit

cc: Associate Administrator for Safety  
Federal Railroad Administration  
1200 New Jersey Avenue, SE  
Mail Stop 25  
Washington, DC 20590

Steve Clark, FTA Region V  
Brian Jackson, FTA Headquarters  
Cyrell McLemore, FTA Region V  
Maya Sarna, FTA Headquarters  
Bill Wheeler, FTA Region V  
Kathryn O'Brien, Metropolitan Council

## **Exhibit 1**

## **Exhibit 2**



Coordination with Minneapolis Park and Recreation Board



**Minneapolis  
Park & Recreation Board**

*Administrative Offices*  
2117 West River Road  
Minneapolis, MN 55411-2227

*Operations Center*  
3800 Bryant Avenue South  
Minneapolis, MN 55409-1000

*Phone*  
612-230-6400

*Fax:*  
612-230-6500

[www.minneapolis-parks.org](http://www.minneapolis-parks.org)

September 24, 2013

Joe Gladke, P.E.  
Manager of Engineering and Transit Planning  
Hennepin County  
701 Fourth Avenue South, Suite 400  
Minneapolis, MN 55415-1843

Re: MPRB preliminary review of Bottineau Transitway DEIS chapters 5 and 8 and coordination with project office.

Dear Mr. Gladke:

The Minneapolis Park and Recreation Board (MPRB) extends a thank you to you and the project team for ongoing coordination with the MPRB on the Bottineau Transitway project. We deeply value the efforts that have been made to provide information about the project. We also appreciate the work that has been completed to date with MPRB staff to engage the community on a discussion of the potential issues and opportunities of the transit project as they relate to Theodore Wirth Regional Park.

Last week we met to review and discuss Chapters 5 and 8 of the DEIS, which addresses Section 4(f) for the proposed transitway. We acknowledge that a de minimus finding is being sought. At this point, the MPRB is not prepared to articulate a course of action in which it will concur with the de minimus finding. The MPRB will use the Draft Environmental Impact Statement comment period to provide detailed responses on Chapter 8 and other chapters as they relate to park property that the MPRB owns and operates.

In our meeting, we articulated the following comments for your consideration:

*President*  
John Erwin

*Vice President*  
Liz Wielinski

*Commissioners*  
Brad Bourn  
Bob Fine  
Carol A. Kummer  
Jon C. Olson  
Anita Tabb  
Scott Vreeland  
M. Annie Young

*Superintendent*  
Jayne Miller

*Secretary to the Board*  
Michael P. Schmidt

- 1) Within the MPRB system, parkways are amenities or features of parks. With this in mind, Theodore Wirth Parkway is a feature of Theodore Wirth Regional Park versus a transportation right-of-way and therefore, should be considered a 4(f) resource.
- 2) As you know, the MPRB was a strong advocate for the Wirth Park Design Forum that explored early design concepts for potential stations and the transitway near Wirth Park including a Plymouth Avenue station. With regard to agency coordination, we believe a Plymouth Avenue station should be considered as part of the DEIS process. We request, however, that the MPRB not be identified as the originator of the idea of a station at Plymouth Avenue.
- 3) Similarly, in terms of agency coordination, we are thankful for the detailed information provided by the project office. While the information has been thoughtful and thorough, the MPRB has not expressed that its overall concerns have been addressed. This will be further evaluated as part of the DEIS comment period.
- 4) With respect to the character of Theodore Wirth Regional Park, current descriptions in the DEIS do not reflect the quiet, natural setting of this portion of the park. This quiet character is consistent with historic and current master plans for the park and will be a critical factor of the MRPB's review of the DEIS.
- 5) We anticipate that any MPRB property that is considered necessary for the project to occur has been identified in Chapter 8. Specifically, if additional property is needed for wetland or floodplain mitigation, we encourage it to be included in this section.
- 6) We would like potential impacts of wetland and floodplain mitigation within the park included in the evaluation by identifying location and size of any possible mitigation areas.
- 7) We believe the woodland on the west edge of rail corridor proximate to proposed Golden Valley station includes high

quality, old-growth oaks. Impacts to this area will be of high concern in the MPRB's review of the DEIS.

- 8) As mentioned in our meeting, the Grand Rounds, which includes Theodore Wirth Park and Parkway, has been deemed eligible for the National Register of Historic Places. The historic nomination has a strong focus on the cultural landscape qualities of the park including viewsheds, topography, vegetation, and the experiential qualities of the parkway. Theodore Wirth Park was acquired in the early 1900s, largely for its inspiring natural qualities. Importantly, at that time it was very unusual to acquire and preserve nature in a city park of this scale. The natural character of the park continues to be its primary identity and the park contains the premier natural resources in the MPRB system. Clarification of the Grand Rounds Historic District vs. park boundaries should be made in the documentation.

Again, thank you for your thoughtful work on the DEIS and ongoing coordination with the MPRB. We look forward to working with you as the project progresses. If you have any questions, please do not hesitate to contact me.

Sincerely,

**Minneapolis Park & Recreation Board**



Bruce Chamberlain, ASLA

Assistant Superintendent for Planning

CC: Jayne Miller, MPRB Superintendent  
Jennifer Ringold, MPRB Director of Strategic Planning  
Andrea Weber, MPRB Design Project Manager  
Renay Leone, MPRB Real Estate Planner



Coordination with Three Rivers Park District



Three Rivers  
Park District  
Board of  
Commissioners

September 9, 2013

Penny Steele  
District 1

Brent Rusco, Hennepin County Senior Professional Engineer  
Housing, Community Works & Transit Engineering and Transit Planning  
701 Fourth Avenue South, Suite 400  
Minneapolis, MN 55415-1843

RE: Bottineau Transitway Preliminary Draft Section 4(f) Evaluation

Dear Mr. Rusco,

Jennifer DeJournett  
District 2

Thank you for the opportunity to comment on the Bottineau Transitway Preliminary Draft Section 4(f) Evaluation. Three Rivers Park District (Park District) staff has reviewed the draft 4(f) evaluation and has provided the following assessment. Please note, however, that this project has not been reviewed by the Park District Board of Commissioners.

Daniel Freeman,  
Vice Chair  
District 3

As the draft 4(f) evaluation states, the Park District operates and maintains existing and planned regional trails adjacent to the proposed Bottineau Transitway, specifically the Rush Creek, Crystal Lake and Bassett Creek Regional Trails.

John Gunyou,  
Chair  
District 4

#### **Rush Creek Regional Trail (Existing)**

Rush Creek Regional Trail (formerly part of the renamed North Hennepin Regional Trail) measures approximately 9.6 miles in length, and connects Elm Creek Park Reserve to Coon Rapids Dam Regional Park through the Cities of Maple Grove and Brooklyn Park. Opened to the public in 1981, the regional trail is envisioned to one day extend westward from Elm Creek Park Reserve to Crow-Hassan Park Reserve; a total distance of approximately 20 miles.

John Gibbs  
District 5

Larry Blackstad  
Appointed

The Rush Creek Regional Trail corridor is significantly wider than most other Twin Cities metro area regional trails, as it expands greater than 1,000 feet in several locations. This allows the trail alignment to gradually weave across the corridor, incorporating significant variety in the trail, while enhancing the user experience. The available corridor width incorporates several large mowed turf areas adjacent to the trail, which contrasts other wooded and dense vegetated sections of the trail. Tree shrub plantings visually and physically separate the surrounding residential development from the trail. In 2011, visitor data demonstrates that the regional trail received 345,000 visits.

Vacant  
Appointed

#### **Park District Impact Response**

Cris Gears  
Superintendent

As background, the Park District's Rush Creek Regional Trail property potentially impacted by a proposed Operations and Maintenance Facility (OMF) was purchased by the Park District with Metropolitan Council funding in the late 1970s, along with several other properties in the regional trail corridor between Elm Creek Park Reserve and Coon Rapids Dam Regional Park. As such, Metropolitan Council restrictive covenants are associated the property. As outlined in Metropolitan Council's *2030 Regional Parks Policy Plan*, restrictive covenants are placed on regional parks system lands, trails and greenways to ensure that these lands are available for regional parks uses, and that the regional investment in these lands is protected. These covenants

cannot be broken or amended without Metropolitan Council approval. Under certain exceptional circumstances, the Metropolitan Council will release restrictive covenants if equally valuable land or facility is provided in exchange for the released park land.

Worth mention is that this same subject Rush Creek Regional Trail property is proposed to be impacted by two additional projects – 1) the NorthPark Business Center and 2) a proposed TH 169 interchange at 101<sup>st</sup> Avenue North.

Additionally, when Park District property is proposed for adverse impacts, the Park District Board of Commissioners (Board) policy states:

***Policy XII, Diversions/Adjacent Land Use/Interim Uses/Divestment***

*The Board strongly opposes diversion of Park District property by any individual, institution or organization, public or private, for any purpose other than those for which the lands were acquired. Where proposed diversions of park property appear to be in the best interest of the Park District and where all other alternatives have been exhausted, and where the diversion poses no threat to the Park District's natural or recreational resource, and only under these conditions, requests will be taken under consideration by the Board on an individual basis.*

*In those instances where the Board determines that a proposed diversion upon Park District property may meet these conditions, the following requirements are required:*

- Restoration of any physical or natural property removed or damaged, or equivalent monetary compensation shall be provided.*
- Compensation will reflect the impact of the intrusion on the aesthetic and recreational values of parkland as well as the market value of affected land measured by its highest and best use, and for associated administrative costs.*
- In any case where conversion of Park District land to other uses is proposed, applicants must satisfy Metropolitan Council policies governing such conversions, including but not limited to, the requirement that equally valuable land or facilities be exchanged.*

**Crystal Lake Regional Trail (Existing and Planned Segments)**

When completed, the Crystal Lake Regional Trail will measure over 11 miles, from the Minneapolis Grand Rounds, through the Cities of Robbinsdale, Crystal, Brooklyn Park, Osseo and Maple Grove to Elm Creek Park Reserve. The Crystal Lake Regional Trail generally extends northwest along the Bottineau Boulevard/CSAH 81 right-of-way and fulfills a longstanding Park District goal to provide regional park and trail facilities within fully built-out, first-tier communities surrounding Minneapolis. The regional trail will provide a convenient transportation option to community destinations for residents within the trail service area including but not limited to; the downtown districts of Robbinsdale and Osseo, the Brooklyn Boulevard commercial district, Osseo Junior and Senior High Schools, Lakeview Terrace and Spanjers Parks, and potential future Bottineau Transitway transit stops. It is expected that a higher percentage of trail use will be for transportation purposes than what is currently seen on other regional trails. The regional trail is projected to generate approximately 288,000 annual visits when fully completed.

**Park District Impact Response**

The Bottineau Transitway Alignment B crossing of 73rd Avenue in Brooklyn Park will cross the roadway at-grade with the Crystal Lake Regional Trail (generally planned for the east side of Bottineau Boulevard/CSAH 81). The Park District anticipates operating and maintaining the trail in road right-of-way through future agreement. Future conversations with the Park District will require attention regarding safe Crystal Lake Regional Trail crossing options and treatments for trail users. In addition, the Park District requests to stay informed during station area planning to coordinate multi-modal trip chaining possibilities.

**Bassett Creek Regional Trail (Existing and Planned Segments)**

The Bassett Creek Regional Trail, when fully constructed, will measure approximately seven miles from French Regional Park, through the Cities of Plymouth, New Hope, Crystal, and Golden Valley

to the Minneapolis Grand Rounds at Theodore Wirth Regional Park. The Bassett Creek Regional Trail will provide direct and indirect access to residential neighborhoods, two elementary schools, middle and high school, commercial nodes, and numerous connections to local and regional parks and trail systems. The regional trail is projected to generate approximately 176,000 annual visits when fully completed.

#### Park District Impact Response

If Bottineau Transitway Alignment D1 is chosen, the potential exists to coordinate multi-modal trip chaining opportunities at the Plymouth Avenue/Golden Valley Road station. The Bassett Creek Regional Trail is planned to make connection to Theodore Wirth Regional Park along Golden Valley Road/CR 66, and will provide opportunity to access light rail and the regional park and trail network. The Park District anticipates operating and maintaining the trail in road right-of-way through future agreement. As stated earlier, the Park District requests to stay informed during station area planning to coordinate projects.

#### **General 4(f) Evaluation Comments**

The following comments are provided in addition for consideration:

#### **Page 8-8 | Figure 8.3-1 Park and Recreational Properties adjacent to the Bottineau Transitway**

- Eliminate the dashed line indicating the Future Crystal Lake Regional Trail alignment within the Bottineau Transitway corridor (Alignment C) from Bass Lake Road south through Crystal and Robbinsdale. The identified corridor in this vicinity follows east side of CSAH 81/Bottineau Boulevard.
- Add the Future Bassett Creek Regional Trail alignment, which generally begins at Theodore Wirth Parkway and CR 66 – traversing west through Golden Valley, eventually crossing into Crystal, New Hope and eventually Plymouth. An electronic copy of the *Bassett Creek Regional Trail Master Plan* (2012) is available upon request.
- Consider identifying Elm Creek Park Reserve and Coon Rapids Dam Regional Park, perhaps through greyed-out text or a gently shaded polygon. While not directly impacted, references in subsequent sections refer to these parks and their location is not graphically identified.

#### **Pages 8-9/10 | Publicly Owned Park and Recreational Properties Adjacent to the Bottineau Transitway**

- Rush Creek Regional Trail
  - the ~~5.6~~ 6.4 mile trail is located north...
  - The ~~property~~ trail is owned and operated by Three Rivers Park District.
- Add line/box to describe the Future Bassett Creek Regional Trail.
- Luce Line Regional Trail
  - The trail runs easterly from Theodore Wirth Parkway along the north side of TH 55 then passes under TH 55 and travels through Bassett's Creek Valley Park. The trail is owned and operated by ~~Three Rivers Park District~~ MPRB. [Note: Three Rivers Park District operates the Luce Line Regional Trail from Theodore Wirth Parkway west to Vicksburg Lane North in Plymouth].

#### **Page 8-15 | 8.4.1 Direct Use of Park and Recreational Properties**

- The ~~5.6~~ 6.4 mile trail segment has an east-west orientation and connects Elm Creek Park Reserve (to the west) to Coon Rapids Dam Regional Park (to the east). There is an additional ~~4.6~~ 3.2 miles of existing regional trail within Elm Creek Park Reserve, for a total existing regional trail length of ~~7.2~~ 9.6 miles.
- Three Rivers Park District owns approximately ~~238~~ 251 acres along the Rush Creek Regional Trail corridor between Elm Creek Park Reserve and Coon Rapids Dam Regional Park.



- Its corridor width expands greater than 1,000 feet in several locations, **gradually weaving across the corridor – incorporating significant variety in the trail while enhancing user experience.**
- There will be no ~~use~~ **impact of** to the future planned trail **west of Elm Creek Park Reserve**, as it is located more than three miles from the OMF site at 101<sup>st</sup> Avenue.

**Page 8-16 | Alignment B, OMF Locations and Rush Creek Regional Trail Area of Potential Use**

- The City of Brooklyn Park *Recreation and Parks Master Plan* (2012) identifies the property that the 101<sup>st</sup> Avenue proposed OMF site primarily is located upon as, "City owned Property" (page 89). Similarly, the property currently shaded blue west of Winnetka Avenue N is also identified as "City owned Property." Both properties are called out in the *Recreation and Parks Master Plan*, but not designated as a park. Recommendation is to treat these properties the same graphically, per direction from City of Brooklyn Park staff.

**Page 8-17**

Section 4(f) Evaluation

- The land adjacent to this OMF site is currently undeveloped open space largely occupied by wetlands, **wooded areas and grassland.**

Measures to Minimize Harm

- City land ~~dedication~~ **dedicated** to parkland *[Note: Recreation and Parks Master Plan (2012) identifies this property as "City owned Property."],* adjacent to the Rush Creek Regional Trail north of the proposed OMF could **be considered for mitigation purposes, should** the portion of the Three Rivers Park District **property that would** be converted to transportation use. **The Park District has not reviewed this land mitigation proposal, but indicates intent to coordinate with project staff to evaluate the potential natural resource and recreation impacts and identify creative mitigation solutions.**

Preliminary Section 4(f) Finding

- Approximately five **of the 251 total** acres would be required from **Three Rivers Park District's** Rush Creek Regional Trail **corridor** property ~~which covers approximately 238 acres~~. The area of use includes five acres of undeveloped ~~land~~ **open space**, and the potential use of a small portion of the ~~turf~~ **unpaved** trail that is situated south of the paved trail, as illustrated in Figure 8.4-1.

**Page 8-35 | 8.5.1 Park and Recreational Properties**

- Add subsection titled Future Bassett Creek Regional Trail (Alignment D1).

Please keep the Park District apprised when the Bottineau Transitway project is prepared for a more formalized review and recommendation by the Park District Board of Commissioners. If you have questions regarding the aforementioned comments, please feel free to contact me at your convenience 763.694.1103.

Sincerely,

*Ann Rexine*

Ann Rexine, Planner

C: Kelly Grissman, Director of Planning  
Jan Youngquist, Planning Analyst (Metropolitan Council)

## Miscellaneous Coordination



U.S. Department  
of Transportation

**Federal Highway  
Administration**

**Federal Transit Administration**

FHWA, Minnesota Division  
380 Jackson Street  
Cray Plaza, Suite 500  
St. Paul, MN 55101-4802

FTA, Region V  
200 West Adams Street  
Suite 320  
Chicago, IL 60606-5253

September 27, 2013

Mark Nelson, AICP  
Director, Office of Statewide Multimodal Planning  
Minnesota Department of Transportation  
395 John Ireland Boulevard  
St. Paul, Minnesota 55155

RE: Amendment to Metropolitan Council's Transportation Policy Plan

Dear Mr. Nelson,

The Federal Transit Administration (FTA) and Federal Highway Administration (FHWA) have reviewed the Minnesota Department of Transportation's (MnDOT) request to amend the Metropolitan Council's Transportation Policy Plan (TPP) dated May 22, 2013. This amendment includes the following:

- Light Rail Transit (LRT) as the locally preferred alternative for the Bottineau Transitway Project (alternative LRT B-C-D1).
  - The TPP states that three corridors could be built as LRT or dedicated busways, one to be completed by 2020, one possibly begun before 2020 and completed soon after, and a third possibly completed by 2030. The Bottineau Transitway Corridor potentially represents one of the three corridors.
- The addition of three potential arterial bus rapid transit (BRT) routes (Lake Street, Hennepin Avenue, and Penn Avenue North) and the extension of Chicago Avenue BRT to include Emerson and Freemont Avenues North.
  - While the TPP expands the number of potential arterial BRT routes from nine to twelve, it continues to assume that six arterial BRT routes will be built and in operation by 2020, and three more by 2030.

The FTA and FHWA concur with the changes made to the TPP. The Metropolitan Council is commended for their efforts in including FTA and FHWA early in the process for amending the TPP. If you have any questions, please contact Bill Wheeler, FTA, at (312) 353-2639, or Susan Moe, FHWA, at (651) 291-6109.

Sincerely,

Marisol R. Simón,  
FTA Regional Administrator

Ec: Susan Moe, FHWA  
Bobbi Retzlaff, MnDOT  
Arlene McCarthy, Metropolitan Council

## APPENDIX E

### CONCEPTUAL ENGINEERING DRAWINGS

Alignment A Drawings

Alignment B Drawings

Alignment C Drawings

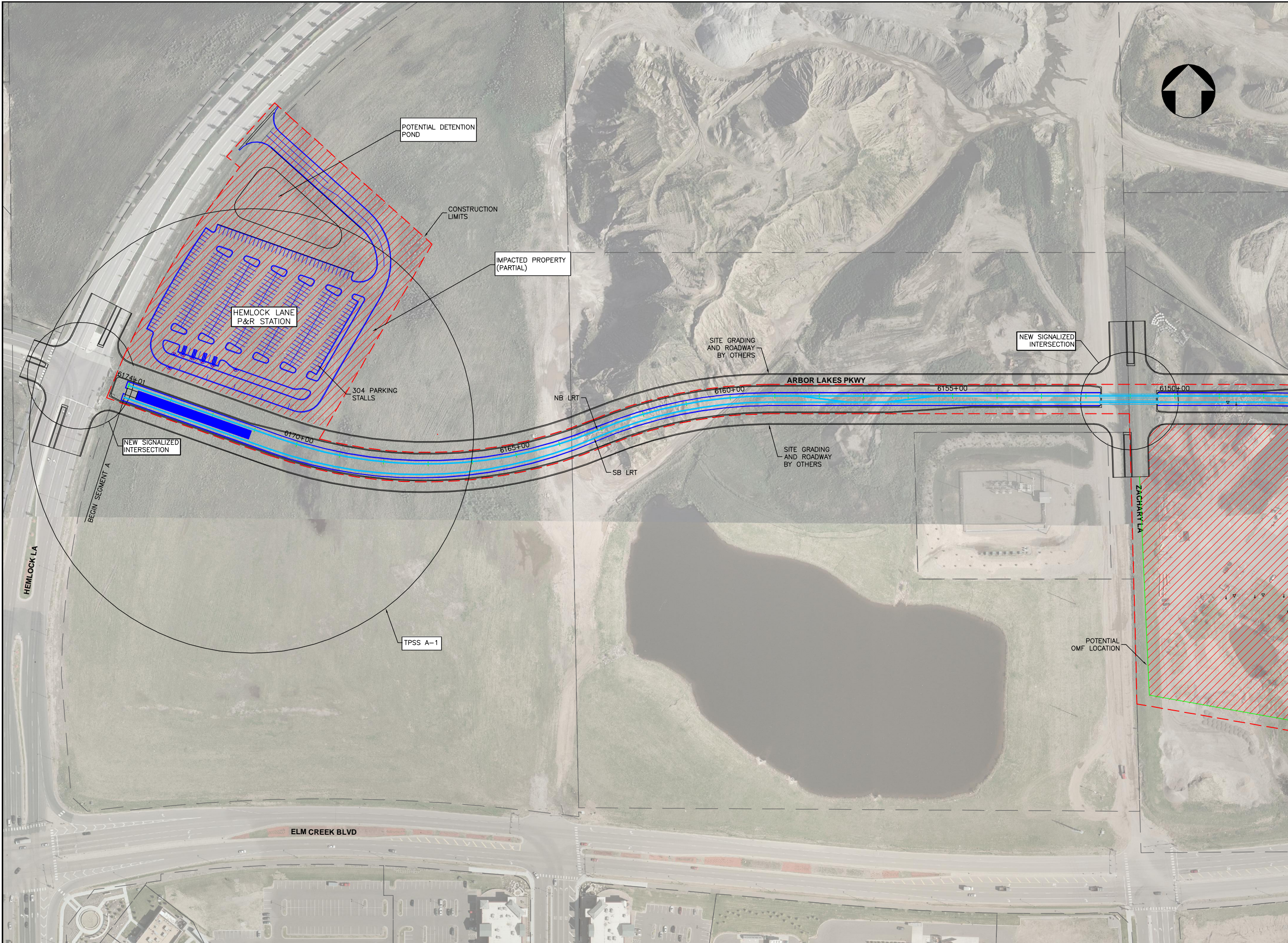
Alignment D1 Drawings


Alignment D2 Drawings

Alignment D Common Section Drawings




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CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116




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**LTK**  
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| DATE:                       | 9/5/2012        |
| PROJECT NO.                 | 160528003.4.100 |

SCALE



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DRAFT EIS  
CONCEPTUAL DESIGN

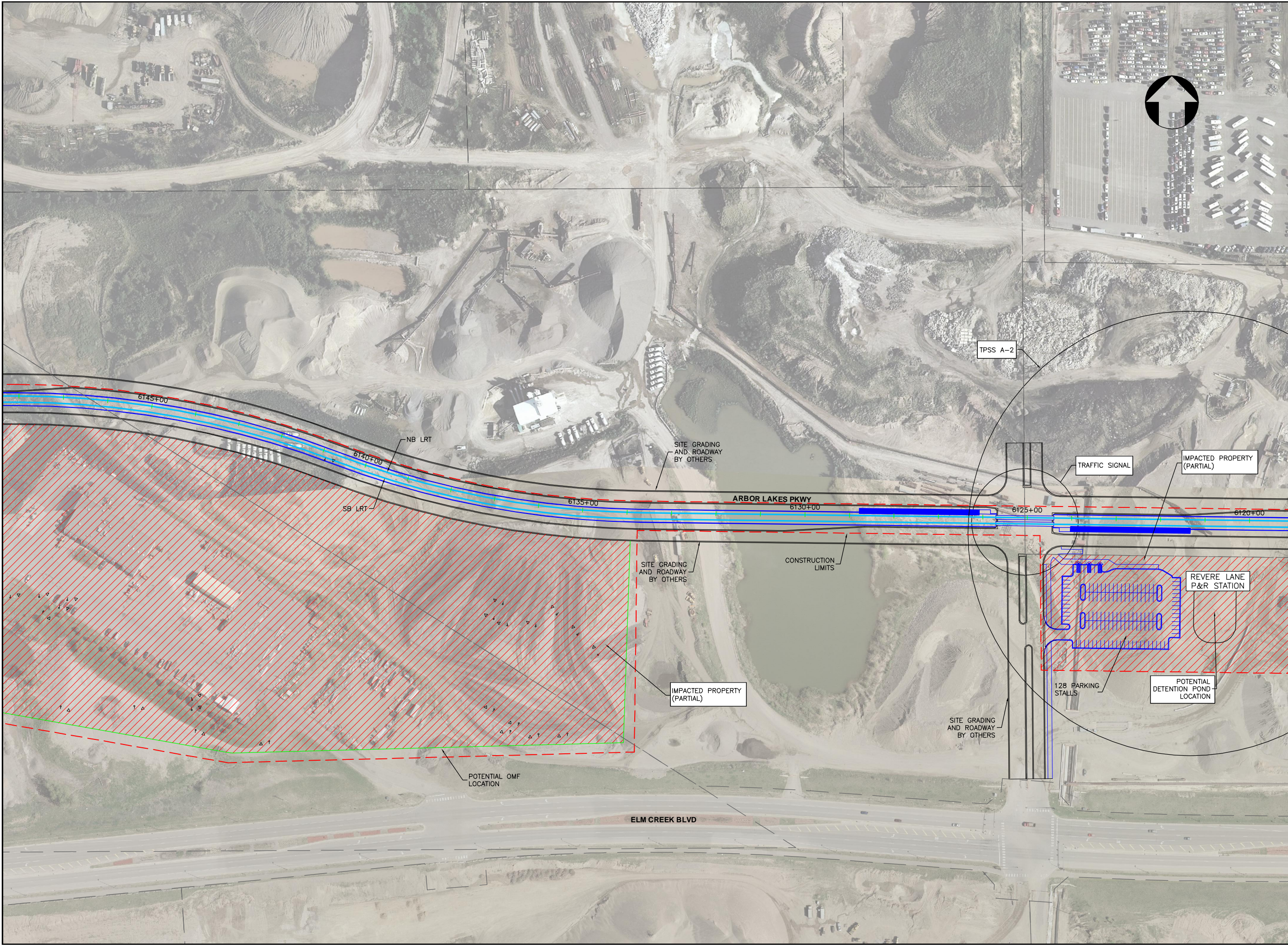
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| 1            | OF 122 |



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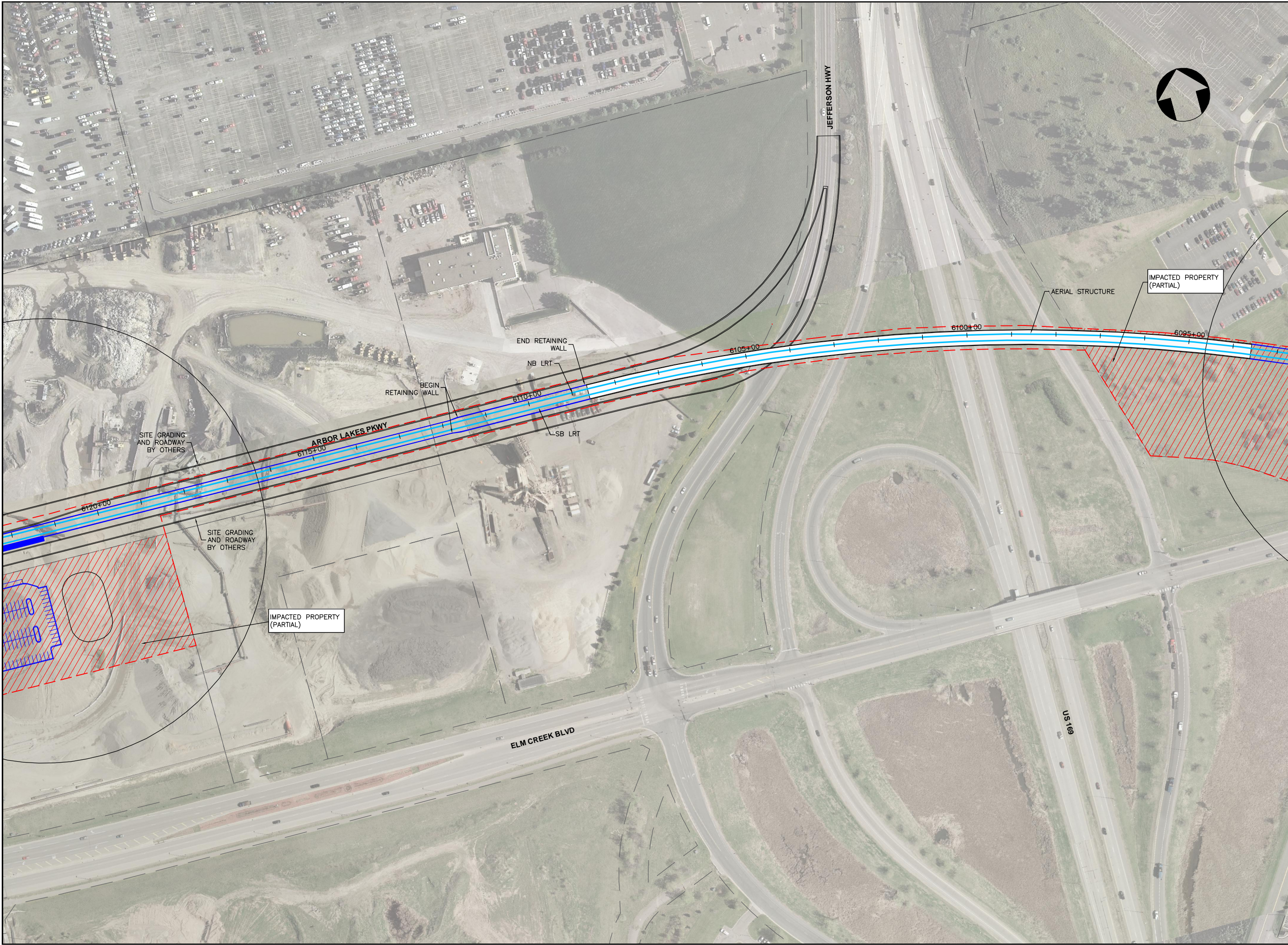
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Hennepin


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SCALE



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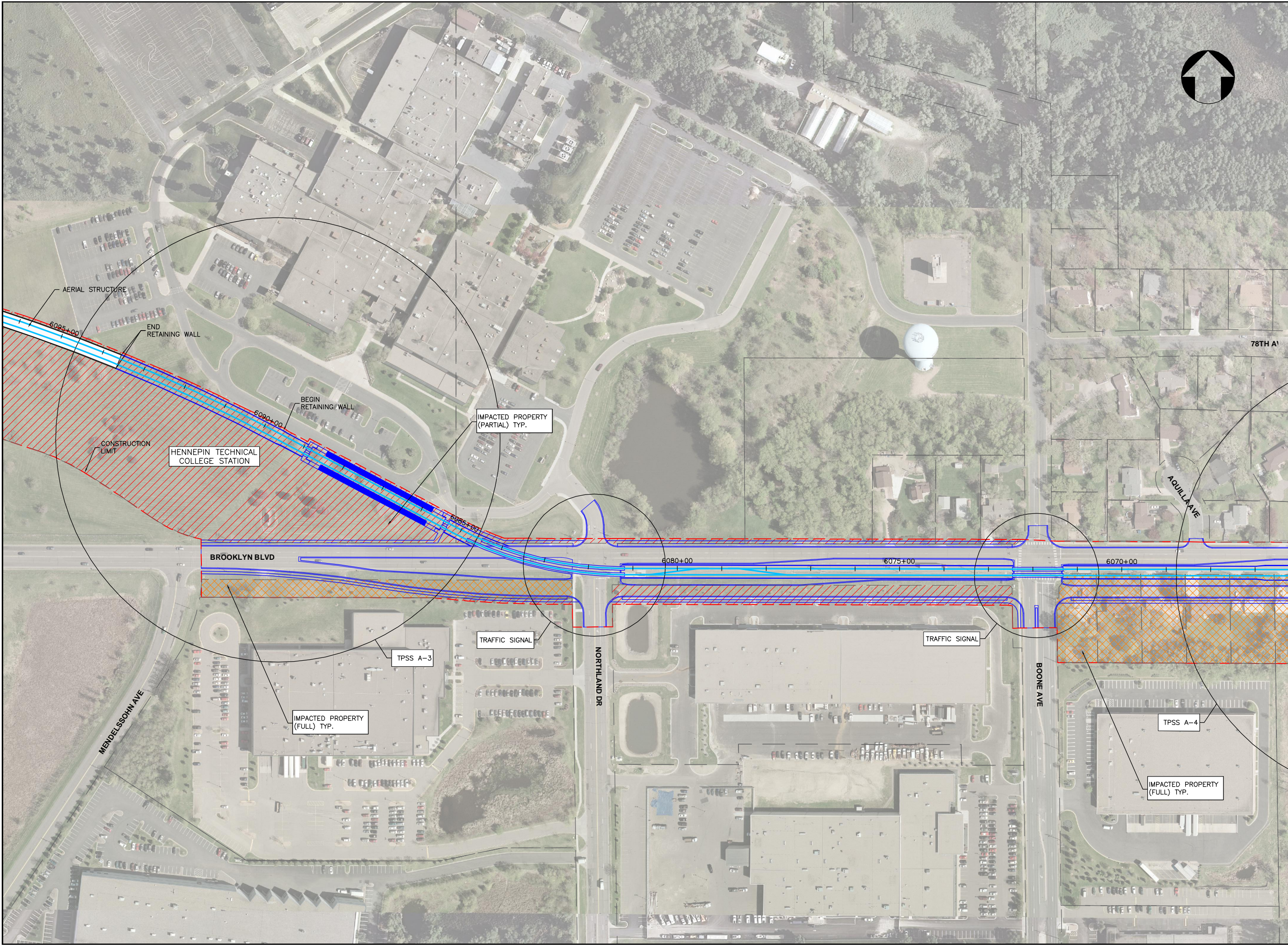
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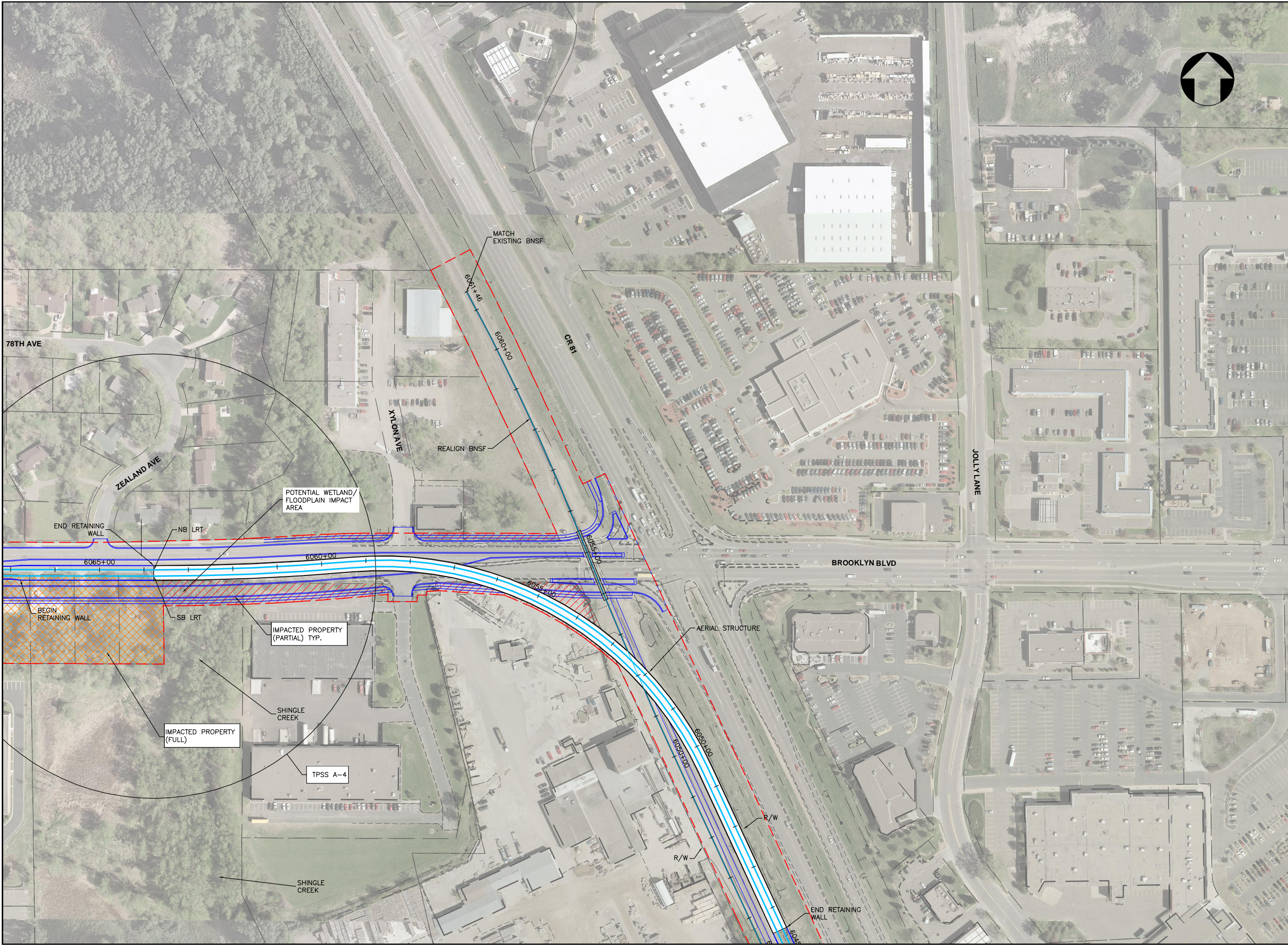
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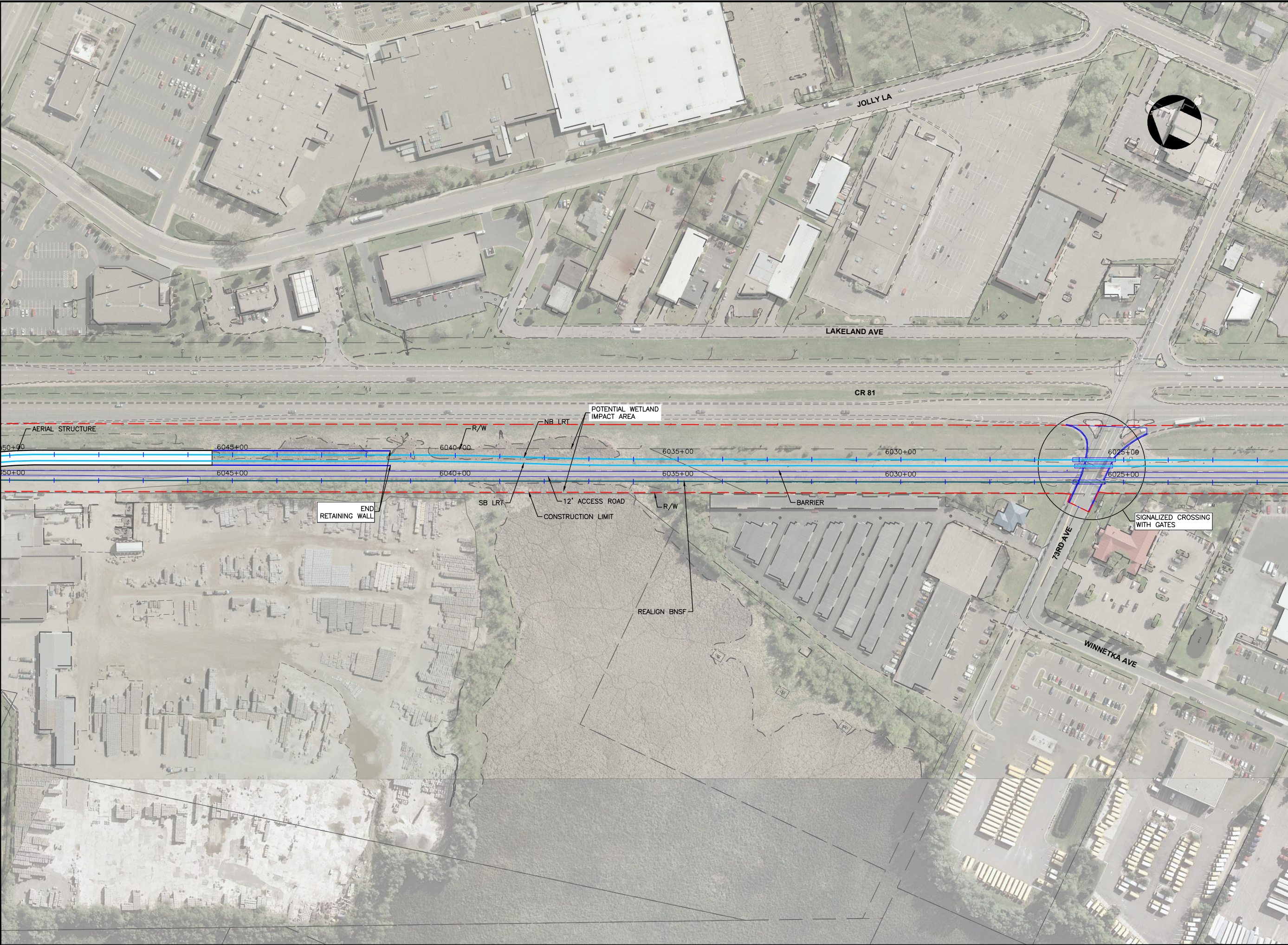
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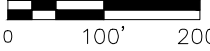
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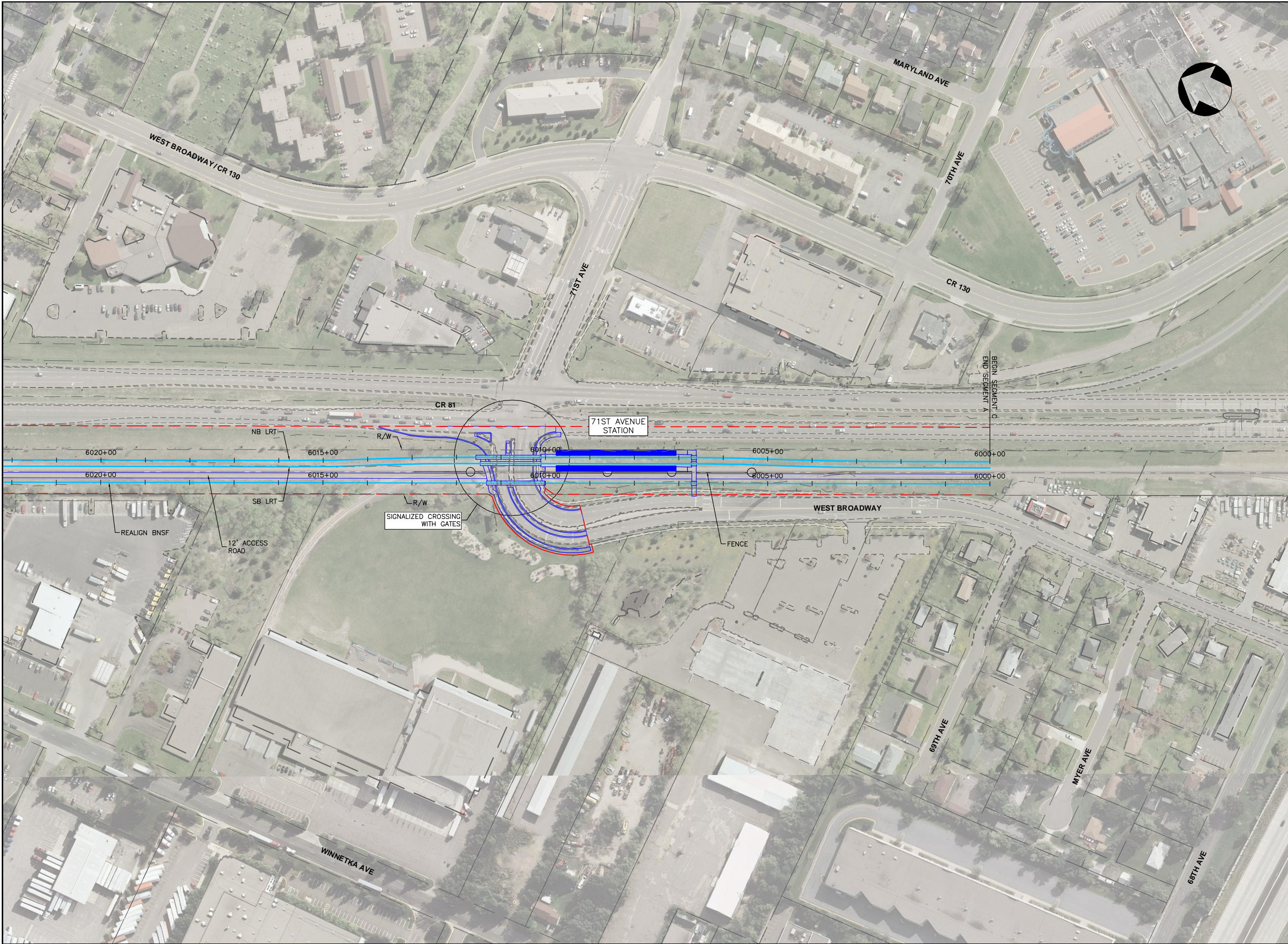
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6 OF 122




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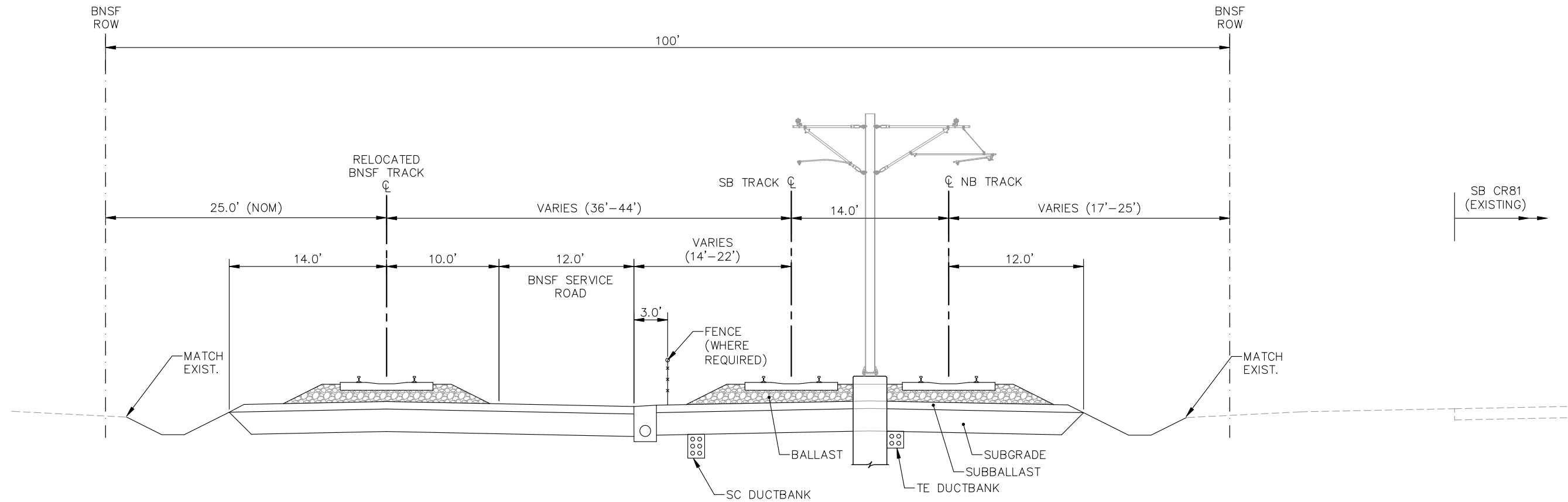
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7 OF 122



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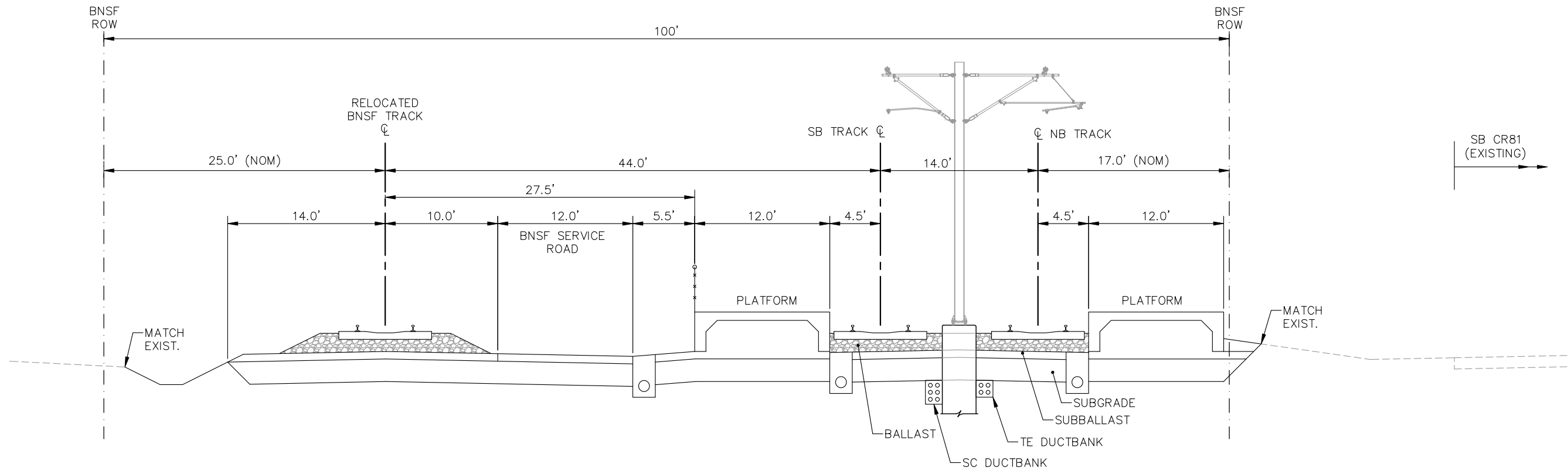
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SHEET 8 OF 21

TYPICAL SECTION A-01



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TYPICAL SECTION A-01A  
ALIGNMENT A - 71ST AVENUE STATION



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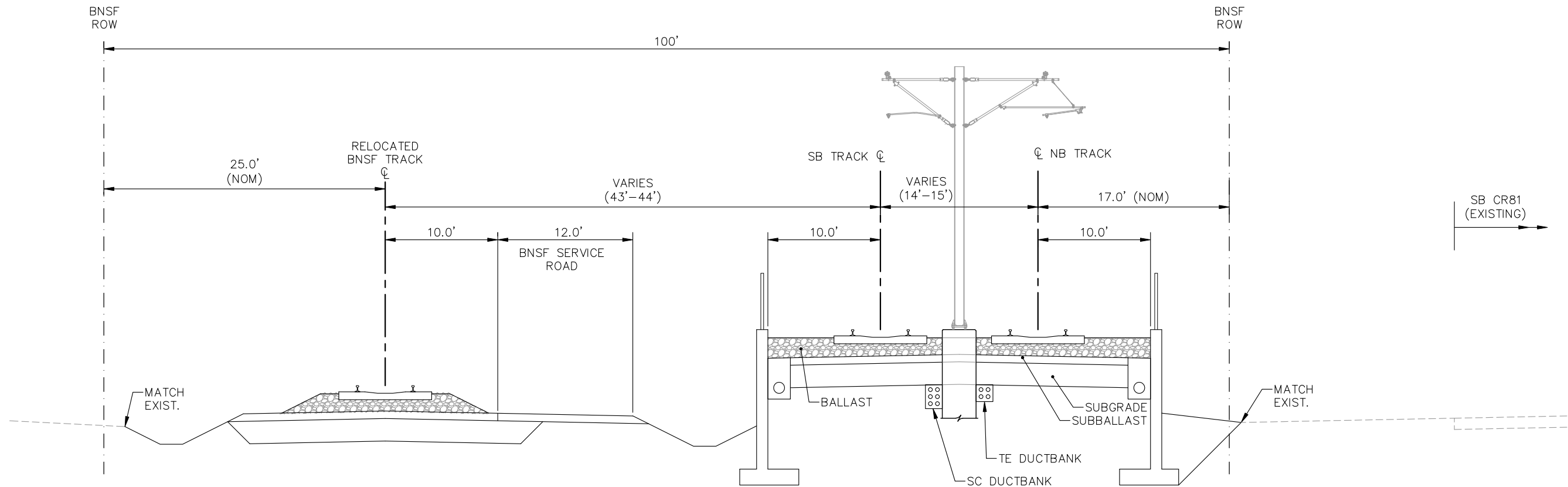
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SHEET 9 OF 21

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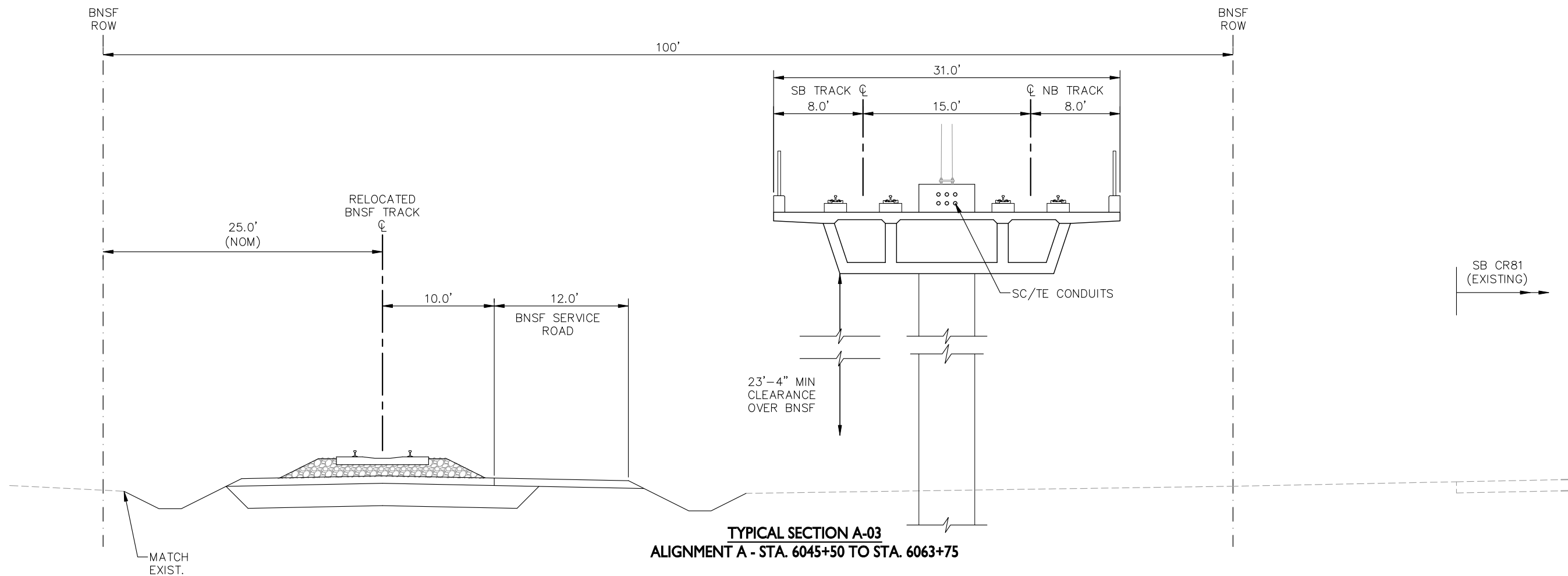
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DATE: 6/29/12

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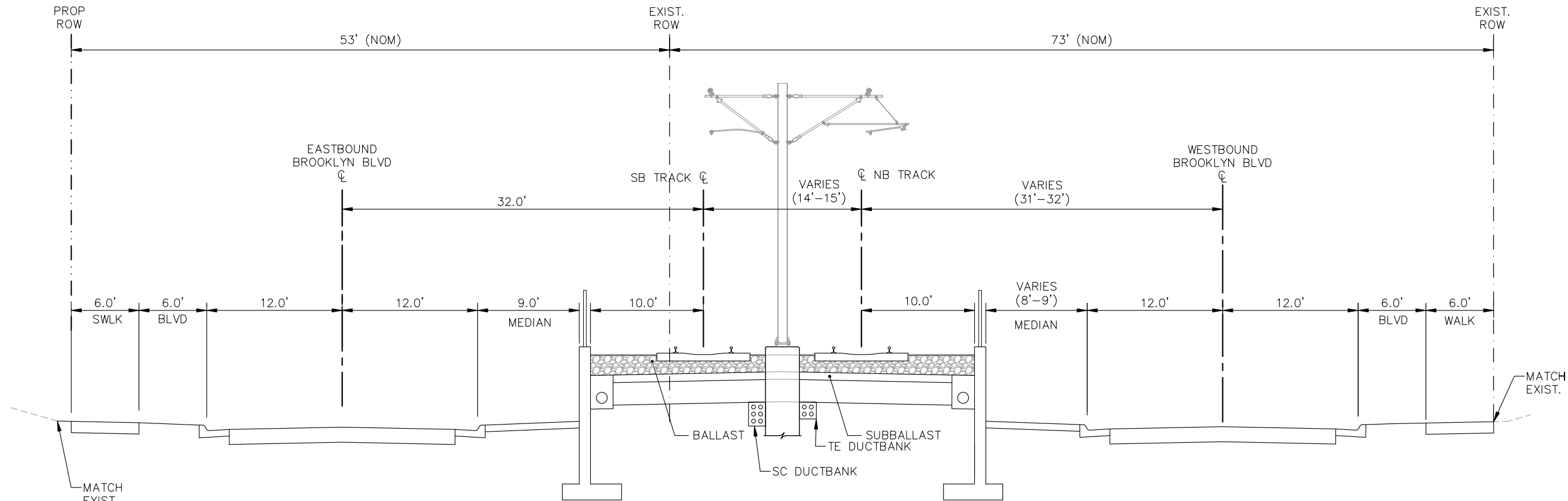
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TYPICAL SECTION A-03

SHEET NUMBER  
**13** OF **124**

P:\Projects\C4147.02 - Bottineau DEIS\C3D\BOTT-TYP A\_04.dwg August 24, 2012 - 9:17am



**TYPICAL SECTION A-04**  
**ALIGNMENT A - STA. 6063+75 TO STA. 6066+75**



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and Associates, Inc.**

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SHEET 12 OF 21

TYPICAL SECTION A-04

SHEET NUMBER

14 OF 124



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TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



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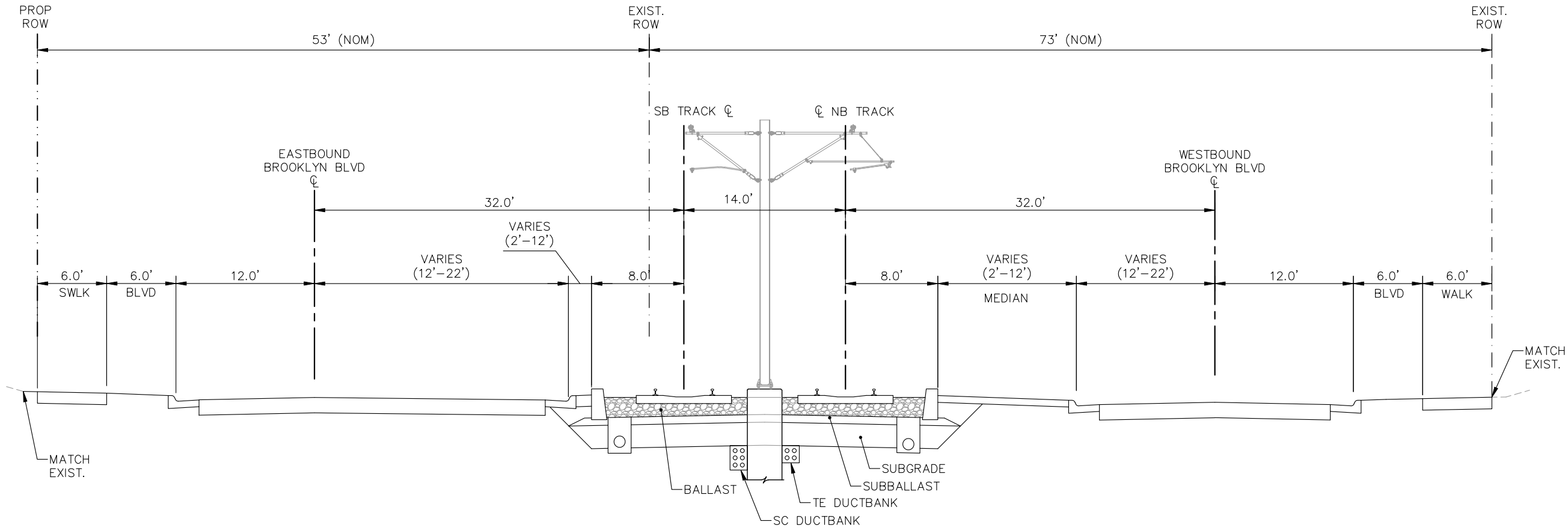
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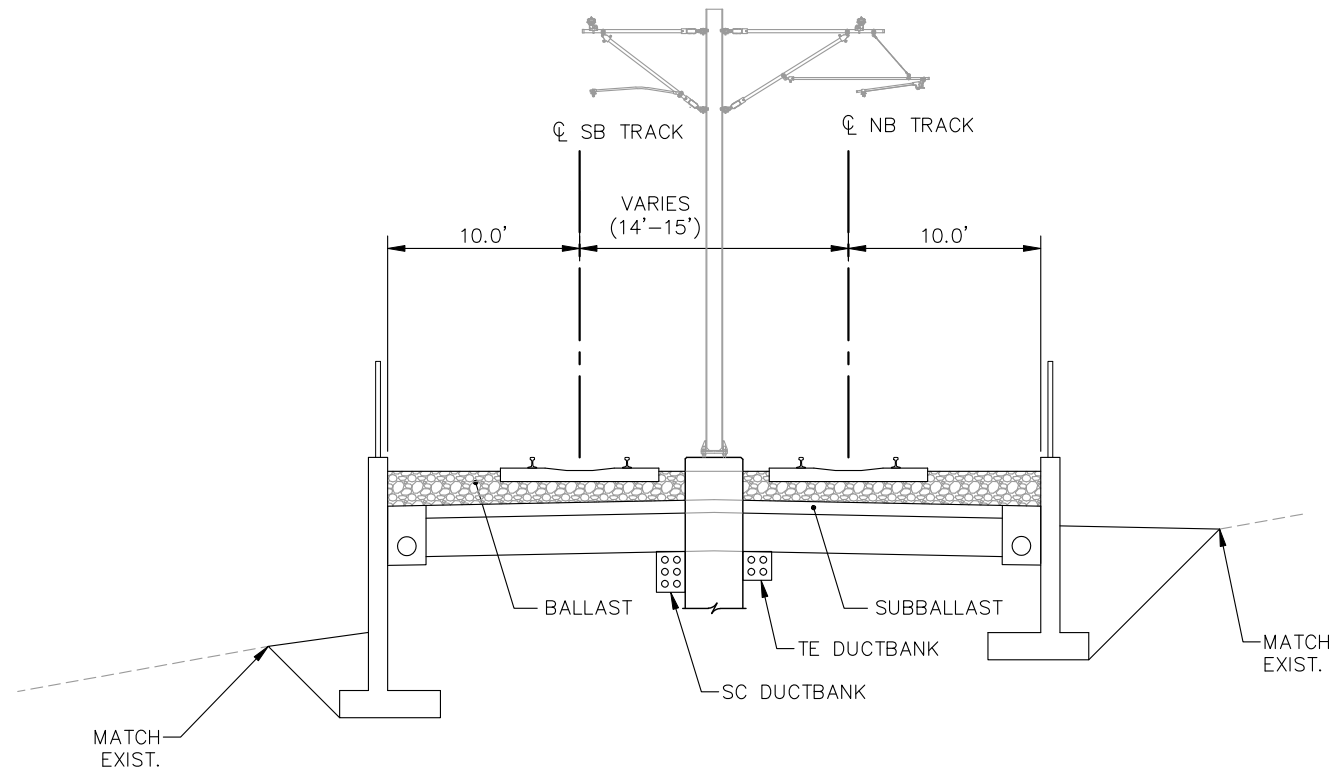
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15 OF 124



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**TYPICAL SECTION A-06**  
**ALIGNMENT A - STA. 6085+00 TO 6093+50**



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DRAFT EIS  
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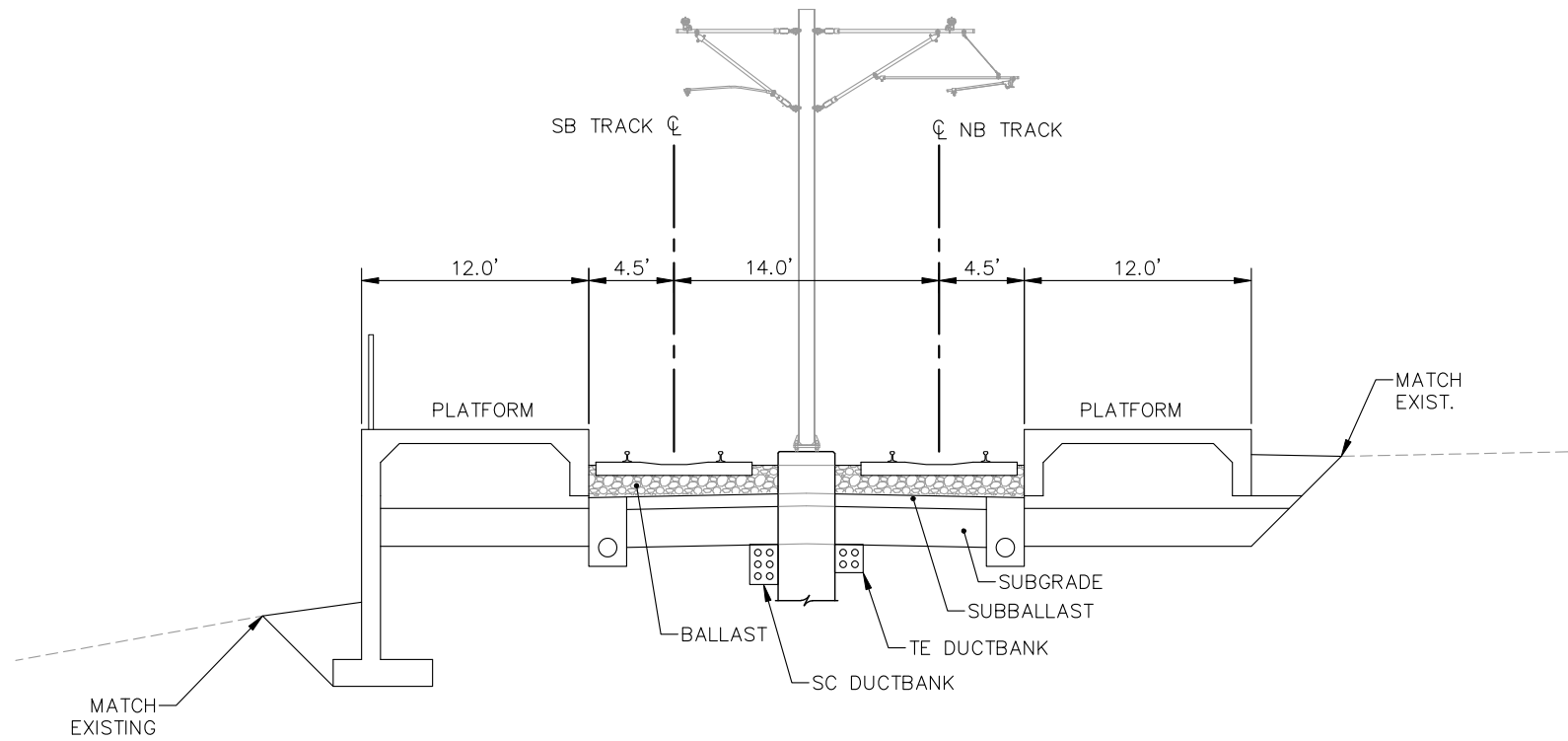
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TYPICAL SECTION A-06

SHEET NUMBER

36 OF 124

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**TYPICAL SECTION 06A**  
**ALIGNMENT A - HENNEPIN TECHNICAL COLLEGE STATION**



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FAX. NO. (651) 645-5116



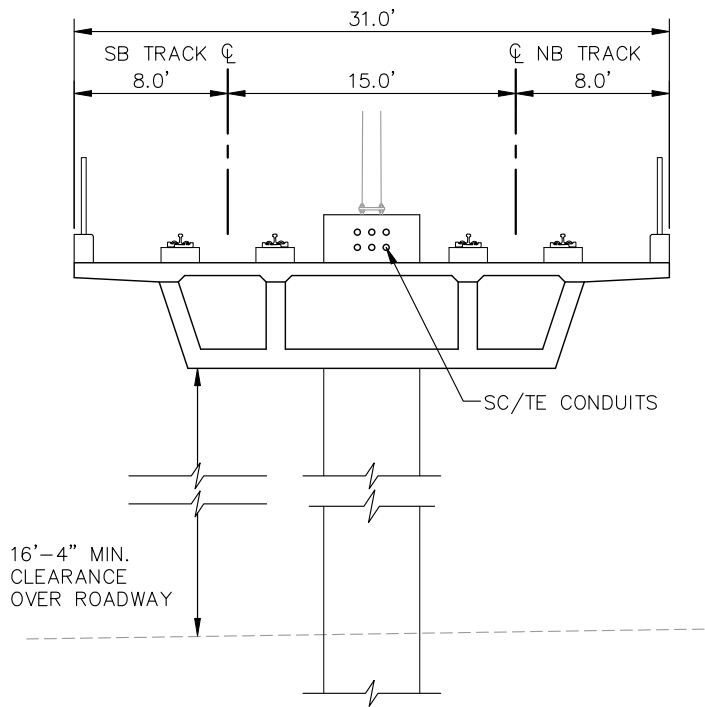
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CONCEPTUAL DESIGN

LRT ALIGNMENT A  
SHEET 15 OF 21

TYPICAL SECTION A-06A

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TYPICAL SECTION A-07  
ALIGNMENT A - STA. 6093+50 TO STA. 6108+50



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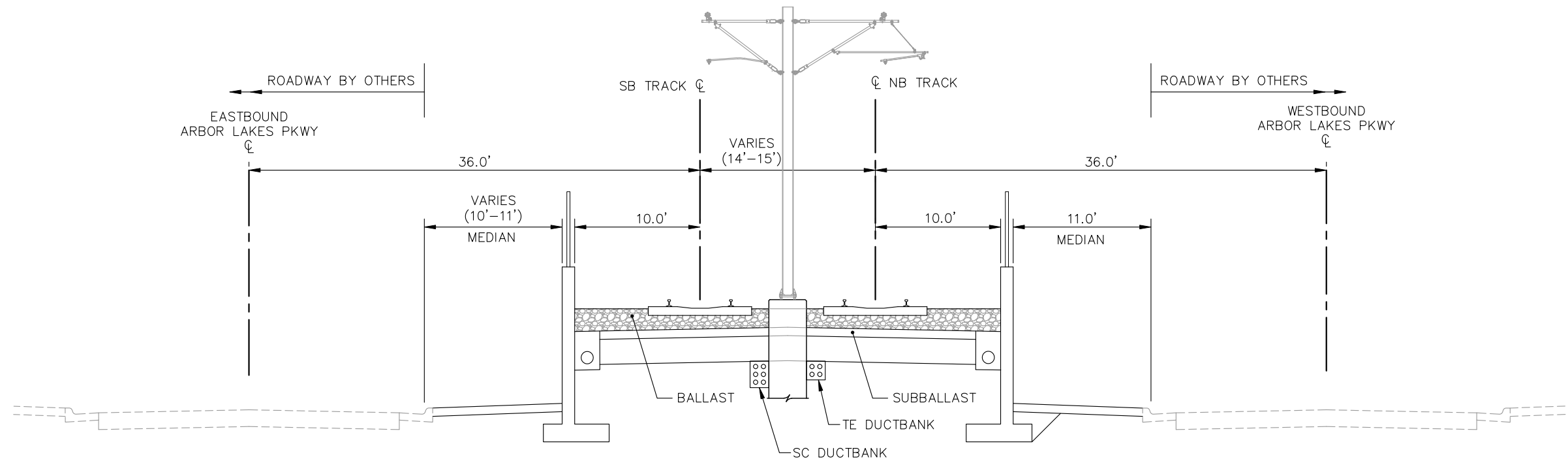
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SHEET 16 OF 21

TYPICAL SECTION A-07



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**TYPICAL SECTION A-08**  
**ALIGNMENT A - STA. 6108+50 TO STA. 6112+00**



CONSULTANTS:



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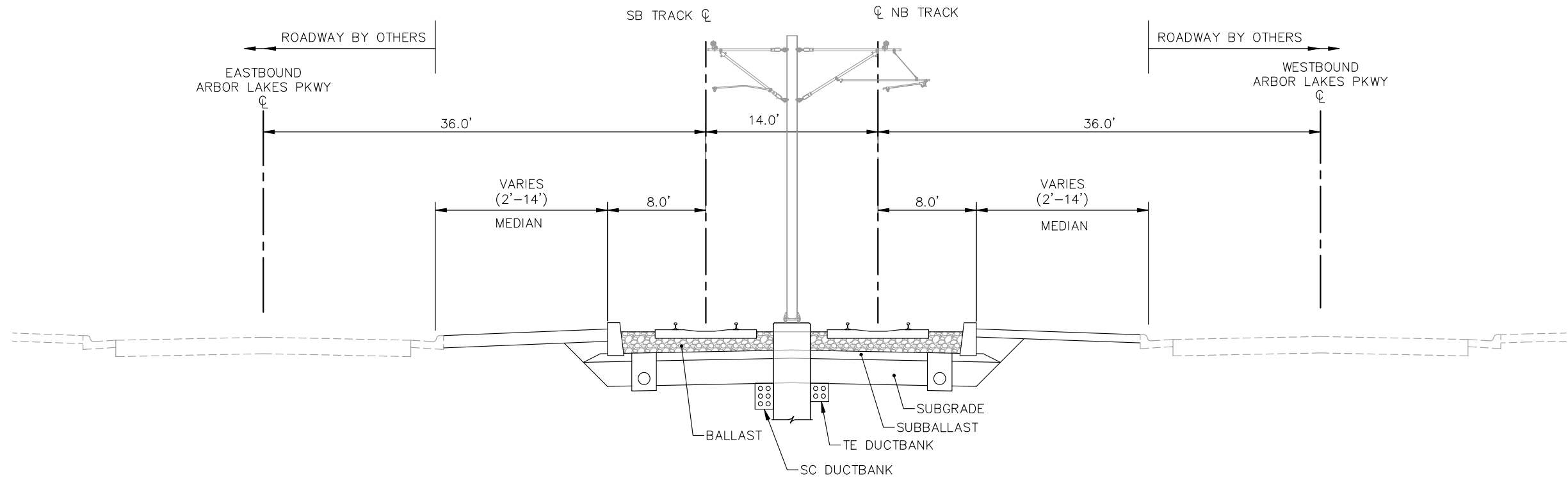
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TYPICAL SECTION A-08

SHEET NUMBER

17 OF 122

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**TYPICAL SECTION A-09**  
**ALIGNMENT A - STA. 6112+00 TO STA. 6159+00**



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FAX. NO. (651) 645-5116

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**LTK**  
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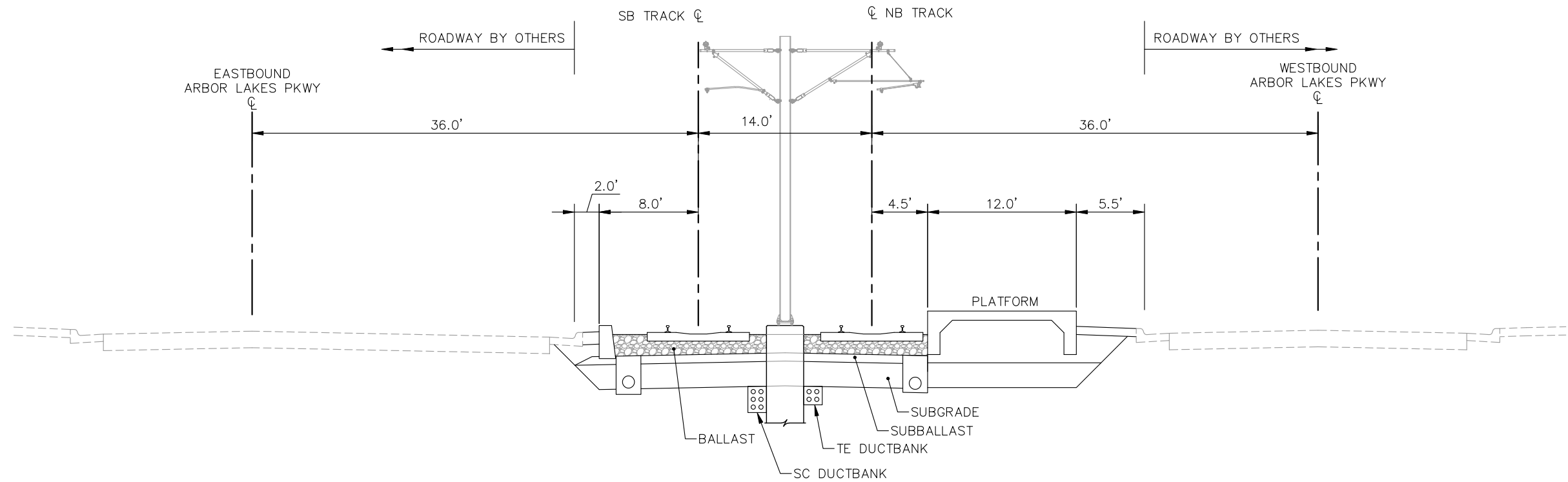
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| PROJECT NO. 160528003.4.100 |

BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT A  
SHEET 18 OF 21

TYPICAL SECTION A-09

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**TYPICAL SECTION A-09A**  
**ALIGNMENT A - REVERE PARKWAY STATION**  
**(NB PLATFORM SHOWN, SB SIMILAR)**



CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
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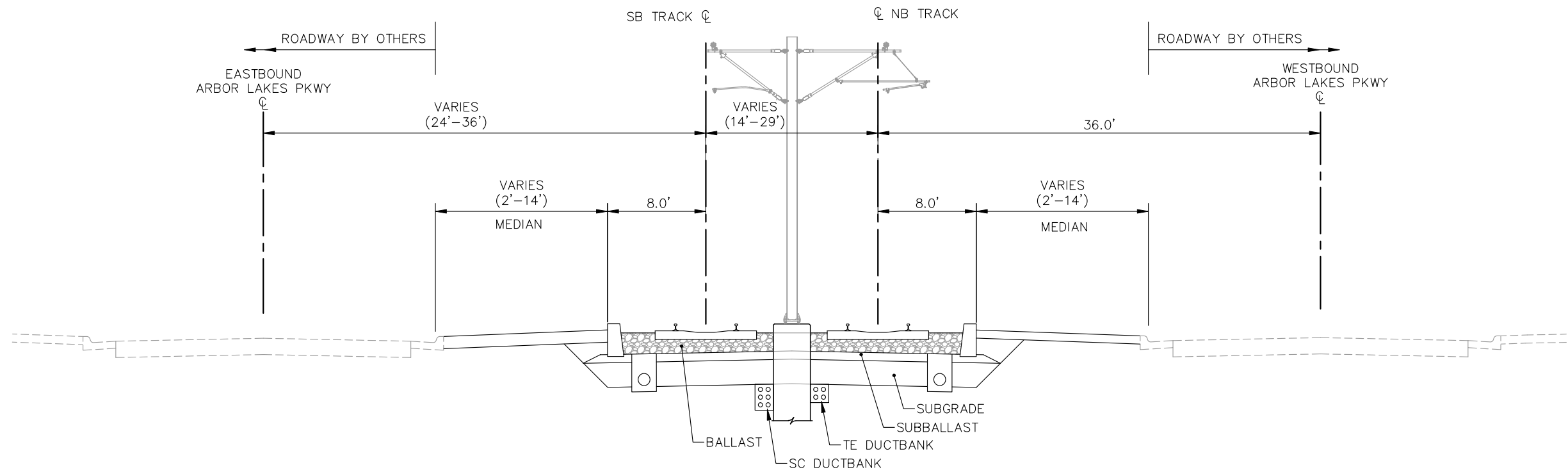
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SHEET 19 OF 21

TYPICAL SECTION A-09A

SHEET NUMBER

19 OF 122

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**TYPICAL SECTION A-10**  
**ALIGNMENT A - STA. 6159+00 TO STA. 6174+00**



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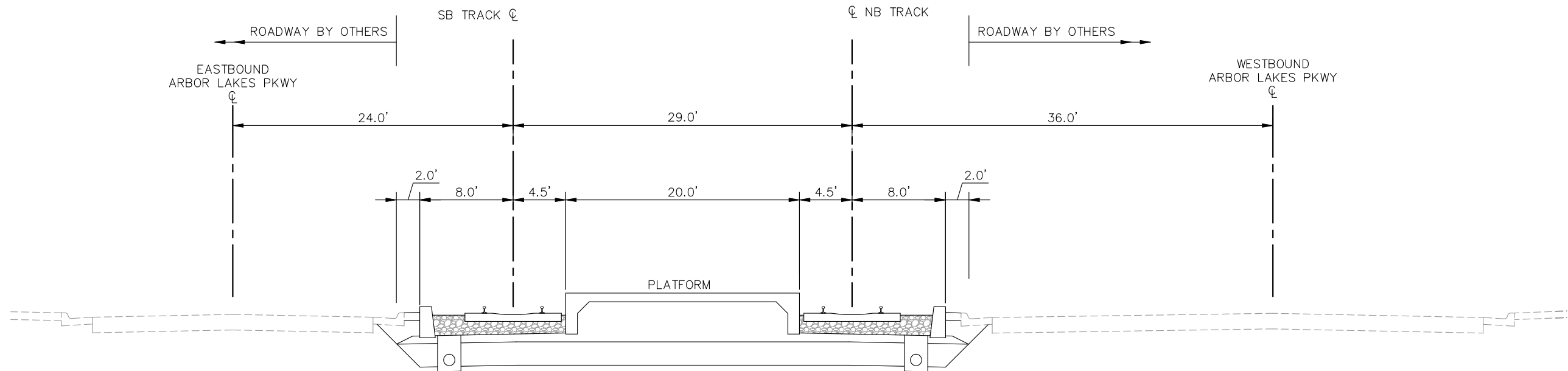
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LRT ALIGNMENT A  
SHEET 20 OF 21

TYPICAL SECTION A-10



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TYPICAL SECTION A-10A  
ALIGNMENT A - HEMLOCK LANE STATION



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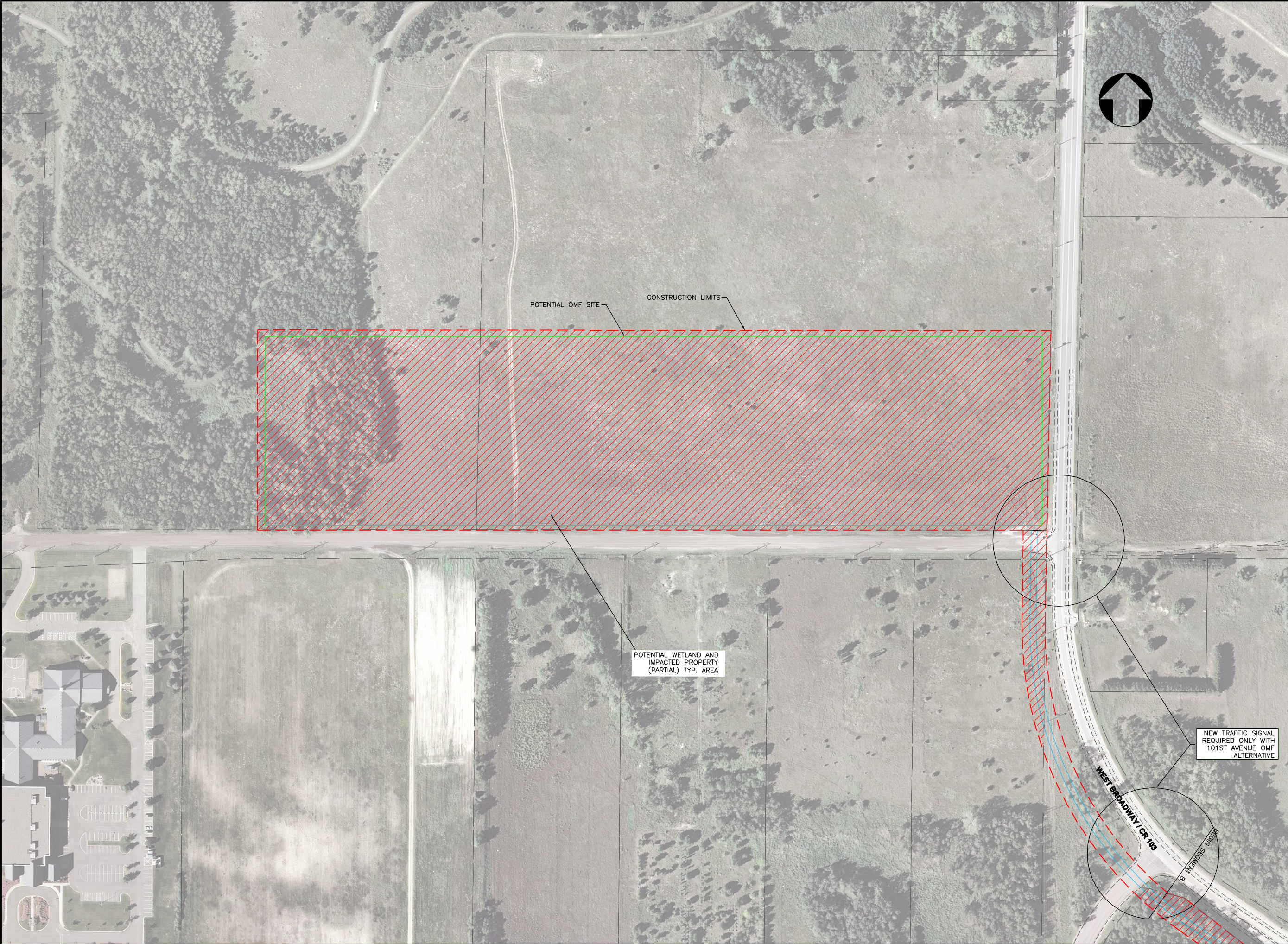
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LRT ALIGNMENT A  
SHEET 21 OF 21

TYPICAL SECTION A-10A




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LRTBP01.dwg

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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE



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BOTTINEAU TRANSITWAY  
DRAFT EIS  
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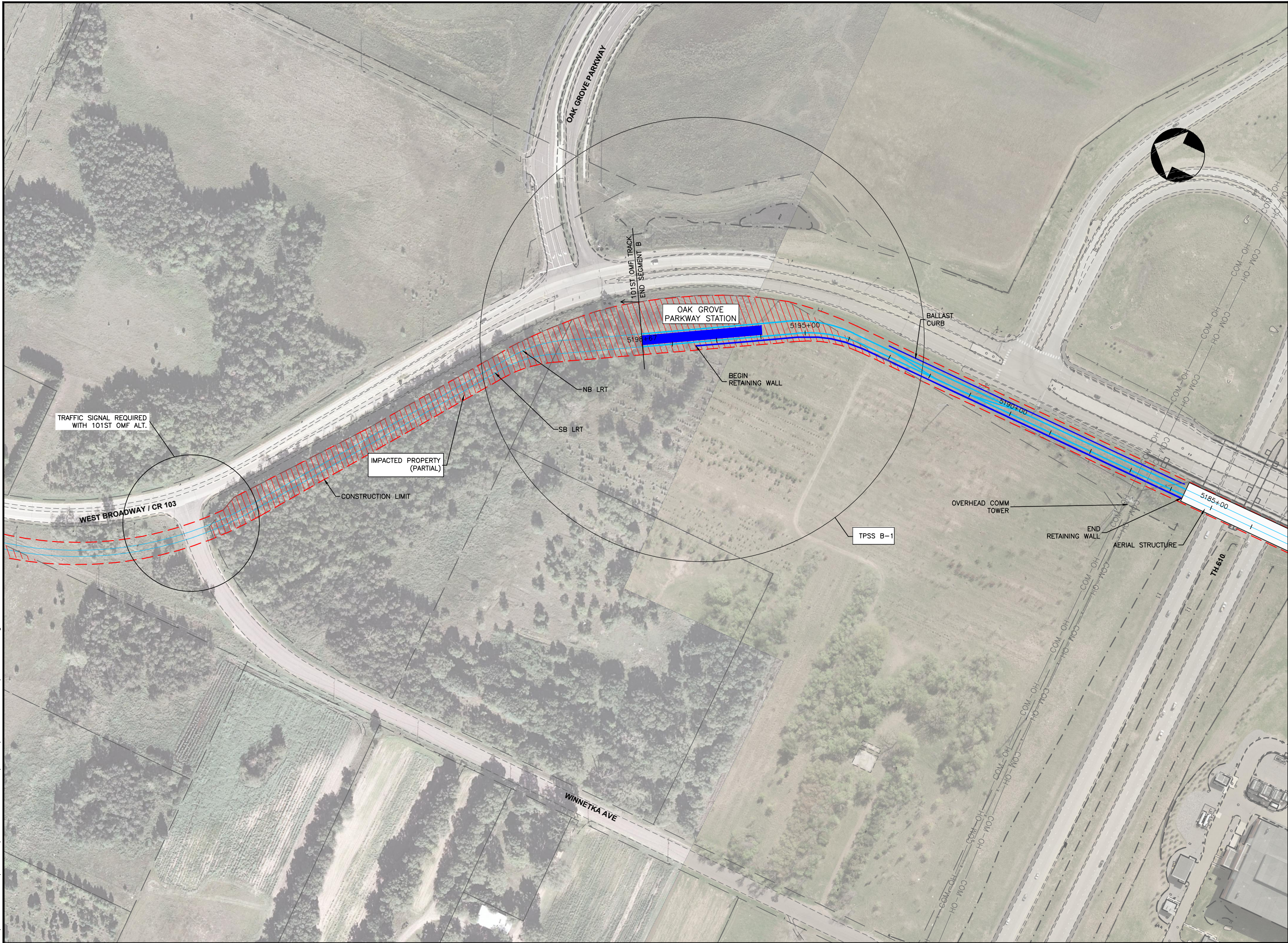
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SHEET 1 OF 24

ALIGNMENT PLAN

SHEET NUMBER  
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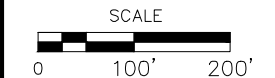


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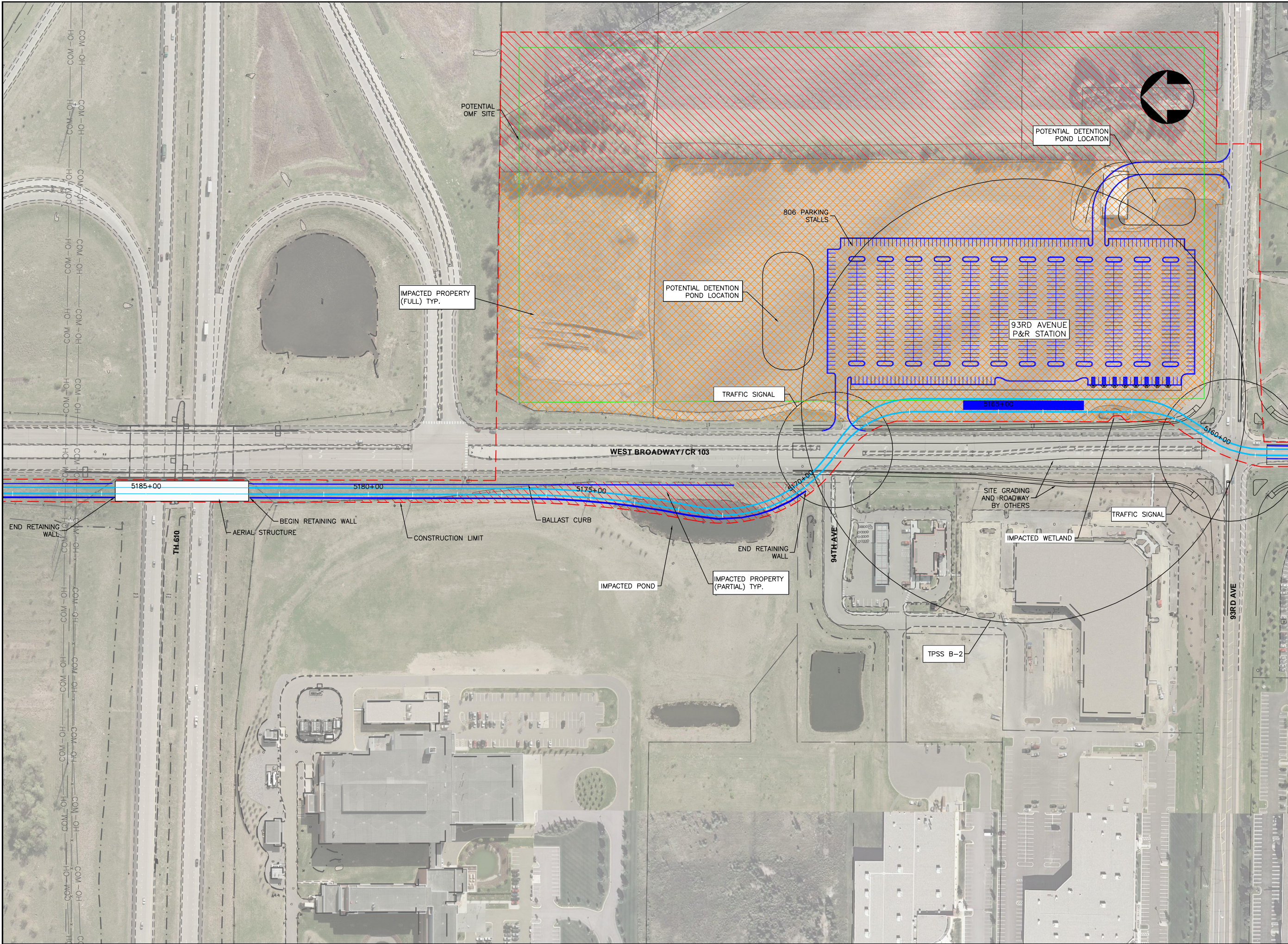
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LRT SEGMENT B  
SHEET 2 OF 24

ALIGNMENT PLAN  
STA 5184+00 - 5198+00




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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE

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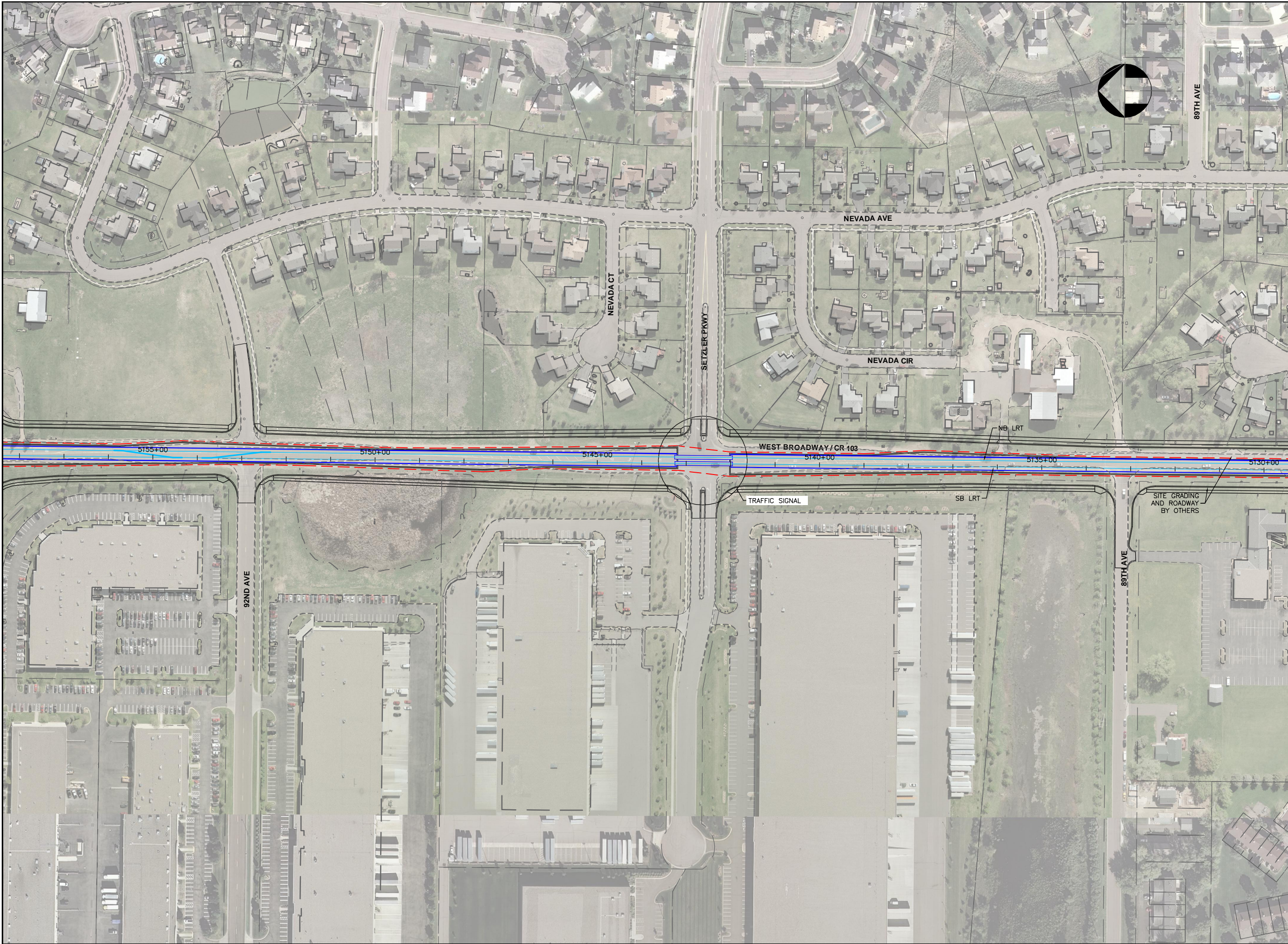
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ALIGNMENT PLAN  
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SHEET NUMBER  
24 OF 122




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Hennepin


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SCALE



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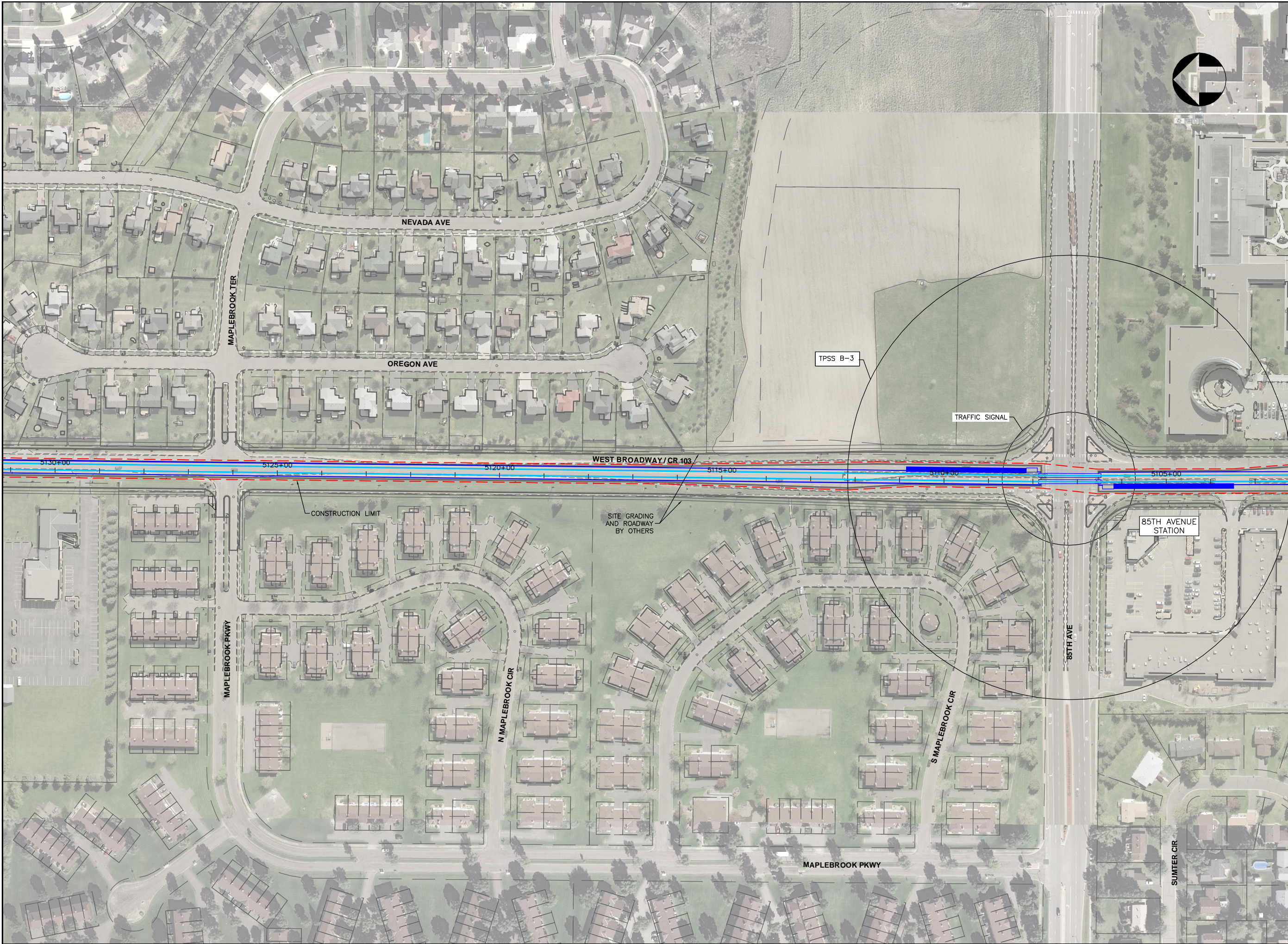
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SHEET NUMBER  
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Hennepin


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SCALE



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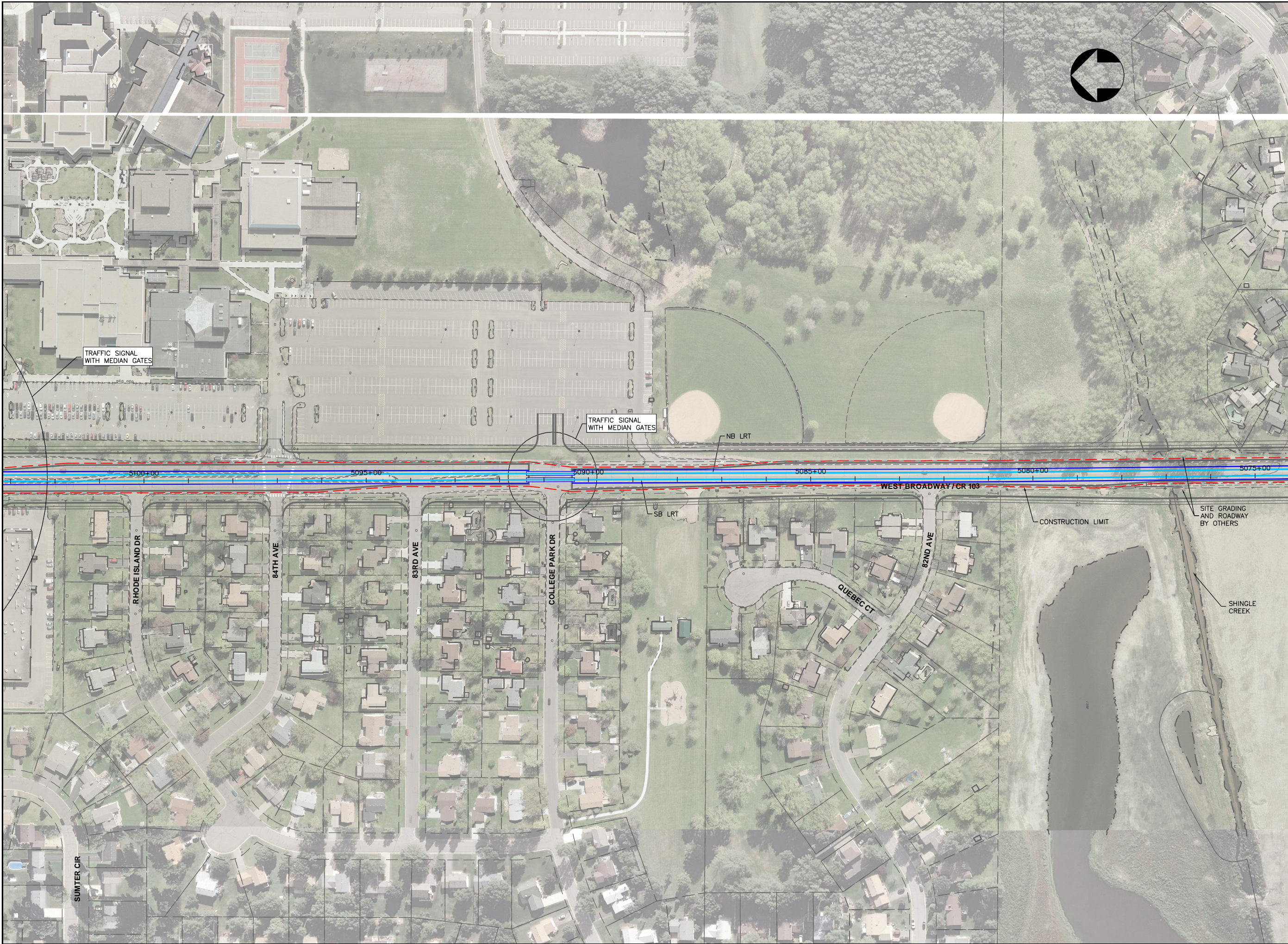
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SCALE



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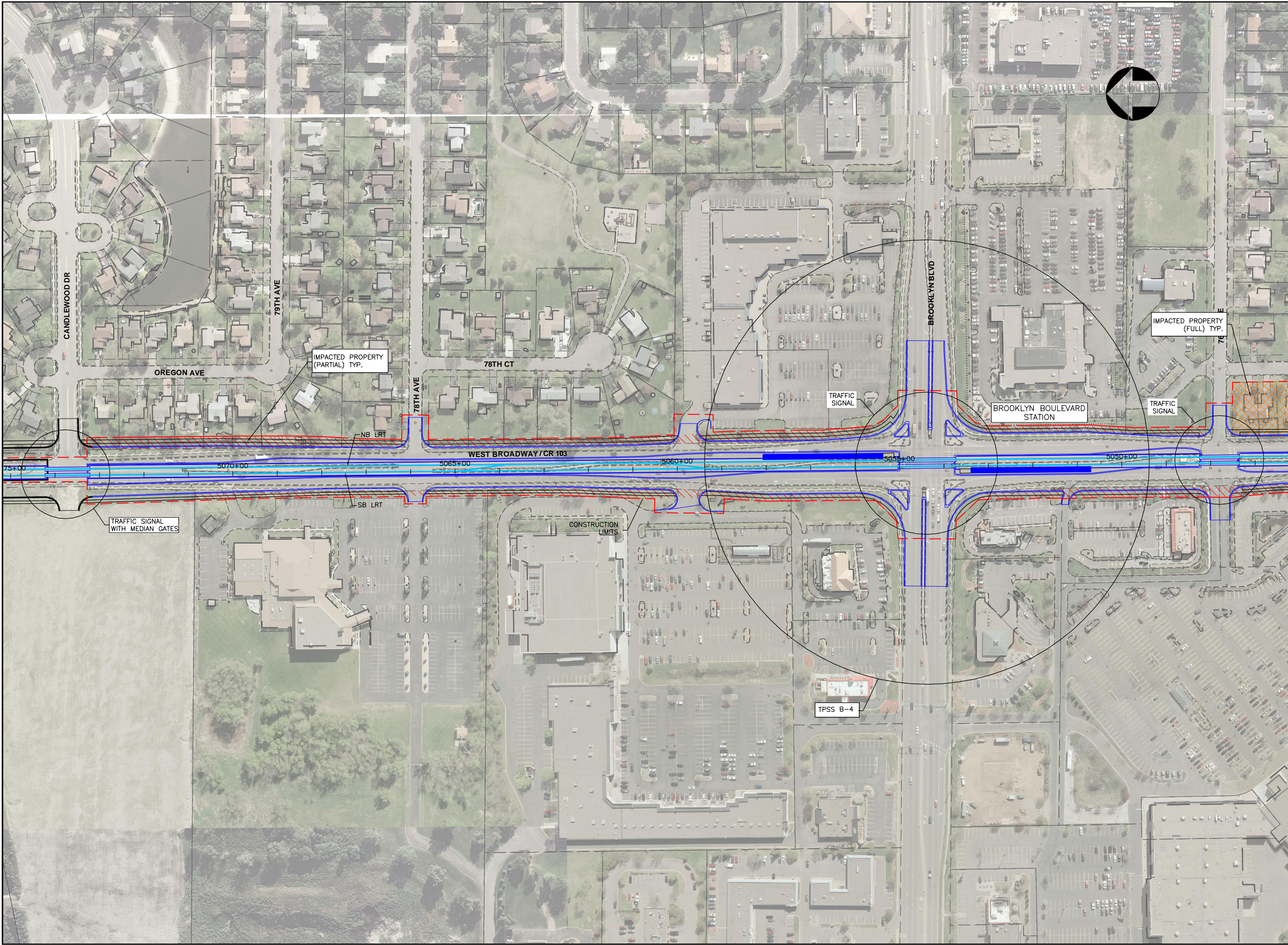
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ALIGNMENT PLAN  
STA 5075+00 - 5103+00

SHEET NUMBER  
27 OF 122




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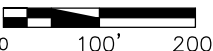
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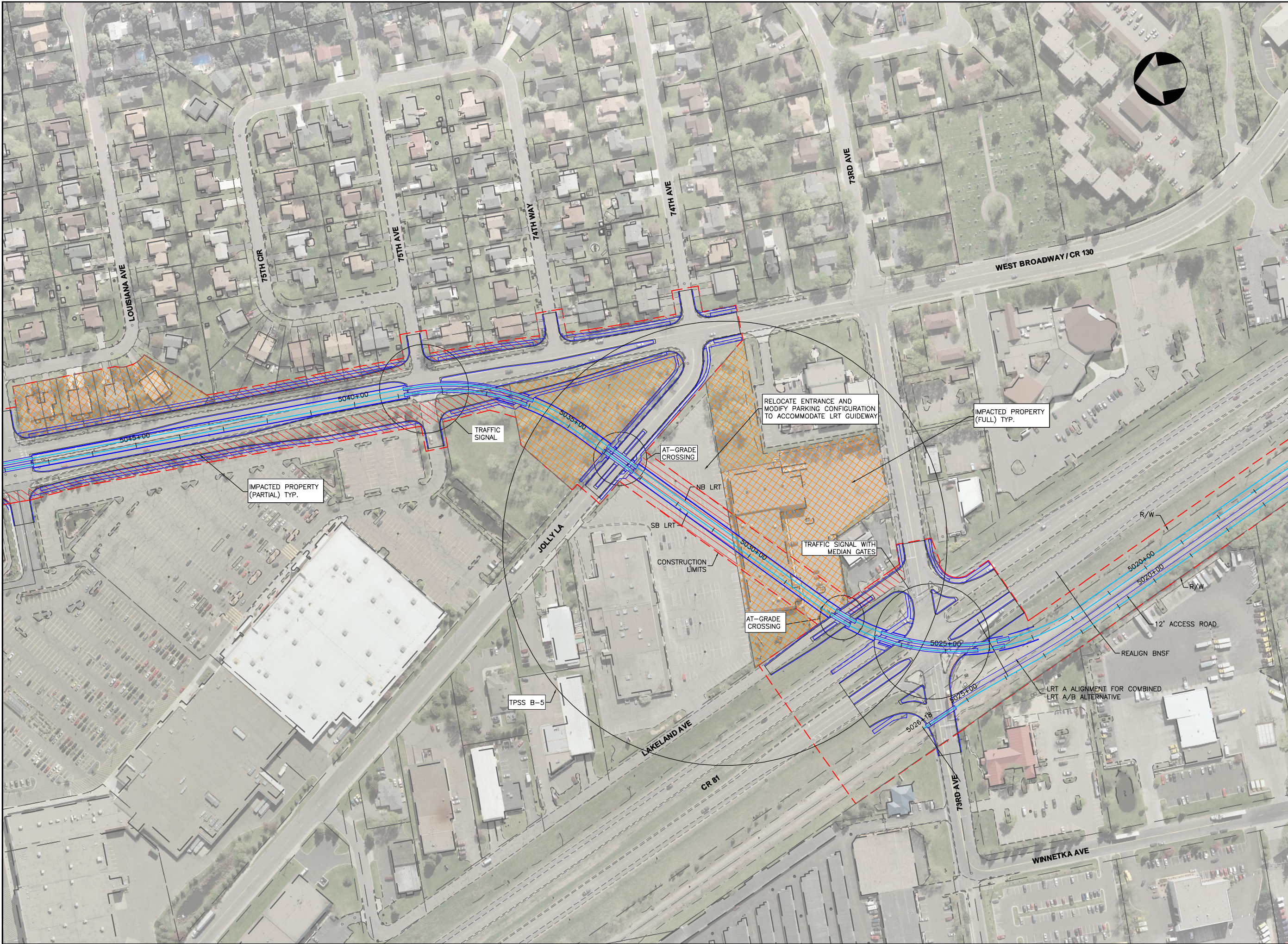
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SHEET NUMBER  
28 OF 122




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LRTBP08.dwg

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SCALE



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BOTTINEAU TRANSITWAY  
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LRT ALIGNMENT B  
SHEET 8 OF 24

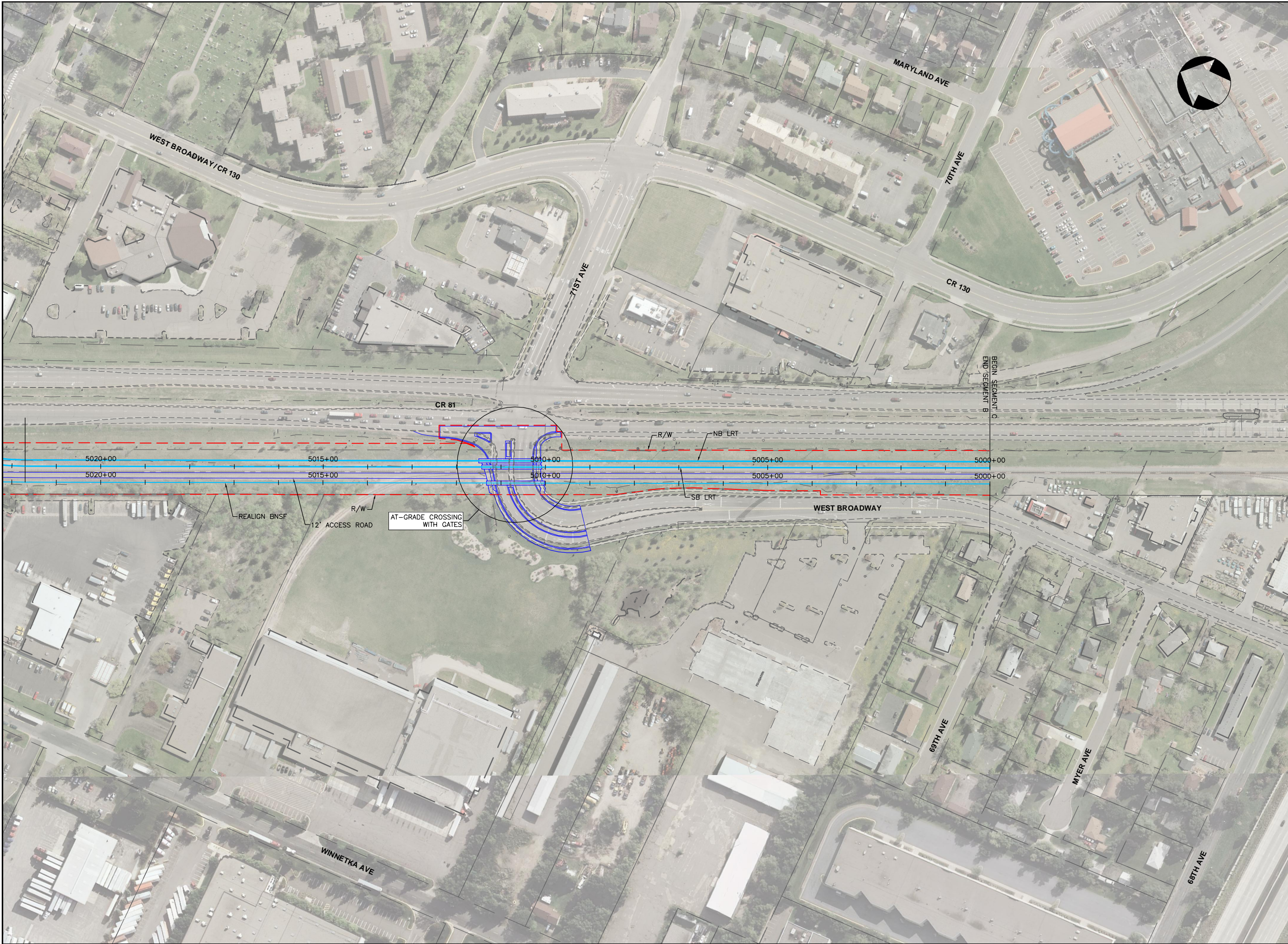
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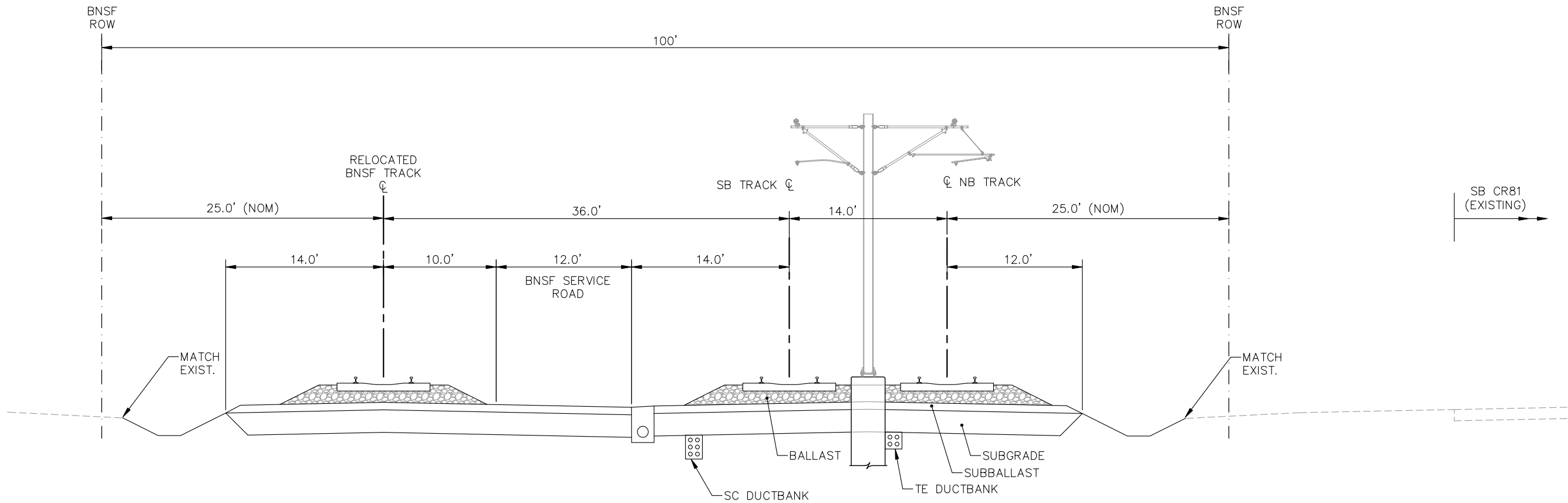
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ALIGNMENT PLAN  
STA 5000+00 - 5022+00

SHEET NUMBER  
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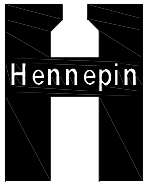


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**TYPICAL SECTION B-01**  
**ALIGNMENT B - STA. 5000+00 TO STA. 5023+00**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



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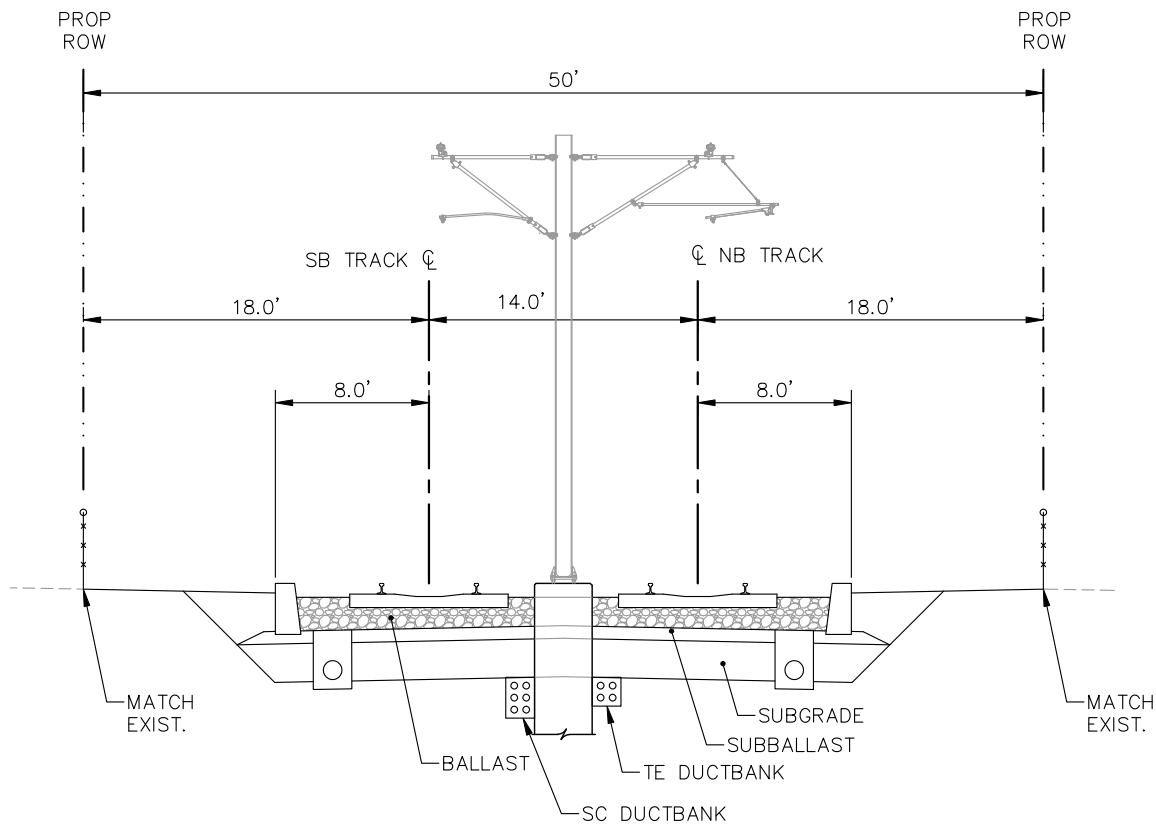
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BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT B  
SHEET 10 OF 24

TYPICAL SECTION B-01



**TYPICAL SECTION B-02**  
**ALIGNMENT B - STA. 5023+00 TO STA. 5038+00**

NOTE: STATIONING REPRESENTS THE  
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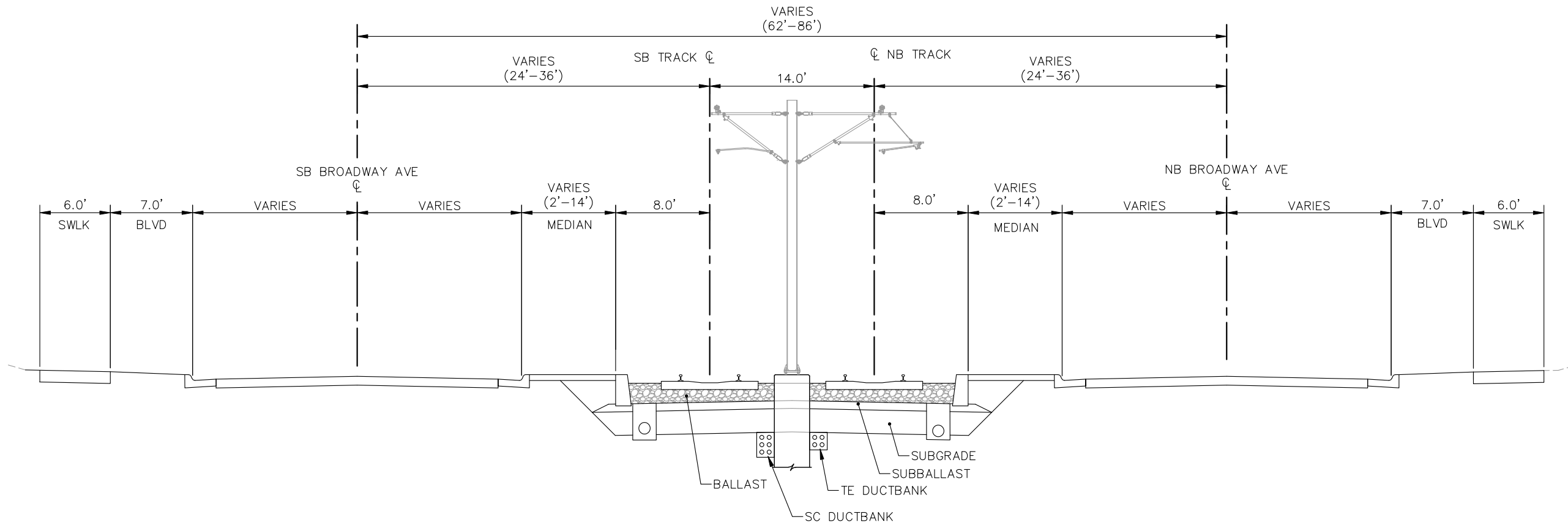
BOTTINEAU CORRIDOR  
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LRT ALIGNMENT B  
 SHEET 11 OF 24

TYPICAL SECTION B-02



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**TYPICAL SECTION B-03**  
**ALIGNMENT B - STA. 5038+00 TO STA. 5066+00**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



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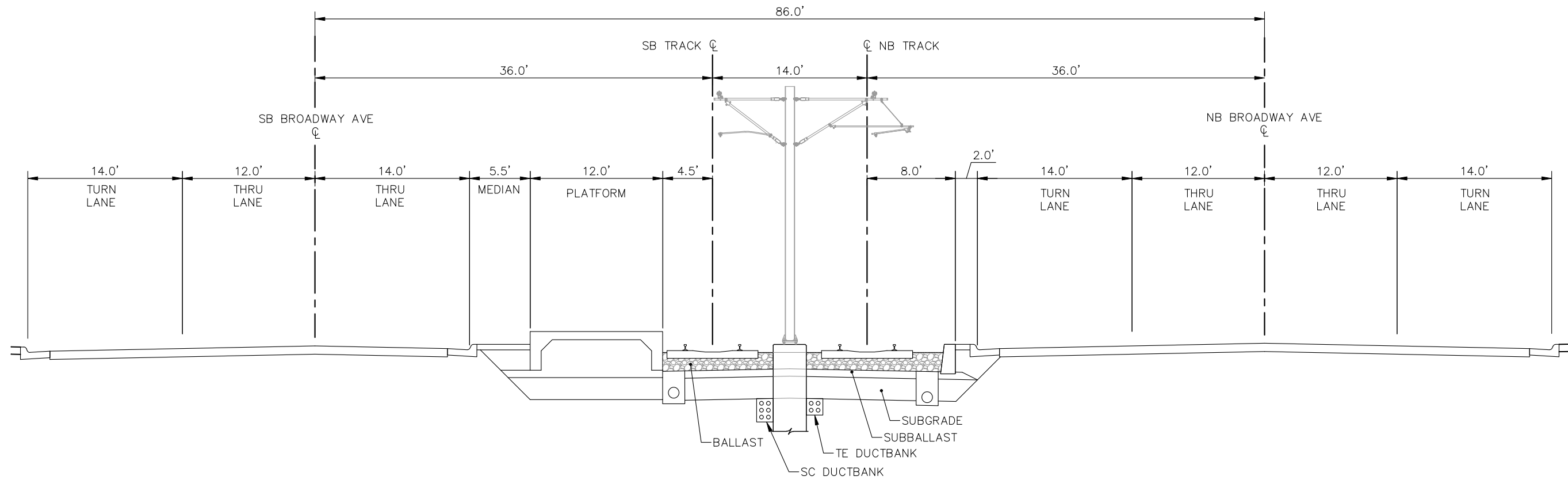
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TYPICAL SECTION B-03

SHEET NUMBER

33 OF 122

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**TYPICAL SECTION B-03A**  
**ALIGNMENT B - BROOKLYN BLVD STATION**  
**(SB PLATFORM SHOWN, NB SIMILAR)**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



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BOTTINEAU CORRIDOR  
DRAFT EIS  
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LRT ALIGNMENT B  
SHEET 13 OF 24

TYPICAL SECTION B-03A

SHEET NUMBER  
**34** OF **122**



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DATE: 6/29/12

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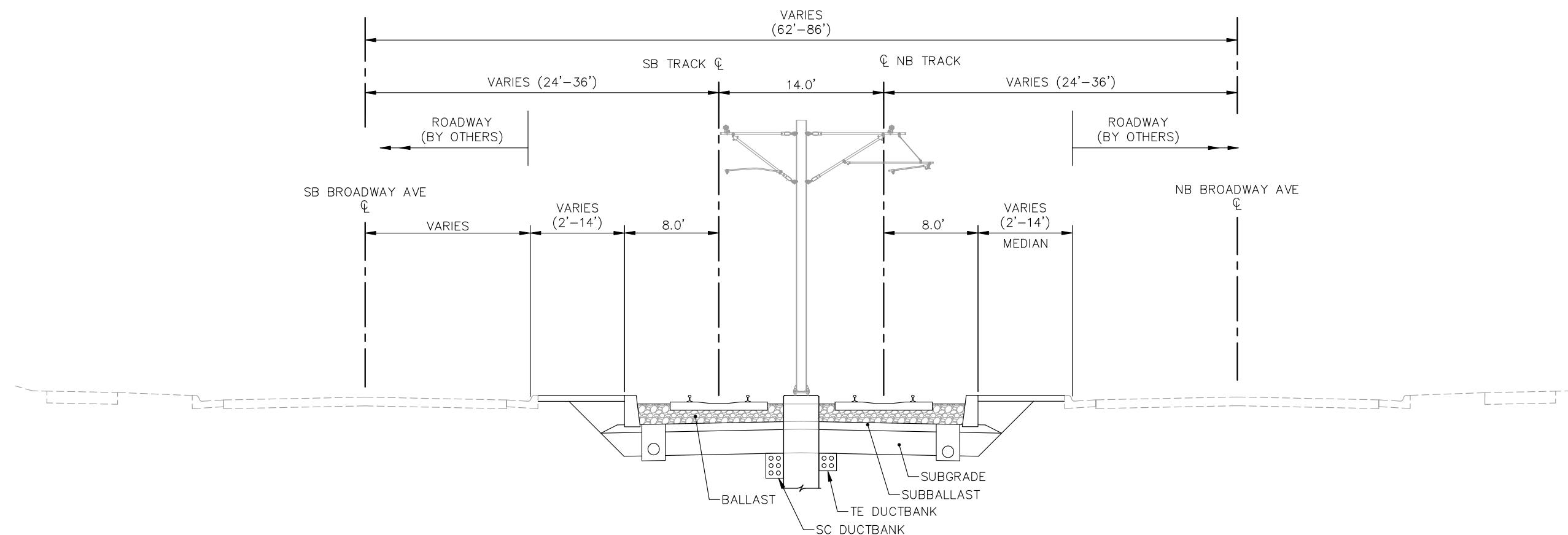
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TYPICAL SECTION B-04

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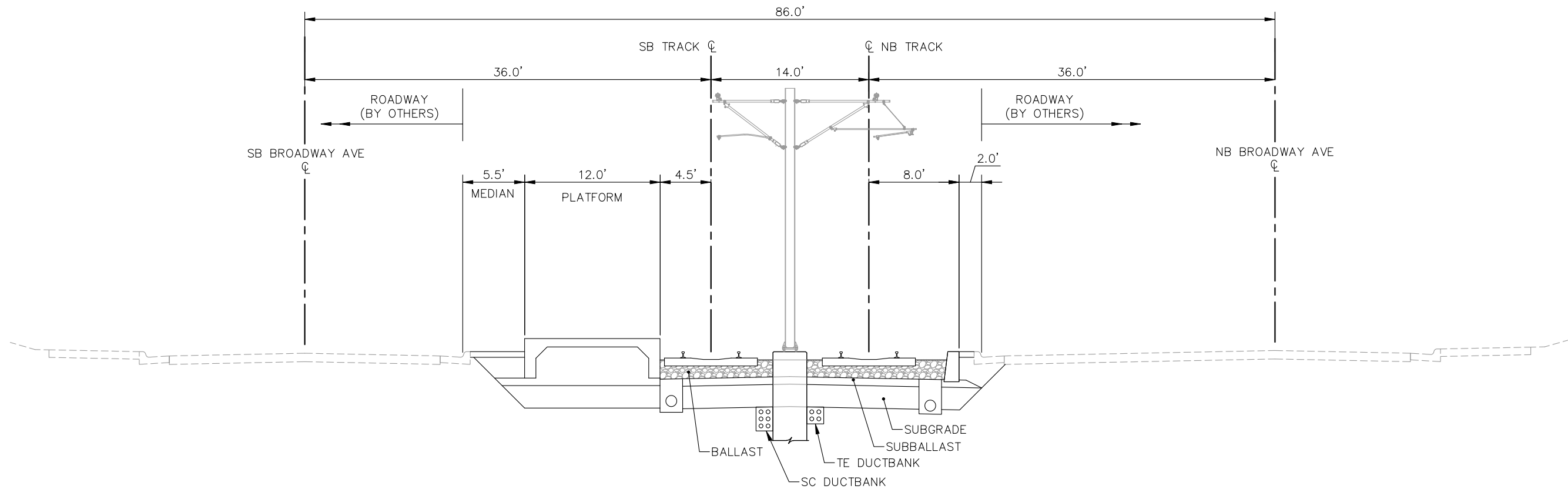
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**TYPICAL SECTION B-04**  
**ALIGNMENT B - STA. 5066+00 TO STA. 5159+00**

NOTE: STATIONING REPRESENTS THE SB LRT TRACK

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**TYPICAL SECTION B-04A**  
**ALIGNMENT B - 85TH AVENUE STATION**  
**(SB PLATFORM SHOWN, NB SIMILAR)**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



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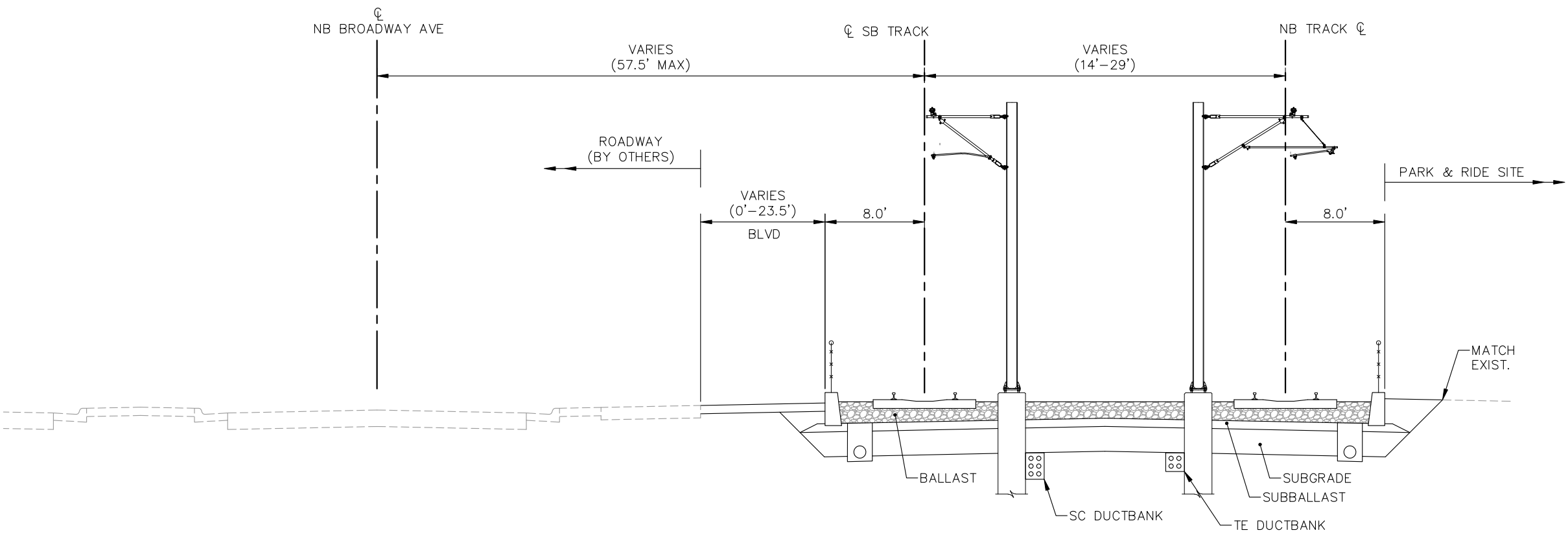
BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT B  
SHEET 15 OF 24

TYPICAL SECTION B-04A



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TYPICAL SECTION B-05  
ALIGNMENT B - STA. 5159+00 TO 5169+00

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| PROJECT NO.       |
| 160528003.4.100   |

BOTTINEAU CORRIDOR  
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CONCEPTUAL DESIGN

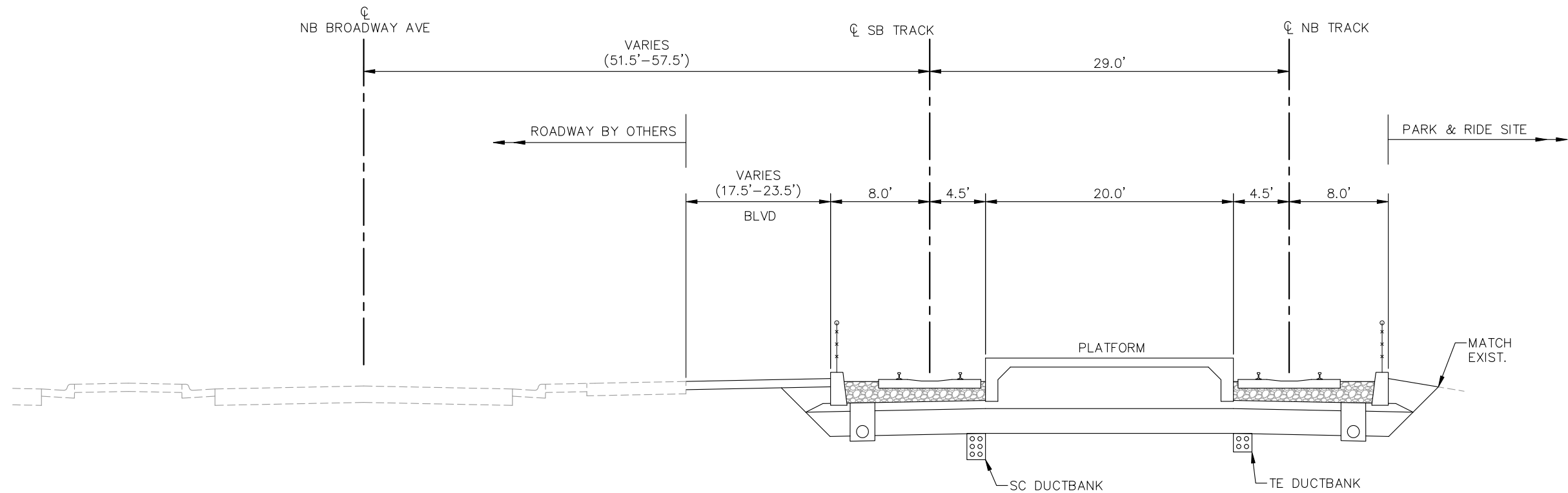
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SHEET 16 OF 24

TYPICAL SECTION B-05

SHEET NUMBER

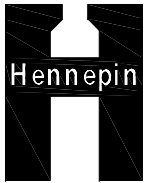
37 OF 122

P:\Projects\C4147.02 - Bottineau DEIS\C3D\BOTT-TYP B\_05A.dwg August 24, 2012 - 9:22am



TYPICAL SECTION B-05A  
ALIGNMENT B - 93RD AVENUE STATION

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



CONSULTANTS:

  
**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116

  
**SRF**  
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**LTK**  
LTK Engineering Services

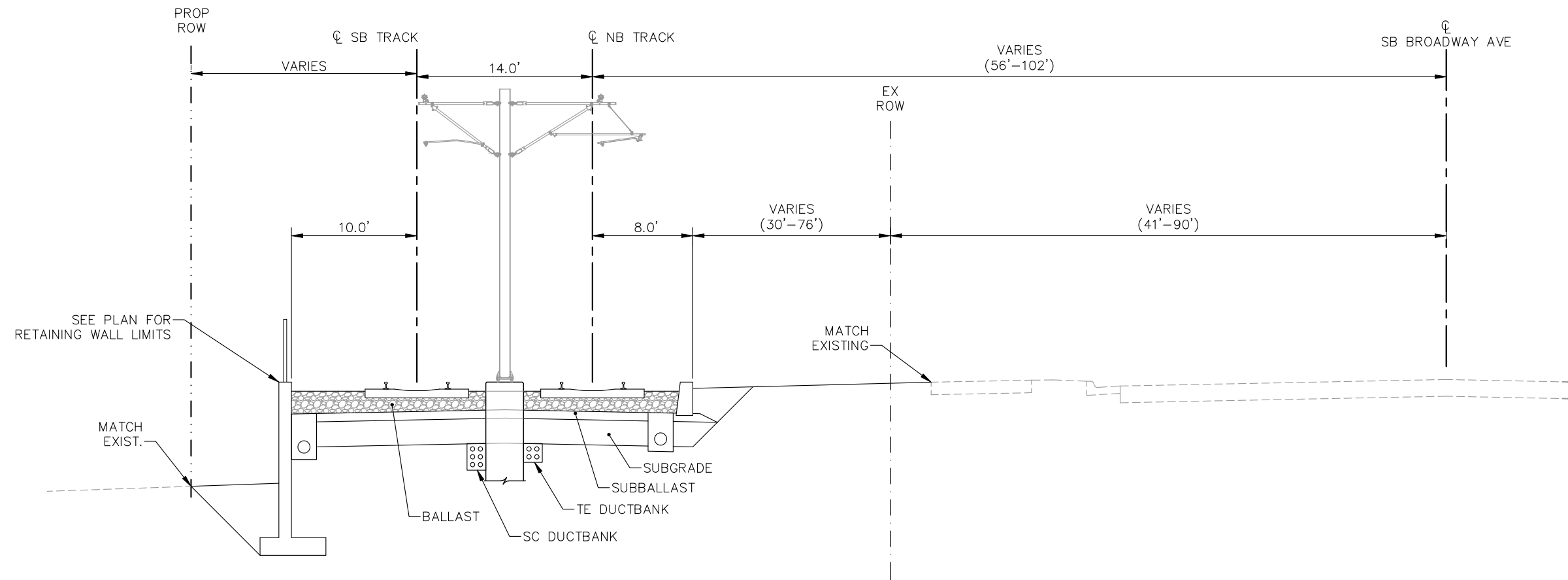
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| DATE: 6/29/12               |
| PROJECT NO. 160528003.4.100 |

BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT B  
SHEET 17 OF 24

TYPICAL SECTION B-05A

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**TYPICAL SECTION B-06**  
**ALIGNMENT B - STA. 5169+00 TO STA. 5193+00**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



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**Kimley-Horn and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



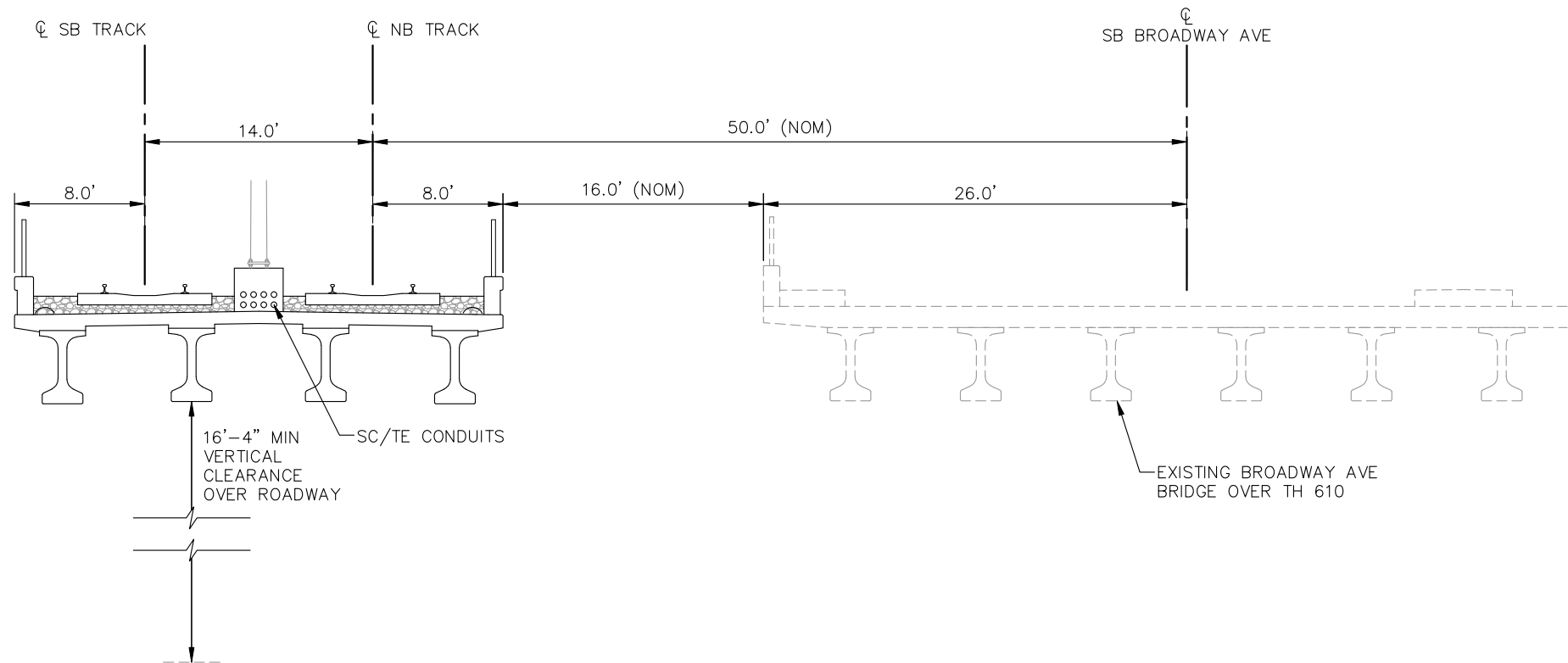
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| DATE: 6/29/12               |
| PROJECT NO. 160528003.4.100 |

BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT B  
SHEET 18 OF 24

TYPICAL SECTION B-06

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TYPICAL SECTION 06A  
ALIGNMENT B - TH610 BRIDGE

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



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and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
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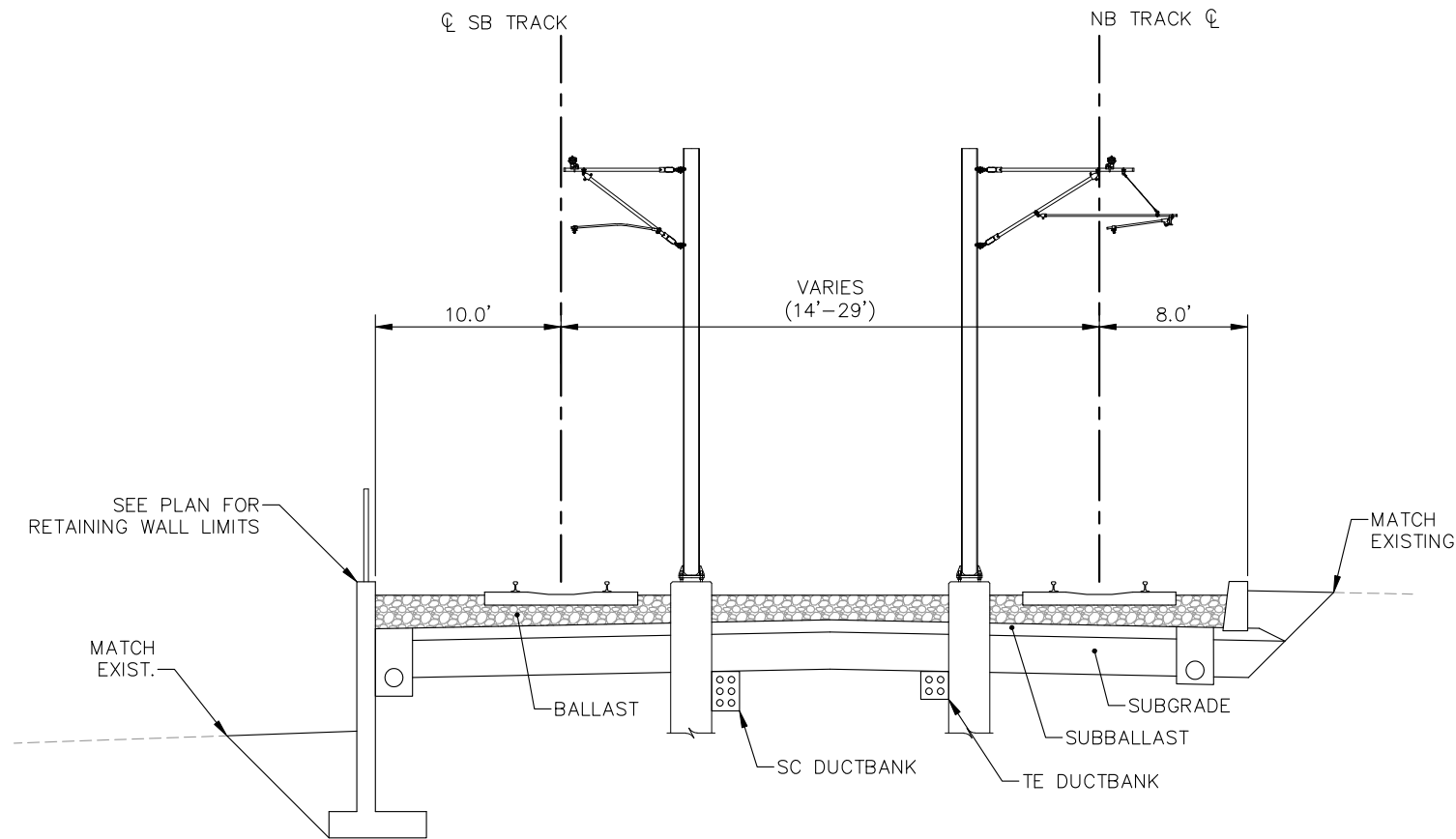
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DRAFT EIS  
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LRT ALIGNMENT B  
SHEET 19 OF 24

TYPICAL SECTION B-06A



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**TYPICAL SECTION B-07**  
**ALIGNMENT B - STA. 5193+00 TO 5198+67**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



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and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



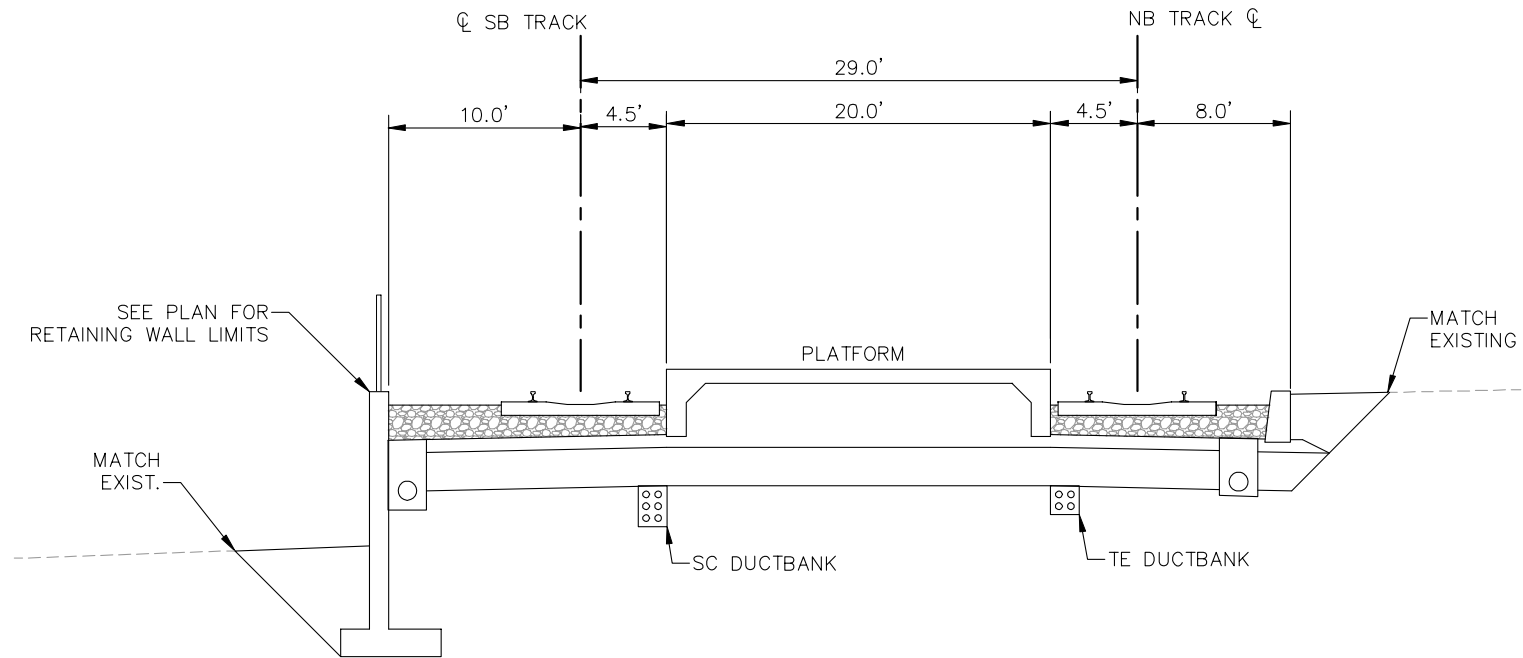
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| PROJECT NO. 160528003.4.100 |

BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT B  
SHEET 20 OF 24

TYPICAL SECTION B-07

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TYPICAL SECTION B-07A  
ALIGNMENT B - OAK GROVE PARKWAY STATION

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



CONSULTANTS:  
  
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and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
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FAX. NO. (651) 645-5116

  
**SRF**  
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LTK Engineering Services

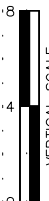
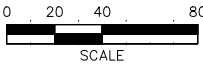
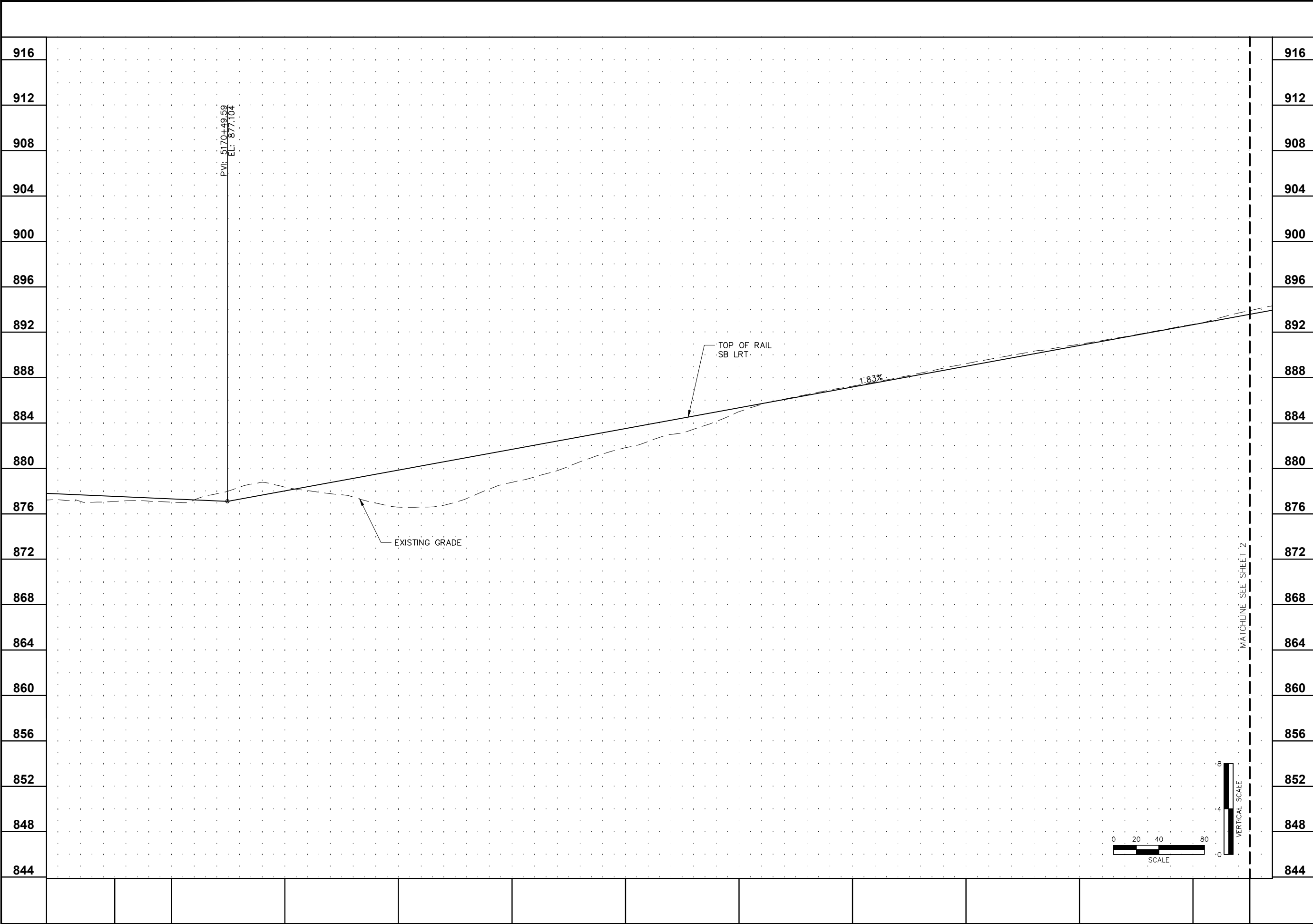
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| PROJECT NO. 160528003.4.100 |


BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT B  
SHEET 21 OF 24


TYPICAL SECTION B-07A

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CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
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FAX. NO. (651) 645-5118



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|                   |                 |
|-------------------|-----------------|
| DRAWING NAME      |                 |
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| PROJECT NO.       | 160528003.4.100 |

BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

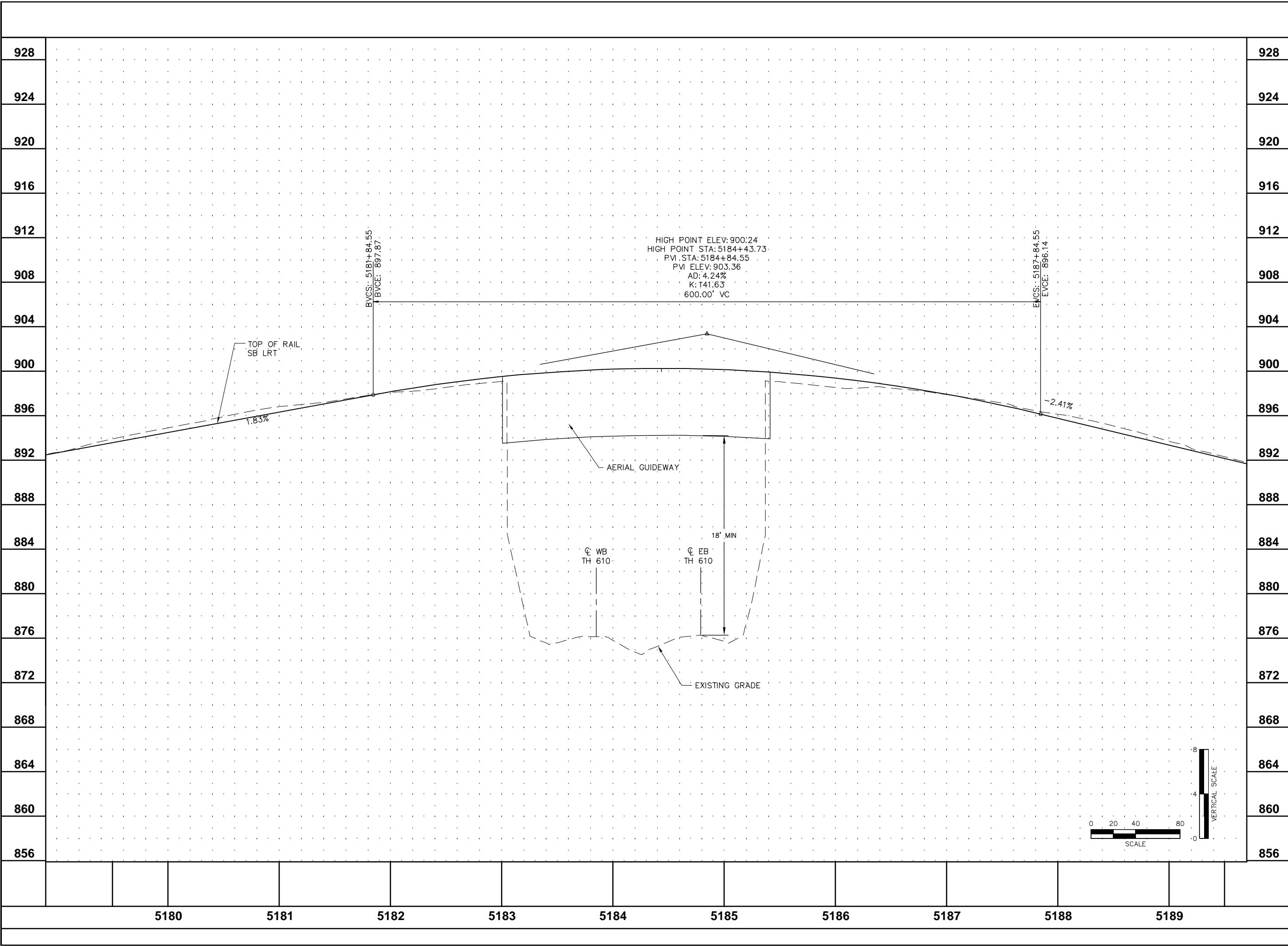
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W. BROADWAY OVER TH 610  
SHEET 22 OF 24


CRITICAL PROFILE

SHEET NUMBER


43 OF 122

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DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



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and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
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FAX. NO. (651) 645-5116



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LTK Engineering Services

|                   |                 |
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| DRAWING NAME      |                 |
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| PROJECT NO.       | 160528003.4.100 |

BOTTINEAU CORRIDOR  
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CONCEPTUAL DESIGN

ALIGNMENT B  
CRITICAL PROFILE  
W. BROADWAY OVER TH 610  
SHEET 23 OF 24

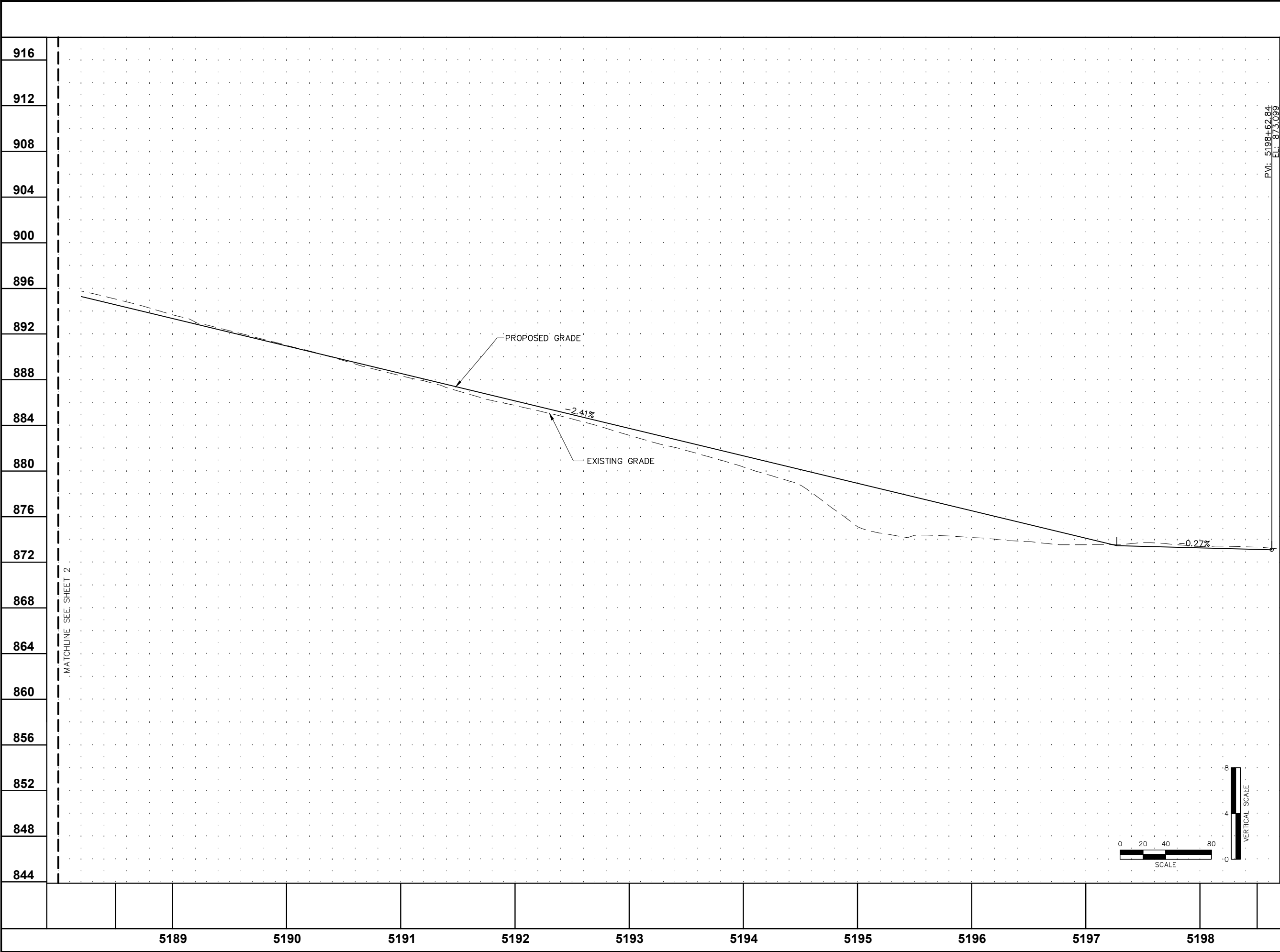
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SHEET NUMBER

44 OF 122




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DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
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PROJECT NO. 160528003.4.100

BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

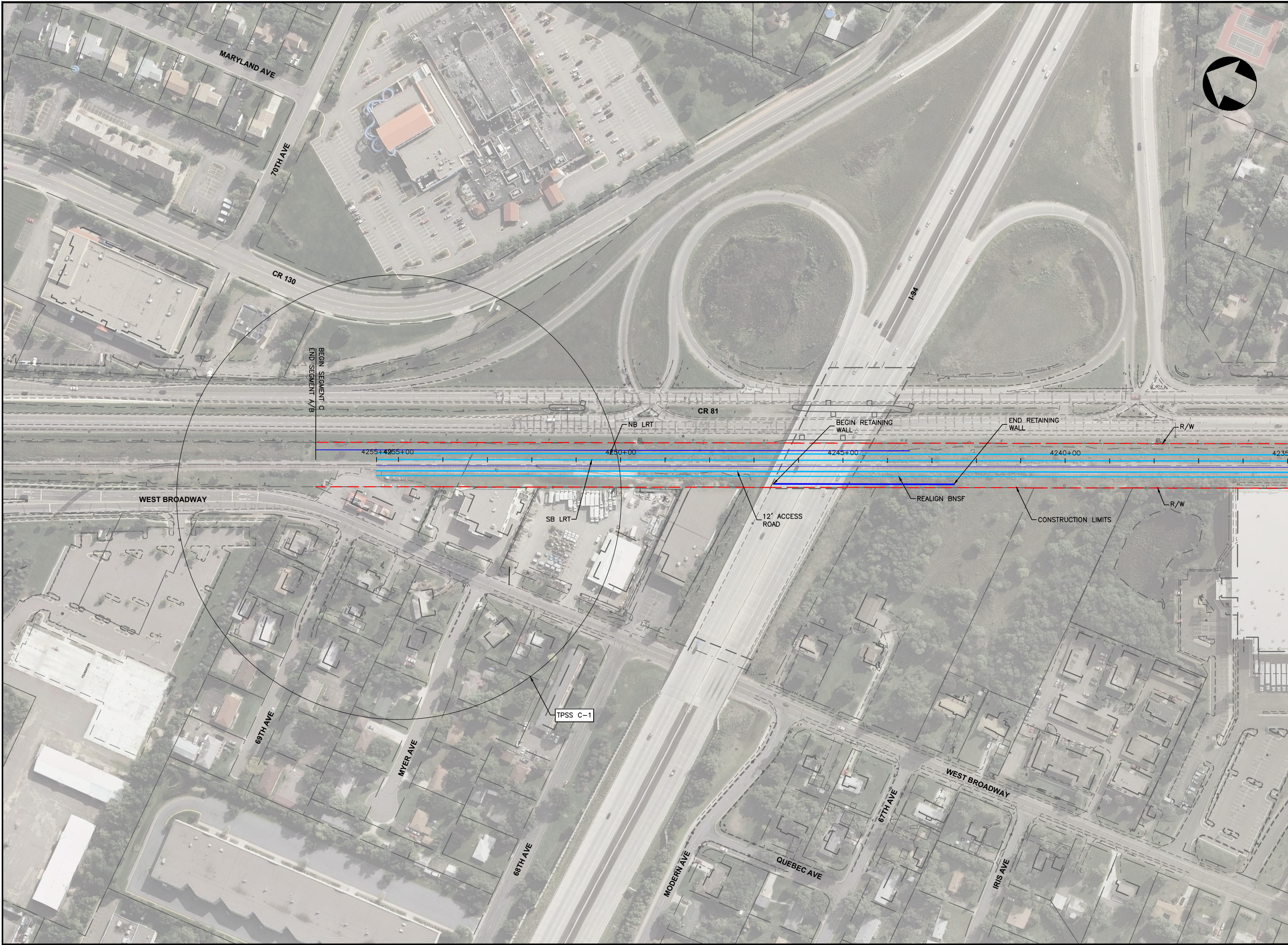
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W. BROADWAY OVER TH 610  
SHEET 24 OF 24


CRITICAL PROFILE

SHEET NUMBER  
45 OF 122




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DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
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DESIGNED BY:

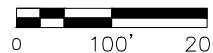
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PROJECT NO. 160528003.4.100

SCALE



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BOTTINEAU TRANSITWAY  
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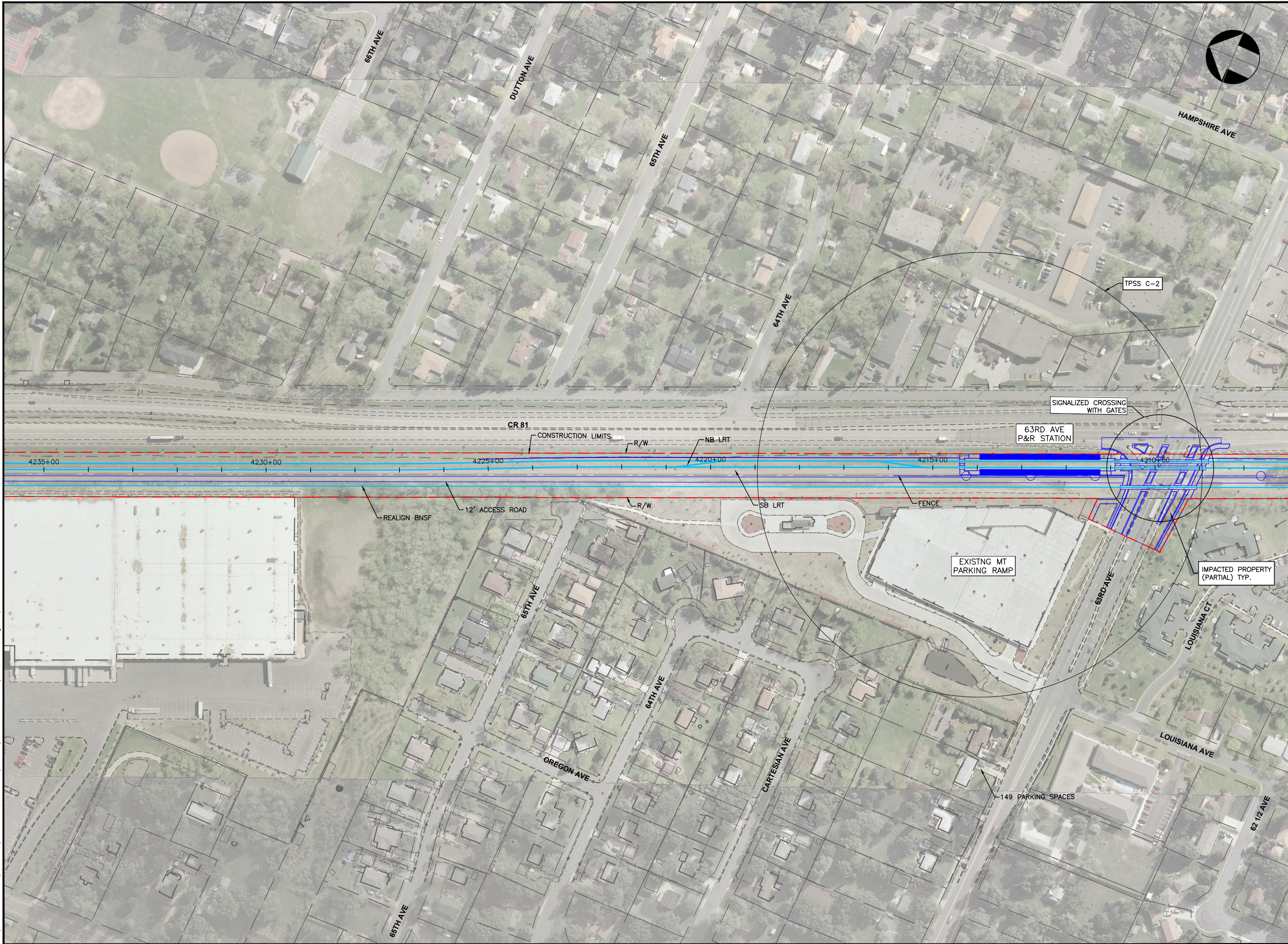
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SHEET 1 OF 30


ALIGNMENT PLAN  
STA 4235+00 - 4256+65

SHEET NUMBER  
46 OF 122




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DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



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LRTCP02.dwg

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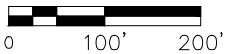
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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE



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BOTTINEAU TRANSITWAY  
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CONCEPTUAL DESIGN

LRT ALIGNMENT C  
SHEET 2 OF 30

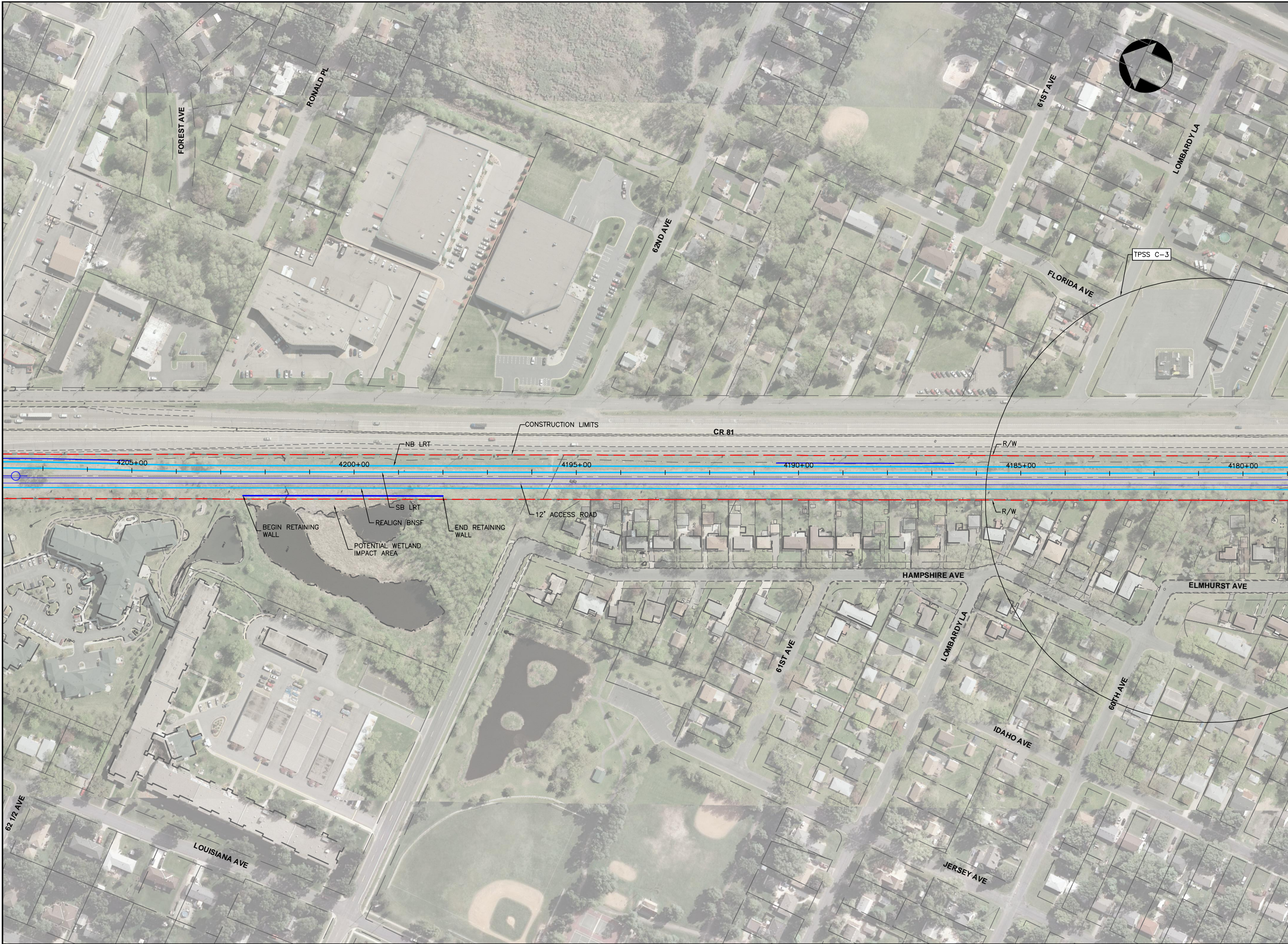
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47 OF 122




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DRAFT ENVIRONMENTAL IMPACT STATEMENT




Hennepin


CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



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LTK Engineering Services

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LRTCP03.dwg

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CHECKED BY:

DATE: 9/5/2012

PROJECT NO. 160528003.4.100

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BOTTINEAU TRANSITWAY  
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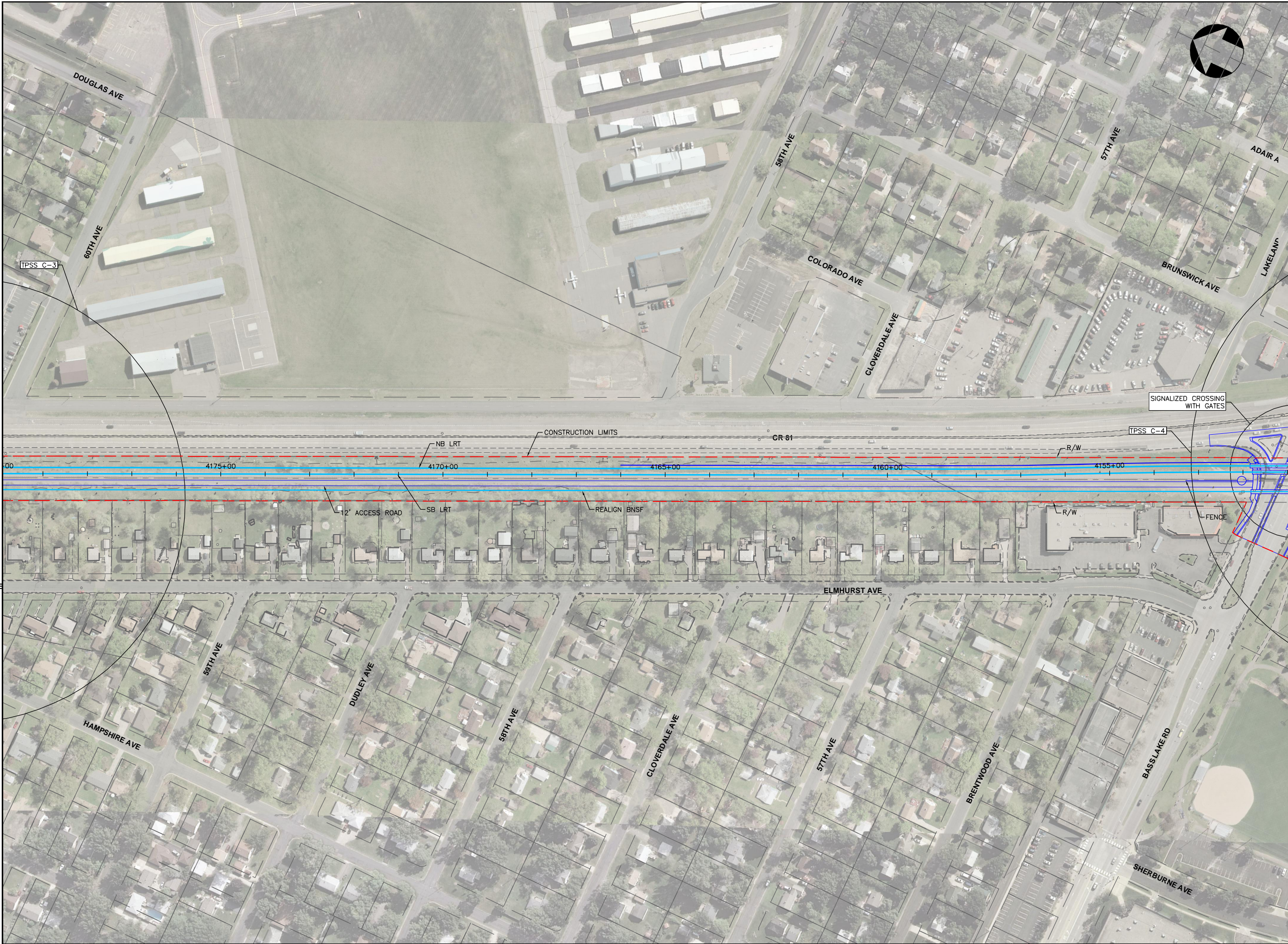
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SHEET 3 OF 30


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SHEET NUMBER  
48 OF 122




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CONSULTANTS:



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and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



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LRTCP04.dwg

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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE

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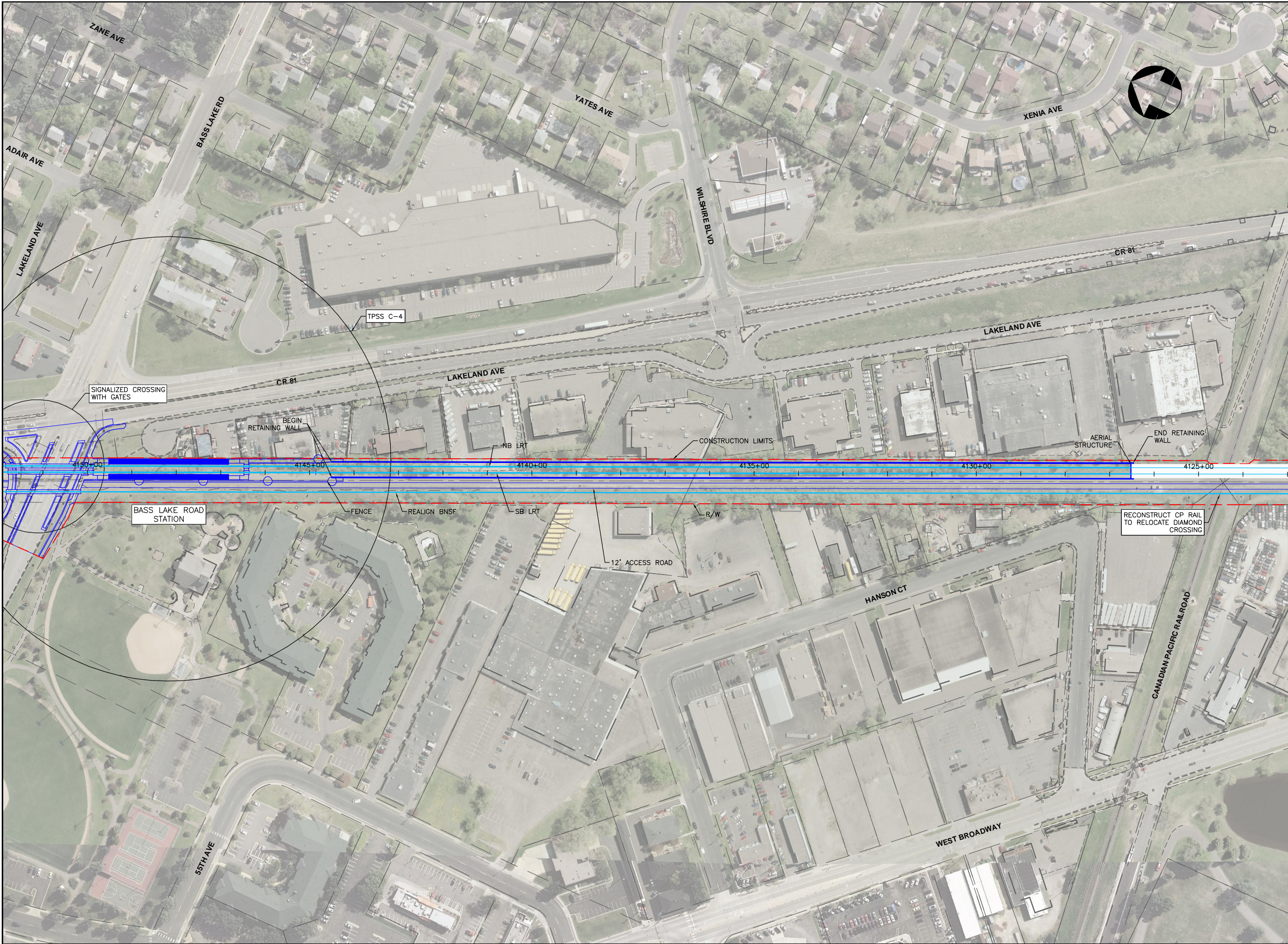
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SHEET 4 OF 30


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STA 4151+00 - 4179+00

SHEET NUMBER  
49 OF 122




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CONSULTANTS:



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2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



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LTK Engineering Services

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LRTCP05.dwg

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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE



0 100' 200'

BOTTINEAU TRANSITWAY  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT C  
SHEET 5 OF 30

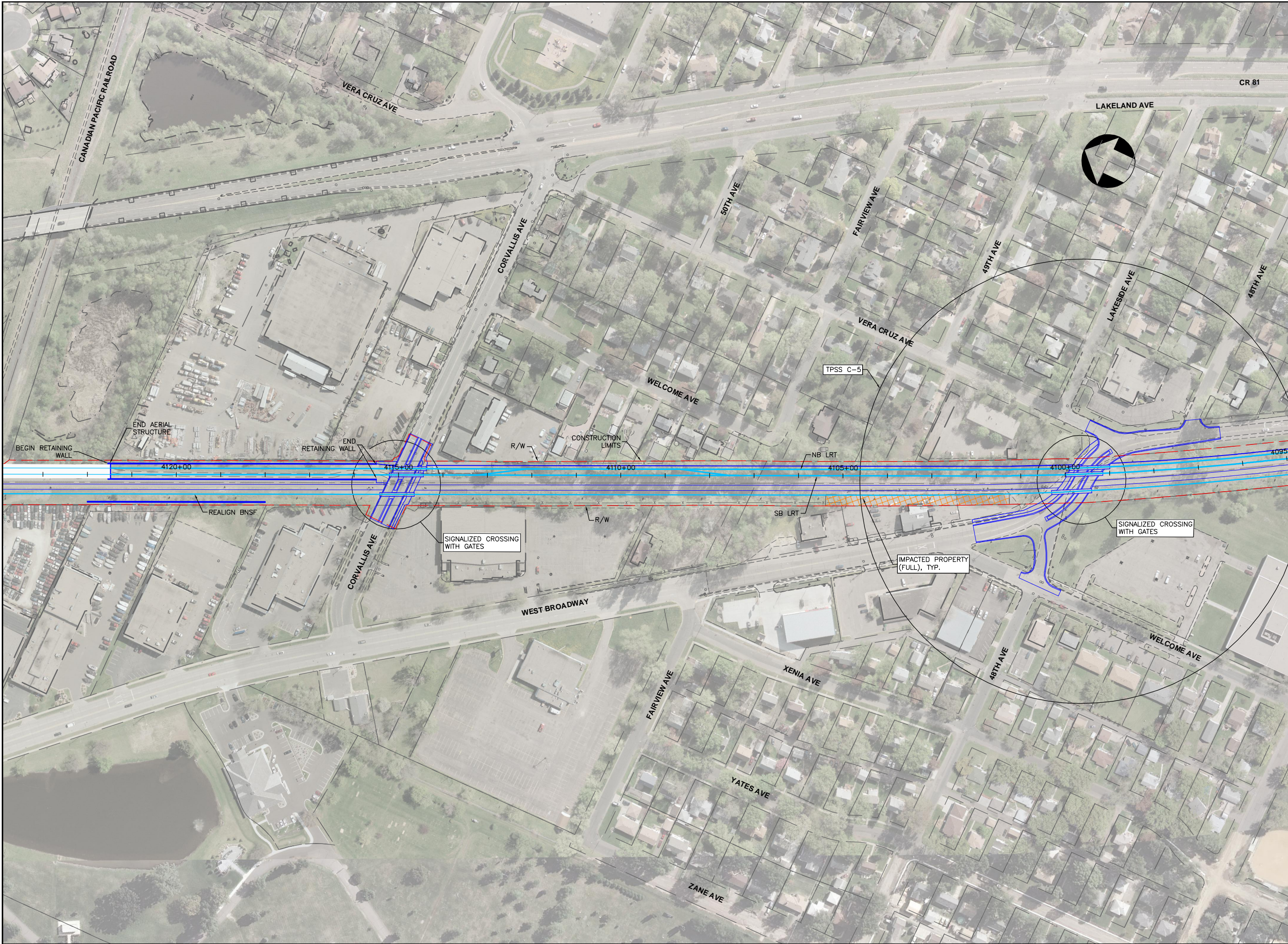
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SHEET NUMBER

50 OF 122




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CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



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LTK Engineering Services

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LRTCP06.dwg

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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE



BOTTINEAU TRANSITWAY  
DRAFT EIS  
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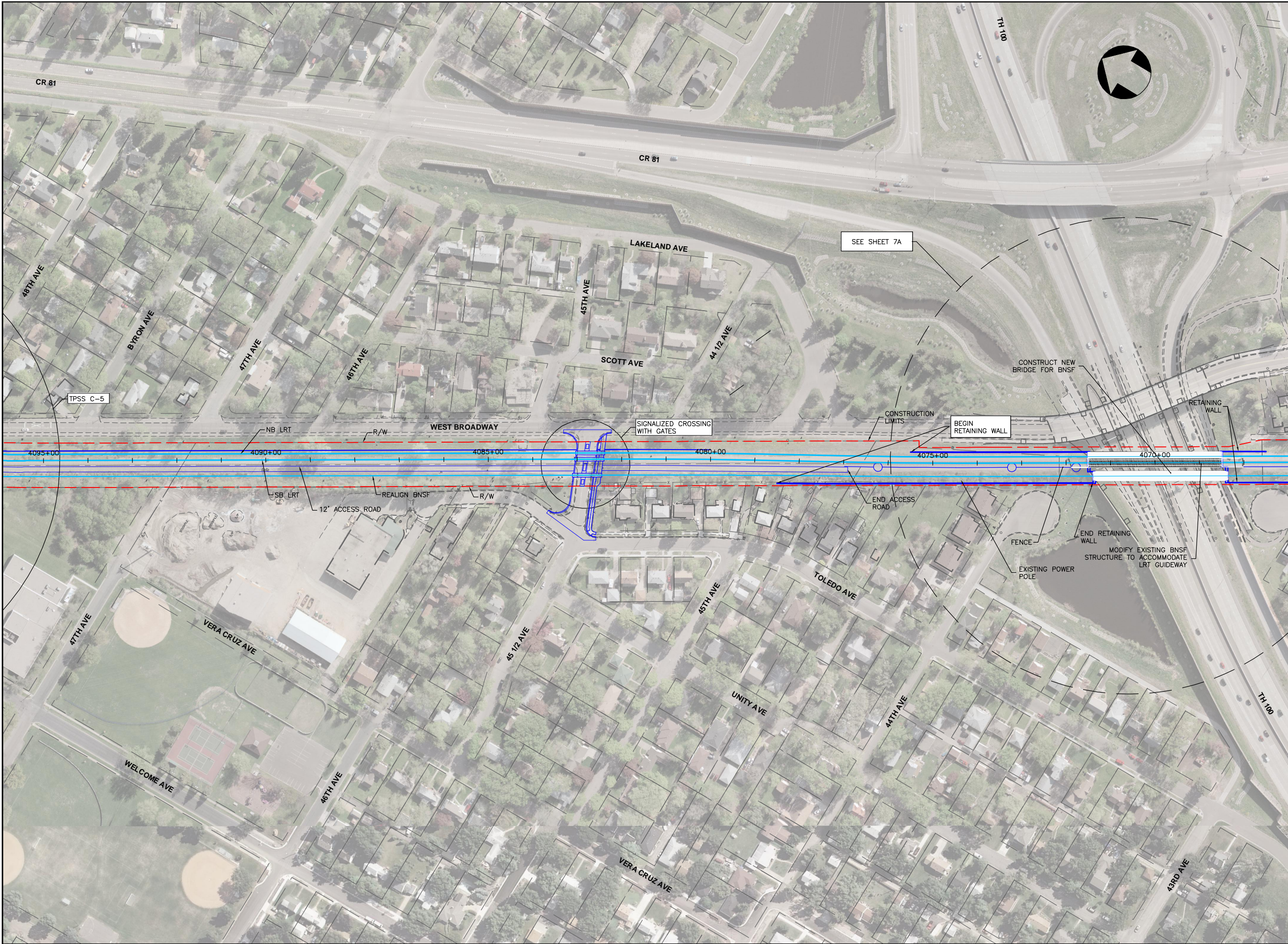
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SHEET 6 OF 30


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SHEET NUMBER  
**51** OF **122**




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CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



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LRTCP07.dwg

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DRAWN BY:

CHECKED BY:

DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE



BOTTINEAU TRANSITWAY  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT C  
SHEET 7 OF 30

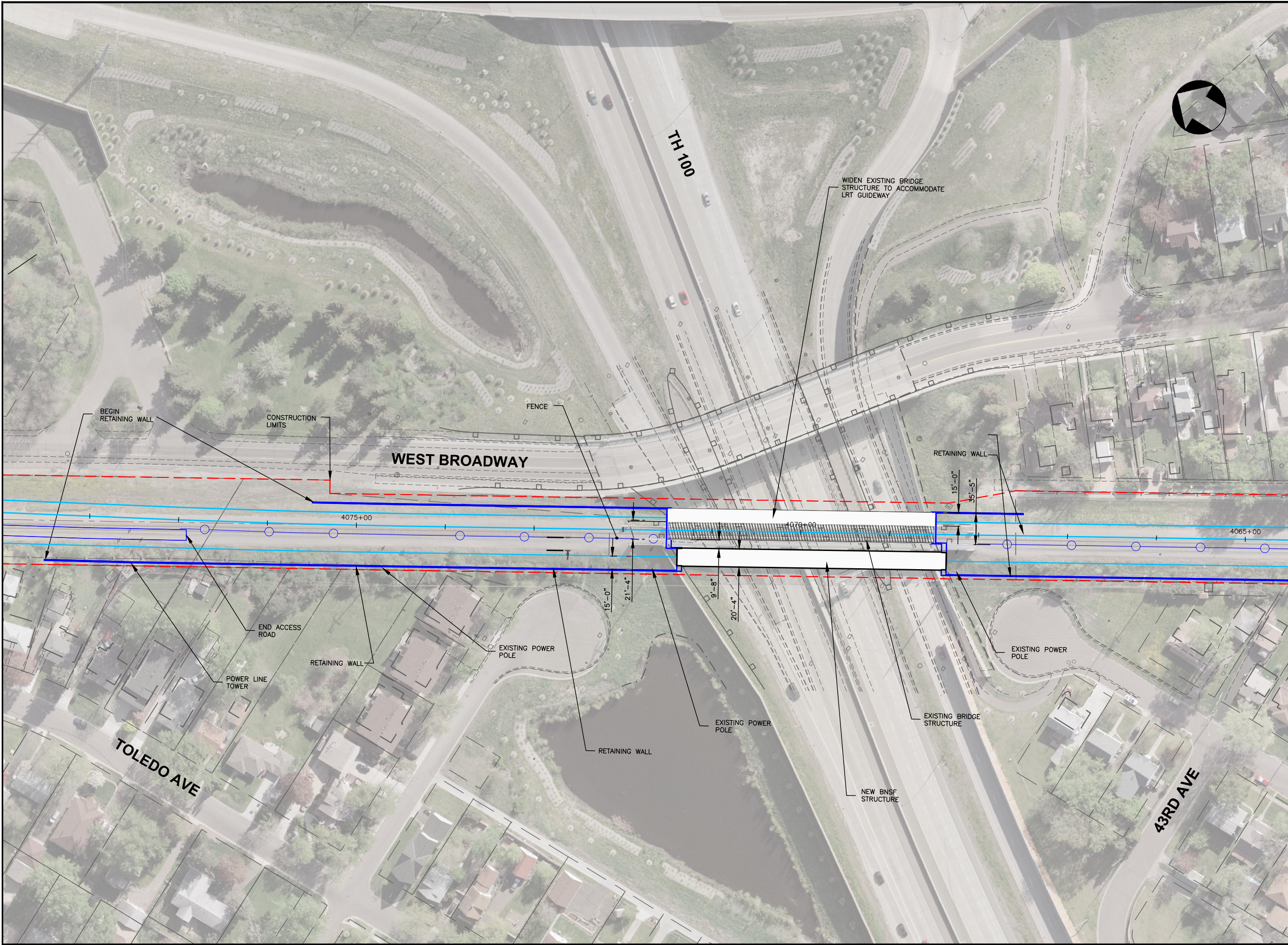
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SHEET NUMBER

52 OF 122



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**Bottineau Transitway**  
DRAFT ENVIRONMENTAL IMPACT STATEMENT

**Hennepin**

CONSULTANTS:  
**Kimley-Horn and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5118

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Consulting Group, Inc.

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DRAWING NAME  
LRTCP07A.dwg

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DRAWN BY:

CHECKED BY:

DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE  
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BOTTINEAU TRANSITWAY  
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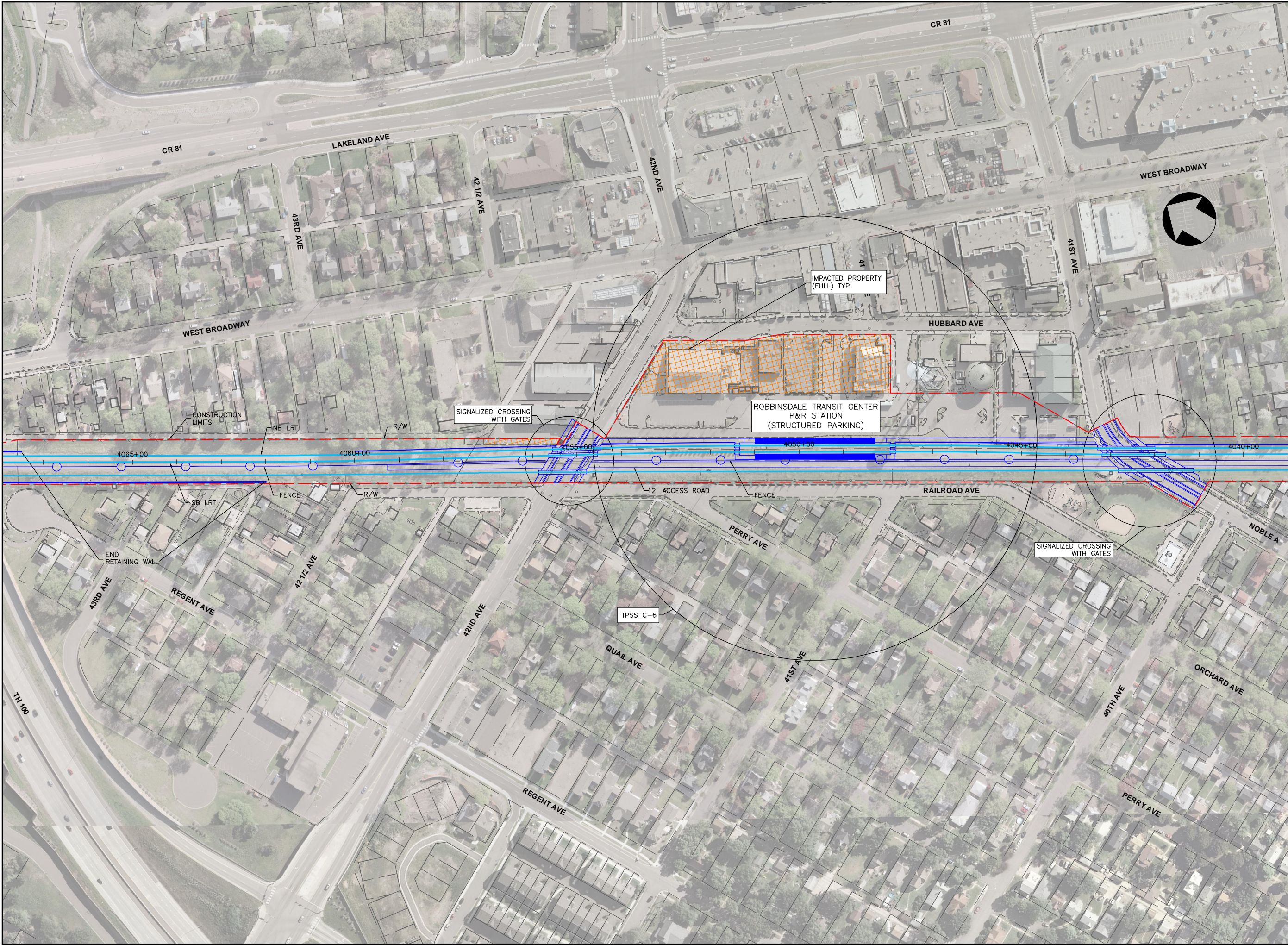
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ALIGNMENT PLAN  
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SHEET NUMBER  
53 OF 122




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DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



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Consulting Group, Inc.



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LTK Engineering Services

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LRTCP08.dwg

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DRAWN BY:

CHECKED BY:

DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE

0 100' 200'

BOTTINEAU TRANSITWAY  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT C  
SHEET 9 OF 30

ALIGNMENT PLAN  
STA 4039+00 - 4067+00


SHEET NUMBER

54 OF 122




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CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
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FAX. NO. (651) 645-5116



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Consulting Group, Inc.



**LTK**  
LTK Engineering Services

DRAWING NAME  
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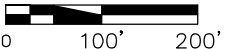
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PROJECT NO. 160528003.4.100

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BOTTINEAU TRANSITWAY  
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LRT ALIGNMENT C  
SHEET 10 OF 30

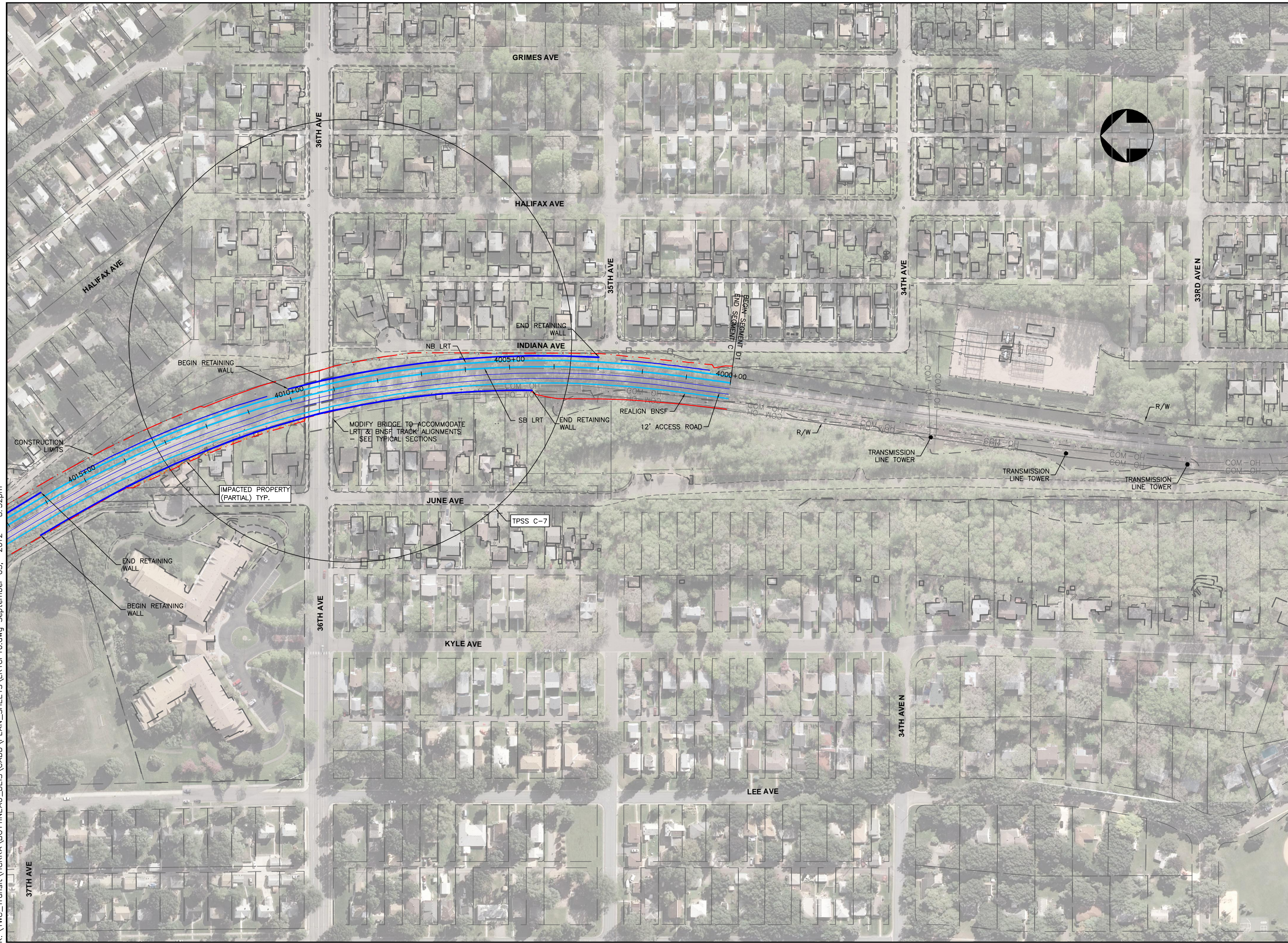
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SHEET NUMBER

55 OF 122



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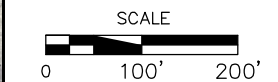
CONSULTANTS:

**Kimley-Horn and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116

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| DRAWN BY:    |                 |
| CHECKED BY:  |                 |
| DATE:        | 9/5/2012        |
| PROJECT NO.  | 160528003.4.100 |



BOTTINEAU TRANSITWAY  
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CONCEPTUAL DESIGN

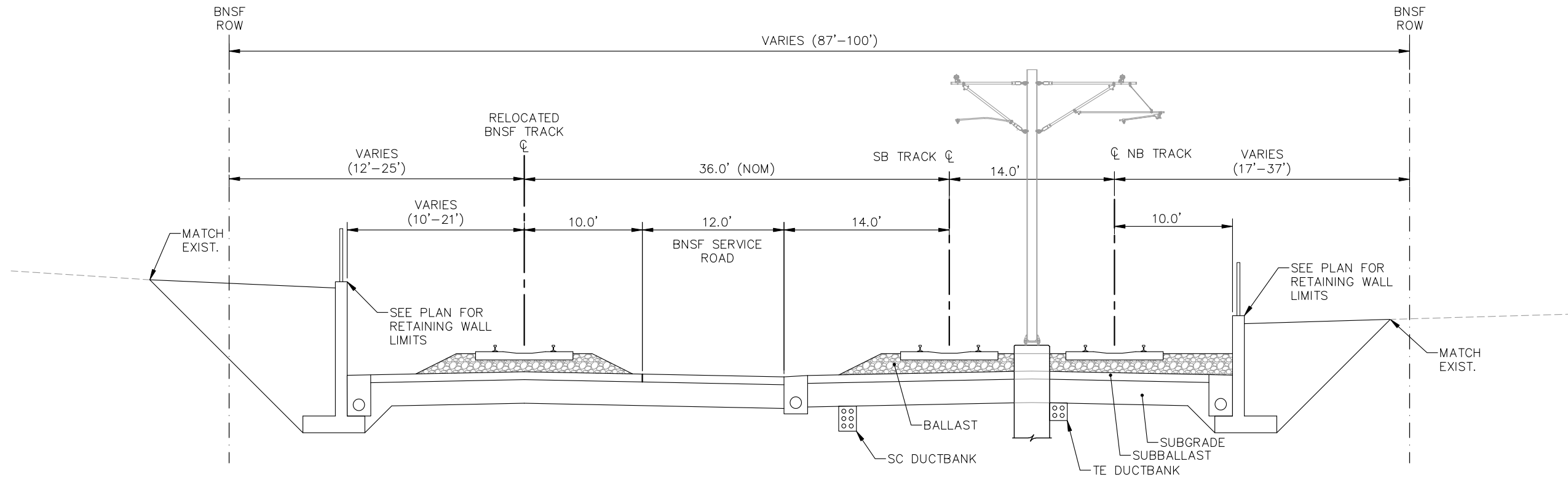
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SHEET 11 OF 30

ALIGNMENT PLAN  
STA 4000+00 - 4016+00

SHEET NUMBER  
**56** OF **122**



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**TYPICAL SECTION C-01**  
**ALIGNMENT C - STA. 4000+00 TO STA. 4042+00**

NOTE: STATIONING REPRESENTS THE  
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BOTT-TYP C\_01.dwg

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PROJECT NO. 160528003.4.100

BOTTINEAU CORRIDOR  
DRAFT EIS  
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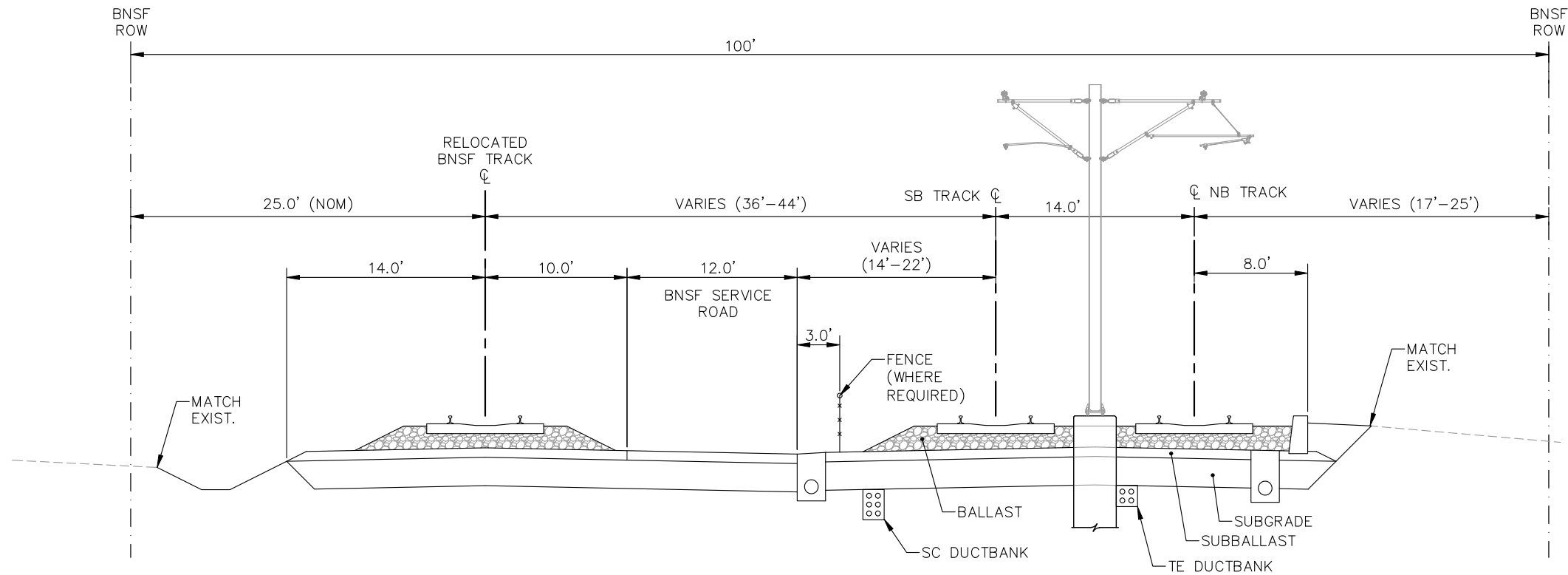
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SHEET 12 OF 29

TYPICAL SECTION C-01

SHEET NUMBER

79 OF 124

P:\Projects\C4147.02 - Bottineau DEIS\C3D\BOTT-TYP C\_02.dwg August 24, 2012 - 9:26am



**TYPICAL SECTION C-02**  
**ALIGNMENT C - STA. 4042+00 TO STA. 4054+00**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



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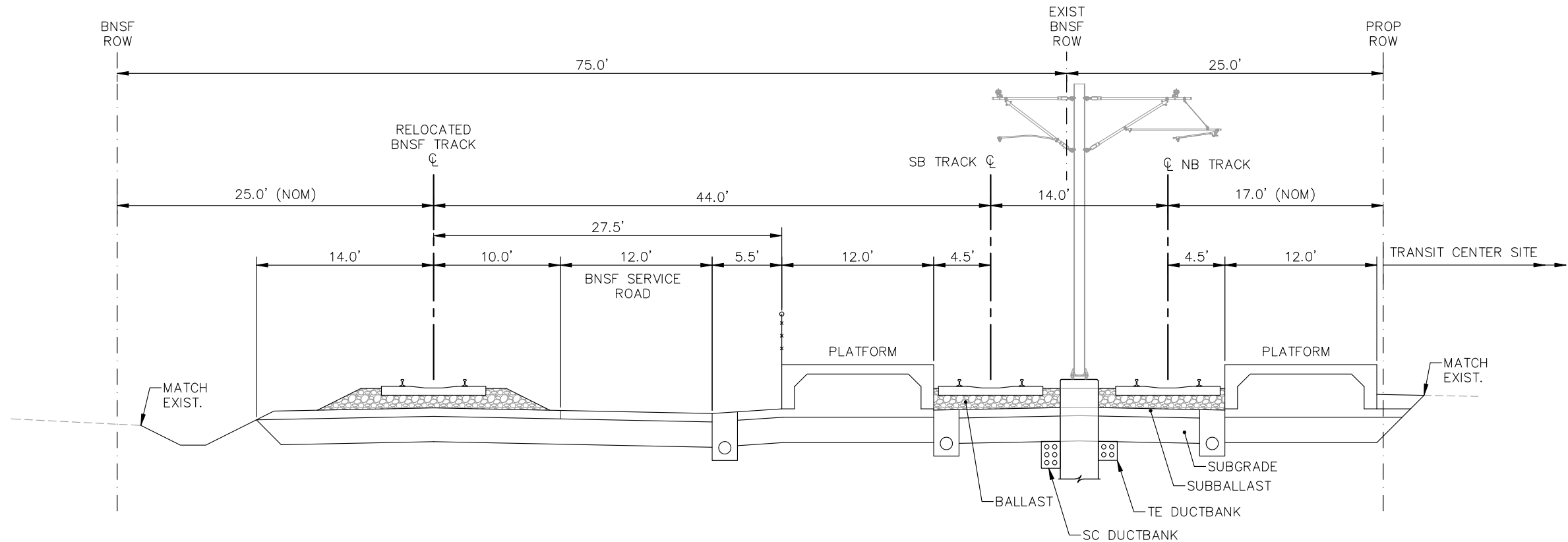
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| PROJECT NO. 160528003.4.100 |

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LRT ALIGNMENT C  
SHEET 13 OF 29

TYPICAL SECTION C-02

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TYPICAL SECTION C-02A  
ALIGNMENT C - ROBBINSDALE STATION

NOTE: STATIONING REPRESENTS THE  
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LRT ALIGNMENT C  
SHEET 14 OF 29

TYPICAL SECTION C-02A

SHEET NUMBER  
**7;** OF **124**



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BOTT-TYP C\_03.d

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DATE: 6/29/12

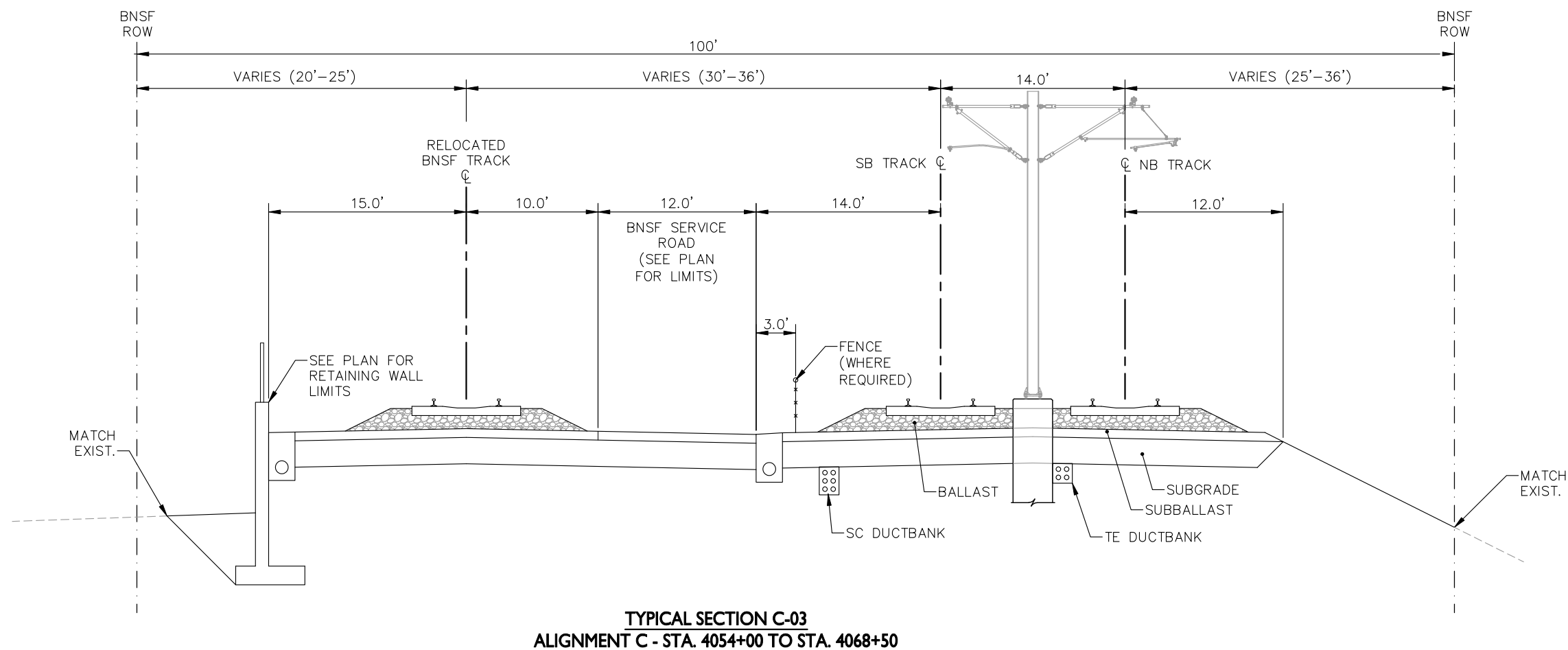
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DRAFT EIS  
CONCEPTUAL DESIGN

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TYPICAL SECTION C-03

SHEET NUMBER

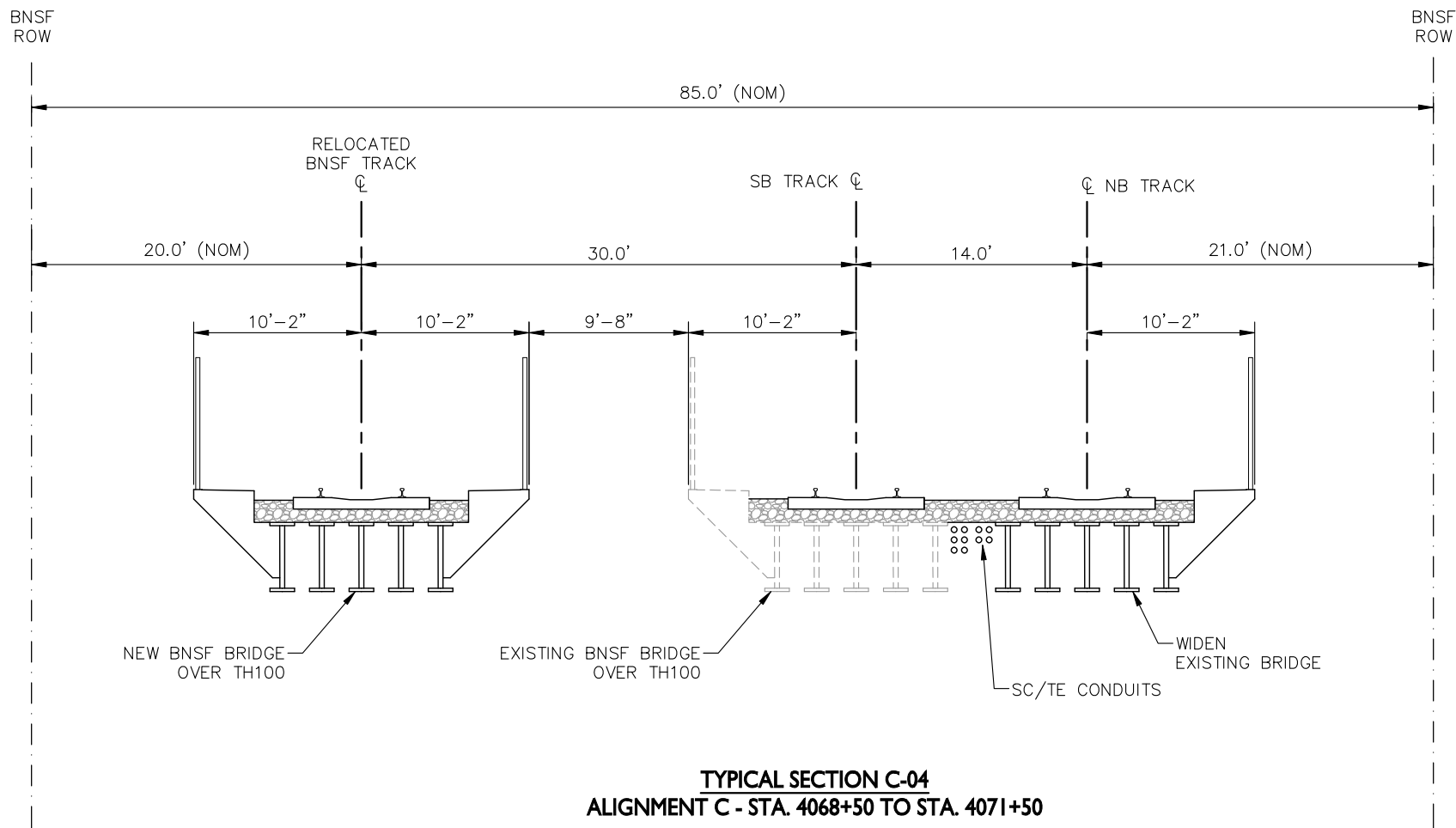
62 OF 124



NOTE: STATIONING REPRESENTS THE SB LRT TRACK



P:\Projects\C4147.02 - Bottineau DEIS\C3D\BOTT-TYP C\_04.dwg August 24, 2012 -- 9:26am



NOTE: STATIONING REPRESENTS THE  
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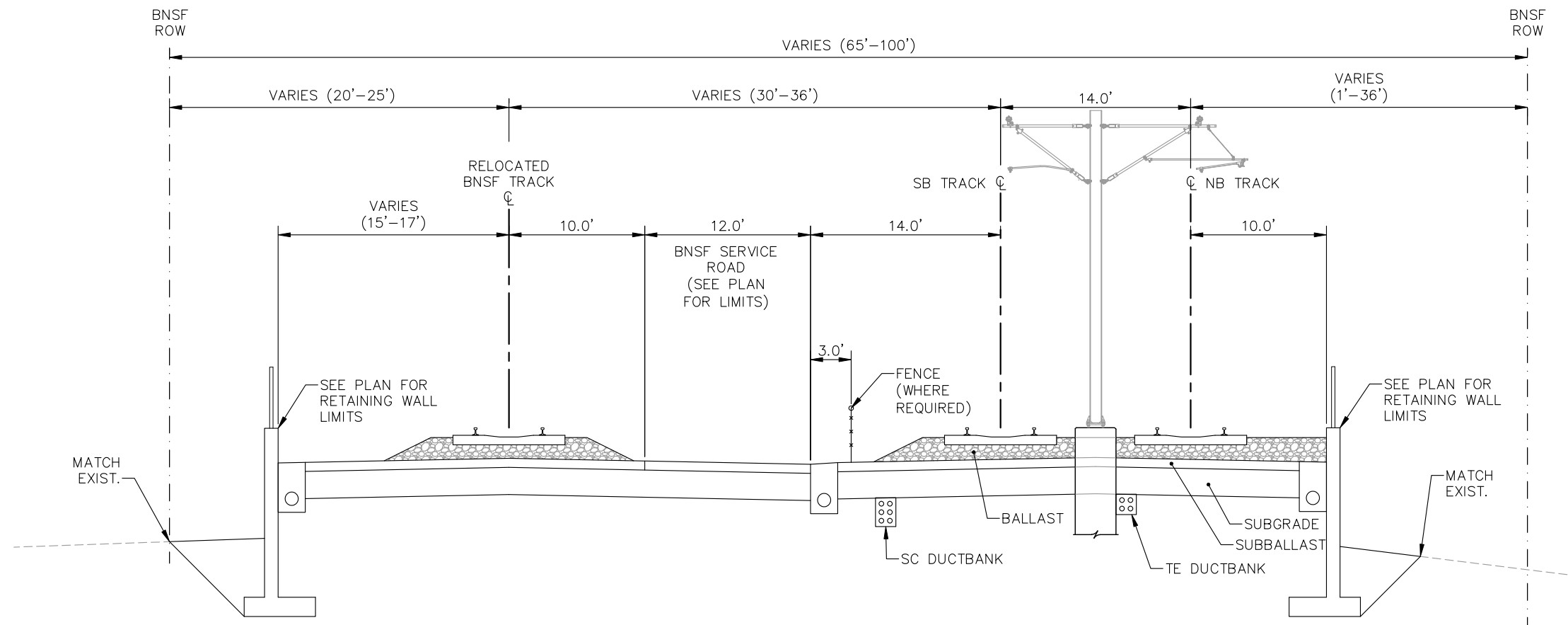
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LRT ALIGNMENT C  
SHEET 16 OF 29

TYPICAL SECTION C-04

SHEET NUMBER  
**63** OF **124**

P:\Projects\C4147.02 - Bottineau DEIS\C3D\BOTT-TYP C\_05.dwg August 24, 2012 - 9:26am



**TYPICAL SECTION C-05**  
**ALIGNMENT C - STA. 4071+50 TO STA. 4083+00**

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DATE: 6/29/12

PROJECT NO. 160528003.4.100

BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

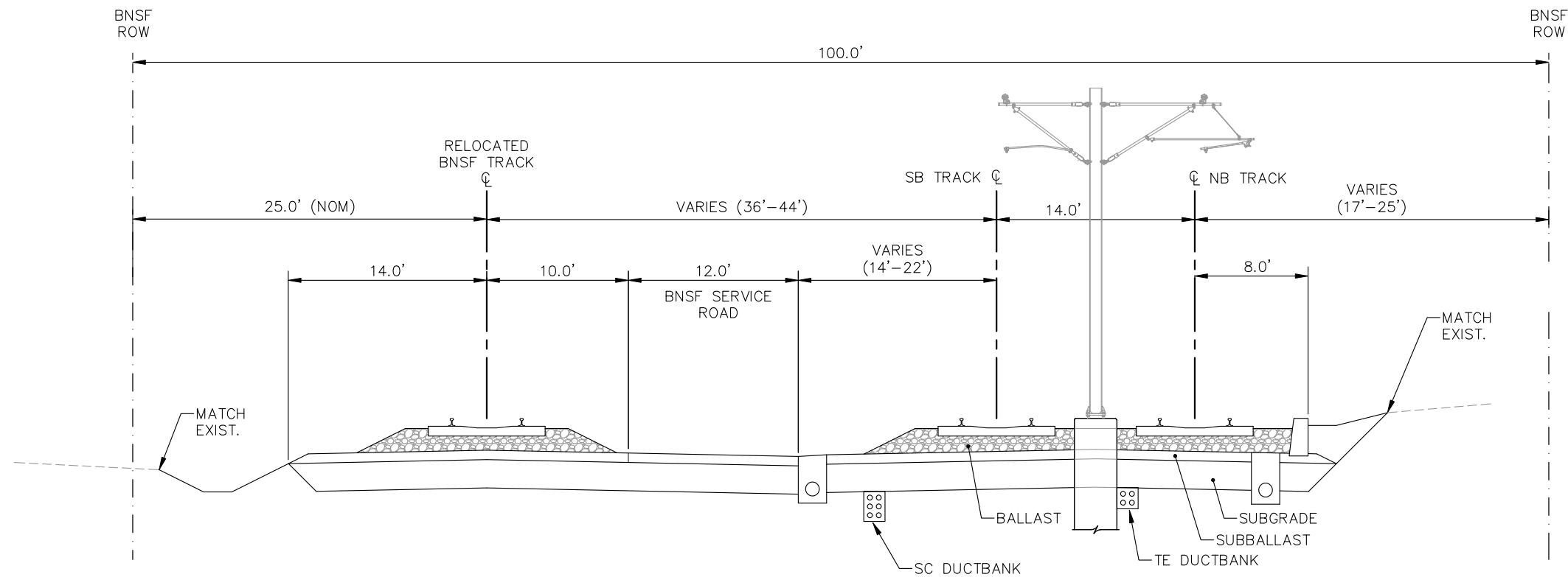
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TYPICAL SECTION C-05

SHEET NUMBER

64 OF 124

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**TYPICAL SECTION C-06**  
**ALIGNMENT C - STA. 4083+00 TO STA. 4115+50**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



CONSULTANTS:



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BOTTINEAU CORRIDOR  
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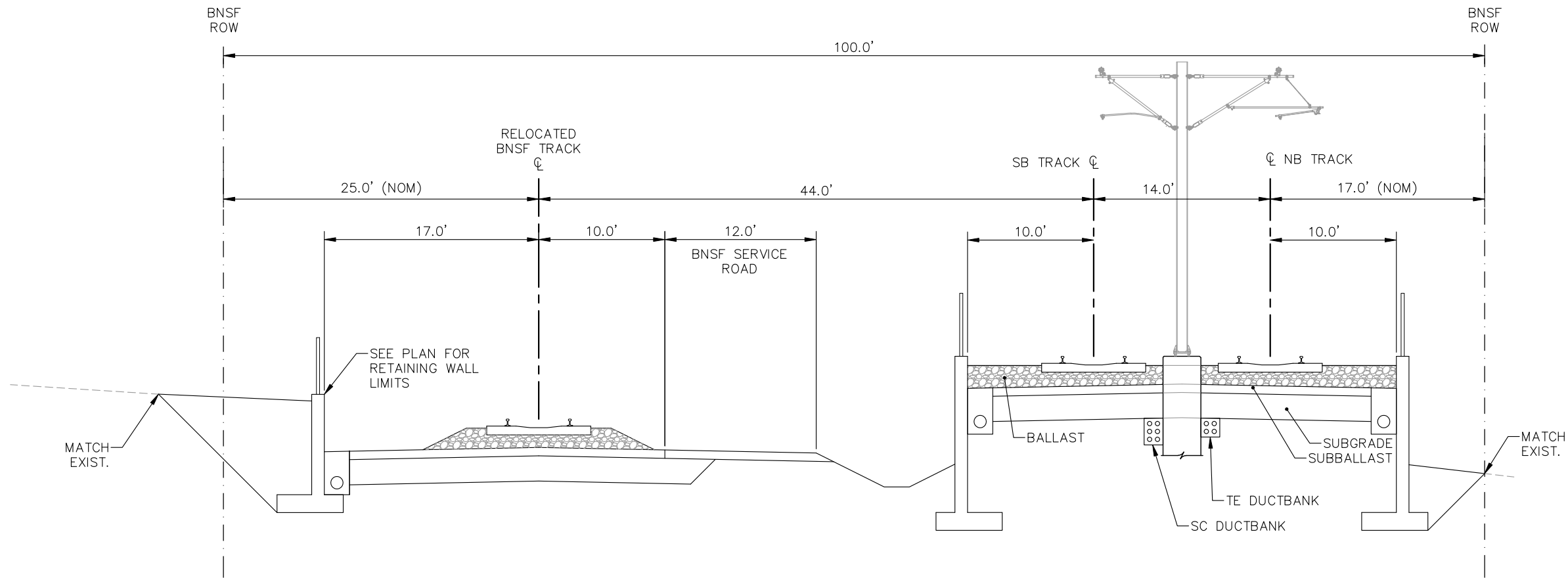
TYPICAL SECTION C-06

SHEET NUMBER

65 OF 124



P:\Projects\C4147.02 - Bottineau DEIS\C3D\BOTT-TYP C\_07.dwg August 24, 2012 - 9:27am



TYPICAL SECTION C-07  
ALIGNMENT C - STA. 4115+50 TO STA. 4121+50

NOTE: STATIONING REPRESENTS THE  
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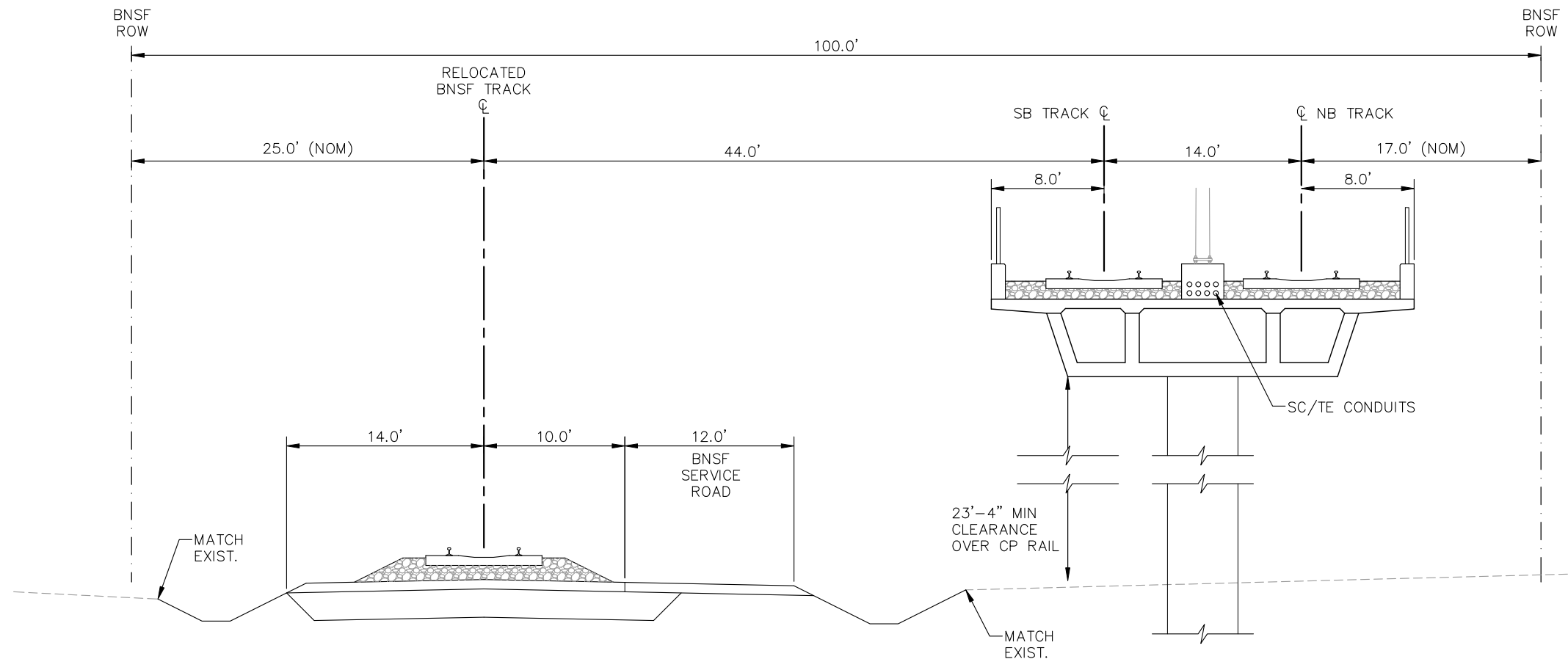
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SHEET 19 OF 29

TYPICAL SECTION C-07

SHEET NUMBER

86 OF 124

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**TYPICAL SECTION C-08**  
**ALIGNMENT C - STA. 4121+50 TO STA. 4126+50**

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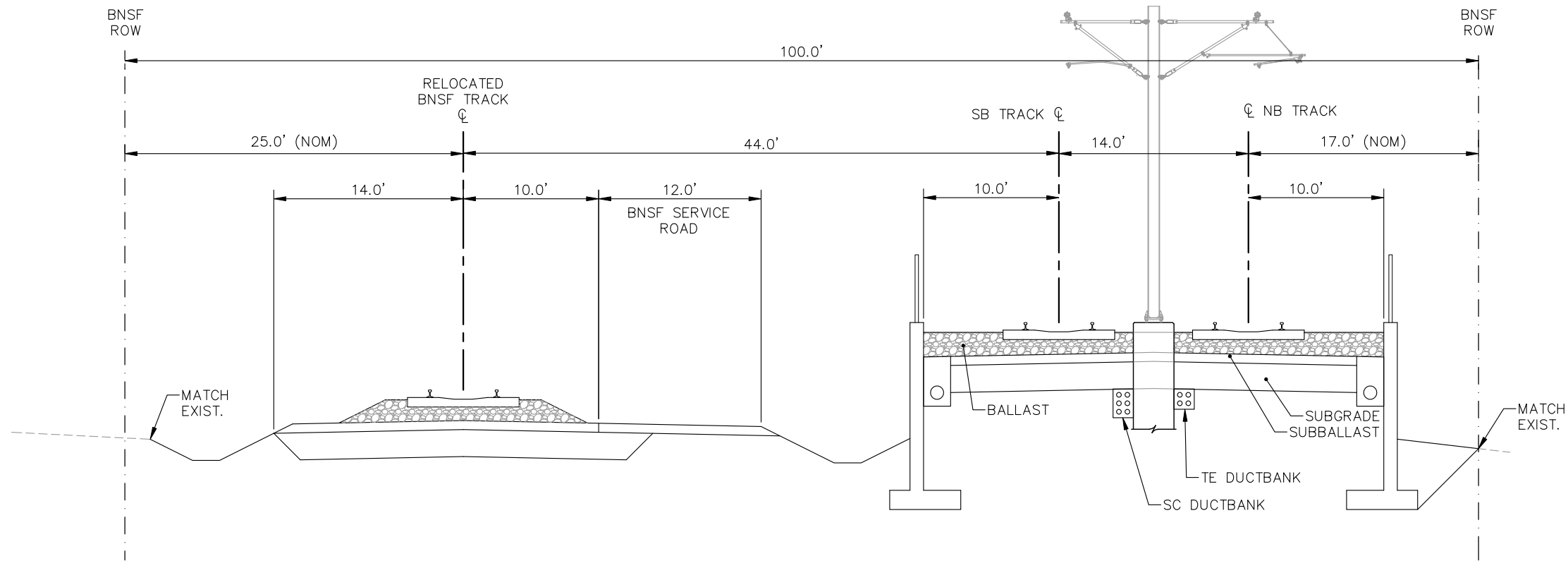
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SHEET 20 OF 29

TYPICAL SECTION C-08

SHEET NUMBER

87 OF 124

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**TYPICAL SECTION C-09**  
**ALIGNMENT C - STA. 4126+50 TO STA. 4144+50**

NOTE: STATIONING REPRESENTS THE  
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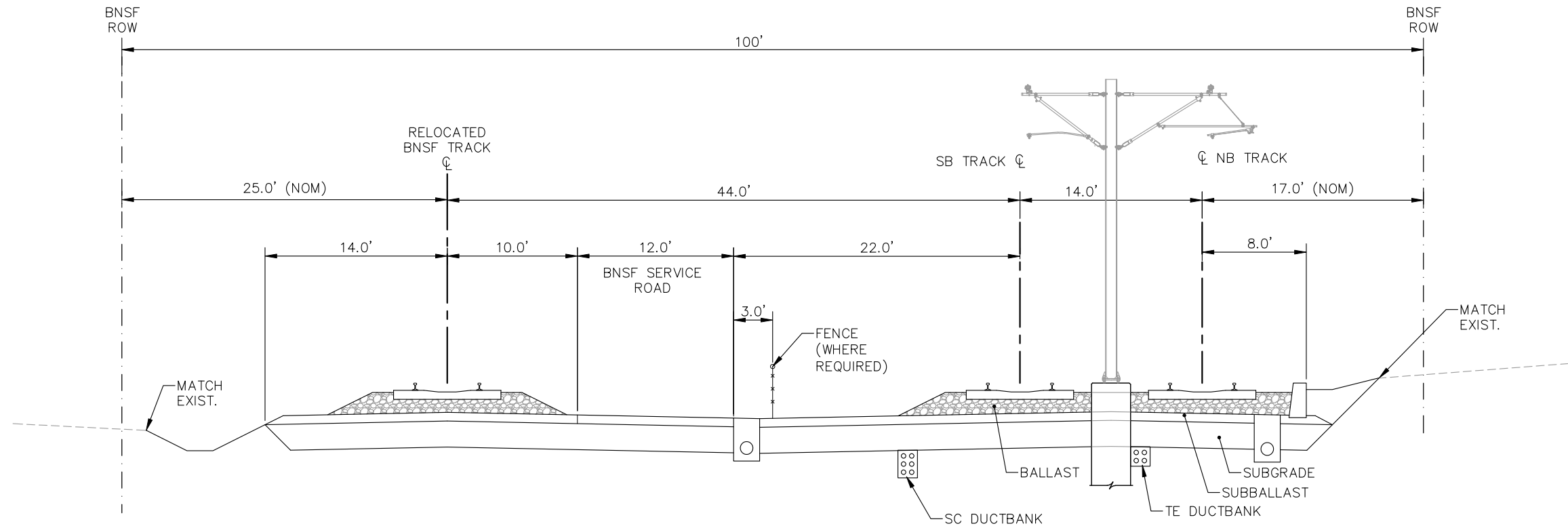
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SHEET 21 OF 29

TYPICAL SECTION C-09

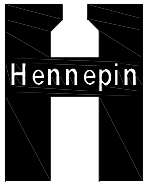


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**TYPICAL SECTION C-10**  
**ALIGNMENT C - STA. 4144+50 TO STA. 4151+00**

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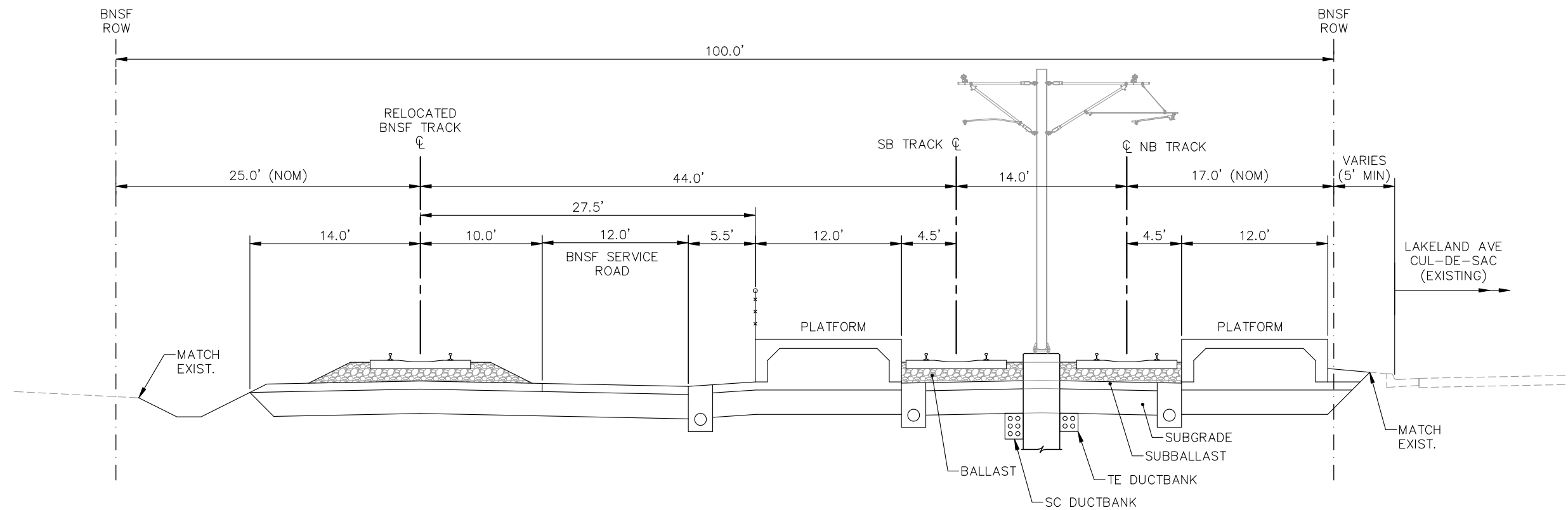
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BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT C  
SHEET 22 OF 29

TYPICAL SECTION C-10<sup>A</sup>

P:\Projects\C4147.02 - Bottineau DEIS\C3D\BOTT-TYP C\_10A.dwg August 24, 2012 - 9:27am



**TYPICAL SECTION C-10A**  
**ALIGNMENT C - BASS LAKE ROAD STATION**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



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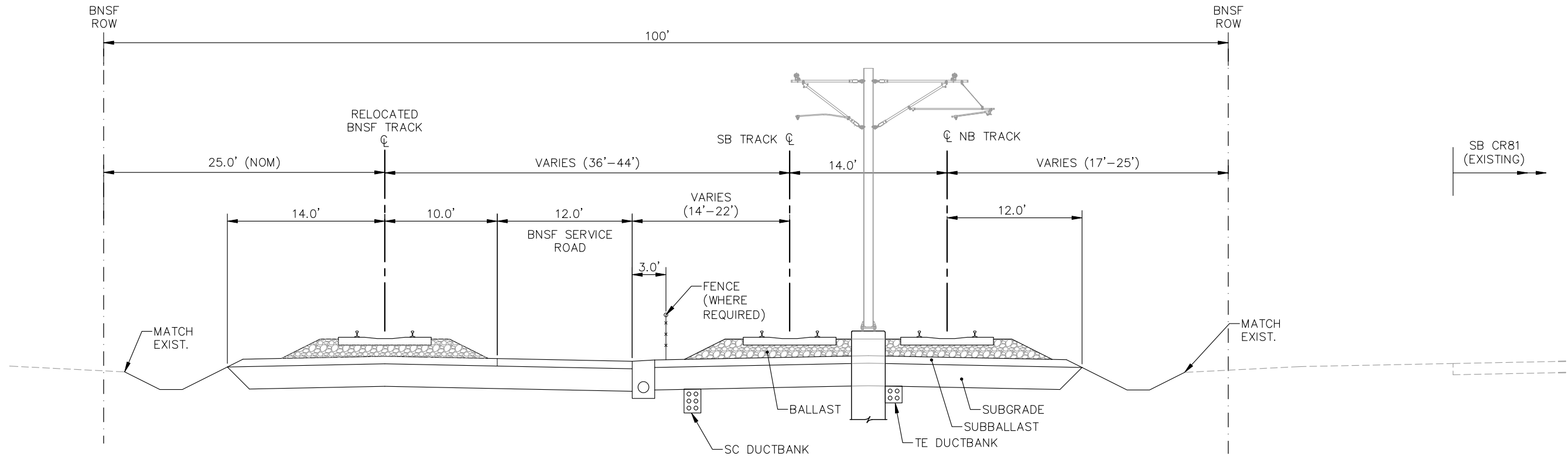
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BOTTINEAU CORRIDOR  
DRAFT EIS  
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SHEET 23 OF 29

TYPICAL SECTION C-10A

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TYPICAL SECTION C-II  
ALIGNMENT C - STA. 4151+00 TO 4256+86

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



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LRT ALIGNMENT C  
SHEET 24 OF 29

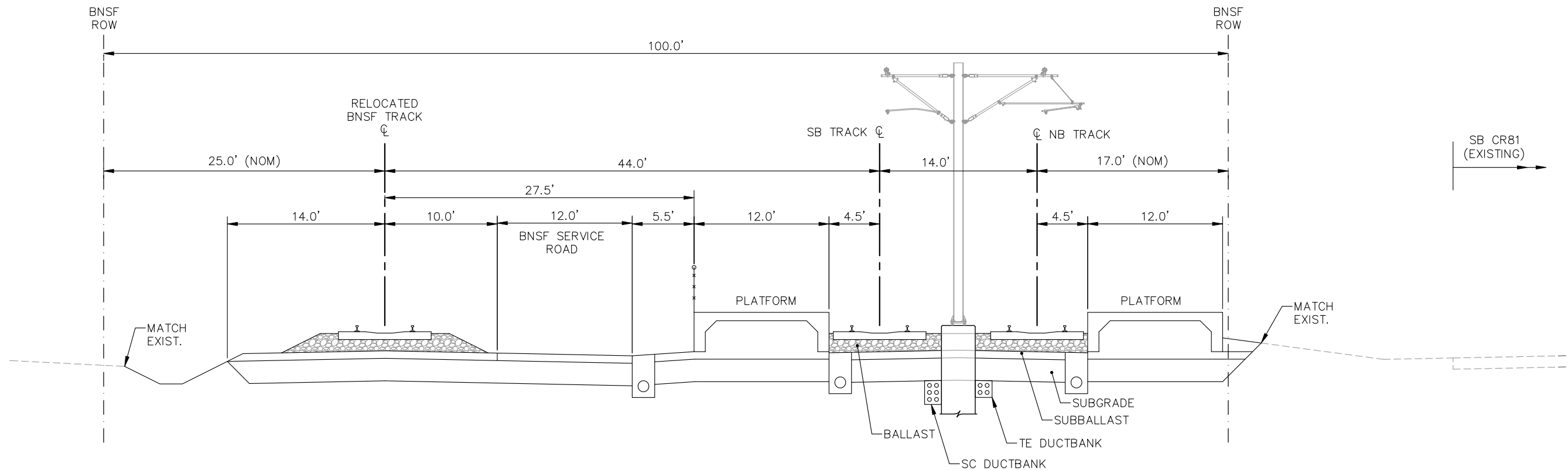
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SHEET NUMBER

69 OF 122



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TYPICAL SECTION C-11A  
ALIGNMENT C - 63RD AVENUE STATION

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BOTTINEAU CORRIDOR  
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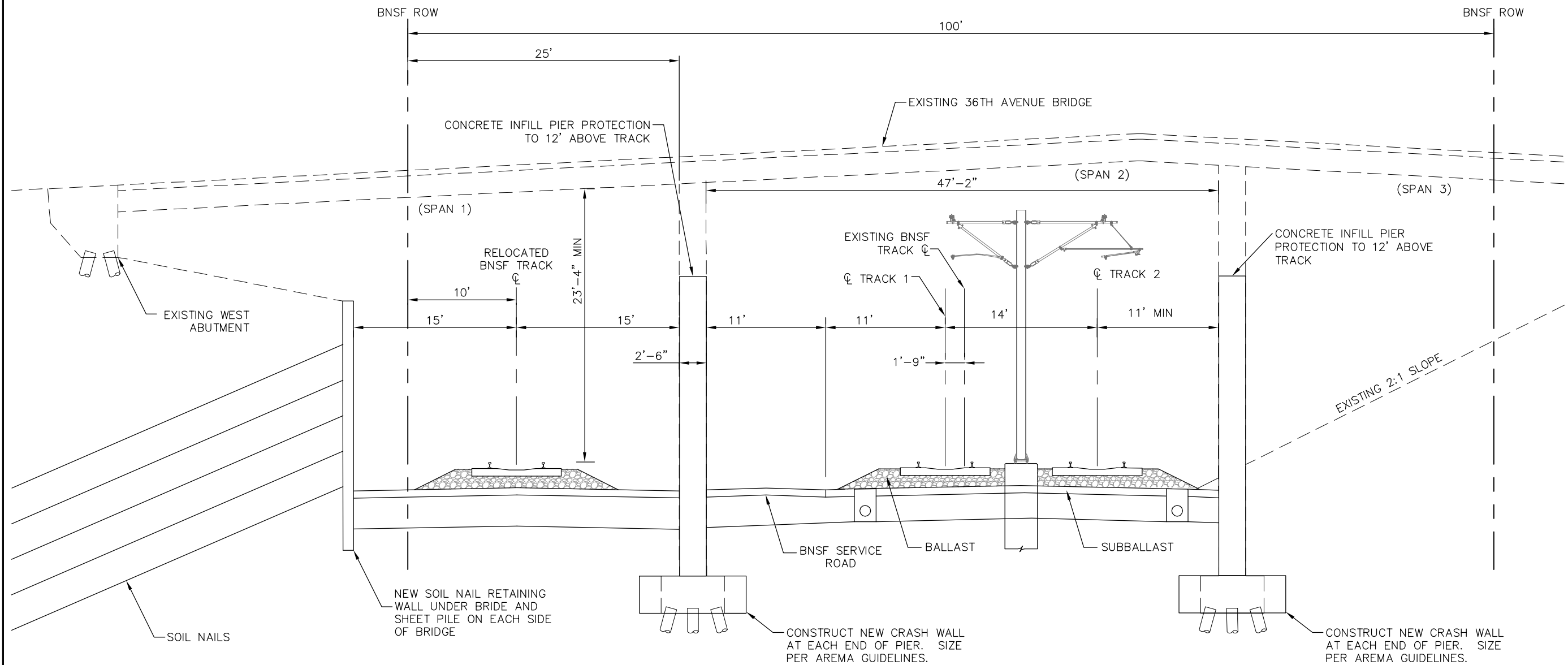
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TYPICAL SECTION C-11A

SHEET NUMBER

70 OF 122

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**TYPICAL SECTION C-12**  
**36th Avenue Bridge**  
**STA. 4009+00 TO 4009+70**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



CONSULTANTS:



DRAWING NAME  
BOTT-TYP 36th Ave.dwg  
DESIGNED BY:  
DRAWN BY:  
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PROJECT NO. 160528003.4.100

BOTTINEAU CORRIDOR  
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CONCEPTUAL DESIGN

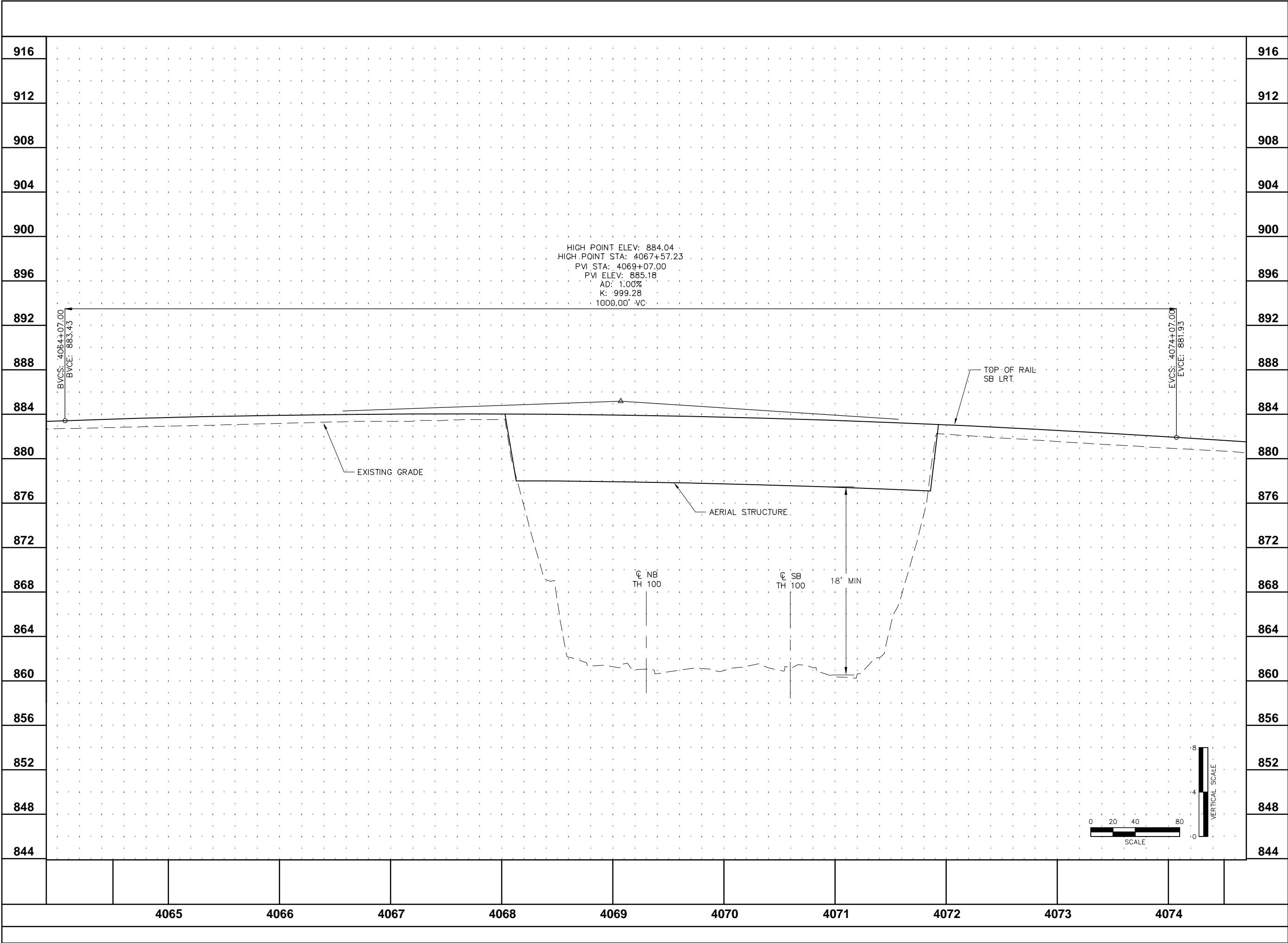
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TYPICAL SECTION C-12

SHEET NUMBER


71 OF 122

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DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

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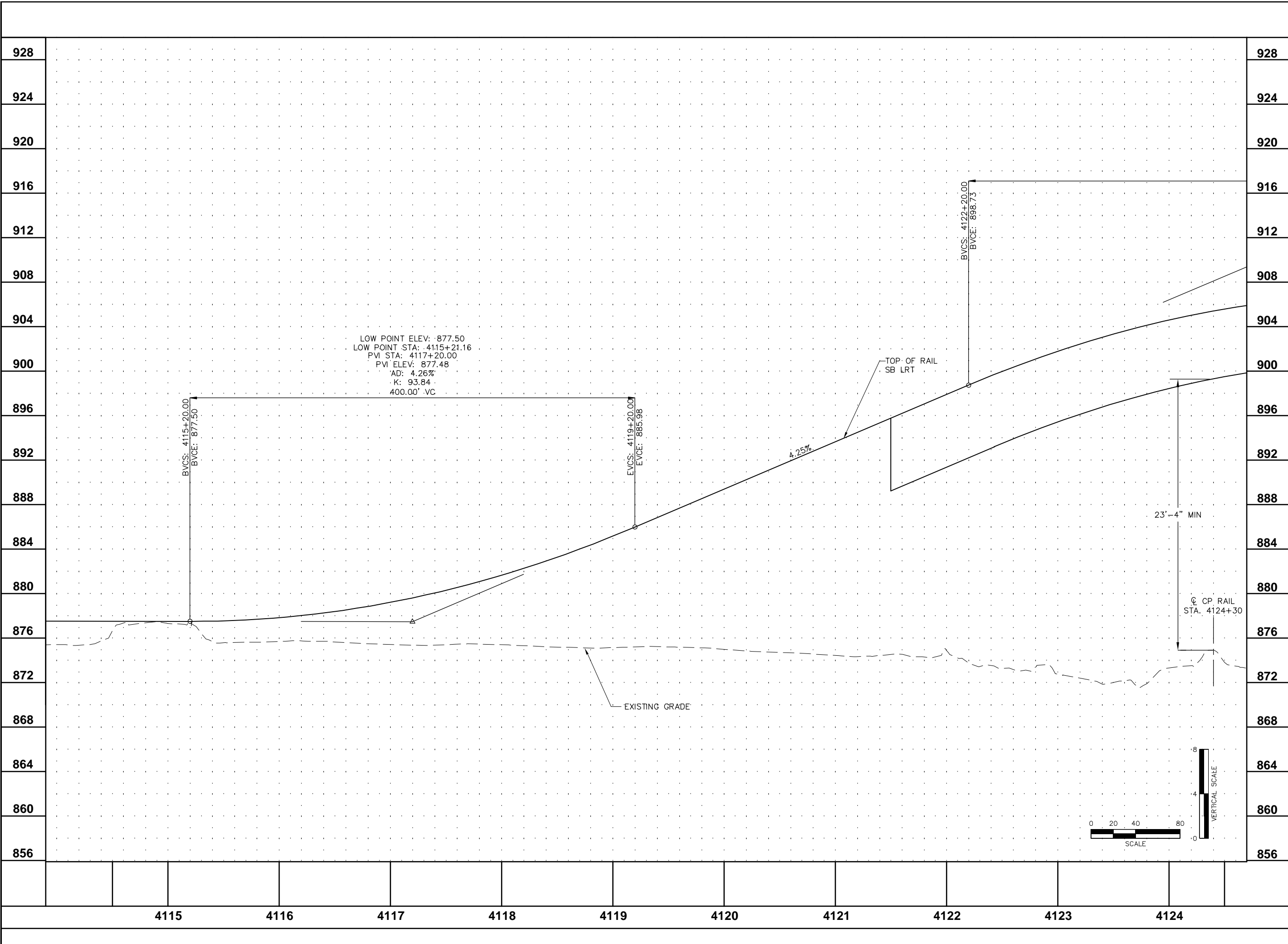
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SHEET 26 OF 30


CRITICAL PROFILE

SHEET NUMBER  
72 OF 122



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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

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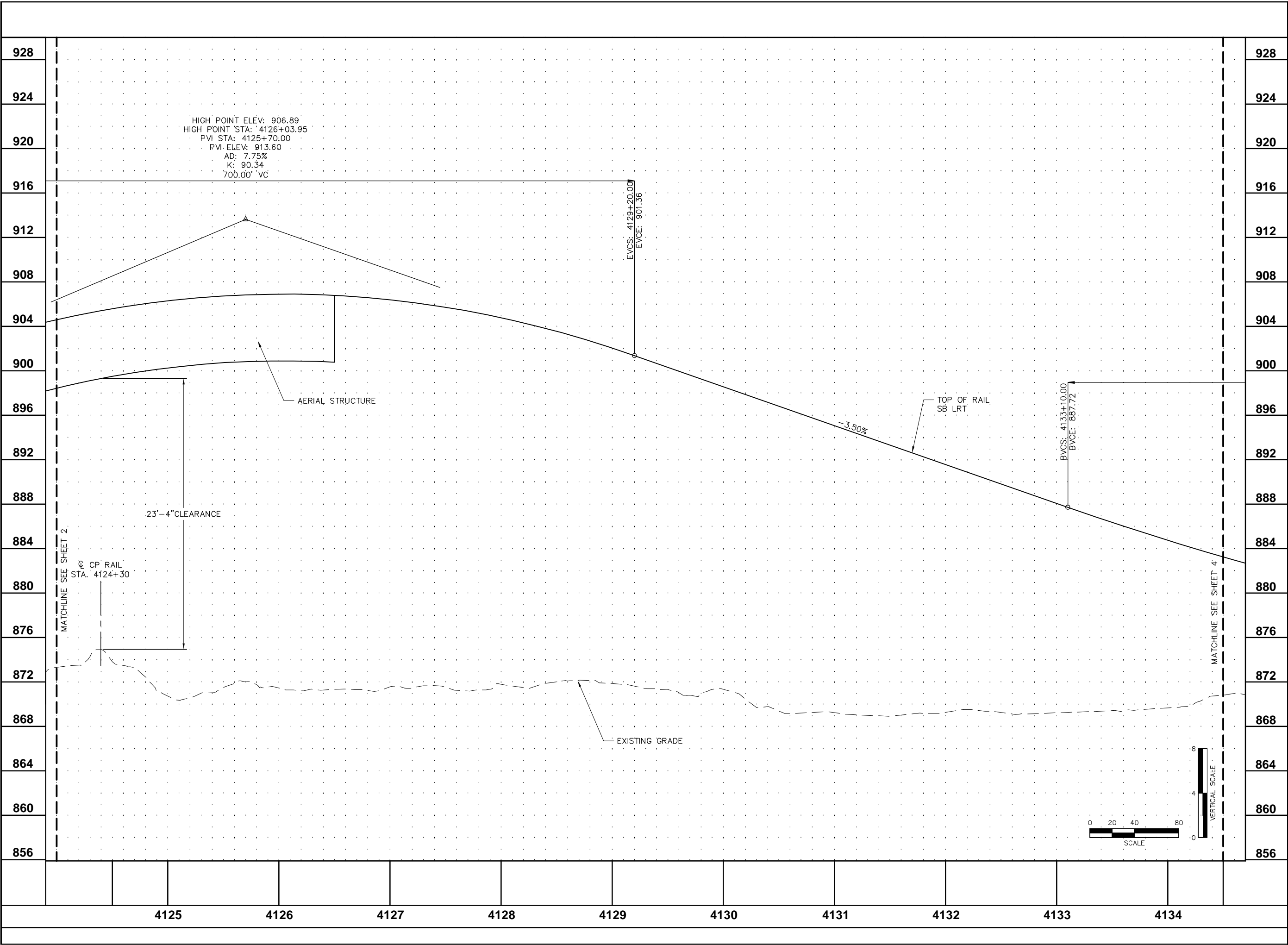
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SHEET 27 OF 30


CRITICAL PROFILE

SHEET NUMBER


73 OF 122

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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

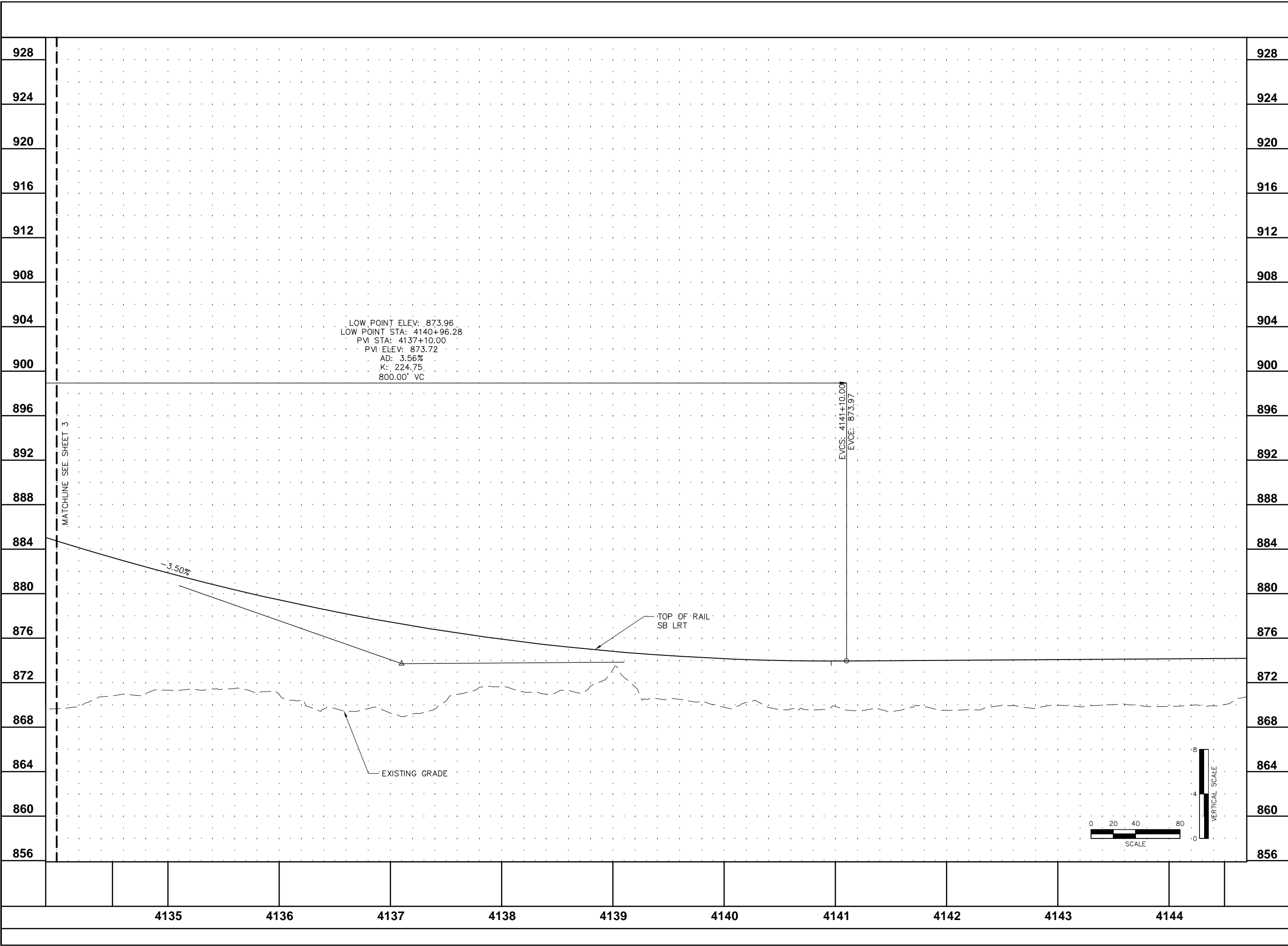
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ALIGNMENT C  
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SHEET 28 OF 30

CRITICAL PROFILE

SHEET NUMBER  
74 OF 122

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CONCEPTUAL DESIGN

ALIGNMENT C  
CRITICAL PROFILE  
CP RAIL CROSSING  
SHEET 29 OF 30

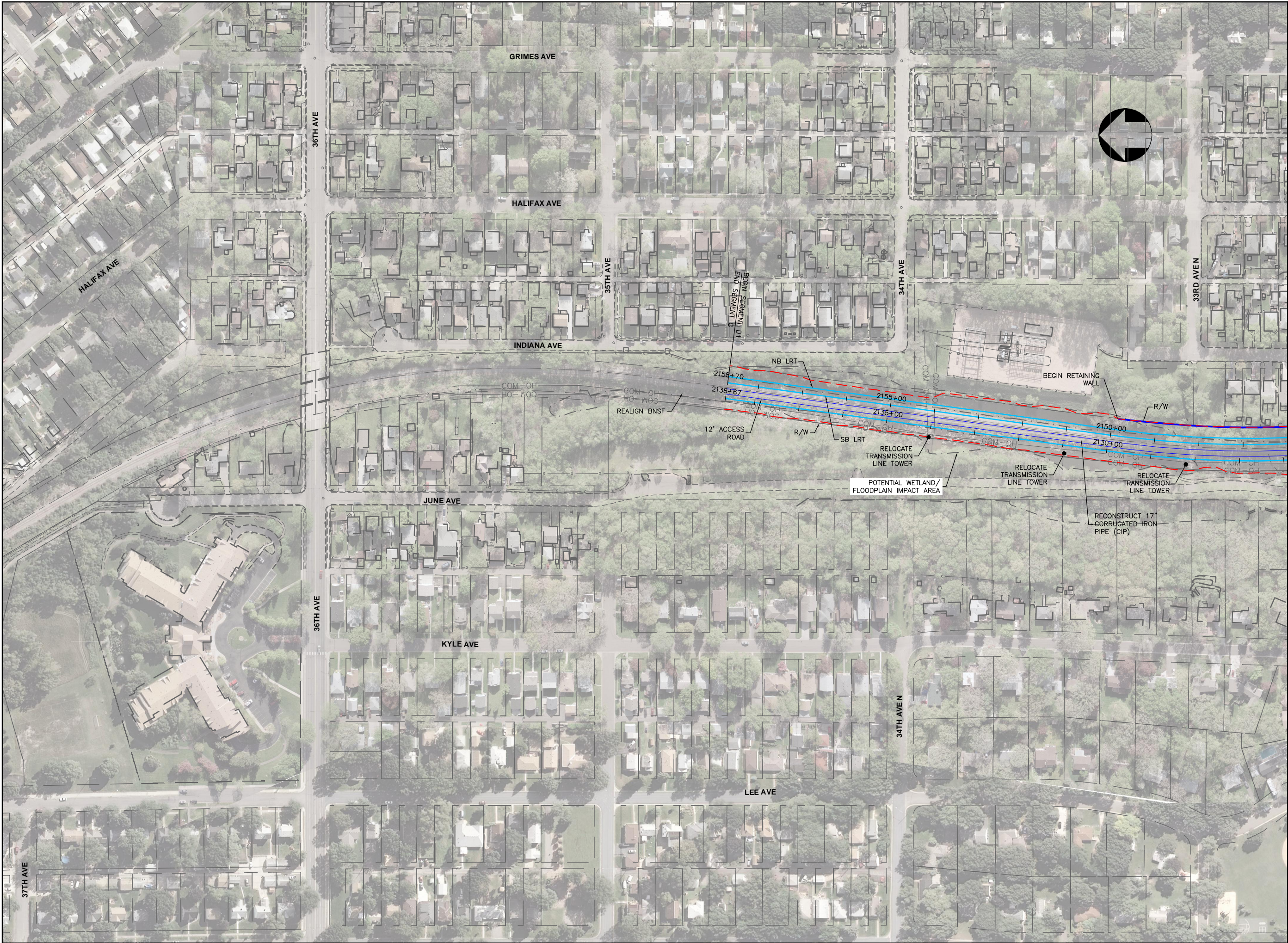
CRITICAL PROFILE


SHEET NUMBER

75 OF 122




K:\TWC\_Transit\HCRA\BOTTINEAU\_DEIS\CADD\PLAN\_SHEETS\LRTD1-P01.dwg September 05, 2012 -- 9:05pm







DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116




**SRF**  
Consulting Group, Inc.



**LTK**  
LTK Engineering Services

|               |                 |
|---------------|-----------------|
| DRAWING NAME  |                 |
| LRTD1-P01.dwg |                 |
| DESIGNED BY:  |                 |
| DRAWN BY:     |                 |
| CHECKED BY:   |                 |
| DATE:         | 9/5/2012        |
| PROJECT NO.   | 160528003.4.100 |

SCALE



0 100' 200'

BOTTINEAU TRANSITWAY  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D1  
SHEET 1 OF 18

ALIGNMENT PLAN  
STA 2147+00 - 2158+70


SHEET NUMBER

76 OF 122




K:\TWC\_Transit\HCRA\BOTTINEAU\_DEIS\CADD\PLAN\_SHEETS\LRTD1-P02.dwg September 05, 2012 - 9:08pm







DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



**SRF**  
Consulting Group, Inc.



**LTK**  
LTK Engineering Services

DRAWING NAME  
LRTD1-P02.dwg

DESIGNED BY:

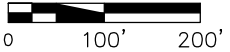
DRAWN BY:

CHECKED BY:

DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE



0 100' 200'

BOTTINEAU TRANSITWAY  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D1  
SHEET 2 OF 18

ALIGNMENT PLAN  
STA 2120+00 - 2148+00

SHEET NUMBER  
77 OF 122



K:\TWC\_Transit\HCRA\BOTTINEAU\_DEIS\CADD\PLAN\_SHEETS\LRTD1-P03.dwg September 05, 2012 - 9:11pm



CONSULTANTS:  
  
**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4157  
FAX. NO. (651) 645-5116

  
**SRF**  
Consulting Group, Inc.

  
**LTK**  
LTK Engineering Services

DRAWING NAME  
LRTD1-P03.dwg  
DESIGNED BY:  
DRAWN BY:  
CHECKED BY:  
DATE: 9/5/2012  
PROJECT NO. 160528003.4.100

SCALE  
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BOTTINEAU TRANSITWAY  
DRAFT EIS  
CONCEPTUAL DESIGN

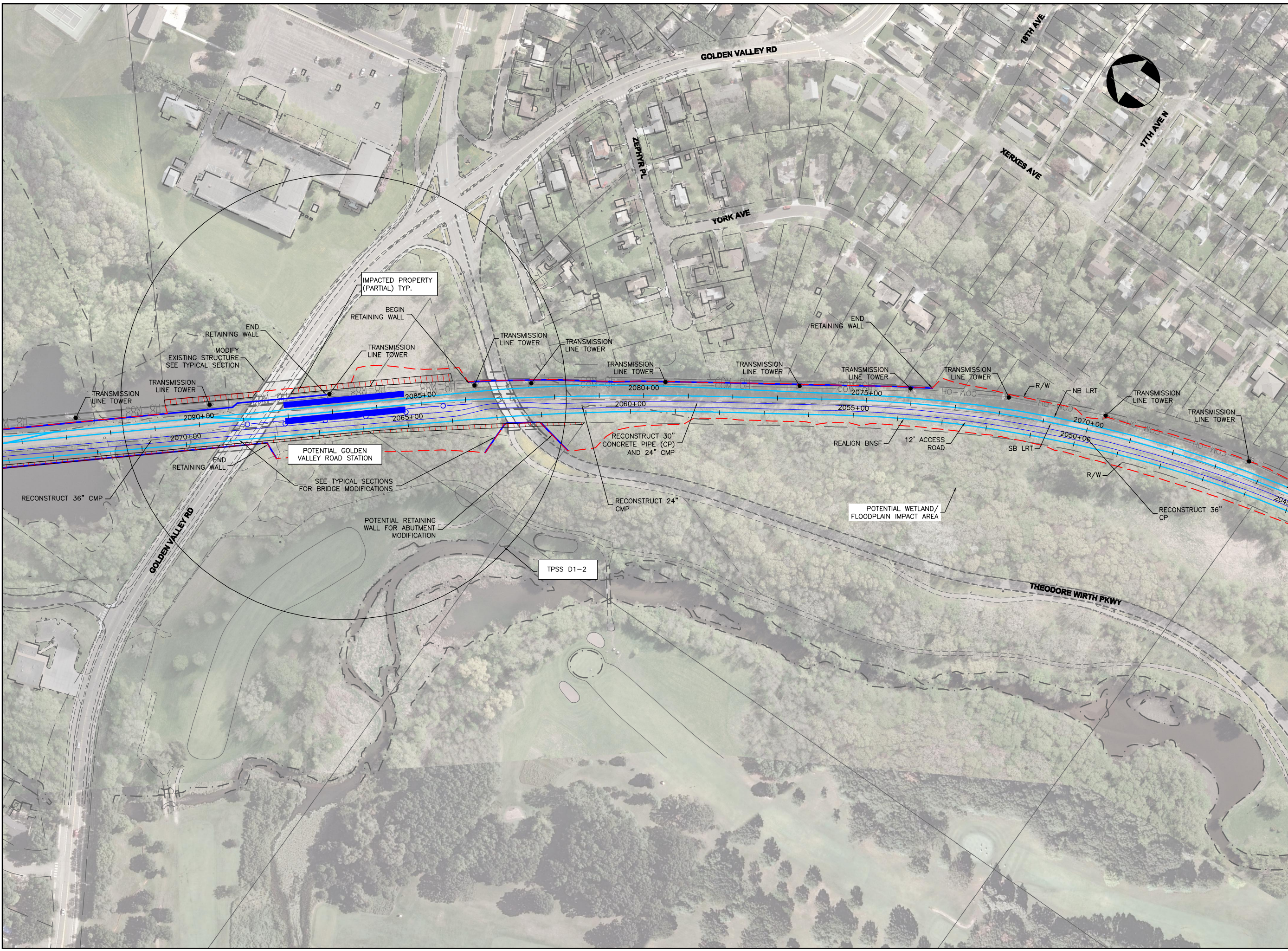
LRT ALIGNMENT D1  
SHEET 3 OF 18


ALIGNMENT PLAN  
STA 2118+00 - 2096+00

SHEET NUMBER  
78 OF 122




K:\TWC\_Transit\HCRA\BOTTINEAU\_DEIS\CADD\PLAN\_SHEETS\LRTD1-P04.dwg September 05, 2012 - 9:14pm







DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



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**LTK**  
LTK Engineering Services

DRAWING NAME  
LRTD1-P04.dwg

DESIGNED BY:

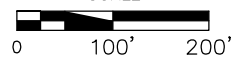
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CHECKED BY:

DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE



BOTTINEAU TRANSITWAY  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D1  
SHEET 4 OF 18


ALIGNMENT PLAN  
STA 2066+00 - 2094+00

SHEET NUMBER  
79 OF 122




K:\TWC\_Transit\HCRA\BOTTINEAU\_DEIS\CADD\PLAN\_SHEETS\LRTD1-P05.dwg September 05, 2012 - 9:16pm







DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4157  
FAX. NO. (651) 645-5116



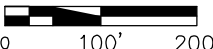
**SRF**  
Consulting Group, Inc.



**LTK**  
LTK Engineering Services

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| DESIGNED BY:  |                 |
| DRAWN BY:     |                 |
| CHECKED BY:   |                 |
| DATE:         | 9/5/2012        |
| PROJECT NO.   | 160528003.4.100 |

SCALE



0 100' 200'

BOTTINEAU TRANSITWAY  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D1  
SHEET 5 OF 18


ALIGNMENT PLAN  
STA 2042+00 - 2070+00

|              |        |
|--------------|--------|
| SHEET NUMBER |        |
| 80           | OF 122 |




K:\TWC\_Transit\HCRA\BOTTINEAU\_DEIS\CADD\PLAN\_SHEETS\LRTD1-P06.dwg September 05, 2012 - 9:19pm







DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



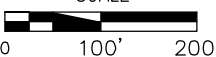
**SRF**  
Consulting Group, Inc.



**LTK**  
LTK Engineering Services

|               |                 |
|---------------|-----------------|
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| DESIGNED BY:  |                 |
| DRAWN BY:     |                 |
| CHECKED BY:   |                 |
| DATE:         | 9/5/2012        |
| PROJECT NO.   | 160528003.4.100 |

SCALE



BOTTINEAU TRANSITWAY  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D1  
SHEET 6 OF 18

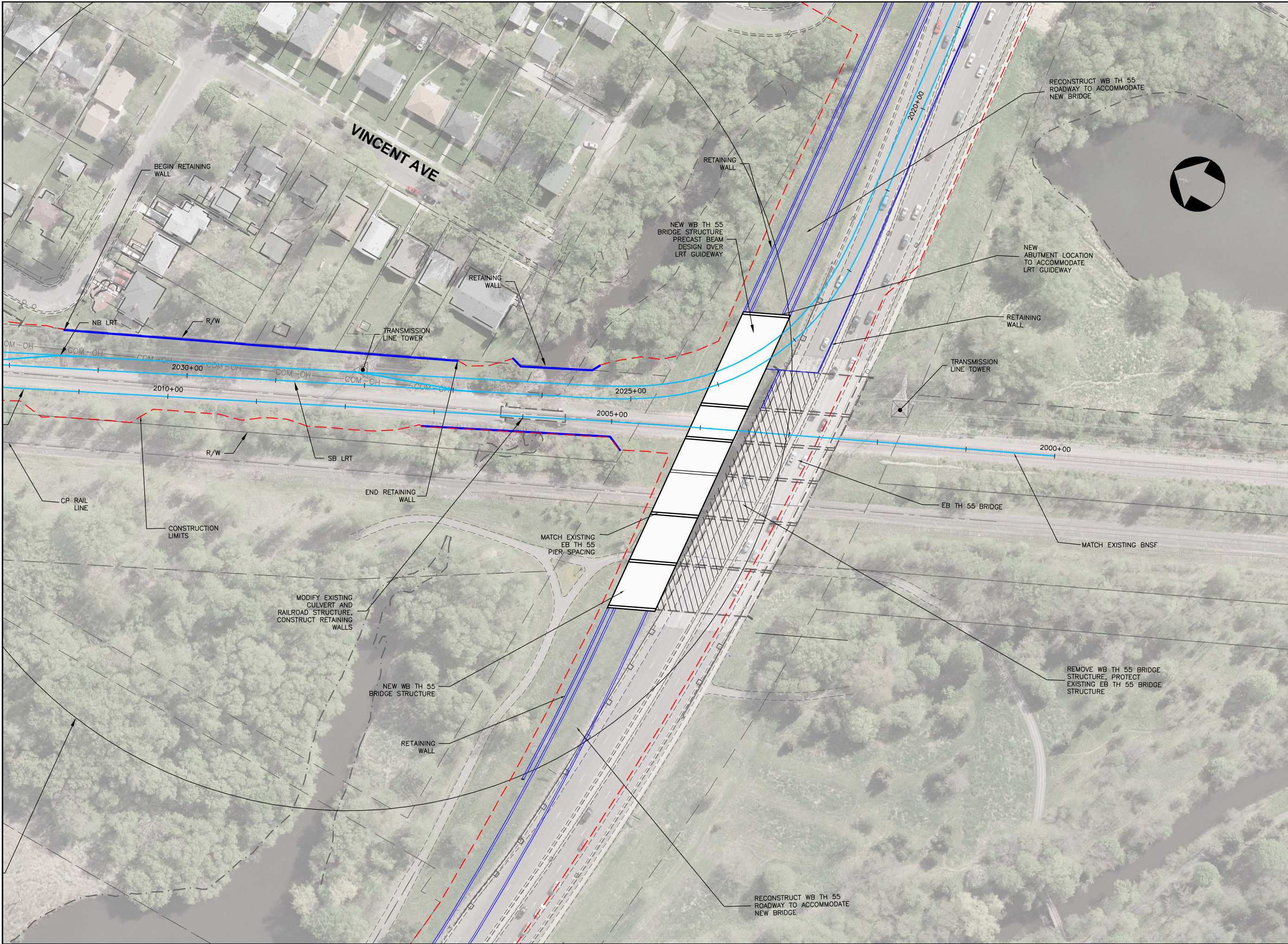
ALIGNMENT PLAN  
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SHEET NUMBER

81 OF 122




K:\TWC\_Transit\HCRR\BOTTINEAU\_DEIS\CADD\PLAN\_SHEETS\LRTD1-P06A\_No Aerial.dwg September 05, 2012 -- 9:22pm







DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



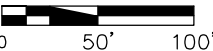
**SRF**  
Consulting Group, Inc.



**LTK**  
LTK Engineering Services

|                          |                 |
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| DESIGNED BY:             |                 |
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| CHECKED BY:              |                 |
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| PROJECT NO.              | 160528003.4.100 |

SCALE



BOTTINEAU TRANSITWAY  
DRAFT EIS  
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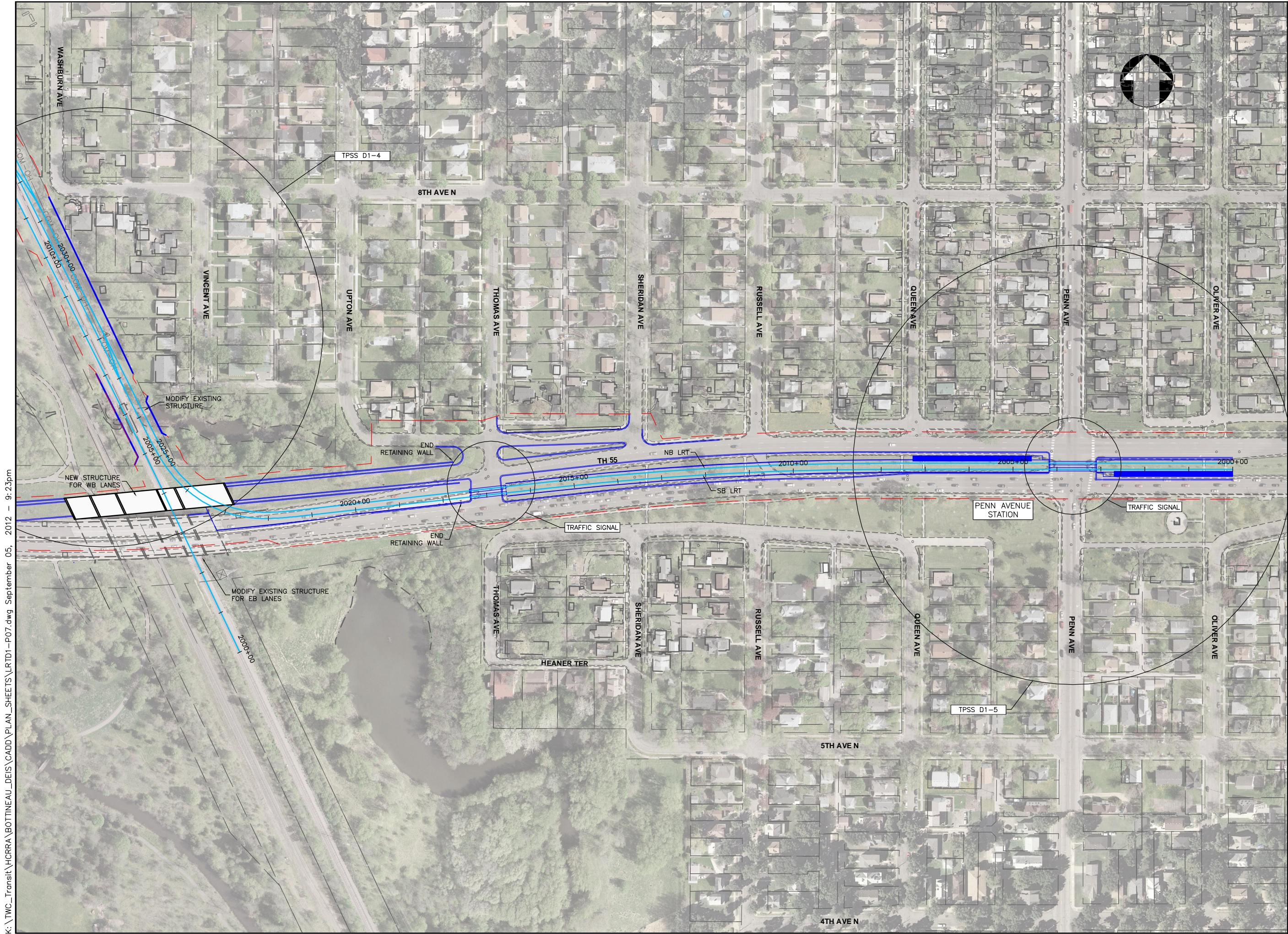
LRT ALIGNMENT D1  
SHEET 7 OF 18

ALIGNMENT PLAN  
STA 2019+00 - 2032+00


SHEET NUMBER

82 OF 122







K:\TWC\_Transit\HCRA\BOTTINEAU\_DEIS\CADD\PLAN\_SHEETS\LRTD1-P07.dwg September 05, 2012 - 9:23pm




DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



**SRF**  
Consulting Group, Inc.



**LTK**  
LTK Engineering Services

DRAWING NAME  
LRTD1-P07.dwg

DESIGNED BY:

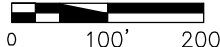
DRAWN BY:

CHECKED BY:

DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE



BOTTINEAU TRANSITWAY  
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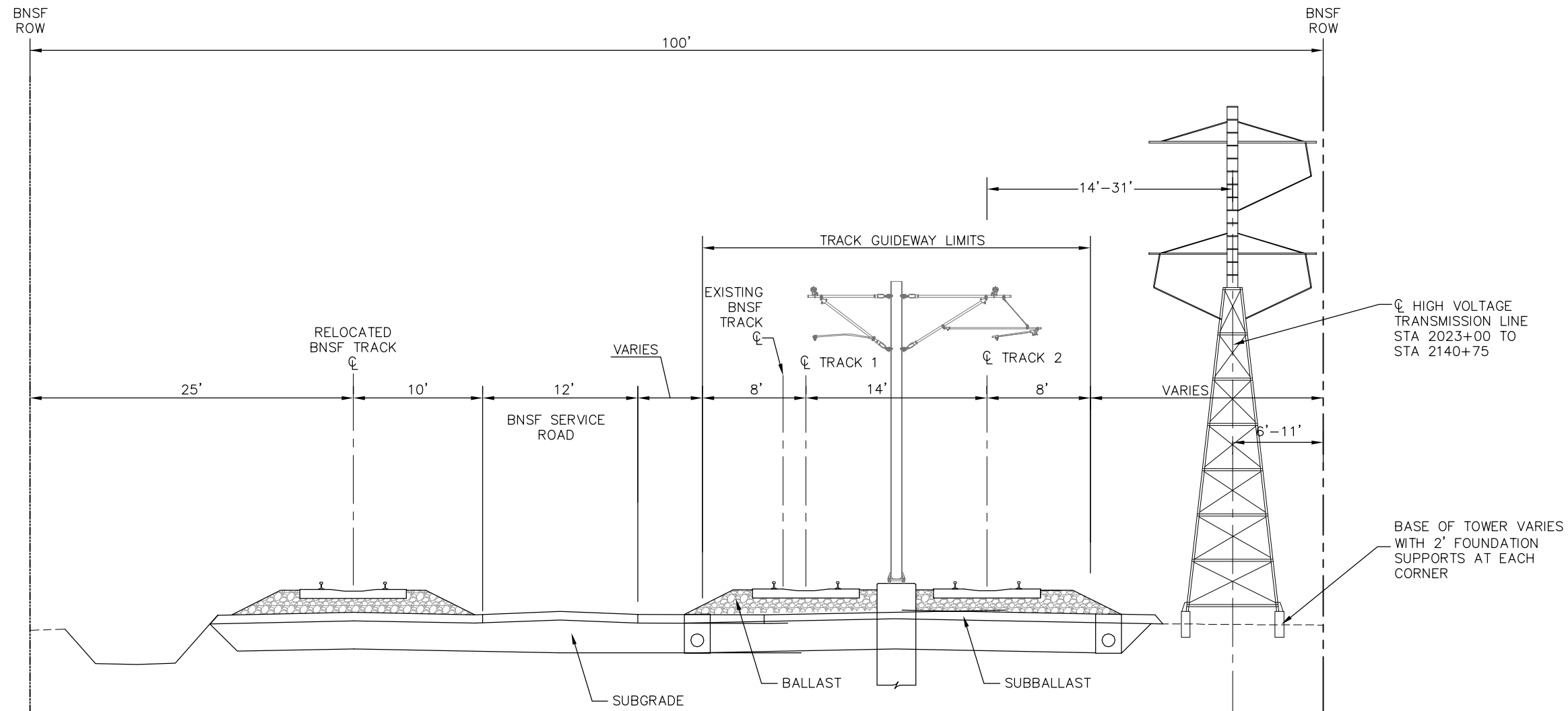
LRT ALIGNMENT D1  
SHEET 8 OF 18

ALIGNMENT PLAN  
STA 2000+00 - 2032+00

SHEET NUMBER  
**83** OF **122**



K:\TWC\_Transit\HCRRA\BOTTINEAU\_DEIS\CADD\PLAN\_SHEETS\BOTT-TYP D1-1.dwg January 08, 2013 - 3:01pm



**TYPICAL SECTION D1-1**  
**SEG. D1 - STA. 2031+00 TO STA. 2045+00**  
**STA. 2065+00 TO STA. 2170+00**  
**STA. 2095+00 TO STA. 2108+00**  
**STA. 2117+00 TO STA. 2127+00**  
**STA. 2150+00 TO STA. 2158+70**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



CONSULTANTS:  
  
**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116

**SRF**  
Consulting Group, Inc.

**LTK**  
LTK Engineering Services

|                             |
|-----------------------------|
| DRAWING NAME                |
| BOTT-TYP D1-1.dwg           |
| DESIGNED BY:                |
| DRAWN BY:                   |
| CHECKED BY:                 |
| DATE: 9/5/2012              |
| PROJECT NO. 160528003.4.100 |

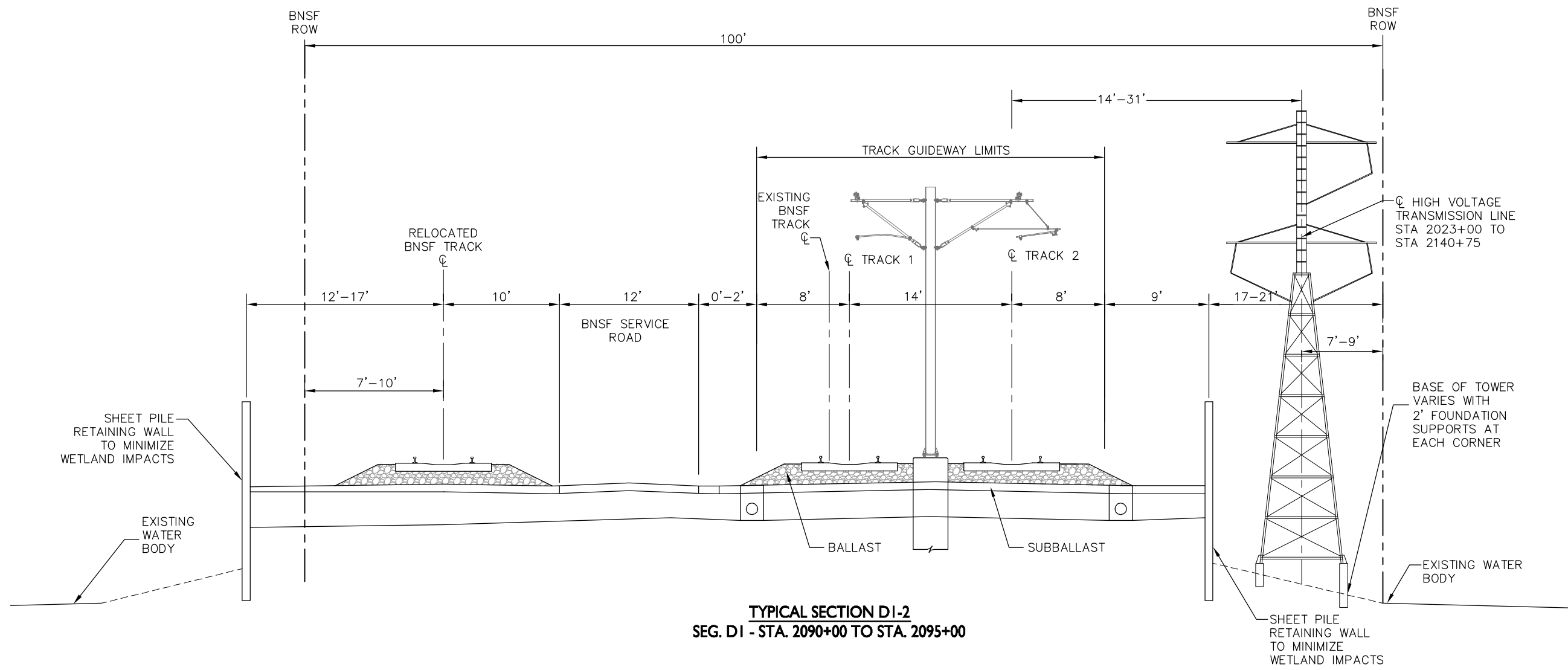
BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D1  
SHEET 9 OF 18

TYPICAL SECTION D1-1



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TYPICAL SECTION D1-2  
SEG. D1 - STA. 2090+00 TO STA. 2095+00

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



CONSULTANTS:  
  
**Kimley-Horn and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116

**SRF**  
Consulting Group, Inc.

**LTK**  
LTK Engineering Services

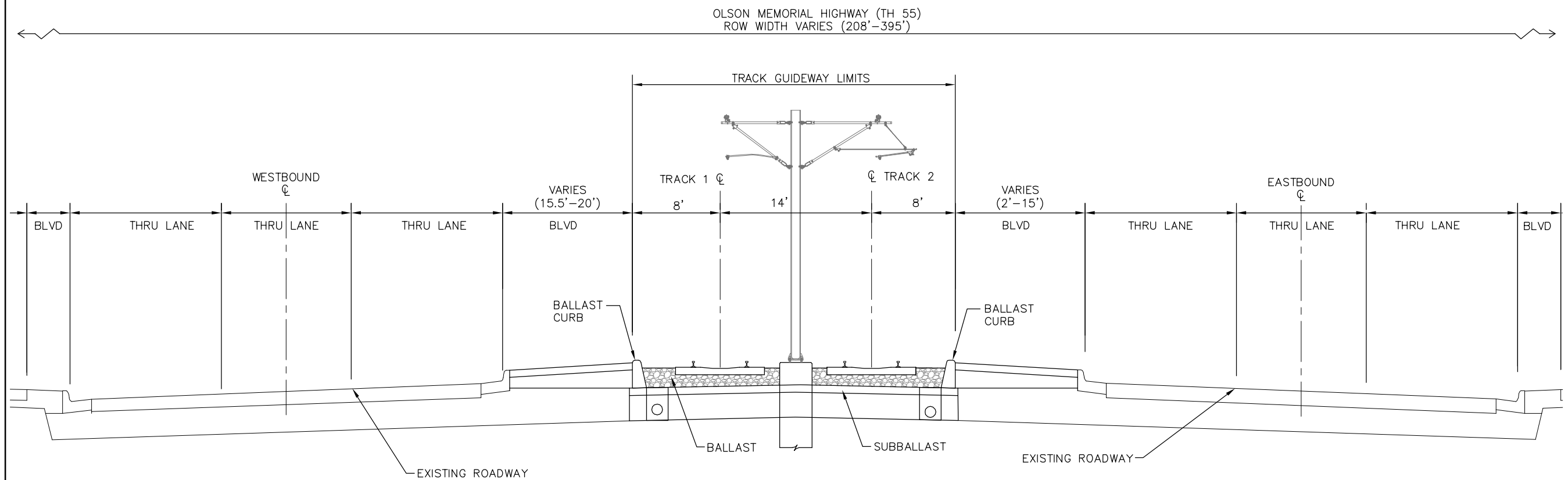
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| CHECKED BY:  |                   |
| DATE:        | 9/5/2012          |
| PROJECT NO.  | 160528003.4.100   |

BOTTINEAU CORRIDOR  
DRAFT DEIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D1  
SHEET 10 OF 18

TYPICAL SECTION D1-2

K:\TWC\_Transit\HCRRRA\BOTTINEAU\_DEIS\CADD\PLAN\_SHEETS\BOTT-TYP D1-3.dwg January 08, 2013 - 3:13pm



**TYPICAL SECTION D1-3**  
**SEG. D1 - STA. 2000+00 TO STA. 2021+00**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4187  
FAX. NO. (651) 645-5116



Consulting Group, Inc.



LTK Engineering Services

DRAWING NAME  
BOTT-TYP D1-3.dwg

DESIGNED BY:

DRAWN BY:

CHECKED BY:

DATE: 9/5/2012

PROJECT NO. 160528003.4.100

BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

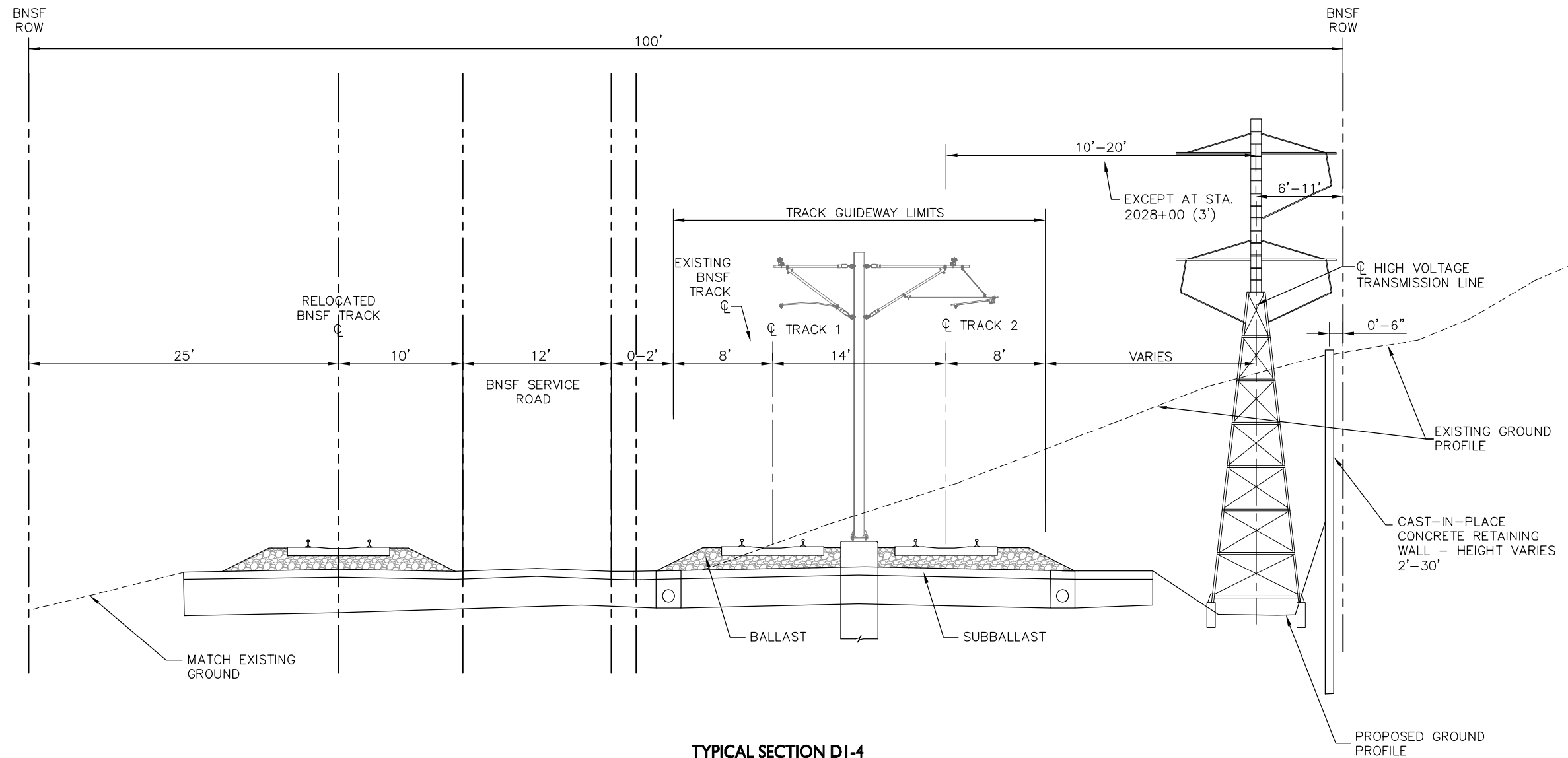
LRT ALIGNMENT D1  
SHEET 11 OF 18

TYPICAL SECTION D1-3

SHEET NUMBER

86 OF 122

K:\TWC\_Transit\HCRRA\BOTTINEAU\_DEIS\CADD\PLAN\_SHEETS\BOTT-TYP D1-4.dwg January 08, 2013 - 1:15pm



**TYPICAL SECTION D1-4**  
SEG. D1 - STA. 2025+00 TO STA. 2031+00  
STA. 2059+00 TO STA. 2065+00  
STA. 2074+00 TO STA. 2081+00  
STA. 2107+00 TO STA. 2117+00  
STA. 2139+00 TO STA. 2150+00

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 445-4197  
FAX. NO. (651) 645-0116



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LTK Engineering Services

DRAWING NAME  
BOTT-TYP D1-4.dwg

DESIGNED BY:

DRAWN BY:

CHECKED BY:

DATE: 9/5/2012

PROJECT NO. 160528003.4.100

BOTTINEAU CORRIDOR  
DRAFT DEIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D1  
SHEET 12 OF 18

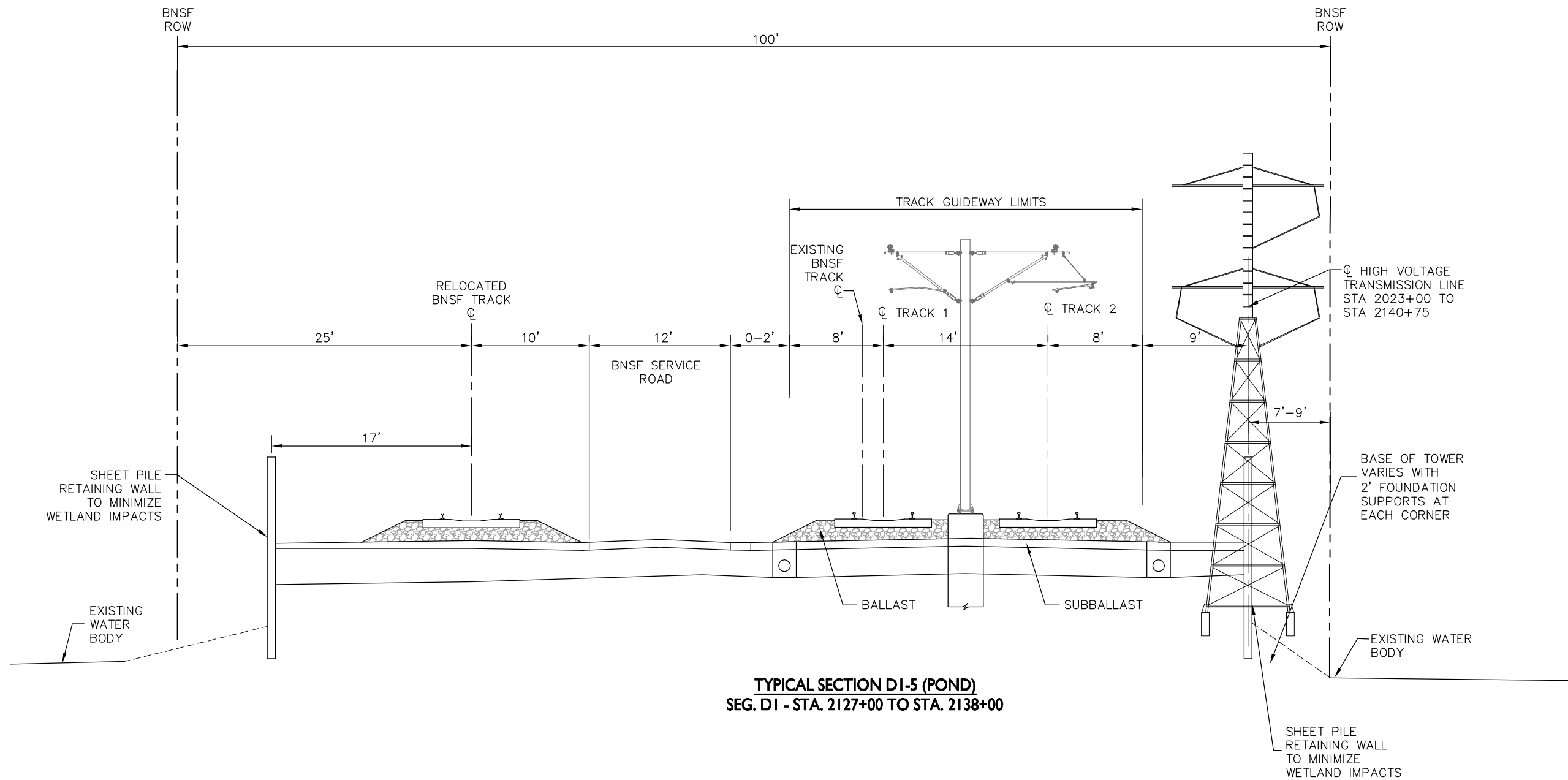
TYPICAL SECTION D1-4

SHEET NUMBER

87 OF 122



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NOTE: STATIONING REPRESENTS THE SB LRT TRACK



CONSULTANTS:



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and Associates, Inc.**

2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



Consulting Group, Inc.



LTK Engineering Services

DRAWING NAME  
BOTT-TYP D1-5.dwg

DESIGNED BY:

DRAWN BY:

CHECKED BY:

DATE: 9/5/2012

PROJECT NO. 160528003.4.100

BOTTINEAU CORRIDOR  
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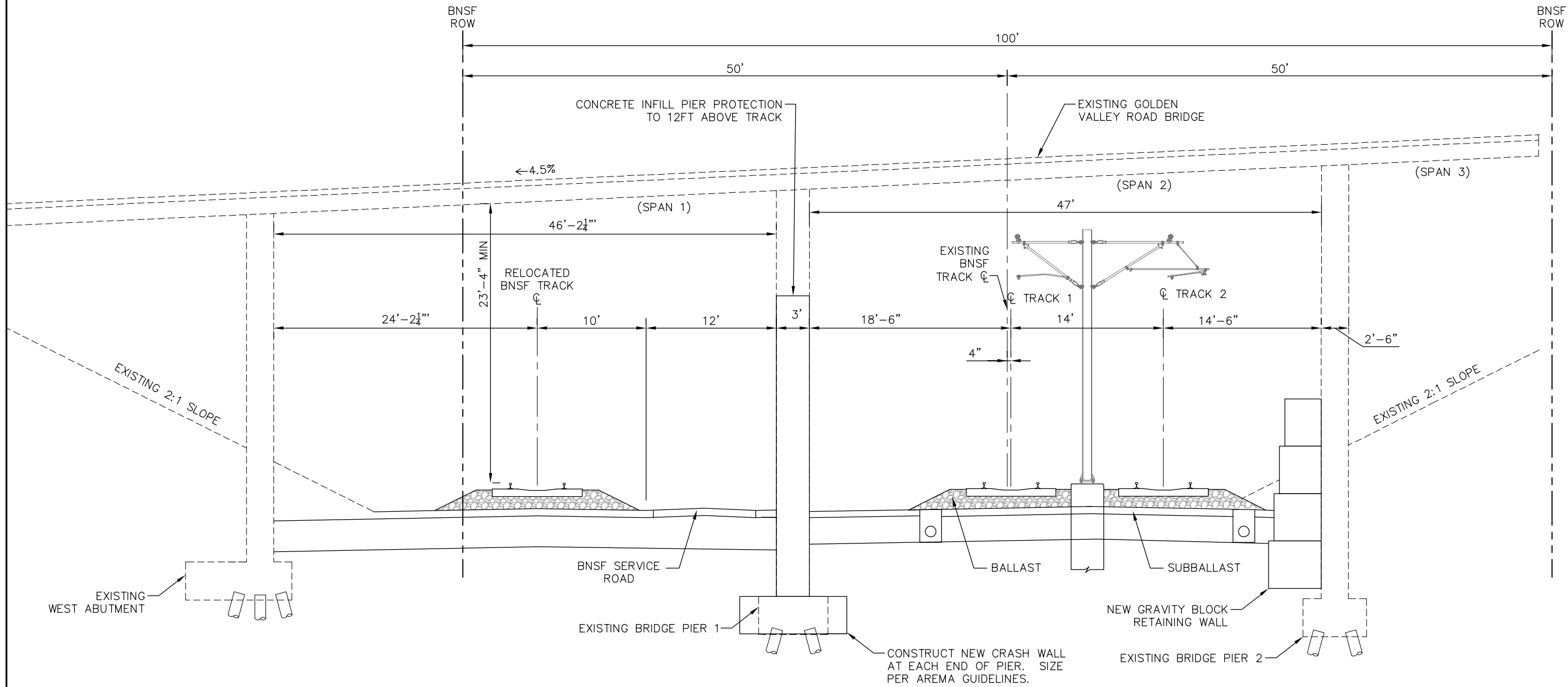
LRT ALIGNMENT D1  
SHEET 13 OF 18

TYPICAL SECTION D1-2

SHEET NUMBER

88 OF 122

K:\TWC\_Transit\HCRRA\BOTTINEAU\BOTT-TYP Golden Valley Rd.dwg January 08, 2013 - 3:25pm



**TYPICAL SECTION D1-6**  
**Golden Valley Road Bridge**  
**STA 2088+00 TO 2089+20**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



Consulting Group, Inc.



LTK Engineering Services

|                               |                 |
|-------------------------------|-----------------|
| DRAWING NAME                  |                 |
| BOTT-TYP Golden Valley Rd.dwg |                 |
| DESIGNED BY:                  |                 |
| DRAWN BY:                     |                 |
| CHECKED BY:                   |                 |
| DATE:                         | 9/5/2012        |
| PROJECT NO.                   | 160528003.4.100 |

BOTTINEAU CORRIDOR  
ALTERNATIVES ANALYSIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D1  
SHEET 14 OF 18

TYPICAL SECTION D1-6

SHEET NUMBER

89 OF 122

K:\TWC\_Transit\HCRRA\BOTTINEAU\_DEIS\CADD\PLAN\_SHEETS\BOTT-TYP Theodore Wirth Pkwy.dwg January 08, 2013 - 3:55pm



CONSULTANTS:  
  
**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116

**SRF**  
Consulting Group, Inc.

**LTK**  
LTK Engineering Services

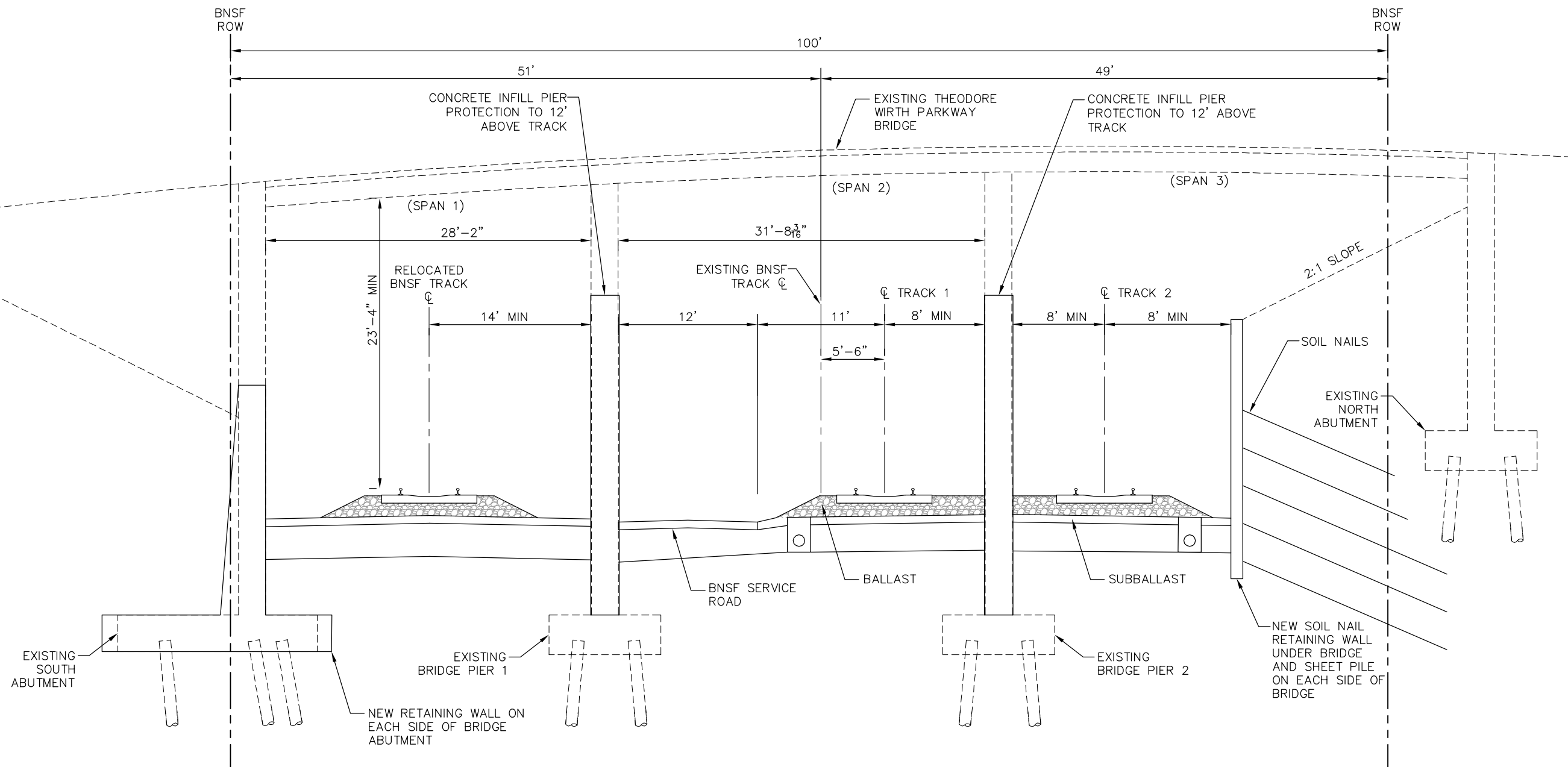
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| DATE:                            | 9/5/2012        |
| PROJECT NO.                      | 160528003.4.100 |

BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D1  
SHEET 15 OF 18

TYPICAL SECTION D1-7

|              |        |
|--------------|--------|
| SHEET NUMBER |        |
| 90           | OF 122 |

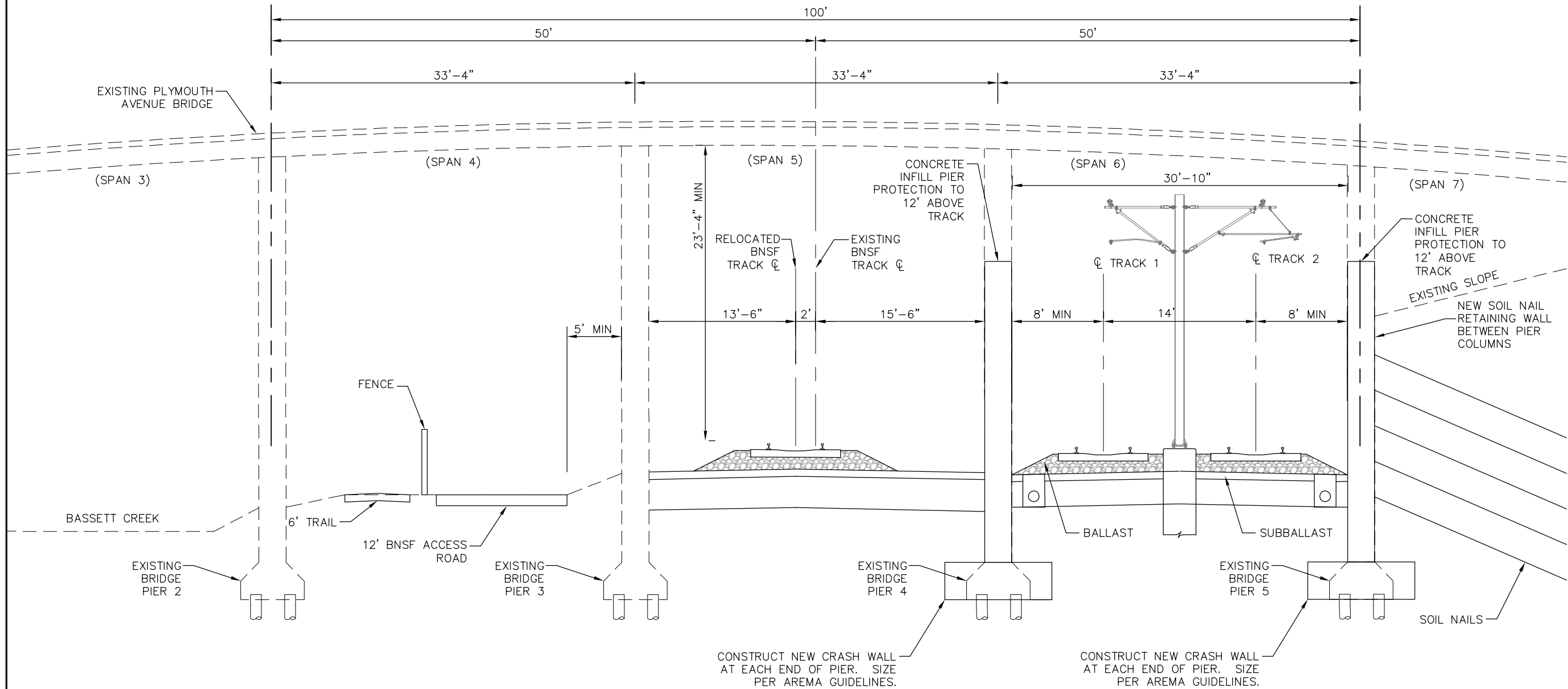


**TYPICAL SECTION D-7**  
**Theodore Wirth Parkway**  
**STA. 2082+50 TO STA. 2083+50**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK



K:\TWC\_Transit\HCRRA\BOTTINEAU\_DEIS\CADD\PLAN\_SHEETS\BOTT-TYP Plymouth Ave.dwg January 08, 2013 - 3:30pm



**TYPICAL SECTION D1-8**  
**Plymouth Ave Bridge**  
**STA. 2052+00 TO STA. 2052+70**

NOTE: STATIONING REPRESENTS THE SB LRT TRACK



CONSULTANTS:

**Kimley-Horn and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116

**SRF**  
Consulting Group, Inc.

**LTK**  
LTK Engineering Services

DRAWING NAME  
BOTT-TYP Plymouth Ave.dwg

DESIGNED BY:

DRAWN BY:

CHECKED BY:

DATE: 9/5/2012

PROJECT NO. 160528003.4.100

BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D1  
SHEET 16 OF 18

TYPICAL SECTION D1-8



CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**

2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



Consulting Group, Inc.



LTK Engineering Services

DRAWING NAME

BOTT-TYP T.H. 55 Bridge.dwg

DESIGNED BY:

DRAWN BY:

CHECKED BY:

9/5/2012

|             |                 |
|-------------|-----------------|
| PROJECT NO. | 160528003.4.100 |
|-------------|-----------------|

BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D1  
SHEET 17 OF 18

TYPICAL SECTION D1-9

SHEET NUMBER

92 OF 122

ELEMENTS OF NEW T.H. 55 WESTBOUND BRIDGE

## ELEMENTS OF NEW T. -BRIDGE STRUCTURE

-RETAINING WALLS (MSE)

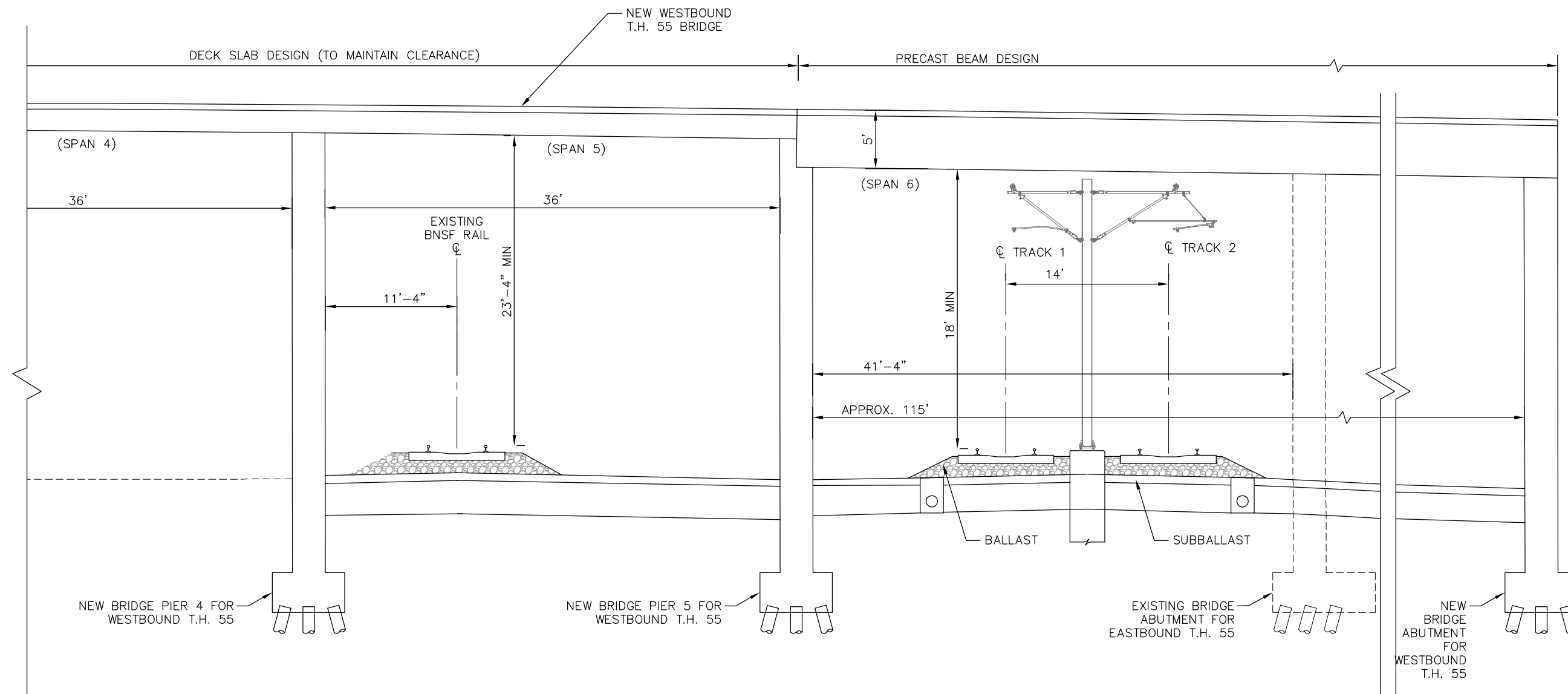
-ONE WALL ON WEST ABUTMENT

-ONE WALL ON EAST ABUTMENT

-RETAINING WALLS (SHEET PILE)

—ONE WALL ON EAST ABUTMENT OF EXISTING

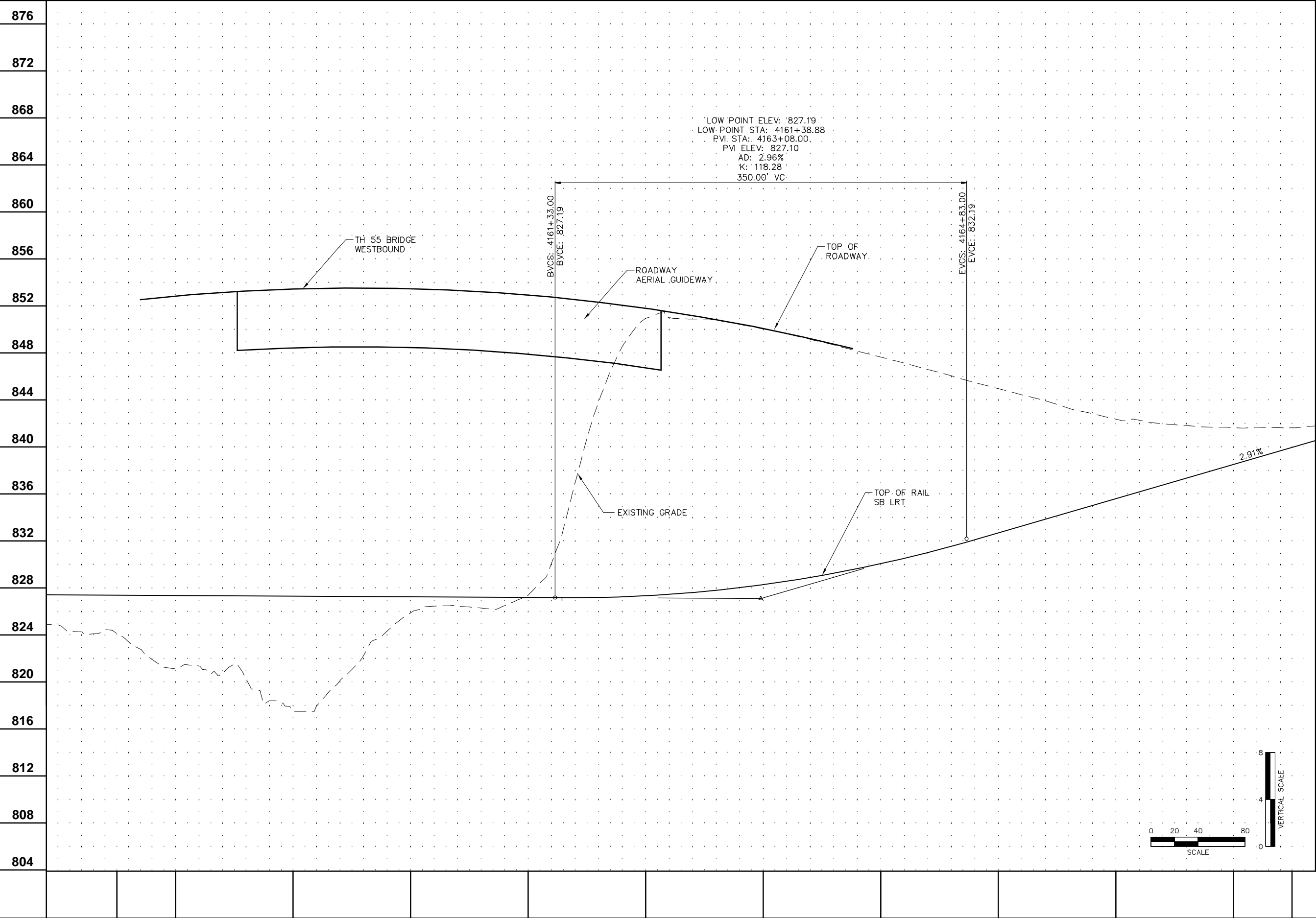
T.H. 55 EASTBOUND BRIDGE



**TYPICAL SECTION DI-9**  
**T.H. 55 Bridge**  
**STA. 2020+00 TO STA. 2025+00**

NOTE: STATIONING REPRESENTS THE  
SB LRT TRACK

K:\TWC\_Transit\HCRRA\BOTTINEAU\_DEIS\CADD\PLAN\_SHEETS\Profile\BOTT-PRF-D1-01.dwg September 05, 2012 - 9:25pm



CONSULTANTS:

**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116

**SRF**  
Consulting Group, Inc.

**LTK**  
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BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

ALIGNMENT D1  
CRITICAL PROFILE  
LRT CROSSING WB TH 55  
SHEET 14 OF 18


CRITICAL PROFILE

SHEET NUMBER  
93 OF 122




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DRAFT ENVIRONMENTAL IMPACT STATEMENT




Hennepin


CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



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LTK Engineering Services

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LRTD2P01.dwg

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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE

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DRAFT EIS  
CONCEPTUAL DESIGN

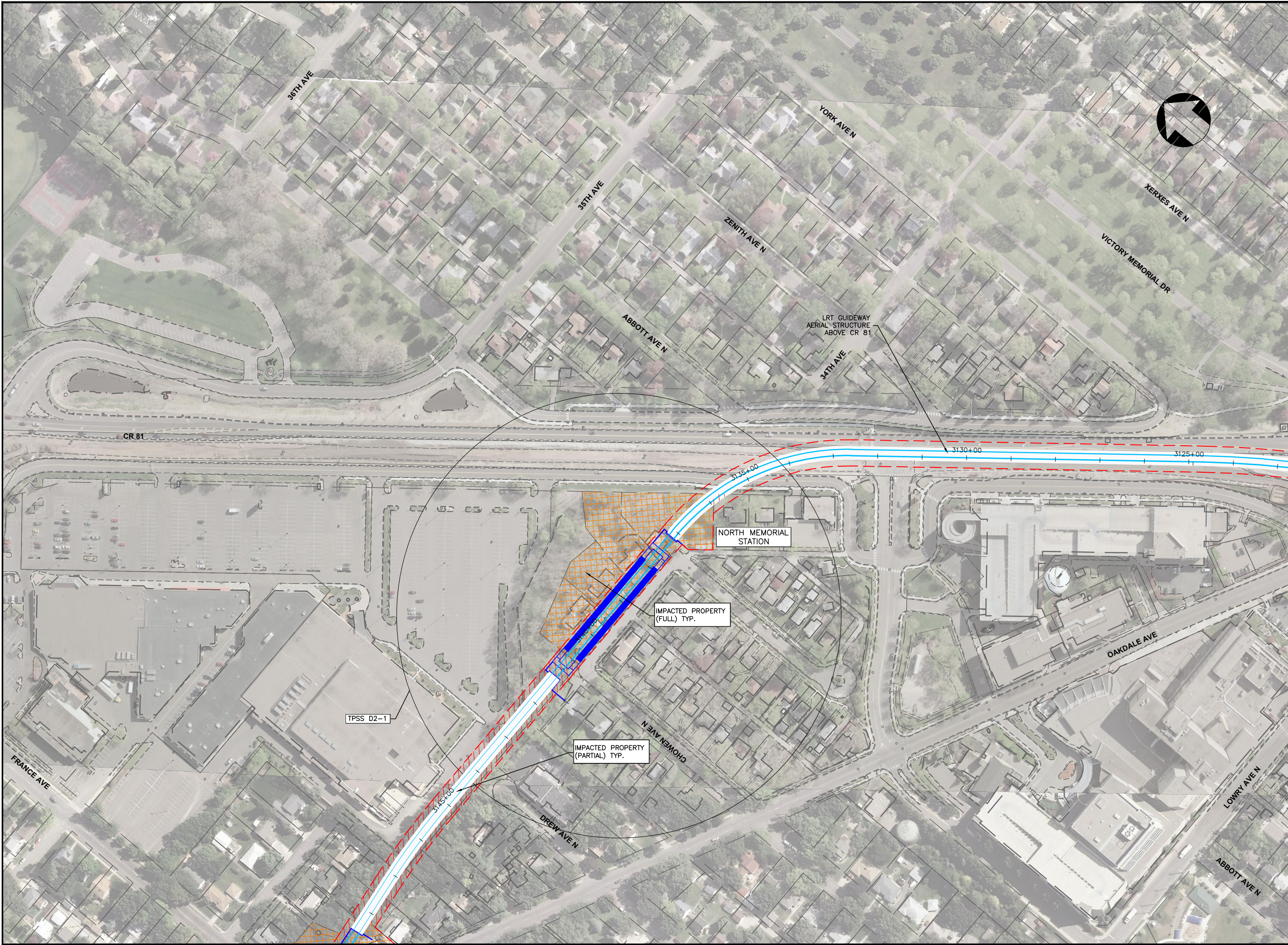
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SHEET 1 OF 20


ALIGNMENT PLAN  
STA 3139+00 - 3164+72

SHEET NUMBER  
94 OF 122




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DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
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2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5118



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LRTD2P02.dwg

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CHECKED BY:

DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE

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BOTTINEAU TRANSITWAY  
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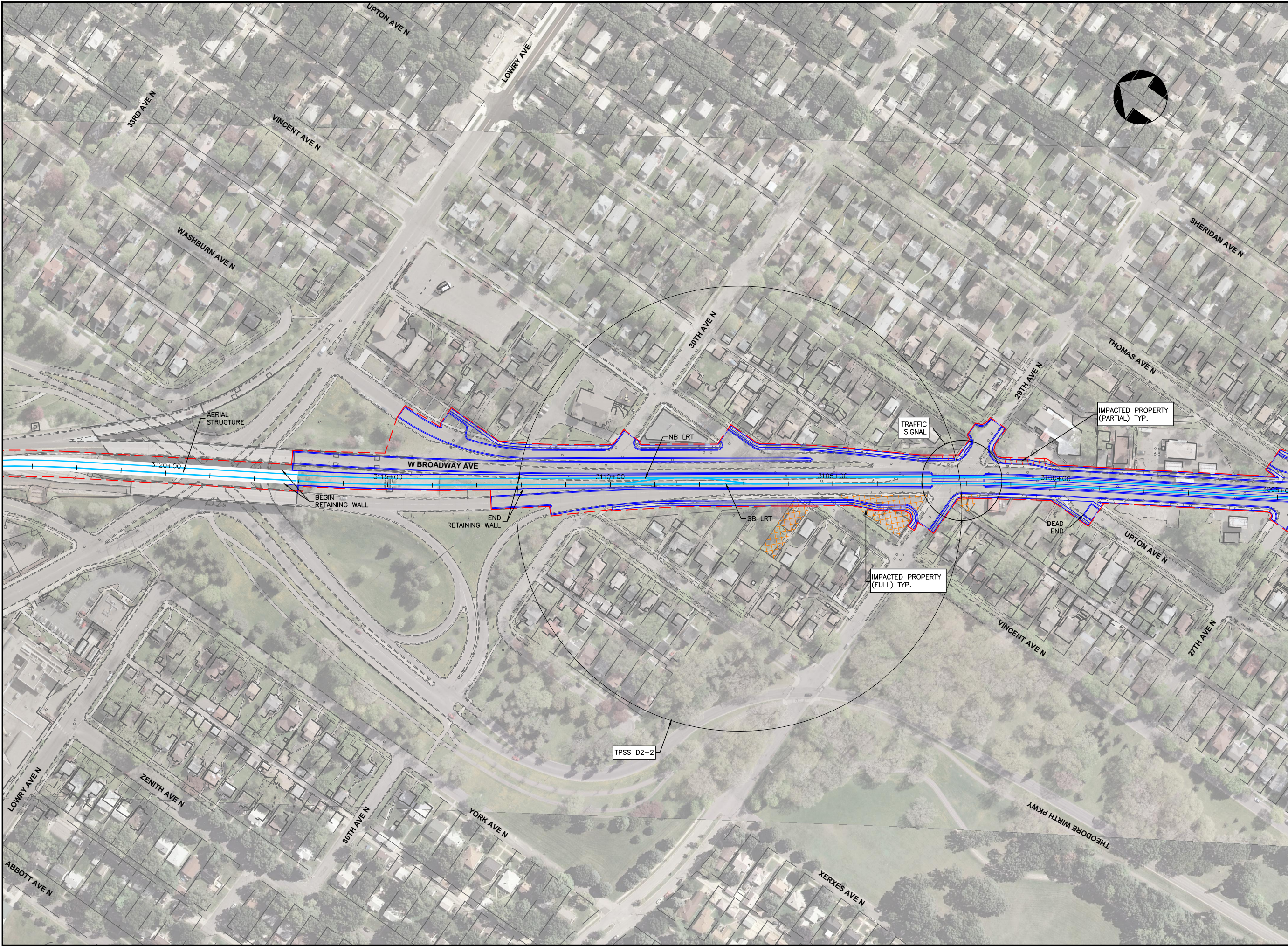
LRT ALIGNMENT D2  
SHEET 2 OF 20


ALIGNMENT PLAN  
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SHEET NUMBER  
95 OF 122




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DRAFT ENVIRONMENTAL IMPACT STATEMENT




Hennepin


CONSULTANTS:



**Kimley-Horn  
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2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
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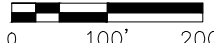
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PROJECT NO. 160528003.4.100

SCALE



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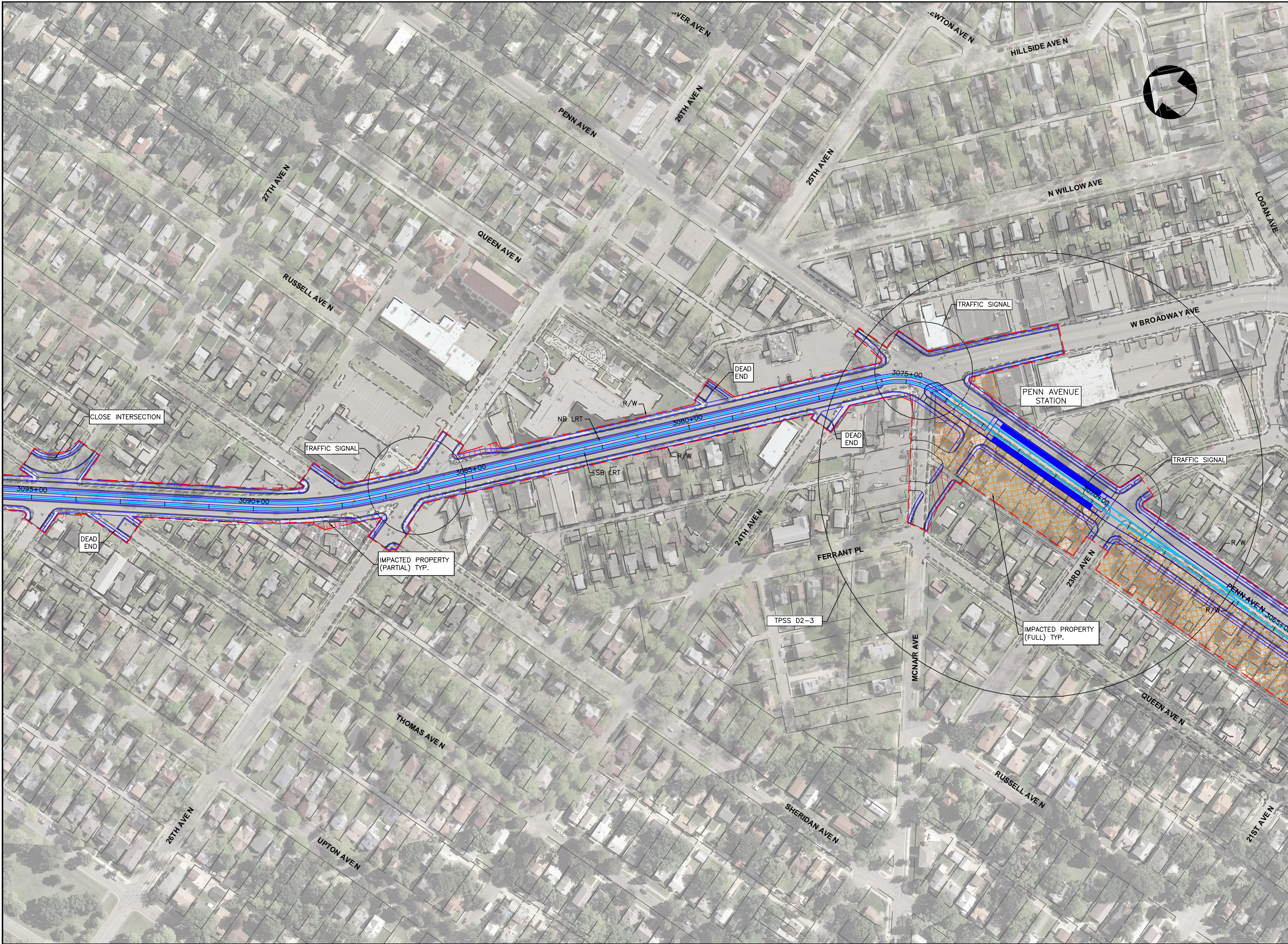
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SHEET NUMBER  
96 OF 122




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DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
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2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
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LRTD2P04.dwg

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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE



0 100' 200'

BOTTINEAU TRANSITWAY  
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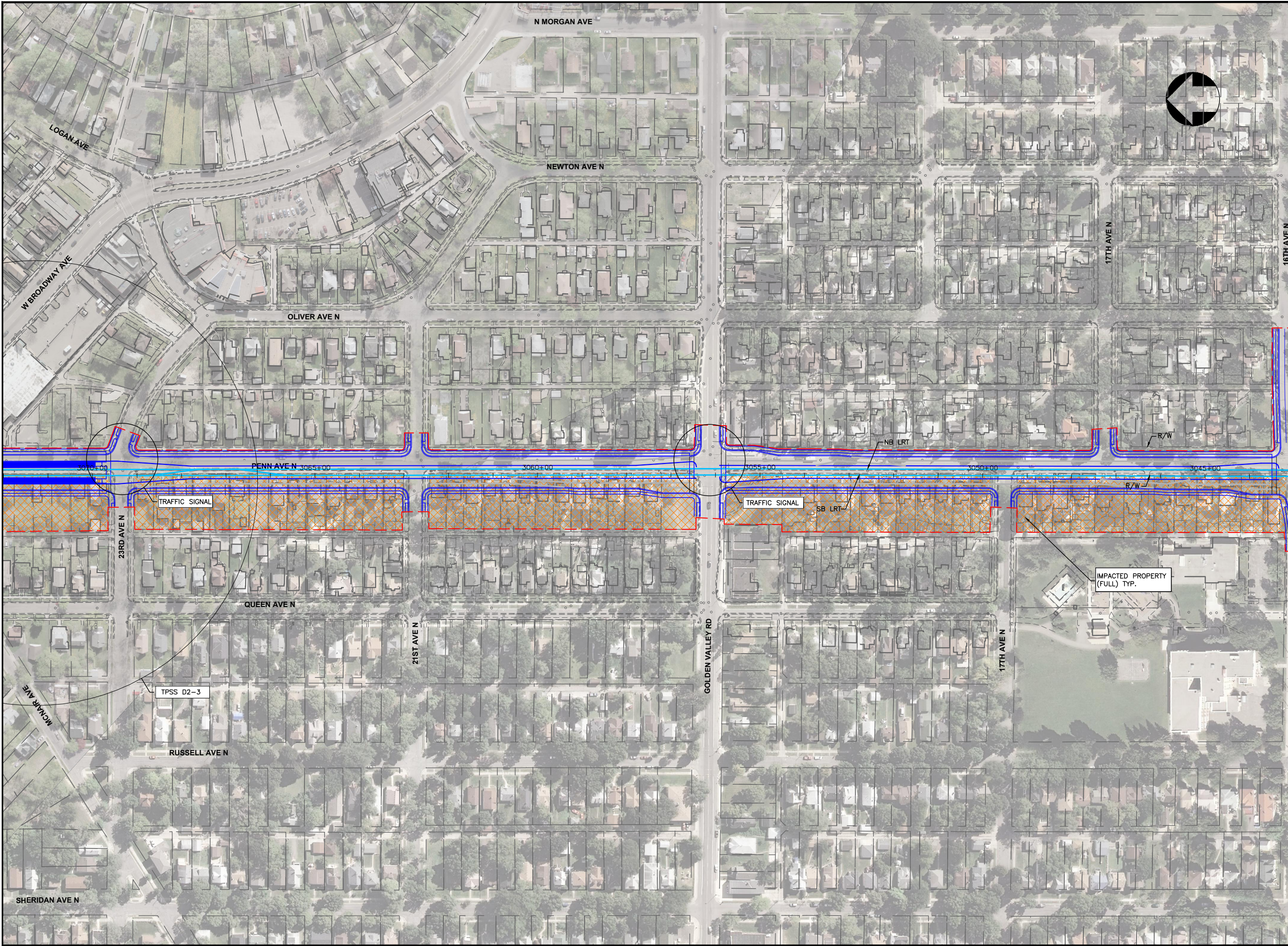
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SHEET 4 OF 20


ALIGNMENT PLAN  
STA 3065+00 - 3095+00

SHEET NUMBER  
97 OF 122




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CONSULTANTS:



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2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-1197  
FAX NO. (651) 645-5118



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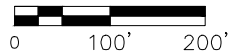
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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE



BOTTINEAU TRANSITWAY  
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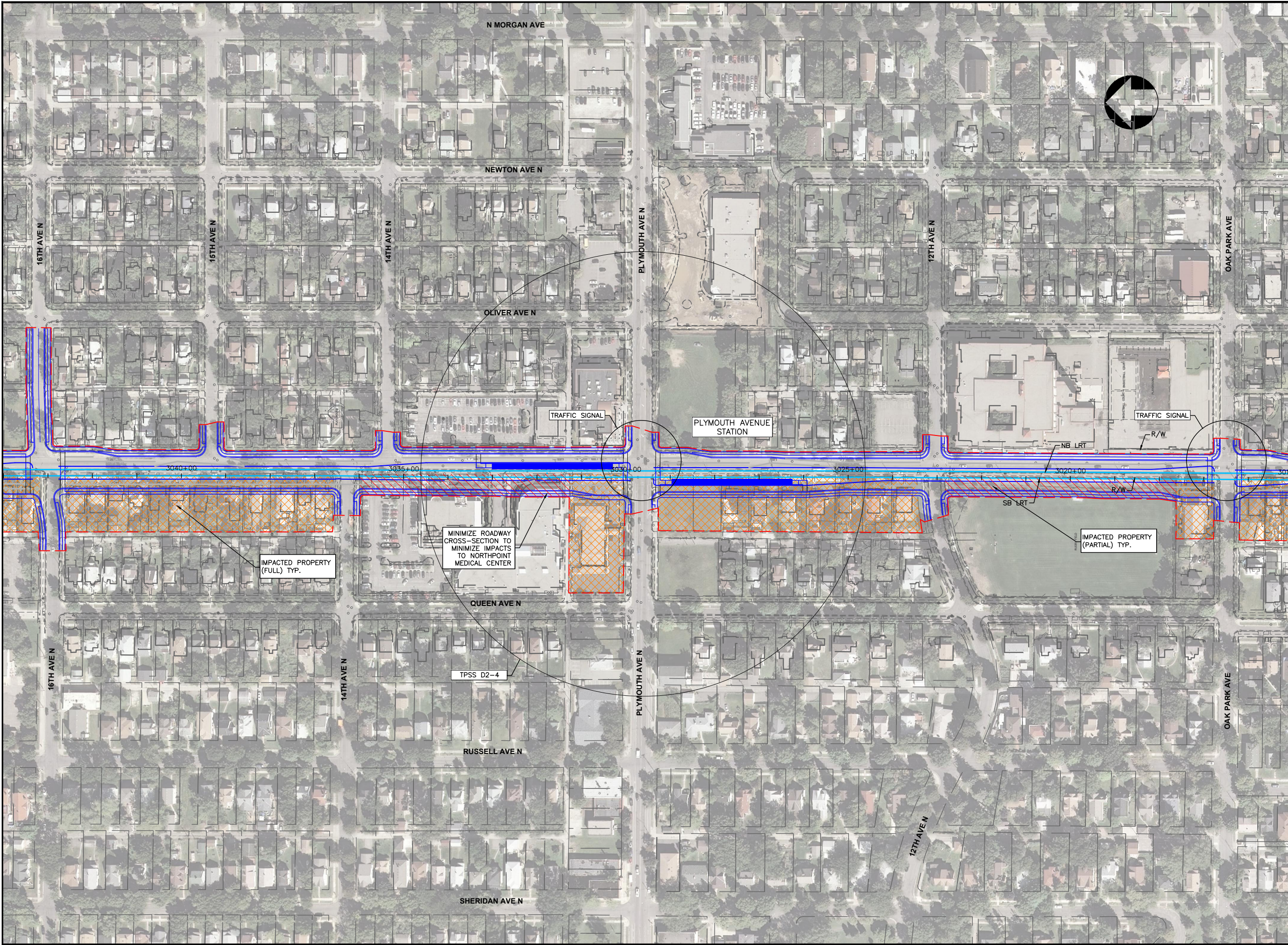
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SHEET 5 OF 20


ALIGNMENT PLAN  
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SHEET NUMBER  
98 OF 122




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Hennepin


CONSULTANTS:



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FAX. NO. (651) 645-5118



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**LTK**  
LTK Engineering Services

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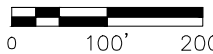
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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE



0 100' 200'

BOTTINEAU TRANSITWAY  
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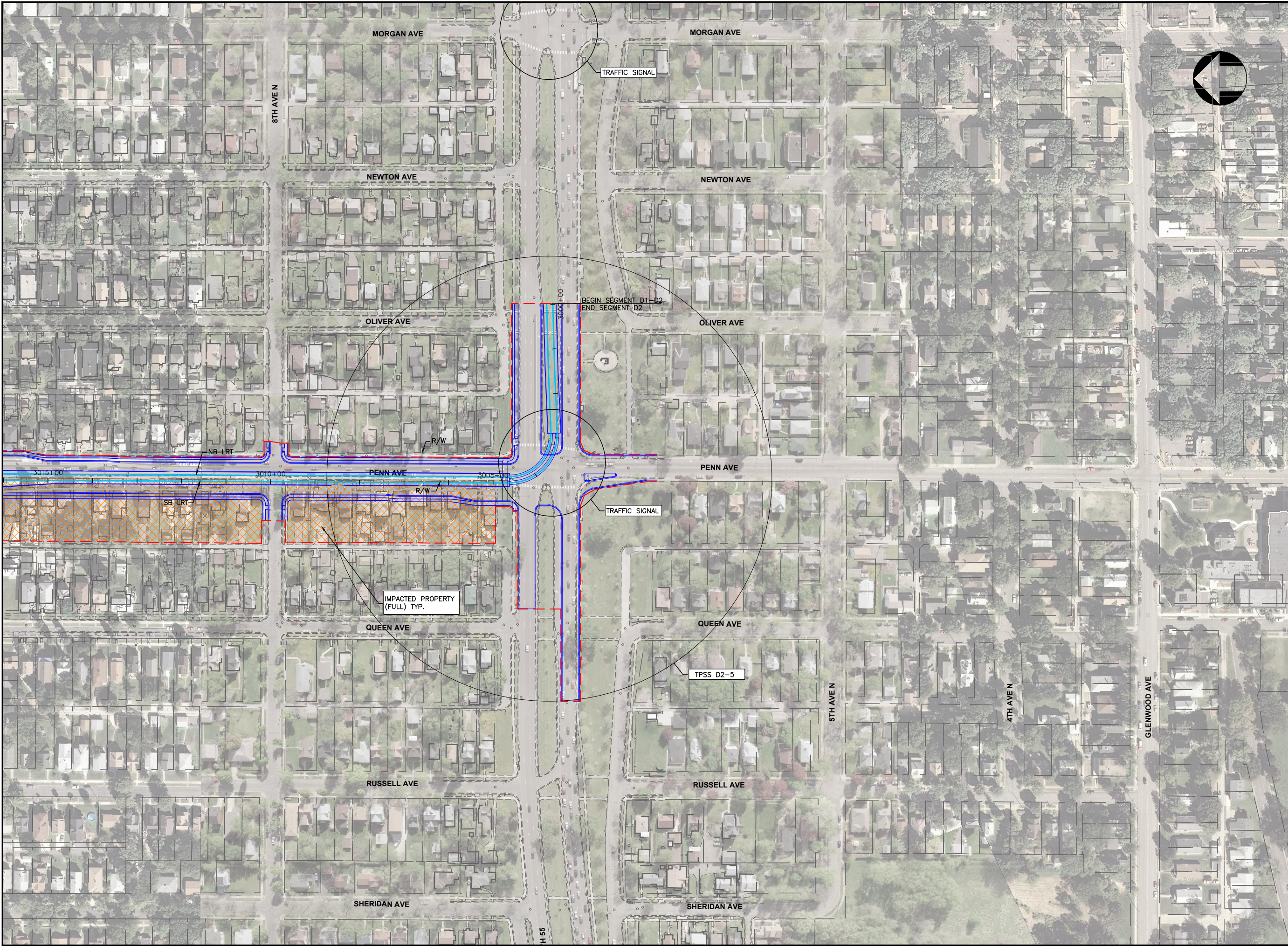
LRT ALIGNMENT D2  
SHEET 6 OF 20


ALIGNMENT PLAN  
STA 3016+00 - 3044+00

SHEET NUMBER  
99 OF 122




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ST. PAUL, MINNESOTA 55114  
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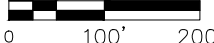
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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE



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BOTTINEAU TRANSITWAY  
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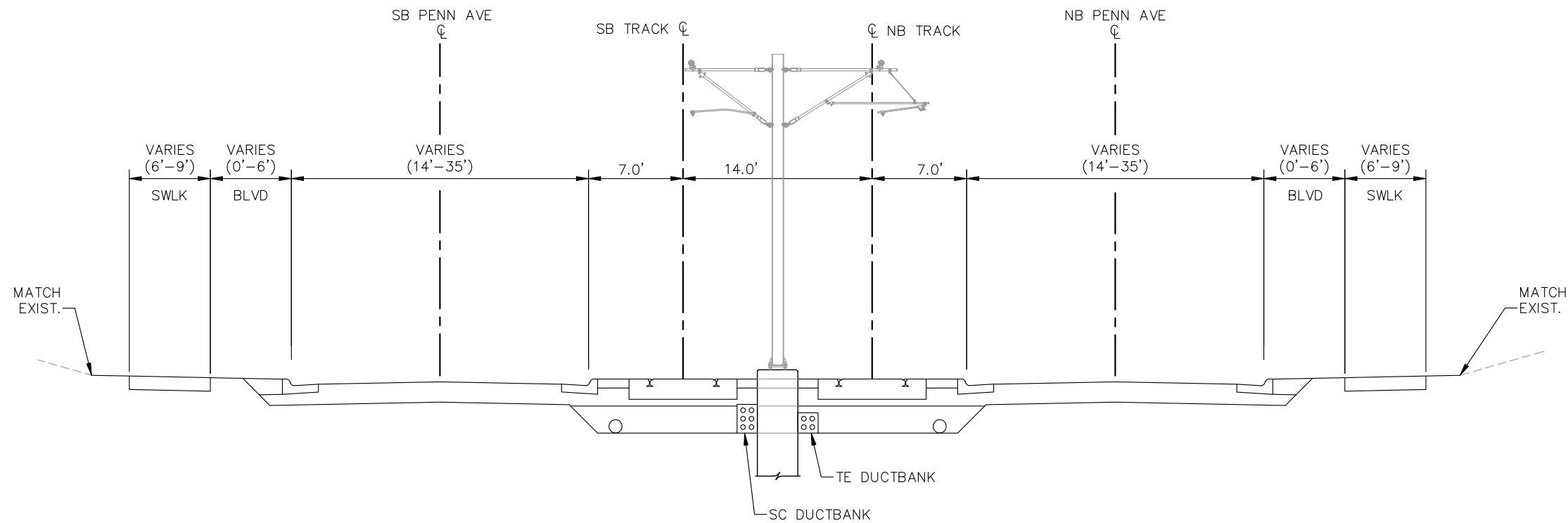
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ALIGNMENT PLAN  
STA 3000+00 - 3016+00

SHEET NUMBER  
100 OF 122



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**TYPICAL SECTION D2-01**  
**ALIGNMENT D2 - STA. 3005+00 TO STA. 3075+00**



CONSULTANTS:



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BOTTINEAU CORRIDOR  
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CONCEPTUAL DESIGN

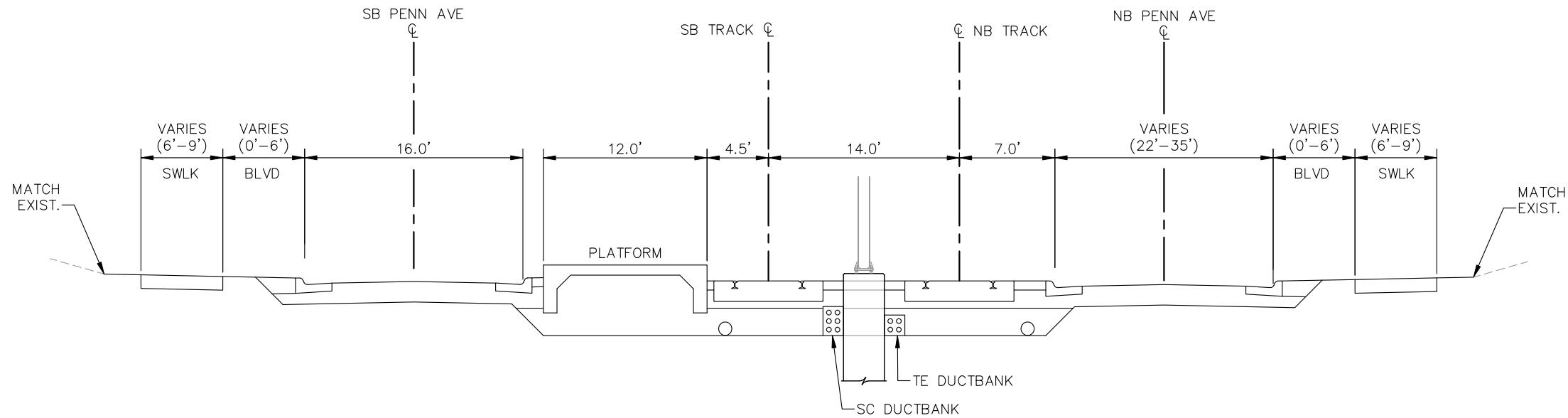
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SHEET 8 OF 20

TYPICAL SECTION D2-01

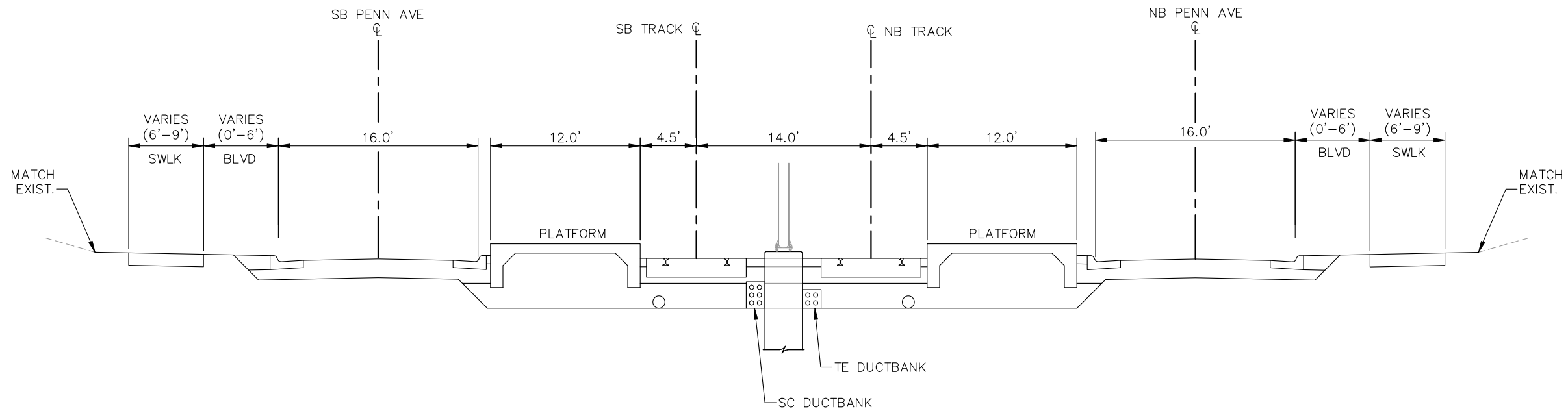
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101 OF 122

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**TYPICAL SECTION D2-01A**  
**ALIGNMENT D2 - PLYMOUTH AVENUE STATION**  
**(SB PLATFORM SHOWN, NB SIMILAR)**



**TYPICAL SECTION D2-01B**  
**ALIGNMENT D2 - BROADWAY / PENN STATION**



CONSULTANTS:



|                             |
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| DRAWING NAME                |
| BOTT-TYP D2_01AB.dwg        |
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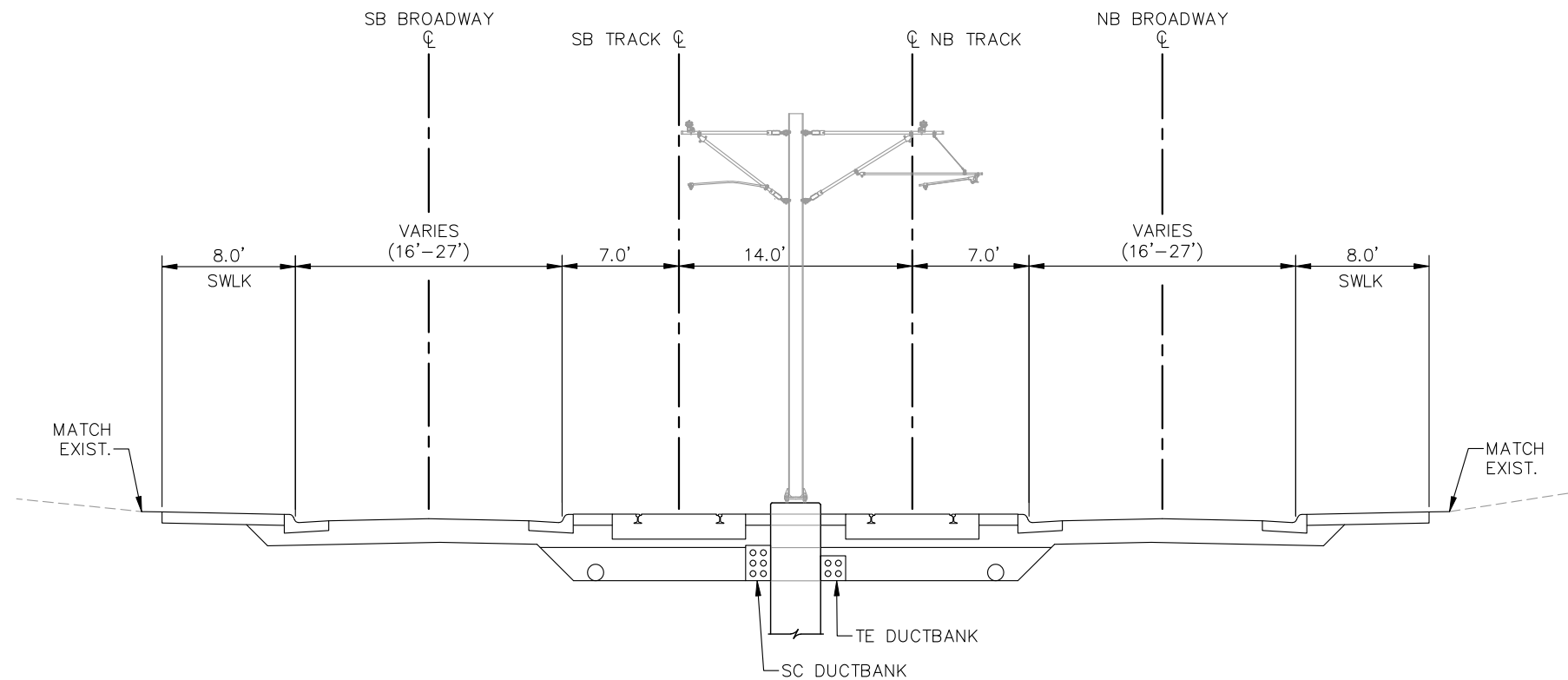
BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D2  
SHEET 9 OF 20

TYPICAL SECTION D2-01AB



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**TYPICAL SECTION D2-02**  
**ALIGNMENT D2 - STA. 3075+00 TO STA. 3103+00**



CONSULTANTS:

**Kimley-Horn and Associates, Inc.**  
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ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



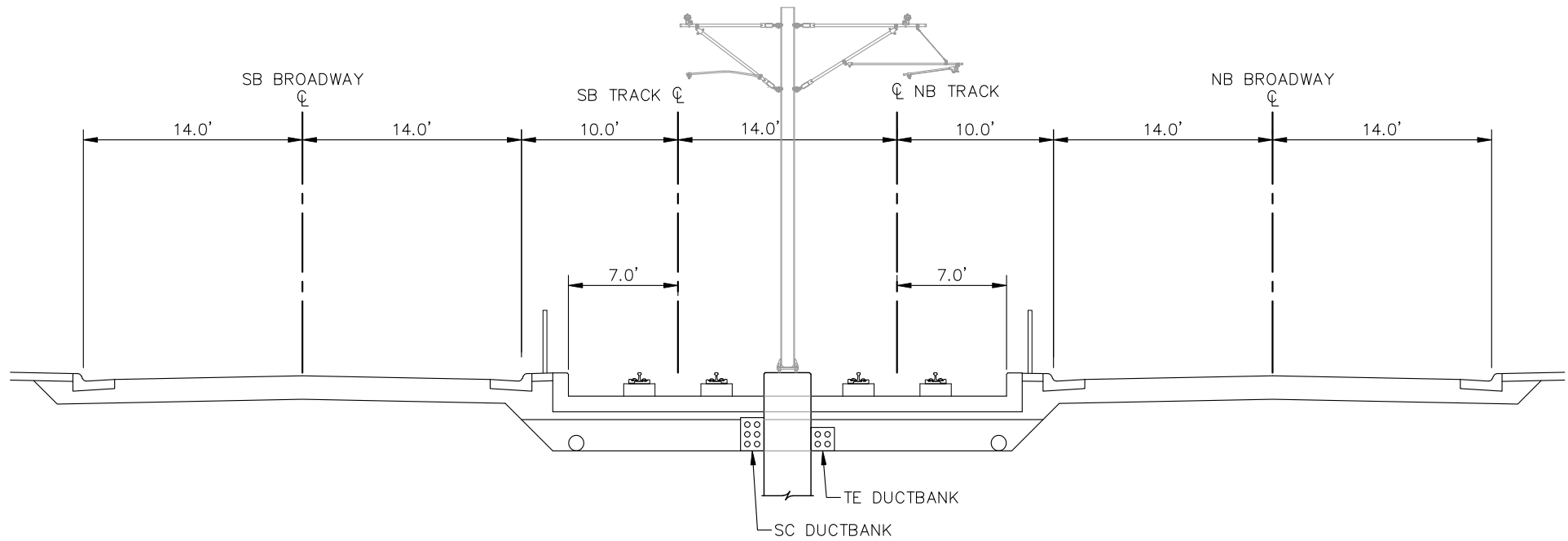
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DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D2  
SHEET 10 OF 20

TYPICAL SECTION D2-02

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TYPICAL SECTION D2-03  
ALIGNMENT D2 - STA. 3103+00 TO STA. 3117+00



CONSULTANTS:  
  
**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116

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**LTK**  
LTK Engineering Services

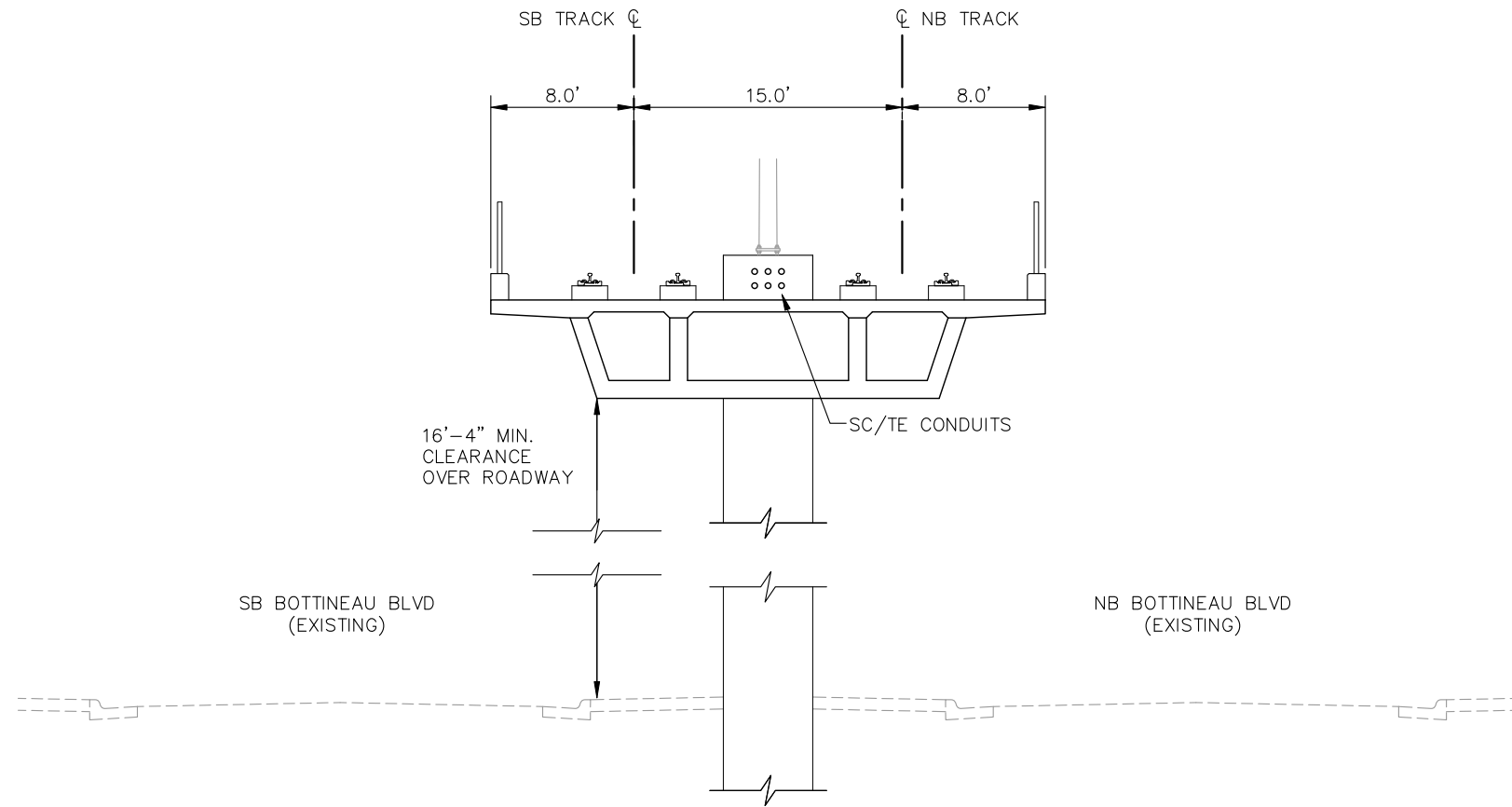
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BOTTINEAU CORRIDOR  
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CONCEPTUAL DESIGN

LRT ALIGNMENT D2  
SHEET 11 OF 20

TYPICAL SECTION D2-03

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**TYPICAL SECTION D2-04**  
**ALIGNMENT D2 - STA. 3117+00 TO STA. 3137+00**



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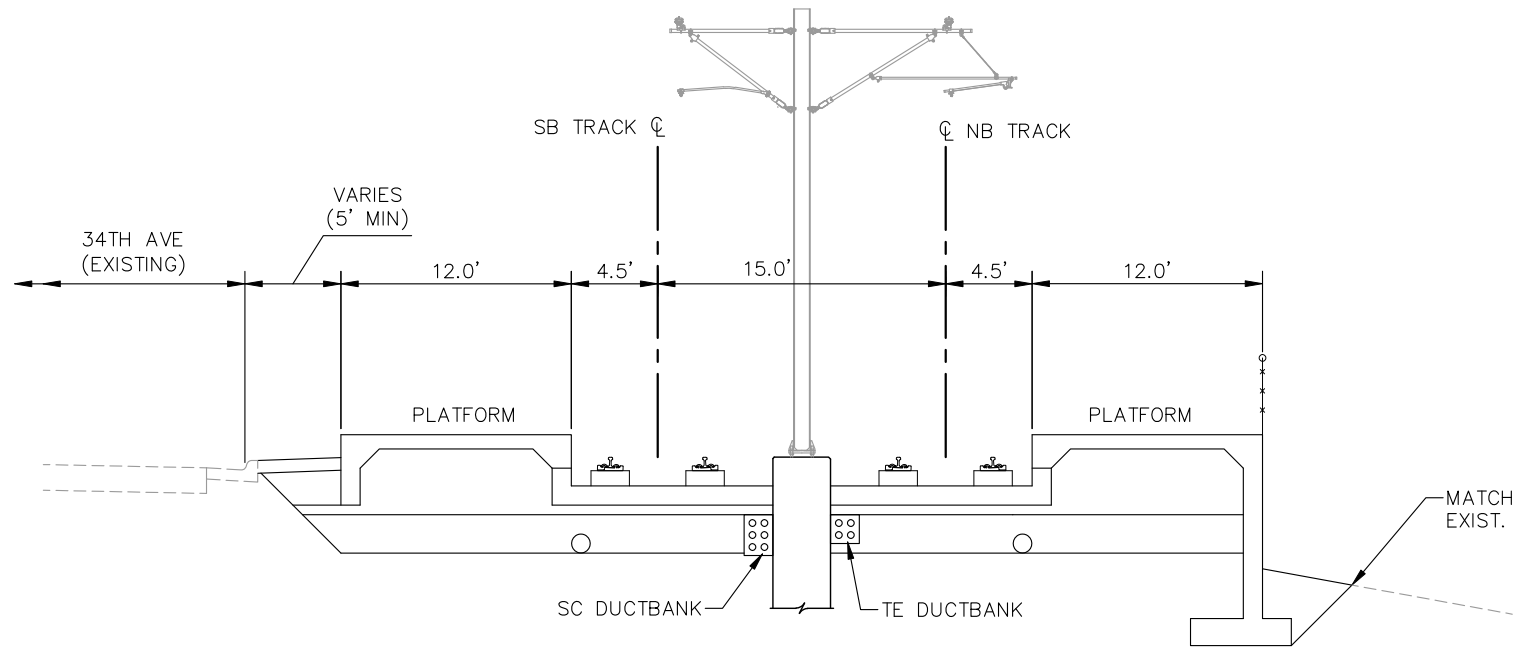
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LRT ALIGNMENT D2  
SHEET 12 OF 20

TYPICAL SECTION D2-04



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TYPICAL SECTION D2-05  
ALIGNMENT D2 - STA. 3137+00 TO STA. 3141+50  
NORTH MEMORIAL STATION



CONSULTANTS:  
  
**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
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FAX. NO. (651) 645-5116

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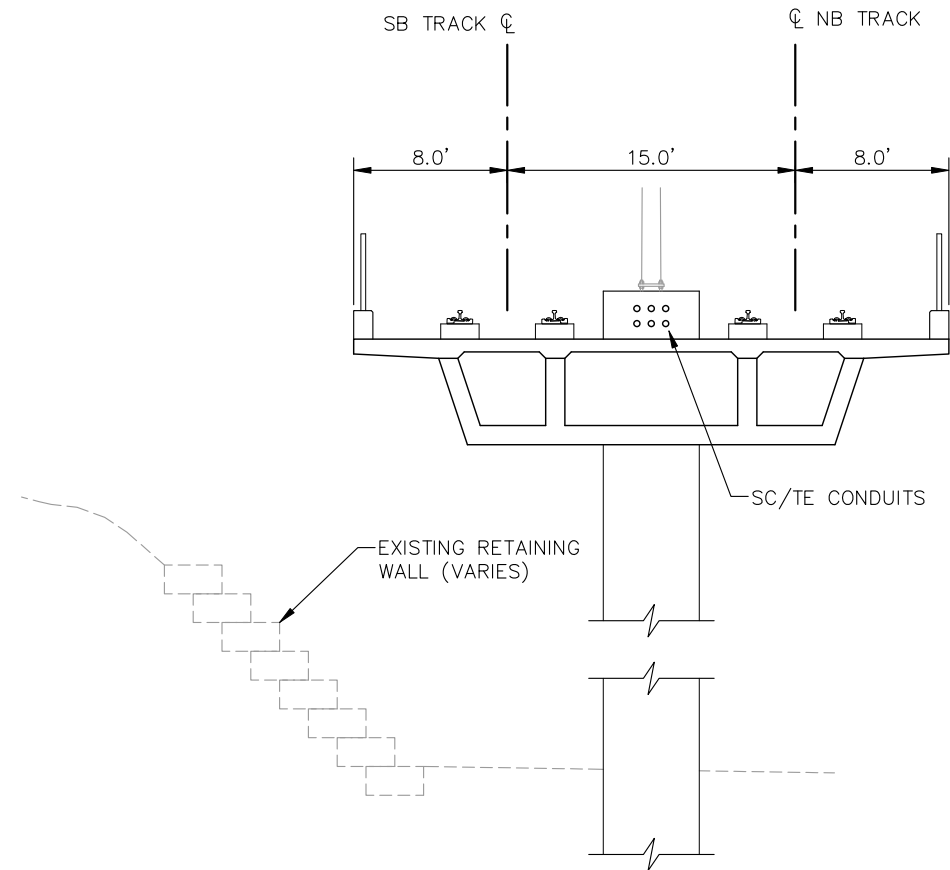
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BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D2  
SHEET 13 OF 20

TYPICAL SECTION D2-05

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TYPICAL SECTION D2-06  
ALIGNMENT D2 - STA. 3141+50 TO STA. 3150+00



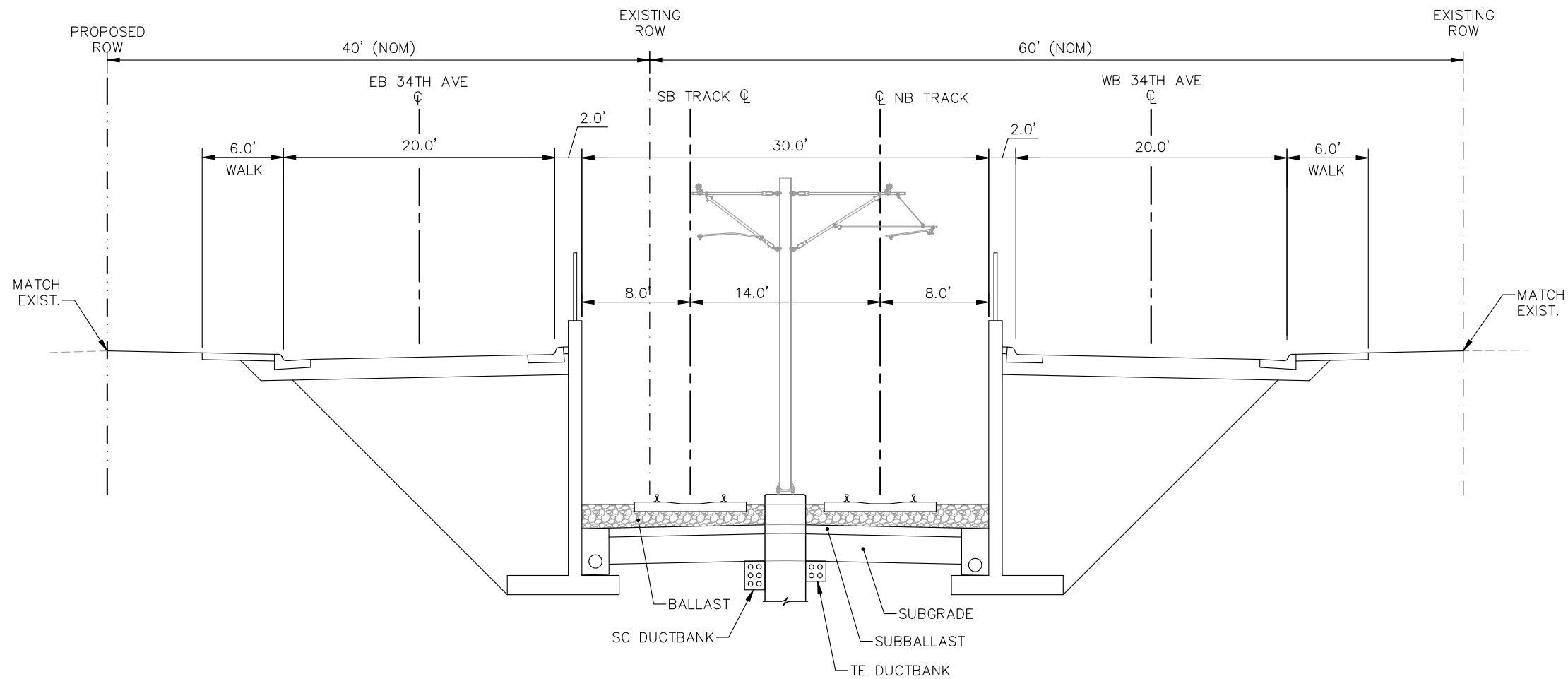
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| PROJECT NO.        | 160528003.4.100 |

BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D2  
SHEET 14 OF 20

TYPICAL SECTION D2-06

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**TYPICAL SECTION D2-07**  
**ALIGNMENT D2 - STA. 3151+00 TO STA. 3159+00**



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BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT ALIGNMENT D2  
SHEET 15 OF 20

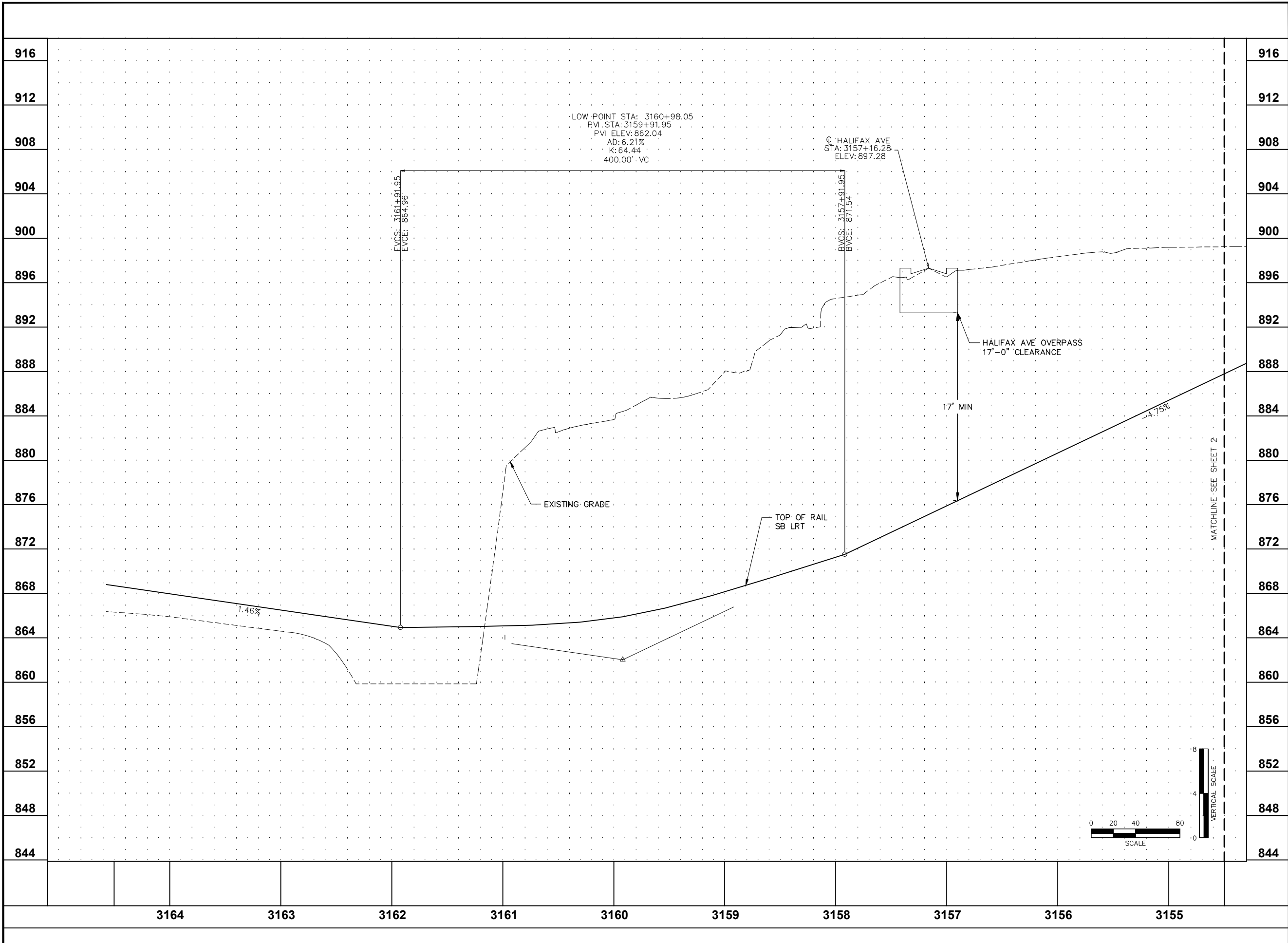
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SHEET NUMBER

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CONSULTANTS:



**Kimley-Horn  
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2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-1197  
FAX. NO. (651) 645-5116



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LTK Engineering Services

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DATE: 9/5/2012

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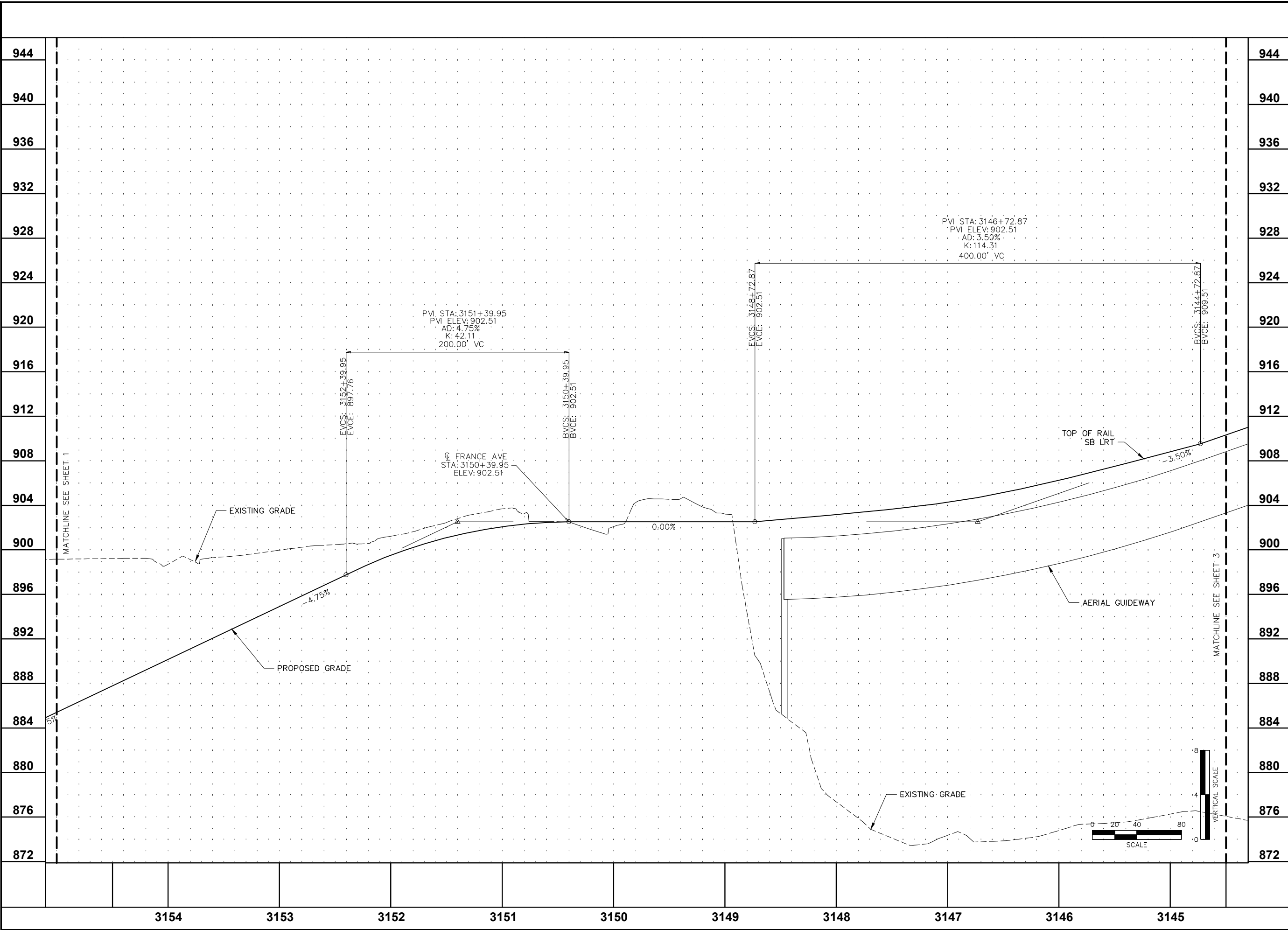
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HALIFAX AVE OVERPASS  
SHEET 16 OF 20

CRITICAL PROFILE

SHEET NUMBER  
109 OF 122

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DRAFT ENVIRONMENTAL IMPACT STATEMENT

CONSULTANTS:

**Kimley-Horn and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5118

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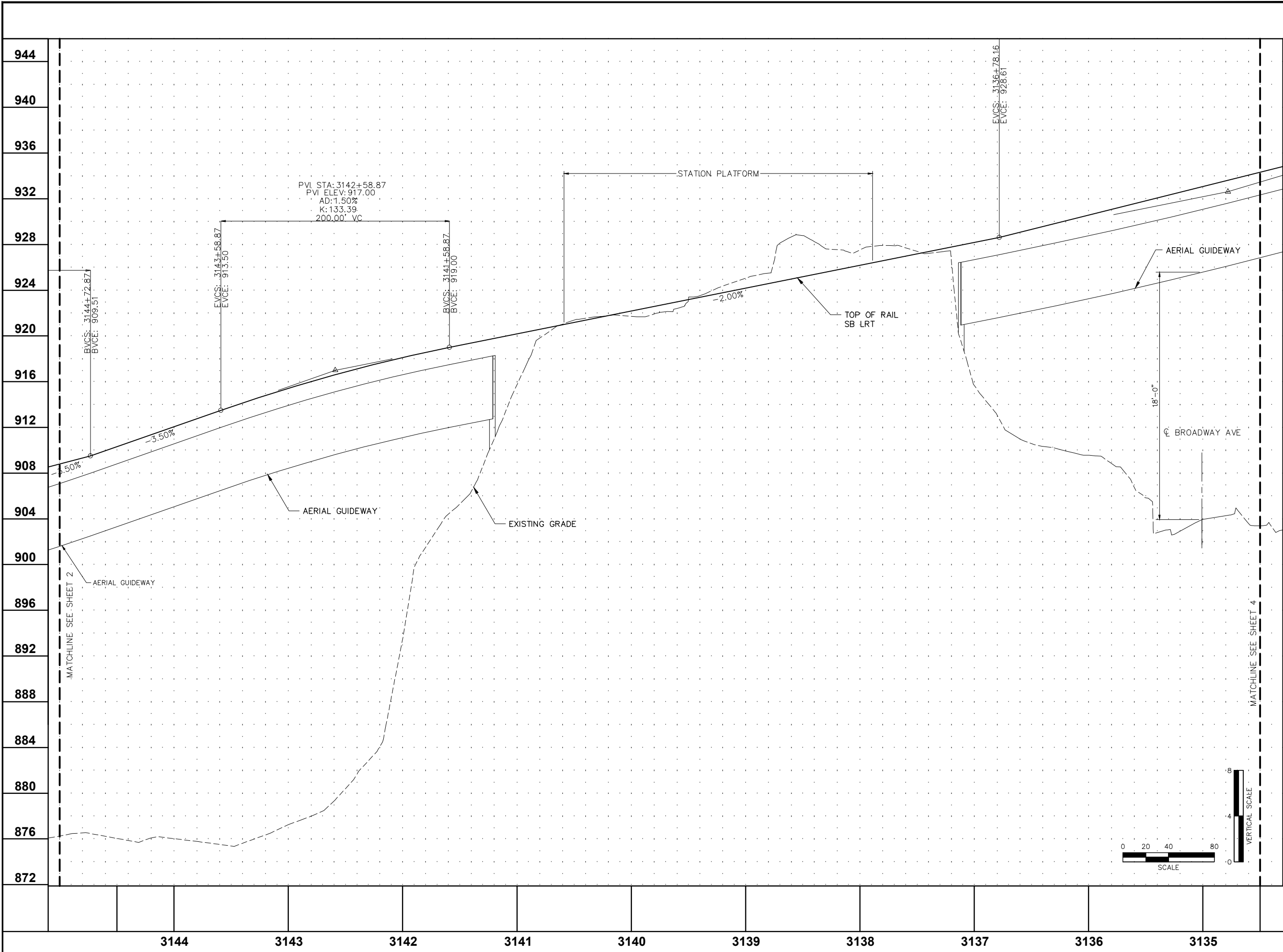
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ALIGNMENT D2  
CRITICAL PROFILE  
BROADWAY OVER DREW AVE  
SHEET 17 OF 20

CRITICAL PROFILE

|              |        |
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| 110          | OF 122 |

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CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
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TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5118



Consulting Group, Inc.



LTK Engineering Services

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BOTT-PRF-D2-03.dwg

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| PROJECT NO. 160528003.4.100 |

BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

ALIGNMENT D2  
CRITICAL PROFILE  
W. BROADWAY OVER TH 610  
SHEET 18 OF 20

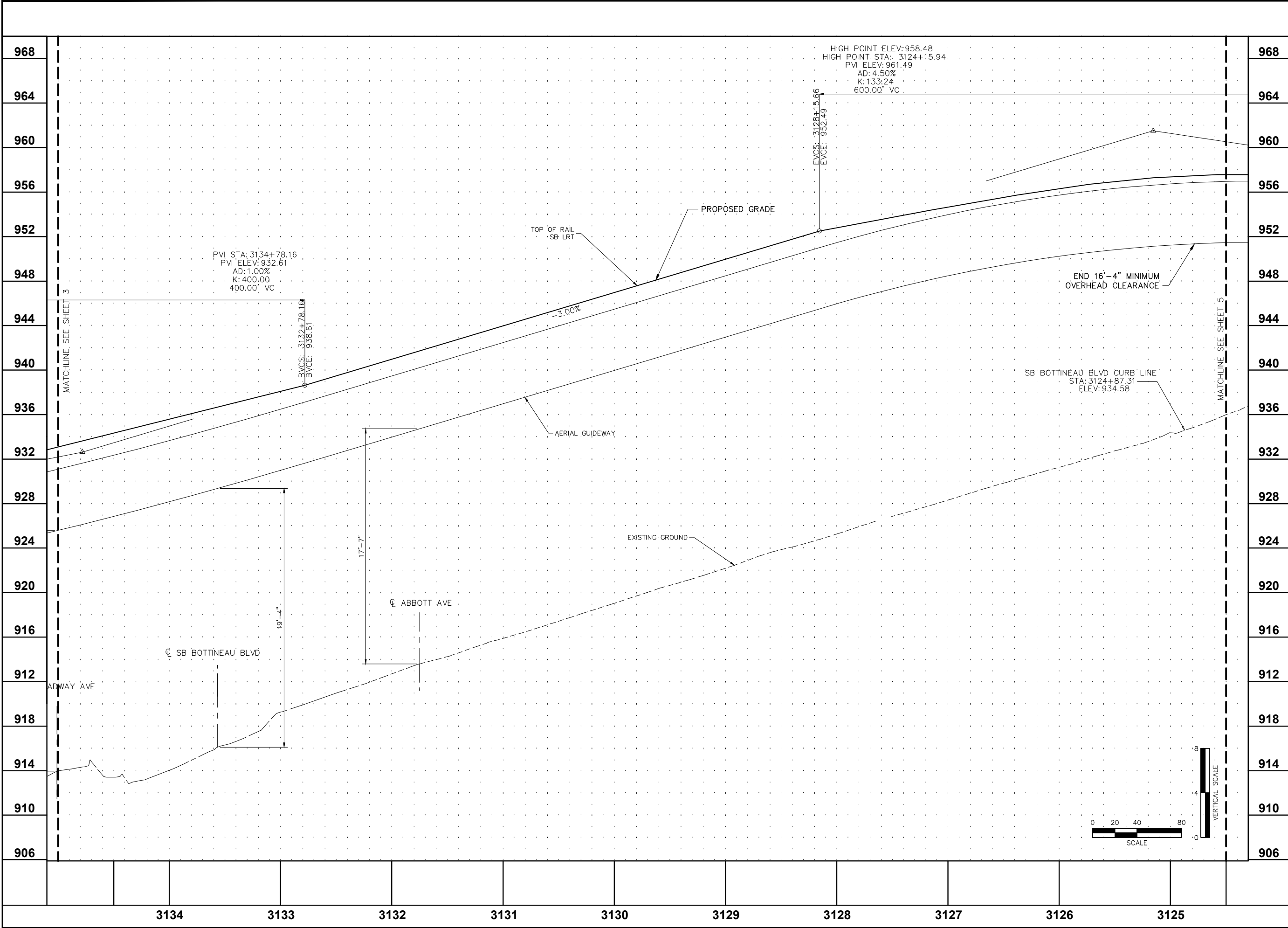
CRITICAL PROFILE

SHEET NUMBER

111 OF 122



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DRAFT ENVIRONMENTAL IMPACT STATEMENT

CONSULTANTS:

**Kimley-Horn and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5118

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| PROJECT NO.        | 160528003.4.100 |

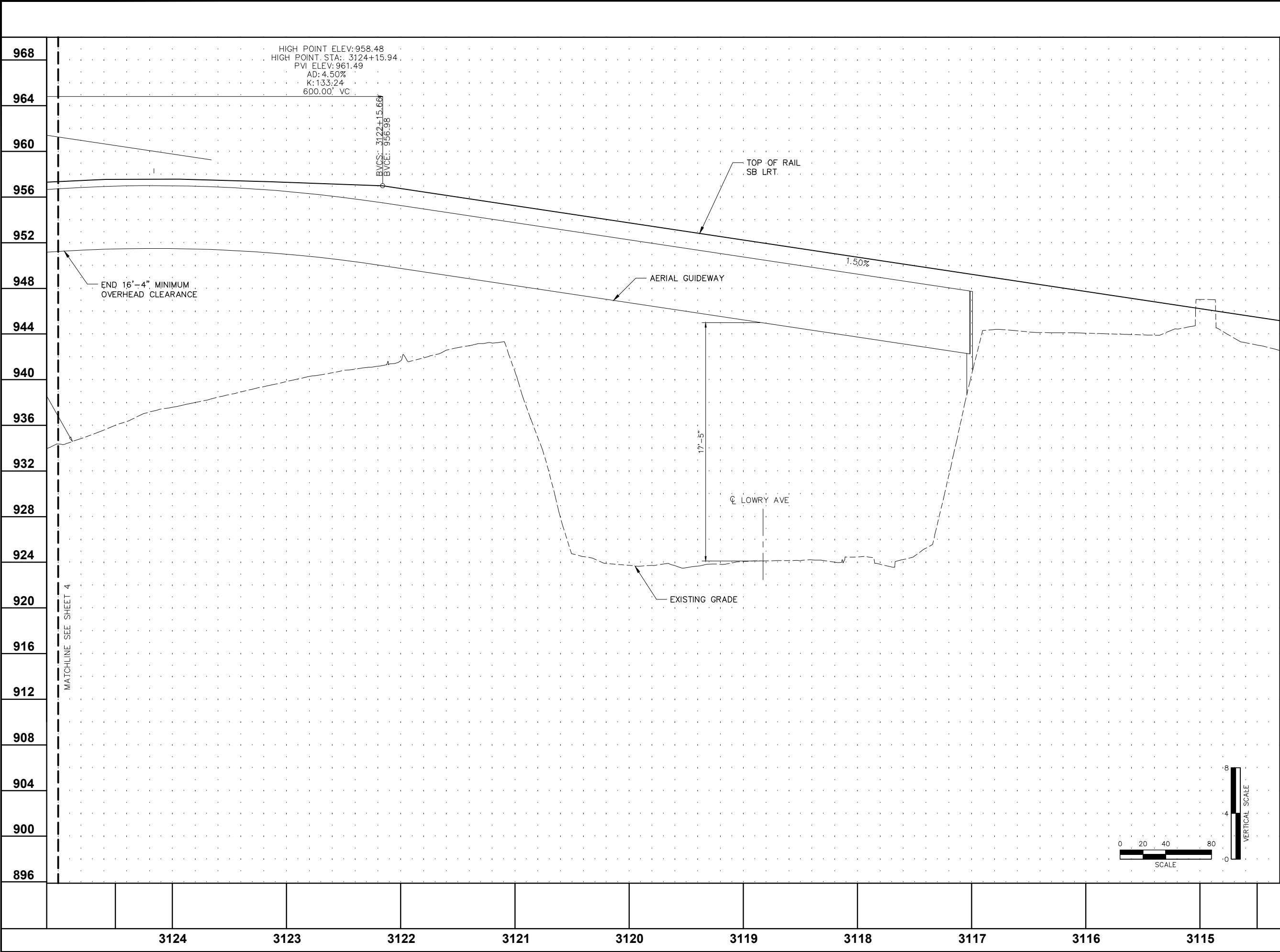
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DRAFT EIS  
CONCEPTUAL DESIGN


ALIGNMENT D2  
CRITICAL PROFILE  
BROADWAY OVER ABBOTT AVE  
SHEET Value OF 20

CRITICAL PROFILE


|              |        |
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| SHEET NUMBER |        |
| 112          | OF 122 |

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DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5118



**SRF**  
Consulting Group, Inc.



**LTK**  
LTK Engineering Services

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| DATE:              | 9/5/2012        |
| PROJECT NO.        | 160528003.4.100 |

BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

ALIGNMENT D2  
CRITICAL PROFILE  
BROADWAY OVER LOWRY AVE  
SHEET 20 OF 20

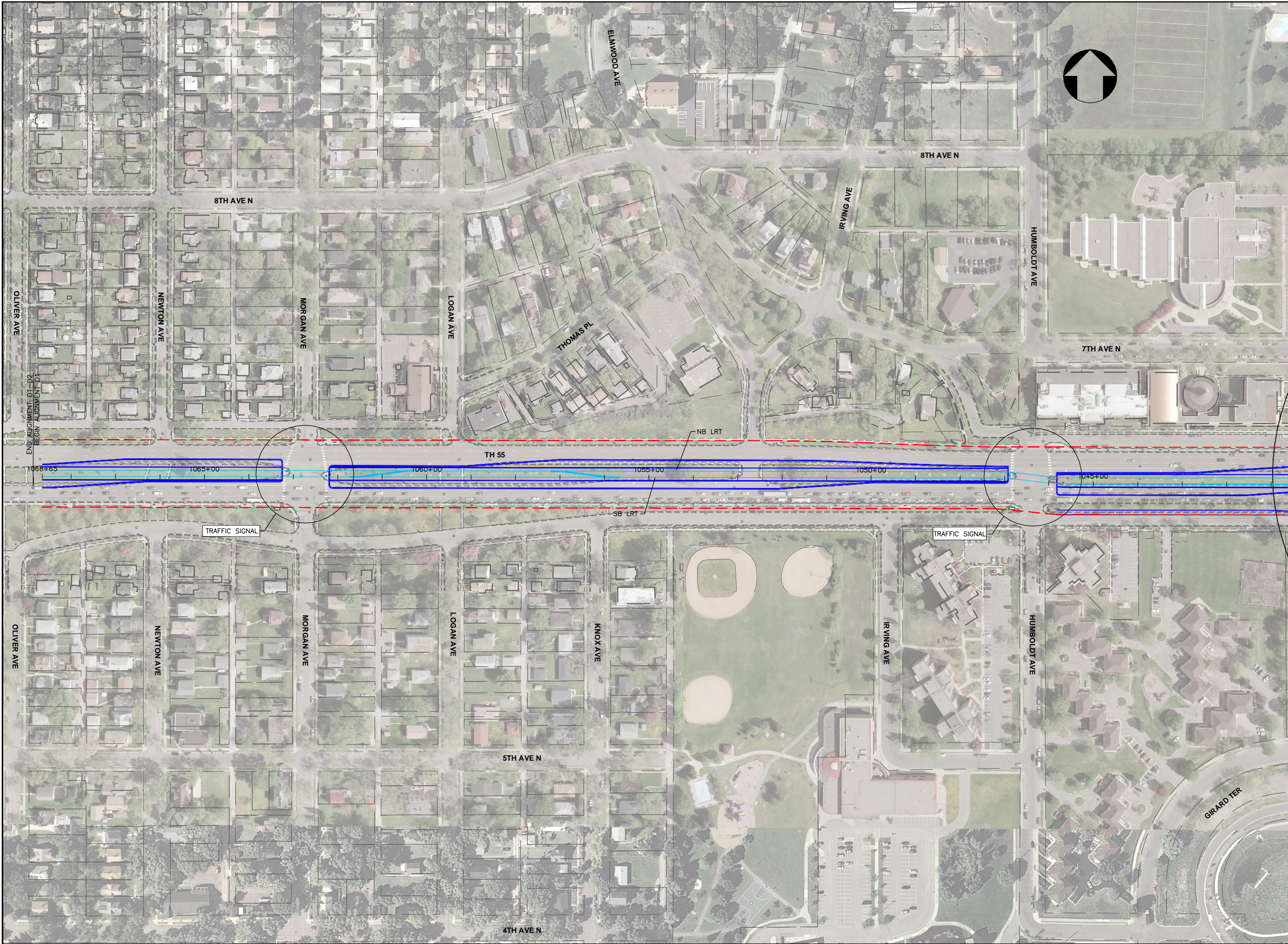
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113 OF 122




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DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



**SRF**  
Consulting Group, Inc.



**LTK**  
LTK Engineering Services

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DESIGNED BY:

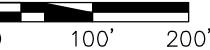
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SCALE



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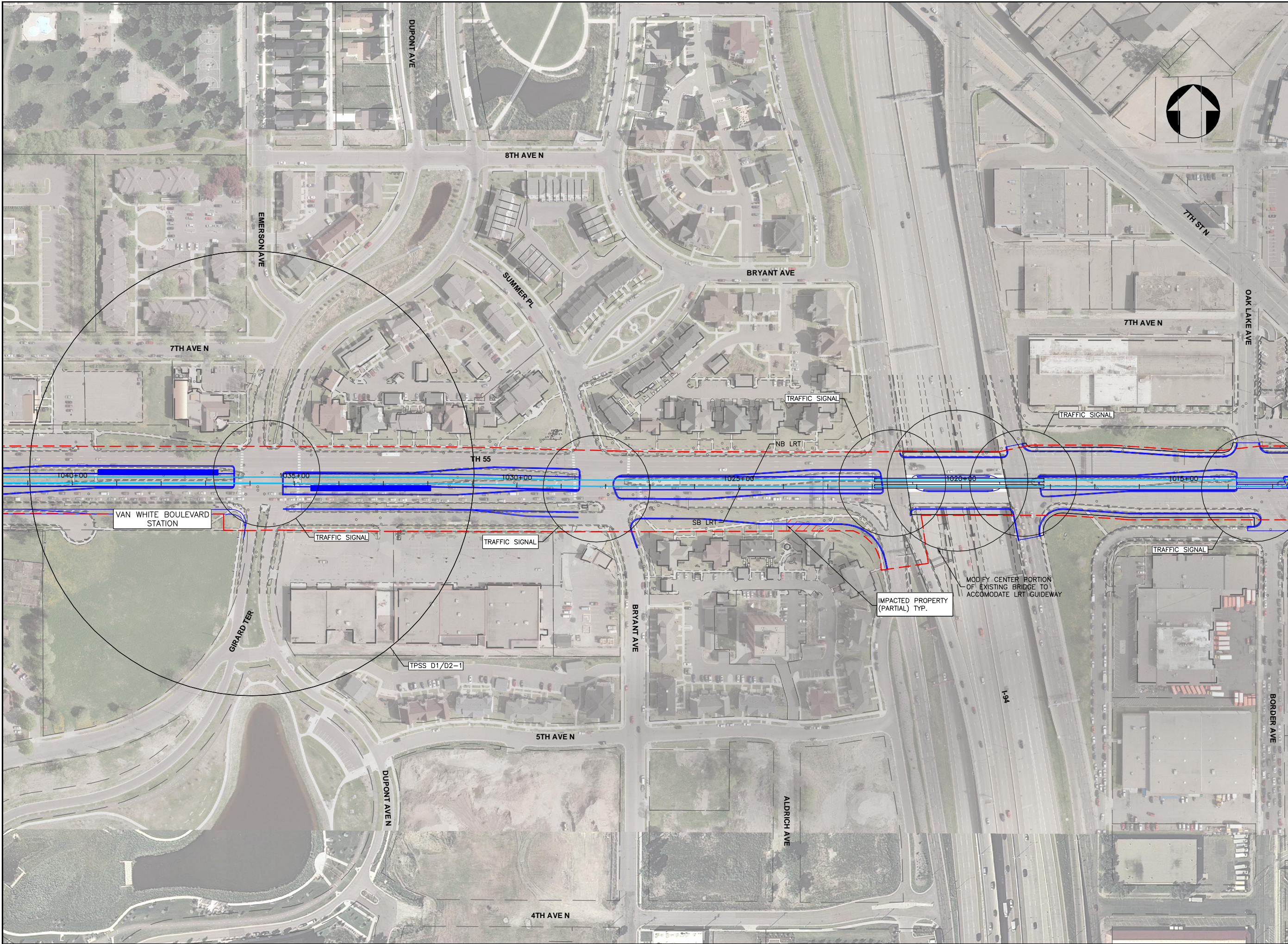
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SHEET 1 OF 9


ALIGNMENT PLAN  
STA 1041+00 - 1068+84

SHEET NUMBER  
114 OF 122




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DRAFT ENVIRONMENTAL IMPACT STATEMENT




CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4157  
FAX. NO. (651) 645-5116



**SRF**  
Consulting Group, Inc.



**LTK**  
LTK Engineering Services

DRAWING NAME  
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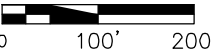
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DATE: 9/5/2012

PROJECT NO. 160528003.4.100

SCALE



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BOTTINEAU TRANSITWAY  
DRAFT EIS  
CONCEPTUAL DESIGN

LRT COMMON ALIGN. D  
SHEET 2 OF 9

ALIGNMENT PLAN  
STA 1013+00 - 1041+00

SHEET NUMBER  
115 OF 122



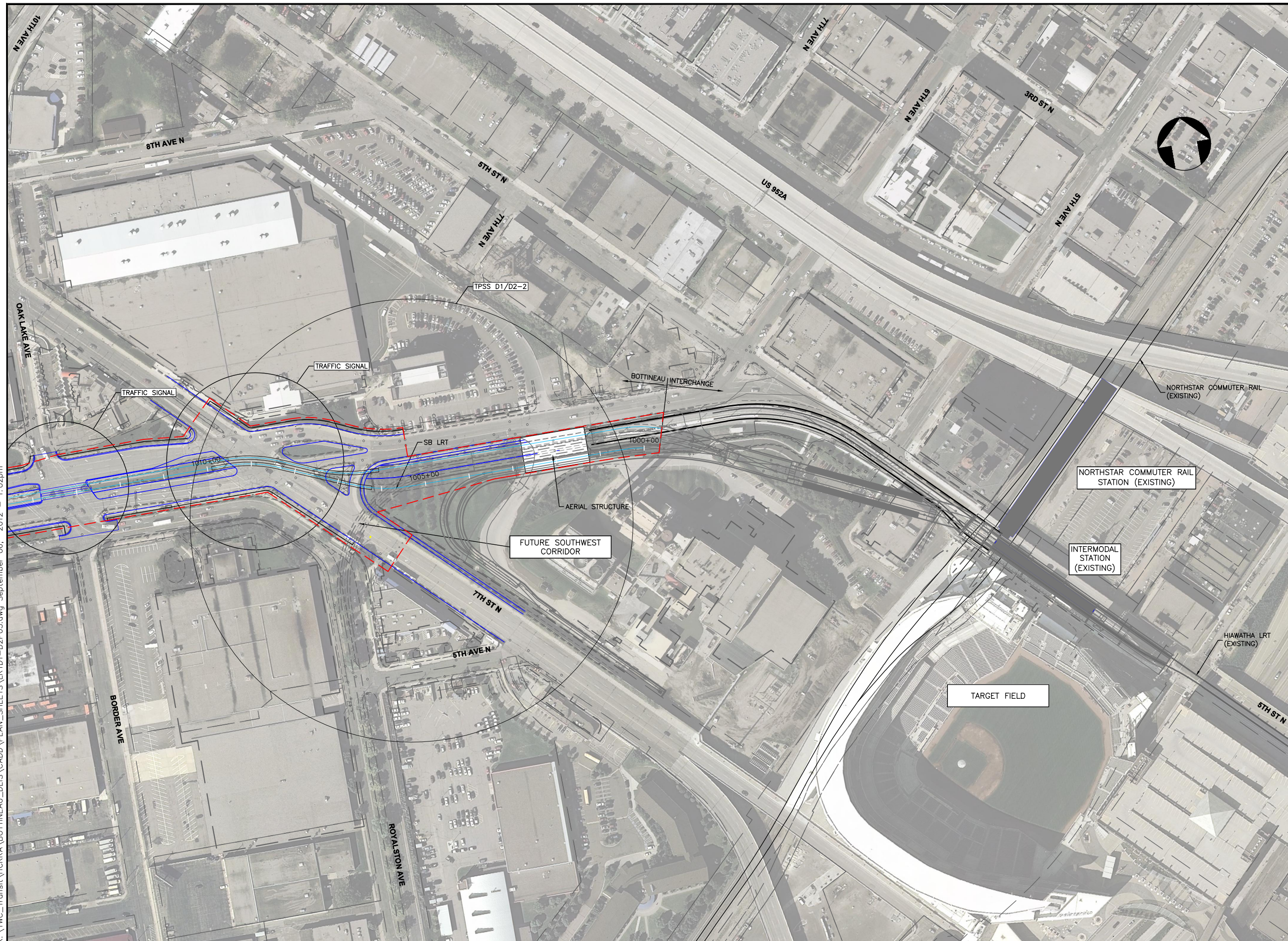


**SRF**  
Consulting Group, Inc.

SCALE

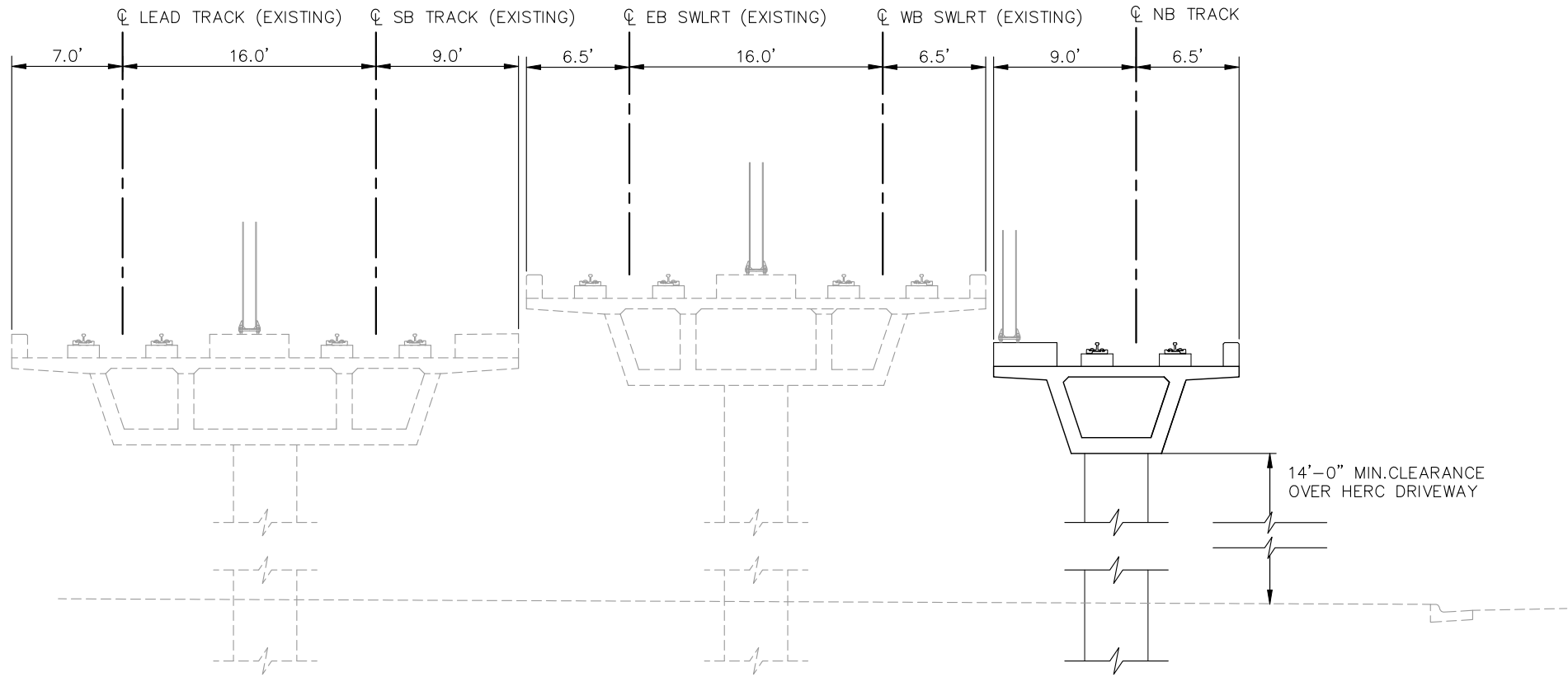
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SHEET NUMBER  
116 OF 122





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**TYPICAL SECTION D1D2-01**  
**D1/D2 COMMON ALIGNMENT - STA. 1000+00 TO STA. 1004+50**



CONSULTANTS:

**Kimley-Horn and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



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| DRAWING NAME                |
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| DRAWN BY:                   |
| CHECKED BY:                 |
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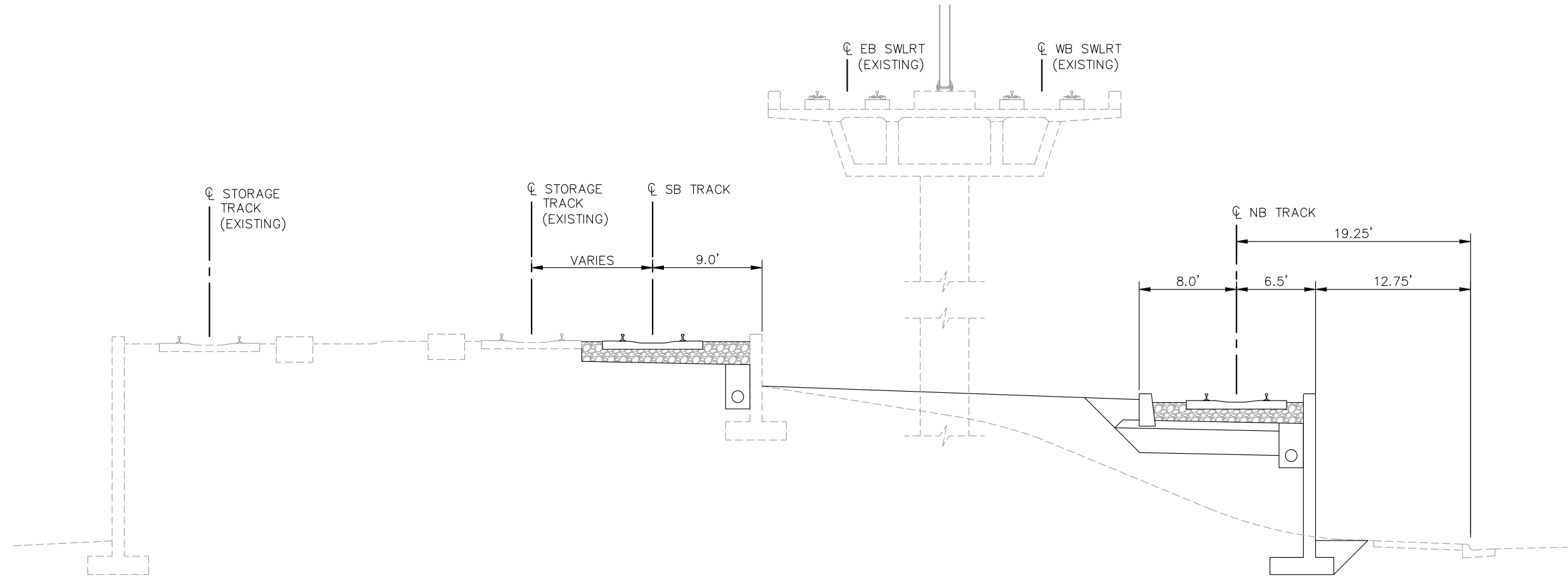
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DRAFT EIS  
CONCEPTUAL DESIGN

D1/D2 COMMON ALIGNMENT  
SHEET 4 OF 9

TYPICAL SECTION D1D2-01



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**TYPICAL SECTION DID2-02**  
**ALIGNMENT DID2 - STA. 1004+50 TO STA. 1006+50**



CONSULTANTS:

**Kimley-Horn and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



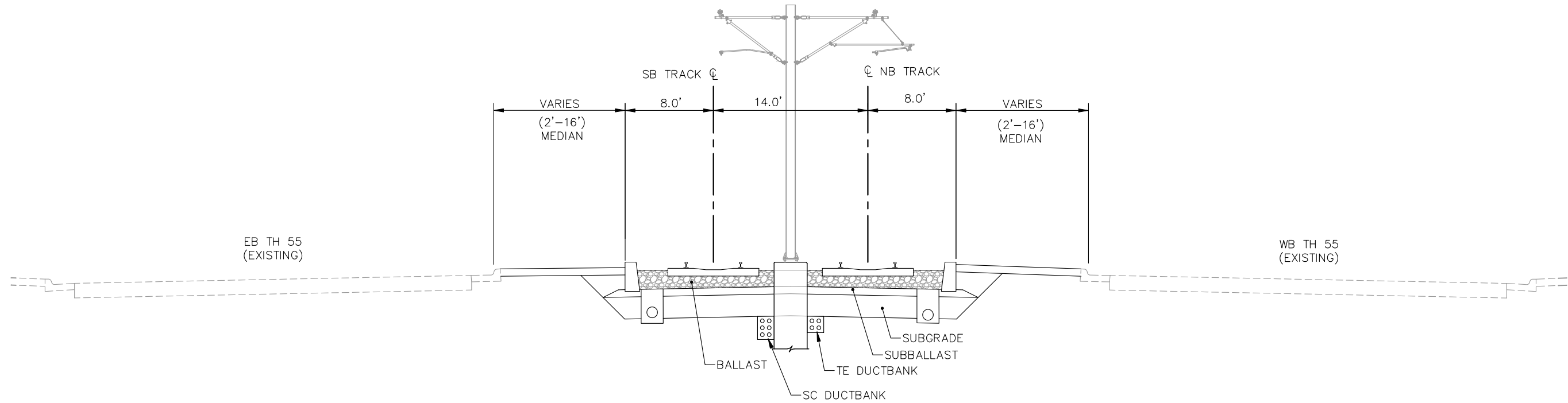
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BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

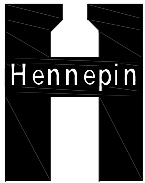
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TYPICAL SECTION DID2-02

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**TYPICAL SECTION D1D2-03**  
**ALIGNMENT D1D2 - STA. 1006+50 TO STA. 1019+00**



CONSULTANTS:

**Kimley-Horn and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116

**SRF**  
Consulting Group, Inc.

**LTK**  
LTK Engineering Services

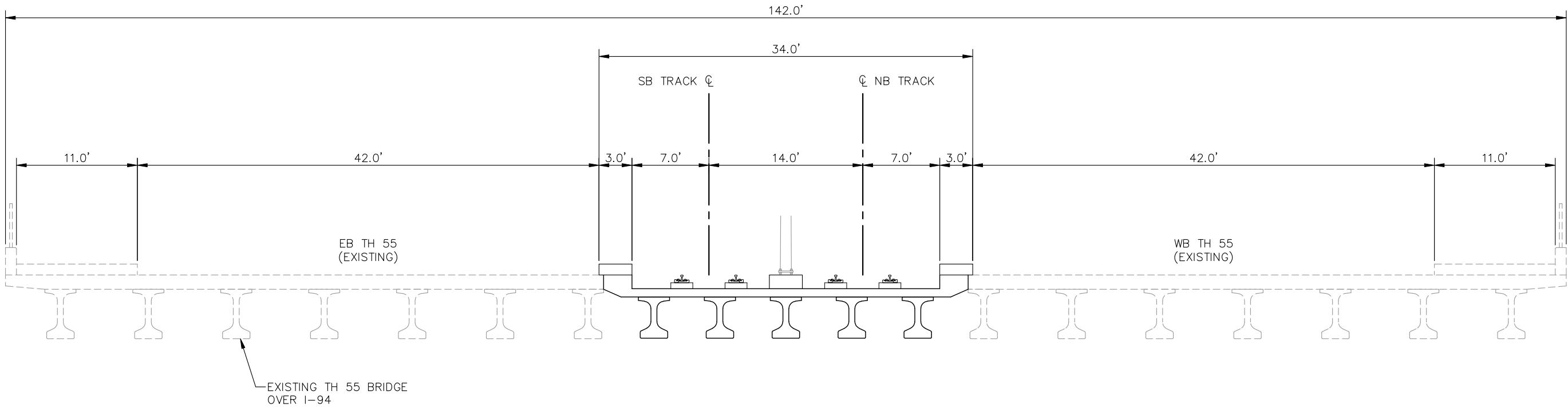
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BOTTINEAU CORRIDOR  
DRAFT EIS  
CONCEPTUAL DESIGN

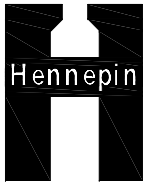
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TYPICAL SECTION D1D2-03

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**TYPICAL SECTION D1D2-04**  
**ALIGNMENT D1D2 - STA. 1019+00 TO STA. 1021+50**



CONSULTANTS:

**Kimley-Horn and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



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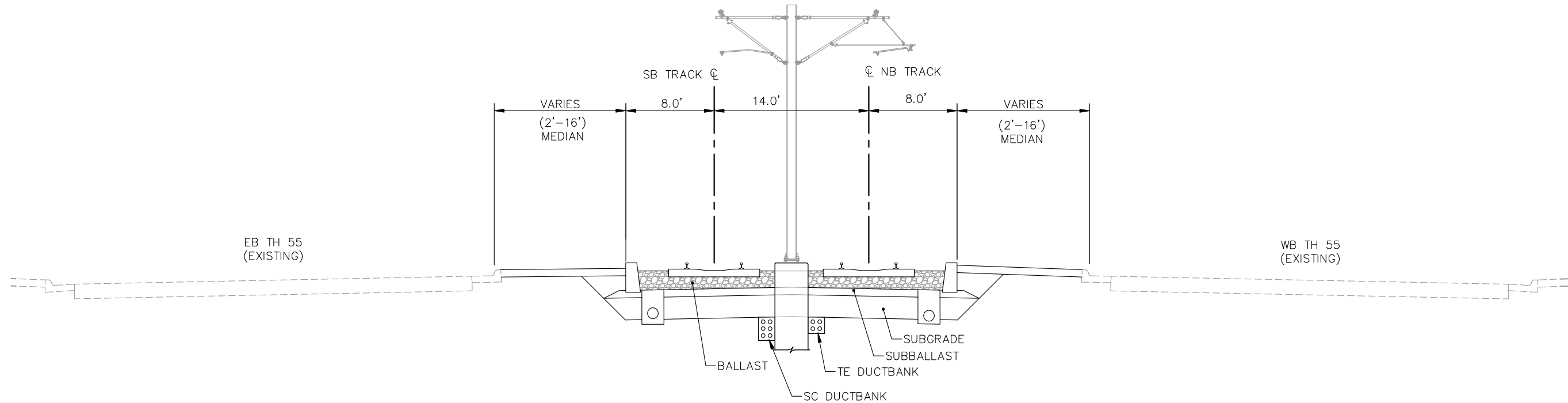
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DRAFT EIS  
CONCEPTUAL DESIGN

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SHEET 7 OF 9

TYPICAL SECTION D1D2-04



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**TYPICAL SECTION D1D2-05**  
**ALIGNMENT D1D2 - STA. 1021+50 TO STA. 1068+84**



CONSULTANTS:



**Kimley-Horn  
and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116



Consulting Group, Inc.



LTK Engineering Services

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| DRAWN BY:                   |
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| PROJECT NO. 160528003.4,100 |

BOTTINEAU CORRIDOR  
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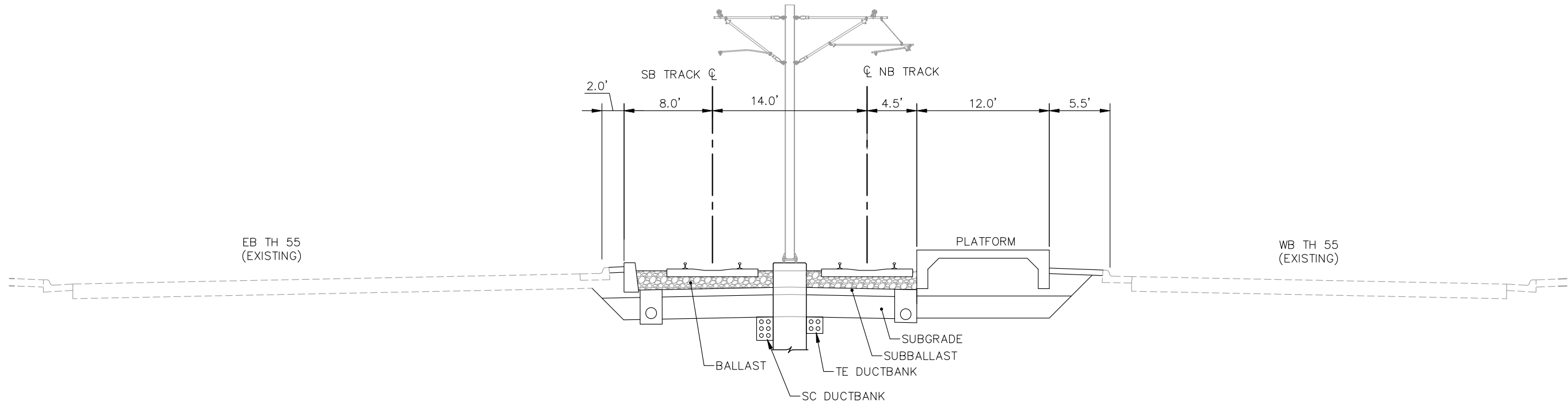
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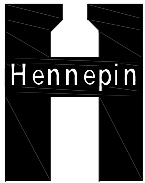
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**TYPICAL SECTION D1D2-05A**  
**ALIGNMENT D1D2 - VAN WHITE STATION**  
**(NB PLATFORM SHOWN, SB SIMILAR)**



CONSULTANTS:  
  
**Kimley-Horn and Associates, Inc.**  
2550 UNIVERSITY AVE. WEST, SUITE 345N  
ST. PAUL, MINNESOTA 55114  
TEL. NO. (651) 645-4197  
FAX. NO. (651) 645-5116

**SRF**  
Consulting Group, Inc.

**LTK**  
LTK Engineering Services

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| DRAWING NAME                |
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CONCEPTUAL DESIGN

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SHEET 9 OF 9

TYPICAL SECTION D1D2-05A

## APPENDIX F

### SUPPORTING TECHNICAL REPORTS & INFORMATION

List of Technical Reports



*The following technical reports can be accessed on the project website at [http://bottineautransitway.org/2012\\_deis\\_documents.htm](http://bottineautransitway.org/2012_deis_documents.htm).*

Connetics Transportation Group. 2012. Operating & Maintenance Cost Methodology Report.

Connetics Transportation Group. 2012. Operating & Maintenance Cost Results Report.

Connetics Transportation Group. 2012. Transit Operations Plans Report.

HMMH, Inc. 2012. Noise and Vibration Technical Report.

Kimley-Horn and Associates, Inc. 2012. Biological Environment Technical Report.

Kimley-Horn and Associates, Inc. 2012. Hazardous Materials Technical Report.

Kimley-Horn and Associates, Inc. 2012. Stormwater Technical Report.

Kimley-Horn and Associates, Inc. 2012. Traffic Technical Report.

Kimley-Horn and Associates, Inc. 2012. Water Resources Technical Report.

Kimley-Horn and Associates, Inc. and SRF Consulting Group, Inc. 2012. Transportation Technical Report.

SRF Consulting Group, Inc. 2012. Air Quality Technical Report.

SRF Consulting Group, Inc. 2012. Environmental Justice Technical Report.

SRF Consulting Group, Inc. 2012. Land Use Plan Compatibility Technical Report.

SRF Consulting Group, Inc. 2012. Section 4(f)/6(f) Determination Technical Report for Park and Recreational Lands.

SRF Consulting Group, Inc. 2012. Visual Quality Technical Report.

SRF Consulting Group, Inc. and Biko Associates. 2012. Economic Impacts Technical Report.

The 106 Group Ltd. 2012. Phase I and II Architectural History Survey for the Bottineau Transitway Project, Crystal, Brooklyn Park, Golden Valley, Maple Grove, Minneapolis, New Hope, and Robbinsdale, Hennepin County, Minnesota (Volume 1 and 2).

The 106 Group Ltd. 2012. Phase IA Archaeological Assessment for the Bottineau Transitway Project, Hennepin County, Minnesota.

The 106 Group Ltd. 2013. Bottineau Transitway Phase I and II Architectural Survey, Hennepin County, Minnesota: Supplemental Report 1.

## APPENDIX G

### SUPPORTING NOISE AND VIBRATION INFORMATION

Noise Impact Area Figures

FIGURE 12: ALIGNMENT A NOISE IMPACT LOCATIONS





FIGURE 13: ALIGNMENT A NOISE IMPACT LOCATIONS

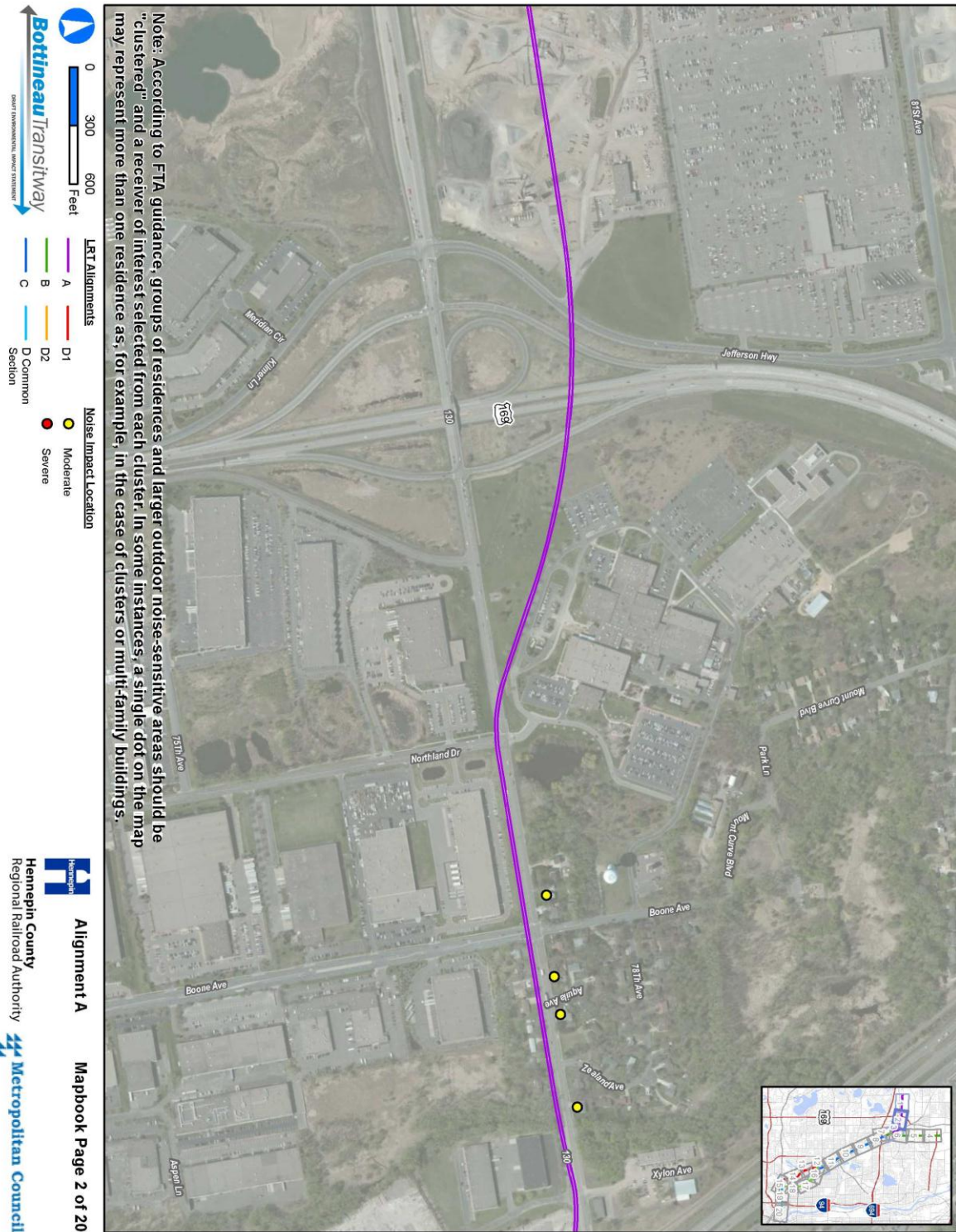




FIGURE 14: ALIGNMENT A NOISE IMPACT LOCATIONS





FIGURE 15: ALIGNMENT B NOISE IMPACT LOCATIONS

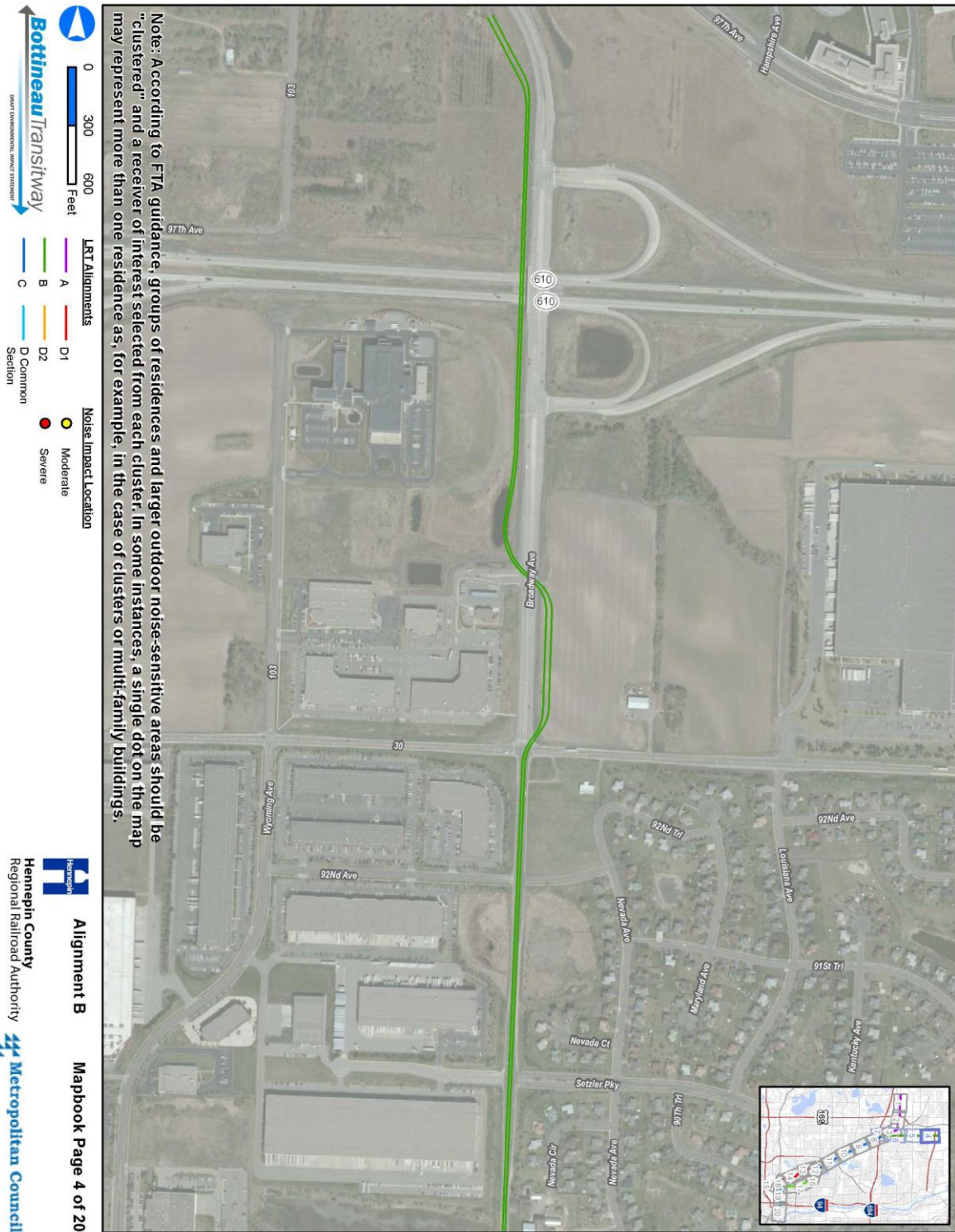




FIGURE 16: ALIGNMENT B NOISE IMPACT LOCATIONS





FIGURE 17: ALIGNMENT B NOISE IMPACT LOCATIONS

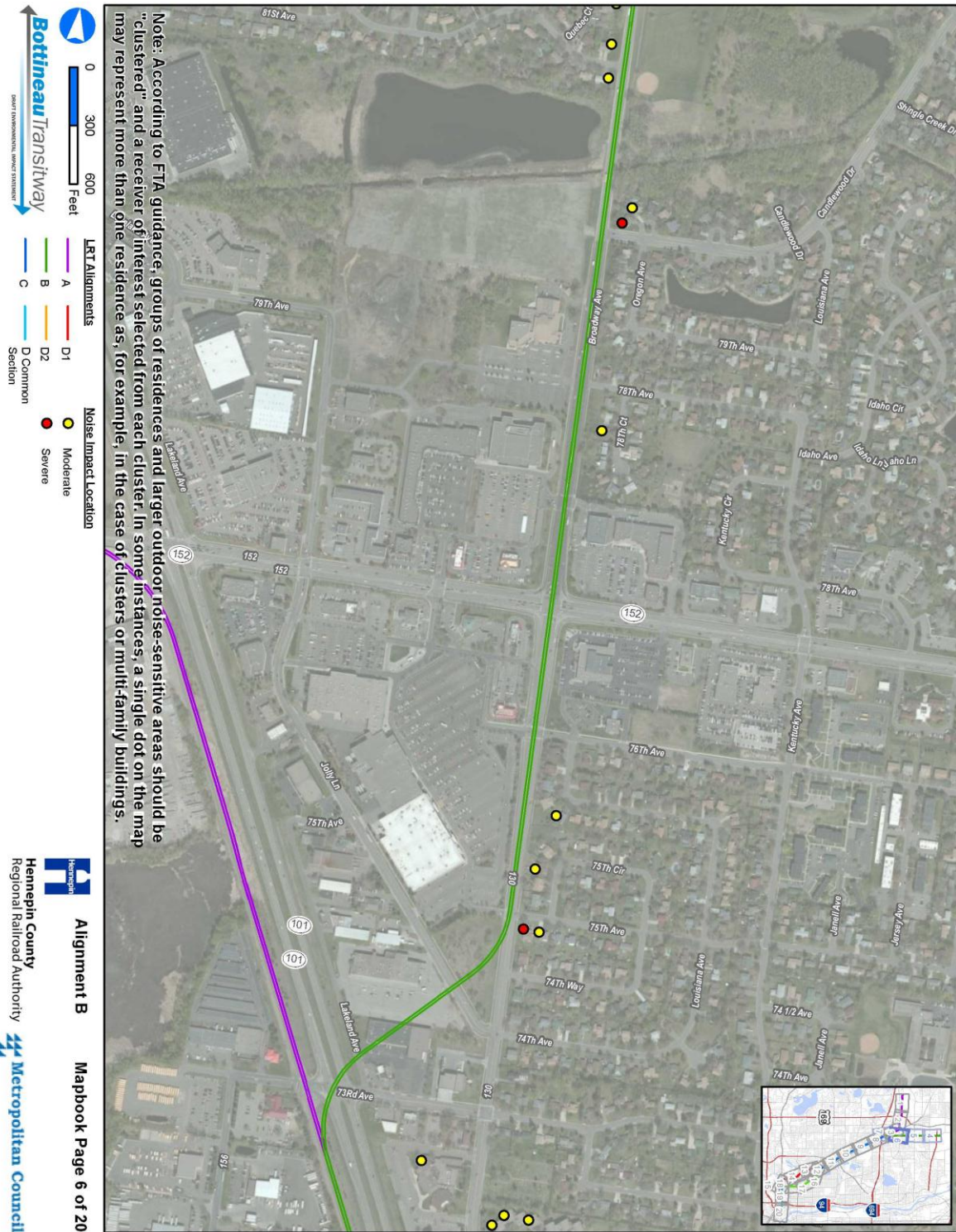




FIGURE 18: ALIGNMENT B NOISE IMPACT LOCATIONS

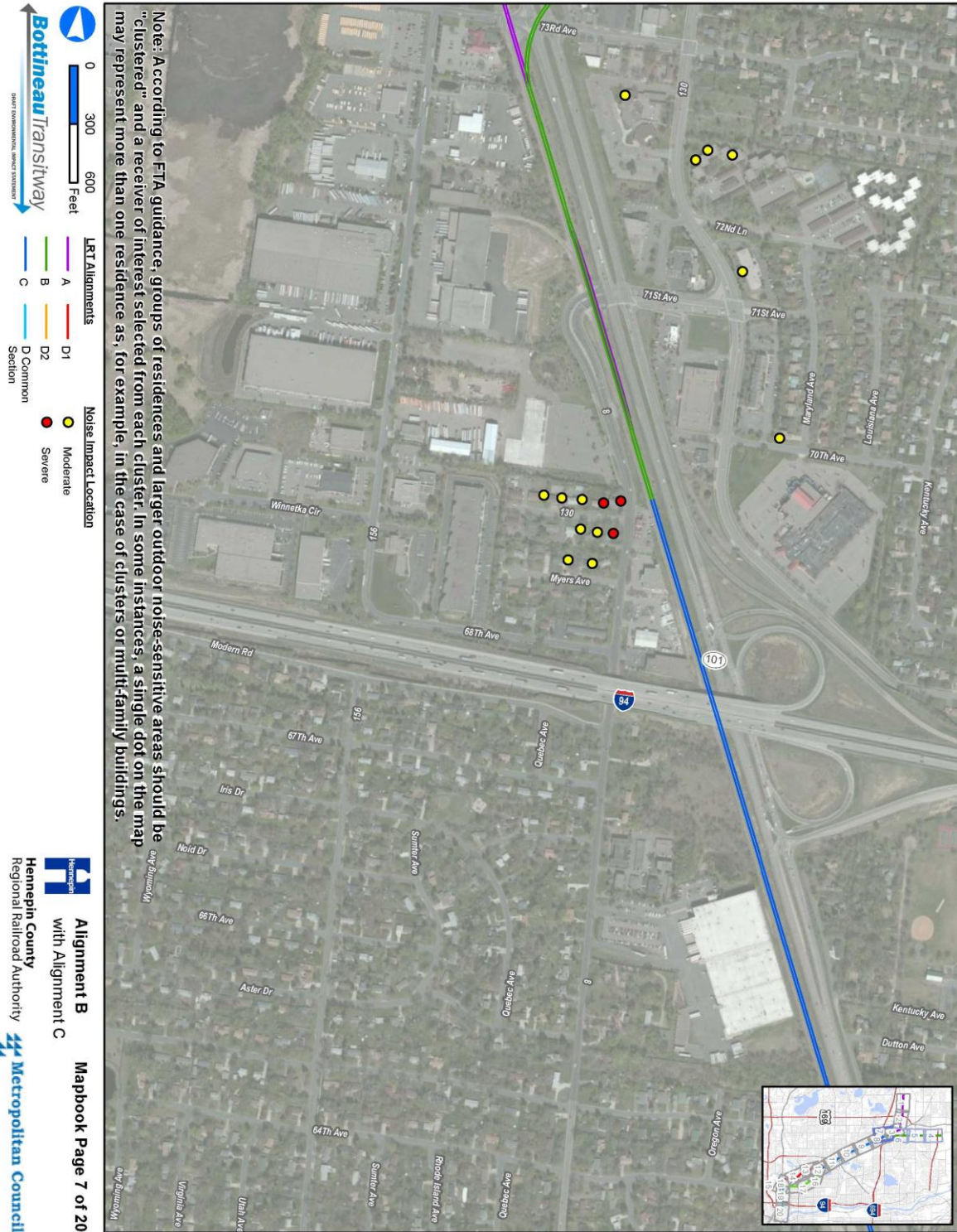




FIGURE 19: ALIGNMENT C NOISE IMPACT LOCATIONS





FIGURE 20: ALIGNMENT C NOISE IMPACT LOCATIONS





FIGURE 21: ALIGNMENT C NOISE IMPACT LOCATIONS

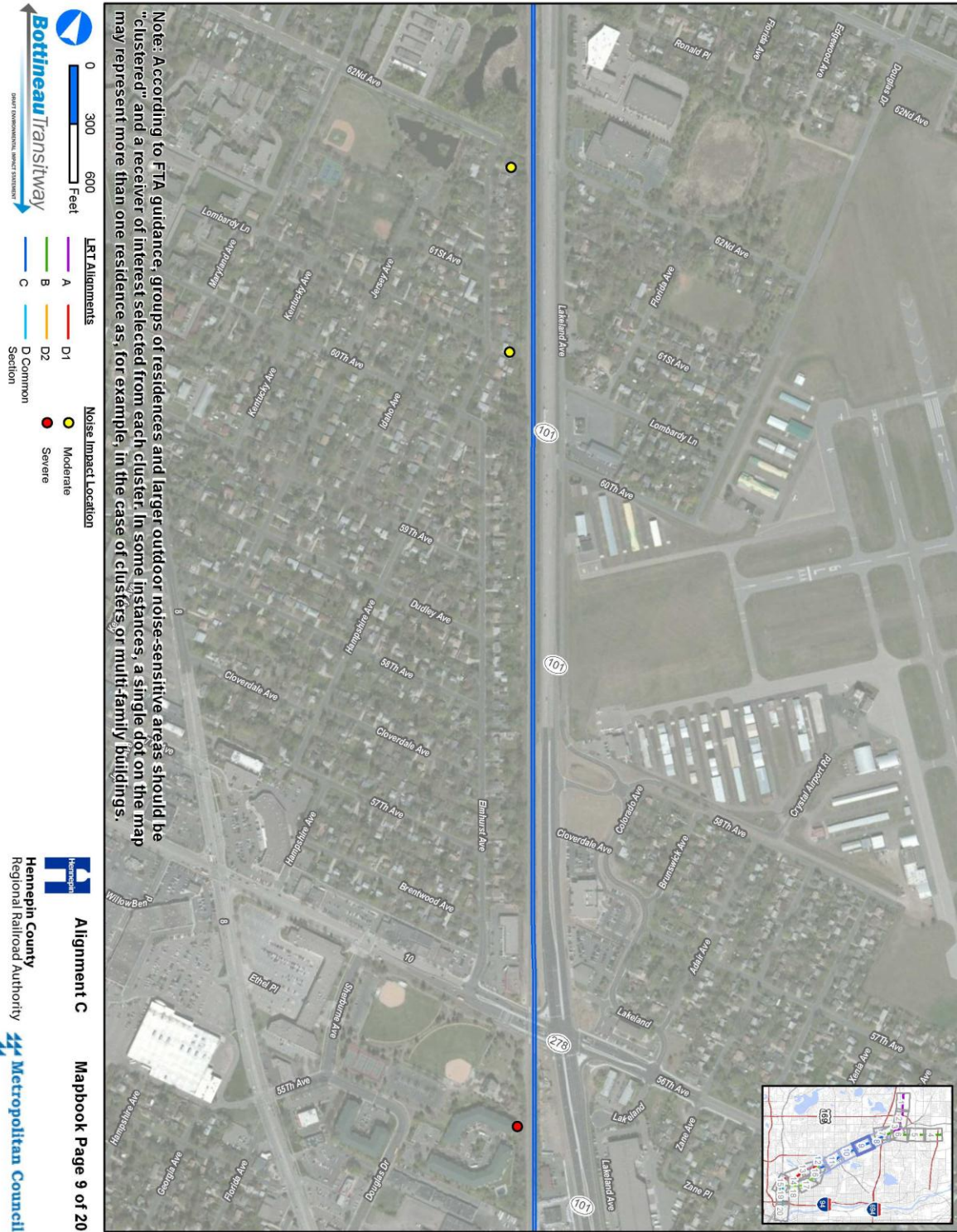




FIGURE 22: ALIGNMENT C NOISE IMPACT LOCATIONS

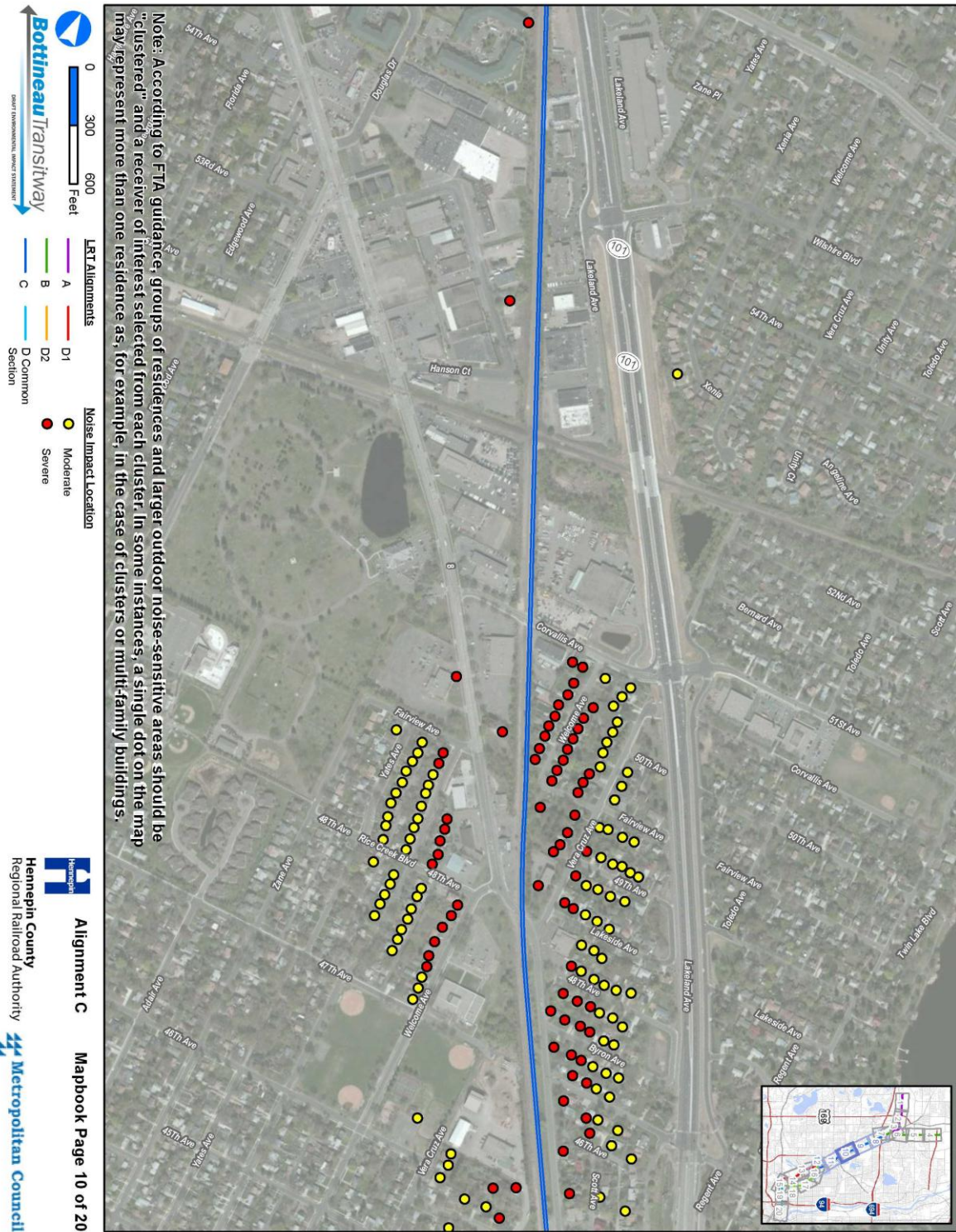




FIGURE 23: ALIGNMENT C NOISE IMPACT LOCATIONS

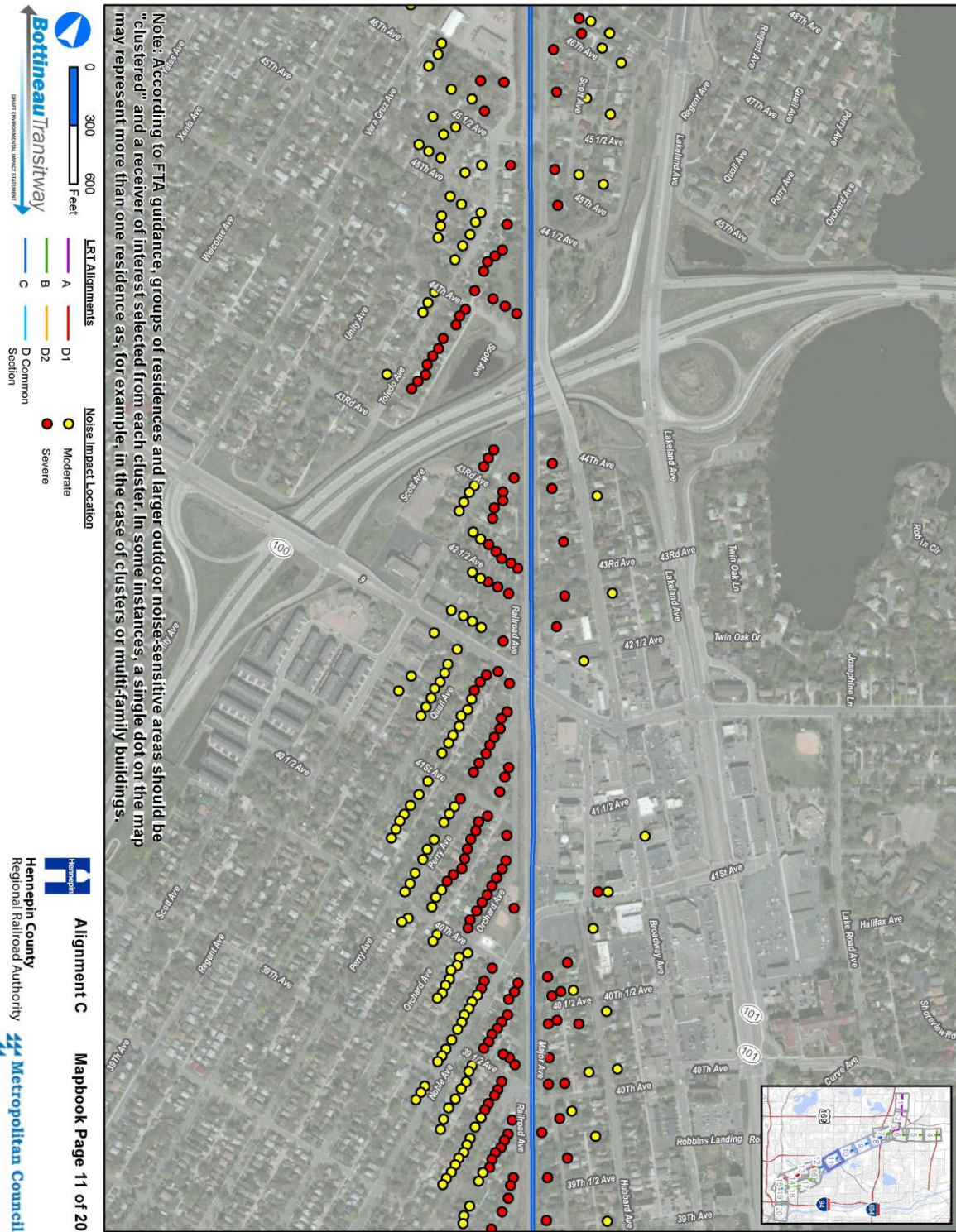
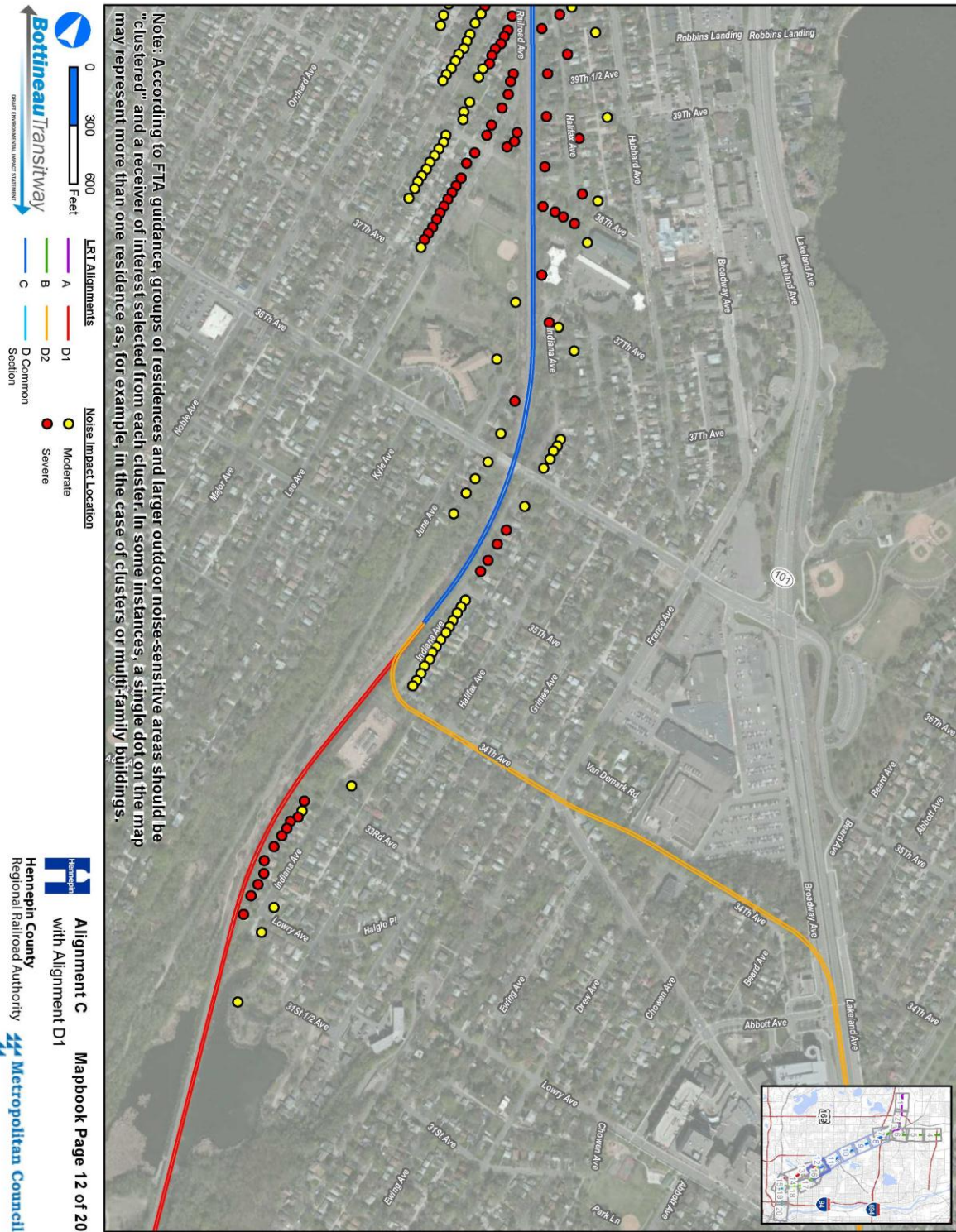




FIGURE 24: ALIGNMENT C NOISE IMPACT LOCATIONS





### FIGURE 25: ALIGNMENT C NOISE IMPACT LOCATIONS

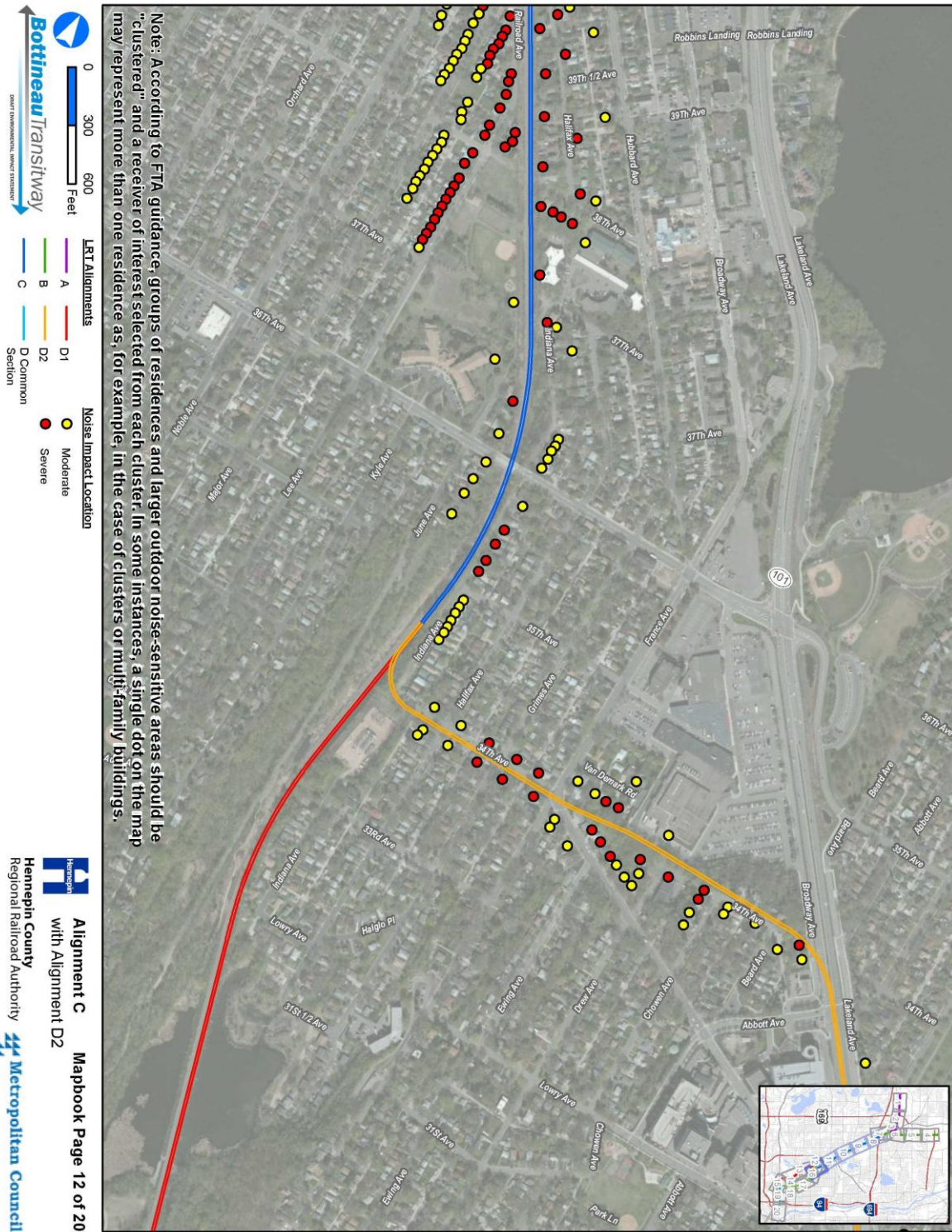




FIGURE 26: ALIGNMENT D1 NOISE IMPACT LOCATIONS

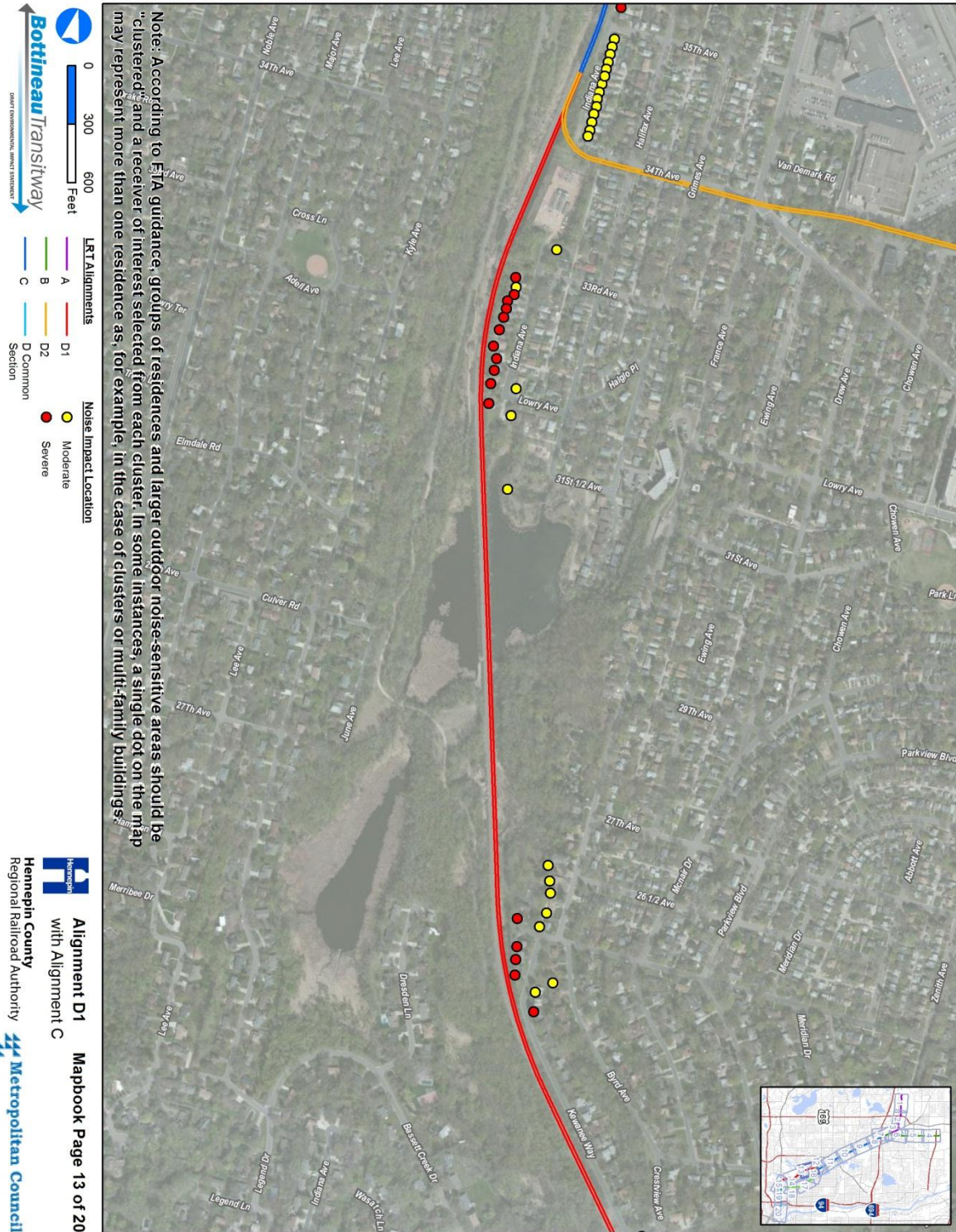




FIGURE 27: ALIGNMENT D1 NOISE IMPACT LOCATIONS





FIGURE 28: ALIGNMENT D1 NOISE IMPACT LOCATIONS

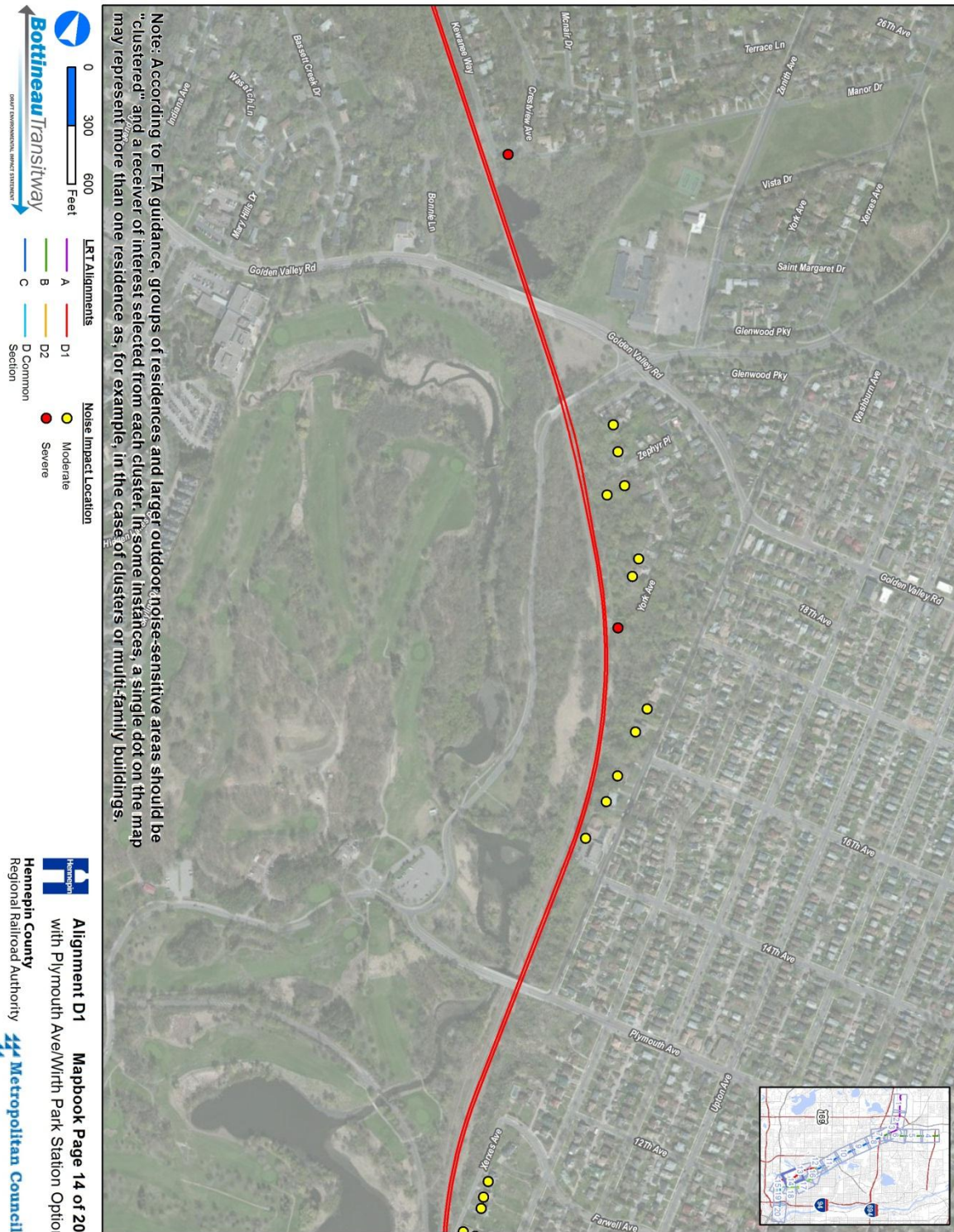




FIGURE 29: ALIGNMENT D1 NOISE IMPACT LOCATIONS

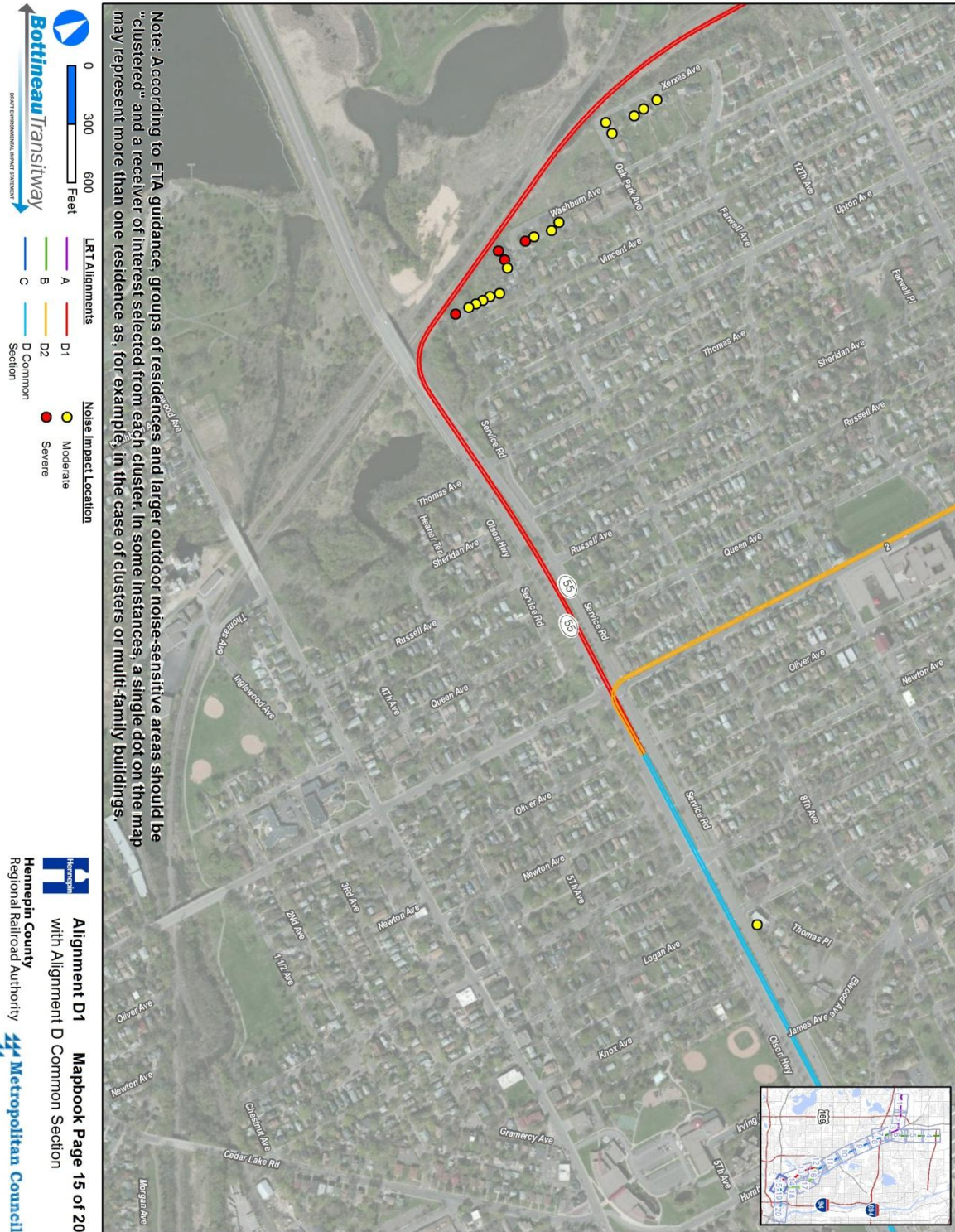




FIGURE 30: ALIGNMENT D2 NOISE IMPACT LOCATIONS

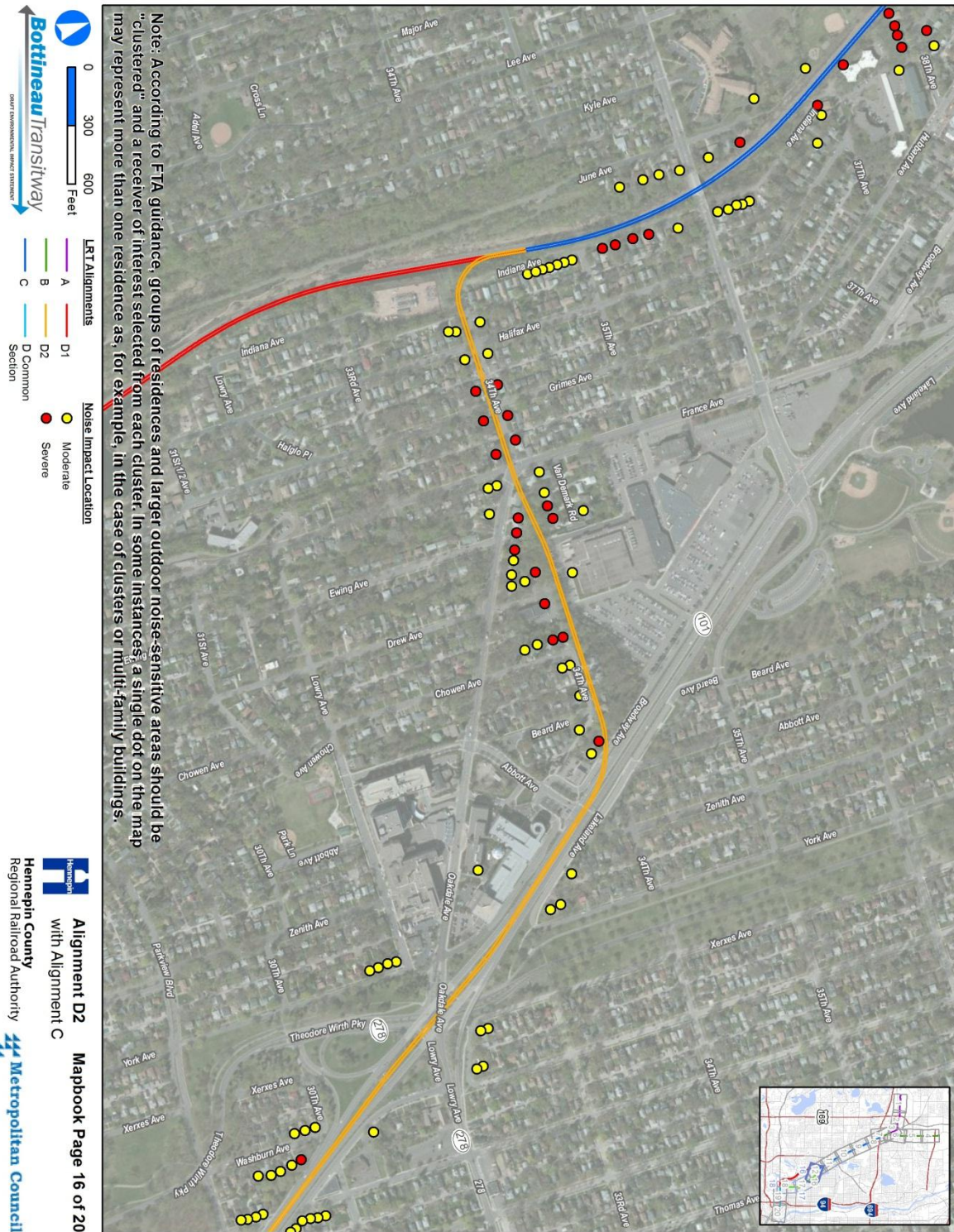




FIGURE 31: ALIGNMENT D2 NOISE IMPACT LOCATIONS

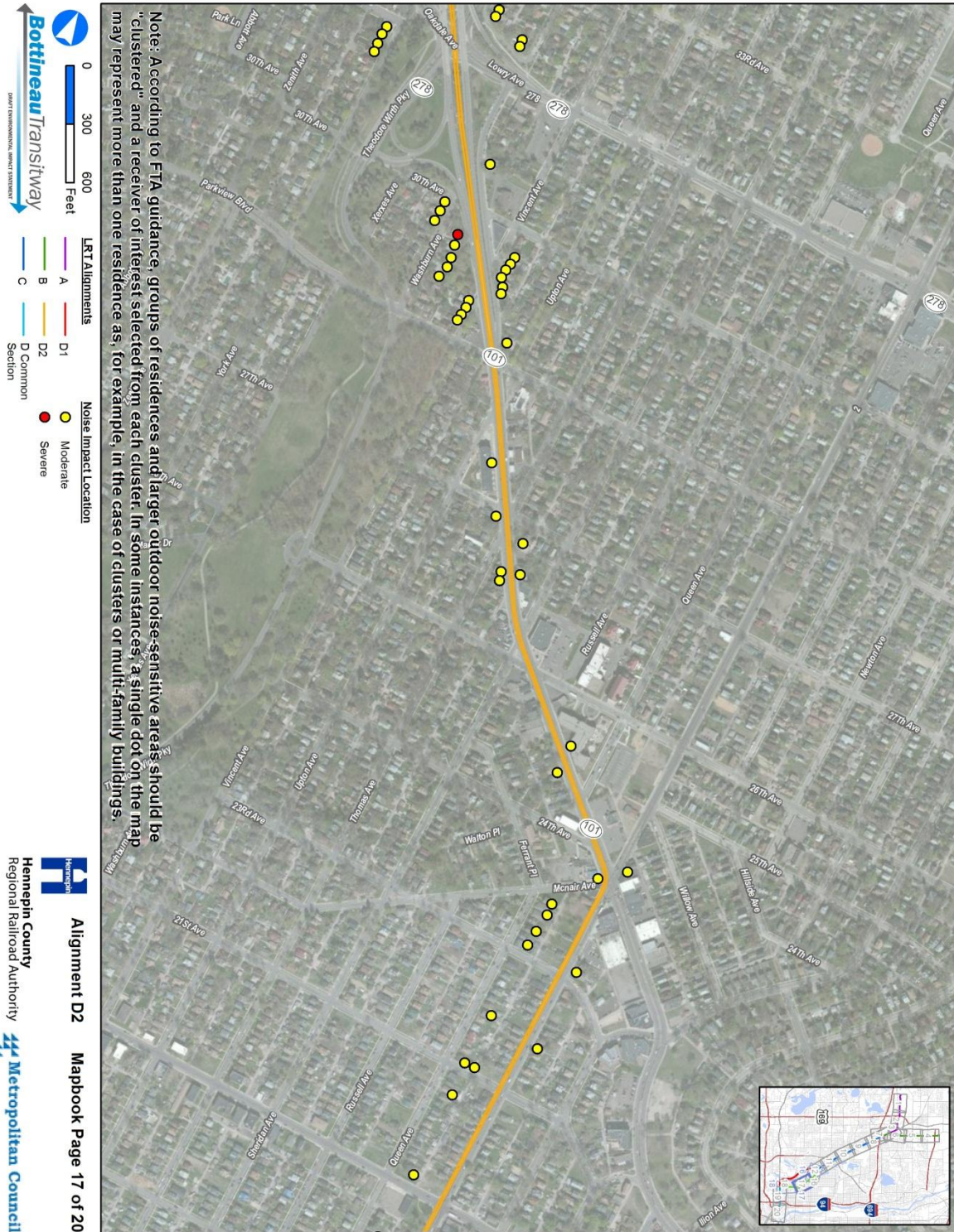




FIGURE 32: ALIGNMENT D2 NOISE IMPACT LOCATIONS

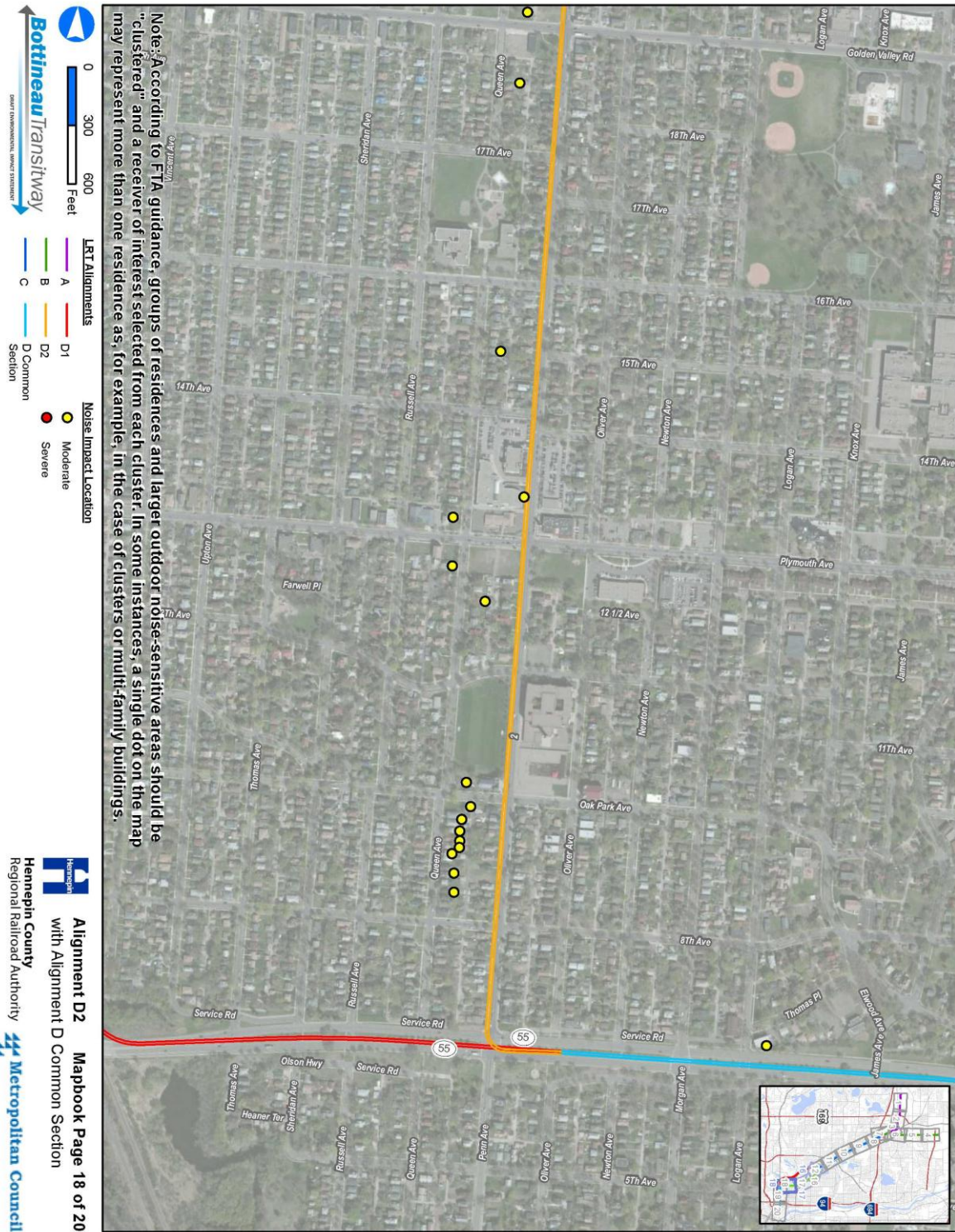




FIGURE 33: ALIGNMENT D COMMON SECTION NOISE IMPACT LOCATIONS

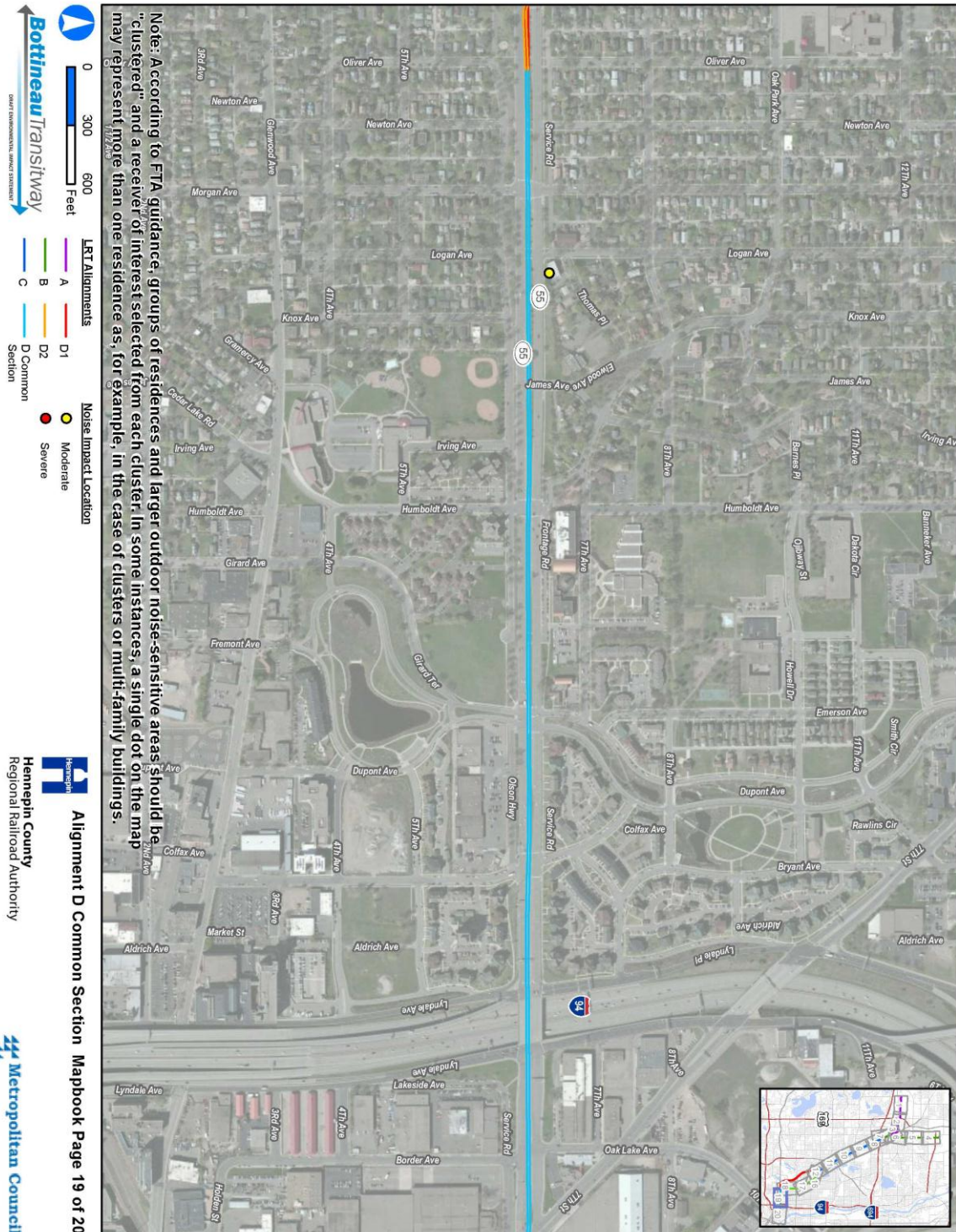




FIGURE 34: ALIGNMENT D COMMON SECTION NOISE IMPACT LOCATIONS



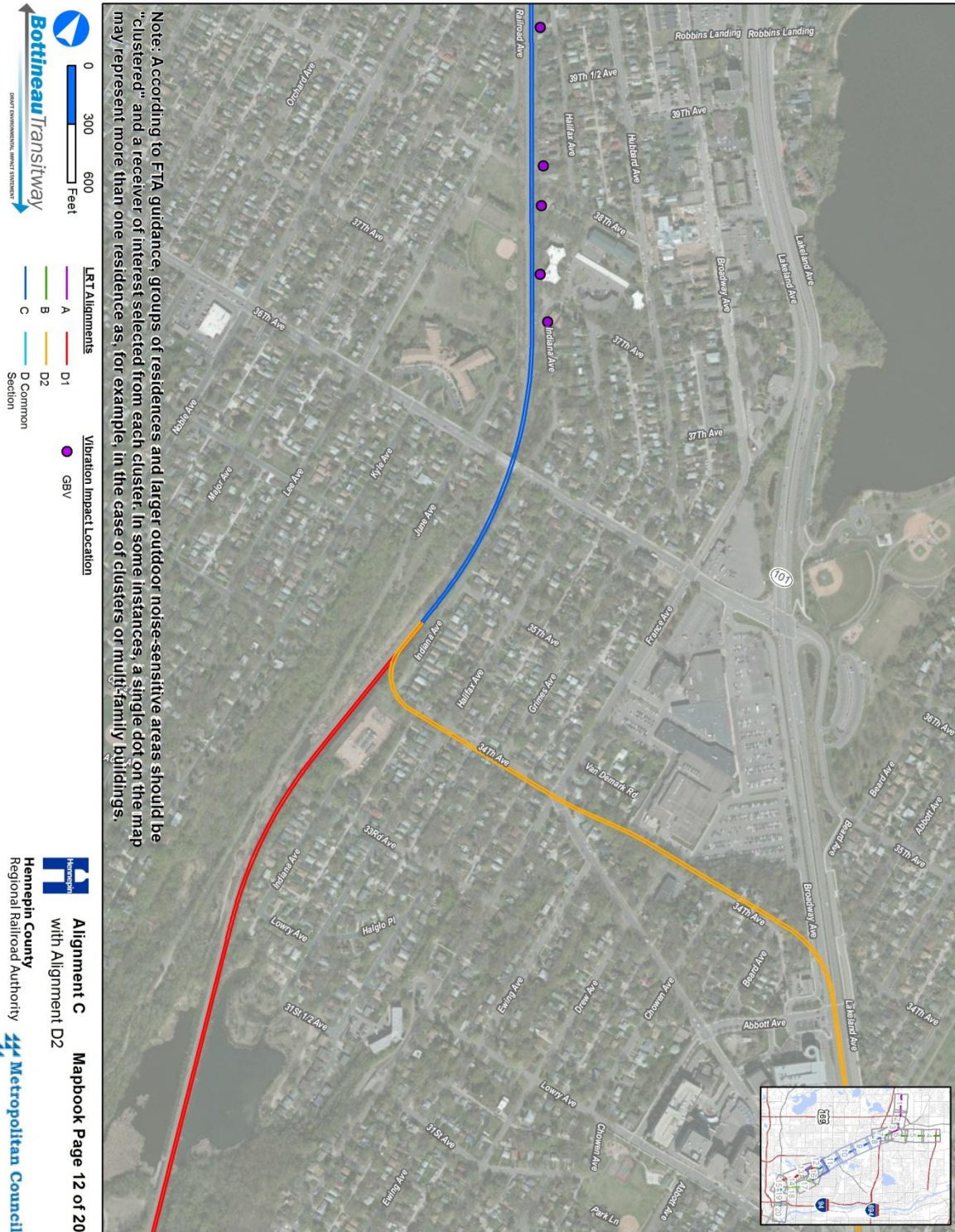


FIGURE 39: ALIGNMENT C VIBRATION IMPACT LOCATIONS





FIGURE 40: ALIGNMENT C VIBRATION IMPACT





## APPENDIX H

### PUBLIC NOTICES & PUBLIC INFORMATION

Minnesota EQB Scoping Decision and EIS Preparation Notice – June 11, 2012

Federal Register Notice of Intent – January 10, 2012

Scoping Meeting Poster – January 2012

D2 Open House Meeting Flyer – October 2011



Publication Date: June 11, 2012  
Vol. 36, No. 12

Next Publication: June 25, 2012  
Submittal Deadline: June 18, 2012  
Submit to [EQB.Monitor@state.mn.us](mailto:EQB.Monitor@state.mn.us)

## ENVIRONMENTAL ASSESSMENT WORKSHEETS

*EAW Comment Deadline: July 11, 2012*

**Project Title: Scott Sanness Farm – Section 26 Feedlot Expansion, Houston County**

**Description:** Scott Sanness operates a total confinement swine feedlot in Houston County with a maximum physical capacity of 790 animal units. He is proposing to construct a below ground, concrete liquid manure storage structure at his existing feedlot. The proposed structure will be 61 feet wide by 164 feet long and 8 feet deep. In addition, he will be expanding his feedlot, within the existing animal holding facilities, by adding 710 animal units in a sensitive area. The facility is located within 1,000 feet of a possible sinkhole. Manure will be stored in reinforced concrete pits located at the facility.

A copy of the Environmental Assessment Worksheet (EAW) will be posted on the Minnesota Pollution Control Agency website, at the following:

<http://www.pca.state.mn.us/news/eaw/index.html>. Written comments on the EAW should be submitted to Charles Peterson. A copy of the EAW may also be obtained by contacting Mary Osborn at 651-757-2101.

In addition to the EAW, the Minnesota Pollution Control Agency's draft National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Permit will also be available for public comment beginning June 11, 2012. The contact person for the NPDES/SDS Permit is Steven Schmidt at 507-206-2618.

**RGU:** Minnesota Pollution Control Agency

**Contact Person:** Charles Peterson, Planner Principal  
Environmental Review Unit – 4<sup>th</sup> Floor  
Resource Management and Assistance Division  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, MN 55155-4194  
651-757-2856  
[charles.peterson@state.mn.us](mailto:charles.peterson@state.mn.us)

The *EQB Monitor* is a biweekly publication of the Environmental Quality Board that lists descriptions and deadlines for Environmental Assessment Worksheets, Environmental Impact Statements, and other notices. The *EQB Monitor* is posted on the Environmental Quality board home page at <http://www.eqb.state.mn.us/>.

Upon request, the *EQB Monitor* will be made available in an alternative format, such as Braille, large print, or audio tape. For TTY, contact Minnesota Relay Service at 800-627-3529 and ask for Department of Administration. For information on the *EQB Monitor*, contact:

Minnesota Environmental Quality Board  
520 Lafayette Road – 4<sup>th</sup> Floor  
St. Paul, MN 55155-4194  
Phone: 651-757-2873  
Fax: 651-297-2343  
<http://www.eqb.state.mn.us>

**Project Title: Lake Superior – Poplar River Water District**

**Description:** This project provides for the creation by the state legislature of a public rural water district (hereinafter the “District”) and the construction by the District of a water pipeline and water appropriation from Lake Superior to provide potable and raw water to residential, commercial, and government customers within the district.

**RGU:** Minnesota Department of Natural Resources (MDNR)

The MDNR will accept written comments on the Environmental Assessment Worksheet during the public review and comment period, which concludes Wednesday, July 11, 2012 at 4:30 p.m.

Written comments should be submitted to Randall Doneen, EAW Project Manager, Environmental Policy and Review Unit, Division of Ecological and Water Resources, Department of Natural Resources, 500 Lafayette Road, St. Paul, Minnesota, 55155-4025. Electronic or e-mail comments may be sent to [Environmentalrev.dnr@state.mn.us](mailto:Environmentalrev.dnr@state.mn.us) with “Poplar River Water District EAW” in the subject line. If submitting comments electronically, please include your name and mailing address.

Public review copies of the EAW are available at the following locations:

- MDNR Library, 500 Lafayette Road, St. Paul, MN 55155
- MDNR Northeast Regional Headquarters 1201 East Highway 2  
Grand Rapids, MN 55744
- Minneapolis Public Library, Government Documents, 300 Nicollet Mall, Minneapolis, Minnesota, 55401
- Duluth Public Library, 520 W Superior St., Duluth, MN 55802
- Grand Marais Library, 104 2nd Avenue West Grand Marais, MN 55604

The EAW is also posted on the MDNR’s website at [www.dnr.state.mn.us](http://www.dnr.state.mn.us). (Click on “Public Input”, then under the “Environmental Review” scroll-down list select “Lake Superior – Poplar River Water District EAW”). Additional copies may be requested by calling (651) 259-5156.

**Project Title: Carlos Avery Brooder Shed Project**

**Description:** Four 1930’s era brooder sheds located within the National Register of Historic Places – listed Carlos Avery Wildlife Management Area Headquarters will be demolished by the Minnesota Department of Natural Resources (MDNR). One building will be repaired. Each building consists of a concrete slab, 10 steel-framed pens, and a wood-framed shelter.

**RGU:** Minnesota Department of Natural Resources

The MDNR will accept written comments on the Environmental Assessment Worksheet during the public review and comment period, which concludes Wednesday, July 11, 2012.



Written comments should be submitted to Jamie Schrenzel, EAW Project Manager, Environmental Policy and Review Unit, Division of Ecological and Water Resources, Department of Natural Resources, 500 Lafayette Road, St. Paul, Minnesota, 55155-4025. Electronic or e-mail comments may be sent to [Environmentalrev.dnr@state.mn.us](mailto:Environmentalrev.dnr@state.mn.us) with “Carlos Avery EAW” in the subject line. If submitting comments electronically, please include your name and mailing address.

Public review copies of the EAW are available at the following locations:

- MDNR Library, 500 Lafayette Road, St. Paul, MN 55155
- MDNR Central Regional Headquarters, 1200 Warner Road, St. Paul, MN 55106
- Minneapolis Public Library, Government Documents, 300 Nicollet Mall, Minneapolis, Minnesota, 55401
- Hardwood Creek Library, 19955 Forest Road North, Forest Lake, MN 55025

The EAW is also posted on the MDNR’s website at [www.dnr.state.mn.us](http://www.dnr.state.mn.us). (Click on “Public Input”, then under the “Environmental Review” scroll-down list select “Carlos Avery Brooder Shed Project EAW”). Additional copies may be requested by calling (651) 259-5115.

**Project Title: CSAH 17 and CSAH 78 Reconstruction SP 070-617-022/ CP17-31**

**Description:** Scott County is proposing to reconstruct 1.6 miles along County State Aid Highway (CSAH) 17 and portion of CSAH 78 from a two-lane rural roadway to four-lane divided urban roadway in the City of Shakopee. The project will improve the safety, mobility, and capacity along the corridor. Project limits include CSAH 17 from 300’ south of Dominion Avenue to CSAH 16, CSAH 78 from Barrington Drive to Hillside Drive, approximately 550’ of Valley View Road (construction of new alignment) from CSAH 17 east and a new street to connection from Valley View Road to St. Francis Avenue.

**RGU:** Scott County

**Contact person:** Lisa Freese, AICP, Transportation Program Manager  
600 Country Trail East  
Jordan, MN 55352  
Phone: (952) 496-8363 / Fax (952) 496-8365  
E-mail: [LFreese@co.scott.mn.us](mailto:LFreese@co.scott.mn.us)

The closing date for comments is July 11, 2012, for consideration. Copies of the Environment Assessment/Environmental Assessment Worksheet documenting the purpose and need for the project, along with anticipated environmental impacts, is available for public viewing at the following locations:

- **Scott County - Central Shop**  
600 Country Trail East, Jordan, MN 55352-9339
- **Shakopee City Hall**  
129 South Holmes Street, Shakopee, MN 55379
- **Scott County Library System – Shakopee Branch**  
235 South Lewis Street, Shakopee, MN 55379

The EAW is also available on the project website (along with other project information) at: [www.co.scott.mn.us/highway17and78](http://www.co.scott.mn.us/highway17and78)

An open house/hearing for the project will be held on Tuesday, June 26, 2012 from 4:30 p.m. to 6 p.m. at In the County Board Room at the Scott County Government Center located at 200 Fourth Avenue West, Shakopee, Minnesota.

**Project Title: Minnehaha Creek Reach 20 Restoration**

**Description:** The Minnehaha Creek Watershed District (MCWD) is proposing a restoration of 4,563 linear feet of straightened channel of Minnehaha Creek within St. Louis Park. The project includes restoration of former channel sinuosity, improving stormwater filtration, updating canoe access, developing recreational trails and maximizing restored stream, wetland and riparian habitats along the creek within St. Louis Park. The creek restoration falls under criteria requiring a mandatory EAW.

The EAW is available for download from the City of St. Louis Park's website at: <http://www.stlouispark.org/development-planning-study.html>. Paper copies of the EAW are available at St. Louis Park City Hall in the Planning Division, 5005 Minnetonka Boulevard, St. Louis Park, Minnesota, or at the Minnehaha Creek Watershed District Offices, 18202 Minnetonka Boulevard, Deephaven, Minnesota.

Comments on the EAW may be provided via written correspondence, email, or telephone, to the contacts below:

**RGU:** City of St. Louis Park

**Contact Persons:**

Adam Fulton, Planner  
City of St. Louis Park  
5005 Minnetonka Boulevard  
St. Louis Park, MN 55416  
[afulton@stlouispark.org](mailto:afulton@stlouispark.org)  
952-928-2841

James Wisker, Director of Planning  
Minnehaha Creek Watershed District  
18202 Minnetonka Boulevard  
Deephaven, MN 55391  
[JWisker@minnehahacreek.org](mailto:JWisker@minnehahacreek.org)  
952-641-4509

**Project Title: Lilydale Regional Park Master Plan Implementation Project**

**Description:** The approved Master Plan Amendment for Lilydale Regional Park works to protect and enhance natural resources in Lilydale Regional Park. Master plan elements include roadway and trail realignment, picnic shelter, restrooms, dog park, Pickerel Lake access, environmental remediation of dump sites and enhancement of fossil ground trailhead.

Copies of the Environmental Assessment Worksheet (EAW) are available for public viewing beginning June 11<sup>th</sup> during regular business hours at the following locations:

Riverview Central Library  
1 East George Street  
Saint Paul, MN 55107

Central Library  
90 West Fourth Street  
Saint Paul, MN 55102

A copy of the EAW may also be obtained by contacting Alice Messer listed below.

A public meeting to receive comment on the EAW is scheduled for Monday, June 18, 2012 from 6:30 to 8:00 p.m. at the Wellstone Community Center (179 Robie Street East, Saint Paul, MN 55107). The 30-day written comment period will be open from June 11 – July 11, 2012. Comments should be submitted to the contact person listed below. For additional information about Lilydale Regional Park visit [www.stpaul.gov/parks](http://www.stpaul.gov/parks) and click on Current Projects.

**RGU:** City of St. Paul Department of Parks and Recreation

**Contact Person:** Alice Messer  
25 West 4th Street, Suite 400  
Saint Paul, Minnesota 55102  
Telephone: 651-266-6412  
Facsimile: 651-292-7405  
[Alice.Messer@ci.stpaul.mn.us](mailto:Alice.Messer@ci.stpaul.mn.us)

## EAW NEED DECISIONS

The noted responsible governmental unit has made a decision regarding the need for an EAW in response to a citizen petition.

- City of Roseville, Proposed Walmart Store at County Road C and Cleveland Avenue, EAW denied, Exempt
- City of Andover, Proposed 150,000 Square Foot Retail Development at 1851 Bunker Lake Boulevard, EAW denied

## EIS NEED DECISIONS

The responsible governmental unit has determined the following projects do not require preparation of an EIS. The dates given are, respectively, the date of the determination and the date the EAW notice was published in the *EQB Monitor*.

- Minnesota Pollution Control Agency, Worthington Industrial Park Sanitary Sewer Extension, Worthington, MN, June 4, 2012 (April 16, 2012)

## EIS SCOPING EAW

*EIS Scoping EAW Comment Deadline: July 25, 2012*

**Project Title:** Veolia Environmental Services Rolling Hills Mixed Municipal Solid Waste Landfill Project, Wright County

**Description:** Veolia Environmental Services Rolling Hills Landfill, Inc. proposes to construct a new 72-acre mixed municipal solid waste (MSW) landfill area on existing Veolia property adjacent to the active industrial solid waste disposal area at the Veolia Rolling Hills Landfill Facility located in Wright County, Minnesota. The project includes phased construction of lined cells, leachate recirculation and disposal



structures, active gas collection including a gas burning flare, a landfill surface water management system, and wetland mitigation and conservation areas. The project is designed to accept mixed MSW, which includes residential, commercial, and Minnesota Pollution Control Agency-approved industrial solid waste, and construction and demolition debris.

The preparation of an Environmental Impact Statement is mandatory. A copy of the Scoping Environmental Assessment Worksheet (EAW) and draft Scoping Decision Document (SDD) will be posted on the Minnesota Pollution Control Agency website, at the following: <http://www.pca.state.mn.us/news/eaw/index.html>. Written comments on the Scoping EAW and draft SDD should be submitted to Nancy Drach. A copy of the Scoping EAW may also be obtained by contacting Mary Osborn at 651-757-2101.

The Minnesota Pollution Control Agency will host a public scoping meeting on July 9, 2012, from 7:00-9:00 p.m. at the Rockford Township Hall located at 3039 Dague Avenue SE, Buffalo, Minnesota, 55313.

**RGU:** Minnesota Pollution Control Agency

**Contact Person:** Nancy Drach, Planner Principal  
Environmental Review Unit – 4<sup>th</sup> Floor  
Resource Management and Assistance Division  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, MN 55155-4194  
651-757-2317  
[nancy.drach@state.mn.us](mailto:nancy.drach@state.mn.us)

## SCOPING DECISION AND EIS PREPARATION NOTICE

**Project Title:** Bottineau Transitway Project

**Description:** The Bottineau Transitway is a proposed project that will provide for transit improvements in the highly traveled northwest area of the Twin Cities. The Bottineau Transitway is located in Hennepin County, Minnesota, extending approximately 13 miles from downtown Minneapolis to the northwest serving north Minneapolis and the suburbs of Golden Valley, Robbinsdale, Crystal, New Hope, Brooklyn Park, Maple Grove and Osseo.

Federal Transit Administration (FTA), HCRRA and the Metropolitan Council have initiated the environmental review process for the Bottineau Transitway Project. Federal funding for this project may be pursued through the FTA New Starts Program. As a result, FTA – designated as the lead federal agency for this project – is choosing to undertake environmental review in compliance with the National Environmental Policy Act (NEPA). As the local public agencies sponsoring the project, the HCRRA and the Metropolitan Council must also comply with the requirements of the Minnesota Environmental Policy Act (MEPA). HCRRA is the RGU under Minnesota Rules Chapter 4410.0500 for the Draft EIS. FTA and HCRRA have determined that the Bottineau Transitway project may have significant impacts. To satisfy both federal and state requirements, an Environmental Impact Statement (EIS) is being prepared for the Bottineau Transitway project.

A Scoping Booklet was prepared, noticed in the Environmental Quality Board (EQB) Monitor on December 26, 2011, and distributed to the EQB EIS distribution list, along with numerous other interested parties. The comment period was open from December 26, 2011 to February 17, 2012 and during that time four formal public Scoping meetings were held. A separate Interagency Scoping Meeting for governmental agencies was also held.

Since the close of the comment period on February 17, 2012, HCRRA in consultation with the Metropolitan Council and the FTA, has been reviewing the technical analysis completed and comments received and working through the project advisory committees established for the Bottineau Transitway. Specifically, the Advise, Review and Communicate Committee (ARCC), Community Advisory Committee (CAC) and the Policy Advisory Committee (PAC). The ARCC provided input to the PAC on the Scoping Decision in late April 2012. The PAC passed an advisory resolution to the HCRRA regarding the scoping decision on April 23 2012, and the HCRRA, acting as both the project proposer and RGU for the proposed action passed a scoping decision resolution on May 8, 2012. Since the action by the RGU on May 8, HCRRA and Met Council have been in consultation with the FTA, the lead federal agency regarding the local scoping decision.

Based on public and agency input and additional technical analysis, HCRRA has determined that the following alternatives will be evaluated in the Draft Environmental Impact Statement (Draft EIS):

- No-Build Alternative
- Transportation System Management (TSM) Alternative
- Four light rail transit (LRT) alternatives on various alignments (A-C-D1, A-C-D2, B-C-D1, and B-C-D2)

A bus rapid transit (BRT) Alternative will not be studied in the Draft EIS.

In addition to the identification of alternatives advanced for further evaluation in the Draft EIS, the Bottineau Transitway Scoping Decision Document includes information in compliance with Minn. R. 4410.2100, subp. 6.

The Scoping Decision Document and EIS Preparation Notice will be distributed to the EQB Distribution list and will also be posted on the Bottineau Transitway website, [www.bottineautransitway.org](http://www.bottineautransitway.org). A press release will also be provided to at least one newspaper of general circulation within Hennepin County.

**RGU:** Hennepin County Regional Railroad Authority (HCRRA)

Questions or comments may be directed to:

**Contact Person:** Brent Rusco  
Bottineau Transitway Project Manager  
Hennepin County  
701 Fourth Avenue South, Suite 400  
Minneapolis, Minnesota 55415  
Phone: 612-543-0579  
Email: [brent.rusco@co.hennepin.mn.us](mailto:brent.rusco@co.hennepin.mn.us)  
Fax: 612-348-9710

Written materials, project updates, and materials used at the public Scoping meetings are available on the Bottineau Transitway project website noted above.

## DRAFT EIS AVAILABLE

### **Project Title: Proposed South Mine, Kasota Township, Le Sueur County, Minnesota**

**Description:** The Le Sueur County Board of Commissioners announces that a Draft Environmental Impact Statement (DEIS) has been prepared for the Proposed South Mine and is available for public comment. Unimin Corporation proposes the continuation of open pit non-metallic mineral mining of the Jordan Sandstone to produce industrial sand. Blasting, crushing, dewatering, size classification, and reclamation activities will occur on approximately 1,188.06 acres located in parts of sections 5, 6, 7, 8, 17, 18; & 12, Kasota Township (T109N, R26W; 27W), Le Sueur County, Minnesota. Current land cover includes row-crop agriculture, pasture, wetlands, natural area, residential, and a Public Water Wetland.

Copies of the DEIS are available for public review at the Le Sueur County Environmental Services office: 515 South Maple Avenue, Le Center; the MN Valley Regional Library Reference Department: 100 E Main St., Mankato; and the Saint Peter Public Library: 601 South Washington Avenue, Saint Peter. A copy of the DEIS will also be posted during the comment period on the Le Sueur County website: <http://www.co.le-sueur.mn.us>.

A public informational meeting will be held on Monday, July 9th, at 6:30 pm, at the Le Sueur County Planning and Zoning office, 515 South Maple Avenue, Le Center.

**All comments must be submitted in writing by 4:30 pm, Monday, July 23rd.**

**Contact Person:** Kathy Brockway  
Planning & Zoning Administrator  
Le Sueur County  
88 South Park Avenue  
Le Center, MN 56057  
Phone (507) 357-2251  
[kbrockway@co.le-sueur.mn.us](mailto:kbrockway@co.le-sueur.mn.us).

## NOTICES

### **STATE OF MINNESOTA DEPARTMENT OF NATURAL RESOURCES**

**Issued: June 4, 2012**

#### **Notice of Availability of Draft Comprehensive Conservation Management Plan for Federal Lands Known as Beltrami Island Land Utilization Project, in Beltrami, Roseau, and Lake-of-the-Woods Counties**

The Minnesota Department of Natural Resources, in conjunction with the U.S. Fish and Wildlife Service, is releasing a Draft Comprehensive Conservation Management Plan for over 84,000 acres of leased federal lands known as the Beltrami Island Land Utilization Project (LUP). LUP lands were designated as “a refuge and breeding ground for native birds and other wildlife” by Executive Order 9091 in 1942. The LUP lands are scattered among state lands in the Beltrami Island State Forest, Red Lake Wildlife Management Area, Hayes Lake State Park, and three peatland Scientific and Natural Areas.



The Department is accepting public comments on the Draft Comprehensive Conservation Management Plan from June 11, 2012 through July 25, 2012.

A Public Open House is scheduled for June 27, 2012 from 4-8 pm at the DNR's Warroad Area Forestry Office, 804 Cherne Dr. NW, Warroad. There will be a short presentation, a question and answer session, and an opportunity to provide oral or written comments.

A copy of the plan may be obtained by 1) contacting Project Consultant Michael R. North (see contact information below); 2) downloading it from the project website: [www.beltramiisland.info](http://www.beltramiisland.info); 3) stopping by the Red Lake WMA Office at Norris Camp, the Warroad Area Forestry Office, the Baudette Area Wildlife Office, or Agassiz National Wildlife Refuge. Printed copies have also been distributed to public libraries in Baudette, Warroad, Roseau, Bemidji, Crookston, and East Grand Forks.

**Project Contact:** Michael R. North, Project Consultant  
Minnesota DNR  
1601 Minnesota Drive  
Brainerd, MN 56401  
Phone: 218-833-8623  
Fax: 218-828-6022  
E-mail: [Michael.north@state.mn.us](mailto:Michael.north@state.mn.us)

To comment, send letter, email, or completed comment card to Michael North by July 26, 2012.

## **MINNESOTA DEPARTMENT OF COMMERCE**

### **Notice of Availability of Environmental Report**

#### **In the Matter of the Certificate of Need Application for the Ellerth Windpark Project**

**PUC Docket Number: IP6855/CN-11-112**

**PLEASE TAKE NOTICE** that Minnesota Department of Commerce Energy Facility Permitting (EFP) staff has completed an environmental report (ER) for the proposed project. The ER analyzes the potential human and environmental impacts of the proposed project and alternatives to the project.

The ER, and all material constituting the official record for the certificate of need, can be found on the eDockets system at: <https://www.eDockets.state.mn.us/EFiling/search.jsp>; search on the year "11" and number "112."

Electronic versions of the ER and selected other documents relevant to this matter are available for viewing on the Department's energy facility permitting website:  
<http://mn.gov/commerce/energyfacilities/Docket.html?Id=32308>.

The ER will also be available at the locations noted below:

|                                                                                             |                                                                                           |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| <b>Godel Memorial Library</b><br>314 East Johnson<br>Warren, MN 56762                       | <b>Newfolden Community Center</b><br>145 East First Street<br>Newfolden, MN 56738         |
| <b>Marshall County Auditor's Office</b><br>208 East Colvin<br>Warren, MN 56762              | Clerks in Wright, West Valley,<br>Foldahl, Marsh Grove,<br>Comstock, and Viking Townships |
| <b>Thief River Falls Public Library</b><br>102 Main Avenue South<br>Thief River Falls 56701 |                                                                                           |

**Project Description.** Anywhere from 61 to 43 turbines would be used for the Ellerth Windpark Project, this number depends on the size and model of turbine selected. The three turbines under consideration (General Electric 1.6 MW, Vestas 1.8 MW V90, and Siemens 2.3 MW SWT – 101) vary in size and capacity. However, the total nameplate capacity would be limited to 98.9 MW.

Tower heights would range from 262 to 328 feet (80 to 100 meters), with rotor diameters of 295 to 331 feet (90 to 101 meters), for a total height of 426.5 to 493.8 feet (125 to 150 meters). Associated project facilities would include tower foundations, turbine access roads, step up transformers, electric feeder and collection lines, a supervisory control and data acquisition (SCADA) system, an operations and maintenance (O&M) building, permanent meteorological towers, and a project substation.

The project is located approximately two miles west of the community of Newfolden and four miles north of Viking in portions of the townships of Wright (Sections E½ SE¼ 36), West Valley (S1/2 30, 31-35), Foldahl (1, 2, 11-13, 24, 25, 36), Marsh Grove (1-13, 19-23, 26-35), Comstock (1), and Viking (2-6) in Marshall County. The project area encompasses approximately 33,709 acres of mostly agricultural land. Ellerth Wind currently has agreements with landowners over approximately 18,870 acres of private land within the project area.

**Project Contacts.** If you have questions or would like further information about this project, please contact:

***Department of Commerce – Environmental Review***

Larry B. Hartman, State Permit Manager  
Minnesota Department of Commerce  
85 7<sup>th</sup> Place East, Suite 500  
St. Paul, MN 55101-2198  
(651) 296-5089, [larry.hartman@state.mn.us](mailto:larry.hartman@state.mn.us)

Jamie MacAlister, Public Advisor  
Minnesota Department of Commerce  
85 7<sup>th</sup> Place East, Suite 500  
St. Paul, MN 55101-2198  
(651) 297-1335, [jamie.macalister@state.mn.us](mailto:jamie.macalister@state.mn.us)

***Public Utilities Commission – Certificate of Need Process***

Bret Eknes  
Minnesota Public Utilities Commission  
121 7<sup>th</sup> Place East  
St. Paul, MN 55101  
(651) 201-2236, [bret.eknes@state.mn.us](mailto:bret.eknes@state.mn.us),

***Applicant***

Brett O'Connor, Ellerth Wind  
381 Rue Notre-Dame West, Suite 102  
Montreal, QC, H2Y 1V2  
Tel: 514-842-1923  
[brett.oconnor@tcir.net](mailto:brett.oconnor@tcir.net)

This document can be made available in alternative formats (i.e., large print or audio) by calling 651-296-0391 (voice). Persons with hearing or speech disabilities may reach the Department through Minnesota Relay at 1-800-627-3529 or by dialing 711.



the PBA comport in all respects with Federal law.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.)

**Authority:** 23 U.S.C. 315; 23 CFR 771.123.

Issued on: January 4, 2012.

**Jonathan D. McDade,**

*Division Administrator, Federal Highway Administration, Albany, New York.*

[FR Doc. 2012-296 Filed 1-9-12; 8:45 am]

**BILLING CODE 4910-22-P**

## DEPARTMENT OF TRANSPORTATION

### Federal Highway Administration

#### Notice of Final Federal Agency Actions on Proposed Highway in Utah

**AGENCY:** Federal Highway Administration (FHWA), DOT.

**ACTION:** Notice of Limitation on Claims for Judicial Review of Actions by FHWA and other Federal agencies.

**SUMMARY:** This notice announces actions taken by the FHWA and other Federal agencies that are final within the meaning of 23 U.S.C. 139(l)(1). The actions relate to a proposed transportation corridor project (Provo Westside Connector) in Provo, Utah County in the State of Utah. These actions grant licenses, permits, and approvals for the project.

**DATES:** By this notice, the FHWA is advising the public of final agency actions subject to 23 U.S.C. 139(l)(1). A claim seeking judicial review of the FHWA actions on the highway project will be barred unless the claim is filed on or before July 8, 2012. If the Federal law that authorizes judicial review of a claim provides a time period of less than 180 days for filing such claim, then that shorter time period still applies.

**FOR FURTHER INFORMATION CONTACT:** For FHWA: Mr. Edward Woolford, Environmental Program Manager, Federal Highway Administration, 2520 West 4700 South, Suite 9A, Salt Lake City, Utah 84129; telephone (801) 955-3524; email: [Edward.Woolford@dot.gov](mailto:Edward.Woolford@dot.gov). The FHWA Utah Division's regular business hours are Monday through Friday, 7:30 a.m. to 4:30 p.m. MST.

**SUPPLEMENTARY INFORMATION:** Notice is hereby given that the FHWA and other Federal agencies have taken final agency actions by issuing licenses, permits, and approvals for the following highway project in the State of Utah: the Provo

Westside Connector in Provo, Utah County, Utah, project number FHWA-UT-EIS-10-01-F. Federal Lead Agency: Federal Highway Administration.

**Project description:** The Selected Alternative (1860 South Alternative) implements a transportation project consisting of: (1) A new arterial roadway from the Interstate 15 interchange located at 1860 South/University Avenue (the Interchange) to 3110 West Street near the entrance to the Provo Airport (Mike Jense Parkway) in Provo; (2) three-way intersections located at 500 West, 1100 West, and Mike Jense Parkway; (3) the typical cross-section for the roadway consists of a total of five travel lanes: two travel lanes in each direction, and a center turn lane median, a 2-foot paved shoulder on each side, curb and gutter on the north side of the roadway, and a 10-foot paved trail on the south side of the roadway separated from the paved roadway by a 9-foot vegetated drainage swale (without curb and gutter); (4) three (3) parking pull-out locations are planned for trail access. One of these, at 500 West, replaces and improves an existing recreational access maintained by the Utah Division of Wildlife Resources; and an unpaved roadway accesses would be provided for private and public land parcels south of the roadway.

The actions by the FHWA and other Federal agencies, and the laws under which such actions were taken, are described in the FEIS for the project, approved on October 12, 2011, in the FHWA Record of Decision (ROD) issued on January 3, 2012, and in other documents in the FHWA administrative record. The FEIS, ROD, and other documents in the FHWA administrative record are available by contacting the FHWA at the address provided above. The FHWA FEIS and ROD can be viewed and downloaded from the project Web site at <http://www.provowestsideconnector.com> or viewed at public libraries in the project area.

This notice applies to all Federal agency decisions as of the issuance date of this notice and all laws under which such actions were taken, including but not limited to:

1. *General:* National Environmental Policy Act (NEPA) [42 U.S.C. 4321-4351]; Federal-Aid Highway Act [23 U.S.C. 109 and 23 U.S.C. 128];
2. *Air:* Clean Air Act [42 U.S.C. 7401-7671(q)];
3. *Land:* Section 4(f) of the Department of Transportation Act of 1966 [49 U.S.C. 303];
4. *Wildlife:* Endangered Species Act [16 U.S.C. 1531-1544 and Section

1536]; Migratory Bird Treaty Act [16 U.S.C. 703-712];

5. *Historic and Cultural Resources:* Section 106 of the National Historic Preservation Act of 1966, as amended [16 U.S.C. 470(f) *et seq.*];

6. *Social and Economic:* Civil Rights Act of 1964 [42 U.S.C. 2000(d)-2000(d)(1)]; Farmland Protection Policy Act (FPPA) [7 U.S.C. 4201-4209];

7. *Wetlands and Water Resources:* Safe Drinking Water Act [42 U.S.C. 300f *et seq.*]; TEA-21 Wetlands Mitigation [23 U.S.C. 103(b)(6)(m), 133(b)(11)]; Flood disaster Protection Act [42 U.S.C. 4001-129]. Executive Orders: E.O. 11990, Protection of Wetlands; E.O. 11988, Floodplain Management; E.O. 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations; E.O. 13175, Consultation and Coordination with Indian Tribal Governments; E.O. 13112, Invasive Species. Nothing in this notice creates a cause of action under these Executive Orders.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.)

**Authority:** 23 U.S.C. 139(l)(1).

Issued on: January 4, 2012.

**James C. Christian,**

*Division Administrator, Salt Lake City.*

[FR Doc. 2012-292 Filed 1-9-12; 8:45 am]

**BILLING CODE 4910-RY-P**

## DEPARTMENT OF TRANSPORTATION

### Federal Transit Administration

#### Intent To Prepare an Environmental Impact Statement on the Bottineau Transitway Project From Minneapolis to Maple Grove in Hennepin County, MN

**AGENCY:** Federal Transit Administration (FTA), Department of Transportation (DOT).

**ACTION:** Notice of intent to prepare an environmental impact statement (EIS).

**SUMMARY:** The FTA, as the lead federal agency, the Hennepin County Regional Railroad Authority (HCRRA), and the Metropolitan Council intend to prepare an EIS for the proposed Bottineau Transitway project located along the Bottineau Transitway Corridor in Hennepin County, Minnesota. The proposed transitway, approximately 13 miles long, would connect downtown Minneapolis with North Minneapolis

and the northwest suburbs of the Twin Cities. The transitway would originate in Minneapolis near the existing Target Field Station, where several existing transit lines converge, and would extend to the following suburbs: Robbinsdale, Golden Valley, Crystal, New Hope, Brooklyn Park, Maple Grove, and Osseo. The EIS will be prepared in accordance with Section 102(2)(C) of the National Environmental Policy Act of 1969 (NEPA) and pursuant to the Council on Environmental Quality's regulations (40 Code of Federal Regulations [CFR] parts 1500–08), as well as provisions of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA–LU). The purpose of this notice is to alert interested parties of the intent to prepare the EIS; provide information on the proposed transit project; invite public participation in the EIS process, including comments on the scope of the EIS proposed in this notice; and serve as an announcement of public and agency scoping meetings.

**DATES:** Written comments on the scope of the EIS should be sent to Brent Rusco, Bottineau Transitway Project Manager, on or before February 17, 2012. See **ADDRESSES** below for the locations to which written comments may be submitted. Public scoping meetings will be held on the following dates, in order to solicit input on the scope of the EIS:

- January 23, 2012, from 4:30 to 6:30 p.m., at the Theodore Wirth Chalet, 1301 Theodore Wirth Parkway, Minneapolis, Minnesota.
- January 24, 2012, from 6 to 8 p.m., at Brooklyn Park City Hall, 5200 85th Avenue North, Brooklyn Park, Minnesota.
- January 25, 2012, from 5:30 to 7:30 p.m., at the Urban Research and Outreach/Engagement Center (UROC), 2001 Plymouth Avenue North, Minneapolis, Minnesota.
- January 31, 2012, from 6 to 8 p.m., at the Robbinsdale City Hall, 4100 Lakeview Avenue North, Robbinsdale, Minnesota.

An interagency scoping meeting for agencies with interest in the project will be held on the following date:

- January 19, 2012, from 9 to 11 a.m., at the Kimley-Horn and Associates office, 2550 University Avenue West, Suite 238N, St. Paul, Minnesota.

All the scoping meetings will be accessible to persons with disabilities. If special translation or signing services or other special accommodations are needed, please contact Brent Rusco (see **ADDRESSES** below) at least 48 hours prior to the meeting. Project information outlining the project purpose and need,

as well as alternatives proposed for analysis, will be available in the form of a scoping information packet, at the meetings and on the project Web site: <http://bottineautransitway.org>. Paper copies of the information may also be obtained from Brent Rusco [see **ADDRESSES** below].

**ADDRESSES:** Comments on the scope of the EIS will be accepted at the scoping meetings, or written comments should be sent to Brent Rusco, Bottineau Transitway Project Manager, Hennepin County, 701 Fourth Avenue South, Suite 400, Minneapolis, MN 55415, Phone: (612) 543–0579, Email: [Brent.rusco@co.hennepin.mn.us](mailto:Brent.rusco@co.hennepin.mn.us), Fax: (612) 348–9710.

**FOR FURTHER INFORMATION CONTACT:** Lois Kimmelman, Environmental Protection Specialist, FTA Region V, Chicago, Illinois, (312) 353–4060; or Bill Wheeler, Community Planner, FTA Region V, Chicago, Illinois, (312) 353–2639.

#### **SUPPLEMENTARY INFORMATION:**

##### **Scoping**

The FTA, HCRRA, and the Metropolitan Council invite all interested individuals and organizations, public agencies, and Native American Tribes to comment on the scope of the EIS for the proposed Bottineau Transitway, including the project's purpose and need, the alternatives to be studied, the environmental impacts to be evaluated, and the evaluation methods to be used. Comments should address: (1) Feasible alternatives that may better achieve the project's purpose and need with fewer adverse impacts, and (2) any significant impacts relating to the alternatives.

"Scoping," as described in the regulations implementing NEPA (Title 40 of CFR 1501.7) has specific and fairly limited objectives, one of which is to identify the significant issues associated with alternatives that will be examined in detail in the document, while simultaneously limiting consideration and development of issues that are not truly significant. It is during the NEPA scoping process that potentially significant environmental impacts—those that give rise to the need to prepare an EIS—should be identified. Impacts that are deemed not to be significant need not be developed extensively in the context of the EIS, thereby keeping the EIS focused on impacts of consequence consistent with the ultimate objectives of the NEPA implementing regulations: "to make the environmental impact statement process more useful to decision makers and the public; and to reduce paperwork and

the accumulation of extraneous background data, in order to emphasize the need to focus on real environmental issues and alternatives \* \* \* [by requiring] impact statements to be concise, clear, and to the point, and supported by evidence that agencies have made the necessary environmental analyses." (Executive Order 11991 of May 24, 1977.)

Once the scope of the EIS is defined, and significant environmental issues to be addressed have been identified, an annotated outline of the EIS will be prepared that: (1) Documents the results of the scoping process, (2) contributes to the transparency of the process, and (3) provides a clear roadmap for concise development of the EIS.

##### **Purpose and Need for the Project**

The purpose of the Bottineau Transitway is to provide transit service which will satisfy the long-term regional mobility and local accessibility needs for businesses and the traveling public. Residents and businesses in the Bottineau Transitway project area need access to the region's activity centers to fully participate in the region's economy. Access to jobs in Minneapolis, St. Paul, the University of Minnesota, and the growing Minneapolis suburbs is crucial. Traffic congestion is expected to intensify in the Twin Cities Metropolitan Area through 2030 and beyond, and it cannot be addressed by highway construction alone. Current transit service in the Bottineau Transitway offers a limited number of viable alternatives to personal vehicles. Without major transit investments, it will be difficult to effectively meet the transportation needs of people and businesses in the corridor, manage highway traffic congestion in the project area, and achieve the region's 2030 Transportation Policy Plan (TPP) goal of doubling transit ridership by 2030.

Five factors contribute to the need for the Bottineau Transitway project:

- Growing travel demand resulting from continuing growth in population and employment.
- Increasing traffic congestion and limited funding.
- Growing numbers of people who depend on transit.
- Limited transit service to suburban jobs (reverse commute opportunities) and travel-time competitive transit options.
- Regional objectives for growth.

##### **Project Location of Environmental Setting**

The project is located in Hennepin County, Minnesota, and includes

downtown Minneapolis, Minnesota, and its northwest suburbs, including Robbinsdale, Golden Valley, Crystal, New Hope, Brooklyn Park, Maple Grove, and Osseo.

#### **Possible Alternatives**

The Bottineau Transitway Alternatives Analysis (AA) Study was completed by HCRRA in March 2010. The AA Study evaluated a no-build alternative and a broad range of build alternatives, including an enhanced bus/transportation system management alternative, as well as commuter rail, light rail transit (LRT), and bus rapid transit (BRT) alternatives. The study progressively narrowed down the build alternatives to a set of 21 alternatives which underwent detailed evaluation. The AA Study is posted on the project Web site.

The following alternatives are currently under consideration for further study in the EIS:

**No-Build Alternative.** The No-Build alternative serves as the baseline against which environmental effects of the Bottineau Transitway build alternatives are measured. It is defined as the existing transportation system in the Bottineau Transitway Corridor, plus any committed transportation improvements in the region, *i.e.*, those roadway, transit facility, and service improvements that are planned, programmed, and included in the TPP, and that are to be implemented by the year 2030. The No-Build Alternative does not include the Bottineau Transitway project. It does include major regional transit projects such as the Green Line (Central Corridor LRT and Southwest Transitway LRT), Red Line (Cedar Avenue BRT), and the Orange Line (I-35W BRT), as well as minor transit service expansions and/or adjustments in order to continue existing Metropolitan Council service policies.

**Enhanced Bus/Transportation Systems Management (TSM) Alternative.** The TSM alternative is defined as enhancements and upgrades to the existing transportation system in the Bottineau Transitway Corridor, such that the project's purpose and need would be met as much as possible without a major capital investment. The TSM alternative could include bus route restructuring, scheduling improvements, new express and limited-stop services, intersection improvements, and other focused infrastructure improvements that would heighten the functioning of the current transit system. The specific combination of improvements to be incorporated into this alternative will be developed during EIS process.

**Light Rail Transit (LRT) Alternatives.** All LRT alternatives would include several station stops between downtown Minneapolis and the Maple Grove/Brooklyn Park area. These alternatives, which would follow West Broadway, the Burlington Northern Santa Fe (BNSF) rail corridor, and Olson Memorial Highway and/or Penn Avenue, would include tracks, stations and support facilities, as well as transit service for LRT and connecting bus routes.

**Bus Rapid Transit (BRT) Alternative.** The BRT alternative would include a busway in its own dedicated space (guideway) with several stations between downtown Minneapolis and the Brooklyn Park area. This alternative, which would follow West Broadway, the BNSF rail corridor, and Olson Memorial Highway, would include all facilities associated with the construction and operation of BRT, including right-of-way, travel lanes, stations, and support facilities, as well as transit service for BRT and connecting bus routes.

#### **Possible Effects**

The purpose of the EIS process is to study, in a public setting, the potentially significant effects of the proposed project on the quality of the human environment. Primary areas of investigation for this project include, but are not limited to: Land use and economic development; land acquisition, displacements, and relocation; neighborhood cohesion and environmental justice; historic resources; parklands; visual and aesthetic qualities; air quality; water quality, wetlands, and floodplains; wildlife/endangered species and ecosystems; noise; vibration; hazardous materials affected by demolition and construction activities; traffic circulation and transportation linkages; parking; pedestrian and bicycle connections; energy use; and safety and security. Effects will be evaluated in the context of both short-term construction and long-term operation of the proposed project. Direct project effects as well as indirect and cumulative effects on the environment will be addressed. The environmental analysis may reveal that the proposed project will not affect, or affect substantially, many of the primary areas of investigation. However, if any adverse impacts are identified, measures to avoid, minimize, or mitigate those adverse effects will be proposed.

#### **Procedures for Public and Agency Involvement**

The regulations implementing NEPA, as well as provisions of SAFETEA-LU,

call for public involvement in the EIS process. Section 6002 of SAFETEA-LU (23 U.S.C. 139) requires that FTA, HCRRA, and the Metropolitan Council do the following: (1) Extend an invitation to other federal and non-federal agencies and Native American tribes that may have an interest in the proposed project to become "participating agencies;" (2) provide an opportunity for involvement by participating agencies and the public to help define the purpose and need for proposed project, as well as the range of alternatives for consideration in the EIS; and (3) establish a plan for coordinating public and agency participation in, and comment on) the environmental review process. An invitation to become a participating or cooperating agency, with scoping materials appended, will be extended to other federal and non-federal agencies and Native American tribes that may have an interest in the proposed project. It is possible that FTA, HCRRA, and the Metropolitan Council will not be able to identify all federal and non-federal agencies and Native American tribes that may have such an interest. Any federal or non-federal agency or Native American tribes interested in the proposed project that does not receive an invitation to become a participating agency should notify at the earliest opportunity the Project Manager identified above under **ADDRESSES**.

A comprehensive public involvement program for public and agency involvement will be developed for the project and posted on the project Web site. The public involvement program includes a full range of activities including maintaining the project Web site, and outreach to local officials, community and civic groups, and the general public.

#### **Paperwork Reduction**

The Paperwork Reduction Act seeks, in part, to minimize the cost to the taxpayer of the creation, collection, maintenance, use, dissemination, and disposition of information. Consistent with this goal and with principles of economy and efficiency in government, it is FTA policy to limit insofar as possible distribution of complete printed sets of environmental documents. Accordingly, unless a specific request for a complete printed set of environmental documents is received before the document is printed, at the latest, FTA and its grantees will distribute only the executive summary of environmental documents in printed form together with a compact disc (CD) that contains the complete environmental document. A complete



printed set of the environmental documents will be available for review at the grantee's offices and elsewhere; an electronic copy of the complete environmental document will also be available on the grantee's Web site.

**Other**

The EIS will be prepared in accordance with NEPA and its implementing regulations issued by the Council on Environmental Quality (40 CFR parts 1500–1508), and with the FTA/Federal Highway Administration

regulations “Environmental Impact and Related Procedures” (23 CFR part 771).

Issued on: January 5, 2012.

**Marisol Simon,**

*Regional Administrator, FTA, Region V.*

[FR Doc. 2012–264 Filed 1–9–12; 8:45 am]

**BILLING CODE P**

# Bottineau Transitway Public Meetings

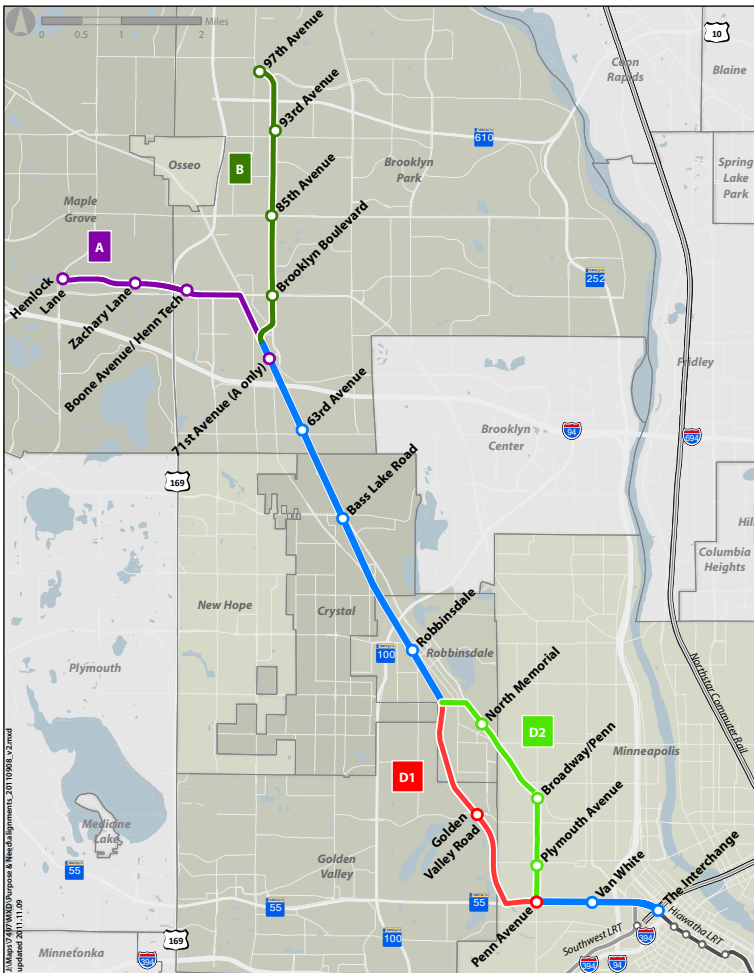


If you are interested in the **Bottineau Transitway project**, we encourage you to take part in the **Scoping process**. Project planners are especially interested in your input on:

- Purpose and need for the project
- The alternatives proposed for study
- Project impacts or benefits that should be evaluated

There are several ways for you to participate and for your voice to be heard.

You can attend a meeting to learn more about the Scoping process and to share your thoughts about the project.



**Formal public Scoping meetings are scheduled for the following dates and locations:**

## Scoping Open House #1:

Monday, January 23rd  
4:30 to 6:30 PM

[Theodore Wirth Chalet](#)

1301 Theodore Wirth Parkway, Minneapolis

## Scoping Open House #2:

Tuesday, January 24th  
6:00 to 8:00 PM

[Brooklyn Park City Hall](#)

5200 85th Avenue N, Brooklyn Park

## Scoping Open House #3:

Wednesday, January 25th  
5:30 to 7:30 PM

Urban Research and Outreach/Engagement Center ([UROC](#))

2001 Plymouth Avenue N, Minneapolis

## Scoping Open House #4:

Tuesday, January 31st  
6:00 to 8:00 PM

[Robbinsdale City Hall](#)

4100 Lakeview Avenue N, Robbinsdale

You can submit comments in writing, by U.S. mail, e-mail, or fax, to:

Brent Rusco

Bottineau Transitway Project Manager

Hennepin County

701 Fourth Avenue South, Suite 400

Minneapolis, MN 55415

Phone: 612.543.0579

Email: [brent.rusco@co.hennepin.mn.us](mailto:brent.rusco@co.hennepin.mn.us)

Fax: 612.348.9710

Comments may also be submitted directly via the Bottineau Transitway website, [www.bottineautransitway.org](http://www.bottineautransitway.org).

**The scoping period closes on February 17, 2012. All comments must be received by that date.**

## Why attend?

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This open house will focus specifically on the updated LRT alignment options under consideration for Penn and Oliver Avenues between West Broadway Avenue and Olson Highway in Minneapolis.

These alignments could affect a range of streets in the area between Queen and Oliver Avenues.

We want to hear your thoughts and opinions in order to select a preferred Segment D2 sub-option to move forward.

Your comments will be compiled and shared with members of the project Policy Advisory Committee.

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## Agenda:

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|      |              |
|------|--------------|
| 5:00 | Open house   |
| 6:00 | Presentation |
| 7:10 | Q&A          |
| 7:25 | Open house   |
| 8:00 | Adjourn      |

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During the open house, review updated concept plans. Project staff will be available to provide information and engage in discussion about the options.

A presentation of the results of technical analysis on the various options will begin at 6:00 p.m.

For more information:  
[www.bottransit.org](http://www.bottransit.org)  
[bottineau@co.hennepin.mn.us](mailto:bottineau@co.hennepin.mn.us)



## Segment D2 Open House

*Share your thoughts on updated LRT alignment options for Penn and Oliver Avenues in North Minneapolis*



Thursday, October 6, 2011  
5:00 p.m. to 8:00 p.m.

Urban Research & Outreach-  
Engagement Center (UROC)  
2001 Plymouth Ave N  
Minneapolis, MN 55411



**Hennepin County**  
Regional Railroad Authority

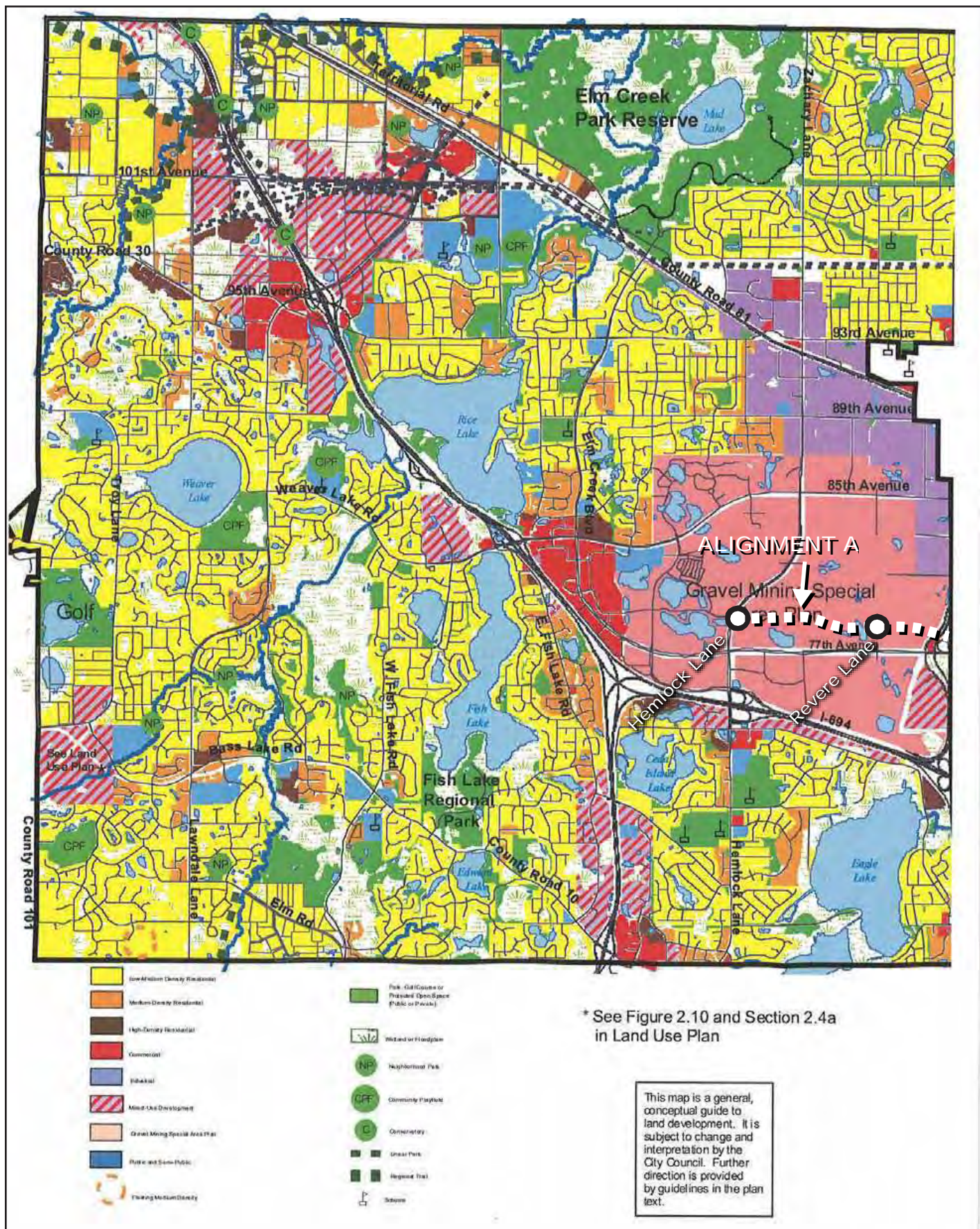




## APPENDIX I

### LAND USE MAPS



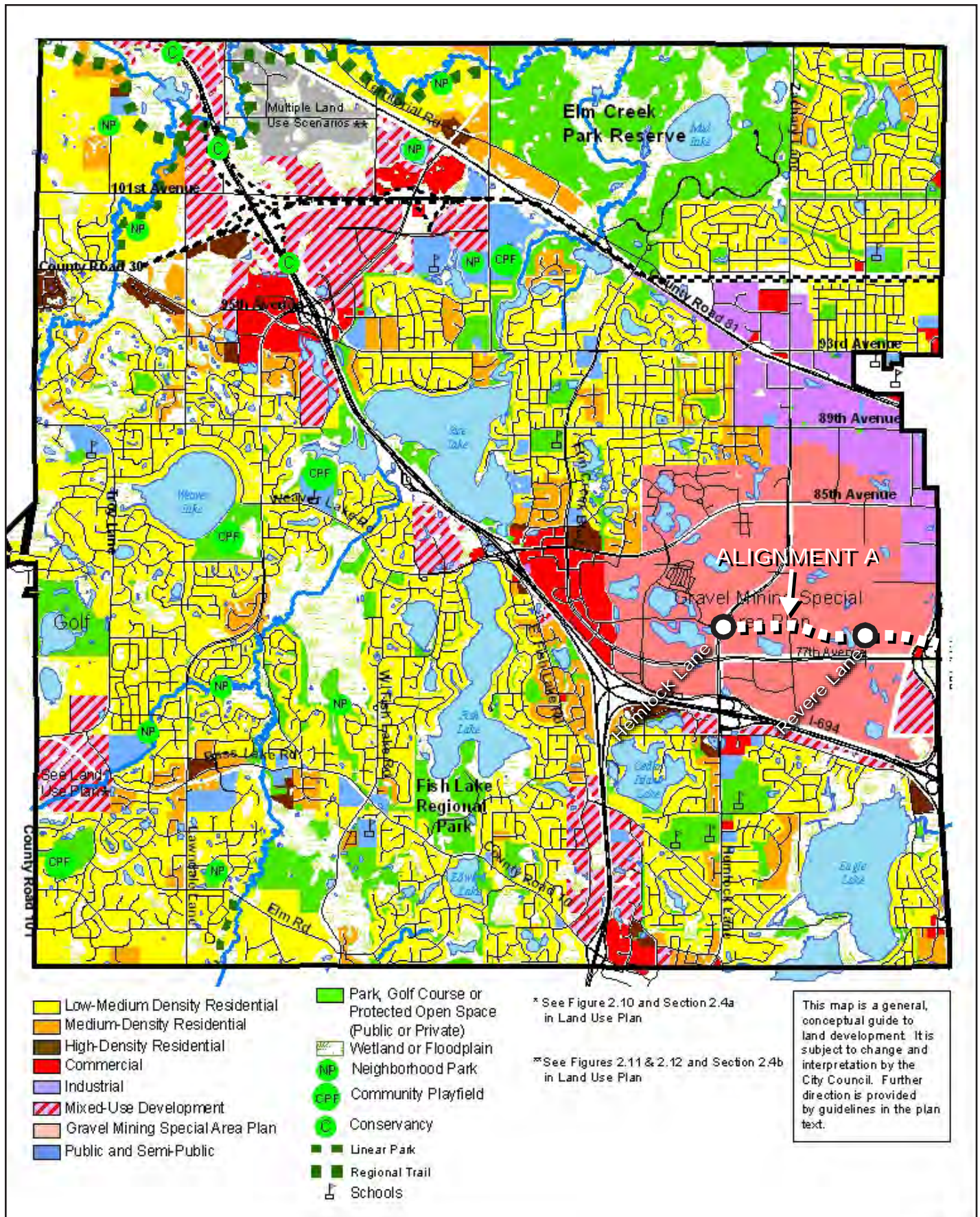


**Exhibit 4-1. "Existing Land Use Plan",**  
City of Maple Grove 2008 Comprehensive Plan, 2008.  
Alignment added for illustrative purposes

Hennepin County  
Regional Railroad Authority





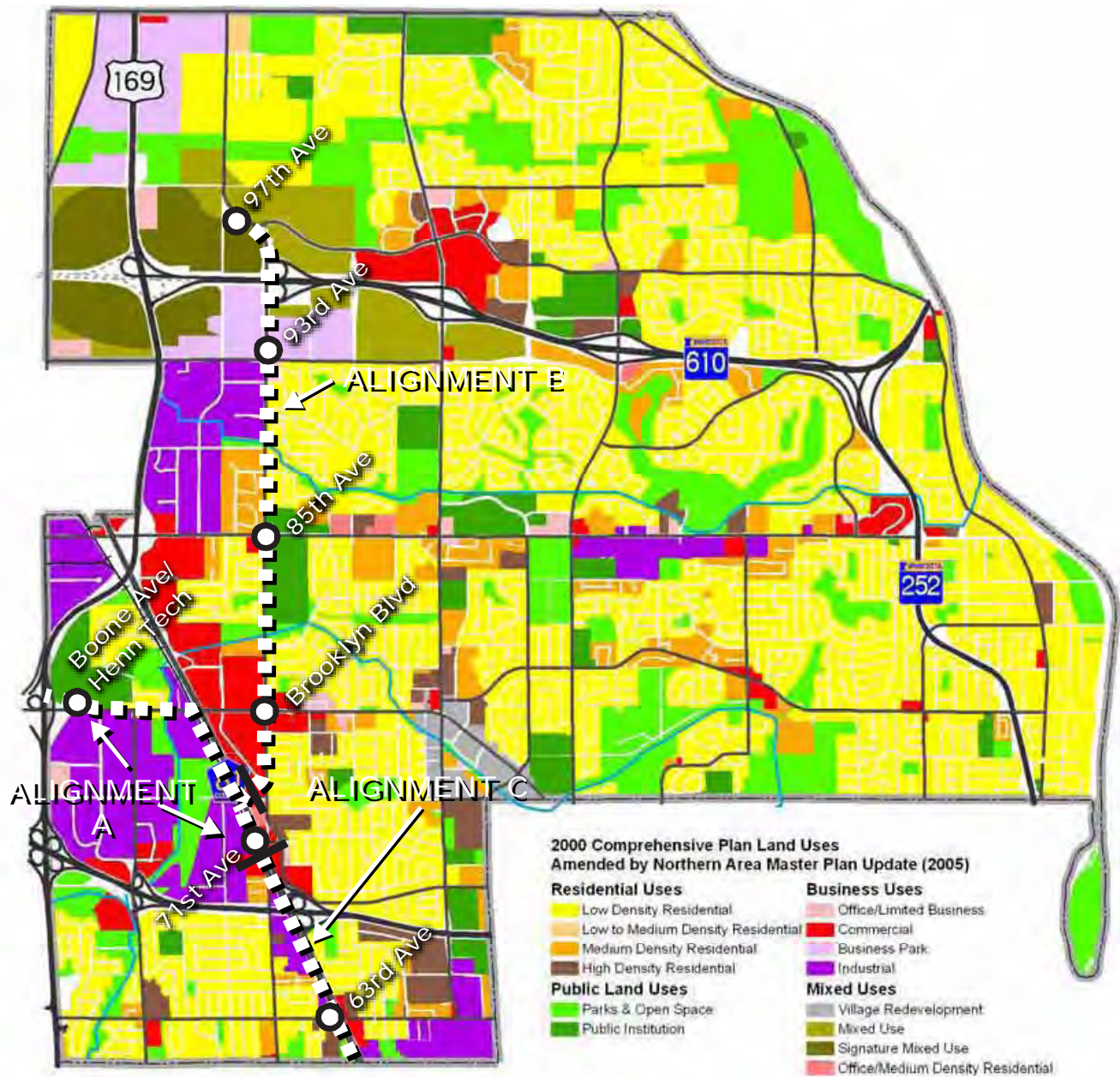


**Exhibit 4-2. "Maple Grove Land Use Plan-Proposed",**  
 City of Maple Grove 2008 Comprehensive Plan, 2008.  
*Alignment added for illustrative purposes*

Hennepin County  
 Regional Railroad Authority

**Metropolitan Council**





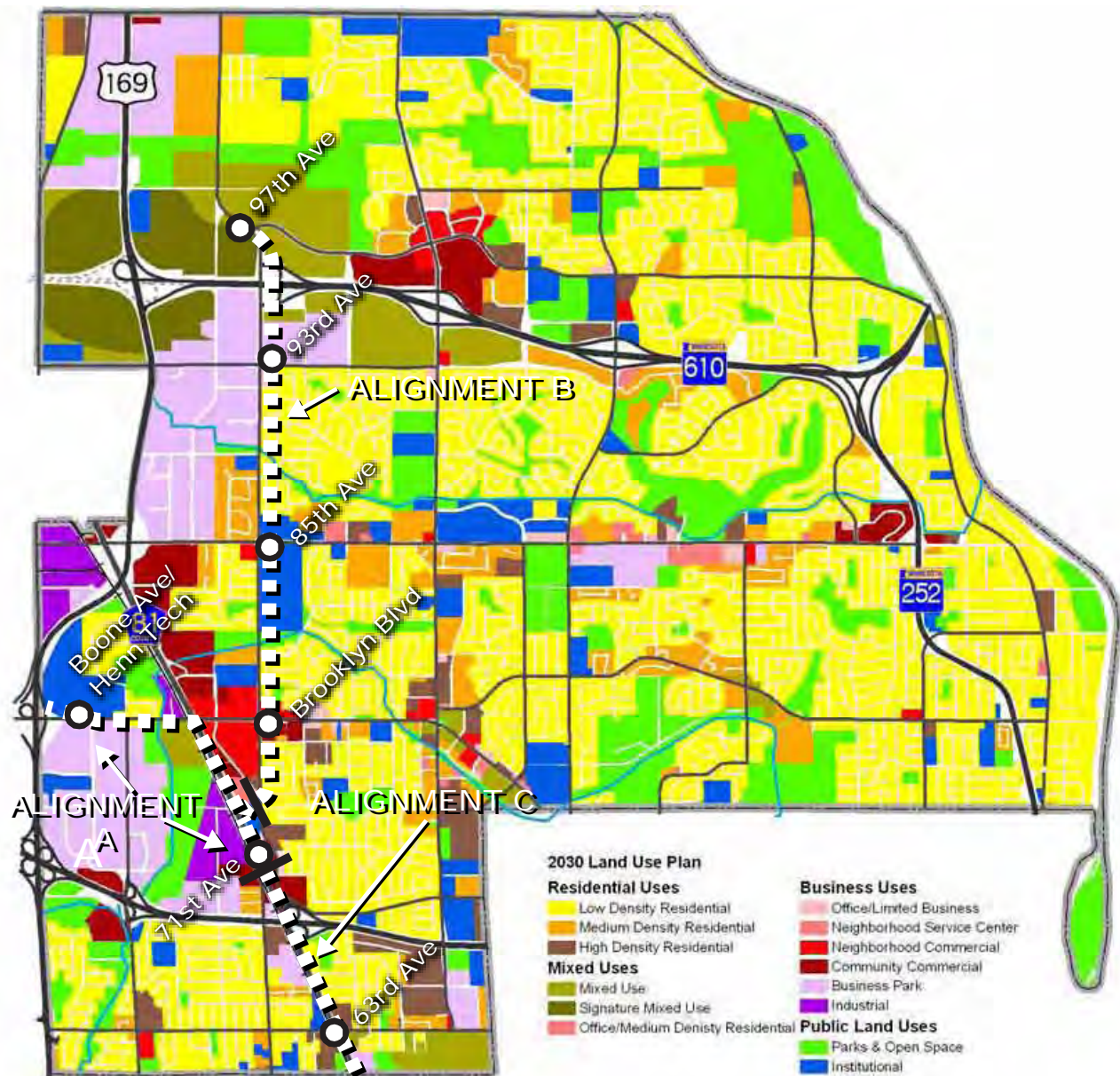
**Exhibit 4-3. "2000 Land Use Plan",**  
 Brooklyn Park 2030 Comprehensive Plan, 2008.  
*Alignment added for illustrative purposes*

Hennepin County  
 Regional Railroad Authority



Metropolitan Council



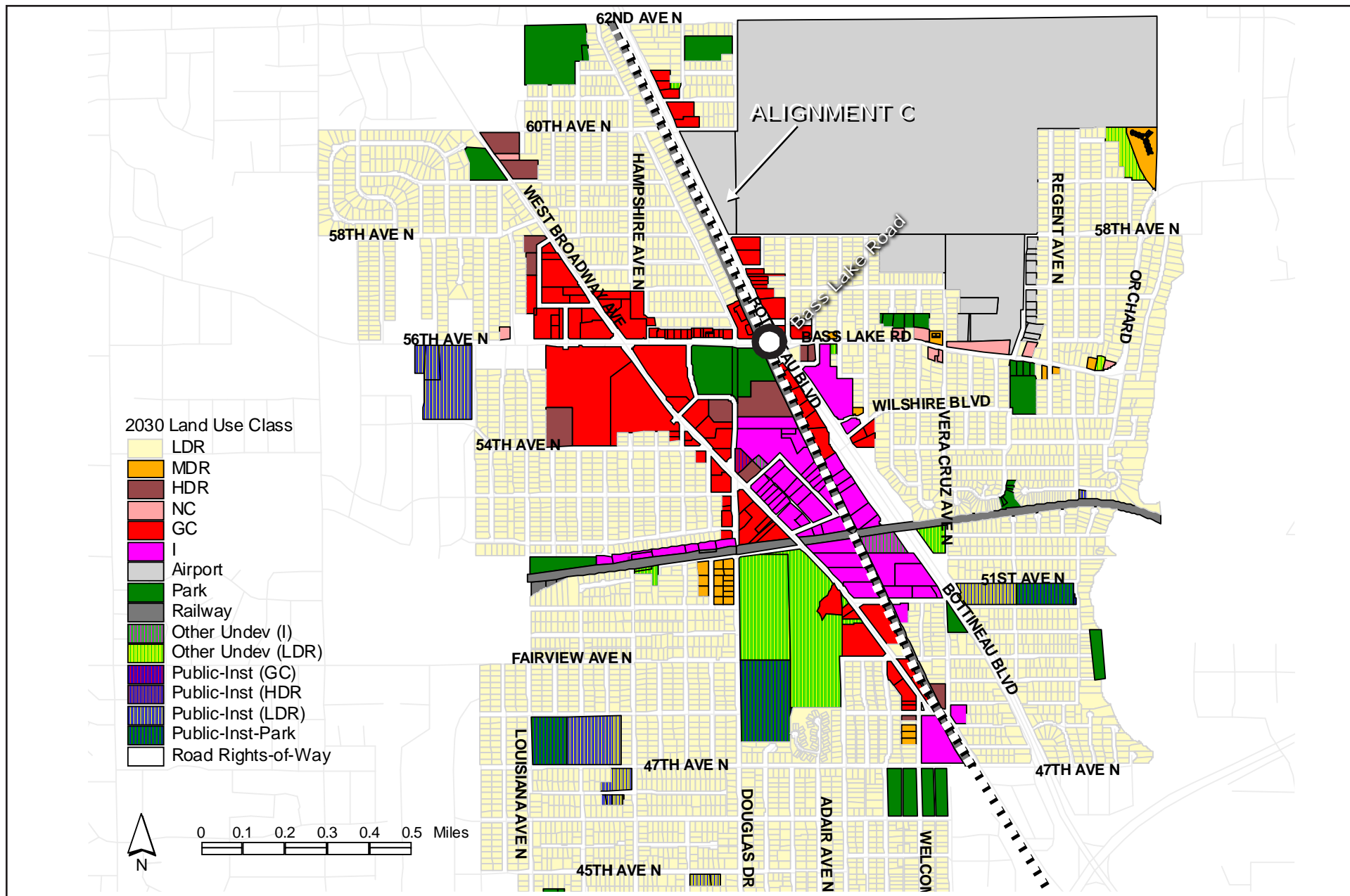


**Exhibit 4-4. "2030 Land Use Plan",**  
 Brooklyn Park 2030 Comprehensive Plan, 2008.  
*Alignment added for illustrative purposes*

Hennepin County  
 Regional Railroad Authority



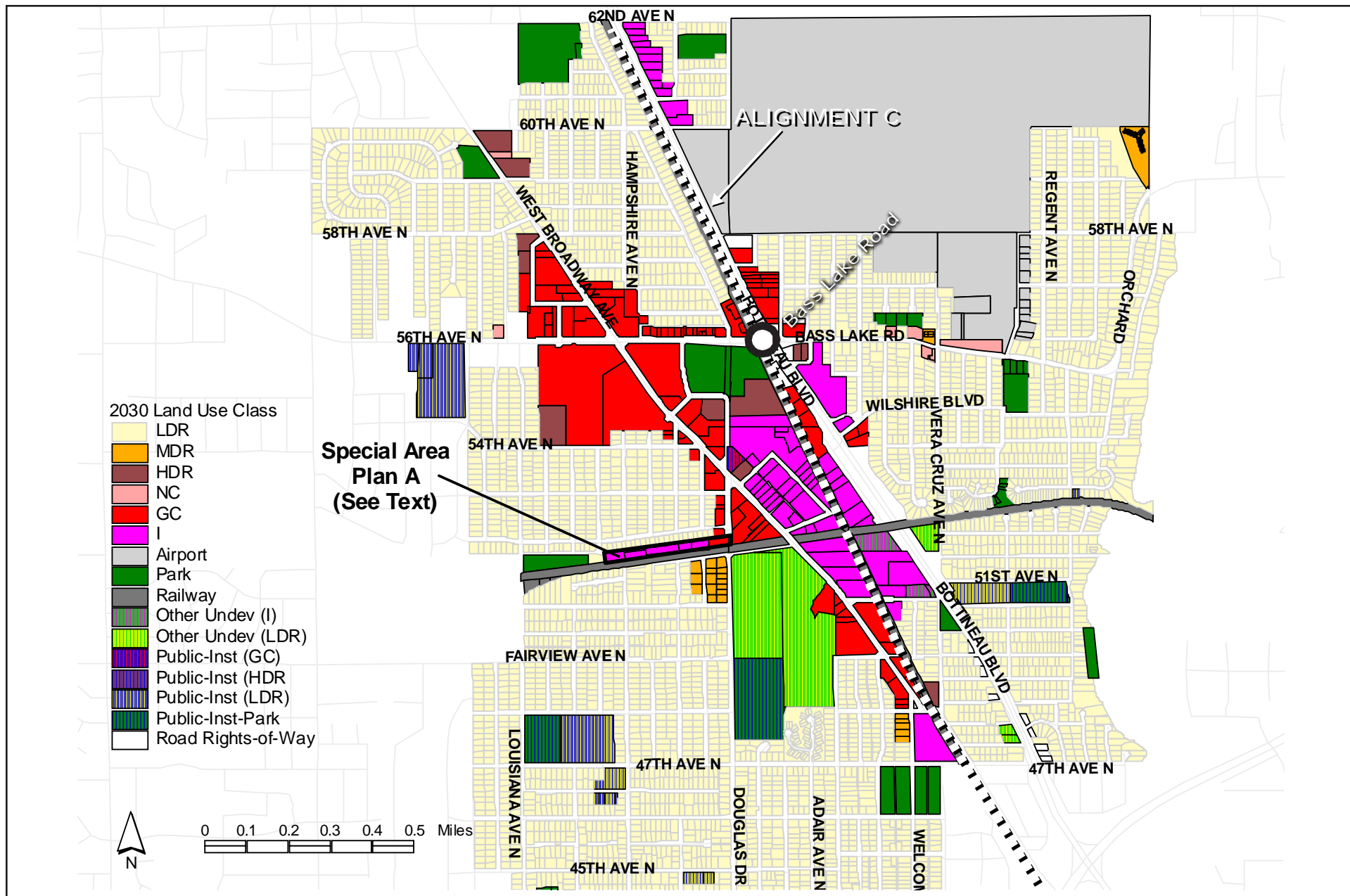




**Exhibit 4-5. "Existing Land Use, 2010", City of Crystal, Minnesota**  
 Comprehensive Plan Update through the year 2030, 2011.  
 Alignment added for illustrative purposes

Hennepin County  
 Regional Railroad Authority





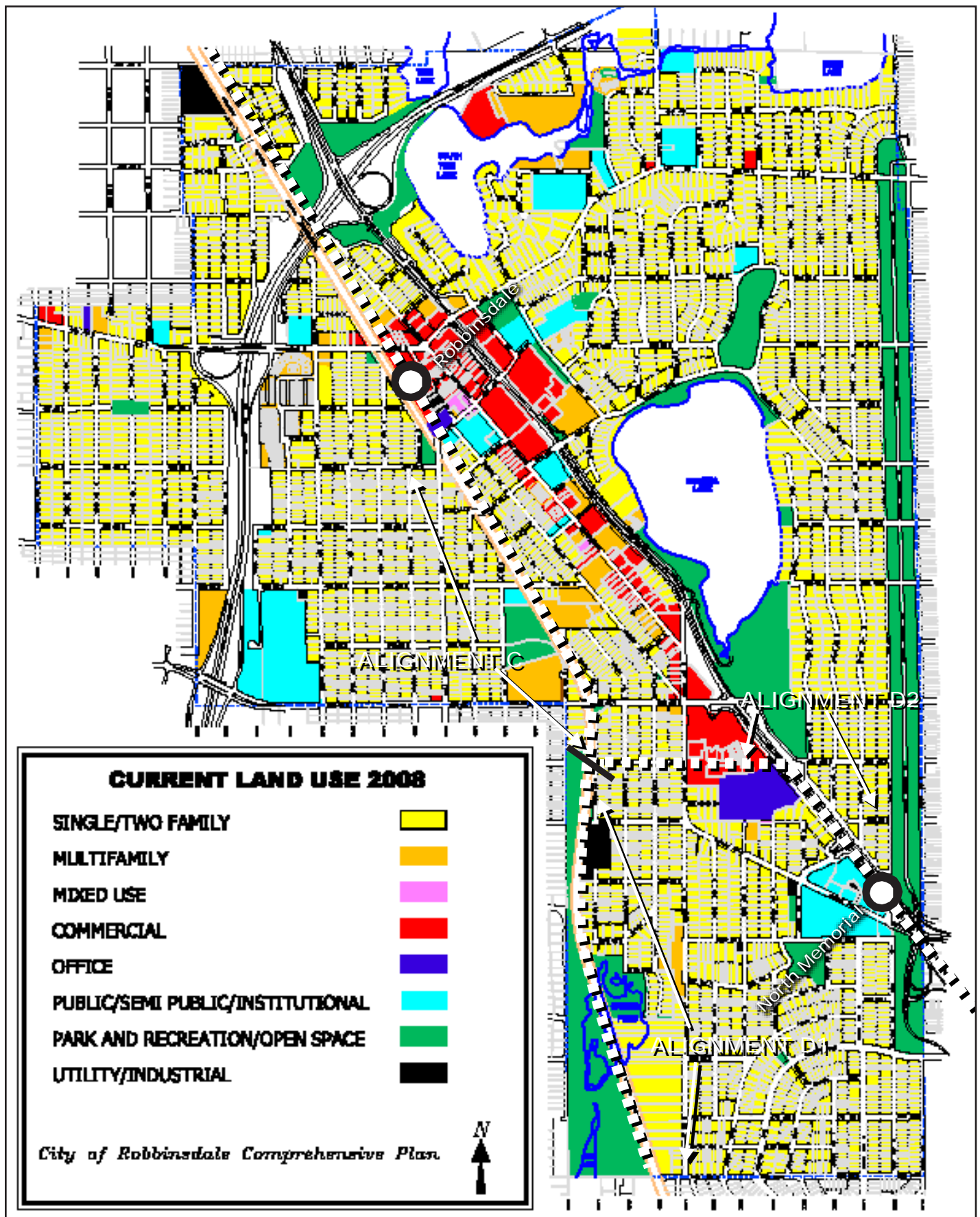
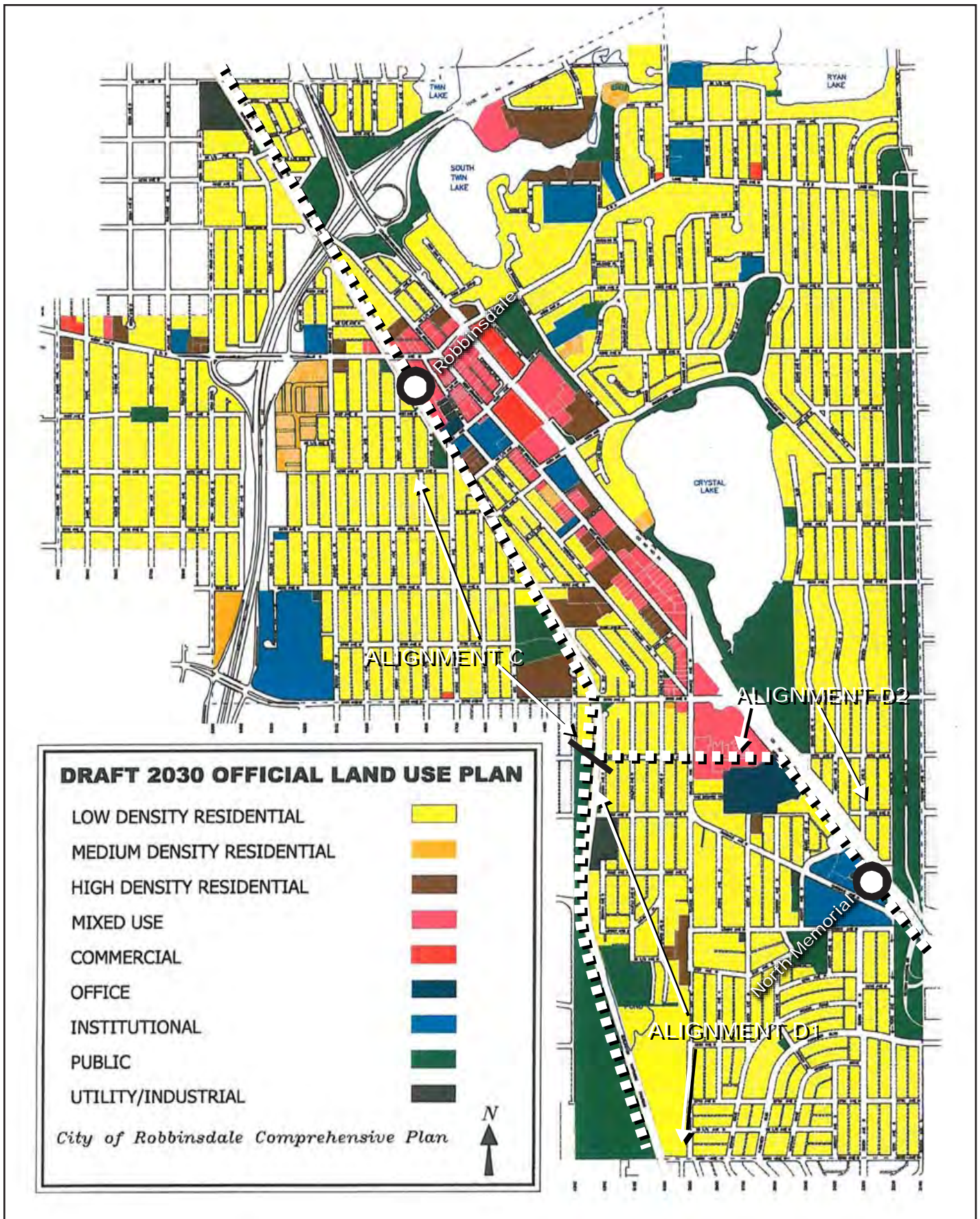


Exhibit 4-7. "Existing Land Patterns",  
 Robbinsdale Comprehensive Plan Update 2030, 2008.  
 Alignment added for illustrative purposes

Hennepin County  
 Regional Railroad Authority







**Exhibit 4-8. "Future Land Use Map",**  
 Robbinsdale Comprehensive Plan Update 2030, 2008.  
 Alignment added for illustrative purposes

Hennepin County  
 Regional Railroad Authority

**Metropolitan Council**

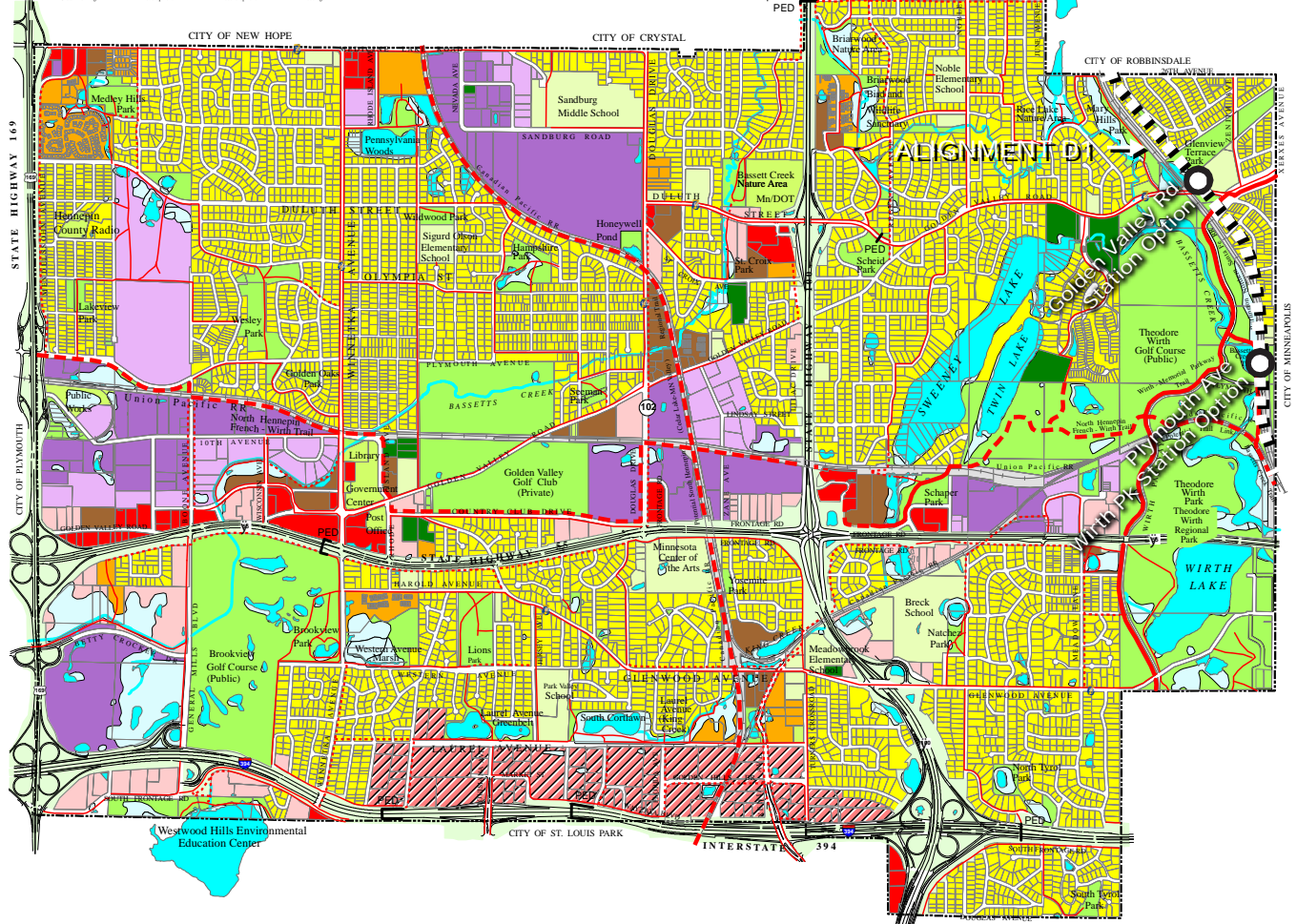


1 inch = 1,833 feet



Thibault  
Associates

Urban Planning    Development    Redevelopment    Housing



### Residential

- Low Density** (0.1 to 5 units per acre)  
2714 acres
- Medium Density** (5 to 11.9 units per acre)  
201 acres
- High Density** (12 to 20 units per acre)  
100 acres

### Commercial

- Office**  
95 acres
- Commercial** (also includes office)  
95 acres

### Industrial

- Light Industrial** (also includes office)  
85 acres
- Industrial** (also includes office)  
95 acres
- I-394 Mixed Use** (includes approximately 25 percent residential, 5 to 11.9 units per acre)  
200 acres

### Park & Open Space

- Open Space** (public and private ownership)  
58 acres
- Open Water** (Based on 2008 aerial photos)  
295 acres
- Wetlands** National Wetlands Inventory - not field verified (Minor adjustments made to some wetlands.)  
169 acres

### Public & Semi-Public

- Schools & Religious Facilities**  
1,375 acres
- Public Facilities** (miscellaneous)  
403 acres
- Semi-Public Facilities** (miscellaneous)  
305 acres

### Railroad

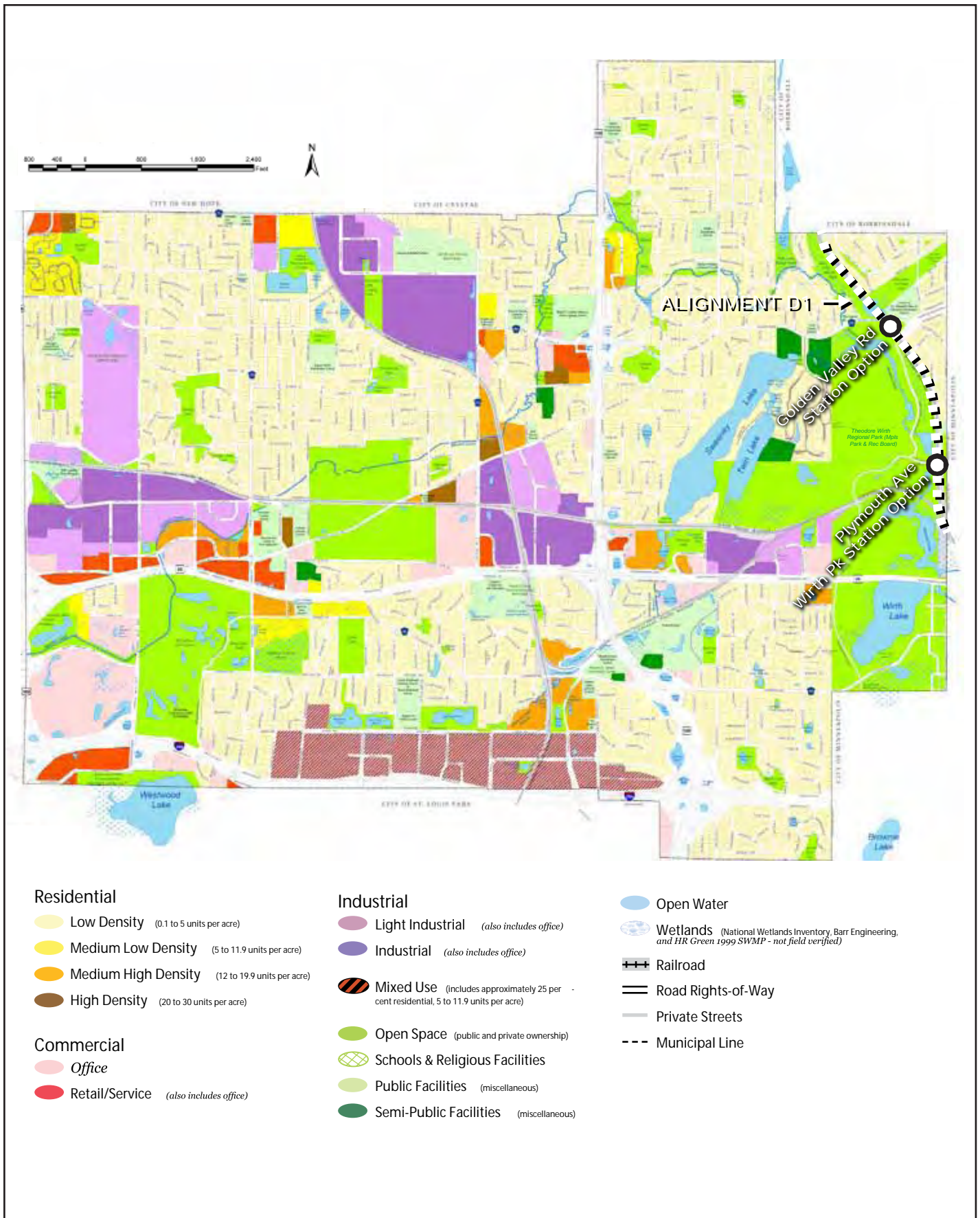
- Railroad** 150 acres
- Existing Local Trail** 700 acres
- Proposed Local Trail**
- Regional Trail**
- Proposed Regional Trail**
- PED Pedestrian Bridge**
- Road Rights-of-Way**
- Municipal Line**



**Exhibit 4-9. "Existing Land Use Map 1998-2008",**  
City of Golden Valley Comprehensive Plan 2008-2018.  
Alignment added for illustrative purposes

Hennepin County  
Regional Railroad Authority

**Metropolitan Council**

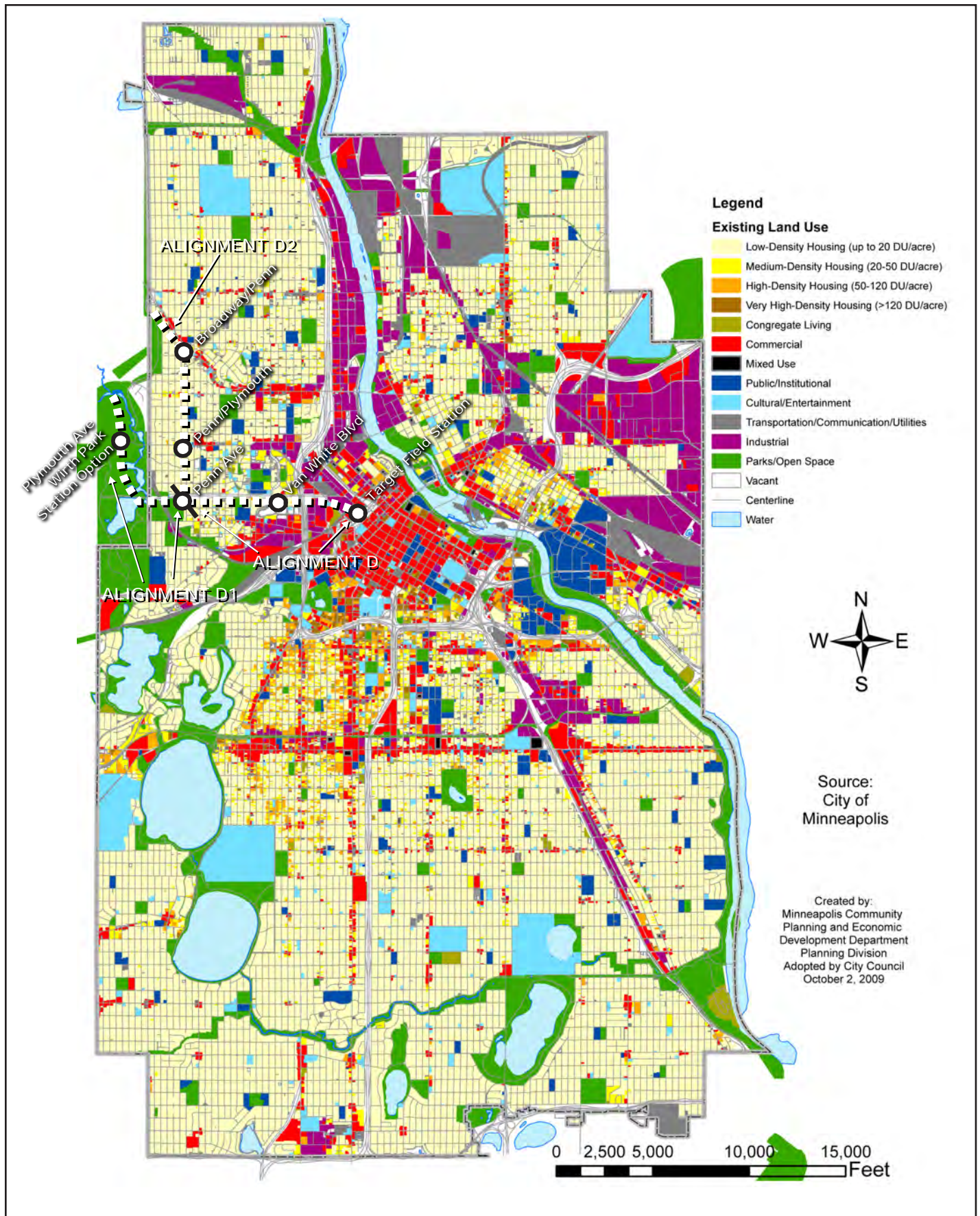


**Exhibit 4-10. "Land Use Plan Map 2010-2030",**  
City of Golden Valley Comprehensive Plan 2008-2018.  
Alignment added for illustrative purposes

Hennepin County  
Regional Railroad Authority





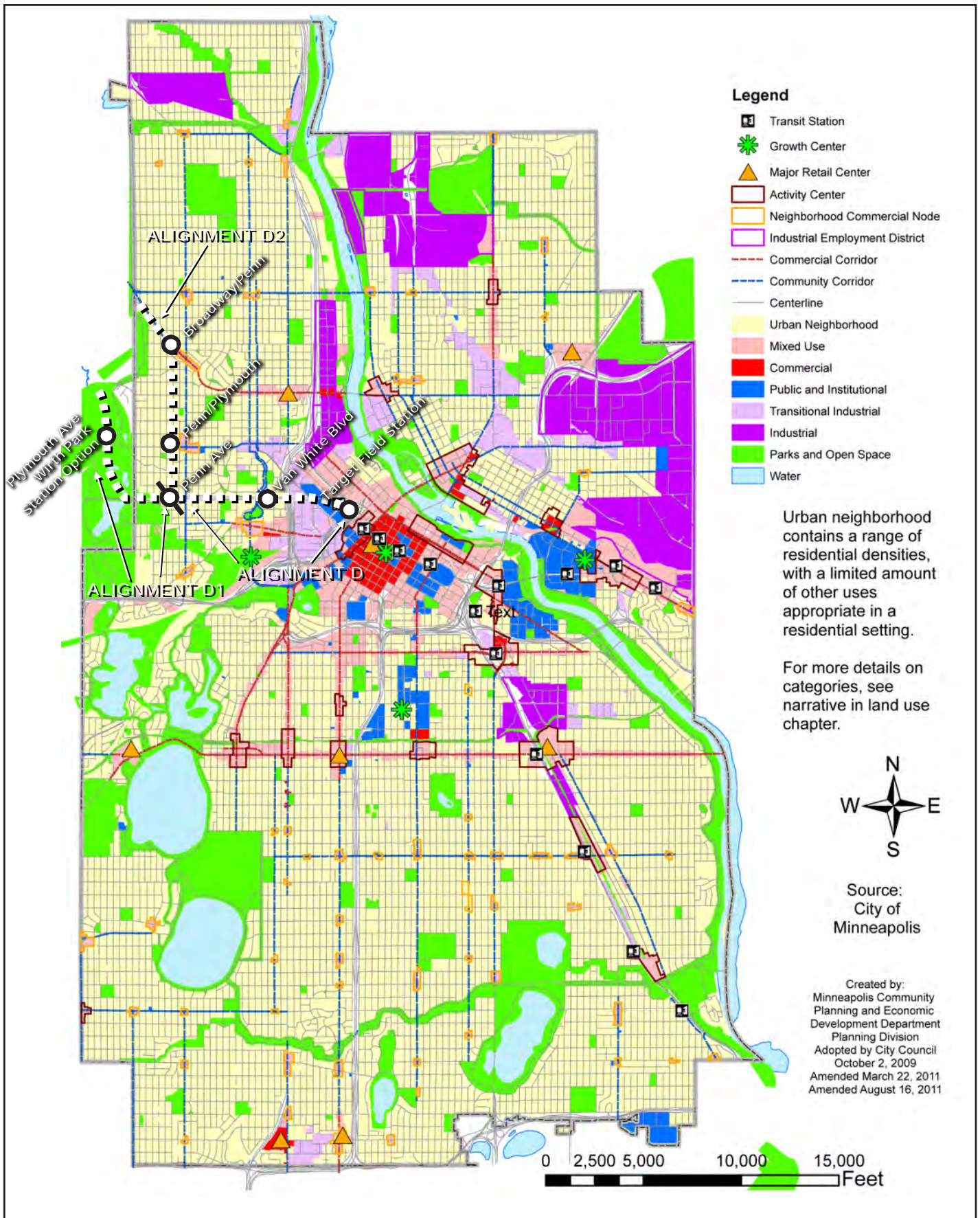


**EXHIBIT 4-11. "Existing Land Use",**  
The Minneapolis Plan for Sustainable Growth, 2009.  
*Alignment added for illustrative purposes*

Hennepin County  
Regional Railroad Authority







**EXHIBIT 4-12 "Future Land Use",**  
The Minneapolis Plan for Sustainable Growth, 2009.  
*Alignment added for illustrative purposes*

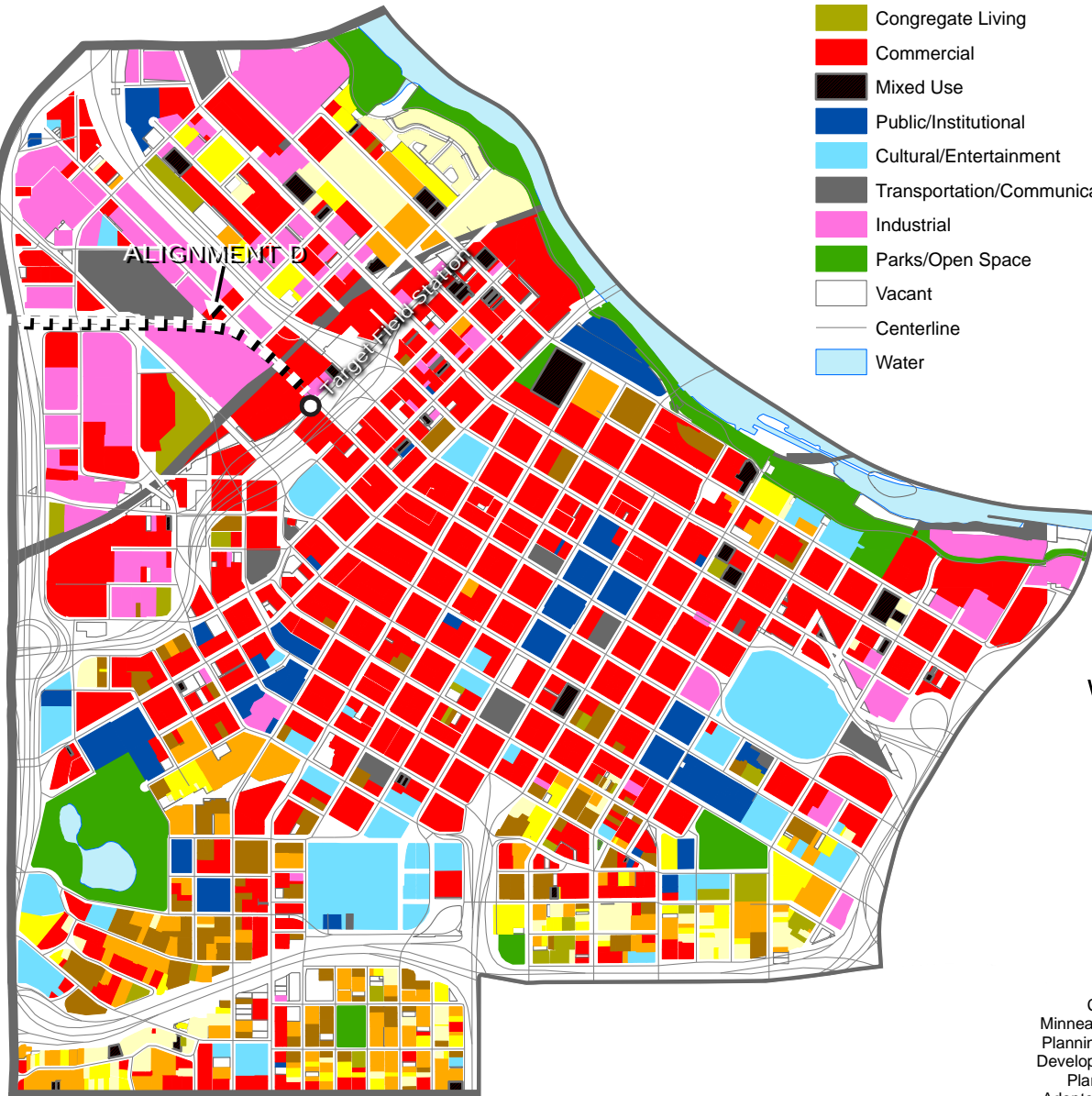
Hennepin County  
Regional Railroad Authority



## Legend

### Existing Land Use

- Low-Density Housing (up to 20 DU/acre)
- Medium-Density Housing (20-50 DU/acre)
- High-Density Housing (50-120 DU/acre)
- Very High-Density Housing (>120 DU/acre)
- Congregate Living
- Commercial
- Mixed Use
- Public/Institutional
- Cultural/Entertainment
- Transportation/Communication/Utilities
- Industrial
- Parks/Open Space
- Vacant
- Centerline
- Water



Source:  
City of  
Minneapolis

Created by:  
Minneapolis Community  
Planning and Economic  
Development Department  
Planning Division  
Adopted by City Council  
October 2, 2009

0 2,500 5,000 Feet



**EXHIBIT 4-13. "Existing Land Use, Downtown Sector",**  
The Minneapolis Plan for Sustainable Growth, 2009.  
*Alignment added for illustrative purposes*

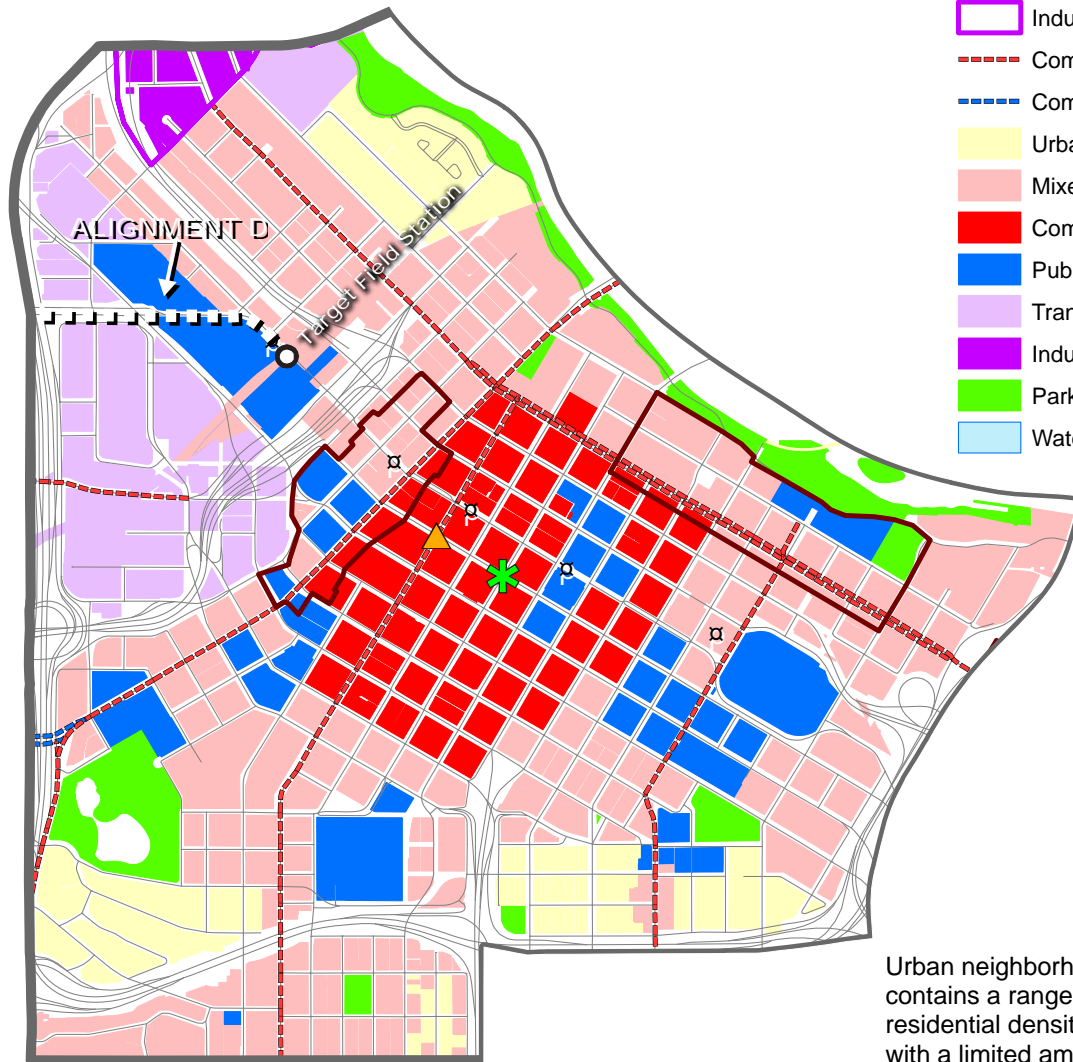
Hennepin County  
Regional Railroad Authority

**Metropolitan Council**



## Legend

- ⊠ Transit Station
- ✱ Growth Center
- ▲ Major Retail Center
- ▭ Activity Center
- ▭ Neighborhood Commercial Node
- ▭ Industrial Employment District
- - - Commercial Corridor
- - - Community Corridor
- Urban Neighborhood
- Mixed Use
- Commercial
- Public and Institutional
- Transitional Industrial
- Industrial
- Parks and Open Space
- Water



Urban neighborhood contains a range of residential densities, with a limited amount of other uses appropriate in a residential setting.

For more details on categories, see narrative in land use chapter.

Source:  
City of Minneapolis

Created by:  
Minneapolis Community  
Planning and Economic  
Development Department  
Planning Division  
Adopted by City Council  
October 2, 2009  
Amended March 22, 2011  
Amended August 16, 2011

0 2,500 5,000 10,000 Feet



**EXHIBIT 4-14. "Future Land Use, Downtown Sector",**  
The Minneapolis Plan for Sustainable Growth, 2009.  
*Alignment added for illustrative purposes*

Hennepin County  
Regional Railroad Authority

**Metropolitan Council**

