Metropolitan Council
300 Metro Square Building
Seventh and Robert Streets
St. Paul, Minnesota 55101

Telephone (612) 291-6359

2 copies

June 24, 1983

TO: Interested Government Officials

On July 18 and 19, the Steering Committee of the Southwest and University Avenue Corridors Transit Study will hold public meetings to gather information from the public on proposed transit improvements on the above corridors.

The meeting for the University Ave. corridor will be held July 18, 7:00 to 9:00 P.M. at the Thomas-Dale Community Center, 911 Lafond Ave. (Victoria and Lafond), St. Paul.

The meeting for the Southwest corridor will be held July 19, 7:00 to 9:00 P.M. in the Heritage Hall, Minneapolis Public Library, 300 Nicollet Mall, Minneapolis.

The meetings will give the public a chance to discuss the scope of the detailed Alternatives Analysis and Draft Environmental Impact Statement (AA/DEIS) as described in the attached Scoping Report. An Environment Assessment Worksheet (EAW) prepared to comply with State EIS requirements is also attached.

Sincerely,

Dirk deVries
Chairman, Steering Committee

LA714A
PHTRN1

Attachments

SOUTHWEST/UNIVERSITY AVE. CORRIDORS STUDY

TRANSIT ALTERNATIVES ANALYSIS

AND

DRAFT ENVIRONMENTAL IMPACT STATEMENT

PHASE I:

DRAFT SCOPING REPORT

for Public Meetings on:

July 18, 1983 at 7:00 p.m.
Thomas-Dale Community Center
911 Lafond Avenue, St. Paul

and

July 19, 1983 at 7:00 p.m.
Heritage Hall, Minneapolis Public Library
300 Nicollet Mall, Minneapolis

June 1983

Metropolitan Council of the Twin Cities Area
300 Metro Square Building, 7th and Robert Street
St. Paul, Minnesota 55101 Tel. (612) 291-6359

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CHAPTER 6

STUDY FRAMEWORK 39

- Time Period of Analysis
- Geographic Limits of Analysis
- Analysis Data Requirements
- Major Study Assumptions
- Impacts to be Assessed
- Level of Detail in Impact Assessment
- Impact Assessment Techniques
- Evaluation Methodology to be Used

EXECUTIVE SUMMARY

Statement of the Problem

Transportation deficiencies are expected in two Twin Cities corridors by the year 2000. One corridor, connects the two downtowns of Minneapolis and St. Paul, via the University of Minnesota and generally follows the University Avenue alignment. The other one, the Southwest corridor between downtown Minneapolis and Excelsior, generally follows the Chicago & North Western (CNW) railroad right-of-way.

In both corridors, combined highway and transit capacities as planned today, will be insufficient to satisfy future travel needs. As a result, traffic congestion is expected by the year 2000. Can additional transit capacity remove this deficiency?

A second concern is congestion at major traffic generators such as the two downtowns and the University of Minnesota due to limited parking and street capacity. Can an improved transit system alleviate these problems?

A third concern is the ability of the metropolitan area to finance a transit system with adequate service levels and service quality in light of the dramatic bus operating cost increases experienced over the past 13 years. Can a higher capacity, less labor intensive and more productive transit system help reduce operating cost increases?

A fourth concern is related to the regional development patterns observed in the metropolitan area. Development, taking place in the second and third tiers of suburbs, requires investment in new urban services whereas unused capacity exists in the inner areas. Can visible, high quality and permanent transit improvements help to guide future development and redevelopment?

Purpose of the Study

The purpose of the study, an Alternatives Analysis and draft Environmental Impact Statement (AA/DEIS), is to evaluate several potential transit improvements or alternatives in each of the two aforementioned corridors. The study will be conducted according to the procedures of the Urban Mass Transportation Administration (UMTA).

At the end of the study, a best alternative will be selected in each corridor based upon the above evaluation. If UMTA concurs with the selection, preliminary engineering and implementation will take place.

Study Authorization

In December 1982, the federal Urban Mass Transportation Administration (UMTA) approved a $500,000 grant application [under Section 8 of the Urban Mass Transit Act], to conduct an AA/DEIS in the Southwest/University Ave. corridors.

Study Management and Coordination

Eleven state, regional and local agencies, as discussed in Chapter 2, are involved in the study: Minneapolis, St. Paul, Hopkins, Minnetonka, St. Louis Park, Hennepin County, Ramsey County, Minnesota Department of Transportation, Metropolitan Transit Commission, Metropolitan Council and University of Minnesota.

The overall policy direction is provided by a Steering Committee consisting of representatives from each of the eleven participating agencies.

Technical direction is provided by a Project Management Team (PMT) where each of the eleven agencies has a representative and by a Project Manager from the Metropolitan Council staff.

Community participation occurs through five citizens advisory committees, appointed by the Steering Committee with representation from: neighborhood groups, business organizations and other interested citizens.

Scoping Process

The scoping process, as discused in Chapter 1, defines the scope of work to be carried out during the AA/DEIS. It identifies the following major aspects of the study:

- The transit alternatives to be considered
- The significant issues to be analyzed
- The impacts to be assessed
- The roles of appropriate agencies
- The program of public involvement

The above aspects, summarized in the Scoping Report, are presented to the public at a Scoping Meeting. If necessary, the Scoping Report is then modified to reflect the comments received at the meeting.

Transit Alternatives Recommended for AA/DEIS

A wide range of alternatives were initially considered and evaluated using criteria including technical and design factors, land-use and development factor as well as accessibility, environmental and social factors.

The following alternatives discussed in Chapter 5 are recommended for further study in the AA/DEIS:

University Ave. Corridor	Southwest Corridor
No-build	No-build
Transportation System Management (TSM)	Transportation System Management (TSM)
Busway on University Ave.	Busway on CNW alignment
Light Rail Transit on University Ave.	Light Rail Transit on CNW alignment

The no-build alternatives, a continuation of existing transit service, constitute the baseline against which all other alternatives are compared.

The (TSM) alternatives represent low-capital improvements to increase the quality of the existing transit service.

The busway alternatives represent at-grade, bus-only lanes or a roadway physically separated from other traffic except at street crossings.

The Light Rail Transit (LRT) alternatives represent electrically-powered transit vehicles running on a pair of at-grade tracks separated from other traffic except at street crossings.

The downtown approaches and penetration of the LRT and busway alternatives will be dealt in more detail as part of the AA/DEIS.

Other alternatives evaluated and found not to be appropriate for detail study and therefore eliminated from further consideration were: Heavy Rail Transit, Personal Rapid Transit, Commuter Rail, LRT and busways on the above and/or other alignments.

Major Issues

The following issues discussed in Chapter 4, have emerged during the scoping process as major concerns to be addressed in the AA/DEIS:

- What would the impact of the proposed transit improvements on existing rider's accessibility?
- What would be the impact of the proposed transit improvements on existing businesses?
- Should the improvement penetrate downtown and if so, how?
- How might improvements in several corridors connect in the downtowns?
- How can transit improvements enhance development and redevelopment opportunities?
- How cost-effective are the proposed transit improvements?
- How can the improvements be financed equitably?

Impacts to be Analyzed

The following impacts discussed in Chapter 6 will be analyzed during the AA/DEIS:

- Impacts on:
    - o Transit
    - o Highway
    - o Other transportation modes
- Impacts on land-use patterns and economic development trends
- Impacts on Neighborhoods
- Impacts on Physical Environment

Study Tasks, Timetable and Cost

The following tasks discussed in Chapter 2 will be undertaken during the AA/DEIS:

- Study Design
- Detailed Definition of Alternatives
- Land Development Plan
- Patronage Forecasts
- Transit Operations Plan
- Capital, Operating and Annual Costs
- Financial Plan
- Environmental Impacts
- Evaluation of Alternatives
- Preparation of DEIS
- Processing of DEIS
- Selection of Preferred Alternative
- UMTA Review and Decision

A consortium of consulting firms headed by Barton-Aschman and Associates will perform a majority of the above tasks. The study is expected to be completed in 18 months from the beginning of the AA/DEIS.

The budget for the AA/DEIS is approximately $625,000, of which $500,000 are federally funded and the balance will be provided in staff time and services by the local participating agencies.

JM520B

CHAPTER 1

INTRODUCTION

PURPOSE OF THE SCOPING REPORT

This report is the first major product of a study of potential transit improvements in two corridors in the Twin Cities Metropolitan Area. It documents its initial portion referred to as the "scoping process."

The scoping process allows all interested parties to participate in the development of the study and defines:

- The potential transit improvements to be studied.
- The scope of the analysis, including the geographic limits the time period to be covered, the impacts to be assessed, and the level of detail of the assessment.
- Basic assumptions to be used in projecting future conditions.
- The public agencies responsible for conducting the study.
- The program of public involvement.
- The study budget and schedule.
- Major review points.

PURPOSE OF THE STUDY

The purpose of this study, a transit Alternative Analysis (AA) and draft Environmental Impact Statement (DEIS), is to produce the information necessary to decide if a major transit improvement is appropriate in the University Avenue and/or the Southwest corridors.

The study includes: a definition of goals and policies; the definition of a range of alternative transit improvements; the selection, through the scoping process, of a small number of alternatives which are found to be most reasonable; a detailed definition of the characteristics of those alternatives; an analysis of the effects of each in the community and the environment; and an evaluation of the alternatives to determine which is considered best.

The alternatives analysis process has been developed and defined by the federal Urban Mass Transportation Administration (UMTA). The successful completion of an alternatives analysis is a prerequisite to an application for federal financial participation in the construction of a fixed-guideway transit line. If UMTA concurs with the selected alternatve in each corridor, preliminary engineering, final design and construction could take place.

STUDY AREA DESCRIPTION

The study area includes two major corridors within the Twin Cities Metropolitan Area, where transit improvements are needed, and could be cost-effective.

One corridor is the Southwest corridor, shown in Figure 1. It begins in downtown Minneapolis and proceeds in a southwest direction through Minneapolis and into St. Louis Park and Hopkins. The corridor turns westward, and extends through Minnetonka, Deephaven, Greenwood, Shorewood and terminates in Excelsior.

The corridor forms a large traffic shed focused on downtown Minneapolis, and also includes other activity nodes such as downtown Hopkins. The corridor is predominantly residential in character, with several areas of employment concentrations as well as some developable land.

Possible alignments for transit improvements include both railroad and highway rights-of-way. The portion of the Chicago Northwestern Railroad right-of-way between Hopkins and Excelsior is now publicly owned. The balance between Hopkins and downtown Minneapolis is expected to become available for acquisition. Roadways in the corridor include parts of Hennepin Avenue and Lake Street, Highway 7, Minnetonka Boulevard and Excelsior Boulevard. Bus service in the corridor is presently provided by MTC routes 1, 6, 12, 17 and 67.

The other corridor is the University Avenue corridor shown in Figure 2. It links downtown Minneapolis and downtown St. Paul, the two metropolitan centers of the region. It also includes the University of Minnesota, a large urban university which is a major activity center and traffic generator. The corridor is entirely urban, lying in the heart of the metropolitan area. It contains older, well established neighborhoods and a significant amount of employment in both clustered and strip developments. Although little undeveloped land exists in the corridor, there are substantial opportunities for redevelopment.

Potential transit alignments include University Avenue itself, which now carries bus route 16, one of the highest patronage line in the MTC system. Also included is I-94, which links the two downtowns and upon which express bus route 94-B operates. To the north of the corridor is a Burlington Northern railroad right-of-way, now in use as a freight railroad, which may offer some opportunity for transit service.

NEED FOR STUDY

This study is needed to determine whether major transit improvements in the study area could solve a number of local and regional problems. No single problem forms the basis for the study. Instead, a set of related deficiencies and concerns are addressed by the study.

One such deficiency is the capacity of the existing and planned transportation system in both corridors to meet the future travel needs.

In the Southwest corridor, 29,900 person trips in the morning peak hour are projected for the year 2000, whereas the combined transit and highway capacity would be limited to 25,800 person trips. In other words, demand would exceed capacity by 16 percent. A previously planned southwest diagonal freeway was eliminated for environmental reasons in the early '70's. Therefore, a congestion problem would exist by the year 2000 if no additional capacity is provided.

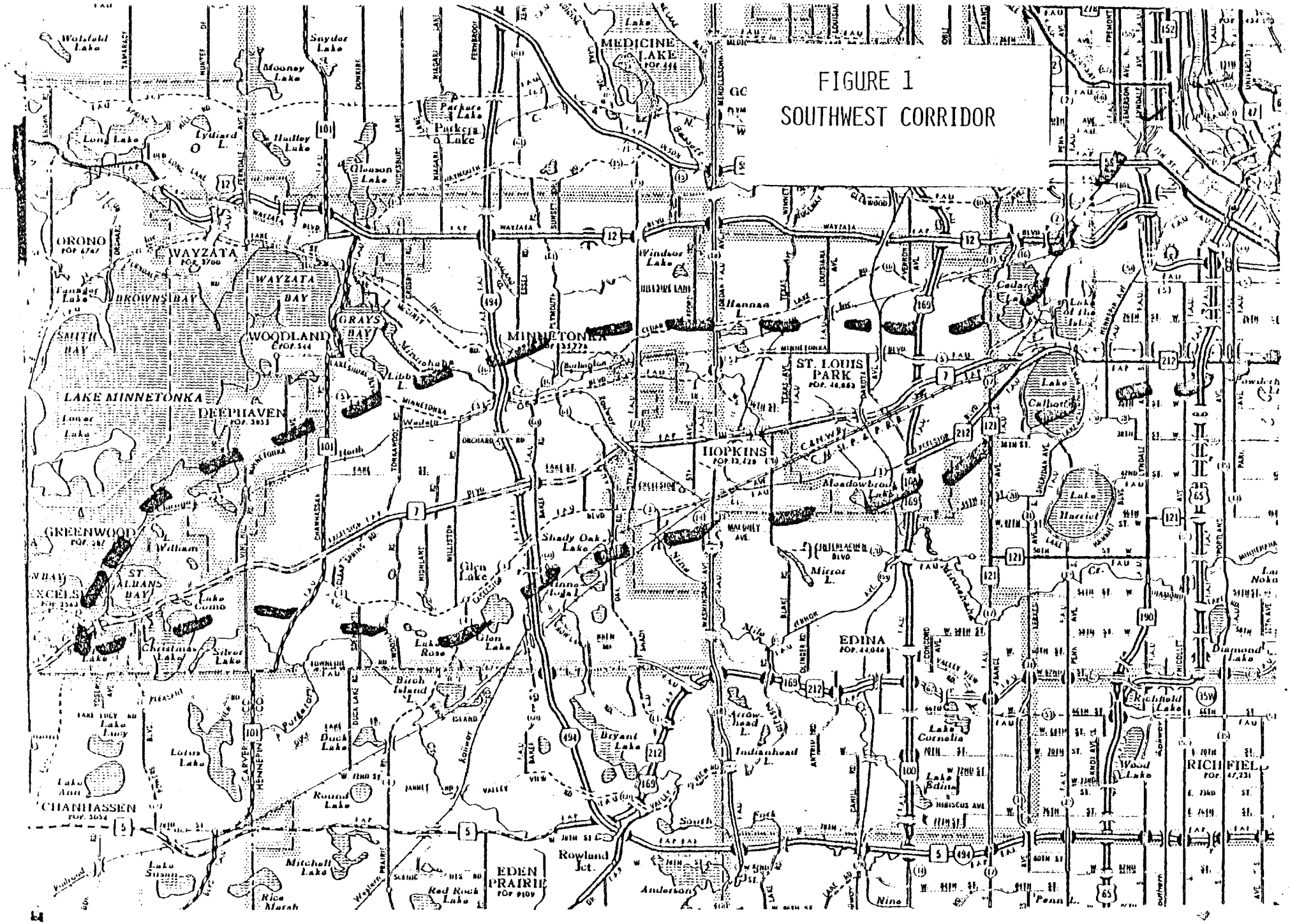


FIGURE 1
SOUTHWEST CORRIDOR

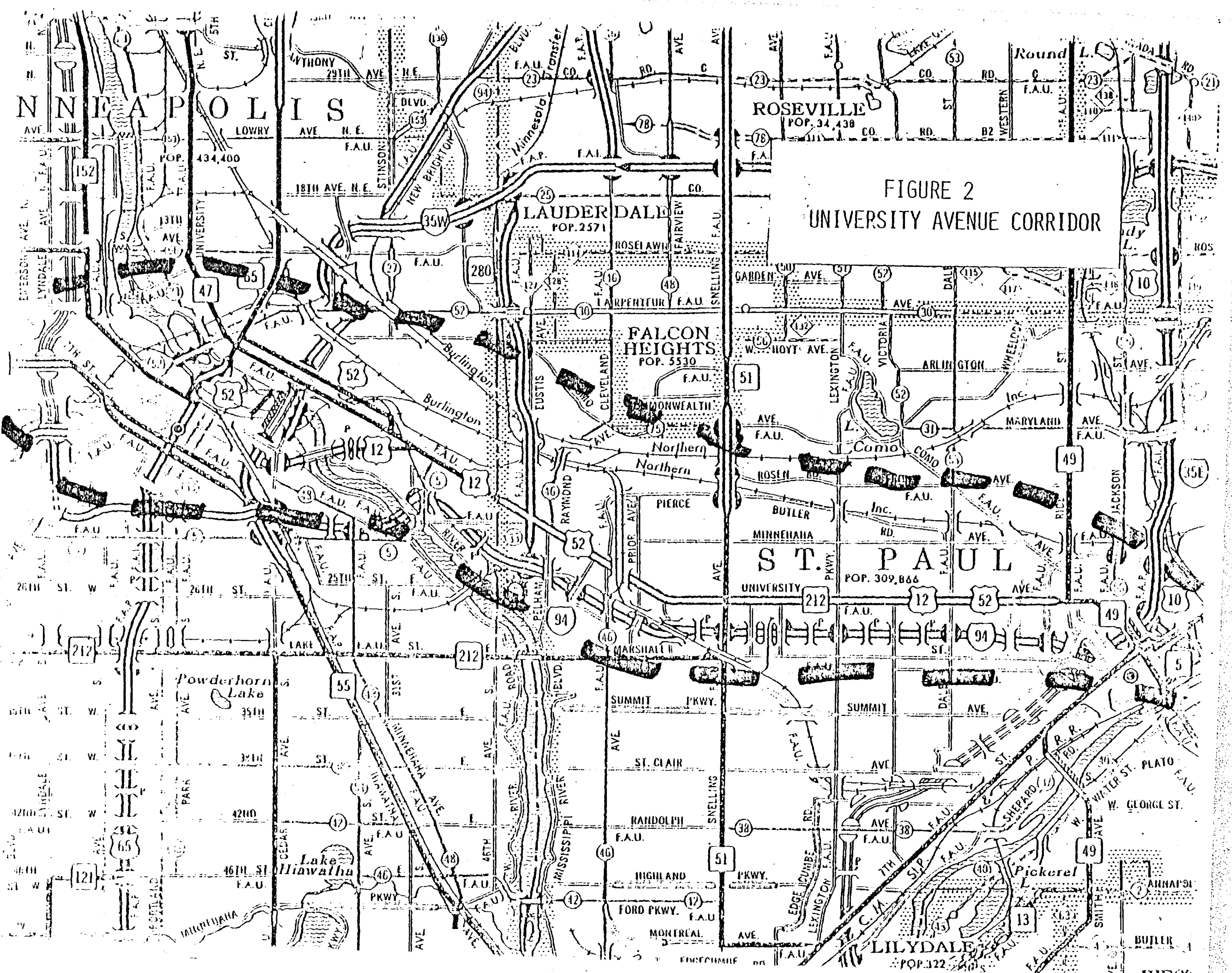


FIGURE 2
UNIVERSITY AVENUE CORRIDOR

The University Avenue corridor will be also deficient in transit and highway capacity. The 2000 peak hour demand forecast is 17,900 person trips, and the combined transit and highway capacity is 12,300 -- which results in thedemand exceeding the capacity by 46 percent. Thus, serious congestion conditions would exist by the year 2000 in the absence of additional capacity.

This study is necessary to explore means to expand capacity in a manner which is environmentally sound, energy-efficient, financially affordable and supportive of community and regional goals.

A second concern is congestion within the downtowns of both central cities, and the University of Minnesota. These major travel generators have limited parking and street capacity and require effective transit service to function well. Growing employment within both downtowns exacerbates the congestion problems. The University is already experiencing a severe parking shortage.

This study is needed to determine whether upgraded transit service could reduce congestion levels and parking requirements and solve the resulting problems of delay and environmental degradation within the two downtowns and the University of Minnesota.

A third area of concern is the ability of the region to finance a transit system with adequate service levels and service quality. The bus system operating costs have increased dramatically over the past few years. Expansion of the system into low-density suburban areas, inflation, and rising costs for fuel and labor have increased the cost per passenger substantially. At the same time, significant sources of funds have been reduced. In 1978, state and federal assistance supported 51 percent of the MTC's operating costs; that support has now shrunk to 20 percent. Federal support is proposed to end entirely, and state support is dependent upon the condition of the state's economy. As state and federal supports are reduced, the burden of paying for the transit system falls more upon the region's taxpayers and the farebox. One possible solution to this financial problem is to use more productive transit equipment and facilities, providing more transit service for each operating dollar.

This study is necessary to determine whether operating savings could offset the capital investment needed to put into place a more productive system.

A fourth concern relates to regional development patterns . Development, occurring in the second and third tier suburbs, requires investment in urban services (sewer, roads, fire, police, etc.) whereas unused capacity exists in the central cities and first tier suburbs. More housing is necessary in the central cities and first tier suburbs for the labor population needed in the two downtowns to maintain them as the major diversified centers in the Twin Cities.

This study is needed to determine to what extent the construction of high quality, visible and permanent transit facilities, in conjunction with appropriate development incentives and controls, could help shape development and redevelopment.

HISTORICAL HIGHLIGHTS OF TRANSIT STUDIES IN THE TWIN CITIES

Analysis of alternative technologies in the Twin Cities began as early as 1964, under the auspices of the Minnesota Highway Department in an interagency undertaking known as The Joint Program. This activity was continued by the Metropolitan Council and the Metropolitan Transit Commission after their creation in 1967. At that time, the primary emphasis was on automated technology systems using smaller vehicles than conventional rapid transit. In 1968-69, long range planning efforts culminated in a transit system concept of a "family of vehicles" rather than a single vehicle system.

The backbone element of the family of vehicles system concept was analyzed in depth during the 1970-71 period. First, the Commission examined various system options including the all-bus option. The latter was rejected on two counts: (1) rapidly increasing operating costs, and (2) failure to contribute to shaping the region's development patterns. A heavy rail transit system was also rejected to prevent overdevelopment of the two downtown areas to the detriment of the rest of the Region.

The Metropolitan Transit Commission then analyzed five types of exclusive transit systems -- four fixed-guideway systems and the bus-on-busway concept. Two small vehicle systems were also investigated -- Activity Center Transit (now called Group Rapid Transit or GRT), and Personal Rapid Transit (now called High Performance PRT or HPPRT). These were rejected primarily on the basis of cost effectiveness. As a result of this work, the Commission developed performance specifications for an intermediate capacity fixed-guideway system. It was estimated that for a first stage of construction, a 37-mile, $550 million fixed guideway system, using 600 vehicles and 25 stations, could best serve as the backbone of the region's family of vehicles system.

The fixed-guideway system, incorporated into a Transit Development Program, was submitted by the MTC to the 1973 Minnesota Legislature in support of a request to proceed to the next step -- preliminary engineering. The Metropolitan Council also presented a plan, a bus-on-busway system, to the Minnesota Legislature.

At the Legislature, the MTC's Transit Development Program received favorable action in the House of Representatives, but was not acted upon by the Senate. In the 1974 legislative session, a bill was passed which called upon the MTC to conduct "automated small vehicle fixed guideway system planning" and report back to the Legislature.

By that time, serious questions had arisen regarding highly-automated transit technologies. The few demonstration systems which had been built had experienced severe technological problems and cost overruns. Many other projects which had been planned were abandoned as the limitations upon the current technology became apparent.

These concerns were reflected in the MTC study. It rejected high technology systems, such as PRT, and proposed that the MTC be authorized to conduct an alternatives analysis of the more straightforward types of automated systems and light rail transit (LRT).

The recommendations from that study were not acted upon by the Minnesota Legislature. Then in 1976, the Metropolitan Council revised its policy plan to

include a prohibition against fixed guideway transit, except for downtown circulation systems. This action effectively stopped planning for regional fixed guideway systems.

In early 1980, the Minnesota Legislature directed the Metropolitan Council to study the feasibility of light rail transit. The study conducted in cooperation with the Minnesota Department of Transportation and the MTC, re-examined the role of fixed guideway transit in the Twin Cities. After analyzing 15 corridors, four corridors were selected for study; in each of the four, light rail transit was compared to one non-LRT alternative. A final outcome of the study was the approval in 1982 of an amendment to the 1976 Transportation Policy Plan removing the prohibition against fixed-guideway transit, and acknowledging the potential feasibility of LRT.

During this same period, the City of Minneapolis and the Minnesota Department of Transportation analyzed major transportation improvements for the Hiawatha Avenue Corridor. Several alternative transit system improvements were analyzed, including LRT and high-occupancy vehicle lanes. The study is now complete, but a decision on the preferred alternative has not yet been made. The light rail alternative has been endorsed by the Hiawatha Avenue Task Force and the city councils of Minneapolis and Bloomington.

In 1980, the MTC studied trolley buses in response to concerns over petroleum fuel availability. The study, completed in 1981, found that purchasing and operating a trolley bus fleet would be more costly than a diesel bus fleet, but would save energy and would be environmentally beneficial. No further planning was done because of the lack of funding available for capital costs.

CHAPTER 2

CURRENT SOUTHWEST/UNIVERSITY AVENUE CORRIDORS STUDY

STUDY AUTHORIZATION

Following the change in regional policy regarding fixed-guideway transit, efforts were begun by several local agencies to organize a detailed corridor level study of light rail transit. In September 1982, an application for federal funds, under Section 8 of the Urban Mass Transportation Act, was filed with UMTA. The application was approved in December 1982, allowing the study to begin.

STUDY OBJECTIVES

The effects of a major transit improvement in a given corridor are complex and multifaceted. A large amount of information, necessary to assess those effects, will be developed in the study:

- What would be the service characteristics of alternative transit improvements?
- Who would be served, and in what numbers, by those potential improvements?
- What levels and types of development and redevelopment could result from the transit improvements?
- What development incentives and controls are appropriate to shape that development?
- What would be the environmental effects of each alternative?
- What would be the costs of the alternative improvements?
- What types of financing could be used to cover those costs?
- Based upon the various factors studied, what solution is appropriate for each corridor?
- What are the relative merits of making an improvement in the different corridors considered, and how would an improvement in one affect the others?

A second major objective for the study is to help reach a consensus on whether a major transit improvement is appropriate, and, if so, what type of improvement should be made. This is achieved by allowing ample opportunity for citizen and affected public agencies involvement to assure that the study results will be widely accepted.

A third study objective is to provide a basis for detailed planning and engineering of any transit improvement, if determined to be appropriate. Decisions made in this study regarding transit technology, alignment, stop location, development plans, land use controls and financing will influence the nature of any project actually implemented.

A final objective is to meet the requirements of potential funding agencies. The successful completion of an alternative analysis is required by the Urban Mass Transportation Administration as a prerequisite to an aplication for construction funds. This includes compliance with applicable civil rights and affirmative action guidelines.

STUDY MANAGEMENT AND COORDINATION

The study is organized as a multi-agency undertaking, involving the state, regional and local agencies affected by the transit improvements under study. The management structure of the project is shown in Figure 3.

The project Steering Committee, composed of policy-level representatives of the participating agencies, is the decision-making body for the study. Its specific responsibilities are:

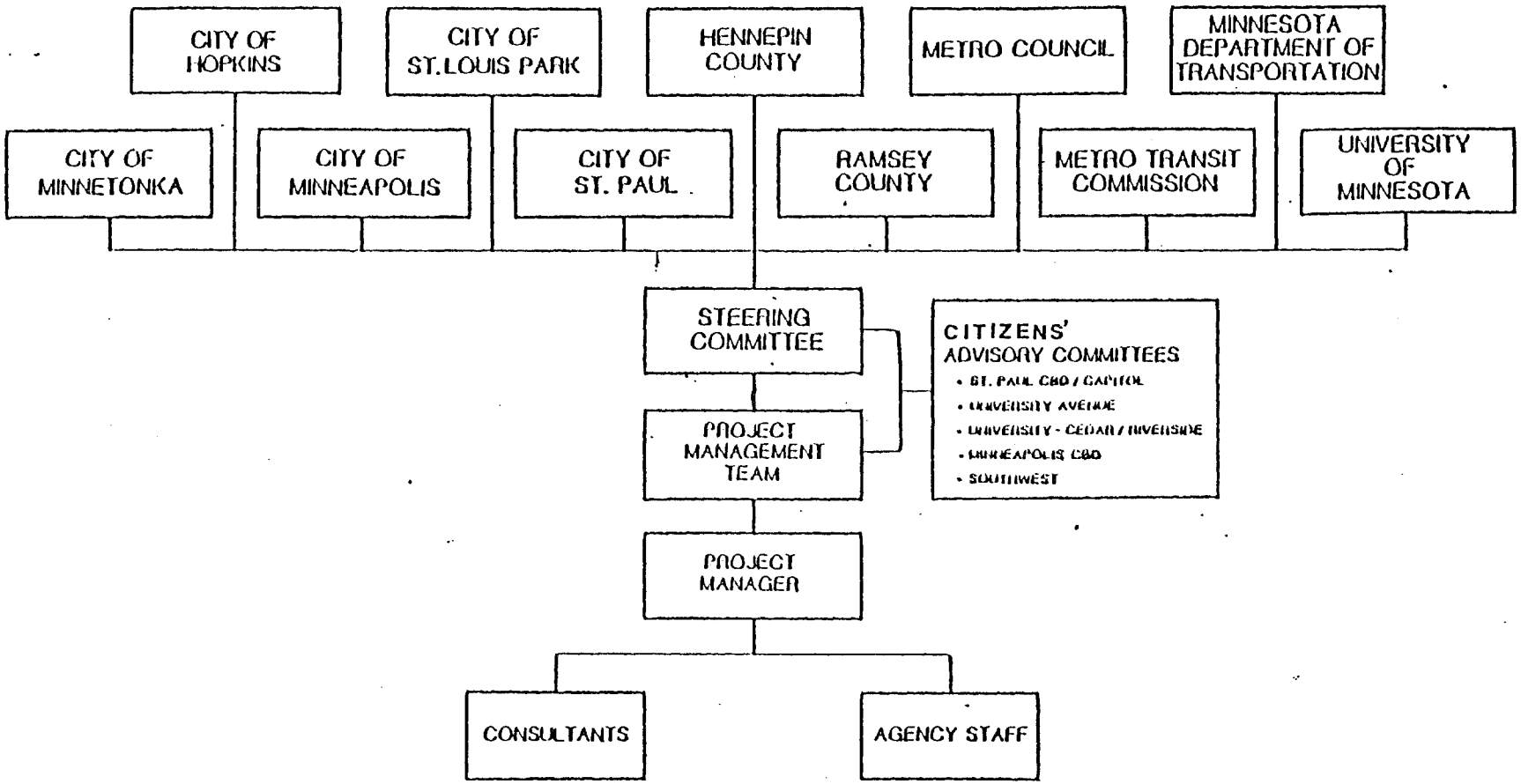
- Give policy direction to the AA/DEIS.
- Appoint citizen advisory committees.
- Give direction to the Project Management Team and Project Manager.
- Act on major study products.
- Provide liaison to the individual units of government represented.
- Receive advice from citizen advisory committees.
- Select the preferred alternative in each corridor.

Membership on the Steering Committee is as follows:

Entity	No. of Members	Representatives
City of Hopkins	1	Mayor or Member of City Council
City of Minneapolis	2	Mayor or Members of City Council
City of Minnetonka	1	Mayor or Member of City Council
City of St. Louis Park	1	Mayor or Member of City Council
City of St. Paul	2	Mayor or Members of City Council
Hennepin County Regional Railroad Authority	2	County Commissioners or Regional Railroad Authority Members
Ramsey County	2	County Commissioners
Metropolitan Council	1	Chairman or Council Member

FIGURE 3

PROJECT ORGANIZATION



Metropolitan Transit Commission	1	Chairman or Commision Member
Minn. Dept. of Transportation	1	Assistant Commissioner
University of Minnesota	1	Asst. Vice Pres. for Physical Planning

Supporting the Steering Committee is a Project Management Team (PMT), made up of one professional staff representative of each affected agency, including the Capitol Area Architectural and Planning Board. The responsibilities of the PMT are:

- Carry out comprehensive review of study products.
- Give technical direction to the AA/DEIS.
- Transmit study products and recommendations to the Steering Committee.
- Assist the Project Manager in working with the participating agencies' staff.
- Provide support to citizen advisory committees.
- Recommend the preferred alternative in each corridor to the Steering Committee.

The responsibility for day-to-day management of the project has been assigned to a project manager, a staff member of the Metropolitan Council. His responsibilities include:

- Receive direction from PMT.
- Present study products to PMT.
- Direct and supervise the work of the consultant.
- Coordinate the work of public agency staff.
- Work with the citizen advisory committees.
- Complete the work program on schedule, within budget and with high technical quality.

In addition to the above public officials and staff, a set of five advisory committees has been established to provide for community involvement. These advisory committees are described later in this chapter.

STUDY TASKS, TIMETABLE, AND COST

The tasks to be undertaken in the study are defined not only because of federal requirements for an alternatives analysis and an EIS, but also to respond to the locally defined objectives of the study. Those tasks will be:

Technical Tasks:

Task 1.1 - Study Design. A study design will be prepared to describe in detail the work to be accomplished during the AA/DEIS.

Task 1.2 - Detailed Definition of alternatives. Technical reports will be prepared to specifically describe the alternatives to be analyzed, including subalternatives regarding alignments approaching and within the downtowns.

Task 1.3 - Land Development Plan. This plan will address the impact of various transit alternatives on land development and redevelopment. It will reflect likely land development based on forecasts of land use changes, relocations, possible development incentives, and the expected level of demand in the corridor.

Task 1.4 - Patronage Forecasts. Reliable patronage forecasts, sensitive to the differences among alternatives, will be prepared using a refined version of the regional transportation computer models.

Task 1.5 - Transit Operations Plan. A technical report will be prepared detailing the transit operating plans for each alternative considered in the analysis.

Task 1.6 - Capital, Operating and Annual Cost Analysis. The various cost components for each alternative will be estimated and documented, and presented in a total annual cost format to allow comparisons among alternatives.

Task 1.7 - Financial Plans. This task will determine the financial feasibility of each alternative, including possible means of funding.

Task 1.8 - Environmental Impacts. Technical reports will be prepared addressing specific areas of environmental concern, including air quality, noise and vibration, water quality, wetlands, energy, land use and neighborhood impact, park lands, historic features and aesthetics, and economic impacts.

Task 1.9 - Evaluation of Alternatives. The alternatives will be evaluated by examining the impacts identified in the preceding tasks.

Decision-Related Tasks:

Task 2 - Prepare Preliminary EIS.

Task 3 - Processing Draft EIS. This task will include UMTA review of DEIS and a public hearing.

Task 4 - Select and Document Preferred Alternative. The Project Management Team will recommend a preferred alternative to the Steering Committee after evaluation of the information contained in the DEIS and the testimony at the public hearing. The Steering Committee will review the PMT recommendation, solicit advice from the five advisory committees, and formally adopt a prefered alternative for each corridor in the study area. This information will be transmitted to UMTA.

Task 5 - UMTA Decision on Project. Any necessary assistance will be provided to UMTA as a decision is made regarding federal financial support for the preferred alternative.

Task 1.8 will be performed by the participating agencies. The remaining technical tasks will be the responsibility of a team of consulting firms: Barton-Aschman & Associates, Bechtel Civil and Minerals, Robert Harmon and Associates, James B. McComb and Associates, Martinez Mapping and Engineering and Professional Design Services. The schedule for completion of the study will cover about two years, starting in December 1982, and is shown in Figure 4. The budget for completion of all tasks will be approximately $625,000, of which $500,000 will be federally funded. The balance of the study costs will be provided in staff time and services of participating agencies.

COMMUNITY AND PUBLIC AGENCY INVOLVEMENT

To adequately reflect the interests and concerns of the communities affected, five citizen advisory committees have been established, representing five subareas of the study area. This division was done to reflect different demographic and geographic characteristics. The five advisory committees are:

- Southwest Corridor Advisory Committee
- Downtown Minneapolis Advisory Committee
- University of Minnesota/Cedar-Riverside Advisory Committee
- University Avenue Advisory Committee
- Downtown St. Paul/Capitol Area Advisory Committee

Each advisory committee includes representation from neighborhood groups, business organizations and other interested citizens. The first category of membership draws upon existing planning district organizations, community organizations and other residents. The second category provides representation for chambers of commerce and business associations. The third category includes others interested in public transit improvements, such as members of the MTC's Advisory Committee on Transit.

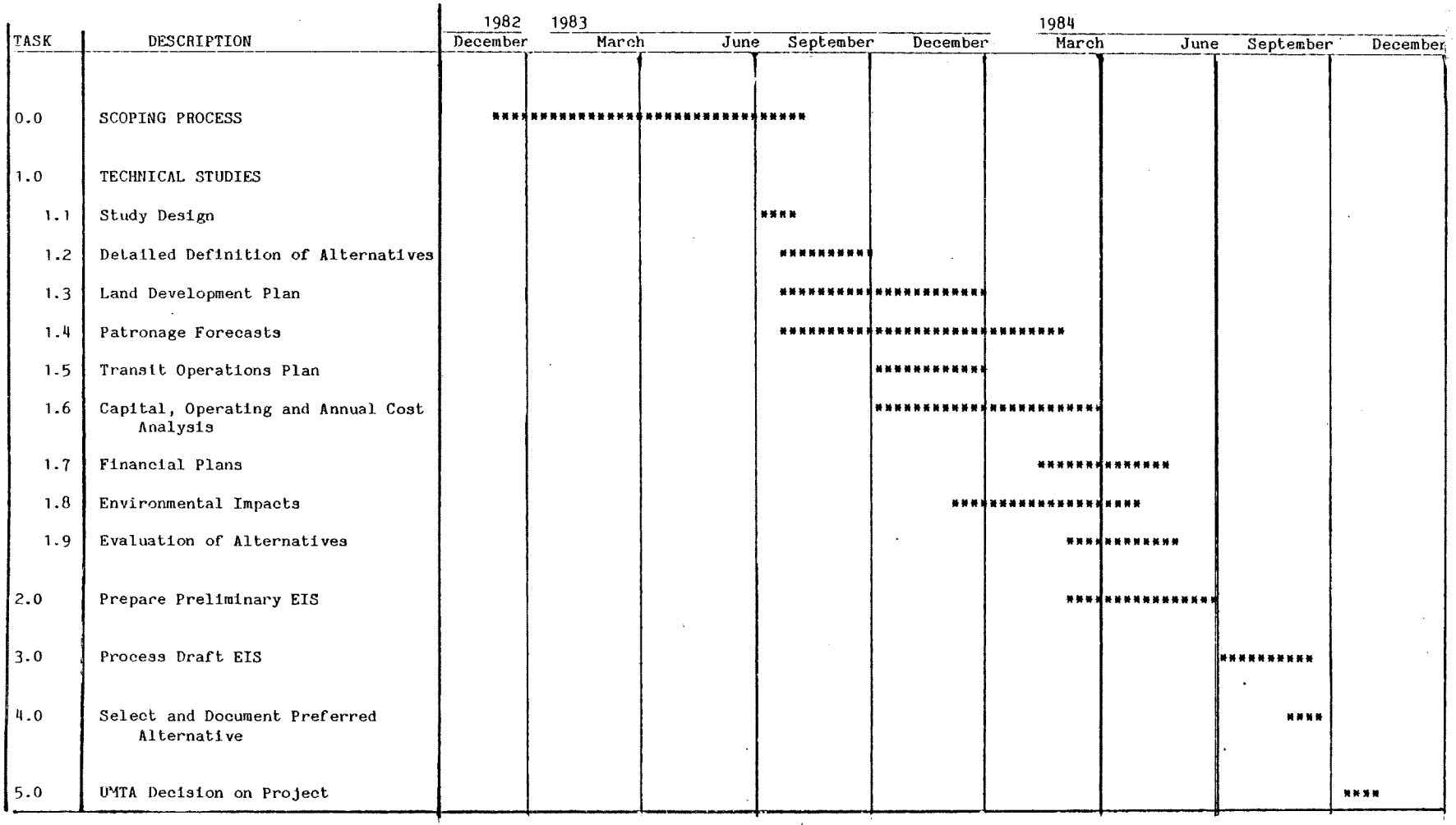
The responsibilities of the advisory committees are to:

- Reflect the interest of those within the study area.
- Service as liaison with the neighborhood groups, business organizations and other individuals in the study area.
- Provide input to the study process.
- Review reports generated during the study.
- Advise the Steering Committee during the study.
- Advise the Project Management Team during the study.

The advisory committees will meet as necessary throughout the course of the study to carry out their responsibilities.

FIGURE 4

SOUTHWEST/UNIVERSITY AVENUE CORRIDORS STUDY
TIMETABLE



CHAPTER 3

RELATED GOALS, POLICIES AND OBJECTIVES

The following statements are derived from adopted goals, policies or plans at the regional and local levels.

REGIONAL GOALS, POLICIES AND OBJECTIVES

- Provide residents of the Urban Service Area, as defined in the Development Framework, with cost-effective, convenient and attractive alternative choices of transportation to both subregional and regional opportunities.

- Primarily express transit service should be provided between the two metro centers and from the suburban subregions to the metro centers.

- Utilize transportation to strengthen the two Metro Centers as the major employment, financial, institutional, retail, cultural, entertainment, medical, and service centers for the Metropolitan Area, the State of Minnesota, and the upper midwest.

- Transportation services and investments should be made on the basis of need and the ability to finance them over time, and be coordinated with the other metropolitan services and investments.

- Provide transit services and investments that achieve the most efficient, productive and effective use of existing public resources.

- The highest priority for transit services should be in areas or along routes with relatively high density of demand for the service and a population dependent upon transit by age, income, or physical or mental disability.

- Preserve and maintain the vast resource of housing and services in the fully developed part of the Metropolitan Area. Redevelopment projects should be undertaken on a selective basis to upgrade deteriorated or obsolete areas.

- The Metropolitan Council shall use its authority to promote a pattern of urbanization within the Urban Service Area that allows efficient, orderly, and economic growth.

LOCAL GOALS, POLICIES AND OBJECTIVES

MINNEAPOLIS

The Minneapolis Plan for the 1980's contains transportation, land use, and social/economic goals, objectives, policies and implementation directions.

The transportation goal is to provide efficient and effective personal and commercial transportation throughout the City: By balancing the demands made by the motorist against those made by transit users, truckers, bicyclists, pedestrians, rail and barge operators and by minimizing the negative effects of all these forms of transportation on families living in the neighborhoods -- so that Minneapolis is a stable and attractive place to raise a family.

Objectives and policies to support this goal are:

Objectives

1. Encourage more people to ride in fewer vehicles, thereby conserving fuel, reducing congestion, shortening trip times and reducing pollution.

2. Provide good transportation services and facilities to and within the City's Central Business District.

Policies

Policy 22. Improve non-peak hour transit service. This service might use smaller vehicles than the standard bus and might have more crosstown routes.

The implementation of the above policy would include endorsing the MTC goal of carrying at least 50 percent of the downtown bound trips by 1990. It would be made possible through a variety of actions such as reverse-flow lanes, bus priority features at intersections, bus access ramps, fringe municipal parking, and bus shelters. It also would require planning for special transit corridors (i.e. Southwest, Hiawatha Avenue and University Avenue), the consideration of LRT, buying or leasing abandoned railroad right-of-ways and improving transit service.

The Physical Environment section of the Plan for the 1980's recognizes the problem of stagnation and deterioration through the following objective and policies:

Objective:

3. Provide direction for change.

Policy 32. The City should encourage the improved efficiency of strip commercial areas.

Policy 33. The City should assist business groups to plan for their futures.

Policy 34. The City should work for the redevelopment of under-utilized land.

The areas of the City undergoing change, or where change is desirable, present opportunities to alter the type, intensity, and quality of the land use. These areas called opportunity areas, are defined as distinct geographic areas where:

a. There is a significant potential for change in the type, intensity, and/or quality of land use; and where

b. City action can be used to stimulate or otherwise guide development and affect the future physical character and land use mix of the area.

The proposed study area includes a majority of these opportunity areas. Transit improvements could have a positive effect in improving these areas.

The Economic Development Chapter of the Plan for the 1980's has as its first objective a decrease in unemployment and under-employment. The potential of transit improvements to influence development and increase accessibility would help to implement this objective.

ST. PAUL

The St. Paul Comprehensive Plan contains transit and land use goals and policies for the City.

The primary transit goal is to "...shape the St. Paul portion of the regional transit system to meet local needs and to help address local priorities."

Supportive objectives are:

1. To ensure provision of high quality transit service in St. Paul that is tailored to the character and needs of the City.

2. To facilitate the convenient, safe and energy-efficient movement of pedestrians and vehicles through major activity centers in St. Paul.

3. To ensure that the transportation needs of transit-dependent persons living in St. Paul are adequately met.

4. To promote and encourage the widespread use of transit for trips of all purposes, to reduce traffic congestion and increase energy efficiency in St. Paul

The following policies support Objective 1:

- "The City considers light rail transit a significant potential transit alternative for the Twin Cities area and supports an amendment of the Transportation Chapter of the Metropolitan Development Guide to allow further evaluation of potential applications."

- "The City urges the Metropolitan Council to seriously consider all potential light rail corridors in St. Paul (including University Avenue) for further evaluation. The City will assist in this evaluation as necessary."

- "The City will work with the MTC and the Metropolitan Council to study the relationship of bus service to potential LRT service in St. Paul."

Relative to Objective 2 the Plan includes the following questions:

- "If LRT enters the core of downtown, would it be at, above or below grade? What streets would be used? Where would the stops be? What are the implications for fringe facilities, skyways, shuttle bus service? What would the traffic impacts be?"

The Plan then concludes with a policy that:

- "The City will immediately study circulation in downtown St. Paul and develop strategies for resolving problems and creating an integrated circulation system."

In support of Objective 3 the Plan discusses special transit needs of the poor, young and elderly. Census data indicates that high concentrations of St. Paul's young and poor are within easy walking distance of University Avenue. The section on Objective 3 concludes with the following policy:

- "The City will continue to work with MTC in reviewing proposed transit service modifications to ensure that the needs of the low-income and young people are considered and continue to be more thoroughly met"

The Land Use portion of St. Paul's Comprehensive Plan calls for major commercial revitalization of University Avenue in conjunction with further LRT study. Objective 7 of the Land Use Chapter proposes: "To accommodate new demands for land in St. Paul while maintaining the existing city character and environmental quality." In an attempt to meet these new demands the Plan proposes creation of mixed use cluster zones. The Plan designates a variety of clusters including "regional", "major retail", "new planned development" and "neighborhood" clusters. Not coincidentally the University Avenue corridor contains one major retail cluster (Midway Center), four neighborhood clusters (at Raymond, Lexington, Dale and Rice Streets), and terminates in St. Paul's regional mixed use cluster (downtown). Improved transit service along University Avenue, therefore, would support major land use priorities of the Comprehensive Plan.

Objective 5 of the Land Use chapter encourages better "connections" between downtown and the inner neighborhood.

Policy 1. 5-1: The City will work to improve the connections between the downtown and adjacent neighborhoods by:

4. Providing better access to downtown through transit and pedestrian improvements.

7. Making entry routes to the downtown more convenient and attractive.

UNIVERSITY OF MINNESOTA

Adopted objectives are:

1. Provide the University population and in particular its students with reasonable and affordable avenues of accessibility.

2. To make the University's many resources and services more available to the general public through improved accessibility.

3. Reduce and ameliorate the current high level of congestion and modal conflict in the University area.

4. Free increasingly limited financial and land resources to assist the University in meeting its prime missions of education and research.

ST. LOUIS PARK

The basic objective of the City is as follows:

> Transportation facilities in the southwest corridor are to be directed towards providing a choice in transportation mode, with one of the modes being a modern transit service between St. Louis Park and Minneapolis and surrounding areas. The facilities must serve and support existing and future development as envisioned in the City's plans during the next 20 years or more, and the transportation trips generated by such development. At the same time, these facilities should minimize adverse environmental conditions, improve the safety for persons regardless of their mode of travel and improve the aesthetic and environmental conditions in the community.

HOPKINS

1. To have public transit within 1/4 mile of each residence. This is not the case now, but can be readily accomplished with feeder service to an LRT line. Transit service is necessary in Hopkins because of income levels, age distribution, and apartment occupancy levels significantly different from those of conventional suburban areas.

2. To properly develop unused vacant industrial and commercial land. Virtually all such land in Hopkins is within one block of the main railroad line through town, tabulated in the City plan at 81.3 acres.

MINNETONKA

1. Provide an effective transit link between residential concentrations and major activity centers in the City and region.

2. Adequate mass transit service should be supported by community transit facilities.

CHAPTER 4

ISSUES AND CONCERNS IDENTIFIED THROUGH COMMUNITY AND AGENCY INPUT

The identification of major issues and concerns relevant to the study is an essential part of the scoping process.

A summary of these issues and concerns is presented in this chapter. Detailed reports and letters are available from the Metropolitan Council offices.

ISSUES AND CONCERNS IDENTIFIED BY CITIZEN PARTICIPATION

DOWNTOWN ST. PAUL/CAPITOL AREA ADVISORY COMMITTEE

- Population segments to be served (transit dependent vs. choice rider) and characteristics of service required (local vs. express service, stop spacing) should be assessed.
- The amount and overall quality of service to be provided from the University Ave. corridor to downtown St. Paul should be clearly defined.
- Downtown penetration impacts such as: potential property acquisition, changes in traffic patterns, reduction in street/sidewalk/skyway capacity, disruption or removal of parking/loading areas should be analyzed.
- Will improving downtown accessibility encourage development throughout the City and in the downtown area?
- Will congestion negatively impact air quality, particularly at critical sites?
- Which downtown activity centers will be served?
- What will be the visual impacts on unique areas: Rice Park, Lowertown, State Capitol complex, Kellogg Blvd.
- What is the potential of a new transit alternative to serve as an internal circulator and to "interface" with other regional transit corridors.
- What will be the costs to users, cities and region? Will financing be equitable?
- Development opportunities in general and at specific downtown sites should be identified and analyzed.

UNIVERSITY AVENUE CORRIDOR ADVISORY COMMITTEE

- The study should focus on transit service improvement along University Ave. itself. Local service should not be sacrificed in favor of express service. Feeder service to the north and south should be improved.

- The study should address the effects of accessibility and parking changes, new development and the location of stops on existing residents and businesses.

- New transit options should not require wholesale redevelopment or major land acquisitions on University Avenue.

- The environmental analysis should concentrate on air quality, noise, and aesthetic impacts. Especially, air quality at University and Snelling should be analyzed.

- Overall costs of the proposed improvements should be evaluated relative to costs of transit services elsewhere in the Twin Cities. Each alternative's overall effectiveness, and the region's ability to pay for the improvement should be assessed.

- User costs should be evaluated according to their relative effects on different types of users (e.g-transit dependents, senior citizens, handicapped). The fare/price for the proposed transit services should be sensitive to the needs of these groups.

UNIVERSITY OF MINNESOTA/CEDAR-RIVERSIDE ADVISORY COMMITTEE

- Transit improvements should not result in reduced local service along University Avenue. The needs of local residents should be accommodated.

- The impact on businesses along the corridor due to changes in alignment, and different stop locations and spacing should be evaluated.

- A cost-effective solution, financed in an equitable way should be pursued.

- Loss of parking on streets, and problem of "ad-hoc park and ride" on side residential streets should be addressed.

- Impacts on total energy use (including energy required to build as well as operate the proposed improvements) and aesthetics should be reviewed.

- Size, location and impacts of development on neighborhoods and businesses should be evaluated.

- Service to the University of Minnesota should maximize accessibility to existing activities.

DOWNTOWN MINNEAPOLIS ADVISORY COMMITTEE

- Subway penetration of Downtown Minneapolis is the preferred alternative, but surface and loop alternatives should be considered.

- These corridors should be considered for penetration of Downtown Minneapolis:

  From the southwest
  - CNW Railroad right-of-way
  - The area between Hennepin and Lyndale Avenues north of W. 29th Street to the Bottleneck.
  - Nicollet Avenue/I35W corridor

  From the east
  - Washington Ave./3rd St. S.
  - University Ave./R.R. bridge #9

- Preferred route through downtown Minneapolis should be through the center of the CBD, equidistant from fringe areas to provide equal service to all parts.

- The public transportation system design and operation should be tailored to the needs of the various user groups; the needs of employees and shoppers for transit service differ in terms of their respective destinations, the time of day each group uses transit, and the costs each group is willing to bear, as do those seeking downtown entertainment. Handicap access to the public transportation system should be considered.

- A compact downtown Minneapolis core must be maintained and all transit alternatives should be studied for their effect on present and future downtown core developments.

- The public transportation system should attract new ridership, therefore all alternatives should be studied for enhancement of personal security while aboard a transit vehicle and at transit shops, vehicle safety, convenience, minimum travel time and passenger preference.

- The alternatives study should consider impacts on air quality, noise, visual intrusion, interfaces with goods movement in the downtown, pedestrian movement, parking and other transportation modes.

- In considering the feasibility of transit alternatives the study should examine total system costs (versus corridor cost only), and that transit improvement benefits ought to include "value captured" from development induced by each transit alternative.

- Only available, proven implementable alternatives ought to be evaluated by the AA/DEIS. Each alternative should be evaluated for its potential to increase the proportion of trips by transit as compared to trips by auto.

- In addition to local service, efforts should be made to provide express service between major concentrations of people. Minimum travel time from such concentrations to the central business district is essential. Transit to the CBD must offer significant reduction in travel time as compared to the auto in order to attract people out of their cars.

- Any improvements or change to the transit system ought to improve its "all weather" operations potential.

- The Downtown Minneapolis Advisory Committee recommends study of surface, subway and loop penetrations of the CBD, with preference for subways. It is concerned that at-grade transit reservations will diminish street capacity and block delivery trucks and parking ramp entries. It believes that transit cannot be elevated in the downtown due to conflicts with the skyways.

SOUTHWEST CORRIDOR ADVISORY COMMITTEE

- Improve the quality of transit service in the corridor and related collector-distribution services should be the major objective.

- The proposed transit improvements should relieve congestion, provide access to suburban job opportunities, and provide off-peak service.

- Transit improvements should be planned to eliminate the need for any future expansion of existing roadways or construction of new roads in the corridor.

- The selected alternative should reflect a balance between the need to expedite service for suburban riders, and to provide local service for inner city residents. It should not serve one of these needs at the expense of the other.
transit system.

- The selected alternative should be expandable, and capable of being integrated with the systems selected to serve other corridors, in order to form a regional transit system.

- The impacts of various downtown approaches from east of France Avenue be on: speed of service, congestion and parking, neighborhood and business, should be assessed.

- Downtown penetration for reserved transitways along Hennepin and Lyndale Avenues, between 29th Street and the Bottleneck would be opposed by neighborhood groups.

- The Chicago and Northwestern route used as a busway through the Kenwood neighborhood, between downtown Minneapolis and Lake Street, would be opposed by neighborhood groups.

- Stop spacing and need for transfers affect travel time, which should be minimized.

- Potential for development and redevelopment around stations should be analyzed.

- Transit alternatives should be compared in terms of relative cost-effectiveness.

ISSUES AND CONCERNS IDENTIFIED BY PUBLIC AGENCIES

The following major issues and concerns have been identified by the public agencies participating in the study:

DEVELOPMENT AND REDEVELOPMENT

- Will transit improvements help implement existing goals, policies, and plans?
- Will transit improvements encourage development and redevelopment in corridors.
- If development takes place because of transit improvements, what will be its impact on: existing businesses, redistribution of regional growth, potential ridership, tax base.

FINANCING OF TRANSIT SERVICE

- Equity should be a major factor in defining financing mechanisms.
- The potential for public/private financial participation should be explored.
- New and practical potential sources of funding should be identified.
- The impact of financing new transit improvements on the overall regional transit system should be analyzed.

PHYSICAL/CULTURAL ENVIRONMENT

Major areas of concern are:

- Air quality
- Noise
- Visual/Aesthetic
- Historical sites

DOWNTOWN PENETRATION

The following aspects of downtown penetration strategies should be considered:

- Potential and cost implications of subways in the downtown and the Capitol area.
- Potential impacts on: traffic patterns, integration with other transportation modes (transit, pedestrian, automobile, truck) and downtown circulation improvements.
- Impacts on adjacent property owners.
- Interconnection and cost implications of multiple rail lines in downtown Minneapolis.

USER SERVICES

Areas to be analyzed are:

- Levels of service provided to transit dependent populations by proposed transit services.
- Preservation of local service to accommodate local needs.
- Potential to increase regional accessibility through new transit services.
- Ability of proposed improvement to reduce congestion and parking shortages.
- Potential of proposed transit improvements to enhance access to job opportunities for low and moderate income people.
- Attractiveness of proposed services as an alternative to the automobile.
- Ability of proposed transit improvements to serve high activity areas.
- Changes required in present system to complement alternative solutions.

SERVICE PROVISION AND COST

- Identification of the cost-effective length of proposed transit improvements in the Southwest Corridor alignment.
- Total annual cost of proposed improvement (life cycle cost capital, operating and maintenance costs), as compared to projected annual cost for existing system.
- Productivity levels of new transit services compared to projections for existing system.
- Ability of farebox revenues to offset costs for proposed transit improvements.
- Need for new facilities and skills as a result of a new technology.
- Potential impact of the proposed transit improvements on the overall regional transit operations.

CHAPTER 5

IDENTIFICATION, EVALUATION AND SELECTION OF ALTERNATIVES

CHAPTER SUMMARY

After evaluation, the following alternatives are recommended for study in the AA/DEIS:

UNIVERSITY AVENUE CORRIDOR

- The "No-build" alternative
- The Transportation System Management (TSM) alternative
- Light Rail Transit (LRT) on University Avenue
- Busway on University Avenue

SOUTHWEST CORRIDOR

- The "No-build" alternative
- The Transportation System Management (TSM) alternative
- Light Rail Transit (LRT) on the Chicago & North Western Railroad Alignment
- Busway on the Chicago & North Western Railroad Alignment

The approach and penetration of the two downtowns and the University of Minnesota have not been defined at this stage but will be addressed in more detail as subalternatives or variations of the above alternatives.

Chapter 5 describes the process used to identify and evaluate alternative transit improvements, in order to select the most promising ones for further analysis.

If additional alternatives are suggested as part of the scoping process, they will also be evaluated. The final decision on which alternatives should be considered for detailed study will be made at the completion of the scoping process.

RATIONALE AND PROCEDURE FOR SELECTION OF POTENTIAL ALTERNATIVES

Potential alternatives were identified from three sources:

1. The Project Management Team initially developed a set of potential alternatives for each corridor.

2. The Citizen Advisory Committees suggested additional alternatives.

3. Other potential alternatives may be suggested at the public scoping meetings.

Alternatives were developed based upon:

- Potential locations (alignments) for the transit alternatives.
- A range of existing transit technologies.
- A range of design and operational characteristics.
- UMTA required alternatives, namely a "no build" and the Transportation System Management (TSM) alternative consisting of low-capital improvements.

Several alignments were considered in each corridor:

University Avenue Corridor (Figure 5)

- University Avenue (Alignment A)
- Interstate 94 (Alignment B)
- Northern Alignment (Alignment C)
- Combined University Ave./Northern Alignment (Alignment D)
- Shortline /University Ave. Alignment (Alignment E)

Southwest Corridor (Figure 6)

- Excelsior Boulevard Alignment (Alignment A)
- Highway 7 Alignment (Alignment B)
- Chicago & North Western (CNW) Railroad Alignment (Alignment C)

Several technologies have been considered and particular emphasis was placed on identifying reasonable combinations of alignment and technology, rather than all possible combinations.

Bus

A low to medium capacity system that uses standard or high-capacity coaches. Buses have either diesel engines, or electric motors which draw power from overhead wire (trolleybus) and travel either in mixed traffic or on "bus only" roads or lanes (busways), with physical barriers to separate transit from other street traffic.

Light Rail Transit (LRT)

Medium to high capacity rail transit system, operating in single vehicle or short trains, drawing its electric power from an overhead wire. LRT may operate in mixed traffic (street car) and/or on exclusive right-of-way. Capable of frequent stops.

Commuter Rail

Common carrier railroad passenger cars operated on existing rail routes with high capacity service speeds, and few stops.

Heavy Rail Rapid Transit

High capacity, high speed urban rail transit system, operating on an exclusive right-of-way (usually elevated or subway), to achieve high speed and safety.

Personal Rapid Transit

Small capacity (3 passenger) vehicles, electrically propelled along an elevated guideway. Fully automated, PRT would operate with very frequent service, and provide non-stop travel for the riders.

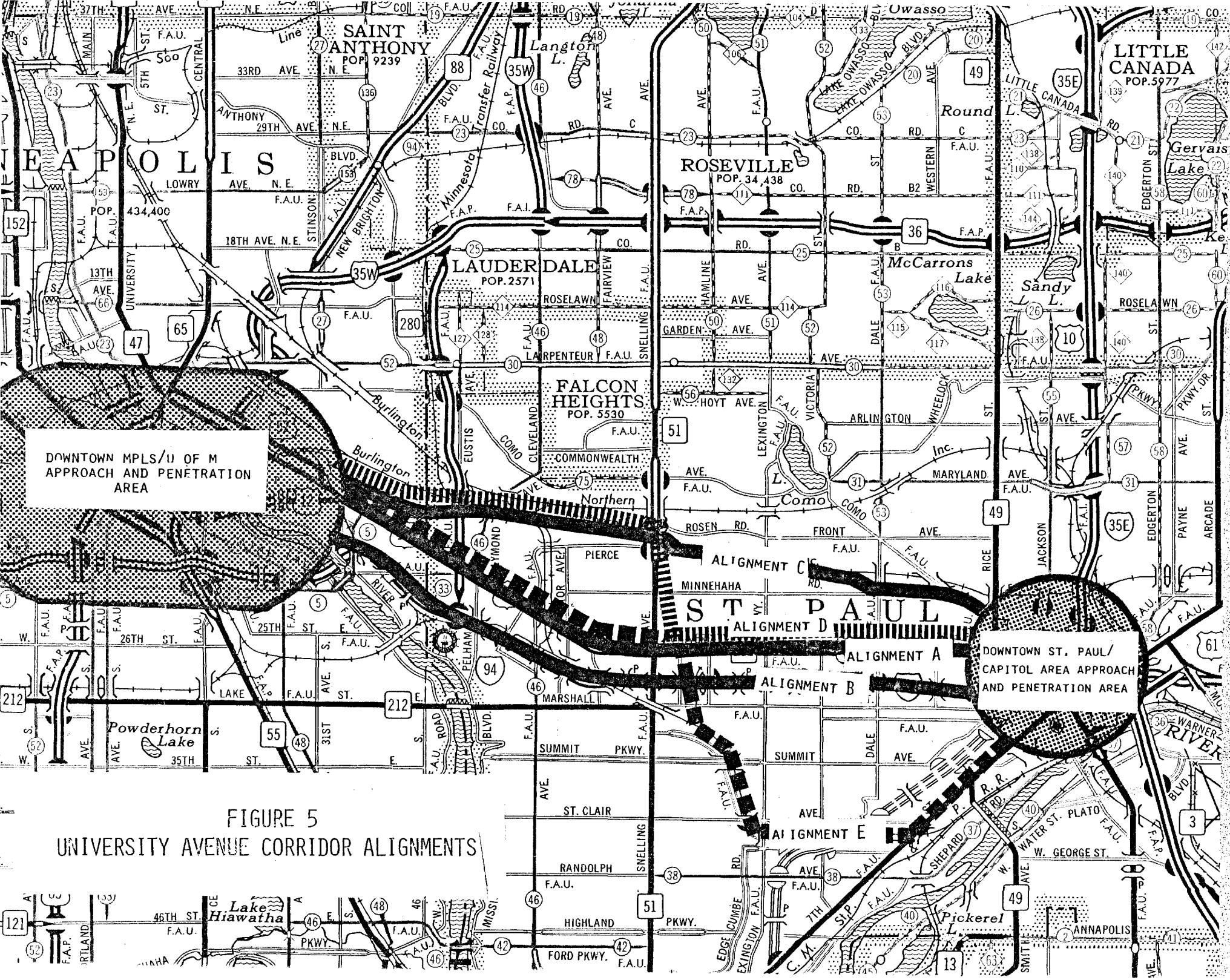


FIGURE 5
UNIVERSITY AVENUE CORRIDOR ALIGNMENTS

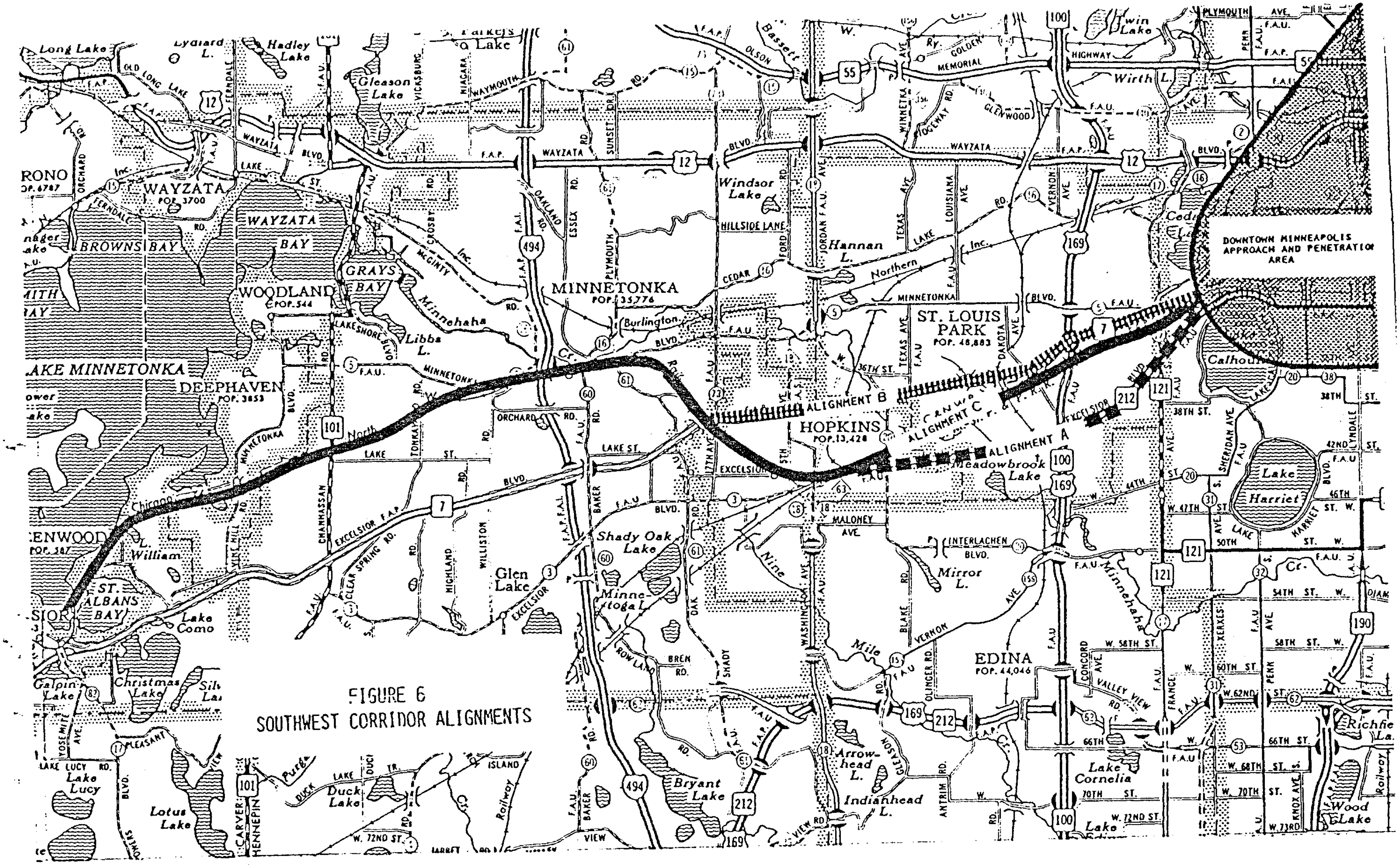


FIGURE 6
SOUTHWEST CORRIDOR ALIGNMENTS

SUBALTERNATIVES

Certain variations of the alternatives cannot be adequately addressed at the scoping level. The following are to be analyzed as subalternatives by the consultants during the AA/DEIS:

1. Diesel bus, electric trolleybus, standard bus, high capacity bus, for busway alternatives.

2. Approach and penetration in three geographic areas:

   - University Avenue Corridor: Downtown St. Paul/Capitol Area approach and penetration;

   - University Avenue Corridor: Downtown Minneapolis approach and penetration, including the University of Minnesota (Health Science Center/West Bank/Cedar-Riverside vs. Dinkytown/St. Anthony-Main area).

   - Southwest Corridor: Downtown Minneapolis approach east of France Avenue by arterial street vs. railroad alignment; downtown penetration.

3. For purpose of the study, the Southwest Corridor is considered to extend to Excelsior. The alternatives analysis will determine whether transit line should extend to Excelsior, or terminate to the east of Excelsior with feeder bus service to remainder of the corridor.

DESCRIPTION OF POTENTIAL ALTERNATIVES

"NO-BUILD" ALTERNATIVE

The "No-build" alternative, a continuation of existing transit services, constitutes the baseline for comparison purposes. Its capacity would be adjusted to meet projected demand.

Two major transit routes constitute the "no-build" alternative in the University Avenue Corridor:

- Route 16A, Minneapolis, St. Paul, University of Minnesota via University Avenue.

- Route 94B, between downtown Minneapolis and downtown St. Paul via I-94.

Other transit routes 4, 6 and 7 traverse only a portion of the corridor, and/or run perpendicular to the main service.

In the Southwest Corridor, the following suburban routes constitute the "no-build" alternative:

- Route 12, Downtown Minneapolis, Excelsior Blvd., St. Louis Park, Hopkins, Minnetonka (Glen Lake Area)

- Route 17, Downtown Minneapolis, Nicollet Ave., Hennepin Avenue, St. Louis Park, Minnetonka Blvd., Knollwood Shopping Center

- Route 67, Downtown Minneapolis, St. Louis Park, Minnetonka Blvd., Minnetonka, Dephaven, Excelsior, Tonka Bay, Chanhassen

Depending on the approach to Downtown Minneapolis, other routes such as 1 and 6, within the eastern end of the corridor may be included in the "no-build" alternative.

TSM ALTERNATIVE

The TSM alternative includes low-capital cost improvements that would increase the quality of transit service. Standard diesel buses might be augmented by higher capacity buses where warranted by demand. Route patterns might be changed to improve transit service levels. Roadway geometric or signing changes might be made to increase bus operating speeds. Bus-bays at stops, by-pass lanes in congested areas, better traffic signal operations, and additional passenger amenities, such as waiting shelters and improved forms of information might be provided.

BUILD ALTERNATIVES: UNIVERSITY AVENUE CORRIDOR

For each alternative, downtown approach/penetration and station/stop locations will be determined further into the study. Transit priority traffic signalization will be utilized as necessary at street crossings. Feeder service would consist of existing, rearranged, or new bus routes.

Light Rail Transit on I-94

The LRT line would travel between Downtown Minneapolis and Downtown St. Paul within the I-94 right of way, providing limited stop service between the two downtowns.

Busway on University Avenue

The busway would consist of at-grade, bus-only lanes within the University Avenue right-of-way. It would be physically separated from street traffic except at street crossings. The busway would provide service to activity areas along University Avenue between Downtown St. Paul and Downtown Minneapolis.

Light Rail Transit on University Avenue

The LRT line would operate on a pair of at-grade tracks within the University Avenue right-of-way, physically separated from street traffic except at street crossings. It would provide a service similar to the University Avenue Busway alternative.

Heavy Rail Rapid Transit on University Avenue

The heavy rail line would operate on a pair of grade separated (elevated or subway) tracks, providing service to selected activity centers along University Avenue.

Personal Rapid Transit (PRT) on University Avenue

A PRT system would be built along University Avenue on an elevated guideway located within the University Avenue right-of-way.

Light Rail Transit on Shortline/University Avenue

The LRT would operate on a pair of at-grade tracks, physically separated from street traffic. The route would follow West 7th St. out of downtown St. Paul, intercept and follow the Milwaukee Road rail line west to the Shortline road, and along the rail right of way to Midway Center, where it would continue down University Avenue west in the same manner as the University Avenue LRT alternative.

Light Rail on Combined University Avenue/Northern Alignment

The LRT line would be at-grade, physically separated from street traffic, except at some street crossings. It would operate on University Avenue, east of Midway Center. At some point between Transfer Road and Lexington Ave., the line would traverse in a north-south direction, connecting University Avenue and Energy Park. West of Energy Park the alignment would follow the Burlington Northern tracks, then connect with and follow the University Avenue Transitway.

Bus on Northern Alignment

This alternative would improve transit service to areas in the Northern portion of the corridor such as Energy Park. It would follow the path defined by: Downtown St. Paul, Capitol Area, Como Avenue, Minnehaha Avenue, Pierce Butler Road, Energy Park, Kasota Avenue Extension, University of Minnesota Area Transitway, University of Minnesota (Minneapolis Campus), Downtown Minneapolis.

Most of the operations would be in mixed traffic with the exception of the portion of the UATW where an exclusive busway will exist. The relatively low levels of congestion on Como Avenue and Pierce Butler Road would allow a high level of service in mixed traffic, making the acquistion of right-of-way along the Burlington Northern Railroad tracks unnecessary. The bus line would provide increased levels of transit service to areas of the corridor north of University Avenue, such as Energy Park.

Light Rail Transit on Northern Alignment

This LRT line would operate parallel to the Burlington Northern tracks on the Northern Alignment, providing express type service between downtown St. Paul and downtown Minneapolis through Energy Park. It would be at-grade, physically separated from other traffic.

BUILD ALTERNATIVES: SOUTHWEST CORRIDOR

For each alternative, the Downtown Minneapolis approach and penetration, the western terminus of the line, and the number and location of the stations/stops would be determined further into the study. All alternatives with the exception of the heavy rail and PRT would be at-grade, with the transit line physically separated from street traffic. Feeder service from the corridor to the transit line would consist of new and/or re-arranged service. Transit priority signalization would be used as necessary.

Busway on CNW Alignment

The CNW busway alternative would consist of a paved roadway along the CNW right-of-way southwest of Minneapolis.

LRT on CNW Alignment

The CNW LRT alternative would operate as a pair of rail tracks, following the CNW right-of-way southwest of Minneapolis.

Commuter Rail on CNW Alignment

The commuter rail alternative would operate along the CNW alignment, using crossing protection devices as needed. It would require using the CNW approach to Downtown Minneapolis.

Heavy Rail Rapid Transit on CNW Alignment

The heavy rail line would operate on the CNW right-of-way. The line would require total grade separation at street crossings, due to the electrified third rail.

Personal Rapid Transit (PRT) on CNW Alignment

The PRT alternative would consist of an elevated fixed guideway along the CNW alignment.

Busway on Hwy. 7

The busway would operate as bus lanes within the existing Highway 7 right-of-way. It would connect with and follow the CNW alignment west of Hopkins.

LRT on Hwy. 7

The LRT line would operate on a pair of tracks along the same route as the Highway 7 busway alternative.

Busway on Excelsior Blvd.

The busway would operate as bus lanes on Excelsior Blvd. from Minneapolis to Hopkins. In Hopkins, the busway would merge onto the CNW alignment.

LRT on Excelsior Blvd.

The LRT line would operate on a pair of tracks along the same route as the Excelsior Boulevard Busway alternative.

EVALUATION OF POTENTIAL ALTERNATIVES

All potential alternatives were evaluated. Evaluation of subalternatives, such as the approach and penetration of downtown Minneapolis, the University of Minnesota, and downtown St. Paul/Capitol Area were not made, but will be done as part of the AA/DEIS.

A two staged evaluation procedure was developed:

1. The alternatives were examined for "fatal flaws." A fatal flaw is a characteristic that makes an alternative significantly inferior to others, and eliminates that alternative from further consideration.

2. The remaining alternatives were evaluated according to five evaluation criteria.

FATAL FLAW ANALYSIS

University Avenue Corridor

The following alternatives were eliminated on an initial screening.

- LRT on I-94
- LRT on Northern Alignment
- Heavy Rail on University Ave.
- LRT on Shortline/University Ave.
- PRT on University Avenue

LRT on I-94

An LRT line on I-94 primarily would replace the route 94-B express service between the two downtowns, which carries under 5,000 passengers per day. Ridership levels of this magnitude would not justify the capital expense required by rail transit, which would be very high because of the need to rebuild the freeway to accommodate the line.

LRT on Northern Alignment

This alternative would not serve a demonstrated demand. The latent demand, based on population and employment densities along its route, would be potentially 10-15,000 passengers a day. Assuming that the line could be built for the same cost as an LRT on University Ave., the per passenger cost would be 2-3 times that of University Avenue service.

Heavy Rail Rapid Transit on University Ave.

Heavy rail transits main advantages are high speed and capacity. A major disadvantage is its high capital costs. The service on University Avenue requires stops far too close to permit its speed advantage. In addition, the transit demand on University Avenue is not large enough to justify a high capacity system. Thus, a heavy rail system could not be used to its advantage, while having costs per passenger of 2-3 times that of LRT.

LRT on Short Line/University Ave.

This alternative would not serve much of the current market in the eastern portion of the corridor, and would not generate a significant amount of riders on its own. The longer route would necessitate higher capital and operating costs than a comparable line on University Avenue. Thus, it would have substantially higher cost per passenger than the LRT on University Avenue.

Personal Rapid Transit on University Avenue

Personal Rapid Transit has been eliminated at this time from this analysis for several reasons. The most significant reason is a lack of verifiable data describing PRT systems. Although the concept of PRT has existed for some time, and has undergone theoretical refinement during that period, no PRT system is currently in transit service. Without real-world experience, valid data on such critical characteristics as system reliability, safety, capital and operating costs cannot be obtained. In the absence of such data, comparison of a PRT alternative with other alternatives is not realistic.

This lack of data reflects a basic difference between PRT and the other potential alternatives addressed here: PRT is an as-yet-unproven technology. That technology requires further research and development efforts before it can be considered to be ready for implementation. Previous studies have indicated that the amount of R & D effort required may be substantial, and, in any event, should not be the responsibility of public agencies and municipalities performing this analysis. The current study is not an R & D activity, but rather, a study of transit implementation in the Twin Cities area, and so should not address any technology which is not clearly ready for implementation.

Southwest Corridor

The following alternatives were eliminated from the Southwest Corridor:

- Commuter Rail on CNW Alignment
- Heavy Rail on CNW Alignment
- PRT on CNW Alignment

Commuter Rail on CNW Alignment

Commuter rail lines typically operate at high speeds over long distances with few stops and a single major destination in the CBD. This type of service would serve only a portion of the corridor's transit demand, and incur an investment cost approximately twice that of an LRT line.

Heavy Rail Rapid Transit on CNW Alignment

A heavy rail line in the Southwest Corridor would require an investment that would not be justified by a demand estimated between 25-40,000 passengers per day. Heavy rail requires total grade separation, has high capital costs, and would not serve enough passengers to be cost-effective. On the other hand, an LRT line can amply serve the expected 25-40,000 passengers per day at a much lower investment.

PRT on CNW Alignment

PRT on the CNW alignment was eliminated for the same reasons discussed under PRT on University Avenue.

EVALUATION CRITERIA

The remaining alternatives were subjected to evaluation criteria.

Five criteria, simple to apply and non-quantitative were used:

Technical and Design Criterion:

- o Right-of-way availability
- o Right-of-way segregation opportunities
- o Right-of-way accessibility
- o Safety
- o Reliability
- o All-weather operation

Land-Use and Development Criterion:

- o Concentration of existing population within a one-half mile at either side of the transit line
- o Concentration of existing employment within a one-half mile at either side of the transit line
- o Potential to stimulate future development and re-development

Accessibility Criterion:

- o Ridership potential, including impact of future development
- o Major trip generators/attractors served
- o Adequacy in replacing existing service
- o Travel time
- o Potential integration with access modes

Environmental Criterion:

- o Major environmental impacts

Social Criterion:

- o Social impacts on existing communities

An additional criterion/factor of "total annual cost per passenger" was originally considered. It was determined, however, that an accurate application of the criterion could only be made with the detailed analysis.

APPLICATION OF EVALUATION CRITERIA

The criteria was applied using the "no-build" as the baseline condition for comparative purposes. Five possible degrees of impact were identified for an alternative:

++	Significant improvement over no-build
+	Some improvement over no-build
0	About the same as no-build
-	Somewhat worse than no-build
--	Significantly worse than no-build

The following describes the reasons why some alternatives were judged to have a different impact than the no-build alternative.

The application of the evaluation criteria is shown in Tables 1 and 2.

Table 1

SCREENING SHEET - UNIVERSITY AVENUE CORRIDOR ALTERNATIVES

Technical and Design Criterion	No Build	TSM	LRT on Univ. Avenue	Busway on Univ. Avenue	LRT on Combined University Ave./ Northern Alignments	Bus Alternative on Northern Alignment
Factors: o Right-of-way availability	0	0	0	0	-	0
o Right-of-way segregation opportunities	0	0	+	+	+	+
o Right-of-way accessibility	0	0	0	0	-	-
o Safety	0	0	0	0	0	0
o Reliability	0	0	+	0	+	0
o All-weather operation	0	0	+	-	+	0
Land-Use and Development Criterion						
Factors: o Concentration of existing population within a one-half mile band at either side of the transit line	0	0	0	0	-	--
o Concentration of existing employment within a one-half mile band at either side of the transit line	0	0	0	0	0	-
o Potential to stimulate future development and redevelopment	0	0	+	+	+	0
Accessibility Criterion						
Factors: o Potential ridership levels	0	+	++	++	+	0
o Major trip generators/attractors served	0	0	0	0	0	0
o Adequacy in replacing existing service	0	0	0	0	-	--
o Travel time	0	+	+	+	+	0
o Potential integration with access modes	0	0	0	0	0	0
Environmental Criterion						
Factor: o Major environmental impacts	0	0	0	-	0	0
Social Criterion						
Factor: o Social impacts on existing communities	0	0	+	0	-	0

Table 2

SCREENING SHEET - SOUTHWEST CORRIDOR ALTERNATIVES

Technical and Design Criterion	No Build	TSM	LRT on Excel. Blvd.	Busway on Excel. Blvd.	LRT on Hwy. 7	Busway on Hwy. 7	LRT on CNW Align.	Buway on CNW Align.
Factors: o Right-of-way availability	0	0	--	--	0	0	++	++
o Right-of-way segregation opportunities	0	0	+	+	+	+	++	++
o Right-of-way accessibility	0	0	0	0	0	0	-	-
o Safety	0	0	0	0	0	0	0	0
o Reliability	0	0	+	0	+	0	+	0
o All-weather operation	0	0	+	-	+	-	+	0
Land-Use and Development Criterion								
Factors: o Concentration of existing population within a one-half mile band at either side of the transit line	0	0	0	0	0	0	0	0
o Concentration of existing employment within a one-half mile band at either side of the transit line	0	0	0	0	0	0	0	0
o Potential to stimulate future development and redevelopment	0	0	+	+	+	+	+	+
Accessibility Criterion								
Factors: o Potential ridership levels	0	+	+	+	+	+	+	+
o Major trip generators/attractors served	0	0	0	0	0	0	0	0
o Adequacy in replacing existing service	0	0	0	0	0	0	0	0
o Travel time	0	+	+	+	+	+	+	+
o Potential integration with access modes	0	0	0	0	0	0	0	0
Environmental Criterion								
Factor: o Major environmental impacts	0	0	-	-	0	0	0	-
Social Criterion								
Factor: o Social impacts on existing communities	0	0	0	0	0	0	0	0

University Avenue Corridor

Technical and Design Criterion

- Right-of-Way Availability

  The combined Northern/University Avenue LRT alignment would have serious right-of-way availability problems between University Avenue and Energy Park. In addition, it is not known whether any right-of-way could be acquired from BN Railroad if it were needed.

- Right-of-Way Segregation Opportunities

  Each of the fixed-guideway alternatives could operate on a semi-exclusive right-of-way, with limited cross traffic interference. The bus alternative on the Northern Alignment could experience some traffic interference along portions of its route, but this would be compensated by operation on the University Area Transitway (UATW) during other portions.

- Right-of-Way Accessibility

  The accessibility from the north side of the Northern Alignment was found to be low, due to the existence of the large railroad property adjacent to it.

- Reliability

  The LRT technology was evaluated as somewhat more reliable than diesel buses.

- All Weather Operation

  The University Avenue busway was rated low because of problems associated with snow clearing. A busway would be separated from street traffic by a physical barrier. Snow would have to be thrown over the barrier onto other general traffic lanes and then cleared to the side of the street.

  The LRT alternatives need only cleared rails to maintain their operation. The weight of the light rail vehicle would be sufficient to eliminate ice build-up on the rails. Therefore, the LRT alternatives were judged better than buses for all-weather operations.

Land Use and Development Criterion

- Existing Population within One-half Mile at Either Side of the Transit Line.

  The Northern Alignment has significantly fewer people residing within one-half mile than does University Ave. The combined University Ave./Northern Alignment captures some of the University Ave. population, but a portion of its route is through a less populated area of the corridor.

- Existing Employment within One-half Mile at Either Side of the Transit Line.

  The Northern alignment bus alternative has a lower employment concentration than University Ave., even with the existence of Energy Park.

- Potential to Stimulate Future Development and Redevelopment

  The LRT and busway alternatives were determined to have more potential than regular bus (i.e., "no-build" and Northern bus) alternatives. Both have physical structures that create visibility and a perception of permanence of the transit line.

Accessiblity Criterion

- Potential Ridership Levels

  The LRT on a combined alignment would substantially improve transit but would serve a less intensely developed transit market. The University Ave. busway and LRT alternatives would create substantial improvements along an intensivelydeveloped corridor. This would be expected to improve ridership levels to a greater degree.

- Major Trip Generators/Attractors Served

  All major trip generators in the corridor would receive transit service by new or existing routes.

- Adequacy in Replacing Existing Service

  The Northern Alignment bus alternative probably would not replace either the 16A or 94B service, but would serve a different transit market. The combined alignment LRT would replace part of the 16A, but some type of transit service along University Ave. between the University of Minnesota and Midway areas would have to be maintained.

- Travel Time

  All fixed-guideway alternatives would improve travel time. The Northern Alignment bus alternative may improve travel time, but this would be offset by its more circuitous route and operation in mixed traffic.

- Potential Integration with Access Modes

  All alternatives were determined to be as adequate in accommodating access modes as is the "no-build" alternative.

Environmental Criterion

- Major Environmental Impacts

  The University Avenue busway would create negative environmental impacts by decreasing street capacity and increasing traffic congestion. The University Avenue LRT would encounter the same problem, but would add less pollutants than a diesel bus.

Social Criterion

- Social Impacts on Existing Communities

  The LRT on the combined alignments would cause disruption and/or relocations in the portion of the route between University Avenue and Energy Park. The LRT on University Ave. is perceived as providing a "shot in the arm" to the redeveloping area of St. Paul along eastern University Ave.

Southwest Corridor

Technical and Design Criterion

- Right-of-Way Availability

For the purpose of this analysis, public ownership of the CNW right-of-way is assumed, making if fully available for transit use. Alternatives on Excelsior Blvd. could require acquisition of additional right-of-way.

- Right-of-Way Segregation Opportunities

  All fixed guideway (busway and LRT) alternatives would operate without street traffic interference, except at some major intersections. The CNW alignment has fewer street crossings and therefore, has greater segregation opportunities.

- Right-of-Way Accessibility

  The CNW alignment was rated less accessible because portions are more separated from surrounding development in terms of distance and grade.

- Safety

- All alternatives were judged to be as safe as the "no-build" alternatives. Nearly exclusive right-of-way was to be somewhat safer than the "no-build."

- Reliability

- The LRT technology was evaluated as somewhat more reliable than the diesel buses.

- All-Weather Operation

  The Excelsior Boulevard and Highway 7 busways would have problems clearing snow over the median barriers.

  LRT alternatives need only to have cleared rails in order to maintain operation. The weight of the light rail vehicle on its steel wheels would be sufficient to eliminate ice build-up on the rails. Therefore, the LRT alternatives were assessed as being better than bus technology.

Land Use and Development Criterion

- Existing Population Within One-half Mile at Either Side of the Transit Line.

  Each alignment contains approximately the same amount of population within one-half mile.

- Existing Employment Within One-half Mile at Either Side of the Transit Line.

  Each alignment contains approximately the same amount of employment within one-half mile.

- Potential to Stimulate Future Development and Redevelopment.

  Each alignment has opportunities to stimulate development and redevelopment. The fixed guideways of the Busway and LRT alternatives provide a visible, permanent structure.

Accessibility Criterion

- Potential Ridership Levels

  All fixed guideway alternatives would be expected to increase transit ridership in the corridor.

- Major Trip Generators/Attractors Served

  All alternatives would serve the major trip generators in the corridor, either by direct (walking) access or feeder buses.

- Adequacy in Replacing Existing Service

  Each alternative could adequately replace existing service.

- Travel Time

  The fixed-guideway alternatives (busway and LRT), would improve travel time.

- Potential Integration with Access Modes

  All alternatives were determined to be adequate in accommodating access modes.

Environmental Criterion

- Major Environmental Impacts

- The CNW busway, would increase noise and air pollution into the area. It would have an impervious asphalt surface resulting in a potential surface run-off problems. The Excelsior Blvd. alignments would cause congestion. These were judged as negative impacts.

Social Criterion

- Social Impacts on Existing Communities

  At the general level of analysis in the scoping process, none of the alternatives were assessed as having any major impacts on the communities. However, a more detailed analysis of these impacts will be done in the AA/DEIS.

ALTERNATIVES RECOMMENDED FOR DETAILED STUDY

Four alternatives in each corridor are recommended for detailed study in the AA/DEIS. Two of the alternatives in each corridor, the "no-build" and TSM alternatives, offer solutions to transit problems without major capital investments. The LRT and busway alternatives were judged to be the most reasonable capital intensive improvements that might be made.

The LRT and busway alternatives on University Avenue corridor were primarily selected because of:

- Both alternatives utilize an existing public right-of-way, accessible to transit riders in the corridor. The LRT on combined University Avenue/Northern Alignment would probably require acquisition of additional right-of-way; and neither this, nor the Bus on Northern Alignment alternative are very accessible in major portions of their routes.

- The two recommended alternatives traverse the most dense activity areas in the corridor, and could be used to stimulate development and redevelopment.

- The University Avenue alternatives have the potential to generate the highest ridership levels. This could be important in its ability to support cost-effective capital investment in a transit line. The other alternatives would not generate as much ridership, and rather than being able to more efficiently replace existing transit service, would require additional service.

The LRT and busway alternatives on the Southwest Corridor were primarily selected because of:

- The CNW right-of-way will be a publicly owned, under-utilized and readily usable alignment. The Highway 7 alignment would require highway reconstruction to accommodate a transitway, and the Excelsior Boulevard would require the acquisition of additional right-of-way.

- Although the three alignments (CNW, Excelsior Blvd, Highway 7) serve essentially the same population and employment areas, the CNW alignment is more advantageous. Highway 7 has a comparatively low level of development adjacent to it, and is in the northern portion of the alignment east of Hopkins. Excelsior Boulevard serves a greater amount of development, but is at the southern edge of the corridor. The CNW alignment essentially bisects the corridor, with good access to most major developments.

CHAPTER 6

STUDY FRAMEWORK

TIME PERIOD OF ANALYSIS

The three proposed time points for analysis are:

EXISTING CONDITIONS (1983)

The study will define the current state of those elements that would be affected by the alternatives. General categories include: geographic setting, transportation system, travel characteristics, community, and natural environment.

SHORT TERM (1983 -1990)

Several impacts will result immediately from the implementation of the preferred alternative: construction impacts, impacts associated with the beginning of revenue service, and visual impacts.

LONG TERM (1990 - 2000)

Many of the impacts will change over time, as a result of changes in the urban area. These might include development, transportation impacts, some environmental impacts such as air quality, noise, and energy, and the impacts of financing an alternative.

GEOGRAPHIC LIMITS OF ANALYSIS

Three geographic levels of impact have been identified, and are shown in Figure 7.

PRIMARY IMPACT AREA

The primary impact area includes a narrow band adjacent to or in the vicinity of the proposed alignments where direct direct environmental impacts and impacts on neighborhoods would be analyzed.

SECONDARY IMPACT AREA

The secondary impact area includes the individual communities through which the alternative passes. Several impacts will be investigated that are important to the affected communities, such as development and financial impacts on tax bases, revenues, and employment levels.

REGIONAL IMPACT AREA

The regional impact area includes the seven-county metropolitan area. It will be used in the assessments of the impacts that occur at the county or multi-county level. Examples are the impacts of the proposed transit improvements could have on regional transit systems operations or financing.

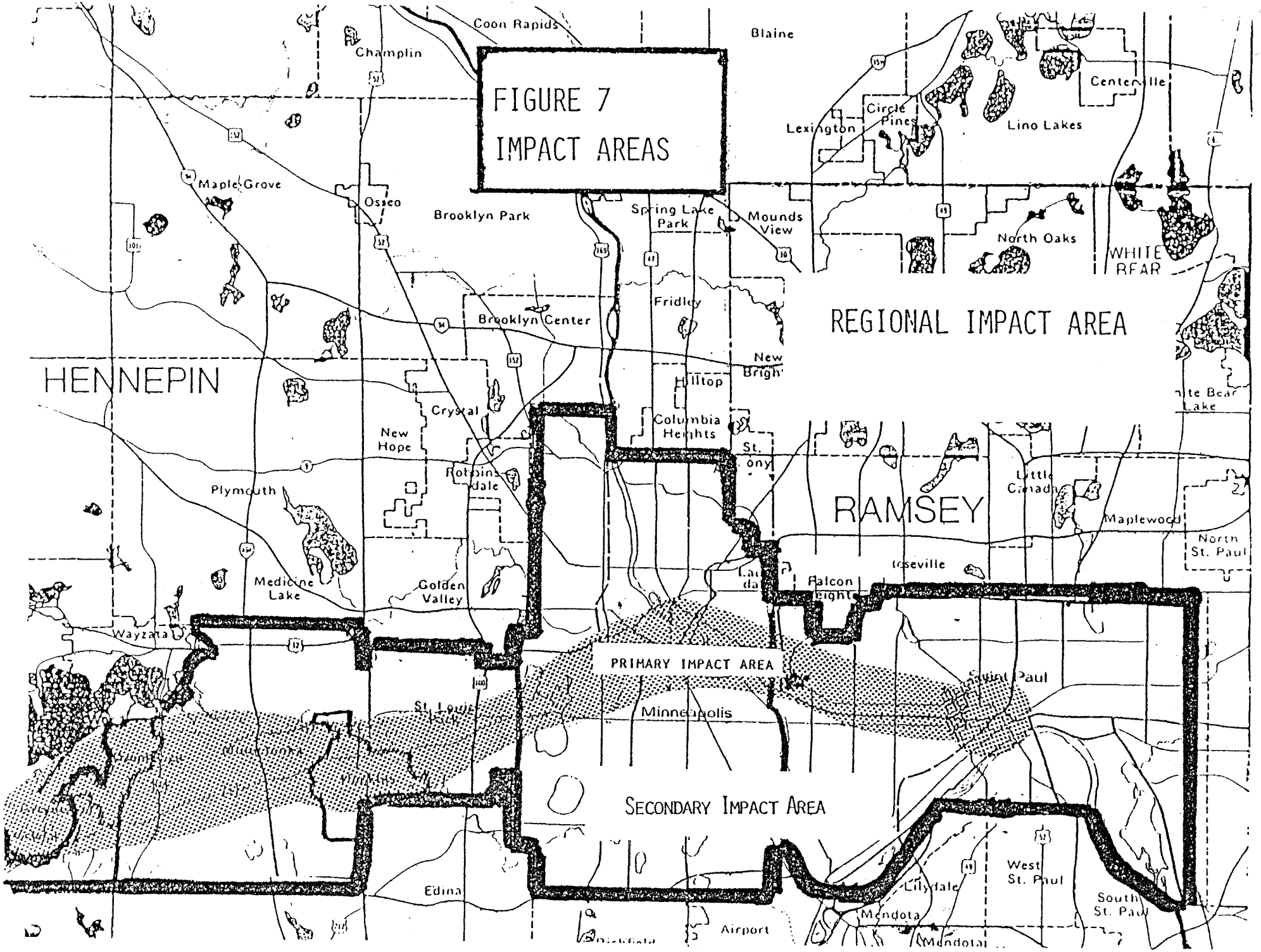


FIGURE 7
IMPACT AREAS
REGIONAL IMPACT AREA
HENNEPIN
RAMSEY
PRIMARY IMPACT AREA
SECONDARY IMPACT AREA
Coon Rapids
Blaine
Champlin
Lexington
Circle Pines
Lino Lakes
Centerville
Maple Grove
Osseo
Brooklyn Park
Spring Lake Park
Mounds View
North Oaks
WHITE BEAR
Fridley
Brooklyn Center
New Brighton
Hilltop
Crystal
New Hope
Columbia Heights
St. Anthony
Little Canada
Maplewood
North St. Paul
Roseville
Falcon Heights
Plymouth
Medicine Lake
Golden Valley
Wayzata
St. Louis Park
Minneapolis
Saint Paul
Edina
Airport
Mendota
Lilydale
West St. Paul
South St. Paul

ANALYSIS DATA REQUIREMENTS

The thoroughness of the alternatives analysis/DEIS depends largely on the quality of the data used in the study. A wealth of data exists locally, and satisfy most of the study's needs. These resources are updated often. The most recent and most compatible set of data will be used in the study.

The necessary data include:

- Base maps depicting various geographic, social and environmental information.
- Land use and development plans and inventories of the affected areas.
- The Metropolitan Council's travel forecasting models, including socio-economic and travel characteristics forecasts.
- Data on existing social and environmental conditions in the primary, secondary, and regional impact areas.

More explicit information on the types and sources of data will be defined in the detailed study design that is to be prepared with the consultants.

STUDY ASSUMPTIONS

Several assumptions must be made and agreed upon for analysis purposes:

- The University of Minnesota Area Transitway, (UATW) between the Minneapolis and St. Paul campuses, will be built.
- Hennepin County Regional Railroad Authority will complete the purchase of the entire CNW alignment in the Southwest corridor.
- The Metropolitan Council growth projections will be used for travel forecasting, except in cases where more recent analysis indicates significant differences.

These assumptions will be subject to modification, if necessary, during the course of the study. Others, such as economic and financial assumptions, will be defined at points further into the study.

MAJOR STUDY PRODUCTS

Several major reports will be produced throughout the study:

- Technical Report on Definition of Alternatives
- Land Development Plan
- Technical Report on Patronage Forecasting
- Technical Report on Transit Operations
- Technical Report on Capital and Operating and Maintenance Costs
- Financial Plan
- Technical Report on Evaluation of Alternatives
- Preliminary Draft Environmental Impact Statement (EIS) Report
- Revised Preliminary Draft EIS Report
- Draft EIS Report
- Memorandum Documenting Selection of Preferred Alternatives

IMPACTS TO BE ASSESSED

The study will evaluate the positive and negative effects of each alternative over a wide range of man-made and natural environments. Several of the impacts will be assessed as a direct result of the issues identified in the scoping process. Others are always part of a thorough environmental impact statement.

The following list of impacts to be assessed is intended as an example, rather than a comprehensive listing:

TRANSPORTATION IMPACTS

Transit

- Levels of Service
- Patronage
- Costs

Highway

- Congestion
- Access to Stations
- Parking

Other Transportation Modes

LAND USE AND ECONOMIC DEVELOPMENT IMPACTS

- Corridor Level impacts
- Site-by-site impacts
- Impacts on services and tax base
- Employment impacts of construction and operation
- Displacements and relocation of existing uses

IMPACTS ON NEIGHBORHOODS

- Barriers to social interaction
- Safety and security
- Impacts of new development
- Impacts during construction

IMPACTS ON THE PHYSICAL ENVIRONMENT

- Visual and aesthetic
- Air quality
- Noise and vibration
- Land-related impacts

- o Water-related impacts
- o Energy Impacts
- o Historical, archeological, and cultural impacts
- o Parklands

LEVEL OF DETAIL IN IMPACT ASSESSMENT

The most appropriate level of detail to analyze each impact will be specified in the study design. Consideration will be given to:

- o Point in time that impact occurs
- o Geographic level that impact occurs
- o Direct (e.g. -- improved travel time) or indirect (e.g. -- increased development) nature of impact
- o Site-specific or impact specific issues raised during scoping process

IMPACT ASSESSMENT TECHNIQUES

The specific techniques used to assess impacts will be determined as part of the study design. All techniques will be agreed upon by UMTA, the participating agencies, and the consultant.

EVALUATION METHODOLOGY TO BE USED

The methodology to evaluate, compare and select a preferred alternative in each corridor will be explicitly agreed upon as part of the study design.

The evaluation methodology will include the following components:

- o Measures of effectiveness in meeting study objectives, and a comparative discussion of the alternatives
- o Measures of efficiency, and a comparative discusssion of the alternatives
- o Measures of equity, and a comparative discussion of the alternatives
- o A discussion of trade-offs
- o A financial feasibility report

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Environmental Assessment Worksheet (EAW)

NOTE TO REVIEWERS: Written comments should address the accuracy and completeness of the EAW information, potential impacts that may warrant investigation and/or the need for an EIS. Such comments must be submitted to the Responsible Government Unit (RGU) during the 30 day period following notice of the EAW's availability in the EQB Monitor. Contact the EQB (612/296-3985) or the RGU to find out when the 30 day comment period ends.

INSTRUCTIONS: Guidelines for assisting in completion of this worksheet may be obtained from EQB. Provide all information which is reasonably accessible. Attach additional sheets if necessary. EXPLAIN ALL ANSWERS.

1 Project Name Southwest/University Avenue Corridors Transit Study

2 Proposer See Note #2

Contact Person _____

Address _____

_____

Phone _____

3 RGU Metropolitan Council

Contact Person Natalio Diaz

Address 300 Metro Square Building

St. Paul, MN 55101

Phone (612) 291-6341

4 Project Location: ____ 1/4 ____ 1/4 Section _____ Township _____ Range _____

a. County Name _____ City/Township Name See Note #4

b. Attach each of the following to the EAW:

1. a county map showing the general area of the project.

2. a copy(ies) of USGS 7 1/2 minute, 1:24,000 scale map or other maps and diagrams or aerial photos which clearly indicate the specific boundaries and topography of the project site.

3. a site plan showing the location of significant features such as proposed structures, roads, extent of flood plain, wetlands, wells, etc.

4. an existing land use map, and if available, a zoning map of the immediate area.

5 Describe the proposed project (what will be done and how long it will take).

See Note #5

6 Reason for EAW preparation: Scoping MEQB Rule # 3.029C

7 Estimated construction cost See Note #7

8 Total project area (acres) _____ or length (miles) See Note #8

9 Number of residential units _____ or commercial, industrial, or institutional square footage To be addressed by EIS

10 Number of proposed parking spaces To be addressed by EIS

11 List all known local, state and federal permits/approvals/funding required:

Level of Government	Type of Application	Status
Federal:		
State:		
Local:		

12 Is the proposed project inconsistent with any:

a. adopted land use ordinances? * ☐ No ☐ Yes

b. adopted comprehensive land use plans? * ☐ No ☐ Yes

c. local, state or federal resource management plans? * ☐ No ☐ Yes

If yes, explain:
Unknown, to be addressed by EIS

13 Describe current and recent past land use and development on and near the site.

See Note #13

14 Approximately what percent of the site is in each of the following categories? (Percentages should total 100% before and after construction) See Note #14

	Before	After		Before	After
Forest/Wooded	____%	____%	Urban vacant	____%	____%
Brush	____%	____%	Wetland (types 3-8)	____%	____%
Grassland	____%	____%	Impervious Surface	____%	____%
Cropland	____%	____%	Other(Specify)	____%	____%

15 Show the type and location of soils on the site map. Give the SCS soil classification types, if known. See Note #14

16 Does the site contain peat soils, steep slopes, sinkholes, shallow limestone formations, abandoned wells, or any geologic hazards? ☐ No ☐ Yes
Explain:

17 What is the approximate depth (in feet) to: See Note #17

a. groundwater ____ min. ____ avg. b. bedrock ____ min. ____ avg.

18 Does any part of the project area involve: See Note #18

a. Shoreland zoning district? ☐ No ☐ Yes

b. Delineated 100-year flood plain? ☐ No ☐ Yes

c. State or federally designated river land use district? ☐ No ☐ Yes

Identify water body and applicable state classification(s):

19 Describe any physical alteration (es, excavation, fill, stream diversion) of any drainage system, lake, stre /or wetland. Estimate quantity of material to be dredged and indicate where spoils will be deposited.

No alterations anticipated

20 Will the project require an appropriation of ground or surface water? ☒ No ☐ Yes
Explain (indicate quantity and source):

21 Will the project affect:
a. surface water quality (on or off the site)? ☐ No ☒ Yes
b. groundwater quality (on or off the site)? ☒ No ☐ Yes
c. groundwater levels in any wells (on or off the site)? ☒ No ☐ Yes
Explain both during and after construction including any discharges expected.

Potential minor sedimentation during construction, depending on final alignment. Affected water bodies could include Mississippi River, Minnehaha Creek, Lake Minnetonka.

22 What type of waste water treatment will be used?
____municipal ____individual (on-site) ____other
Describe type of treatment system and amount treated in gallons/day. Show location of non-municipal systems on a site map and the results of percolation test if warranted. Indicate if pre-treatment measures will be used.

None required

23 Describe and indicate on a site map the provisions to control erosion and storm-water run-off. Include size and location of any retention basins, and discharge point(s).

See Note #23

24 Will the project generate:
a. air pollution? * ☐ No ☐ Yes
b. dust? * ☐ No ☐ Yes
c. noise? * ☐ No ☐ Yes
d. odors? * ☐ No ☐ Yes
Explain both during and after construction, identify distances to noise sensitive land uses, and quantity and type of air pollutants.

*Type and level of pollutant generated will vary with alternative. These impacts will be addressed by the EIS.

25 Describe the type and amount of solid waste and/or hazardous waste that will be generated and the method and location of disposal:

None

The no-build alternatives, a continuation of existing transit service, constitute the baseline against which all other alternatives are compared.

The TSM alternatives represent low-capital improvements to increase the quality of the existing transit service.

The busway alternatives represent at-grade, bus-only lanes or a roadway physically separated from other traffic except at street crossings.

The light rail transit (LRT) alternatives represent electrically-powered transit vehicles running on a pair of at-grade tracks separated from other traffic except at street crossings.

Feeder service from the corridor to the new transit line would be provided by new, rearranged and/or existing bus routes.

The downtown approaches and penetration of the LRT and busway alternatives will be dealt in more detail as part of the DEIS.

Completion of the Draft EIS is expected to take 15 months. Construction/implementation time will depend on the alternative selected, but could be expected by 1990.

7. Construction cost will depend on the selected alternative. Previous studies have suggested that the most capital-intensive alternative (LRT) would cost approximately $135 million in the Southwest Corridor and $100 million in the University Avenue Corridor (1980 dollars).

8. The Southwest Corridor alignment is approximately 18.2 miles long. The University Avenue Corridor alignment is approximately 9.8 miles long. The exact length of each improvement will depend on severalfactors which will be determined in the EIS.

13. The proposed alignment currently have transportation land uses. Adjacent land uses can be generally classified as: commerical (retail and office) in the downtowns of Minneapolis, St. Paul and Hopkins, and along University Avenue; public and semi-public institutional at the University of Minnesota; commercial/ industrial along the CNW alignment east of Hopkins and west of France Avenue; mixed single and multi-family, residential and commercial between downtown Minneapolis and France Avenue; and developing single-family residential west of Hopkins.

14. Proposed alignments primarily consist of compacted gravel-sand-silt soils along the CNW right-of-way and impervious asphalt surface along the remainder of the alignments. The EIS will address changes to vegetation and soil that occur.

17. The proposed alignments vary greatly in terms of depth to bedrock and groundwater. Potential groundwater disturbance problems may occur along the westernmost portions of the CNW alignment, due to its proximity to Lake Minnetonka and its drainage areas.

Potential groundwater and bedrock problems will be addressed in the EIS.

18. Potential affected shoreland zoning districts in the vicinity of the proposed alignments are: Mississippi River, Lake of the Isles, Cedar Lake, Lake Calhoun, Bass Lake, Galpin Lake, Lake William, Minnehaha Creek, and Lake Minnetonka.

The 100 year floodplains of Minnehaha Creek and the Mississippi River will be crossed.

23. The alignments use existing transportation right-of-ways, no change in method of stormwater runoff should be needed. Erosion will be abated by using appropriate ground cover. Construction - related erosion control measures will be used as needed.

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