



January 2, 2018

The Honorable Paul Torkelson, Chair
House Transportation Finance Committee
381 State Office Building
Saint Paul, MN 55155

The Honorable Linda Runbeck, Chair
House Transportation & Regional Governance Policy
Committee
417 State Office Building
Saint Paul, MN 55155

The Honorable Frank Hornstein, DFL Lead
House Transportation Policy & Finance Committee
243 State Office Building
Saint Paul, MN 55155

The Honorable Scott Newman, Chair
Senate Transportation Finance & Policy Committee
3105 Minnesota Senate Building
Saint Paul, MN 55155

The Honorable Scott Dibble
Ranking Minority Member
Senate Transportation Finance & Policy Committee
2213 Minnesota Senate Building
Saint Paul, MN 55155

The Honorable Connie Bernardy, DFL Lead
House Transportation & Regional Governance
Policy Committee
253 State Office Building
Saint Paul, MN 55155

RE: 2017 Life-Cycle Cost Analyses report

Dear Legislators:

The Minnesota Department of Transportation is pleased to provide the annual report on pavement life-cycle cost analysis, as required under [Minn. Stat. 174.185, Subd. 3.](#)

In 2017, 43 construction projects were in the reconditioning, resurfacing and road repair funding categories and required a LCCA.

MnDOT has conducted LCCAs on road rehabilitation projects since 1999. In addition, MnDOT is innovating new methods to design and select the most cost-effective pavement structure. Innovations include new pavement design procedures and refining the alternate bidding process to allow bidders of both pavement materials to bid on a project.

Please contact me if you have questions or comments about this report, or you may contact Glenn Engstrom at glen.engstrom@state.mn.us or 651-366-5531.

Sincerely,

A handwritten signature in blue ink that reads "Charles A. Zelle".

Charles A. Zelle
Commissioner



2017 Report on

Life-Cycle Cost Analyses

January 2018

Prepared by:

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You may also send an email to ADArequest.dot@state.mn.us

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Legislative Request

This report is issued to comply with [Minnesota Statutes 174.185](#).

The statute requires a life-cycle cost analysis for every project in the reconditioning, resurfacing and road repair funding categories constructed after July 1, 2011. The LCCA is a comparison of life-cycle costs among competing paving materials using equal design lives and equal comparison periods. Documentation required by the statute includes:

- Lowest life-cycle cost
- Alternatives considered
- Chosen strategy
- Documented justification, if the chosen strategy is not the low cost option

174.185 PAVEMENT LIFE-CYCLE COST ANALYSIS.

Subdivision 1. Definitions.

For the purposes of this section, the following definitions apply.

- (a) "Life-cycle cost" is the sum of the cost of the initial pavement project and all anticipated costs for maintenance, repair, and resurfacing over the life of the pavement. Anticipated costs must be based on Minnesota's actual or reasonably projected maintenance, repair, and resurfacing schedules, and costs determined by the Department of Transportation district personnel based upon recently awarded local projects and experience with local material costs.
- (b) "Life-cycle cost analysis" is a comparison of life-cycle costs among competing paving materials using equal design lives and equal comparison periods.

Subd. 2. Required analysis.

For each project in the reconditioning, resurfacing, and road repair funding categories, the commissioner shall perform a life-cycle cost analysis and shall document the lowest life-cycle costs and all alternatives considered. The commissioner shall document the chosen pavement strategy and, if the lowest life cycle is not selected, document the justification for the chosen strategy. A life-cycle cost analysis is required for projects to be constructed after July 1, 2011. For projects to be constructed prior to July 1, 2011, when feasible, the department will use its best efforts to perform life-cycle cost analyses.

Subd. 3. Report.

The commissioner shall report annually to the chairs and ranking minority members of the senate and house of representatives committees with jurisdiction over transportation finance beginning on January 1, 2012, the results of the analyses required in subdivision 2.

The cost of preparing this report is less than \$5,000.

Life-Cycle Cost Analysis Report

Implementation

[Minn. Stat. 174.185](#) requires a life-cycle cost analysis for every project in the reconditioning, resurfacing and road repair funding categories constructed after July 1, 2011.

The Minnesota Department of Transportation first implemented a LCCA process for roadway rehabilitation projects in 1999. The LCCA process was modified in 2010 to meet the specific requirements of legislation and was presented in [Technical Memorandum 10-04-MAT-01](#). After the technical memorandum expired, the LCCA process, with some modifications, was incorporated into the MnDOT Pavement Design Manual which went into effect October 31st, 2014.

The LCCA process, which is consistent with Federal Highway Administration guidelines, is performed on all pavement projects regardless of funding category, but only the results of projects in the reconditioning, resurfacing and road repair funding categories are included in this report. The LCCA process limits the requirement to perform a LCCA to projects with more than 60,000 square yards of pavement (formerly 30,000 square yards in the technical memorandum) and to projects that include placing more than two-inch thickness of pavement material. Thin overlays (two inches or less) are considered short-term preventive maintenance and do not have a viable concrete alternative with an equal design life.

The LCCA process requires the inclusion of at least one portland cement concrete and one hot-mix asphalt alternate with equal design lives. To best determine the most cost effective design, the LCCA may include additional alternatives with other design lives.

Results

In 2017, 43 construction projects were in the reconditioning, resurfacing and road repair funding categories and required a LCCA according to the MnDOT Pavement Design Manual.

The results of the 43 LCAs are as follows:

- Hot-mix asphalt was the low-cost option for 41 construction projects. Forty were selected for construction and one was constructed as portland cement concrete. Documented justification for selecting an option that was not the low-cost option is provided.
- Portland cement concrete was the low-cost option for two construction projects. One was selected for construction and the other used the alternate bidding process to choose the option for construction.
- The LCCA provided for SP 3803-34 does not have equal design lives “among competing paving materials”.

A table of LCCA results and copies of the LCAs submitted by MnDOT districts are attached.

Discussion

Hot-mix asphalt is most often the low-cost option in the submitted LCCAs. Portland cement concrete options usually have a greater initial cost than hot-mix asphalt, but become competitive by having lower maintenance costs over the life of the pavement. However, the relatively short design lives of these rehabilitation-type projects do not allow portland cement concrete options to exploit this relative advantage. Portland cement concrete options with longer design lives than hot-mix asphalt alternates are more competitive than the portland cement concrete options with the equal design lives required by the statute.

Recently, procedures were developed to implement two new portland cement concrete pavement design programs. These new programs resulted in substantially thinner pavement designs that reduce the initial cost of constructing portland cement concrete pavements and increase competitiveness. In addition, a research project has been started to develop a new procedure to design portland cement concrete pavements that are built on top of existing portland cement concrete pavements.

To create competition and to get the most cost-effective pavement, MnDOT continues to use the alternate bidding process on projects that are likely to have competitive hot-mix asphalt and portland cement concrete options. One project in the reconditioning, resurfacing or road repair funding categories used the alternate bidding process this year.

The alternate bidding process is similar to using an LCCA to determine the low-cost option. However, instead of using an estimate for the initial cost of an option, alternate bidding uses actual bid prices. The process is as follows:

1. MnDOT lets a project with two options, one hot-mix asphalt and one portland cement concrete.
2. MnDOT calculates a maintenance factor. This is the difference between the maintenance costs of the two options.
3. Each contractor bids on either of the two options.
4. MnDOT adjusts the bids by adding the maintenance factor to the bids of the option with the greater maintenance costs.
5. MnDOT selects the bid with the lowest adjusted bid.

Conclusion

MnDOT implemented the requirements of [Minn. Stat. 174.185](#) and provided the required results in this report. MnDOT will continue to work to ensure that all future projects meet the requirements of the legislation. In addition, MnDOT is innovating new pavement design methods to design the most cost-effective pavement structure.

Appendix A: Summary of LCCA Results

State Project Number (SP#)	Existing Pavement Type	Exception for low-cost option?	Design Life (in years)	Option Description	Present Worth	Optional Material (1)	Selected Option (2)	Alternate Bid? (3)
0508-13	HMA	No	14	HMA Overlay	\$7,391,553.00	HMA	X	No
			20	HMA Overlay	\$7,655,313.00	HMA		
			20	PCC Overlay	\$8,739,778.00	PCC		
0805-113	PCC	No	14	HMA Overlay	\$3,734,184.00	HMA	X	No
			20	New PCC	\$4,678,646.00	PCC		
			20	New HMA	\$4,516,652.00	HMA		
1104-25	HMA	No	15	HMA Overlay	\$3,739,160.00	HMA	X	No
			20	HMA over FDR	\$3,923,432.00	HMA		
			20	PCC Overlay	\$7,071,656.00	PCC		
1402-19	HMA	No	15	HMA Overlay	\$5,288,099.00	HMA	X	No
			20	HMA over CIR	\$5,523,800.00	HMA		
			20	PCC Overlay	\$9,354,680.00	PCC		
1809-93	HMA	No	20	PCC Overlay	\$12,071,831.00	PCC		No
			20	HMA Over CIR	\$6,774,805.00	HMA	X	
			35	PCC	\$10,907,590.00	PCC		
1814-06	PCC	No	20	New PCC	\$1,816,443.37	PCC		No
			20	New HMA	\$1,730,138.37	HMA	X	
			35	New PCC	\$1,748,024.45	PCC		
1904-27	PCC	No	17	HMA Overlay	\$3,117,189.00	HMA	X	No
			20	New PCC	\$4,196,970.00	PCC		
			20	New HMA	\$6,495,252.00	HMA		
1918-110	HMA	No	20	HMA over CIR	\$4,705,657.00	HMA	X	No
			20	PCC Overlay	\$7,202,657.00	PCC		
			35	PCC Overlay	\$5,267,017.00	PCC		
1921-094	PCC	No	20	New PCC	\$2,803,685.00	PCC		No
			20	New HMA	\$2,509,279.00	HMA	X	
			35	New PCC	\$2,653,620.00	PCC		
2206-13	PCC	No	16	HMA Overlay	\$4,003,855.00	HMA	X	No
			20	New PCC	\$4,416,026.00	PCC		
			20	New HMA	\$5,817,062.00	HMA		
2506-77	PCC	No	15	HMA Overlay	\$5,968,852.00	HMA	X	No
			20	PCC Overlay	\$12,194,633.00	PCC		
			20	HMA Overlay	\$6,918,133.00	HMA		
2726-074	HMA	No	20	New PCC	\$4,836,254.00	PCC		No
			20	HMA over SFDR	\$2,674,950.00	HMA	X	
			35	New PCC	\$4,264,269.00	PCC		

State Project Number (SP#)	Existing Pavement Type	Exception for low-cost option?	Design Life (in years)	Option Description	Present Worth	Optional Material (1)	Selected Option (2)	Alternate Bid? (3)
2781-432	PCC	No	15	HMA Overlay	\$15,943,751.00	HMA	X	No
			20	PCC Overlay	\$29,027,687.00	PCC		
			20	New HMA	\$22,028,243.00	HMA		
2906-18	HMA	No	20	PCC Overlay	\$7,478,203.00	PCC		No
			20	HMA over FDR	\$4,711,936.00	HMA	X	
			35	PCC Overlay	\$6,047,719.00	PCC		
3003-47	HMA	Yes	15	HMA Overlay	\$5,758,713.00	HMA		No
			20	HMA over FDR	\$7,211,247.00	HMA		
			20	PCC Overlay	\$9,350,706.00	PCC	X	
3102-46	PCC	No	20	New HMA	\$452,985.00	HMA	X	No
			20	New PCC	\$481,681.00	PCC		
			35	New PCC	\$498,719.00	PCC		
3108-70	HMA	No	20	New PCC	\$9,535,837.00	PCC		No
			20	New HMA	\$6,804,716.00	HMA	X	
			35	New PCC	\$8,447,152.00	PCC		
3108-76	HMA	No	20	New HMA	\$3,630,709.00	HMA		No
			20	HMA Overlay	\$1,736,109.00	HMA	X	
			35	New PCC	\$7,234,245.00	PCC		
3109-41	HMA	No	17	HMA Overlay	\$3,105,870.00	HMA	X	No
			20	PCC Overlay	\$8,485,937.00	PCC		
			20	HMA Over FDR	\$4,642,751.00	HMA		
3401-20	HMA	No	20	HMA Over FDR	\$9,373,559.00	HMA	X	Yes
			20	PCC Overlay	\$12,005,113.00	PCC		
			35	PCC Overlay	\$9,207,481.00	PCC	X	
3417-18	HMA	No	20	PCC Overlay	\$5,802,405.00	PCC		No
			20	HMA Over CIR	\$5,119,065.00	HMA	X	
			20	HMA Over FDR	\$5,256,355.00	HMA		
3515-16	PCC	No	17	HMA Overlay	\$2,574,583.00	HMA	X	No
			20	HMA Over CIR	\$3,307,247.00	HMA		
			20	PCC Overlay	\$5,497,465.00	PCC		
3605-41	HMA	No	15	HMA Overlay	\$1,605,522.00	HMA	X	No
			20	New PCC	\$2,883,089.00	PCC		
			20	New HMA	\$2,358,910.00	HMA		
3801-92	HMA	No	15	HMA Overlay	\$275,004.00	HMA	X	No
			20	PCC Overlay	\$415,639.00	PCC		
			20	HMA Over FDR	\$376,115.00	HMA		

State Project Number (SP#)	Existing Pavement Type	Exception for low-cost option?	Design Life (in years)	Option Description	Present Worth	Optional Material (1)	Selected Option (2)	Alternate Bid? (3)
3803-34	HMA	No	15	HMA Overlay	\$5,984,667.00	HMA	X	No
			20	HMA Overlay	\$6,808,352.00	HMA		
			35	New PCC	\$9,344,372.00	PCC		
4008-28	PCC	No	20	PCC Overlay	\$8,175,191.00	PCC		No
			20	HMA Over CIR	\$5,218,843.00	HMA		
			15	HMA Overlay	\$4,995,772.00	HMA	X	
4308-34	HMA	No	19	HMA Overlay	\$5,460,761.00	HMA	X	No
			20	New HMA	\$12,577,254.00	HMA		
			20	PCC Overlay	\$7,570,422.00	PCC		
4713-14	HMA	No	16	HMA Overlay	\$3,311,192.00	HMA	X	No
			20	HMA Over CIR	\$4,017,160.00	HMA		
			20	PCC Overlay	\$6,226,675.00	PCC		
4910-29	HMA	No	15	HMA Overlay	\$3,196,341.00	HMA	X	No
			20	PCC Overlay	\$5,250,913.00	PCC		
			20	HMA Over FDR	\$3,360,011.00	HMA		
5005-62	HMA	No	17	HMA Overlay	\$374,801.00	HMA	X	No
			20	PCC Overlay	\$418,809.00	PCC		
			20	HMA Overlay	\$403,312.00	HMA		
5209-74	PCC	No	20	New HMA	\$13,387,281.00	HMA		No
			20	PCC Overlay	\$11,078,610.00	PCC		
			35	PCC Overlay	\$9,355,757.00	PCC	X	
5619-11	HMA	No	15	HMA Overlay	\$7,366,993.00	HMA	X	No
			20	New HMA	\$16,105,965.00	HMA		
			20	PCC Overlay	\$16,576,651.00	PCC		
5903-23	HMA	No	16	HMA Overlay	\$2,529,840.00	HMA	X	No
			20	PCC Overlay	\$4,072,221.00	PCC		
			20	HMA Overlay FDR	\$3,205,754.00	HMA		
6011-29	PCC	No	17	HMA Overlay	\$3,877,034.00	HMA	X	No
			20	HMA Overlay	\$5,559,848.00	HMA		
			20	PCC Overlay	\$9,045,983.00	PCC		
			35	New PCC	\$11,212,551.00	PCC		
6402-22	PCC	No	20	PCC Overlay	\$20,208,257.00	PCC		No
			20	HMA Over CIR	\$7,679,743.00	HMA	X	
			35	PCC Overlay	\$15,509,711.00	PCC		
6501-12	HMA	No	18	HMA Overlay	\$4,469,452.00	HMA	X	No
			20	PCC Overlay	\$6,788,330.00	PCC		
			20	HMA Over FDR	\$6,150,285.00	HMA		

State Project Number (SP#)	Existing Pavement Type	Exception for low-cost option?	Design Life (in years)	Option Description	Present Worth	Optional Material (1)	Selected Option (2)	Alternate Bid? (3)
6607-49	HMA	Yes	15	HMA Overlay	\$6,668,013.00	HMA	X	No
			20	HMA Over CIR	\$6,327,016.00	HMA		
			20	PCC Overlay	\$8,576,066.00	PCC		
7001-112	HMA	No	17	HMA Overlay	\$2,433,792.00	HMA	X	No
			20	PCC Overlay	\$4,019,932.00	PCC		
			20	HMA Over FDR	\$3,432,592.00	HMA		
7604-22	HMA	No	20	HMA Over FDR	\$7,102,624.00	HMA		No
			20	PCC Overlay	\$9,492,348.00	PCC		
			20	HMA Overlay	\$6,300,701.00	HMA	X	
8101-57	PCC	No	15	HMA Overlay	\$6,141,538.00	HMA	X	No
			20	New HMA	\$8,617,363.00	HMA		
			20	PCC Overlay	\$6,392,040.00	PCC		
8408-57	PCC	No	20	PCC Overlay	\$4,372,887.00	PCC		No
			15	HMA Overlay	\$1,897,168.00	HMA	X	
			20	HMA Overlay	\$2,012,846.00	HMA		
8603-09	HMA	No	15	HMA Overlay	\$2,660,218.00	HMA	X	No
			20	HMA Over FDR	\$3,057,154.00	HMA		
			20	PCC Overlay	\$3,063,415.00	PCC		
8712-32	PCC	No	15	HMA Overlay	\$4,676,534.74	HMA		No
			20	HMA Over CIR	\$3,440,316.19	HMA	X	
			20	PCC Overlay	\$8,421,839.97	PCC		

(1) Option material - The pavement material that each option utilizes.

(2) Selected Option- This is marked (X) if the pavement option was selected to be constructed.

If the project uses alternate bidding, more than one option will be marked and
and the constructed option will be the low-cost option as determined by alternate bidding.

(3) Alternate Bidding? - 'Yes' if the project used alternate bidding to select which option to construct.

Definitions:

HMA = Hot-Mix Asphalt

PCC = Portland Cement Concrete

FDR = Full-Depth Reclamation (recycle existing HMA and Base to use as a new base)

CIR = Cold-in-Place Recycling (Recycle a layer of existing HMA with Cold-Mix Asphalt)

CPR = Concrete Pavement Repair

Rubblize = Break the existing PCC into pieces to act as the new base for HMA pavement

Crack & Seat = Crack and compact the existing PCC pavement to delay reflective cracking in an HMA overlay

Appendix B: Copies of LCCAs

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
0508-13	35
Highway	Discount Rate
	1.74%
Date	
Performed By	CLEAR ALL

District 3 - 2015/2016 prices

Segment 1			
SEG	Length	SEG	Length
1	17.603	1	17.603
ALT	Description	ALT	Description
1	2" Mill & 3 1/2" Overlay	2	3" Mill & 4 1/2" Overlay
Pavement Type	HMA	Pavement Type	PCC
Primary Category	Overlay, DL=13 to 17 years	Primary Category	2x2 Joint Spacing
Secondary Category		Secondary Category	
Rural		Rural	
ShoulderCategory	Bituminous	ShoulderCategory	Bituminous
			PCC

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Notes:

Notes:

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Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	2" Mill & 3 1/2" Overlay	\$ 183,683.39	\$ 183,683.39	0	4" Mill & 6" Overlay	\$ 316,275.70	\$ 316,275.70	0	2" Mill & 6" UBCO	\$ 354,053.33	\$ 354,053.33
1	-	\$ -	\$ -	1	-	\$ -	\$ -	1	-	\$ -	\$ -
2	-	\$ -	\$ -	2	-	\$ -	\$ -	2	-	\$ -	\$ -
3	Crack Treatment	\$ 2,112.00	\$ 2,005.48	3	Crack Treatment	\$ 2,112.00	\$ 2,005.48	3	-	\$ -	\$ -
4	-	\$ -	\$ -	4	-	\$ -	\$ -	4	-	\$ -	\$ -
5	-	\$ -	\$ -	5	-	\$ -	\$ -	5	-	\$ -	\$ -
6	-	\$ -	\$ -	6	-	\$ -	\$ -	6	-	\$ -	\$ -
7	Seal	\$ 7,634.64	\$ 6,766.22	7	Seal	\$ 7,634.64	\$ 6,766.22	7	-	\$ -	\$ -
8	-	\$ -	\$ -	8	-	\$ -	\$ -	8	-	\$ -	\$ -
9	-	\$ -	\$ -	9	-	\$ -	\$ -	9	-	\$ -	\$ -
10	-	\$ -	\$ -	10	-	\$ -	\$ -	10	-	\$ -	\$ -
11	-	\$ -	\$ -	11	-	\$ -	\$ -	11	-	\$ -	\$ -
12	-	\$ -	\$ -	12	-	\$ -	\$ -	12	-	\$ -	\$ -
13	-	\$ -	\$ -	13	-	\$ -	\$ -	13	-	\$ -	\$ -
14	ML Overlay 3.5"	\$ 174,718.38	\$ 137,231.66	14	-	\$ -	\$ -	14	-	\$ -	\$ -
15	-	\$ -	\$ -	15	-	\$ -	\$ -	15	-	\$ -	\$ -
16	-	\$ -	\$ -	16	-	\$ -	\$ -	16	-	\$ -	\$ -
17	Crack Treatment	\$ 2,112.00	\$ 1,575.20	17	-	\$ -	\$ -	17	-	\$ -	\$ -
18	-	\$ -	\$ -	18	-	\$ -	\$ -	18	-	\$ -	\$ -
19	-	\$ -	\$ -	19	-	\$ -	\$ -	19	-	\$ -	\$ -
20	-	\$ -	\$ -	20	ML Overlay 3.5"	\$ 174,718.38	\$ 123,738.24	20	1st CPR	\$ 201,125.76	\$ 142,440.35
21	Seal	\$ 7,634.64	\$ 5,314.49	21	-	\$ -	\$ -	21	-	\$ -	\$ -
22	-	\$ -	\$ -	22	-	\$ -	\$ -	22	-	\$ -	\$ -
23	-	\$ -	\$ -	23	Crack Treatment	\$ 2,112.00	\$ 1,420.31	23	-	\$ -	\$ -
24	-	\$ -	\$ -	24	-	\$ -	\$ -	24	-	\$ -	\$ -
25	-	\$ -	\$ -	25	-	\$ -	\$ -	25	-	\$ -	\$ -
26	-	\$ -	\$ -	26	-	\$ -	\$ -	26	-	\$ -	\$ -
27	ML Overlay 3.5"	\$ 174,718.38	\$ 109,663.42	27	Seal	\$ 7,634.64	\$ 4,791.94	27	-	\$ -	\$ -
28	-	\$ -	\$ -	28	-	\$ -	\$ -	28	-	\$ -	\$ -
29	-	\$ -	\$ -	29	-	\$ -	\$ -	29	-	\$ -	\$ -
30	Crack Treatment	\$ 2,112.00	\$ 1,258.76	30	-	\$ -	\$ -	30	-	\$ -	\$ -
31	-	\$ -	\$ -	31	-	\$ -	\$ -	31	-	\$ -	\$ -
32	-	\$ -	\$ -	32	-	\$ -	\$ -	32	-	\$ -	\$ -
33	-	\$ -	\$ -	33	-	\$ -	\$ -	33	-	\$ -	\$ -
34	Seal	\$ 7,634.64	\$ 4,246.87	34	-	\$ -	\$ -	34	-	\$ -	\$ -
35	Remaining Life	\$ (58,239.46)	\$ (31,842.46)	35	Remaining Life	\$ (36,782.82)	\$ (20,111.03)	35	0/0 Remaining	\$ -	\$ -

Net Present Cost for Segment \$ 7,391,553.08 Net Present Cost for Segment \$ 7,655,313.48 Net Present Cost for Segment \$ 8,739,778.25

Maintenance - Net Present Cost for Segment \$ 4,158,174.37 Maintenance - Net Present Cost for Segment \$ 2,087,912.33 Maintenance - Net Present Cost for Segment \$ 2,507,377.48

Equivalent Annual Cost \$ 283,757.79 Equivalent Annual Cost \$ 293,883.41 Equivalent Annual Cost \$ 335,515.43

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	35	24	2	35	24	2	35
Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix
4	2	WEARING COURSE MIXTURE (3.6	4	2	WEARING COURSE MIXTURE (3.6	4	2	WEARING COURSE MIXTURE (3.6
Width of Rounding Aggregate	white/ >7 million	SL Mix	Width of Rounding Aggregate	white/ >7 million	SL Mix	Width of Rounding Aggregate	white/ >7 million	SL Mix
3	N	WEARING COURSE MIXTURE (3.6	3	N	WEARING COURSE MIXTURE (3.6	3	N	WEARING COURSE MIXTURE (3.6
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
3 1/2			4.5			12		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
14	3 1/2		20	4 1/2		b		

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
0805-113	35
Highway	Discount Rate
TH 15	1.74%
Date	
1/19/2016	
Performed By	
BAT	

CLEAR ALL

District 7 - 2015/2016 prices

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	Mill & Overlay, Rural \$3,734,184.28	New HMA, Rural \$4,516,651.64	New PCC, Rural \$4,678,645.91	6.1 Miles
Segment #2 Net Present Cost				0.0 Miles
Segment #3 Net Present Cost				0.0 Miles
Segment #4 Net Present Cost				0.0 Miles
Segment #5 Net Present Cost				0.0 Miles
Segment #6 Net Present Cost				0.0 Miles
Segment #7 Net Present Cost				0.0 Miles
Segment #8 Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 3,734,184.28	\$ 4,516,651.64	\$ 4,678,645.91	Total
% of Low Cost	100.0%	121.0%	125.3%	6.1

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	Mill & Overlay, Rural \$1,896,838.80	New HMA, Rural \$1,227,292.26	New PCC, Rural \$1,106,159.14	6.1 Miles
Segment #2 Net Present Cost				0.0 Miles
Segment #3 Net Present Cost				0.0 Miles
Segment #4 Net Present Cost				0.0 Miles
Segment #5 Net Present Cost				0.0 Miles
Segment #6 Net Present Cost				0.0 Miles
Segment #7 Net Present Cost				0.0 Miles
Segment #8 Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 1,896,838.80	\$ 1,227,292.26	\$ 1,106,159.14	Total
Bid Adjustment Factor	\$ 790,679.66	\$ 121,133.12	\$ -	6.1

Segment 1					
SEG	Length	SEG	Length	SEG	
1	6.101	1	6.101	1	6.101
ALT		ALT		ALT	
1	Mill & Overlay, Rural	2	New HMA, Rural	3	New PCC, Rural
Pavement Type	HMA	Pavement Type	HMA	Pavement Type	PCC
Primary Category	Overlay, DL >13 to 17 years	Primary Category	20 Year HMA	Primary Category	>12 Joint Spacing
Secondary Category	Rural	Secondary Category	Rural	Secondary Category	Design Life = 20 Years
ShoulderCategory	Bituminous	ShoulderCategory	Bituminous	ShoulderCategory	Thick Bit
Notes:	CLICK HERE TO EDIT THIS ALTERNATE	Notes:	CLICK HERE TO EDIT THIS ALTERNATE	Notes:	
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	
0	Mill & Overlay, Rural	\$ 301,154.81	\$ 301,154.81	0	New HMA, Rural
1		\$ -	\$ -	1	
2		\$ -	\$ -	2	
3	Crack Treatment	\$ 2,112.00	\$ 2,005.48	3	
4		\$ -	\$ -	4	
5		\$ -	\$ -	5	
6		\$ -	\$ -	6	
7	Seal	\$ 9,545.02	\$ 8,459.30	7	
8		\$ -	\$ -	8	Crack Treatment
9		\$ -	\$ -	9	
10		\$ -	\$ -	10	
11		\$ -	\$ -	11	
12		\$ -	\$ -	12	Seal
13		\$ -	\$ -	13	
14	ML Overlay 3.5"	\$ 232,077.78	\$ 182,284.31	14	
15		\$ -	\$ -	15	
16		\$ -	\$ -	16	
17	Crack Treatment	\$ 2,112.00	\$ 1,575.20	17	
18		\$ -	\$ -	18	
19		\$ -	\$ -	19	
20		\$ -	\$ -	20	ML Overlay 4
21	Seal	\$ 9,545.02	\$ 6,644.32	21	
22		\$ -	\$ -	22	
23		\$ -	\$ -	23	Crack Treatment
24		\$ -	\$ -	24	
25		\$ -	\$ -	25	
26		\$ -	\$ -	26	
27	ML Overlay 3.5"	\$ 232,077.78	\$ 145,665.52	27	Seal
28		\$ -	\$ -	28	
29		\$ -	\$ -	29	
30	Crack Treatment	\$ 2,112.00	\$ 1,258.76	30	
31		\$ -	\$ -	31	
32		\$ -	\$ -	32	
33		\$ -	\$ -	33	
34	Seal	\$ 9,545.02	\$ 5,309.55	34	
35	Remaining Life	\$ (77,359.26)	\$ (42,296.23)	35	2/17 Remaining Life
Net Present Cost for Segment	\$ 3,734,184.28	Net Present Cost for Segment	\$ 4,516,651.64	Net Present Cost for Segment	\$ 4,678,645.91
Maintenance - Net Present Cost for Segment	\$ 1,896,838.80	Maintenance - Net Present Cost for Segment	\$ 1,227,292.26	Maintenance - Net Present Cost for Segment	\$ 1,106,159.14
Equivalent Annual Cost	143,353.35	Equivalent Annual Cost	173,391.85	Equivalent Annual Cost	179,510.73

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	35	28	2	35	28	2	35
Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
20	2	WEARING COURSE MIXTURE (3,1)	16	2	WEARING COURSE MIXTURE (3,1)	16	2	WEARING COURSE MIXTURE (3,1)
Width of Rounding Aggregate	white/ >7 million	SL Mix	Width of Rounding Aggregate	white/ >7 million	SL Mix	Width of Rounding Aggregate	white/ >7 million	SL Mix
N			N			N		
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			N			Y		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
2			2			12		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
14	4.5		20	4		4		

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
1104-25	35
Highway	Discount Rate
	1.58%
Date	
Performed By	CLEAR ALL

D3 - 2016/2017 prices

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LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	3" Mill & 3" Overlay	2" Mill, FDR, 4" Overlay	5" Mill & 5" Whitetopping	10.8 Miles
	\$3,739,160.12	\$3,923,432.72	\$7,071,656.37	
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 3,739,160.12	\$ 3,923,432.72	\$ 7,071,656.37	Total
% of Low Cost	100.0%	104.9%	189.1%	10.8

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	3" Mill & 3" Overlay	2" Mill, FDR, 4" Overlay	5" Mill & 5" Whitetopping	10.8 Miles
	\$1,937,718.37	\$1,365,254.29	\$3,317,176.26	
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 1,937,718.37	\$ 1,365,254.29	\$ 3,317,176.26	Total
Bid Adjustment Factor	\$ 572,464.08	\$ -	\$ 1,951,921.97	10.8

Segment 1											
SEG	Length	SEG	Length	SEG							
1	10.784	1	10.784	1	10.784						
ALT		ALT		ALT							
1	3" Mill & 3" Overlay	2	2" Mill, FDR, 4" Overlay	3	5" Mill & 5" Whitetopping						
Pavement Type		Pavement Type		Pavement Type							
HMA		HMA		PCC							
Primary Category		Primary Category		Primary Category							
Overlay, DL=13 to 17 years		20 Year HMA		6X6' ± 5.0" Thickness							
Secondary Category		Secondary Category		Secondary Category							
Rural		Rural		Design Life = 20 Years							
ShoulderCategory		ShoulderCategory		ShoulderCategory							
Bituminous		Bituminous		PCC							
CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE							
DELETE		DELETE		DELETE							
Notes:					Notes:						
Notes:					Notes:						
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	3" Mill & 3" Overlay	\$ 167,047.64	\$ 167,047.64	0	2" Mill, FDR, 4" Overlay	\$ 237,219.81	\$ 237,219.81	0	5" Mill & 5" Whitetopping	\$ 348,152.83	\$ 348,152.83
1				1				1			
2				2				2			
3	Crack Treatment	\$ 2,112.00	\$ 2,014.97	3				3			
4				4				4			
5				5				5			
6				6				6			
7	Seal	\$ 7,200.70	\$ 6,452.34	7				7			
8				8	Crack Treatment	\$ 1,056.00	\$ 931.53	8			
9				9				9			
10				10				10			
11				11				11			
12				12	Seal	\$ 11,520.09	\$ 9,544.59	12			
13				13				13			
14				14				14			
15	ML Overlay 3.5"	\$ 146,530.83	\$ 115,825.95	15				15			
16				16				16			
17				17				17			
18	Crack Treatment	\$ 2,112.00	\$ 1,592.74	18				18			
19				19				19			
20				20	ML Overlay 4	\$ 165,841.03	\$ 121,207.03	20	1st CPR	\$ 358,010.40	\$ 261,656.47
21				21				21			
22	Seal	\$ 7,200.70	\$ 5,100.28	22				22			
23				23	Crack Treatment	\$ 2,112.00	\$ 1,472.67	23			
24				24				24			
25				25				25			
26				26				26			
27				27	Seal	\$ 7,200.70	\$ 4,715.77	27			
28				28				28			
29				29				29			
30				30				30	Remove and Replace	\$ 354,419.37	\$ 221,447.71
31				31				31			
32	Crack Treatment	\$ 2,112.00	\$ 1,276.88	32				32			
33				33				33			
34				34				34			
35	Remaining Life	\$ (78,901.21)	\$ (45,582.32)	35	2/17 Remaining Life	\$ (19,510.71)	\$ (11,271.60)	35	30/35 Remaining	\$ (303,788.04)	\$ (175,502.52)
Net Present Cost for Segment					Net Present Cost for Segment	\$ 3,739,160.12	Net Present Cost for Segment	\$ 3,923,432.72	Net Present Cost for Segment	\$ 7,071,656.37	
Maintenance - Net Present Cost for Segment					Maintenance - Net Present Cost for Segment	\$ 1,937,718.37	Maintenance - Net Present Cost for Segment	\$ 1,365,254.29	Maintenance - Net Present Cost for Segment	\$ 3,317,176.26	
Equivalent Annual Cost					Equivalent Annual Cost	\$ 139,902.09	Equivalent Annual Cost	\$ 146,796.72	Equivalent Annual Cost	\$ 264,588.70	
Total Lane Width	# of Lanes	Analysis Period	Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix	Total Lane Width	# of Lanes	Analysis Period
24	2	35	24	2	35	24	2	35	24	2	35
Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix
4	2	WEARING COURSE MIXTURE (4,E	4	2	WEARING COURSE MIXTURE (4,E	4	2	WEARING COURSE MIXTURE (4,E	4	2	WEARING COURSE MIXTURE (4,E
Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix
3	N	WEARING COURSE MIXTURE (4,E	3	N	WEARING COURSE MIXTURE (4,E	3	N	WEARING COURSE MIXTURE (4,E	3	N	WEARING COURSE MIXTURE (4,E
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			N			N			N		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
1.5			2			2			12		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
15	1.5		20	2		20	2		4		

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
1402-19	35
Highway	Discount Rate
32	1.74%
Date	
9/14/2015	
Performed By	
KR	CLEAR ALL

District 4 - 2015/2016 prices

Segment 1			
SEG	Length	SEG	Length
1	15.5	1	15.5
ALT		ALT	
1	3" Mill & Fill	2	3" CIR & HMA
Pavement Type		Pavement Type	
HMA		HMA	
Primary Category		Primary Category	
Overlay, DL=13 to 17 years		20 Year HMA	
Secondary Category		Secondary Category	
Rural		Rural	
ShoulderCategory		ShoulderCategory	
Aggregate		Aggregate	
Notes: PLANNED FIX		Notes: HMA OPTION DESIGN LIFE 20 YEARS	
			Notes: PCC OPTION DESIGN LIFE 20 YEARS

Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	3" MILL & FILL	\$ 144,278.00	\$ 144,278.00	0	MILL 1.5" CIR 3" PAVE 3"	\$ 211,357.07	\$ 211,357.07	0	4.5" WHITETOPPING	\$ 246,061.56	\$ 246,061.56
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,464.00	\$ 2,339.73	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 8,544.34	\$ 7,572.45	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8	Crack Treatment	\$ 1,232.00	\$ 1,073.19	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 12,706.22	\$ 10,330.37	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15	ML Overlay 3.5"	\$ 164,123.25	\$ 126,705.31	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	Crack Treatment	\$ 2,464.00	\$ 1,806.30	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	ML Overlay 3.5	\$ 196,606.99	\$ 139,240.08	20	1st CPR	\$ 449,848.26	\$ 318,589.44
21		\$ -	\$ -	21		\$ -	\$ -	21			
22	Seal	\$ 8,544.34	\$ 5,846.02	22		\$ -	\$ -	22			
23		\$ -	\$ -	23	Crack Treatment	\$ 2,464.00	\$ 1,657.03	23			
24		\$ -	\$ -	24		\$ -	\$ -	24			
25		\$ -	\$ -	25		\$ -	\$ -	25			
26		\$ -	\$ -	26		\$ -	\$ -	26			
27		\$ -	\$ -	27	Seal	\$ 8,544.34	\$ 5,362.92	27			
28		\$ -	\$ -	28		\$ -	\$ -	28			
29	ML Overlay 3.5"	\$ 164,123.25	\$ 99,519.88	29		\$ -	\$ -	29			
30		\$ -	\$ -	30		\$ -	\$ -	30	Remove and Replace	\$ 305,253.62	\$ 181,931.88
31		\$ -	\$ -	31		\$ -	\$ -	31			
32	Crack Treatment	\$ 2,464.00	\$ 1,418.75	32		\$ -	\$ -	32			
33		\$ -	\$ -	33		\$ -	\$ -	33			
34		\$ -	\$ -	34		\$ -	\$ -	34			
35	Remaining Life	\$ (88,374.06)	\$ (48,318.58)	35	2/17 Remaining Life	\$ (23,130.23)	\$ (12,646.47)	35	30/35 Remaining	\$ (261,645.96)	\$ (143,055.11)

Net Present Cost for Segment	\$ 5,288,098.65	Net Present Cost for Segment	\$ 5,523,800.04	Net Present Cost for Segment	\$ 9,354,680.63
Maintenance - Net Present Cost for Segment	\$ 3,051,789.65	Maintenance - Net Present Cost for Segment	\$ 2,247,765.45	Maintenance - Net Present Cost for Segment	\$ 5,540,726.45
Equivalent Annual Cost	203,007.29	Equivalent Annual Cost	212,055.74	Equivalent Annual Cost	359,121.21

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
28	2	35	28	2	35	28	2	35
Total Shdr Width	# of Shldrs	ML Mix	Total Shdr Width	# of Shldrs	ML Mix	Total Shdr Width	# of Shldrs	ML Mix
0	0	WEARING COURSE MIXTURE (3,	0	0	WEARING COURSE MIXTURE (3,	0	0	WEARING COURSE MIXTURE (3,
Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix
3	N		3	N		3	Y	
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			N			Y		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
1.5			1.5			6		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
15	0		20	0		20	0	

50-Year Analysis Period

**DELETE
LCCA
INPUTS**

Project Number	Analysis Period
1809-93	50
Highway	Discount Rate
371	1.32%
Date	
9/13/2017	
Performed By	District 3
Samuel Nigon	2017/2018 Prices

**50-Year
Analysis
Period**

**35-Year
Analysis
Period**

Notes:

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	Mill, CIR, HMA Overlay \$2,503,785.05	5" Mill, 5" PCC, 3" HMA Shld \$4,409,182.22	5" Mill, 6" PCC \$3,979,874.19	4.3 Miles
Segment #2 Net Present Cost	Mill, CIR, HMA Overlay \$2,525,952.73	5" Mill, 5" PCC, 3" HMA Shld \$4,448,219.71	5" Mill, 6" PCC \$4,015,110.74	4.3 Miles
Segment #3 Net Present Cost	Mill & Overlay \$843,253.99	5" Mill, 5" PCC, 3" HMA Shld \$1,553,281.33	5" Mill, 6" PCC \$1,399,943.01	1.5 Miles
Segment #4 Net Present Cost	Mill & Overlay \$901,813.31	5" Mill, 5" PCC, 3" HMA Shld \$1,661,148.10	5" Mill, 6" PCC \$1,512,662.05	1.6 Miles
Project Net Present Cost	\$6,774,805.09	\$12,071,831.37	\$10,907,589.99	Total
% of Low Cost	100.0%	178.2%	161.0%	11.8

Segment 1

SEG	Length	DELETE		SEG	Length	DELETE		SEG	Length	DELETE	
1	4,292	DELETE		1	4,292	DELETE		1	4,292	DELETE	
ALT	Description			ALT	Description			ALT	Description		
1	Mill, CIR, HMA Overlay			2	5" Mill, 5" PCC, 3" HMAS			3	5" Mill, 6" PCC		
Pavement Type	HMA	INITIAL COST		Pavement Type	PCC	INITIAL COST		Pavement Type	PCC	INITIAL COST	
Primary Category	20-year HMA			Primary Category	>11' Joint Spacing			Primary Category	>11' Joint Spacing		
Secondary Category	Rural	LCCA FORM		Secondary Category	Design Life = 20 years	LCCA FORM		Secondary Category	Design Life = 35 years	LCCA FORM	
Shoulder Category	Bituminous			Thin Bit.					PCC	LCCA FORM	
Notes:		Notes:				Notes:					
Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	\$ 1,190,147.63	\$ 1,190,147.63	0	Construction	\$ 2,262,841.91	\$ 2,262,841.91	0	Construction	\$ 2,964,725.92	\$ 2,964,725.92
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ -	\$ -	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8	Crack Treatment	\$ 4,544.44	\$ 4,091.84	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12	Seal	\$ 48,208.11	\$ 41,188.69	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	Mill/Overlay	\$ 1,077,335.54	\$ 828,795.46	20	1st CPR	\$ 1,313,139.69	\$ 1,010,199.86	20	1st CPR	\$ 651,076.89	\$ 500,874.20
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Crack Treatment	\$ 9,088.88	\$ 6,722.35	23		\$ -	\$ -	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27	Seal	\$ 29,099.71	\$ 20,422.97	27		\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35		\$ -	\$ -	35	R & R Mainline	\$ 2,262,517.87	\$ 1,429,751.89	35	2nd CPR	\$ 813,815.53	\$ 514,274.07
36		\$ -	\$ -	36		\$ -	\$ -	36		\$ -	\$ -
37	Mill/Overlay	\$ 791,790.12	\$ 487,403.20	37		\$ -	\$ -	37		\$ -	\$ -
38		\$ -	\$ -	38		\$ -	\$ -	38		\$ -	\$ -
39		\$ -	\$ -	39		\$ -	\$ -	39		\$ -	\$ -
40	Crack Treatment	\$ 9,088.88	\$ 5,379.02	40		\$ -	\$ -	40		\$ -	\$ -
41		\$ -	\$ -	41		\$ -	\$ -	41		\$ -	\$ -
42		\$ -	\$ -	42		\$ -	\$ -	42		\$ -	\$ -
43		\$ -	\$ -	43		\$ -	\$ -	43		\$ -	\$ -
44	Seal	\$ 29,099.71	\$ 16,341.83	44		\$ -	\$ -	44		\$ -	\$ -
45		\$ -	\$ -	45		\$ -	\$ -	45		\$ -	\$ -
46		\$ -	\$ -	46		\$ -	\$ -	46		\$ -	\$ -
47		\$ -	\$ -	47		\$ -	\$ -	47		\$ -	\$ -
48		\$ -	\$ -	48		\$ -	\$ -	48		\$ -	\$ -
49		\$ -	\$ -	49		\$ -	\$ -	49		\$ -	\$ -
50	Remaining Life	\$ (186,303.56)	\$ (96,707.93)	50	Remaining Life	\$ (565,629.47)	\$ (293,611.44)	50	Remaining Life	\$ -	\$ -
Net Present Cost for Segment		\$ 2,503,785.05		Net Present Cost for Segment		\$ 4,409,182.22		Net Present Cost for Segment		\$ 3,979,874.19	
Maintenance - Net Present Cost for Segment		\$ 1,313,637.42		Maintenance - Net Present Cost for Segment		\$ 2,146,340.31		Maintenance - Net Present Cost for Segment		\$ 1,015,148.27	
Equivalent Annual Cost		\$ 68,723.51		Equivalent Annual Cost		\$ 121,022.55		Equivalent Annual Cost		\$ 109,238.97	

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	50	24	2	50	24	2	50
Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
14	2	9.5 WE (4,C)	14	2		14	2	
Rounding Agg. Width	white/ >7 million	SL Mix	Rounding Agg. Width	white/ >7 million	SL Mix	Rounding Agg. Width	white/ >7 million	SL Mix
3	No	12.5 WE (3,C)	3	Yes	12.5 WE (3,C)	3	Yes	
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
No			Yes	5		Yes	6	
ML Top Lift/Jt spacing	# Dowels per Lane		ML Top Lift/Jt spacing	# Dowels per Lane		ML Top Lift/Jt spacing	# Dowels per Lane	
3			12			12		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
20	3		3			3		

Segment 2

SEG	Length	DELETE		SEG	Length	DELETE		SEG	Length	DELETE	
2	4,330	DELETE		2	4,330	DELETE		2	4,330	DELETE	
ALT	Description			ALT	Description			ALT	Description		
1	Mill, CIR, HMA Overlay			2	5" Mill, 5" PCC, 3" HMA S			3	5" Mill, 6" PCC		
Pavement Type	HMA	INITIAL COST		Pavement Type	PCC	INITIAL COST		Pavement Type	PCC	INITIAL COST	
Primary Category	20-year HMA			Primary Category	> 1' Joint Spacing			Primary Category	> 1' Joint Spacing		
Secondary Category	Rural	LCCA FORM		Secondary Category	Design Life = 20 years	LCCA FORM		Secondary Category	Design Life = 35 years	LCCA FORM	
Shoulder Category	Bituminous			Thin Bit.					PCC		
Notes:		Notes:			Notes:			Notes:			
Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	\$ 1,200,684.82	\$ 1,200,684.82	0	Construction	\$ 2,282,876.39	\$ 2,282,876.39	0	Construction	\$ 2,990,974.65	\$ 2,990,974.65
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ -	\$ -	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8	Crack Treatment	\$ 4,584.67	\$ 4,128.07	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12	Seal	\$ 48,634.93	\$ 41,553.36	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	Mill/Overlay	\$ 1,086,873.90	\$ 836,133.33	20	1st CPR	\$ 1,324,765.81	\$ 1,019,143.85	20	1st CPR	\$ 656,841.33	\$ 505,308.78
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Crack Treatment	\$ 9,169.35	\$ 6,781.87	23		\$ -	\$ -	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27	Seal	\$ 29,357.35	\$ 20,603.78	27		\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35		\$ -	\$ -	35	R & R Mainline	\$ 2,282,549.47	\$ 1,442,410.45	35	2nd CPR	\$ 821,020.80	\$ 518,827.30
36		\$ -	\$ -	36		\$ -	\$ -	36		\$ -	\$ -
37	Mill/Overlay	\$ 798,800.35	\$ 491,718.49	37		\$ -	\$ -	37		\$ -	\$ -
38		\$ -	\$ -	38		\$ -	\$ -	38		\$ -	\$ -
39		\$ -	\$ -	39		\$ -	\$ -	39		\$ -	\$ -
40	Crack Treatment	\$ 9,169.35	\$ 5,426.64	40		\$ -	\$ -	40		\$ -	\$ -
41		\$ -	\$ -	41		\$ -	\$ -	41		\$ -	\$ -
42		\$ -	\$ -	42		\$ -	\$ -	42		\$ -	\$ -
43		\$ -	\$ -	43		\$ -	\$ -	43		\$ -	\$ -
44	Seal	\$ 29,357.35	\$ 16,486.52	44		\$ -	\$ -	44		\$ -	\$ -
45		\$ -	\$ -	45		\$ -	\$ -	45		\$ -	\$ -
46		\$ -	\$ -	46		\$ -	\$ -	46		\$ -	\$ -
47		\$ -	\$ -	47		\$ -	\$ -	47		\$ -	\$ -
48		\$ -	\$ -	48		\$ -	\$ -	48		\$ -	\$ -
49		\$ -	\$ -	49		\$ -	\$ -	49		\$ -	\$ -
50	Remaining Life	\$ (187,953.02)	\$ (97,564.15)	50	Remaining Life	\$ (570,637.37)	\$ (296,210.98)	50	Remaining Life	\$ -	\$ -
Net Present Cost for Segment		\$ 2,525,952.73	Net Present Cost for Segment		\$ 4,448,219.71	Net Present Cost for Segment		\$ 4,015,110.74			
Maintenance - Net Present Cost for Segment		\$ 1,325,267.91	Maintenance - Net Present Cost for Segment		\$ 2,165,343.32	Maintenance - Net Present Cost for Segment		\$ 1,024,136.08			
Equivalent Annual Cost		69,331.96	Equivalent Annual Cost		122,094.05	Equivalent Annual Cost		110,206.14			
Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period			
24	2	50	24	2	50	24	2	50			
Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix			
14	2	9.5 WE (4,C)	14	2		14	2				
Rounding Agg. Width	white/ >7 milliom	SL Mix	Rounding Agg. Width	white/ >7 milliom	SL Mix	Rounding Agg. Width	white/ >7 milliom	SL Mix			
3	No	12.5 WE (3,C)	3	Yes	12.5 WE (3,C)	3	Yes	12.5 WE (3,C)			
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness				
No			Yes	5		Yes	5				
ML Top Lift/Jt spacing	# Dowels per Lane		ML Top Lift/Jt spacing	# Dowels per Lane		ML Top Lift/Jt spacing	# Dowels per Lane				
3			12			12					
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness				
20	3		3			3					

Segment 3

SEG	Length	DELETE		SEG	Length	DELETE		SEG	Length	DELETE	
3	1.512	DELETE		3	1.512	DELETE		3	1.512	DELETE	
ALT	Description			ALT	Description			ALT	Description		
1	Mill & Overlay			2	5" Mill, 5" PCC, 3" HMA S			3	5" Mill, 6" PCC		
Pavement Type		INITIAL COST		Pavement Type		INITIAL COST		Pavement Type		INITIAL COST	
HMA				PCC				PCC			
Primary Category		INITIAL COST		Primary Category		INITIAL COST		Primary Category		INITIAL COST	
20-year HMA				> 11' Joint Spacing				> 11' Joint Spacing			
Secondary Category		LCCA FORM		Secondary Category		LCCA FORM		Secondary Category		LCCA FORM	
Urban				Design Life = 20 years		LCCA FORM		Design Life = 35 years		LCCA FORM	
Shoulder Category				Shoulder Category				Shoulder Category			
Thin Bit.				Thin Bit.				PCC			
Notes:				Notes:				Notes:			
Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	\$ 375,799.46	\$ 375,799.46	0	Construction	\$ 797,161.46	\$ 797,161.46	0	Construction	\$ 1,042,323.21	\$ 1,042,323.21
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ -	\$ -	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8	Crack Treatment	\$ 1,600.93	\$ 1,441.49	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12	Seal	\$ 16,982.91	\$ 14,510.09	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	Mill/Overlay	\$ 330,824.18	\$ 254,503.42	20	1st CPR	\$ 462,597.20	\$ 355,876.55	20	1st CPR	\$ 229,363.53	\$ 176,449.62
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Crack Treatment	\$ 3,201.86	\$ 2,368.17	23		\$ -	\$ -	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27	Seal	\$ 10,251.34	\$ 7,194.67	27		\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35		\$ -	\$ -	35	R & R Mainline	\$ 797,047.29	\$ 503,677.73	35	2nd CPR	\$ 286,693.63	\$ 181,170.18
36		\$ -	\$ -	36		\$ -	\$ -	36		\$ -	\$ -
37	Mill/Overlay	\$ 364,355.13	\$ 224,286.53	37		\$ -	\$ -	37		\$ -	\$ -
38		\$ -	\$ -	38		\$ -	\$ -	38		\$ -	\$ -
39		\$ -	\$ -	39		\$ -	\$ -	39		\$ -	\$ -
40	Crack Treatment	\$ 3,201.86	\$ 1,894.94	40		\$ -	\$ -	40		\$ -	\$ -
41		\$ -	\$ -	41		\$ -	\$ -	41		\$ -	\$ -
42		\$ -	\$ -	42		\$ -	\$ -	42		\$ -	\$ -
43		\$ -	\$ -	43		\$ -	\$ -	43		\$ -	\$ -
44	Seal	\$ 10,251.34	\$ 5,756.96	44		\$ -	\$ -	44		\$ -	\$ -
45		\$ -	\$ -	45		\$ -	\$ -	45		\$ -	\$ -
46		\$ -	\$ -	46		\$ -	\$ -	46		\$ -	\$ -
47		\$ -	\$ -	47		\$ -	\$ -	47		\$ -	\$ -
48		\$ -	\$ -	48		\$ -	\$ -	48		\$ -	\$ -
49		\$ -	\$ -	49		\$ -	\$ -	49		\$ -	\$ -
50	Remaining Life	\$ (85,730.62)	\$ (44,501.73)	50	Remaining Life	\$ (199,261.82)	\$ (103,434.41)	50	Remaining Life	\$ -	\$ -
Net Present Cost for Segment		\$ 843,253.99	Net Present Cost for Segment		\$ 1,553,281.33	Net Present Cost for Segment		\$ 1,399,943.01			
Maintenance - Net Present Cost for Segment		\$ 467,454.53	Maintenance - Net Present Cost for Segment		\$ 756,119.88	Maintenance - Net Present Cost for Segment		\$ 357,619.80			
Equivalent Annual Cost		\$ 23,145.51	Equivalent Annual Cost		\$ 42,634.23	Equivalent Annual Cost		\$ 38,425.42			

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	50	24	2	50	24	2	50
Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
14	2	9.5 WE (4,C)	14	2		14	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix	Rounding Agg. Width	white/ >7 milliom	SL Mix	Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (3,C)	3	Yes	12.5 WE (3,C)	3	Yes	
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
No			Yes	5		Yes	6	
ML Top Lift/Jt spacing	# Dowels per Lane		ML Top Lift/Jt spacing	# Dowels per Lane		ML Top Lift/Jt spacing	# Dowels per Lane	
3			12			12		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
20	3		3			3		

Segment 4

SEG	Length	DELETE		SEG	Length	DELETE		SEG	Length	DELETE	
4	1.617	DELETE		4	1.617	DELETE		4	1.617	DELETE	
ALT	Description			ALT	Description			ALT	Description		
1	Mill & Overlay			2	5" Mill, 5" PCC, 3" HMA S			3	5" Mill, 6" PCC		
Pavement Type		INITIAL COST		Pavement Type		INITIAL COST		Pavement Type		INITIAL COST	
HMA				PCC				PCC			
Primary Category		Primary Category		Primary Category		Secondary Category		Secondary Category		Secondary Category	
20-year HMA		> 11' Joint Spacing		Design Life = 20 years		Design Life = 35 years		Design Life = 35 years		Design Life = 35 years	
Secondary Category				Shoulder Category				Shoulder Category			
Urban				Thin Bit.		Thin Bit.		PCC			
Shoulder Category						LCCA FORM				LCCA FORM	
Thin Bit.										LCCA FORM	
Notes:				Notes:				Notes:			
Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	\$ 401,896.64	\$ 401,896.64	0	Construction	\$ 852,519.89	\$ 852,519.89	0	Construction	\$ 1,130,207.54	\$ 1,130,207.54
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ -	\$ -	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8	Crack Treatment	\$ 1,712.11	\$ 1,541.59	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12	Seal	\$ 18,162.28	\$ 15,517.73	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	Mill/Overlay	\$ 353,798.10	\$ 272,177.28	20	1st CPR	\$ 494,722.01	\$ 380,590.21	20	1st CPR	\$ 245,291.55	\$ 188,703.07
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Crack Treatment	\$ 3,424.21	\$ 2,532.63	23		\$ -	\$ -	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27	Seal	\$ 10,963.24	\$ 7,694.30	27		\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35		\$ -	\$ -	35	R & R Mainline	\$ 852,397.81	\$ 538,655.36	35	2nd CPR	\$ 306,602.91	\$ 193,751.44
36		\$ -	\$ -	36		\$ -	\$ -	36		\$ -	\$ -
37	Mill/Overlay	\$ 389,657.60	\$ 239,862.00	37		\$ -	\$ -	37		\$ -	\$ -
38		\$ -	\$ -	38		\$ -	\$ -	38		\$ -	\$ -
39		\$ -	\$ -	39		\$ -	\$ -	39		\$ -	\$ -
40	Crack Treatment	\$ 3,424.21	\$ 2,026.53	40		\$ -	\$ -	40		\$ -	\$ -
41		\$ -	\$ -	41		\$ -	\$ -	41		\$ -	\$ -
42		\$ -	\$ -	42		\$ -	\$ -	42		\$ -	\$ -
43		\$ -	\$ -	43		\$ -	\$ -	43		\$ -	\$ -
44	Seal	\$ 10,963.24	\$ 6,156.74	44		\$ -	\$ -	44		\$ -	\$ -
45		\$ -	\$ -	45		\$ -	\$ -	45		\$ -	\$ -
46		\$ -	\$ -	46		\$ -	\$ -	46		\$ -	\$ -
47		\$ -	\$ -	47		\$ -	\$ -	47		\$ -	\$ -
48		\$ -	\$ -	48		\$ -	\$ -	48		\$ -	\$ -
49		\$ -	\$ -	49		\$ -	\$ -	49		\$ -	\$ -
50	Remaining Life	\$ (91,684.14)	\$ (47,592.13)	50	Remaining Life	\$ (213,099.45)	\$ (110,617.36)	50	Remaining Life	\$ -	\$ -
Net Present Cost for Segment		\$ 901,813.31	Net Present Cost for Segment		\$ 1,661,148.10	Net Present Cost for Segment		\$ 1,512,662.05			
Maintenance - Net Present Cost for Segment		\$ 499,916.67	Maintenance - Net Present Cost for Segment		\$ 808,628.21	Maintenance - Net Present Cost for Segment		\$ 382,454.51			
Equivalent Annual Cost		\$ 24,752.83	Equivalent Annual Cost		\$ 45,594.94	Equivalent Annual Cost		\$ 41,519.32			

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	50	24	2	50	24	2	50
Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
14	2	9.5 WE (4,C)	14	2		14	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix	Rounding Agg. Width	white/ >7 milliom	SL Mix	Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (3,C)	3	Yes	12.5 WE (3,C)	3	Yes	
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
No			Yes	5		Yes	6	
ML Top Lift/Jt spacing	# Dowels per Lane		ML Top Lift/Jt spacing	# Dowels per Lane		ML Top Lift/Jt spacing	# Dowels per Lane	
3			12			12		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
20	3		3			3		

35-Year Analysis Period		35 - Year		50-Year Analysis Period	
Project Number	1814-06	Analysis Period	35	Discount Rate	1.74%
Highway		Date		Performed By	CLEAR ALL

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	6" HMA over 8" Agg, Base Cl. 6 Net Present Cost \$1,730,138.37	6" PCC over 4" Agg, Base Cl. 6 \$1,816,443.37	6" PCC over 4" Agg, Base Cl. 6 \$1,748,024.45	1.0 Miles
Segment #2	Net Present Cost			0.0 Miles
Segment #3	Net Present Cost			0.0 Miles
Segment #4	Net Present Cost			0.0 Miles
Segment #5	Net Present Cost			0.0 Miles
Segment #6	Net Present Cost			0.0 Miles
Segment #7	Net Present Cost			0.0 Miles
Segment #8	Net Present Cost			0.0 Miles
Project Net Present Cost	\$ 1,730,138.37	\$ 1,816,443.37	\$ 1,748,024.45	Total
% of Low Cost	100.0%	105.0%	101.0%	1.0

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	6" HMA over 8" Agg. Base Cl. 6 \$180,895.89	6" PCC over 4" Agg. Base Cl. 6 \$218,162.89	6" PCC over 4" Agg. Base Cl. 6 \$149,743.98	1.0 Miles
Segment #2 Net Present Cost				0.0 Miles
Segment #3 Net Present Cost				0.0 Miles
Segment #4 Net Present Cost				0.0 Miles
Segment #5 Net Present Cost				0.0 Miles
Segment #6 Net Present Cost				0.0 Miles
Segment #7 Net Present Cost				0.0 Miles
Segment #8 Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 180,895.89	\$ 218,162.89	\$ 149,743.98	Total
Bid Adjustment Factor	\$ 31,151.91	\$ 68,418.91	\$ -	1.0

Segment 1											
SEG	Length		SEG	Length		SEG	Length		SEG	Length	
1	1		1	1		1	1		1	1	
ALT	Description		ALT	Description		ALT	Description		ALT	Description	
1	6" HMA over 8" Agg. Base Cl. 6		2	6" PCC over 4" Agg. Base Cl. 6		3	6" PCC over 4" Agg. Base Cl. 6		4	6" PCC over 4" Agg. Base Cl. 6	
Pavement Type			Pavement Type			Pavement Type			Pavement Type		
HMA			PCC			PCC			PCC		
Primary Category	Primary Category		Primary Category	Primary Category		Secondary Category	Secondary Category		Secondary Category	Secondary Category	
20 Year HMA	≥12 Joint spacing		≥12 Joint spacing	≥12 Joint spacing		Design Life > 20 Years	Design Life > 20 Years		Design Life 35 Years	Design Life 35 Years	
Secondary Category	Secondary Category		ShoulderCategory	ShoulderCategory		ShoulderCategory	ShoulderCategory		ShoulderCategory	ShoulderCategory	
Urban			PCC			PCC			PCC		
ShoulderCategory			Thick			Notes:	Notes:		Notes:		
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	Initial Cost	\$ 1,549,242.48	\$ 1,549,242.48	0	Initial Cost	\$ 1,598,280.47	\$ 1,598,280.47	0	Initial Cost	\$ 1,598,280.47	\$ 1,598,280.47
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ -	\$ -	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8	Crack Treatment	\$ 1,628.00	\$ 1,418.14	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12	Seal	\$ 17,592.73	\$ 14,303.18	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	ML Mill 3.0"	\$ 241,512.49	\$ 171,042.85	20	1st CPR	\$ 308,045.98	\$ 218,162.89	20	1st CPR	\$ 211,438.48	\$ 149,743.98
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Crack Treatment	\$ 3,256.00	\$ 2,189.65	23		\$ -	\$ -	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27	Seal	\$ 11,912.57	\$ 7,477.02	27		\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	2/17 Remaining Life	\$ (28,413.23)	\$ (15,534.96)	35	0/0 Remaining	\$ -	\$ -	35	0/0 Remaining	\$ -	\$ -
		\$ 66,419.09	\$ 69,737.29								
Net Present Cost for Segment			\$ 1,730,138.37	Net Present Cost for Segment			\$ 1,816,443.37	Net Present Cost for Segment			\$ 1,748,024.45
Maintenance - Net Present Cost for Segment			\$ 180,895.89	Maintenance - Net Present Cost for Segment			\$ 218,162.89	Maintenance - Net Present Cost for Segment			\$ 149,743.98
Equivalent Annual Cost			\$ 66,419.09	Equivalent Annual Cost			\$ 69,737.29	Equivalent Annual Cost			\$ 67,105.73

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
37	3	35	37	3	35	37	3	35
Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
8	2	WEARING COURSE MIXTURE (3,8)	8	2	WEARING COURSE MIXTURE (3,8)	8	2	WEARING COURSE MIXTURE (3,8)
Width of Rounding Aggregate	white/->7milliom	SL Mix	Width of Rounding Aggregate	white/->7milliom	SL Mix	Width of Rounding Aggregate	white/->7milliom	SL Mix
	N	WEARING COURSE MIXTURE (2,B)		N	WEARING COURSE MIXTURE (2,B)		N	WEARING COURSE MIXTURE (2,B)
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
	N			Y	6		Y	6
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
2			12	11		12	11	
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
20	6		20	6		35	6	

35-Year Analysis Period		35 - Year		50-Year Analysis Period	
Project Number	Analysis Period				
1904-27	35				
Highway	Discount Rate				
	1.74%				
Date					
Performed By	CLEAR ALL				
Metro - 2015/2016 prices					

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	HMA Mill & Overlay \$3,117,189.32	HMA \$6,495,252.19	UBCO \$4,196,969.65	Miles
Segment #2 Net Present Cost				0.0
Segment #3 Net Present Cost				0.0
Segment #4 Net Present Cost				0.0
Segment #5 Net Present Cost				0.0
Segment #6 Net Present Cost				0.0
Segment #7 Net Present Cost				0.0
Segment #8 Net Present Cost				0.0
Project Net Present Cost	\$ 3,117,189.32	\$ 6,495,252.19	\$ 4,196,969.65	Total
% of Low Cost	100.0%		208.4%	134.6%
				5.9

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	HMA Mill & Overlay \$1,188,517.25	HMA \$1,222,438.77	UBCO \$1,305,937.26	Miles
Segment #2 Net Present Cost				0.0
Segment #3 Net Present Cost				0.0
Segment #4 Net Present Cost				0.0
Segment #5 Net Present Cost				0.0
Segment #6 Net Present Cost				0.0
Segment #7 Net Present Cost				0.0
Segment #8 Net Present Cost				0.0
Project Net Present Cost	\$ 1,188,517.25	\$ 1,222,438.77	\$ 1,305,937.26	Total
Bid Adjustment Factor	\$ -	\$ 33,921.52	\$ 117,420.01	5.9

Segment 1											
SEG	Length	SEG	Length	SEG							
1	5.9	1	5.9	1	5.9						
ALT		ALT		ALT							
1	HMA Mill & Overlay	2	HMA	3	UBCO						
Pavement Type		Pavement Type		Pavement Type							
HMA		HMA		PCC							
Primary Category		Primary Category		Primary Category							
Overlay, DL >13 to 17 years		20 year HMA		6'x6' >5" Thickness							
Secondary Category		Secondary Category		Secondary Category							
Rural		Rural		Design Life = 20 Years							
ShoulderCategory		ShoulderCategory		ShoulderCategory							
Bituminous		Bituminous		Thick Bit							
Notes:		Notes:		Notes:							
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0		\$ 326,893.57	\$ 326,893.57	0		\$ 893,697.19	\$ 893,697.19	0		\$ 490,005.49	\$ 490,005.49
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,534.40	\$ 2,406.58	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 9,447.61	\$ 8,372.98	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8	Crack Treatment	\$ 1,267.20	\$ 1,103.85	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17	ML Overlay 3.5"	\$ 217,948.62	\$ 162,552.88	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	Crack Treatment	\$ 2,534.40	\$ 1,794.90	20	ML Overlay 4	\$ 317,421.04	\$ 224,802.45	20	1st CPR	\$ 312,539.54	\$ 221,345.30
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23	Crack Treatment	\$ 2,534.40	\$ 1,704.38	23		\$ -	\$ -
24	Seal	\$ 9,447.61	\$ 6,244.83	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33	ML Overlay 3.5"	\$ 217,948.62	\$ 123,346.53	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (188,888.81)	\$ (103,275.08)	35	2/17 Remaining Life	\$ (37,343.65)	\$ (20,417.67)	35	0/0 Remaining	\$ -	\$ -
Net Present Cost for Segment	\$ 3,117,189.32	Net Present Cost for Segment	\$ 6,495,252.19	Net Present Cost for Segment	\$ 4,196,969.65						
Maintenance - Net Present Cost for Segment	\$ 1,188,517.25	Maintenance - Net Present Cost for Segment	\$ 1,222,438.77	Maintenance - Net Present Cost for Segment	\$ 1,305,937.26						
Equivalent Annual Cost	119,667.24	Equivalent Annual Cost	249,349.27	Equivalent Annual Cost	161,119.43						

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	35	24	2	35	24	2	35
Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
4	2	WEARING COURSE MIXTURE (2,C)	4	2	WEARING COURSE MIXTURE (2,C)	4	2	WEARING COURSE MIXTURE (2,C)
Width of Rounding Aggregate	white/ >7 million	SL Mix	Width of Rounding Aggregate	white/ >7 million	SL Mix	Width of Rounding Aggregate	white/ >7 million	SL Mix
3	N	WEARING COURSE MIXTURE (2,C)	3	N	WEARING COURSE MIXTURE (2,C)	3	N	WEARING COURSE MIXTURE (2,C)
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
Y			Y			N	6	
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
2			2			12	4840	
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
17	4		20	5		6		

35-Year Analysis Period

50 - Year

50-Year Analysis Period

Project Number	Analysis Period
1918-110	50
Highway	Discount Rate
110	2.00%
Date	
3/26/2015	
Performed By	CLEAR ALL
KY	

Metro - 2014/2015 prices

Figure 1. The effect of the number of clusters on the classification accuracy.

LCCA SUMMARY

LCCA SUMMARY					
	Alternate #1	Alternate #2	Alternate #3	Length	
Segment #1 Net Present Cost	C251 \$5,267,017.19	C151 \$7,202,657.70	B251 \$4,705,267.69	3.5 Miles	
Segment #2 Net Present Cost				0.0 Miles	
Segment #3 Net Present Cost				0.0 Miles	
Segment #4 Net Present Cost				0.0 Miles	
Segment #5 Net Present Cost				0.0 Miles	
Segment #6 Net Present Cost				0.0 Miles	
Segment #7 Net Present Cost				0.0 Miles	
Segment #8 Net Present Cost				0.0 Miles	
Project Net Present Cost	\$ 5,267,017.19	\$ 7,202,657.70	\$ 4,705,267.69	Total	
% of Low Cost	111.9%	153.1%	100.0%	3.5	

BID ADJUSTMENT FACTOR SUMMARY

BID ADJUSTMENT FACTOR SUMMARY					
	Alternate #1	Alternate #2	Alternate #3	Length	
Segment #1 Net Present Cost	C2S1 \$1,340,287.91	C1S1 \$3,482,984.38	B2S1 \$2,001,299.80	3.5 Miles	
Segment #2 Net Present Cost				0.0 Miles	
Segment #3 Net Present Cost				0.0 Miles	
Segment #4 Net Present Cost				0.0 Miles	
Segment #5 Net Present Cost				0.0 Miles	
Segment #6 Net Present Cost				0.0 Miles	
Segment #7 Net Present Cost				0.0 Miles	
Segment #8 Net Present Cost				0.0 Miles	
Project Net Present Cost	\$ 1,340,287.91	\$ 3,482,984.38	\$ 2,001,299.80	Total	
Bid Adjustment Factor	\$ -	\$ 2,142,696.47	\$ 661,011.89	3.5	

Segment 1

SEG	Length	SEG	Length	SEG	Length						
1	3.509	1	3.509	1	3.509						
ALT	Description		ALT	Description							
1	C2S1		2	C1S1							
Pavement Type		Pavement Type		Pavement Type							
PCC		PCC		HMA							
Primary Category ≥12 Joint spacing		Primary Category 6'X6' ≥5.5" Thickness		Primary Category 20 Year HMA							
Secondary Category		Secondary Category		Secondary Category							
Design Life 35 Years		Design Life = 20 Years		Rural							
ShoulderCategory		ShoulderCategory		ShoulderCategory							
PCC		PCC		Bituminous							
CLICK HERE TO EDIT THIS ALTERNATE			CLICK HERE TO EDIT THIS ALTERNATE								
Notes:			Notes:								
Notes:											
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	C2S1	\$ 1,119,045.11	\$ 1,119,045.11	0	C1S1	\$ 1,060,037.99	\$ 1,060,037.99	0	B2S1	\$ 770,580.76	\$ 770,580.76
1	\$ -	\$ -	\$ -	1	\$ -	\$ -	\$ -	1	\$ -	\$ -	\$ -
2	\$ -	\$ -	\$ -	2	\$ -	\$ -	\$ -	2	\$ -	\$ -	\$ -
3	\$ -	\$ -	\$ -	3	\$ -	\$ -	\$ -	3	\$ -	\$ -	\$ -
4	\$ -	\$ -	\$ -	4	\$ -	\$ -	\$ -	4	\$ -	\$ -	\$ -
5	\$ -	\$ -	\$ -	5	\$ -	\$ -	\$ -	5	\$ -	\$ -	\$ -
6	\$ -	\$ -	\$ -	6	\$ -	\$ -	\$ -	6	\$ -	\$ -	\$ -
7	\$ -	\$ -	\$ -	7	\$ -	\$ -	\$ -	7	\$ -	\$ -	\$ -
8	\$ -	\$ -	\$ -	8	\$ -	\$ -	\$ -	8	Crack Treatment	\$ 1,712.13	\$ 1,461.28
9	\$ -	\$ -	\$ -	9	\$ -	\$ -	\$ -	9		\$ -	\$ -
10	\$ -	\$ -	\$ -	10	\$ -	\$ -	\$ -	10		\$ -	\$ -
11	\$ -	\$ -	\$ -	11	\$ -	\$ -	\$ -	11		\$ -	\$ -
12	\$ -	\$ -	\$ -	12	\$ -	\$ -	\$ -	12	Seal	\$ 32,440.32	\$ 25,578.97
13	\$ -	\$ -	\$ -	13	\$ -	\$ -	\$ -	13		\$ -	\$ -
14	\$ -	\$ -	\$ -	14	\$ -	\$ -	\$ -	14		\$ -	\$ -
15	\$ -	\$ -	\$ -	15	\$ -	\$ -	\$ -	15		\$ -	\$ -
16	\$ -	\$ -	\$ -	16	\$ -	\$ -	\$ -	16		\$ -	\$ -
17	\$ -	\$ -	\$ -	17	\$ -	\$ -	\$ -	17		\$ -	\$ -
18	\$ -	\$ -	\$ -	18	\$ -	\$ -	\$ -	18		\$ -	\$ -
19	\$ -	\$ -	\$ -	19	\$ -	\$ -	\$ -	19		\$ -	\$ -
20	1st CPR	\$ 292,167.91	\$ 196,620.63	20	1st CPR	\$ 510,166.29	\$ 343,327.29	20	ML Overlay 3.5	\$ 484,069.69	\$ 325,765.03
21	\$ -	\$ -	\$ -	21	\$ -	\$ -	\$ -	21	Crack Treatment	\$ -	\$ -
22	\$ -	\$ -	\$ -	22	\$ -	\$ -	\$ -	22		\$ -	\$ -
23	\$ -	\$ -	\$ -	23	\$ -	\$ -	\$ -	23		\$ 3,424.26	\$ 2,171.51
24	\$ -	\$ -	\$ -	24	\$ -	\$ -	\$ -	24		\$ -	\$ -
25	\$ -	\$ -	\$ -	25	\$ -	\$ -	\$ -	25		\$ -	\$ -
26	\$ -	\$ -	\$ -	26	\$ -	\$ -	\$ -	26		\$ -	\$ -
27	\$ -	\$ -	\$ -	27	\$ -	\$ -	\$ -	27	Seal	\$ 23,373.50	\$ 13,693.65
28	\$ -	\$ -	\$ -	28	\$ -	\$ -	\$ -	28		\$ -	\$ -
29	\$ -	\$ -	\$ -	29	\$ -	\$ -	\$ -	29		\$ -	\$ -
30	\$ -	\$ -	\$ -	30	\$ -	\$ -	\$ -	30		\$ -	\$ -
31	\$ -	\$ -	\$ -	31	\$ -	\$ -	\$ -	31		\$ -	\$ -
32	\$ -	\$ -	\$ -	32	\$ -	\$ -	\$ -	32		\$ -	\$ -
33	\$ -	\$ -	\$ -	33	\$ -	\$ -	\$ -	33		\$ -	\$ -
34	2nd CPR	\$ 370,652.73	\$ 185,336.60	35	Remove and Replace	\$ 1,594,659.68	\$ 797,373.87	35	ML Overlay 3.5"	\$ 484,069.69	\$ 232,649.19
35	\$ -	\$ -	\$ -	36	\$ -	\$ -	\$ -	36		\$ -	\$ -
36	\$ -	\$ -	\$ -	37	\$ -	\$ -	\$ -	37		\$ -	\$ -
37	\$ -	\$ -	\$ -	38	\$ -	\$ -	\$ -	38		\$ -	\$ -
38	\$ -	\$ -	\$ -	39	\$ -	\$ -	\$ -	39		\$ -	\$ -
39	\$ -	\$ -	\$ -	40	\$ -	\$ -	\$ -	40	Crack Treatment	\$ 3,424.26	\$ 1,550.81
40	\$ -	\$ -	\$ -	41	\$ -	\$ -	\$ -	41		\$ -	\$ -
41	\$ -	\$ -	\$ -	42	\$ -	\$ -	\$ -	42		\$ -	\$ -
42	\$ -	\$ -	\$ -	43	\$ -	\$ -	\$ -	43	Chip Seal	\$ 23,373.50	\$ 9,779.49
43	\$ -	\$ -	\$ -	44	\$ -	\$ -	\$ -	44		\$ -	\$ -
44	\$ -	\$ -	\$ -	45	\$ -	\$ -	\$ -	45		\$ -	\$ -
45	\$ -	\$ -	\$ -	46	\$ -	\$ -	\$ -	46		\$ -	\$ -
46	\$ -	\$ -	\$ -	47	\$ -	\$ -	\$ -	47		\$ -	\$ -
47	\$ -	\$ -	\$ -	48	\$ -	\$ -	\$ -	48		\$ -	\$ -
48	\$ -	\$ -	\$ -	49	\$ -	\$ -	\$ -	49		\$ -	\$ -
49	\$ -	\$ -	\$ -	50	\$ /15 Remaining	\$ (398,664.92)	\$ (148,115.13)	50	4/17 Remaining Life	\$ (113,898.75)	\$ (42,315.56)
50	O/0 Remaining	\$ -	\$ -								
Net Present Cost for Segment			\$ 5,267,017.19	Net Present Cost for Segment		\$ 7,202,657.70	Net Present Cost for Segment		\$ 4,705,267.69		
Maintenance - Net Present Cost for Segment			\$ 1,340,287.91	Maintenance - Net Present Cost for Segment		\$ 3,482,984.38	Maintenance - Net Present Cost for Segment		\$ 2,001,299.80		
Equivalent Annual Cost			\$ 167,613.39	Equivalent Annual Cost		\$ 229,211.69	Equivalent Annual Cost		\$ 149,736.72		

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
48	4	50	48	4	50	48	4	50
Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
26	12.5 Wearing Course(a,f)	26	26	4	4	26	4	4
Width of Rounding Aggregate	white/ >7 million	Width of Rounding Aggregate	white/ >7 million	Width of Rounding Aggregate	white/ >7 million	Width of Rounding Aggregate	white/ >7 million	Width of Rounding Aggregate
1.5	SL Mix	Y	Y	Y	SL Mix	1.5	N	12.5 Wearing Course (4,E)
Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC
Y	6.5	Y	6	Y	6	Y	6	3(B)
ML Top Lift / joint spacing	# Dowels per Lane	ML Top Lift / joint spacing	# Dowels per Lane	ML Top Lift / joint spacing	# Dowels per Lane	ML Top Lift / joint spacing	# Dowels per Lane	ML Top Lift / joint spacing
12	11	6	11	6	11	1.5	20	4
Design Life	Shldr Thickness	Design Life	Shldr Thickness	Design Life	Shldr Thickness	Design Life	Shldr Thickness	Design Life
35	6.5	6	6	6	6	35	20	4

35-Year Analysis Period

50 - Year

50-Year Analysis Period

Project Number	Analysis Period
1921-094	50
Highway	Discount Rate
MN 3	1.58%
Date	
12/29/2016	
Performed By	Tou Vu

CLEAR ALL

DS - 2016/2017 prices

Alt 1 - 20 yr bit w/UTBWC	Alt 2 - 20 yr conc	Alt 3 - 35 yr conc

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	ALT 1 Net Present Cost \$2,509,279.20	ALT 2 \$2,803,684.99	ALT 3 \$2,653,619.83	1.8 Miles
Segment #2				1.8 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 2,509,279.20	\$ 2,803,684.99	\$ 2,653,619.83	Total
% of Low Cost	100.0%	111.7%	105.8%	3.6

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	ALT 1 Net Present Cost \$676,830.60	ALT 2 \$950,868.05	ALT 3 \$448,053.52	1.8 Miles
Segment #2				1.8 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 676,830.60	\$ 950,868.05	\$ 448,053.52	Total
Bid Adjustment Factor	\$ 228,777.08	\$ 502,814.53	\$ -	3.6

Segment 1											
SEG	Length	SEG	Length	SEG							
1	1.793	1	1.793	1	1.793						
ALT	Description	ALT	Description	ALT	Description						
1	ALT 1	2	ALT 2	3	ALT 3						
Pavement Type		Pavement Type		Pavement Type							
HMA	PCC	HMA	PCC	HMA	PCC						
Primary Category	Primary Category	Secondary Category	Secondary Category	Primary Category	Primary Category						
20 Year HMA	>12 Joint spacing	Urban	Design Life = 20 Years	20 Year HMA	>12 Joint spacing						
Secondary Category	ShoulderCategory	ShoulderCategory	ShoulderCategory	Secondary Category	ShoulderCategory						
Urban	Thick	Thin	Medium	Urban	Thick						
ShoulderCategory	DELETE	CLICK HERE TO EDIT THIS ALTERNATE	DELETE	ShoulderCategory	DELETE						
Notes:		Notes:		Notes:							
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	B1S1	\$ 1,022,001.45	\$ 1,022,001.45	0	C1S1	\$ 1,033,361.37	\$ 1,033,361.37	0	C2S1	\$ 1,230,098.33	\$ 1,230,098.33
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ -	\$ -	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8	Crack Treatment	\$ 1,267.20	\$ 1,117.84	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12	Seal	\$ -	\$ -	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	ML Mill 3.0"	\$ 300,608.36	\$ 219,703.46	20	1st CPR	\$ 272,833.22	\$ 199,403.64	20	1st CPR	\$ 169,222.24	\$ 123,678.23
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Crack Treatment	\$ 2,534.40	\$ 1,767.20	23		\$ -	\$ -	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27	Seal	\$ -	\$ -	27		\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35		\$ -	\$ -	35	Remove and Replace	\$ 713,879.86	\$ 412,418.21	35	2nd CPR	\$ 218,468.38	\$ 126,212.19
36		\$ -	\$ -	36		\$ -	\$ -	36		\$ -	\$ -
37	ML Overlay 3.5"	\$ 339,371.08	\$ 190,007.66	37		\$ -	\$ -	37		\$ -	\$ -
38		\$ -	\$ -	38		\$ -	\$ -	38		\$ -	\$ -
39		\$ -	\$ -	39		\$ -	\$ -	39		\$ -	\$ -
40	Crack Treatment	\$ 2,534.40	\$ 1,353.78	40		\$ -	\$ -	40		\$ -	\$ -
41		\$ -	\$ -	41		\$ -	\$ -	41		\$ -	\$ -
42		\$ -	\$ -	42		\$ -	\$ -	42		\$ -	\$ -
43		\$ -	\$ -	43		\$ -	\$ -	43		\$ -	\$ -
44	Seal	\$ -	\$ -	44		\$ -	\$ -	44		\$ -	\$ -
45		\$ -	\$ -	45		\$ -	\$ -	45		\$ -	\$ -
46		\$ -	\$ -	46		\$ -	\$ -	46		\$ -	\$ -
47		\$ -	\$ -	47		\$ -	\$ -	47		\$ -	\$ -
48		\$ -	\$ -	48		\$ -	\$ -	48		\$ -	\$ -
49		\$ -	\$ -	49		\$ -	\$ -	49		\$ -	\$ -
50	0/0 Remaining Life	\$ (79,852.02)	\$ (36,464.94)	50	5/20 Remaining	\$ (178,469.97)	\$ (81,499.46)	50	0/0 Remaining	\$ -	\$ -
Net Present Cost for Segment		\$ 2,509,279.20	\$ Net Present Cost for Segment		\$ 2,803,684.99	\$ Net Present Cost for Segment		\$ 2,653,619.83			
Maintenance - Net Present Cost for Segment		\$ 676,830.60	\$ Maintenance - Net Present Cost for Segment		\$ 950,868.05	\$ Maintenance - Net Present Cost for Segment		\$ 448,053.52			
Equivalent Annual Cost		\$ 72,967.85	\$ Equivalent Annual Cost		\$ 81,528.94	\$ Equivalent Annual Cost		\$ 77,165.16			

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	50	24	2	50	24	2	50
Total Shdr Width	# of Shldr	ML Mix	Total Shdr Width	# of Shldr	ML Mix	Total Shdr Width	# of Shldrs	ML Mix
12	2	WEARING COURSE MIXTURE (3, SL Mix	12	2	WEARING COURSE MIXTURE (3, SL Mix	12	2	Wearng Course Mixture (3, SL Mix
Width of Rounding Aggregate	white/>7 million	N	Width of Rounding Aggregate	white/>7 million	Y	Width of Rounding Aggregate	white/>7 million	SL Mix
1.5	Y		1.5	Y		1.5	Y	
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
2	11		2	11		2	11	
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
20	4		20	6.5		20	7.5	

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
2206-13	35
Highway	Discount Rate
TH 109	1.74%
Date	
12/10/2015	
Performed By	BAT

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District 7 - 2015/2016 prices

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	Mill and Overlay Net Present Cost \$4,003,854.73	New HMA \$5,817,062.44	New PCC UBOL \$4,416,025.62	8.2 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 4,003,854.73	\$ 5,817,062.44	\$ 4,416,025.62	Total
% of Low Cost	100.0%	145.3%	110.3%	8.2

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	Mill and Overlay Net Present Cost \$1,751,295.24	New HMA \$1,366,639.29	New PCC UBOL \$985,483.96	8.2 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 1,751,295.24	\$ 1,366,639.29	\$ 985,483.96	Total
Bid Adjustment Factor	\$ 765,811.28	\$ 381,155.33	\$ -	8.2

Segment 1					
SEG	Length	SEG	Length	SEG	
1	8.18	1	8.18	1	8.18
ALT	Description	ALT	Description	ALT	Description
1	Mill and Overlay	2	New HMA	3	New PCC UBOL
Pavement Type		Pavement Type		Pavement Type	
HMA		HMA		PCC	
Primary Category		Primary Category		Primary Category	
Overlay, DL >13 to 17 years		20 Year HMA		>12 Joint Spacing	
Secondary Category		Secondary Category		Secondary Category	
Rural		Rural		Design Life = 20 Years	
ShoulderCategory		ShoulderCategory		ShoulderCategory	
Aggregate		Aggregate		Aggregate	
CLICK HERE TO EDIT THIS ALTERNATE					
Notes:					
Notes:					
Notes:					
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	
0	Mill and Overlay	\$ 275,374.02	\$ 275,374.02	0	
1		\$ -	\$ -	1	
2		\$ -	\$ -	2	
3	Crack Treatment	\$ 2,112.00	\$ 2,005.48	3	
4		\$ -	\$ -	4	
5		\$ -	\$ -	5	
6		\$ -	\$ -	6	
7	Seal	\$ 7,598.25	\$ 6,733.97	7	
8		\$ -	\$ -	8	
9		\$ -	\$ -	9	
10		\$ -	\$ -	10	
11		\$ -	\$ -	11	
12		\$ -	\$ -	12	
13	Seal	\$ 11,034.60	\$ 8,971.31	13	
14		\$ -	\$ -	14	
15		\$ -	\$ -	15	
16	ML Overlay 3.5"	\$ 207,056.59	\$ 157,116.33	16	
17		\$ -	\$ -	17	
18		\$ -	\$ -	18	
19	Crack Treatment	\$ 2,112.00	\$ 1,521.78	19	
20		\$ -	\$ -	20	
21	ML Overlay 4	\$ 234,496.28	\$ 166,073.86	21	
22		\$ -	\$ -	22	
23	Crack Treatment	\$ 2,112.00	\$ 1,420.31	23	
24		\$ -	\$ -	24	
25		\$ -	\$ -	25	
26		\$ -	\$ -	26	
27		\$ -	\$ -	27	
28	Seal	\$ 7,598.25	\$ 4,769.10	28	
29		\$ -	\$ -	29	
30		\$ -	\$ -	30	
31	ML Overlay 3.5"	\$ 207,056.59	\$ 121,299.68	31	
32		\$ -	\$ -	32	
33		\$ -	\$ -	33	
34	Crack Treatment	\$ 2,112.00	\$ 1,174.83	34	
35	Remaining Life	\$ (147,897.56)	\$ (80,863.09)	35	
CLICK HERE TO EDIT THIS ALTERNATE					
1st CPR					
\$ 170,110.42					
120,474.81					
Net Present Cost for Segment					
\$ 4,003,854.73					
Net Present Cost for Segment					
\$ 5,817,062.44					
Net Present Cost for Segment					
\$ 4,416,025.62					
Maintenance - Net Present Cost for Segment					
\$ 1,751,295.24					
Maintenance - Net Present Cost for Segment					
\$ 1,366,639.29					
Maintenance - Net Present Cost for Segment					
\$ 985,483.96					
Equivalent Annual Cost					
\$ 153,705.85					
Equivalent Annual Cost					
\$ 223,313.93					
Equivalent Annual Cost					
\$ 169,528.87					

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	35	24	2	35	24	2	35
Total Shdr Width	# of Shldrs	ML Mix	Total Shdr Width	# of Shldrs	ML Mix	Total Shdr Width	# of Shldrs	ML Mix
4	2	WEARING COURSE MIXTURE (4,	4	2	WEARING COURSE MIXTURE (4,	15	2	WEARING COURSE MIXTURE (4,
Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix
15	N		15	N		15	N	
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			N			N		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
2			2			12		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
16	4		20	4		11		

35 - Year

Project Number	Analysis Period
S.P. 2506-77	35
Highway	Discount Rate
T.H. 52 SB	1.58%
Date	
12/27/2016	
Performed By	
TRM	

CLEAR ALL

D6 - 2016/2017 prices

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	1.5" Mill & 3.0" Bit. Overlay Net Present Cost \$5,968,851.66	3" Mill & 4.5" Bit. Overlay with UTBWC \$6,918,132.97	8" UBL \$12,194,633.12	13.7 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 5,968,851.66	\$ 6,918,132.97	\$ 12,194,633.12	Total
% of Low Cost	100.0%	115.9%	204.3%	13.7

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	1.5" Mill & 3.0" Bit. Overlay Net Present Cost \$3,375,974.70	3" Mill & 4.5" Bit. Overlay with UTBWC \$1,856,312.02	8" UBL \$2,863,604.66	13.7 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 3,375,974.70	\$ 1,856,312.02	\$ 2,863,604.66	Total
Bid Adjustment Factor	\$ 1,519,662.68	\$ -	\$ 1,007,292.64	13.7

Segment 1											
SEG	Length	SEG	Length	SEG							
1	13.741	1	13.741	1	13.741						
ALT		ALT		ALT							
1	1.5" Mill & 3.0" Bit. Overlay	2	3" Mill & 4.5" Bit. Overlay with UTBWC	3	8" UBL						
Pavement Type	HMA	Pavement Type	HMA	Pavement Type	PCC						
Primary Category	Overlay, DL < 13 years	Primary Category	Overlay, DL > 17 years	Primary Category	>12 Joint Spacing						
Secondary Category	Rural	Secondary Category	Rural	Secondary Category	Design Life = 20 Years						
ShoulderCategory	Bituminous	ShoulderCategory	Bituminous	ShoulderCategory	Thin Bit						
CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE							
DELETE		DELETE		DELETE							
Notes:					Notes:						
					Notes:						
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0		\$ 188,696.38	\$ 188,696.38	0		\$ 368,373.55	\$ 368,373.55	0		\$ 679,064.73	\$ 679,064.73
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 1,909.25	\$ 1,821.54	3	Crack Treatment	\$ 1,909.25	\$ 1,821.54	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ -	\$ -	7	Seal	\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15	ML Overlay 3.5"	\$ 216,565.50	\$ 171,185.17	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	Crack Treatment	\$ 1,909.25	\$ 1,439.84	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	ML Overlay 3.5"	\$ 216,565.50	\$ 158,279.66	20	1st CPR	\$ 285,140.49	\$ 208,398.56
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22	Seal	\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23	Crack Treatment	\$ 1,909.25	\$ 1,331.29	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32	Crack Treatment	\$ 1,909.25	\$ 1,156.11	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (116,612.19)	\$ (67,368.47)	35	Remaining Life	\$ (45,592.74)	\$ (26,339.55)	35	0/0 Remaining	\$ -	\$ -
Net Present Cost for Segment					Net Present Cost for Segment					Net Present Cost for Segment	
Maintenance - Net Present Cost for Segment					Maintenance - Net Present Cost for Segment					Maintenance - Net Present Cost for Segment	
Equivalent Annual Cost					Equivalent Annual Cost					Equivalent Annual Cost	

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	35	24	2	35	27	2	35
Total Shdr Width	# of Shdrs	ML Mix	Total Shdr Width	# of Shdrs	ML Mix	Total Shdr Width	# of Shdrs	ML Mix
14	2	WEARING COURSE MIXTURE (4,1)	14	2	WEARING COURSE MIXTURE (4,1)	11	2	WEARING COURSE MIXTURE (2,8)
Width of Rounding Aggregate	white/ >7 million	SL Mix	Width of Rounding Aggregate	white/ >7 million	SL Mix	Width of Rounding Aggregate	white/ >7 million	SL Mix
3	Y	WEARING COURSE MIXTURE (2,1)	3	Y	WEARING COURSE MIXTURE (2,1)	3	N	WEARING COURSE MIXTURE (2,8)
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			Y			N		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
1.5	2		2	2		1.5	11	
Design Life	Shdr Thickness		Design Life	Shdr Thickness		Design Life	Shdr Thickness	
15	7		20	7.5		15	3	

35-Year Analysis Period	50 - Year	50-Year Analysis Period
Project Number	Analysis Period	
50-1000	Discount Rate	
Highway	1.4%	
MT-47	Rate	
5%	Date	
1/1/2017	CLEAR ALL	
Performed By		
Dave		

LCCA SUMMARY					
Segment #1	Alternative #1	Alternative #2	Alternative #3	Alternative #4	Length
Segment #1	HMA NO BGS \$1.41	PCC-NO BGS \$0.41	PCC-NO BGS \$0.41	PCC-NO BGS \$0.41	1.0
Segment #2	\$1,102,281.41	\$1,276,681.30	\$1,276,681.30	\$1,276,681.30	Mile
Segment #2	HMA BGS \$0.41	PCC-BGS \$0.41	PCC-BGS \$0.41	PCC-BGS \$0.41	1.0
Segment #3	\$1,127,681.31	\$1,276,681.30	\$1,276,681.30	\$1,276,681.30	Mile
Segment #3					0.0
Segment #4					0.0
Segment #4					Mile
Segment #5					Mile
Segment #5					0.0
Segment #6					Mile
Segment #6					0.0
Segment #7					Mile
Segment #7					0.0
Segment #8					Mile
Segment #8					0.0
Segment #9					Mile
Segment #9					0.0
Segment #10					Mile
Segment #10					0.0
Project Total Present Cost	\$ 2,874,562.17	\$ 4,830,321.31	\$ 4,830,321.31	\$ 4,264,220.00	Total
	100.0%	100.0%	100.0%	100.0%	

Segment 1					
SKU#	Length	SKU#	Length	SKU#	Length
ALT#	Description	ALT#	Description	ALT#	Description
1	PMM-AB2-BLD	2	PVC-AB2-BLD	3	PVC-AB2-BLD
Secondary Category		Secondary Category		Secondary Category	
Primary Type		Primary Type		Primary Type	
SKU#		SKU#		SKU#	
211-V-A004A	CLICK HERE TO EDIT THIS ALTERNATE	211-V-A004B	CLICK HERE TO EDIT THIS ALTERNATE	211-V-A004C	CLICK HERE TO EDIT THIS ALTERNATE
Secondary Category		Secondary Category		Secondary Category	

Year	Activity	Cost/ per Mile	Pres. Cost/ per Mile	Year	Activity	Cost	Pres./Cost/ per Mile	Year	Activity	Cost	Pres./Cost/ per Mile
0	PVMT Refuel	\$ 685,948.02	\$ 685,948.02	0	PVMT Refuel	\$ 1,727,094.81	\$ 1,727,094.81	0	PVMT Refuel	\$ 1,871,331.87	\$ 1,871,331.87
1		\$ 5	\$ 1	1		\$ 5	\$ 1	1		\$ 5	\$ 1
2		\$ 5	\$ 3	2		\$ 5	\$ 2	2		\$ 5	\$ 2
3		\$ 5	\$ 4	3		\$ 5	\$ 3	3		\$ 5	\$ 3
4		\$ 5	\$ 5	4		\$ 5	\$ 4	4		\$ 5	\$ 4
5		\$ 5	\$ 5	5		\$ 5	\$ 5	5		\$ 5	\$ 5
6		\$ 5	\$ 6	6		\$ 5	\$ 6	6		\$ 5	\$ 6
7		\$ 5	\$ 7	7		\$ 5	\$ 7	7		\$ 5	\$ 7
8	Crack Treatment	\$ 2,288.00	\$ 2,010.12	8		\$ 5	\$ 8	8		\$ 5	\$ 8
9		\$ 5	\$ 9	9		\$ 5	\$ 9	9		\$ 5	\$ 9
10		\$ 5	\$ 10	10		\$ 5	\$ 10	10		\$ 5	\$ 10
11		\$ 5	\$ 11	11		\$ 5	\$ 11	11		\$ 5	\$ 11
12	Seal	\$ 32,812.91	\$ 27,186.06	12		\$ 5	\$ 12	12		\$ 5	\$ 12
13		\$ 5	\$ 13	13		\$ 5	\$ 13	13		\$ 5	\$ 13
14		\$ 5	\$ 14	14		\$ 5	\$ 14	14		\$ 5	\$ 14
15		\$ 5	\$ 15	15		\$ 5	\$ 15	15		\$ 5	\$ 15
16		\$ 5	\$ 16	16		\$ 5	\$ 16	16		\$ 5	\$ 16
17		\$ 5	\$ 17	17		\$ 5	\$ 17	17		\$ 5	\$ 17
18		\$ 5	\$ 18	18		\$ 5	\$ 18	18		\$ 5	\$ 18
19		\$ 5	\$ 19	19		\$ 5	\$ 19	19		\$ 5	\$ 19
20	Mt. Overlay 3.5"	\$ 553,830.00	\$ 404,711.76	20	1st CPR	\$ 540,212.88	\$ 399,206.38	20	1st CPR	\$ 407,388.54	\$ 291,672.02
21		\$ 5	\$ 21	21		\$ 5	\$ 21	21		\$ 5	\$ 21
22		\$ 5	\$ 22	22		\$ 5	\$ 22	22		\$ 5	\$ 22
23	Crack Treatment	\$ 4,576.00	\$ 3,190.78	23		\$ 5	\$ 23	23		\$ 5	\$ 23
24		\$ 5	\$ 24	24		\$ 5	\$ 24	24		\$ 5	\$ 24
25		\$ 5	\$ 25	25		\$ 5	\$ 25	25		\$ 5	\$ 25
26		\$ 5	\$ 26	26		\$ 5	\$ 26	26		\$ 5	\$ 26
27	Seal	\$ 23,160.05	\$ 15,167.64	27		\$ 5	\$ 27	27		\$ 5	\$ 27
28		\$ 5	\$ 28	28		\$ 5	\$ 28	28		\$ 5	\$ 28
29		\$ 5	\$ 29	29		\$ 5	\$ 29	29		\$ 5	\$ 29
30		\$ 5	\$ 30	30		\$ 5	\$ 30	30		\$ 5	\$ 30
31		\$ 5	\$ 31	31		\$ 5	\$ 31	31		\$ 5	\$ 31
32		\$ 5	\$ 32	32		\$ 5	\$ 32	32		\$ 5	\$ 32
33		\$ 5	\$ 33	33		\$ 5	\$ 33	33		\$ 5	\$ 33
34		\$ 5	\$ 34	34		\$ 5	\$ 34	34		\$ 5	\$ 34
35		\$ 5	\$ 35	35	Remove and Replace	\$ 1,321,907.20	\$ 648,141.15	35	2nd CPR	\$ 363,553.72	\$ 210,029.08
36		\$ 5	\$ 36	36		\$ 5	\$ 36	36		\$ 5	\$ 36
37	Mt. Overlay 3.5"	\$ 618,301.32	\$ 346,176.60	37		\$ 5	\$ 37	37		\$ 5	\$ 37
38		\$ 5	\$ 38	38		\$ 5	\$ 38	38		\$ 5	\$ 38
39		\$ 5	\$ 39	39		\$ 5	\$ 39	39		\$ 5	\$ 39
40	Crack Treatment	\$ 4,576.00	\$ 2,444.32	40		\$ 5	\$ 40	40		\$ 5	\$ 40
41		\$ 5	\$ 41	41		\$ 5	\$ 41	41		\$ 5	\$ 41
42		\$ 5	\$ 42	42		\$ 5	\$ 42	42		\$ 5	\$ 42
43		\$ 5	\$ 43	43		\$ 5	\$ 43	43		\$ 5	\$ 43
44	Seal	\$ 23,160.05	\$ 11,618.26	44		\$ 5	\$ 44	44		\$ 5	\$ 44
45		\$ 5	\$ 45	45		\$ 5	\$ 45	45		\$ 5	\$ 45
46		\$ 5	\$ 46	46		\$ 5	\$ 46	46		\$ 5	\$ 46
47		\$ 5	\$ 47	47		\$ 5	\$ 47	47		\$ 5	\$ 47
48		\$ 5	\$ 48	48		\$ 5	\$ 48	48		\$ 5	\$ 48
49		\$ 5	\$ 49	49		\$ 5	\$ 49	49		\$ 5	\$ 49
50	O/D Remaining Life	\$ (145,482.63)	\$ (66,435.59)	50	5/20 Remaining	\$ (280,476.77)	\$ (128,031.52)	50	0/O Remaining	\$ -	\$ -
51	Net Present Cost for Segment	\$ 1,503,261.25	\$ 1,503,261.25	51	Net Present Cost for Segment	\$ 2,776,104.00	\$ 2,776,104.00	51	Net Present Cost for Segment	\$ 2,497,501.03	\$ 2,497,501.03
52	Non-Present Cost for Segment	\$ 763,700.00	\$ 763,700.00	52	Maintenance	\$ 364,400.00	\$ 364,400.00	52	Maintenance	\$ 512,970.00	\$ 512,970.00
53	Present Cost for Segment	\$ 3,266,961.25	\$ 3,266,961.25	53	Present Cost for Segment	\$ 3,440,504.00	\$ 3,440,504.00	53	Present Cost for Segment	\$ 3,010,471.03	\$ 3,010,471.03
54	Total Lane Width	# of Lanes	Analysis Period	54	Total Lane Width	# of Lanes	Analysis Period	54	Total Lane Width	# of Lanes	Analysis Period
55	Total Shdr Width	# of Shdr	ML Mix	55	Total Shdr Width	# of Shdr	ML Mix	55	Total Shdr Width	# of Shdr	ML Mix
56	Width of Roadway Acreage	white/7' million		56	Width of Roadway Acreage	white/7' million		56	Width of Roadway Acreage	white/7' million	
57	Wearing Course Maturity	I		57	Wearing Course Maturity	I		57	Wearing Course Maturity	I	
58	Sealed/UTBCW	MC Thickness		58	Sealed/UTBCW	MC Thickness		58	Sealed/UTBCW	MC Thickness	
59	SL Mix			59	SL Mix			59	SL Mix		
60	Mr. Top Lift / Joint spacing	# Downton per Lane		60	Mr. Top Lift / joint spacing	# Downton per Lane		60	Mr. Top Lift / joint spacing	# Downton per Lane	
61	Design Life	Shdr Thickness		61	Design Life	Shdr Thickness		61	Design Life	Shdr Thickness	
62	Design Life	Shdr Thickness		62	Design Life	Shdr Thickness		62	Design Life	Shdr Thickness	

Segment 2					
SSN	Length	SSN	Length	SSN	Length
2	0-785	2	0-785	2	0-785
4		4		4	
1	HABA-BUS-SHLD	1	HABA-BUS-SHLD	1	HABA-BUS-SHLD
Description		Description		Description	
Possessing Date		Possessing Date		Possessing Date	
MM.YY		MM.YY		MM.YY	
30 Year HABA		30 Year HABA		30 Year HABA	
Secondary Category		Secondary Category		Secondary Category	
CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE	

Year	Activity	Cost	Pres. Cost/ per Mile	Year	Activity	Cost	Pres. Cost/ per Mile	Year	Activity	Cost	Pres. Cost/ per Mile
0	PVMT Resurf	\$ 747,730.00	\$ 747,730.00	0	PVMT Resurf	\$ 1,710,500.64	\$ 1,710,500.64	0	PVMT Resurf	\$ 1,815,162.15	\$ 1,815,162.15
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ -	\$ -	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8	Crack Treatment	\$ 2,388,000	\$ 2,318,112	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12	Seal	\$ 32,821,293	\$ 27,186,000	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	M1 Mill 3.0"	\$ 553,030,000	\$ 404,771,710	20	1st CPR	\$ 445,095,005	\$ 325,953,87	20	1st CPR	\$ 304,104,204	\$ 222,204
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Crack Treatment	\$ 4,576,000	\$ 3,190,78	23		\$ -	\$ -	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27	Seal	\$ 21,350,000	\$ 15,167,64	27		\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35		\$ -	\$ -	35		\$ -	\$ -	35		\$ -	\$ -
36		\$ -	\$ -	36		\$ -	\$ -	36		\$ -	\$ -
37	M1 Overlay 3.5"	\$ 618,301,312	\$ 340,175,10	37		\$ -	\$ -	37		\$ -	\$ -
38		\$ -	\$ -	38		\$ -	\$ -	38		\$ -	\$ -
39		\$ -	\$ -	39		\$ -	\$ -	39		\$ -	\$ -
40	Crack Treatment	\$ 4,576,000	\$ 2,444,12	40		\$ -	\$ -	40		\$ -	\$ -
41		\$ -	\$ -	41		\$ -	\$ -	41		\$ -	\$ -
42		\$ -	\$ -	42		\$ -	\$ -	42		\$ -	\$ -
43		\$ -	\$ -	43		\$ -	\$ -	43		\$ -	\$ -
44	Seal	\$ 21,350,000	\$ 11,613,20	44		\$ -	\$ -	44		\$ -	\$ -
45		\$ -	\$ -	45		\$ -	\$ -	45		\$ -	\$ -
46		\$ -	\$ -	46		\$ -	\$ -	46		\$ -	\$ -
47		\$ -	\$ -	47		\$ -	\$ -	47		\$ -	\$ -
48		\$ -	\$ -	48		\$ -	\$ -	48		\$ -	\$ -
49	O/D Remaining Lsf	\$ (145,482,600)	\$ (66,435,100)	50	S/20 Remaining	\$ (316,050,860)	\$ (144,600,65)	50	O/D Remaining	\$ -	\$ -
50											
Net Present Cost for Segment											
		\$ 1,372,684.74				\$ 1,020,502.00					
Not Present Cost for Segment											
		\$ 458,720,000				\$ 340,000,000					
Remaining Present Cost											
		\$ 1,372,684.74				\$ 1,020,502.00					
Remaining Not Present Cost											
		\$ 458,720,000				\$ 340,000,000					
Remaining Present Cost											
		\$ 1,372,684.74				\$ 1,020,502.00					
Remaining Not Present Cost											
		\$ 458,720,000				\$ 340,000,000					
Total Lane Width											
	# of Lanes	Analytical Period		Total Lane Width	# of Lanes	Analytical Period		Total Lane Width	# of Lanes	Analytical Period	
Total Shred Width											
	# of Shdrs	Mt. Mix		Total Shred Width	# of Shdrs	Mt. Mix		Total Shred Width	# of Shdrs	Mt. Mix	
Width of Routine Areas											
	white/ 7' million			Width of Routine Areas	white/ 7' million			Width of Routine Areas	white/ 7' million		
Sealer/BW/CWC											
	Mt. Thickness			Sealer/BW/CWC	Mt. Thickness			Sealer/BW/CWC	Mt. Thickness		
Mt. Top Lift / Joint spacing											
	# Dovens per Lane			Mt. Top Lift / Joint spacing	# Dovens per Lane			Mt. Top Lift / Joint spacing	# Dovens per Lane		
Design Life											
	Shrd Thickness			Design Life	Shrd Thickness			Design Life	Shrd Thickness		

35-Year Analysis Period

50 - Year

50-Year Analysis Period

Project Number	Analysis Period
2906-18	50
Highway	Discount Rate
71	1.74%
Date	
1/11/2016	
Performed By	
AW	

CLEAR ALL

District 2 - 2015/2016 prices



Segment 1				Segment 1				Segment 1			
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG	Length
1	7.51	1	7.51	1	7.51	1	7.51	1	7.51	1	7.51
ALT		ALT		ALT		ALT		ALT		ALT	
1	Reclaim HMA	2	PCC	3	PCC	4	PCC	5	PCC	6	PCC
Pavement Type		Pavement Type		Pavement Type		Pavement Type		Pavement Type		Pavement Type	
HMA		PCC		PCC		PCC		PCC		PCC	
Primary Category		Primary Category		Primary Category		Primary Category		Primary Category		Primary Category	
20 Year HMA		>12 Joint spacing		>12 Joint spacing		>12 Joint spacing		>12 Joint spacing		>12 Joint spacing	
Secondary Category		Secondary Category		Secondary Category		Secondary Category		Secondary Category		Secondary Category	
Rural		Design Life = 20 Years		Design Life = 20 Years		Design Life = 20 Years		Design Life = 20 Years		Design Life = 20 Years	
ShoulderCategory		ShoulderCategory		ShoulderCategory		ShoulderCategory		ShoulderCategory		ShoulderCategory	
Bituminous		Thick Bit		Thick Bit		Thick Bit		Thick Bit		Thick Bit	
CLICK HERE TO EDIT THIS ALTERNATE				CLICK HERE TO EDIT THIS ALTERNATE				CLICK HERE TO EDIT THIS ALTERNATE			
Notes:				Notes:				Notes:			
Year	Activity	Cost/Per Mile	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile
0		\$ 353,716.26	\$ 353,716.26	0		\$ 578,764.27	\$ 578,764.27	0		\$ 578,764.27	\$ 578,764.27
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ -	\$ -	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8	Crack Treatment	\$ 1,056.00	\$ 919.88	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12	Seal	\$ 12,495.78	\$ 10,159.27	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	ML Overlay 3.5	\$ 220,523.21	\$ 156,177.92	20	1st CPR	\$ 254,513.71	\$ 180,250.51	20	1st CPR	\$ 189,557.83	\$ 134,247.76
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Crack Treatment	\$ 2,112.00	\$ 1,420.31	23		\$ -	\$ -	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26	Seal	\$ 8,567.38	\$ 5,377.39	27		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
28		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
29		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
30		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
31		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
32		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
33		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
34		\$ -	\$ -	35	Remove and Replace	\$ 536,575.96	\$ 293,373.28	35	2nd CPR	\$ 168,773.20	\$ 92,276.86
35		\$ -	\$ -	36		\$ -	\$ -	36		\$ -	\$ -
36		\$ -	\$ -	37		\$ -	\$ -	37		\$ -	\$ -
37	ML Overlay 3.5"	\$ 220,523.21	\$ 116,482.36	37		\$ -	\$ -	38		\$ -	\$ -
38		\$ -	\$ -	38		\$ -	\$ -	39		\$ -	\$ -
39		\$ -	\$ -	39		\$ -	\$ -	39		\$ -	\$ -
40	Crack Treatment	\$ 2,112.00	\$ 1,059.31	40		\$ -	\$ -	40		\$ -	\$ -
41		\$ -	\$ -	41		\$ -	\$ -	41		\$ -	\$ -
42		\$ -	\$ -	42		\$ -	\$ -	42		\$ -	\$ -
43		\$ -	\$ -	43		\$ -	\$ -	43		\$ -	\$ -
44	Chip Seal	\$ 8,567.38	\$ 4,010.62	44		\$ -	\$ -	44		\$ -	\$ -
45		\$ -	\$ -	45		\$ -	\$ -	45		\$ -	\$ -
46		\$ -	\$ -	46		\$ -	\$ -	46		\$ -	\$ -
47		\$ -	\$ -	47		\$ -	\$ -	47		\$ -	\$ -
48		\$ -	\$ -	48		\$ -	\$ -	48		\$ -	\$ -
49		\$ -	\$ -	49		\$ -	\$ -	49		\$ -	\$ -
50	4/17 Remaining Life	\$ (51,887.81)	\$ (21,901.74)	50	5/20 Remaining	\$ (34,143.99)	\$ (56,621.92)	50	0/0 Remaining	\$ -	\$ -
Net Present Cost for Segment				Net Present Cost for Segment				Net Present Cost for Segment			
\$ 4,711,936.13				\$ 7,478,203.73				\$ 5,047,719.61			
Maintenance - Net Present Cost for Segment				Maintenance - Net Present Cost for Segment				\$ 3,131,684.06			
Equivalent Annual Cost				Equivalent Annual Cost				\$ 225,160.59			

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	50	26	2	50	26	2	50
Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix
16	2	WEARING COURSE MIXTURE (3,1)	14	2	WEARING COURSE MIXTURE (2,1)	14	2	WEARING COURSE MIXTURE (2,1)
Width of Rounding Aggregate	white/ >7 million N	WEARING COURSE MIXTURE (2,1)	Width of Rounding Aggregate	white/ >7 million N	WEARING COURSE MIXTURE (2,1)	Width of Rounding Aggregate	white/ >7 million N	WEARING COURSE MIXTURE (2,1)
3		SL Mix	3		SL Mix	3		SL Mix
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N	4.5		Y	6		Y	6	
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
1.5			12	11		12	11	
Design Life	Shdr Thickness		Design Life	Shdr Thickness		Design Life	Shdr Thickness	
20	3		20	4		35	4	

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
3003-47	35
Highway	Discount Rate
65	1.74%
Date	
10/30/2015	
Performed By	Darren Nelson

CLEAR ALL

District 3 - 2015/2016 prices

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill, 5" Conc WT, 3" Bit Shldr \$9,350,706.83	2" Mill, 8" Reclain, 5" Bit ML, 3: Bit Shldr \$7,211,246.90	2" ML M&F, 1.5" Full Width OL \$5,758,712.74	13.4 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 9,350,706.83	\$ 7,211,246.90	\$ 5,758,712.74	Total
% of Low Cost	162.4%		125.2%	100.0% 13.4

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill, 5" Conc WT, 3" Bit Shldr \$4,376,921.63	2" Mill, 8" Reclain, 5" Bit ML, 3: Bit Shldr \$2,365,337.90	2" ML M&F, 1.5" Full Width OL \$3,113,874.34	13.4 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 4,376,921.63	\$ 2,365,337.90	\$ 3,113,874.34	Total
Bid Adjustment Factor	\$ 2,011,583.73	\$ -	\$ 748,536.45	13.4

Segment 1											
SEG	Length	SEG	Length	SEG							
1	13.4	1	13.4	1	13.4						
ALT		ALT		ALT							
1	2" Mill, 5" Conc WT, 3" Bit Shldr	2	2" Mill, 8" Reclain, 5" Bit ML, 3: Bit Shldr	3	2" ML M&F, 1.5" Full Width OL						
Pavement Type	PCC	Pavement Type	HMA	Pavement Type	HMA						
Primary Category	6'X6' ≤ 5.0" Thickness	Primary Category	20 Year HMA	Primary Category	Overlay, DL >13 to 17 years						
Secondary Category		Secondary Category	Rural	Secondary Category	Rural						
Design Life = 20 Years		ShoulderCategory	Bituminous	ShoulderCategory	Bituminous						
Notes:	CLICK HERE TO EDIT THIS ALTERNATE	Notes:	CLICK HERE TO EDIT THIS ALTERNATE	Notes:	CLICK HERE TO EDIT THIS ALTERNATE						
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	2" Mill,5" WT,3" Bit Shld	\$ 371,178.00	\$ 371,178.00	0	2" Mill,8" Rclm,5" Bit ML	\$ 361,635.00	\$ 361,635.00	0	2" ML M&F, 1.5" FW OL	\$ 197,376.00	\$ 197,376.00
1	\$ -	\$ -	\$ -	1	\$ -	\$ -	\$ -	1	\$ -	\$ -	\$ -
2	\$ -	\$ -	\$ -	2	\$ -	\$ -	\$ -	2	\$ -	\$ -	\$ -
3	\$ -	\$ -	\$ -	3	\$ -	\$ -	\$ -	3	\$ -	\$ -	\$ -
4	\$ -	\$ -	\$ -	4	\$ -	\$ -	\$ -	4	\$ -	\$ -	\$ -
5	\$ -	\$ -	\$ -	5	\$ -	\$ -	\$ -	5	\$ -	\$ -	\$ -
6	\$ -	\$ -	\$ -	6	\$ -	\$ -	\$ -	6	\$ -	\$ -	\$ -
7	\$ -	\$ -	\$ -	7	\$ -	\$ -	\$ -	7	\$ -	\$ -	\$ -
8	\$ -	\$ -	\$ -	8	Crack Treatment	\$ 1,056.00	\$ 919.88	8	Seal	\$ 8,334.20	\$ 7,386.21
9	\$ -	\$ -	\$ -	9	\$ -	\$ -	\$ -	9	\$ -	\$ -	\$ -
10	\$ -	\$ -	\$ -	10	\$ -	\$ -	\$ -	10	\$ -	\$ -	\$ -
11	\$ -	\$ -	\$ -	11	\$ -	\$ -	\$ -	11	\$ -	\$ -	\$ -
12	\$ -	\$ -	\$ -	12	Seal	\$ 12,194.89	\$ 9,914.64	12	\$ -	\$ -	\$ -
13	\$ -	\$ -	\$ -	13	\$ -	\$ -	\$ -	13	\$ -	\$ -	\$ -
14	\$ -	\$ -	\$ -	14	\$ -	\$ -	\$ -	14	\$ -	\$ -	\$ -
15	\$ -	\$ -	\$ -	15	\$ -	\$ -	\$ -	15	ML Overlay 3.5"	\$ 197,900.62	\$ 152,781.64
16	\$ -	\$ -	\$ -	16	\$ -	\$ -	\$ -	16	\$ -	\$ -	\$ -
17	\$ -	\$ -	\$ -	17	\$ -	\$ -	\$ -	17	Crack Treatment	\$ 2,112.00	\$ 1,548.26
18	\$ -	\$ -	\$ -	18	\$ -	\$ -	\$ -	18	\$ -	\$ -	\$ -
19	\$ -	\$ -	\$ -	19	\$ -	\$ -	\$ -	19	Crack Treatment	\$ 2,112.00	\$ 1,548.26
20	1st CPR	\$ 381,664.17	\$ 270,300.42	20	ML Overlay 3.5	\$ 246,985.45	\$ 174,918.89	20	\$ -	\$ -	\$ -
21	\$ -	\$ -	\$ -	21	\$ -	\$ -	\$ -	21	\$ -	\$ -	\$ -
22	\$ -	\$ -	\$ -	22	\$ -	\$ -	\$ -	22	Seal	\$ 8,334.20	\$ 5,702.24
23	\$ -	\$ -	\$ -	23	Crack Treatment	\$ 2,112.00	\$ 1,420.31	23	\$ -	\$ -	\$ -
24	\$ -	\$ -	\$ -	24	\$ -	\$ -	\$ -	24	\$ -	\$ -	\$ -
25	\$ -	\$ -	\$ -	25	\$ -	\$ -	\$ -	25	\$ -	\$ -	\$ -
26	\$ -	\$ -	\$ -	26	\$ -	\$ -	\$ -	26	\$ -	\$ -	\$ -
27	\$ -	\$ -	\$ -	27	Seal	\$ 8,334.20	\$ 5,231.03	27	\$ -	\$ -	\$ -
28	\$ -	\$ -	\$ -	28	\$ -	\$ -	\$ -	28	ML Overlay 3.5"	\$ 197,900.62	\$ 120,001.56
29	\$ -	\$ -	\$ -	29	\$ -	\$ -	\$ -	29	\$ -	\$ -	\$ -
30	Remove and Replace	\$ 442,336.55	\$ 263,633.64	30	\$ -	\$ -	\$ -	30	\$ -	\$ -	\$ -
31	\$ -	\$ -	\$ -	31	\$ -	\$ -	\$ -	31	\$ -	\$ -	\$ -
32	\$ -	\$ -	\$ -	32	\$ -	\$ -	\$ -	32	Crack Treatment	\$ 2,112.00	\$ 1,216.07
33	\$ -	\$ -	\$ -	33	\$ -	\$ -	\$ -	33	\$ -	\$ -	\$ -
34	\$ -	\$ -	\$ -	34	\$ -	\$ -	\$ -	34	\$ -	\$ -	\$ -
35	30/35 Remaining	\$ (379,145.62)	\$ (207,298.13)	35	2/17 Remaining Life	\$ (29,057.11)	\$ (15,087.00)	35	Remaining Life	\$ (106,561.87)	\$ (58,262.78)
Net Present Cost for Segment	\$ 9,350,706.83	Net Present Cost for Segment	\$ 7,211,246.90	Net Present Cost for Segment	\$ 5,758,712.74						
Maintenance - Net Present Cost for Segment	\$ 4,376,921.63	Maintenance - Net Present Cost for Segment	\$ 2,365,337.90	Maintenance - Net Present Cost for Segment	\$ 3,113,874.34						
Equivalent Annual Cost	\$ 358,968.66	Equivalent Annual Cost	\$ 276,853.93	Equivalent Annual Cost	\$ 223,073.92						

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	35	24	2	35	24	2	35
Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
13	2		13	2		13	2	
Width of Rounding Aggregate	white/ >7 million	SL Mix	Width of Rounding Aggregate	white/ >7 million	SL Mix	Width of Rounding Aggregate	white/ >7 million	SL Mix
4	Y	WEARING COURSE MIXTURE (2,1)	4	N	WEARING COURSE MIXTURE (2,1)	4	N	WEARING COURSE MIXTURE (2,1)
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N	5		N	5		N	3.5	
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
6			1.5			1.5		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
20	3		20	3		15	1.5	

35 - Year

Project Number	Analysis Period
3102-46	35
Highway	Discount Rate
2	2.00%
Date	
4/10/2015	
Performed By	
ko	CLEAR ALL

District 2 - 2014/2015 prices

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LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	7" Reconstruct Bit \$452,985.09	6.0" concrete Reconstruct. \$481,681.70	6.5" concrete reconstruct \$498,719.86	0.3 Miles
Segment #2 Net Present Cost				0.0 Miles
Segment #3 Net Present Cost				0.0 Miles
Segment #4 Net Present Cost				0.0 Miles
Segment #5 Net Present Cost				0.0 Miles
Segment #6 Net Present Cost				0.0 Miles
Segment #7 Net Present Cost				0.0 Miles
Segment #8 Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 452,985.09	\$ 481,681.70	\$ 498,719.86	Total
% of Low Cost	100.0%	106.3%	110.1%	0.3

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	7" Reconstruct Bit \$51,460.98	6.0" concrete Reconstruct. \$41,693.83	6.5" concrete reconstruct \$27,680.27	0.3 Miles
Segment #2 Net Present Cost				0.0 Miles
Segment #3 Net Present Cost				0.0 Miles
Segment #4 Net Present Cost				0.0 Miles
Segment #5 Net Present Cost				0.0 Miles
Segment #6 Net Present Cost				0.0 Miles
Segment #7 Net Present Cost				0.0 Miles
Segment #8 Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 51,460.98	\$ 41,693.83	\$ 27,680.27	Total
Bid Adjustment Factor	\$ 23,780.71	\$ 14,013.57	\$ -	0.3

35-Year Analysis Period

50 - Year

50-Year Analysis Period

Project Number	Analysis Period
3108-70	50
Highway	Discount Rate
38	1.74%
Date	
2/25/2016	
Performed By	
ko	

CLEAR ALL

District 1 - 2015/2016 prices

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	18" regrade HMA Net Present Cost \$6,804,716.36	18" Regrade - conc \$9,535,836.73	18" Regrade - Conc \$8,447,151.95	10.3 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 6,804,716.36	\$ 9,535,836.73	\$ 8,447,151.95	Total
% of Low Cost	100.0%	140.1%	124.1%	10.3

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	18" regrade HMA Net Present Cost \$1,959,762.64	18" Regrade - conc \$3,233,651.89	18" Regrade - Conc \$1,855,482.31	10.3 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 1,959,762.64	\$ 3,233,651.89	\$ 1,855,482.31	Total
Bid Adjustment Factor	\$ 104,280.33	\$ 1,378,169.58	\$ -	10.3

Segment 1											
SEG	Length	SEG	Length	SEG							
1	10.28	1	10.28	1	10.28						
ALT	Description	ALT	Description	ALT	Description						
1	18" regrade HMA	2	18" Regrade - conc	3	18" Regrade - Conc						
Pavement Type		Pavement Type		Pavement Type							
HMA	PCC	PCC	PCC	PCC	PCC						
Primary Category	Primary Category	Primary Category	Primary Category	Primary Category	Primary Category						
20 Year HMA	>12 Joint spacing	>12 Joint spacing	>12 Joint spacing	>12 Joint spacing	>12 Joint spacing						
Secondary Category	Secondary Category	Secondary Category	Secondary Category	Secondary Category	Secondary Category						
Rural	Design Life = 20 Years	Design Life = 35 Years	Design Life = 35 Years	Design Life = 35 Years	Design Life = 35 Years						
ShoulderCategory	ShoulderCategory	Aggregate	Aggregate	Aggregate	Aggregate						
Notes:	Notes:	Notes:	Notes:	Notes:	Notes:						
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/mile
0		\$ 471,299.00	\$ 471,299.00	0		\$ 613,053.00	\$ 613,053.00	0		\$ 641,213.00	\$ 641,213.00
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ -	\$ -	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8	Crack Treatment	\$ 1,056.00	\$ 919.88	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12	Seal	\$ 10,856.01	\$ 8,826.11	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	ML Overlay 3.5	\$ 149,876.75	\$ 106,145.02	20	1st CPR	\$ 194,652.48	\$ 137,855.87	20	1st CPR	\$ 134,568.72	\$ 95,303.63
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Crack Treatment	\$ 2,112.00	\$ 1,420.31	23		\$ -	\$ -	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27	Seal	\$ 7,288.68	\$ 4,574.80	27		\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35		\$ -	\$ -	35	Remove and Replace	\$ 400,478.74	\$ 218,962.03	35	2nd CPR	\$ 155,812.80	\$ 85,190.75
36		\$ -	\$ -	36		\$ -	\$ -	36		\$ -	\$ -
37	ML Overlay 3.5"	\$ 149,876.75	\$ 79,166.26	37		\$ -	\$ -	37		\$ -	\$ -
38		\$ -	\$ -	38		\$ -	\$ -	38		\$ -	\$ -
39		\$ -	\$ -	39		\$ -	\$ -	39		\$ -	\$ -
40	Crack Treatment	\$ 2,112.00	\$ 1,059.31	40		\$ -	\$ -	40		\$ -	\$ -
41		\$ -	\$ -	41		\$ -	\$ -	41		\$ -	\$ -
42		\$ -	\$ -	42		\$ -	\$ -	42		\$ -	\$ -
43		\$ -	\$ -	43		\$ -	\$ -	43		\$ -	\$ -
44	Chip Seal	\$ 7,288.68	\$ 3,412.03	44		\$ -	\$ -	44		\$ -	\$ -
45		\$ -	\$ -	45		\$ -	\$ -	45		\$ -	\$ -
46		\$ -	\$ -	46		\$ -	\$ -	46		\$ -	\$ -
47		\$ -	\$ -	47		\$ -	\$ -	47		\$ -	\$ -
48		\$ -	\$ -	48		\$ -	\$ -	48		\$ -	\$ -
49		\$ -	\$ -	49		\$ -	\$ -	49		\$ -	\$ -
50	4/17 Remaining Life	\$ (35,265.12)	\$ (14,885.34)	50	5/20 Remaining	\$ (100,119.69)	\$ (42,260.32)	50	0/0 Remaining	\$ -	\$ -
Net Present Cost for Segment		\$ 6,804,716.36	\$ Net Present Cost for Segment		\$ 9,535,836.73	\$ Net Present Cost for Segment		\$ 8,447,151.95			
Maintenance - Net Present Cost for Segment		\$ 1,959,762.64	\$ Maintenance - Net Present Cost for Segment		\$ 2,333,651.89	\$ Maintenance - Net Present Cost for Segment		\$ 1,855,482.31			
Equivalent Annual Cost		\$ 204,882.61	\$ Equivalent Annual Cost		\$ 287,113.68	\$ Equivalent Annual Cost		\$ 254,334.57			

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	50	24	2	50	24	2	50
Total Shdr Width	# of Shldr	ML Mix	Total Shdr Width	# of Shldr	ML Mix	Total Shdr Width	# of Shldr	ML Mix
2	2	2	2	2	2	2	2	2
Width of Rounding Aggregate	white/>7 million	WEARING COURSE MIXTURE (3,	Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix
2	N	SL Mix	2	N	SL Mix	2	N	SL Mix
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
	Y			Y			Y	
ML Top Lift / joint spacing	# Dowels per Lane	1.5	ML Top Lift / joint spacing	# Dowels per Lane	12	ML Top Lift / joint spacing	# Dowels per Lane	11
Design Life	Shldr Thickness	20	Design Life	Shldr Thickness	b	Design Life	Shldr Thickness	35
	5			5			5	

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
SP 3108-76	35
Highway	Discount Rate
TH 38	1.58%
Date	
10/2/2016	
Performed By	Amy Thorson

CLEAR ALL

D1 - 2016/2017 prices

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill, 4" Overlay Net Present Cost \$1,736,109.90	20 Year HMA \$3,630,709.62	PCC \$4,234,245.09	6.3 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 1,736,109.90	\$ 3,630,709.62	\$ 4,234,245.09	Total
% of Low Cost	100.0%	209.1%	243.9%	6.3

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill, 4" Overlay Net Present Cost \$862,539.30	20 Year HMA \$975,990.42	PCC \$780,295.29	6.3 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 862,539.30	\$ 975,990.42	\$ 780,295.29	Total
Bid Adjustment Factor	\$ 82,244.01	\$ 195,695.13	\$ -	6.3

Segment 1					
SEG	Length	SEG	Length	SEG	
1	6.3	1	6.3	1	6.3
ALT	Description	ALT	Description	ALT	Description
1	2" Mill, 4" Overlay	2	20 Year HMA	3	PCC
Pavement Type	HMA	Pavement Type	HMA	Pavement Type	PCC
Primary Category	20 Year HMA	Primary Category	20 Year HMA	Primary Category	>12 Joint spacing
Secondary Category	Rural	Secondary Category	Rural	Secondary Category	Design Life 35 Years
ShoulderCategory	Bituminous	ShoulderCategory	Bituminous	ShoulderCategory	Thin Bit
CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE	
DELETE		DELETE		DELETE	
Notes:					
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	
0		\$ 138,662.00	\$ 138,662.00	0	
1		\$ -	\$ -	1	
2		\$ -	\$ -	2	
3		\$ -	\$ -	3	
4		\$ -	\$ -	4	
5		\$ -	\$ -	5	
6		\$ -	\$ -	6	
7		\$ -	\$ -	7	
8	Crack Treatment	\$ 1,056.00	\$ 931.53	8	
9		\$ -	\$ -	9	
10		\$ -	\$ -	10	
11		\$ -	\$ -	11	
12	Seal	\$ 15,018.15	\$ 12,442.80	12	
13		\$ -	\$ -	13	
14		\$ -	\$ -	14	
15		\$ -	\$ -	15	
16		\$ -	\$ -	16	
17		\$ -	\$ -	17	
18		\$ -	\$ -	18	
19		\$ -	\$ -	19	
20	ML Overlay 4	\$ 173,673.64	\$ 126,931.60	20	
21		\$ -	\$ -	21	
22		\$ -	\$ -	22	
23	Crack Treatment	\$ 2,112.00	\$ 1,472.67	23	
24		\$ -	\$ -	24	
25		\$ -	\$ -	25	
26		\$ -	\$ -	26	
27	Seal	\$ 10,591.40	\$ 6,936.36	27	
28		\$ -	\$ -	28	
29		\$ -	\$ -	29	
30		\$ -	\$ -	30	
31		\$ -	\$ -	31	
32		\$ -	\$ -	32	
33		\$ -	\$ -	33	
34		\$ -	\$ -	34	
35	2/17 Remaining Life	\$ (20,432.19)	\$ (11,803.96)	35	
2/17 Remaining Life					
Notes:					
Year	Activity	Cost	Pres. Cost/per Mile	Year	
0		\$ 421,384.00	\$ 421,384.00	0	
1		\$ -	\$ -	1	
2		\$ -	\$ -	2	
3		\$ -	\$ -	3	
4		\$ -	\$ -	4	
5		\$ -	\$ -	5	
6		\$ -	\$ -	6	
7		\$ -	\$ -	7	
8	Crack Treatment	\$ 1,056.00	\$ 931.53	8	
9		\$ -	\$ -	9	
10		\$ -	\$ -	10	
11		\$ -	\$ -	11	
12	Seal	\$ 15,018.15	\$ 12,442.80	12	
13		\$ -	\$ -	13	
14		\$ -	\$ -	14	
15		\$ -	\$ -	15	
16		\$ -	\$ -	16	
17		\$ -	\$ -	17	
18		\$ -	\$ -	18	
19		\$ -	\$ -	19	
20	ML Overlay 4	\$ 200,839.45	\$ 146,786.07	20	
21		\$ -	\$ -	21	
22		\$ -	\$ -	22	
23	Crack Treatment	\$ 2,112.00	\$ 1,472.67	23	
24		\$ -	\$ -	24	
25		\$ -	\$ -	25	
26		\$ -	\$ -	26	
27	Seal	\$ 10,591.40	\$ 6,936.36	27	
28		\$ -	\$ -	28	
29		\$ -	\$ -	29	
30		\$ -	\$ -	30	
31		\$ -	\$ -	31	
32		\$ -	\$ -	32	
33		\$ -	\$ -	33	
34		\$ -	\$ -	34	
35	2/17 Remaining Life	\$ (23,628.17)	\$ (13,650.32)	35	
2/17 Remaining Life					
Notes:					
1st CPR	\$ 169,466.01	\$ 123,856.39			
Equivalent Annual Cost					
Net Present Cost for Segment	\$ 1,736,109.90	\$ 3,630,709.62	\$ 4,234,245.09		
Maintenance - Net Present Cost for Segment	\$ 862,539.30	\$ 975,990.42	\$ 780,295.29		
Equivalent Annual Cost	\$ 64,957.21	\$ 135,844.38	\$ 158,425.88		

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	35	24	2	35
Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix
8	2	WEARING COURSE MIXTURE (3,1	8	2	WEARING COURSE MIXTURE (3,C
Width of Rounding Aggregate	white/->7 million	SL Mix	Width of Rounding Aggregate	white/->7 million	SL Mix
0	N	WEARING COURSE MIXTURE (3,1	1.5	N	WEARING COURSE MIXTURE (3,C
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N	4		N	6	
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
2			2		
Design Life	Shdr Thickness		Design Life	Shdr Thickness	
15	2		20	3	
Wearing Course Mixtures					
Wear Layer					
Base Layer					
Subgrade					
Soil Mix					
Wear Layer					
Base Layer					
Subgrade					
Soil Mix					

35-Year Analysis Period		50-Year Analysis Period
Project Number	Analysis Period	
1307-01	35	
Highway	Discount Rate	
0%	1.1%	
Data		
1/1/2015		
Permitting End		
KO		

CLEAR ALL

District 2 - 2015/2016 prices.

35 - Year

50-Year Analysis Period

Segment 1	
SEG	Length
1	4.0
ALT	2.0
1	Description
ALT	Description
1	1" mill & T overlay
2	1" mill & T overlay
1	5.0" BCOA
ALT	5.0" BCOA
1	Reclaim
ALT	Reclaim
1	Pavement Type
ALT	Pavement Type
1	PCB
ALT	PCB
Primary Category	PCB
Secondary Category	PCB
Design Life = 20 Years	PCB
Shoulder Category	PCB
Aggregate	PCB
Notes:	CLICK HERE TO EDIT THIS ALTERNATE
Notes:	CLICK HERE TO EDIT THIS ALTERNATE
Notes:	CLICK HERE TO EDIT THIS ALTERNATE

Segment 2	
SEG	Length
1	4.0
ALT	2.0
1	Description
ALT	Description
1	1" mill & T overlay
2	1" mill & T overlay
1	5.0" BCOA
ALT	5.0" BCOA
1	Reclaim
ALT	Reclaim
1	Pavement Type
ALT	Pavement Type
1	PCB
ALT	PCB
Primary Category	PCB
Secondary Category	PCB
Design Life = 20 Years	PCB
Shoulder Category	PCB
Aggregate	PCB
Notes:	CLICK HERE TO EDIT THIS ALTERNATE
Notes:	CLICK HERE TO EDIT THIS ALTERNATE
Notes:	CLICK HERE TO EDIT THIS ALTERNATE

LCCA SUMMARY					
Alternate #1		Alternate #2		Alternate #3	
Length	Length	Length	Length	Length	Length
0.00 miles	0.00 miles	0.00 miles	0.00 miles	0.00 miles	0.00 miles
Segment #1 3" mill & T overlay	5.0" BCOA	Reclaim	6.6		
\$141,789.52	\$54,871,874.26	\$2,956,546.57			
Segment #2 ML Overlay	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #3 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #4 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #5 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #6 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #7 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #8 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #9 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #10 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #11 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #12 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #13 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #14 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #15 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #16 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #17 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #18 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #19 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #20 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #21 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #22 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #23 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #24 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #25 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #26 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #27 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #28 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #29 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #30 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #31 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #32 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #33 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #34 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Segment #35 Remaining Life	5.0" BCOA	Reclaim	6.6		
\$1,309,255.73	\$1,309,255.73	\$1,309,255.73			
Remaining Non Present Cost	\$ 857,058.81		\$ 3,700,091.98		\$ 1,400,232.36
Bid Adjustment Factor	\$ 1.00		\$ 2,741,534.17		\$ 445,600.44

BID ADJUSTMENT FACTOR SUMMARY					
Alternate #1		Alternate #2		Alternate #3	
Length	Length	Length	Length	Length	Length
0.00 miles	0.00 miles	0.00 miles	0.00 miles	0.00 miles	0.00 miles
Segment #1 3" mill & T overlay	5.0" BCOA	Reclaim	6.6		
\$415,221.18	\$3,301,740.06	\$658,764.30			
Segment #2 ML Overlay	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #3 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #4 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #5 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #6 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #7 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #8 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #9 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #10 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #11 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #12 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #13 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #14 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #15 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #16 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #17 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #18 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #19 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #20 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #21 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #22 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #23 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #24 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #25 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #26 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #27 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #28 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #29 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #30 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #31 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #32 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #33 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #34 ML Overlay 3.5"	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73	\$541,635.73			
Segment #35 Remaining Life	5.0" BCOA	Reclaim	6.6		
\$541,635.73	\$1,309,255.73</td				

35-Year Analysis Period **50 - Year** **50-Year Analysis Period**

Project Number	Analysis Period
3401-20	50
Highway	Discount Rate
	1.74%
Date	
Performed By	CLEAR ALL

District 8 - 2015/2016 prices

(Redacted)

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	6" Whitetopping (35 YR) \$9,207,481.74	6" Whitetopping (20 YR) \$12,005,133.52	FDR + 4.5" HMA \$9,373,559.03	16.4 Miles
Segment #2 Net Present Cost				0.0 Miles
Segment #3 Net Present Cost				0.0 Miles
Segment #4 Net Present Cost				0.0 Miles
Segment #5 Net Present Cost				0.0 Miles
Segment #6 Net Present Cost				0.0 Miles
Segment #7 Net Present Cost				0.0 Miles
Segment #8 Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 9,207,481.74	\$ 12,005,133.52	\$ 9,373,559.03	Total: 16.4
% of Low Cost	100.0%	130.4%	101.8%	

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	6" Whitetopping (35 YR) \$3,123,363.84	6" Whitetopping (20 YR) \$5,921,015.63	FDR + 4.5" HMA \$3,976,583.02	16.4 Miles
Segment #2 Net Present Cost				0.0 Miles
Segment #3 Net Present Cost				0.0 Miles
Segment #4 Net Present Cost				0.0 Miles
Segment #5 Net Present Cost				0.0 Miles
Segment #6 Net Present Cost				0.0 Miles
Segment #7 Net Present Cost				0.0 Miles
Segment #8 Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 3,123,363.84	\$ 5,921,015.63	\$ 3,976,583.02	Total: 16.4
Bid Adjustment Factor	\$ -	\$ 2,797,651.79	\$ 853,219.17	

Segment 1											
SEG	Length	SEG	Length	SEG							
1	16.433	1	16.433	1	16.433						
ALT		ALT		ALT							
1	6" Whitetopping (35 YR)	2	6" Whitetopping (20 YR)	3	FDR + 4.5" HMA						
Pavement Type	PCC	Pavement Type	HMA	Pavement Type	HMA						
Primary Category	>12 Joint spacing	Primary Category	>12 Joint spacing	Primary Category	20 Year HMA						
Secondary Category		Secondary Category		Secondary Category	Rural						
Design Life 35 Years		Design Life < 20 Years		ShoulderCategory							
ShoulderCategory	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate						
Notes:	CLICK HERE TO EDIT THIS ALTERNATE	Notes:	CLICK HERE TO EDIT THIS ALTERNATE	Notes:	CLICK HERE TO EDIT THIS ALTERNATE						
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	6" UBOL (35 YR)	\$ 370,237.81	\$ 370,237.81	0	6" Whitetopping (20 YR)	\$ 370,237.81	\$ 370,237.81	0	FDR + 4.5" HMA	\$ 328,423.05	\$ 328,423.05
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ -	\$ -	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12		\$ -	\$ -	12	Seal	\$ 12,742.80	\$ 10,360.10
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	1st CPR	\$ 135,927.17	\$ 96,265.71	20	1st CPR	\$ 198,171.76	\$ 140,348.28	20	ML Overlay 3.5	\$ 191,794.73	\$ 135,831.97
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23		\$ -	\$ -	23	Crack Treatment	\$ 2,464.00	\$ 1,657.03
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27		\$ -	\$ -	27	Seal	\$ 8,733.73	\$ 5,481.79
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	2nd CPR	\$ 171,560.56	\$ 93,800.85	35	Remove and Replace	\$ 498,529.44	\$ 272,571.31	35			
36		\$ -	\$ -	36		\$ -	\$ -	36			
37		\$ -	\$ -	37		\$ -	\$ -	37	ML Overlay 3.5"	\$ 191,794.73	\$ 101,307.72
38		\$ -	\$ -	38		\$ -	\$ -	38			
39		\$ -	\$ -	39		\$ -	\$ -	39			
40		\$ -	\$ -	40		\$ -	\$ -	40	Crack Treatment	\$ 2,464.00	\$ 1,235.87
41		\$ -	\$ -	41		\$ -	\$ -	41			
42		\$ -	\$ -	42		\$ -	\$ -	42			
43		\$ -	\$ -	43		\$ -	\$ -	43			
44		\$ -	\$ -	44		\$ -	\$ -	44	Chip Seal	\$ 8,733.73	\$ 4,088.49
45		\$ -	\$ -	45		\$ -	\$ -	45			
46		\$ -	\$ -	46		\$ -	\$ -	46			
47		\$ -	\$ -	47		\$ -	\$ -	47			
48		\$ -	\$ -	48		\$ -	\$ -	48			
49		\$ -	\$ -	49		\$ -	\$ -	49			
50	0/0 Remaining	\$ -	\$ 5/20 Remaining	50	4/17 Remaining Life	\$ (52,607.07)	\$ (45,128.17)	50			
		\$ 9,207,481.74	\$ 12,005,133.52			\$ 9,373,559.03					
		Maintenance - Net Present Cost for Segment	\$ 3,123,363.84	Maintenance - Net Present Cost for Segment	\$ 5,921,015.63	Maintenance - Net Present Cost for Segment	\$ 3,976,583.02				
		Equivalent Annual Cost	\$ 277,227.27	Equivalent Annual Cost	\$ 361,461.52	Equivalent Annual Cost	\$ 282,227.68				

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
28	2	50	28	2	50	28	2	50
Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix
12	2		12	2		12	2	
Width of Rounding Aggregate	white/ > 7 million	SL Mix	Width of Rounding Aggregate	white/ > 7 million	SL Mix	Width of Rounding Aggregate	white/ > 7 million	SL Mix
3	Y		3	Y		3	N	
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N	6		N	6		N	6	
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
12	6		12	6		12	6	
Design Life	Shdr Thickness		Design Life	Shdr Thickness		Design Life	Shdr Thickness	
20	7		20	5		20	5	

35-Year Analysis Period **50 - Year** **50-Year Analysis Period**

Project Number	Analysis Period
3417-18	50
Highway	Discount Rate
	1.74%
Date	
Performed By	CLEAR ALL

District 8 - 2015/2016 prices

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	7" Whitetopping w/ PCC shldrs \$5,802,405.74	3.5" CIR + 3" HMA \$5,119,065.64	9" FDR (5" SFDR) + 2" HMA \$5,256,355.33	9.0 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 5,802,405.74	\$ 5,119,065.64	\$ 5,256,355.33	Total
% of Low Cost	113.3%	100.0%	102.7%	9.0

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	7" Whitetopping w/ PCC shldrs \$1,495,876.41	3.5" CIR + 3" HMA \$2,260,019.17	9" FDR (5" SFDR) + 2" HMA \$2,507,784.23	9.0 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 1,495,876.41	\$ 2,260,019.17	\$ 2,507,784.23	Total
Bid Adjustment Factor	\$ -	\$ 764,142.77	\$ 1,011,907.82	9.0

Segment 1											
SEG	Length	SEG	Length	SEG							
1	9.021	1	9.021	1	9.021						
ALT		ALT		ALT							
1	7" Whitetopping w/ PCC shldrs	2	3.5" CIR + 3" HMA	3	9" FDR (5" SFDR) + 2" HMA						
Pavement Type	HMA	Pavement Type	HMA	Pavement Type	HMA						
Primary Category	20 Year HMA	Primary Category	20 Year HMA	Primary Category	20 Year HMA						
Secondary Category	Rural	Secondary Category	Rural	Secondary Category	Rural						
Design Life 35 Years		ShoulderCategory	Bituminous	ShoulderCategory	Bituminous						
Notes:	CLICK HERE TO EDIT THIS ALTERNATE	Notes:	CLICK HERE TO EDIT THIS ALTERNATE	Notes:	CLICK HERE TO EDIT THIS ALTERNATE						
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	7" Whitetopping	\$ 477,389.35	\$ 477,389.35	0	3.5" CIR + 3" HMA	\$ 316,932.32	\$ 316,932.32	0	9" FDR (5" SFDR) + 2" HMA	\$ 304,685.86	\$ 304,685.86
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ -	\$ -	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8	Crack Treatment	\$ 1,056.00	\$ 919.88	8	Crack Treatment	\$ 1,144.00	\$ 996.53
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 12,724.64	\$ 10,345.34	12	Seal	\$ 13,409.56	\$ 10,902.19
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	ML Overlay 3.5	\$ 199,673.52	\$ 141,411.85	20	ML Overlay 4	\$ 231,905.20	\$ 164,238.82
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23	Crack Treatment	\$ 2,112.00	\$ 1,420.31	23	Crack Treatment	\$ 2,288.00	\$ 1,538.67
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ 8,882.79	\$ 5,575.35	27	Seal	\$ 9,332.03	\$ 5,857.33
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35		\$ -	\$ -	35		\$ -	\$ -	35		\$ -	\$ -
36		\$ -	\$ -	36		\$ -	\$ -	36		\$ -	\$ -
37		\$ -	\$ -	37	ML Overlay 3.5"	\$ 199,673.52	\$ 105,469.37	37	ML Overlay 3.5"	\$ 207,381.70	\$ 109,540.90
38		\$ -	\$ -	38		\$ -	\$ -	38		\$ -	\$ -
39		\$ -	\$ -	39		\$ -	\$ -	39		\$ -	\$ -
40		\$ -	\$ -	40	Crack Treatment	\$ 2,112.00	\$ 1,059.31	40	Crack Treatment	\$ 2,288.00	\$ 1,147.59
41		\$ -	\$ -	41		\$ -	\$ -	41		\$ -	\$ -
42		\$ -	\$ -	42		\$ -	\$ -	42		\$ -	\$ -
43		\$ -	\$ -	43		\$ -	\$ -	43		\$ -	\$ -
44		\$ -	\$ -	44	Chip Seal	\$ 8,882.79	\$ 4,158.27	44	Chip Seal	\$ 9,332.03	\$ 4,368.58
45		\$ -	\$ -	45		\$ -	\$ -	45		\$ -	\$ -
46		\$ -	\$ -	46		\$ -	\$ -	46		\$ -	\$ -
47		\$ -	\$ -	47		\$ -	\$ -	47		\$ -	\$ -
48		\$ -	\$ -	48		\$ -	\$ -	48		\$ -	\$ -
49		\$ -	\$ -	49		\$ -	\$ -	49		\$ -	\$ -
50		\$ -	\$ -	50	4/17 Remaining Life	\$ (46,982.01)	\$ (19,831.01)	50	4/17 Remaining Life	\$ (48,795.70)	\$ (20,596.57)
Net Present Cost for Segment		\$ 5,802,405.74	Net Present Cost for Segment		\$ 5,119,065.64	Net Present Cost for Segment		\$ 5,256,355.33	Net Present Cost for Segment		\$ 5,257,784.23
Maintenance - Net Present Cost for Segment		\$ 1,495,876.41	Maintenance - Net Present Cost for Segment		\$ 2,260,019.17	Maintenance - Net Present Cost for Segment		\$ 2,507,784.23	Maintenance - Net Present Cost for Segment		\$ 2,507,784.23
Equivalent Annual Cost		174,704.13	Equivalent Annual Cost		154,129.50	Equivalent Annual Cost		158,263.15	Equivalent Annual Cost		

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
26	2	50	24	2	50	26	2	50
Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
14	2		16	2	WEARING COURSE MIXTURE (4,1)	14	2	WEARING COURSE MIXTURE (4,8)
Width of Rounding Aggregate	white/ > 7 million	SL Mix	Width of Rounding Aggregate	white/ > 7 million	SL Mix	Width of Rounding Aggregate	white/ > 7 million	SL Mix
5	N	WEARING COURSE MIXTURE (3,B)	5	N	WEARING COURSE MIXTURE (3,B)	5	N	WEARING COURSE MIXTURE (3,B)
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N	7		N			N		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
15	6		15	6		2		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
35	4		20	3		20	3	

35-Year Analysis Period		35 - Year		50-Year Analysis Period	
Project Number	Analysis Period				
3515-16	35				
Highway	Discount Rate				
175	1.74%				
Date					
1/5/2016					
Performed By					
KO					
CLEAR ALL					
District 2 - 2015/2016 prices					

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	2" mill & 2" OL \$2,574,582.91	6" unbonded concrete \$6,947,465.00	CIR \$3,307,246.63	9.6 Miles
Segment #2 Net Present Cost				0.0 Miles
Segment #3 Net Present Cost				0.0 Miles
Segment #4 Net Present Cost				0.0 Miles
Segment #5 Net Present Cost				0.0 Miles
Segment #6 Net Present Cost				0.0 Miles
Segment #7 Net Present Cost				0.0 Miles
Segment #8 Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 2,574,582.91	\$ 6,947,465.00	\$ 3,307,246.63	Total
% of Low Cost	100.0%	269.8%	128.5%	9.6

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	2" mill & 2" OL \$1,577,623.05	6" unbonded concrete \$1,548,180.25	CIR \$1,662,380.15	9.6 Miles
Segment #2 Net Present Cost				0.0 Miles
Segment #3 Net Present Cost				0.0 Miles
Segment #4 Net Present Cost				0.0 Miles
Segment #5 Net Present Cost				0.0 Miles
Segment #6 Net Present Cost				0.0 Miles
Segment #7 Net Present Cost				0.0 Miles
Segment #8 Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 1,577,623.05	\$ 1,548,180.25	\$ 1,662,380.15	Total
Bid Adjustment Factor	\$ 29,442.80	\$ -	\$ 114,199.91	9.6

Segment 1											
SEG	Length	SEG	Length	SEG							
1	9.649	1	9.649	1	9.649						
ALT		ALT		ALT							
1	2" mill & 2" OL	2	6" unbonded concrete	3	CIR						
Pavement Type		Pavement Type		Pavement Type							
HMA		PCC		HMA							
Primary Category		Primary Category		Primary Category							
Overlay, DL > 17 years		>12 Joint Spacing		20 Year HMA							
Secondary Category		Secondary Category		Secondary Category							
Rural		Design Life > 20 Years		Rural							
ShoulderCategory		ShoulderCategory		ShoulderCategory							
Aggregate		Aggregate		Aggregate							
Notes:		Notes:		Notes:							
CLICK HERE TO EDIT THIS ALTERNATE											
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0		\$ 103,322.61	\$ 103,322.61	0		\$ 559,569.36	\$ 559,569.36	0		\$ 170,470.15	\$ 170,470.15
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,464.00	\$ 2,339.73	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 8,544.34	\$ 7,572.45	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8		\$ -	\$ -	8	Crack Treatment	\$ 1,232.00	\$ 1,073.19
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12		\$ -	\$ -	12	Seal	\$ 12,706.22	\$ 10,330.37
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17	ML Overlay 3.5"	\$ 179,563.61	\$ 133,924.14	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	Crack Treatment	\$ 2,464.00	\$ 1,745.04	20	1st CPR	\$ 226,555.12	\$ 160,499.81	20	ML Overlay 4	\$ 238,955.88	\$ 169,232.22
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23		\$ -	\$ -	23	Crack Treatment	\$ 2,464.00	\$ 1,657.03
24	Seal	\$ 8,544.34	\$ 5,647.77	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27		\$ -	\$ -	27	Seal	\$ 8,544.34	\$ 5,362.92
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ 22,445.45	\$ 12,272.07	35	0/0 Remaining	\$ -	\$ -	35	2/17 Remaining Life	\$ (28,112.46)	\$ (15,370.50)
Net Present Cost for Segment	\$ 2,574,582.91	Net Present Cost for Segment	\$ 6,947,465.00	Net Present Cost for Segment	\$ 3,307,246.63						
Maintenance - Net Present Cost for Segment	\$ 1,577,623.05	Maintenance - Net Present Cost for Segment	\$ 1,548,180.25	Maintenance - Net Present Cost for Segment	\$ 1,662,380.15						
Equivalent Annual Cost	\$ 98,836.87	Equivalent Annual Cost	\$ 266,709.48	Equivalent Annual Cost	\$ 126,963.44						

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
28	2	35	28	2	35	28	2	35
Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix
12	2	WEARING COURSE MIXTURE (3,C)	12	2	WEARING COURSE MIXTURE (3,C)	12	2	WEARING COURSE MIXTURE (3,C)
Width of Rounding Aggregate	white/ >7 million	St. Mix	Width of Rounding Aggregate	white/ >7 million	St. Mix	Width of Rounding Aggregate	white/ >7 million	St. Mix
12	N		12	N		12	N	
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			Y	6		N		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
2			22			2		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
17	1		20	2		20	1	

35-Year Analysis Period 35 - Year 50-Year Analysis Period

Project Number	Analysis Period
SP 3605-41	35
Highway	Discount Rate
TH 11	1.58%
Date	
10/17/2016	
Performed By	
Amy Thorson	

CLEAR ALL

D1 - 2016/2017 prices

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	3" Mill, 3" Overlay \$1,605,522.41	20 Year HMA \$2,358,910.32	PCC \$2,883,088.53	4.0 Miles
Segment #2 Net Present Cost				0.0 Miles
Segment #3 Net Present Cost				0.0 Miles
Segment #4 Net Present Cost				0.0 Miles
Segment #5 Net Present Cost				0.0 Miles
Segment #6 Net Present Cost				0.0 Miles
Segment #7 Net Present Cost				0.0 Miles
Segment #8 Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 1,605,522.41	\$ 2,358,910.32	\$ 2,883,088.53	Total: 4.0
% of Low Cost	100.0%	146.5%		179.6%

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	3" Mill, 3" Overlay \$855,789.89	20 Year HMA \$673,375.36	PCC \$690,106.37	4.0 Miles
Segment #2 Net Present Cost				0.0 Miles
Segment #3 Net Present Cost				0.0 Miles
Segment #4 Net Present Cost				0.0 Miles
Segment #5 Net Present Cost				0.0 Miles
Segment #6 Net Present Cost				0.0 Miles
Segment #7 Net Present Cost				0.0 Miles
Segment #8 Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 855,789.89	\$ 673,375.36	\$ 690,106.37	Total: 4.0
Bid Adjustment Factor	\$ 182,414.53	\$ -	\$ 16,731.01	

Segment 1											
SEG	Length	SEG	Length	SEG							
1	4	1	4	1	4						
ALT	Description	ALT	Description	ALT	Description						
1	3" Mill, 3" Overlay	2	20 Year HMA	3	PCC						
Pavement Type	HMA	Pavement Type	HMA	Pavement Type	PCC						
Primary Category		Primary Category		Primary Category							
Overlay, DL >13 to 17 years		20 Year HMA		>12 Joint Spacing							
Secondary Category		Secondary Category		Secondary Category							
Rural		Rural		Design Life = 20 Years							
ShoulderCategory	Bituminous	ShoulderCategory	Bituminous	ShoulderCategory	Thick Bit						
	DELETE		DELETE		DELETE						
Notes:		Notes:		Notes:							
Year	Activity	Cost/Per Mile	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile
0		\$ 187,433.13	\$ 187,433.13	0		\$ 421,383.74	\$ 421,383.74	0		\$ 548,245.54	\$ 548,245.54
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,112.00	\$ 2,014.97	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 11,227.46	\$ 10,060.60	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8	Crack Treatment	\$ 1,056.00	\$ 931.53	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 15,838.87	\$ 13,122.78	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15	ML Overlay 3.5"	\$ 171,486.63	\$ 135,552.38	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	Crack Treatment	\$ 2,112.00	\$ 1,592.74	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	ML Overlay 4	\$ 219,436.90	\$ 160,378.26	20	1st CPR	\$ 236,058.81	\$ 172,526.59
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22	Seal	\$ 11,227.46	\$ 7,952.45	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23	Crack Treatment	\$ 2,112.00	\$ 1,472.67	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ 11,227.46	\$ 7,352.92	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29	ML Overlay 3.5"	\$ 171,486.63	\$ 108,840.93	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32	Crack Treatment	\$ 2,112.00	\$ 1,278.88	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (92,338.96)	\$ (53,345.48)	35	2/17 Remaining Life	\$ (25,816.11)	\$ (14,914.32)	35	0/0 Remaining	\$ -	\$ -
Net Present Cost for Segment	\$ 1,605,522.41	Net Present Cost for Segment	\$ 2,358,910.32	Net Present Cost for Segment	\$ 2,883,088.53						
Maintenance - Net Present Cost for Segment	\$ 855,789.89	Maintenance - Net Present Cost for Segment	\$ 673,375.36	Maintenance - Net Present Cost for Segment	\$ 690,106.37						
Equivalent Annual Cost	\$ 60,071.23	Equivalent Annual Cost	\$ 88,259.52	Equivalent Annual Cost	\$ 107,871.85						

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	35	24	2	35	24	2	35
Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix
16	2	WEARING COURSE MIXTURE (4,C	16	2	WEARING COURSE MIXTURE (3,C	16	2	WEARING COURSE MIXTURE (3,B)
Width of Rounding Aggregate	white/-7' million	SL Mix	Width of Rounding Aggregate	white/-7' million	SL Mix	Width of Rounding Aggregate	white/-7' million	SL Mix
2	N	WEARING COURSE MIXTURE (4,C	1.5	N	WEARING COURSE MIXTURE (3,C	1.5	N	WEARING COURSE MIXTURE (3,B)
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N	3		N	6		N	6	
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
1.5			2			1.5	11	
Design Life	Shdr Thickness		Design Life	Shdr Thickness		Design Life	Shdr Thickness	
15	3		20	3		15	3	

District	1
Performed By	CJM
Analysis Period	35
Discount Rate	2.2
ESALs	250,000

Project Number	3801-92
Date	2/27/2014
Funding Category	RS <input checked="" type="checkbox"/>
Low Cost Option #	1
Chosen Option #	1

District	1
Performed By	CJM
Analysis Period	35
Discount Rate	2.2
	250000

Project Number	3801-92
Date	2/27/2014
Funding Category	RS <input checked="" type="checkbox"/>
Low Cost Option #	1
Chosen Option #	1

* Equivalent Annual Cost is included for information only.

****Remaining Service Life Value is reported as a negative value.**

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
3803-34	35
Highway	Discount Rate
1	1.58%
Date	
12/13/2016	
Performed By	
Jamie Strandemo	

CLEAR ALL

D1 - 2016/2017 prices



LCCA SUMMARY			
	Alternate #1	Alternate #2	Alternate #3
Segment #1	3" Mill and Overlay	Thick Mill and Overlay (6")	Concrete Overly 35yr
Net Present Cost	\$5,984,666.98	\$6,808,351.63	\$9,344,371.69
Segment #2			
Net Present Cost			0.0 Miles
Segment #3			0.0 Miles
Net Present Cost			
Segment #4			0.0 Miles
Net Present Cost			
Segment #5			0.0 Miles
Net Present Cost			
Segment #6			0.0 Miles
Net Present Cost			
Segment #7			0.0 Miles
Net Present Cost			
Segment #8			0.0 Miles
Net Present Cost			
Project Net Present Cost	\$ 5,984,666.98	\$ 6,808,351.63	\$ 9,344,371.69
% of Low Cost	100.0%	113.8%	156.1%
Total			15.2

BID ADJUSTMENT FACTOR SUMMARY			
	Alternate #1	Alternate #2	Alternate #3
Segment #1	3" Mill and Overlay	Thick Mill and Overlay (6")	Concrete Overly 35yr
Net Present Cost	\$3,577,972.82	\$1,935,965.73	\$1,336,429.26
Segment #2			0.0 Miles
Net Present Cost			
Segment #3			0.0 Miles
Net Present Cost			
Segment #4			0.0 Miles
Net Present Cost			
Segment #5			0.0 Miles
Net Present Cost			
Segment #6			0.0 Miles
Net Present Cost			
Segment #7			0.0 Miles
Net Present Cost			
Segment #8			0.0 Miles
Net Present Cost			
Project Net Present Cost	\$ 3,577,972.82	\$ 1,935,965.73	\$ 1,336,429.26
Bid Adjustment Factor	\$ 2,241,543.56	\$ 599,536.46	\$ - 15.2

Segment 1					
SEG	Length	SEG	Length		
1	15.22	1	15.22		
ALT	Description	ALT	Description		
1	3" Mill and Overlay	2	Thick Mill and Overlay (6")		
Pavement Type		Pavement Type			
HMA		HMA			
Primary Category		Primary Category			
Overlay, DL >13 to 17 years		20 Year HMA			
Secondary Category		Secondary Category			
Urban		Rural			
ShoulderCategory		ShoulderCategory			
Thin		Bituminous			
CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE			
DELETE		DELETE			
Notes:					
Notes:					
Notes:					
Year	Activity	Cost/per Mile	Pres. Cost/per Mile		
0		\$ 158,127.08	\$ 158,127.08		
1		\$ -	\$ 320,130.48		
2		\$ -	\$ -		
3	Crack Treatment	\$ 1,936.00	\$ 1,847.06		
4		\$ -	\$ -		
5		\$ -	\$ -		
6		\$ -	\$ -		
7	Seal	\$ 9,602.77	\$ 8,604.77		
8		\$ -	\$ 853.91		
9		\$ -	\$ -		
10		\$ -	\$ -		
11		\$ -	\$ -		
12		\$ -	\$ 11,292.57		
13		\$ -	\$ -		
14		\$ -	\$ -		
15	ML Overlay 3.5"	\$ 187,542.98	\$ 148,244.19		
16		\$ -	\$ -		
17		\$ -	\$ -		
18	Crack Treatment	\$ 1,936.00	\$ 1,460.02		
19		\$ -	\$ -		
20		\$ -	\$ 162,036.59		
21		\$ -	\$ -		
22	Seal	\$ 9,602.77	\$ 6,801.68		
23		\$ -	\$ 1,349.95		
24		\$ -	\$ -		
25		\$ -	\$ -		
26		\$ -	\$ -		
27		\$ -	\$ 9,602.77		
28		\$ -	\$ -		
29	ML Overlay 4.0"	\$ 206,893.52	\$ 131,313.34		
30		\$ -	\$ -		
31		\$ -	\$ -		
32	Crack Treatment	\$ 1,936.00	\$ 1,172.31		
33		\$ -	\$ -		
34		\$ -	\$ -		
35	Remaining Life	\$ (111,404.21)	\$ (64,359.74)		
2/17 Remaining Life		\$ (19,063.13)			
0/0 Remaining		\$ (11,013.03)			
1st CPR					
\$ 120,142.18		\$ 87,807.44			
Net Present Cost for Segment					
\$ 5,984,666.98		\$ 6,808,351.63			
Net Present Cost for Segment					
\$ 6,808,351.63		\$ 9,344,371.69			
Maintenance - Net Present Cost for Segment					
\$ 3,577,972.82		\$ 1,935,965.73			
Maintenance - Net Present Cost for Segment					
\$ 1,935,965.73		\$ 1,336,429.26			
Equivalent Annual Cost					
\$ 223,918.58		\$ 254,737.05			
Equivalent Annual Cost					
\$ 254,737.05		\$ 349,623.20			

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
22	2	35	22	2	35	22	2	35
Total Shdr Width	# of Shldrs	ML Mix	Total Shdr Width	# of Shldrs	ML Mix	Total Shdr Width	# of Shldrs	ML Mix
6	2	WEARING COURSE MIXTURE (4.5 SL Mix)	6	2	WEARING COURSE MIXTURE (3.5 SL Mix)	6	2	WEARING COURSE MIXTURE (3.5 SL Mix)
Width of Rounding Aggregate	white/>7' million	N	Width of Rounding Aggregate	white/>7' million	N	Width of Rounding Aggregate	white/>7' million	N
1.5			1.5			1.5		
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			N			N		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
1.5			2			1.5		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
15	4		20	4		35	3	

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
4008-28	35
Highway	Discount Rate
	1.58%
Date	
Performed By	CLEAR ALL

D7 - 2016/2017 prices



LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	Bit M&O 3"	CIR and overlay	6" UCOL	12.7 Miles
	\$4,995,771.71	\$5,218,843.43	\$8,175,191.49	
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 4,995,771.71	\$ 5,218,843.43	\$ 8,175,191.49	Total
% of Low Cost	100.0%	104.5%	163.6%	12.7

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	Bit M&O 3"	CIR and overlay	6" UCOL	12.7 Miles
	\$2,926,048.87	\$2,681,916.82	\$2,187,046.05	
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 2,926,048.87	\$ 2,681,916.82	\$ 2,187,046.05	Total
Bid Adjustment Factor	\$ 739,002.82	\$ 494,870.77	\$ -	12.7

Segment 1											
SEG	Length	SEG	Length	SEG							
1	12.726	1	12.726	1	12.726						
ALT	Description	ALT	Description	ALT	Description						
1	BIT M&O 3"	2	CIR and overlay	3	6" UCOL						
Pavement Type		Pavement Type		Pavement Type							
HMA		HMA		PCC							
Primary Category		Primary Category		Primary Category							
Overlay, DL >13 to 17 years		20 Year HMA		>12 Joint spacing							
Secondary Category		Secondary Category		Secondary Category							
Rural		Rural		Design Life = 20 Years							
ShoulderCategory		ShoulderCategory		ShoulderCategory							
Aggregate		Aggregate		Aggregate							
CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE							
DELETE		DELETE		DELETE							
Notes:					Notes:						
Year					Year						
0					0						
3" M&O					\$ 162,637.34						
\$ 199,349.88					\$ 199,349.88						
CIR & overlay					0						
6" UCOL					\$ 470,544.20						
\$ 470,544.20					\$ 470,544.20						
Crack Treatment					\$ 2,464.00						
\$ 2,350.80					3						
Seal					\$ 8,947.11						
\$ 8,017.25					7						
Crack Treatment					\$ 1,232.00						
\$ 1,086.79					8						
ML Overlay 3.5"					\$ 188,382.78						
\$ 148,908.01					15						
Crack Treatment					\$ 2,464.00						
\$ 1,858.20					18						
ML Overlay 4					\$ 286,764.11						
\$ 209,585.21					20						
1st CPR					\$ 235,141.98						
\$ 171,856.52					\$ 171,856.52						
Seal					\$ 8,947.11						
\$ 6,337.27					22						
Crack Treatment					\$ 2,464.00						
\$ 1,718.11					23						
Remaining Life					\$ (101,436.88)						
\$ (58,601.48)					35						
2/17 Remaining Life					\$ (33,736.95)						
\$ (19,490.30)					35						
0/0 Remaining					\$ -						
Net Present Cost for Segment					\$ 4,995,771.71						
Net Present Cost for Segment					\$ 5,218,843.43						
Maintenance - Net Present Cost for Segment					\$ 2,681,916.82						
Maintenance - Net Present Cost for Segment					\$ 2,187,046.05						
Equivalent Annual Cost					\$ 186,918.69						
Equivalent Annual Cost					\$ 195,265.00						
Equivalent Annual Cost					\$ 305,877.88						

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
28	2	35	28	2	35	28	2	35
Total Shdr Width	# of Shldr	ML Mix	Total Shdr Width	# of Shldr	ML Mix	Total Shdr Width	# of Shldr	ML Mix
12	2	WEARING COURSE MIXTURE (4,	12	2	WEARING COURSE MIXTURE (4,	12	2	WEARING COURSE MIXTURE (4,
Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix
0	N		0	N		0	N	
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			N			N		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
1.5	2		2	2		12	11	
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
15	4		20	4		20	4	

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
4308-34	35
Highway	Discount Rate
	1.74%
Date	
Performed By	CLEAR ALL

District 8 - 2015/2016 prices

Segment 1											
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG	Length
1	11.819	1	11.819	1	11.819	1	11.819	1	11.819	1	11.819
ALT		ALT		ALT		ALT		ALT		ALT	
1	UTBWC + 3" Overlay	2	5" Bituminous Reconstruct	3	6" UBL	4	PCC	5	6" UBL	6	Description
Pavement Type	HMA	Pavement Type	HMA	Pavement Type	PCC	Pavement Type	PCC	Pavement Type	PCC	Pavement Type	
Primary Category	Overlay, DL > 17 years	Primary Category	>12 Joint spacing	Primary Category	>12 Joint spacing	Primary Category	>12 Joint spacing	Primary Category	>12 Joint spacing	Primary Category	
Secondary Category	20 Year HMA	Secondary Category	Secondary Category	Secondary Category	Secondary Category	Secondary Category	Secondary Category	Secondary Category	Secondary Category	Secondary Category	
Rural		Rural		Rural		Rural		Rural		Rural	
ShoulderCategory	Aggregate	ShoulderCategory	Aggregate	ShoulderCategory	Aggregate	ShoulderCategory	Aggregate	ShoulderCategory	Aggregate	ShoulderCategory	
Notes:		Notes:		Notes:		Notes:		Notes:		Notes:	
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	UTBWC + 3" Overlay	\$ 292,096.86	\$ 292,096.86	0	5" Bit. Reconstruct	\$ 884,554.87	\$ 884,554.87	0	6" UBL	\$ 500,181.58	\$ 500,181.58
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,288.00	\$ 2,172.61	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 8,109.89	\$ 7,187.41	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8	Crack Treatment	\$ 1,232.00	\$ 1,073.19	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 12,742.80	\$ 10,360.10	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	ML Overlay 3.5"	\$ 233,152.55	\$ 167,995.34	20	ML Overlay 3.5	\$ 250,086.29	\$ 177,114.95	20	1st CPR	\$ 198,171.76	\$ 140,348.28
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22	Crack Treatment	\$ 2,288.00	\$ 1,565.45	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23	Crack Treatment	\$ 2,464.00	\$ 1,657.03	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26	Seal	\$ 8,109.89	\$ 5,178.81	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ 8,733.73	\$ 5,481.79	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (25,905.84)	\$ (14,164.04)	35	2/17 Remaining Life	\$ (29,421.92)	\$ (16,086.45)	35	0/0 Remaining	\$ -	\$ -
Net Present Cost for Segment											
\$ 5,460,761.38											
Net Present Cost for Segment											
\$ 12,577,253.65											
Maintenance - Net Present Cost for Segment											
\$ 2,008,468.59											
Maintenance - Net Present Cost for Segment											
\$ 2,122,699.64											
Equivalent Annual Cost											
209,635.72											
Equivalent Annual Cost											
\$ 482,834.07											
Equivalent Annual Cost											
\$ 290,624.49											
Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
26	2	35	28	2	35	28	2	35	26	2	35
Total Shdr Width	# of Shldrs	ML Mix	Total Shdr Width	# of Shldrs	ML Mix	Total Shdr Width	# of Shldrs	ML Mix	Total Shdr Width	# of Shldrs	ML Mix
12	2	WEARING COURSE MIXTURE (3,C)	10	2	WEARING COURSE MIXTURE (3,C)	10	2	WEARING COURSE MIXTURE (3,C)	12	2	WEARING COURSE MIXTURE (3,C)
Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix
1.5	N		1.5	N		1.5	N		1.5	N	
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			N			N			N		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
1.5			1.5			1.5			1.5		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
19	3.5		20	5		19	3.5		19	3.5	

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
4713-14	35
Highway	Discount Rate
	1.58%
Date	
Performed By	CLEAR ALL

D8 - 2016/2017 prices

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	2.5" Mill and Overlay \$3,311,191.98	4" Mill and 4" PCC Whitetopping \$6,226,675.72	4" Mill + 4" CIR + 2" HMA \$4,017,160.02	8.2 Miles
Segment #2 Net Present Cost				0.0 Miles
Segment #3 Net Present Cost				0.0 Miles
Segment #4 Net Present Cost				0.0 Miles
Segment #5 Net Present Cost				0.0 Miles
Segment #6 Net Present Cost				0.0 Miles
Segment #7 Net Present Cost				0.0 Miles
Segment #8 Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 3,311,191.98	\$ 6,226,675.72	\$ 4,017,160.02	Total 8.2
% of Low Cost	100.0%	188.0%	121.3%	

BID ADJUSTMENT FACTOR SUMMARY					
	Alternate #1		Alternate #2		Alternate #3
Segment #1 Net Present Cost	2.5" Mill and Overlay \$2,054,709.99		4" Mill and 4" PCC Whitecapping \$3,074,400.42		4" Mill + 4" CIR + 2" HMA \$1,561,640.90
Segment #2 Net Present Cost					0.0 Miles
Segment #3 Net Present Cost					0.0 Miles
Segment #4 Net Present Cost					0.0 Miles
Segment #5 Net Present Cost					0.0 Miles
Segment #6 Net Present Cost					0.0 Miles
Segment #7 Net Present Cost					0.0 Miles
Segment #8 Net Present Cost					0.0 Miles
Project Net Present Cost	\$ 2,054,709.99		\$ 3,074,400.42	\$ 1,561,640.90	Total
Bid Adjustment Factor	\$ 493,069.10		\$ 1,512,759.52	\$ -	8.2

Segment 1											
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG	Length
1	8.213	1	8.213	1	8.213	1	8.213	1	8.213	1	8.213
ALT	Description	ALT	Description	ALT	Description	ALT	Description	ALT	Description	ALT	Description
1	2.5" Mill and Overlay	2	4" Mill and 4" PCC Whitetopping	3	4" Mill + 4" CIR + 2" HMA						
Pavement Type	PCC	Pavement Type	PCC	Pavement Type	HMA	Pavement Type	HMA	Pavement Type	HMA	Pavement Type	HMA
Primary Category	Primary Category	Primary Category	Primary Category	Secondary Category	Secondary Category	Secondary Category	Secondary Category	Rural	Rural	ShoulderCategory	ShoulderCategory
Overlay, DL <13 to 17 years	6"X6' ≤ 5.0' Thickness	Design Life = 20 Years	20 Year HMA	Bituminous	Thin Bit	Bituminous	Bituminous	Bituminous	Bituminous	Bituminous	Bituminous
Secondary Category	Secondary Category	ShoulderCategory	ShoulderCategory	DELETE	DELETE	DELETE	DELETE	DELETE	DELETE	DELETE	DELETE
Notes:	Notes:	Notes:									
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	2.5" Mill and Overlay	\$ 152,986.97	\$ 152,986.97	0	4" Mill and 4" PCC	\$ 383,815.33	\$ 383,815.33	0	4" Mill + 4" CIR + 2" HMA	\$ 298,979.56	\$ 298,979.56
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,112.00	\$ 2,014.97	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 6,721.12	\$ 6,022.60	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8		\$ -	\$ -	8	Crack Treatment	\$ 1,056.00	\$ 931.52
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12		\$ -	\$ -	12	Seal	\$ 11,437.72	\$ 9,476.35
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16	ML Overlay 3.5"	\$ 239,286.84	\$ 186,203.35	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19	Crack Treatment	\$ 2,112.00	\$ 1,567.97	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	1st CPR	\$ 419,965.52	\$ 306,937.16	20	ML Overlay 4	\$ 262,273.73	\$ 191,686.16
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Seal	\$ 6,721.12	\$ 4,686.55	23		\$ -	\$ -	23	Crack Treatment	\$ 2,112.00	\$ 1,472.67
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27		\$ -	\$ -	27	Seal	\$ 6,721.12	\$ 4,401.70
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30	Remove and Replace	\$ 519,892.13	\$ 324,838.12	30		\$ -	\$ -
31	ML Overlay 3.5"	\$ 239,286.84	\$ 147,185.27	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34	Crack Treatment	\$ 2,112.00	\$ 1,239.41	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (170,919.17)	\$ (98,742.36)	35	30/35 Remaining	\$ (445,621.83)	\$ (257,441.86)	35	2/17 Remaining Life	\$ (30,855.73)	\$ (17,825.76)
Net Present Cost for Segment	\$ 3,311,191.98	Net Present Cost for Segment	\$ 6,226,675.72	Net Present Cost for Segment	\$ 4,017,160.03						
Maintenance - Net Present Cost for Segment	\$ 2,054,709.99	Maintenance - Net Present Cost for Segment	\$ 3,074,400.42	Maintenance - Net Present Cost for Segment	\$ 1,561,640.96						
Equivalent Annual Cost	\$ 123,889.50	Equivalent Annual Cost	\$ 332,973.43	Equivalent Annual Cost	\$ 150,303.56						

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	35	28	2	35	24	2	35
Total Shdr Width	# of Shdrls	ML Mix	Total Shdr Width	# of Shdrls	ML Mix	Total Shdr Width	# of Shdrls	ML Mix
20	2	WEARING COURSE MIXTURE (3,6)	16	2	WEARING COURSE MIXTURE (3,6)	20	2	WEARING COURSE MIXTURE (3,6)
Width of Rounding Aggregate	white/ >? million	SL Mix	Width of Rounding Aggregate	white/ >? million	SL Mix	Width of Rounding Aggregate	white/ >? million	SL Mix
3	N	WEARING COURSE MIXTURE (2,4)	3	Y	WEARING COURSE MIXTURE (2,4)	3	N	WEARING COURSE MIXTURE (2,4)
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			N			N		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
2.5			6	0		2		
Design Life	Shdr Thickness		Design Life	Shdr Thickness		Design Life	Shdr Thickness	
36	3.6		30	3.6		30	3.6	

35-Year Analysis Period

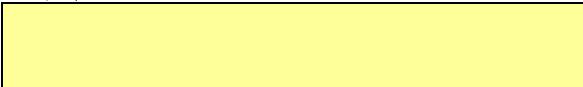
35 - Year

50-Year Analysis Period

Project Number	Analysis Period
4910-29	35
Highway	Discount Rate
25 Little Rock to Genola	1.58%
Date	
7/18/2016	
Performed By	
Darren Nelson	

CLEAR ALL

D3 - 2016/2017 prices



LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill and 3.5" OL Net Present Cost \$3,196,341.21	3" Mill, 6" FDR, 4.5" Bit \$3,360,011.88	3" Mill, 4.5" White-Top \$5,250,913.63	9.0 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 3,196,341.21	\$ 3,360,011.88	\$ 5,250,913.63	Total
% of Low Cost	100.0%	105.1%	164.3%	9.0

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill and 3.5" OL Net Present Cost \$1,611,945.21	3" Mill, 6" FDR, 4.5" Bit \$1,153,265.88	3" Mill, 4.5" White-Top \$2,865,436.63	9.0 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 1,611,945.21	\$ 1,153,265.88	\$ 2,865,436.63	Total
Bid Adjustment Factor	\$ 458,679.33	\$ -	\$ 1,712,170.75	9.0

Segment 1											
SEG	Length	SEG	Length	SEG							
1	9	1	9	1							
ALT	Description	ALT	Description	ALT							
1	2" Mill and 3.5" OL	2	3" Mill, 6" FDR, 4.5" Bit	3							
Pavement Type		Pavement Type		Pavement Type							
HMA	HMA	PCC									
Primary Category	Primary Category	Primary Category									
Overlay, DL >13 to 17 years	20 Year HMA	6X6' ± 5.0" Thickness									
Secondary Category	Secondary Category	Secondary Category									
Rural	Rural	Design Life = 20 Years									
ShoulderCategory	ShoulderCategory	ShoulderCategory									
Bituminous	Bituminous	PCC									
CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE							
DELETE		DELETE		DELETE							
Notes:					Notes:						
Notes:					Notes:						
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	2" Mill and 3.5" OL	\$ 176,044.00	\$ 176,044.00	0	3" Mill, 6" FDR, 4.5" Bit	\$ 245,194.00	\$ 245,194.00	0	3" Mill, 4.5" White-Top	\$ 265,053.00	\$ 265,053.00
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,112.00	\$ 2,014.97	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 7,200.70	\$ 6,452.34	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8	Crack Treatment	\$ 1,056.00	\$ 931.53	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 11,520.09	\$ 9,544.59	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15	ML Overlay 3.5"	\$ 146,010.62	\$ 115,414.75	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	Crack Treatment	\$ 2,112.00	\$ 1,592.74	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	ML Overlay 3.5	\$ 168,165.16	\$ 122,905.66	20	1st CPR	\$ 362,762.40	\$ 265,129.53
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22	Seal	\$ 7,200.70	\$ 5,100.28	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23	Crack Treatment	\$ 2,112.00	\$ 1,472.67	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ 7,200.70	\$ 4,715.77	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29	ML Overlay 3.5"	\$ 146,010.62	\$ 92,671.54	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30	Remove and Replace	\$ 410,786.31	\$ 256,666.81
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32	Crack Treatment	\$ 2,112.00	\$ 1,278.88	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (78,621.10)	\$ (45,420.49)	35	2/17 Remaining Life	\$ (19,784.14)	\$ (11,429.57)	35	30/35 Remaining	\$ (352,102.55)	\$ (203,414.48)
Net Present Cost for Segment					Net Present Cost for Segment	\$ 3,196,341.21	Net Present Cost for Segment	\$ 3,360,011.88	Net Present Cost for Segment	\$ 5,250,913.63	
Maintenance - Net Present Cost for Segment					Maintenance - Net Present Cost for Segment	\$ 1,611,945.21	Maintenance - Net Present Cost for Segment	\$ 1,153,265.88	Maintenance - Net Present Cost for Segment	\$ 2,865,436.63	
Equivalent Annual Cost					Equivalent Annual Cost	\$ 119,592.32	Equivalent Annual Cost	\$ 125,716.12	Equivalent Annual Cost	\$ 196,464.92	

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	35	24	2	35	24	2	35
Total Shdr Width	# of Shdrs	ML Mix	Total Shdr Width	# of Shdrs	ML Mix	Total Shdr Width	# of Shdrs	ML Mix
4	2	WEARING COURSE MIXTURE (3,6 SL Mix)	4	2	WEARING COURSE MIXTURE (3,6 SL Mix)	4	2	WEARING COURSE MIXTURE (3,6 SL Mix)
Width of Rounding Aggregate	white/>7 million		Width of Rounding Aggregate	white/>7 million		Width of Rounding Aggregate	white/>7 million	
2	N	WEARING COURSE MIXTURE (3,6 SL Mix)	2	N	WEARING COURSE MIXTURE (3,6 SL Mix)	2	N	WEARING COURSE MIXTURE (3,6 SL Mix)
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			N			N		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
1.5			1.5			1.5		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
15	3.5		20	4.5		15	3.5	

Cost Analysis/ TH 56 From Maple St(Taopi) to CSAH 46 (SP 5005-62)

Givens:

Length = 16.415 miles
 Width of Road = 24 feet(Conc.) 24 feet(Bit.) 4/20/15-TRM
 1" Bituminous = 113 lbs/SY
 Interest Rate = 2 %
 Inflation Rate = 0 %

1.5" MILL & 3" min. Bituminous Overlay

Item	Course	Unit	Price/Unit	Total Cost	Strategy	Year	Cost/Mile	P/F	Present Worth	Annual Cost
1.5" MILL BITUMINOUS		SY	\$0.80	\$184,898.56	Initial Cost	0	\$175,703	1.000	\$175,703	\$7,029
PATCH		Ton	\$200.00	\$131,320.00	Rout & seal	2	\$6,300	0.961	\$6,055	\$242
TACK COAT		GAL	\$1.00	\$46,224.64	Chipseal	4	\$30,000	0.924	\$27,715	\$1,109
3" SPWEB340B	Wear	TON	\$64.37	<u>\$2,521,719.37</u>	Mill & 3" Overlay	17	\$177,206	0.714	\$126,554	\$5,062
				Total Cost: <u>\$2,884,163</u>	Rout & seal	19	\$6,300	0.686	\$4,325	\$173
				Cost/Mile: <u>\$175,703</u>	Chipseal	21	\$30,000	0.660	\$19,793	\$792
					Mill & 3" Overlay	33	\$177,206	0.520	\$92,188	\$3,688
					Remaining Life Value	35	(\$155,055)	0.500	-\$77,532	-\$3,101
									Total Present Worth: <u>\$374,801</u>	\$14,993
									Equivalent Annual Cost: <u>\$14,993</u>	\$14,993

6.5" WHITETOPPING-undoweled

Item	Course	Unit	Price/Unit	Total Cost	Strategy	Year	Cost/Mile	P/F	Present Worth	Annual Cost
6" MILL BITUMINOUS		SY	\$2.52	\$582,430.46	Initial Cost	0	\$317,863	1.000	\$317,863	\$12,715
Place Conc, Pavement 6.5"		SY	\$4.00	\$924,492.80	Minor CPR	20	\$150,000	0.673	\$100,946	\$4,038
Structural Concrete		CY	\$86.96	\$3,629,114.36	Remaining Life Value	35	\$0	0.500	\$0	\$0
Reinforcement Bars	Epoxy	lb	\$0.80	<u>\$81,681.04</u>					Total Present Worth: <u>\$418,809</u>	\$16,753
				Total Cost: <u>\$5,217,719</u>					Equivalent Annual Cost: <u>\$16,753</u>	\$16,753
				Cost/Mile: <u>\$317,863</u>						

MILL & 4.5" min. Bituminous Overlay

Item	Course	Unit	Price/Unit	Total Cost	Strategy	Year	Cost/Mile	P/F	Present Worth	Annual Cost
1.5" MILL BITUMINOUS		SY	\$0.80	\$184,898.56	Initial Cost	0	\$253,922	1.000	\$253,922	\$10,157
PATCH		Ton	\$200.00	\$131,320.00	Rout & seal	2	\$6,300	0.961	\$6,055	\$242
TACK COAT		GAL	\$1.00	\$69,336.96	Chipseal	4	\$30,000	0.924	\$27,715	\$1,109
4.5" SPWEB340B	Wear	TON	\$64.37	<u>\$3,782,579.05</u>	Mill & 3" Overlay	22	\$177,206	0.647	\$114,624	\$4,585
				Total Cost: <u>\$4,168,135</u>	Rout & seal	24	\$6,300	0.622	\$3,917	\$157
				Cost/Mile: <u>\$253,922</u>	Chipseal	26	\$30,000	0.598	\$17,927	\$717
					Remaining Life Value	35	(\$41,696)	0.500	-\$20,849	-\$834
									Total Present Worth: <u>\$403,312</u>	\$16,133
									Equivalent Annual Cost: <u>\$16,133</u>	\$16,133

1. Preventive Maintenance adds 1 year of life to thin overlays and 2 years to medium overlays and Reclaimed pavements
2. Each successive overlay has 1 year less life than previous one on a section.
3. Thin overlay -10 years life, medium overlay-15 years, heavy bit. overlay-20 years, reclamation -20 years, whitetopping-20 years.
4. Aggregate and shoulder quantities were not included in each option.
5. Calculations are based on 35 year life cycle.
6. Costs are based upon recent district project costs.
7. No chipseal on the bituminous overlay over whitetopping.

35-Year Analysis Period		50 - Year		50-Year Analysis Period		Segment 1																					
Project Number	Analysis Period	Highway	Discount Rate	ALT	Length	SEG	Length	ALT	Length	SEG	Length	Pavement Type	Primary Category	Secondary Category	Description	Pavement Type	Primary Category	Secondary Category	Description								
SP 5209-74	50	TH 169	1.58%		9.45	1	9.45	1	9.45	1	9.45	PCC	≥12 Joint spacing	Design Life 35 Years	8" UBOL w/ 15' joints	PCC	≥12 Joint spacing	Design Life = 20 Years	8" UBOL w/ 15' joints								
Date	11/7/2016	Performed By	Kyle Vogt	CLEAR ALL								Secondary Category	ShoulderCategory	Thick Bit	DELETE	Secondary Category	ShoulderCategory	Thick Bit	8" Bituminous Reconstruction								
D7 - 2016/2017 prices		50 Year Analysis Period for Concrete UBOL and Bituminous Reconstruction																									
Notes: 8" Unbonded Concrete Overlay w/ 15' Joints				Notes: 7.5" Unbonded Concrete Overlay w/ 15' Joints				Notes: 7.5" Unbonded Concrete Overlay w/ 15' Joints				Notes: 8" Bituminous Reconstruction															
LCCA SUMMARY																											
Alternate #1		Alternate #2		Alternate #3		Length		Year		Activity		Cost/per Mile		Pres. Cost/per Mile		Year		Activity		Cost		Pres. Cost/per Mile					
Segment #1	8" UBOL w/ 15' joints	7.5" UBOL w/ 15' its	8" Bituminous Reconstruction	9.5	0	8" UBOL w/ 15' Jts	\$ 758,828.09	0	7.5" UBOL w/ 15' Jts	\$ 702,418.29	0	8" Bit. Reconstruction	\$ 1,151,786.57		\$ 1,151,786.57	0	8" Bit. Reconstruction	\$ 1,151,786.57		\$ 1,151,786.57		\$ -					
Net Present Cost	\$9,355,756.95	\$11,078,609.67	\$13,387,281.08	Miles	1	\$ -	\$ -	1	\$ -	1	\$ -					1	\$ -				\$ -						
Segment #2				0.0	2	\$ -	\$ -	2	\$ -	2	\$ -					2	\$ -				\$ -						
Net Present Cost				Miles	3	\$ -	\$ -	3	\$ -	3	\$ -					3	\$ -				\$ -						
Segment #3				0.0	4	\$ -	\$ -	4	\$ -	4	\$ -					4	\$ -				\$ -						
Net Present Cost				Miles	5	\$ -	\$ -	5	\$ -	5	\$ -					5	\$ -				\$ -						
Segment #4				0.0	6	\$ -	\$ -	6	\$ -	6	\$ -					6	\$ -				\$ -						
Net Present Cost				Miles	7	\$ -	\$ -	7	\$ -	7	\$ -					7	\$ -				\$ -						
Segment #5				0.0	8	\$ -	\$ -	8	\$ -	8	\$ -					8	\$ -				\$ -						
Net Present Cost				Miles	9	\$ -	\$ -	9	\$ -	9	\$ -					9	\$ -				\$ -						
Segment #6				0.0	10	\$ -	\$ -	10	\$ -	10	\$ -					10	\$ -				\$ -						
Net Present Cost				Miles	11	\$ -	\$ -	11	\$ -	11	\$ -					11	\$ -				\$ -						
Segment #7				0.0	12	\$ -	\$ -	12	\$ -	12	\$ -					12	\$ -				\$ -						
Net Present Cost				Miles	13	\$ -	\$ -	13	\$ -	13	\$ -					13	\$ -				\$ -						
Segment #8				0.0	14	\$ -	\$ -	14	\$ -	14	\$ -					14	\$ -				\$ -						
Net Present Cost				Miles	15	\$ -	\$ -	15	\$ -	15	\$ -					15	\$ -				\$ -						
Segment #9				0.0	16	\$ -	\$ -	16	\$ -	16	\$ -					16	\$ -				\$ -						
Net Present Cost				Miles	17	\$ -	\$ -	17	\$ -	17	\$ -					17	\$ -				\$ -						
Segment #10				0.0	18	\$ -	\$ -	18	\$ -	18	\$ -					18	\$ -				\$ -						
Net Present Cost				Miles	19	\$ -	\$ -	19	\$ -	19	\$ -					19	\$ -				\$ -						
Project Net Present Cost	\$ 9,355,756.95	\$ 11,078,609.67	\$ 13,387,281.08	Total	20	1st CPR	\$ 173,579.78	0	126,863.00	20	1st CPR	\$ 246,785.22	0	180,366.13	20	ML Overlay 4	\$ 225,519.08	0	164,823.49								
% of Low Cost	100.0%	118.4%	143.1%	9.5	21	\$ -	\$ -	21	\$ -	21	\$ -					21	\$ -				\$ -						
BID ADJUSTMENT FACTOR SUMMARY	Alternate #1				Alternate #2				Alternate #3				Length				Year				Activity						
Segment #1	8" UBOL w/ 15' joints	7.5" UBOL w/ 15' its	8" Bituminous Reconstruction	9.5	22	\$ -	\$ -	22	\$ -	22	\$ -					22	\$ -				\$ -						
Net Present Cost	\$2,184,831.52	\$4,440,756.82	\$2,502,897.99	Miles	23	\$ -	\$ -	23	\$ -	23	\$ -					23	\$ -				\$ -						
Segment #2				0.0	24	\$ -	\$ -	24	\$ -	24	\$ -					24	\$ -				\$ -						
Net Present Cost				Miles	25	\$ -	\$ -	25	\$ -	25	\$ -					25	\$ -				\$ -						
Segment #3				0.0	26	\$ -	\$ -	26	\$ -	26	\$ -					26	\$ -				\$ -						
Net Present Cost				Miles	27	\$ -	\$ -	27	\$ -	27	\$ -					27	\$ -				\$ -						
Segment #4				0.0	28	\$ -	\$ -	28	\$ -	28	\$ -					28	\$ -				\$ -						
Net Present Cost				Miles	29	\$ -	\$ -	29	\$ -	29	\$ -					29	\$ -				\$ -						
Segment #5				0.0	30	\$ -	\$ -	30	\$ -	30	\$ -					30	\$ -				\$ -						
Net Present Cost				Miles	31	\$ -	\$ -	31	\$ -	31	\$ -					31	\$ -				\$ -						
Segment #6				0.0	32	\$ -	\$ -	32	\$ -	32	\$ -					32	\$ -				\$ -						
Net Present Cost				Miles	33	\$ -	\$ -	33	\$ -	33	\$ -					33	\$ -				\$ -						
Segment #7				0.0	34	\$ -	\$ -	34	\$ -	34	\$ -					34	\$ -				\$ -						
Net Present Cost				Miles	35	2nd CPR	\$ 180,601.73	0	104,336.10	35	Remove and Replace	\$ 624,647.72	0	360,867.58	35	ML Overlay 3.5"	\$ 201,772.34	0	112,968.64								
Segment #8				0.0	36	\$ -	\$ -	36	\$ -	36	\$ -					36	\$ -				\$ -						
Net Present Cost				Miles	37	\$ -	\$ -	37	\$ -	37	\$ -					37	\$ -				\$ -						
Segment #9				0.0	38	\$ -	\$ -	38	\$ -	38	\$ -					38	\$ -				\$ -						
Net Present Cost				Miles	39	\$ -	\$ -	39	\$ -	39	\$ -					39	\$ -				\$ -						
Segment #10				0.0	40	\$ -	\$ -	40	\$ -	40	\$ -					40	\$ -				\$ -						
Net Present Cost				Miles	41	\$ -	\$ -	41	\$ -	41	\$ -					41	\$ -				\$ -						
Project Net Present Cost	\$ 2,184,831.52	\$ 4,440,756.82	\$ 2,502,897.99	Total	42	\$ -	\$ -	42	\$ -	42	\$ -					42	\$ -				\$ -						
Bid Adjustment Factor	\$ -	\$ -	\$ 2,255,925.30	\$ 318,066.47	9.5	43	\$ -	\$ -	43	\$ -	43	\$ -				43	\$ -				\$ -						
					44	\$ -	\$ -	44	\$ -	44	\$ -					44	\$ -				\$ -						
					45	\$ -	\$ -	45	\$ -	45	\$ -					45	\$ -				\$ -						
					46	\$ -	\$ -	46	\$ -	46	\$ -					46	\$ -				\$ -						
					47	\$ -	\$ -	47	\$ -	47	\$ -					47	\$ -				\$ -						
					48	\$ -	\$ -	48	\$ -	48	\$ -					48	\$ -				\$ -						
					49	\$ -	\$ -	49	\$ -	49	\$ -					49	\$ -				\$ -						
					50	O/D Remaining	\$ -	50	\$ (156,161.93)	50	5/20 Remaining	\$ (71,312.35)	50	5/47 Remaining Life	\$ (47,475.84)	50	(21,680.15)										
						Net Present Cost for Segment	\$ 9,355,756.95	Net Present Cost for Segment	\$ 11,078,609.67	Net Present Cost for Segment	\$ 2,502,897.99	Maintenance - Net Present Cost for Segment	\$ 4,440,756.82	Maintenance - Net Present Cost for Segment	\$ 2,502,897.99	Maintenance - Net Present Cost for Segment	\$ 2,502,897.99										
						Equivalent Annual Cost	272,057.99	Equivalent Annual Cost	322,157.18	Equivalent Annual Cost	322,157.18	Equivalent Annual Cost	322,157.18	Equivalent Annual Cost	389,291.51	Equivalent Annual Cost	389,291.51										
						Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Lane Width	# of Lanes	Analysis Period				
						28	2	50	28	2	50	28	2	50	7	1	ML Mix	7	1	ML Mix	Width of Rounding Aggregate	# Shldrs	WEARING COURSE MIXTURE (4,E)				
						Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Width of Rounding Aggregate	# Shldrs	ML Mix	Width of Rounding Aggregate	# Shldrs	ML Mix	Width of Rounding Aggregate	# Shldrs	WEARING COURSE MIXTURE (3,B)				
						7	1	SL Mix	7	1	SL Mix	7	1	SL Mix	3	N	SL Mix	3	N	SL Mix	Width of Rounding Aggregate	# Shldrs	WEARING COURSE MIXTURE (3,B)				
						Width of Rounding Aggregate	white / > 7 million	WEARING COURSE MIXTURE (3,B)	Width of Rounding Aggregate	white / > 7 million	WEARING COURSE MIXTURE (3,B)	Width of Rounding Aggregate	white / > 7 million	WEARING COURSE MIXTURE (3,B)	Sealed/UTBWC	N	ML Thickness	Sealed/UTBWC	N	ML Thickness	Width of Rounding Aggregate	white / > 7 million	SL Mix	WEARING COURSE MIXTURE (3,B)			
						3	N	ML Thickness	3	N	ML Thickness	3	N	ML Thickness	Sealed/UTBWC	N	ML Thickness	Sealed/UTBWC	N	ML Thickness	Width of Rounding Aggregate	white / > 7 million	SL Mix	WEARING COURSE MIXTURE (3,B)			
						ML Top Lift / joint spacing	# Dowels per Lane	ML Top Lift / joint spacing	# Dowels per Lane	ML Top Lift / joint spacing	# Dowels per Lane	ML Top Lift / joint spacing	# Dowels per Lane	ML Top Lift / joint spacing	15	11	ML Top Lift / joint spacing	15	11	ML Top Lift / joint spacing	Design Life	Shldr Thickness	Design Life	Shldr Thickness	Design Life	Shldr Thickness	
						15	11		15	11		15	11		ML Top Lift / joint spacing	20	4	ML Top Lift / joint spacing	20	4	ML Top Lift / joint spacing	Design Life	Shldr Thickness	Design Life	Shldr Thickness	Design Life	Shldr Thickness
						Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness		ML Top Lift / joint spacing	20	4	ML Top Lift / joint spacing	20	4	ML Top Lift / joint spacing	Design Life	Shldr Thickness	Design Life	Shldr Thickness		

35-Year Analysis Period		50-Year Analysis Period	
Period	Length	Period	Length
Period 1	1-5	Period 1	1-5
Period 2	6-10	Period 2	6-10
Period 3	11-15	Period 3	11-15
Period 4	16-20	Period 4	16-20
Period 5	21-25	Period 5	21-25
Period 6	26-30	Period 6	26-30
Period 7	31-35	Period 7	31-35
Period 8	36-40	Period 8	36-40
Period 9	41-45	Period 9	41-45
Period 10	46-50	Period 10	46-50
Period 11	51-55	Period 11	51-55
Period 12	56-60	Period 12	56-60
Period 13	61-65	Period 13	61-65
Period 14	66-70	Period 14	66-70
Period 15	71-75	Period 15	71-75
Period 16	76-80	Period 16	76-80
Period 17	81-85	Period 17	81-85
Period 18	86-90	Period 18	86-90
Period 19	91-95	Period 19	91-95
Period 20	96-100	Period 20	96-100
Period 21	101-105	Period 21	101-105
Period 22	106-110	Period 22	106-110
Period 23	111-115	Period 23	111-115
Period 24	116-120	Period 24	116-120
Period 25	121-125	Period 25	121-125
Period 26	126-130	Period 26	126-130
Period 27	131-135	Period 27	131-135
Period 28	136-140	Period 28	136-140
Period 29	141-145	Period 29	141-145
Period 30	146-150	Period 30	146-150
Period 31	151-155	Period 31	151-155
Period 32	156-160	Period 32	156-160
Period 33	161-165	Period 33	161-165
Period 34	166-170	Period 34	166-170
Period 35	171-175	Period 35	171-175
Period 36	176-180	Period 36	176-180
Period 37	181-185	Period 37	181-185
Period 38	186-190	Period 38	186-190
Period 39	191-195	Period 39	191-195
Period 40	196-200	Period 40	196-200
Period 41	201-205	Period 41	201-205
Period 42	206-210	Period 42	206-210
Period 43	211-215	Period 43	211-215
Period 44	216-220	Period 44	216-220
Period 45	221-225	Period 45	221-225
Period 46	226-230	Period 46	226-230
Period 47	231-235	Period 47	231-235
Period 48	236-240	Period 48	236-240
Period 49	241-245	Period 49	241-245
Period 50	246-250	Period 50	246-250
Period 51	251-255	Period 51	251-255
Period 52	256-260	Period 52	256-260
Period 53	261-265	Period 53	261-265
Period 54	266-270	Period 54	266-270
Period 55	271-275	Period 55	271-275
Period 56	276-280	Period 56	276-280
Period 57	281-285	Period 57	281-285
Period 58	286-290	Period 58	286-290
Period 59	291-295	Period 59	291-295
Period 60	296-300	Period 60	296-300
Period 61	301-305	Period 61	301-305
Period 62	306-310	Period 62	306-310
Period 63	311-315	Period 63	311-315
Period 64	316-320	Period 64	316-320
Period 65	321-325	Period 65	321-325
Period 66	326-330	Period 66	326-330
Period 67	331-335	Period 67	331-335
Period 68	336-340	Period 68	336-340
Period 69	341-345	Period 69	341-345
Period 70	346-350	Period 70	346-350
Period 71	351-355	Period 71	351-355
Period 72	356-360	Period 72	356-360
Period 73	361-365	Period 73	361-365
Period 74	366-370	Period 74	366-370
Period 75	371-375	Period 75	371-375
Period 76	376-380	Period 76	376-380
Period 77	381-385	Period 77	381-385
Period 78	386-390	Period 78	386-390
Period 79	391-395	Period 79	391-395
Period 80	396-400	Period 80	396-400
Period 81	401-405	Period 81	401-405
Period 82	406-410	Period 82	406-410
Period 83	411-415	Period 83	411-415
Period 84	416-420	Period 84	416-420
Period 85	421-425	Period 85	421-425
Period 86	426-430	Period 86	426-430
Period 87	431-435	Period 87	431-435
Period 88	436-440	Period 88	436-440
Period 89	441-445	Period 89	441-445
Period 90	446-450	Period 90	446-450
Period 91	451-455	Period 91	451-455
Period 92	456-460	Period 92	456-460
Period 93	461-465	Period 93	461-465
Period 94	466-470	Period 94	466-470
Period 95	471-475	Period 95	471-475
Period 96	476-480	Period 96	476-480
Period 97	481-485	Period 97	481-485
Period 98	486-490	Period 98	486-490
Period 99	491-495	Period 99	491-495
Period 100	496-500	Period 100	496-500
Period 101	501-505	Period 101	501-505
Period 102	506-510	Period 102	506-510
Period 103	511-515	Period 103	511-515
Period 104	516-520	Period 104	516-520
Period 105	521-525	Period 105	521-525
Period 106	526-530	Period 106	526-530
Period 107	531-535	Period 107	531-535
Period 108	536-540	Period 108	536-540
Period 109	541-545	Period 109	541-545
Period 110	546-550	Period 110	546-550
Period 111	551-555	Period 111	551-555
Period 112	556-560	Period 112	556-560
Period 113	561-565	Period 113	561-565
Period 114	566-570	Period 114	566-570
Period 115	571-575	Period 115	571-575
Period 116	576-580	Period 116	576-580
Period 117	581-585	Period 117	581-585
Period 118	586-590	Period 118	586-590
Period 119	591-595	Period 119	591-595
Period 120	596-600	Period 120	596-600
Period 121	601-605	Period 121	601-605
Period 122	606-610	Period 122	606-610
Period 123	611-615	Period 123	611-615
Period 124	616-620	Period 124	616-620
Period 125	621-625	Period 125	621-625
Period 126	626-630	Period 126	626-630
Period 127	631-635	Period 127	631-635
Period 128	636-640	Period 128	636-640
Period 129	641-645	Period 129	641-645
Period 130	646-650	Period 130	646-650
Period 131	651-655	Period 131	651-655
Period 132	656-660	Period 132	656-660
Period 133	661-665	Period 133	661-665
Period 134	666-670	Period 134	666-670
Period 135	671-675	Period 135	671-675
Period 136	676-680	Period 136	676-680
Period 137	681-685	Period 137	681-685
Period 138	686-690	Period 138	686-690
Period 139	691-695	Period 139	691-695
Period 140	696-700	Period 140	696-700
Period 141	701-705	Period 141	701-705
Period 142	706-710	Period 142	706-710
Period 143	711-715	Period 143	711-715
Period 144	716-720	Period 144	716-720
Period 145	721-725	Period 145	721-725
Period 146	726-730	Period 146	726-730
Period 147	731-735	Period 147	731-735
Period 148	736-740	Period 148	736-740
Period 149	741-745	Period 149	741-745
Period 150	746-750	Period 150	746-750
Period 151	751-755	Period 151	751-755
Period 152	756-760	Period 152	756-760
Period 153	761-765	Period 153	761-765
Period 154	766-770	Period 154	766-770
Period 155	771-775	Period 155	771-775
Period 156	776-780	Period 156	776-780
Period 157	781-785	Period 157	781-785
Period 158	786-790	Period 158	786-790
Period 159	791-795	Period 159	791-795
Period 160	796-800	Period 160	796-800
Period 161	801-805	Period 161	801-805
Period 162	806-810	Period 162	806-810
Period 163	811-815	Period 163	811-815
Period 164	816-820	Period 164	816-820
Period 165	821-825	Period 165	821-825
Period 166	826-830	Period 166	826-830
Period 167	831-835	Period 167	831-835
Period 168	836-840	Period 168	836-840
Period 169	841-845	Period 169	841-845
Period 170	846-850	Period 170	846-850
Period 171	851-855	Period 171	851-855
Period 172	856-860	Period 172	856-860
Period 173	861-865	Period 173	861-865
Period 174	866-870	Period 174	866-870
Period 175	871-875	Period 175	871-875
Period 176	876-880	Period 176	876-880
Period 177	881-885	Period 177	881-885
Period 178	886-890	Period 178	886-890
Period 179	891-895	Period 179	891-895
Period 180	896-900	Period 180	896-900
Period 181	901-905	Period 181	901-905
Period 182	906-910	Period 182	906-910
Period 183	911-915	Period 183	911-915
Period 184	916-920	Period 184	916-920
Period 185	921-925	Period 185	921-925
Period 186	926-930	Period 186	926-930
Period 187	931-935	Period 187	931-935
Period 188	936-940	Period 188	936-940
Period 189	941-945	Period 189	941-945
Period 190	946-950	Period 190	946-950
Period 191	951-955	Period 191	951-955
Period 192	956-960	Period 192	956-960
Period 193	961-965	Period 193	961-965
Period 194	966-970	Period 194	966-970
Period 195	971-975	Period 195	971-975
Period 196	976-980	Period 196	976-980
Period 197	981-985	Period 197	981-985
Period 198	986-990	Period 198	986-990
Period 199	991-995	Period 199	991-995
Period 200	996-999	Period 200	996-999
Period 201	1000-1003	Period 201	1000-1003
Period 202	1004-1007	Period 202	1004-1007
Period 203	1008-1011	Period 203	1008-1011
Period 204	1012-1015	Period 204	1012-1015
Period 205	1016-1019	Period 205	1016-1019
Period 206	1020-1023	Period 206	1020-1023
Period 207	1024-1027	Period 207	1024-1027
Period 208	1028-1031	Period 208	1028-1031
Period 209	1032-1035	Period 209	1032-1035
Period 210	1036-1039	Period 210	1036-1039
Period 211	1040-1043	Period 211	1040-1043
Period 212	1044-1047	Period 212	1044-1047
Period 213	1048-1051	Period 213	1048-1051
Period 214	1052-1055	Period 214	1052-1055
Period 215	1056-1059	Period 215	1056-1059
Period 216	1060-1063	Period 216	1060-1063
Period 217	1064-1067	Period 217	1064-1067
Period 218	1068-1071	Period 218	1068-1071
Period 219	1072-1075	Period 219	1072-1075
Period 220	1076-1079	Period 220	1076-1079
Period 221	1080-1083	Period 221	1080-1083
Period 222	1084-1087	Period 222	1084-1087
Period 223	1088-1091	Period 223	1088-1091
Period 224	1092-1095	Period 224	1092-1095
Period 225	1096-1099	Period 225	1096-1099
Period 226	1100-1103	Period 226	1100-1103
Period 227	1104-1107	Period 227	1104-1107
Period 228	1108-1111	Period 228	1108-1111
Period 229	1112-1115	Period 229	1112-1115
Period 230	1116-1119	Period 230	1116-1119
Period 231	1120-1123	Period 231	1120-1123
Period 232	1124-1127	Period 232	1124-1127
Period 233	1128-1131	Period 233	1128-1131
Period 234</			

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
5903-23	35
Highway	Discount Rate
	1.74%
Date	
Performed By	CLEAR ALL

District 8 - 2015/2016 prices

Segment 1											
SEG	Length	SEG	Length								
1	6.924	1	6.924								
ALT		ALT									
1	2" Mill & 3" Overlay	2	FDR & 4" HMA								
Pavement Type		Pavement Type									
HMA		HMA									
Primary Category		Primary Category									
Overlay, DL >13 to 17 years		20 Year HMA									
Secondary Category		Secondary Category									
Rural		Rural									
ShoulderCategory		ShoulderCategory									
Aggregate		Aggregate									
CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE									
Notes:		Notes:									
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile

0	2" Mill & 3" Overlay	\$ 164,645.16	\$ 164,645.16	0	FDR & 4" HMA	\$ 274,148.82	\$ 274,148.82	0	4.5" PCC Whitetopping	\$ 271,437.20	\$ 271,437.20
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ 2,464.00	\$ 2,339.73	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ 8,733.73	\$ 7,740.29	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8		\$ 1,232.00	\$ 1,073.19	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 12,742.80	\$ 10,360.10	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ 190,369.50	\$ 144,454.02	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ 2,464.00	\$ 1,775.41	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	ML Overlay 4	\$ 264,440.08	\$ 187,280.52	20	1st CPR	\$ 378,864.41	\$ 268,317.59
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ 8,733.73	\$ 5,873.40	23	Crack Treatment	\$ 2,464.00	\$ 1,657.03	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ 8,733.73	\$ 5,481.79	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30	Remove and Replace	\$ 379,843.78	\$ 226,387.80
31		\$ 190,369.50	\$ 111,520.22	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ 2,464.00	\$ 1,370.63	34		\$ -	\$ -	34		\$ -	\$ -
35		\$ (135,978.21)	\$ (74,346.18)	35	2/17 Remaining Life	\$ (31,110.60)	\$ (17,009.74)	35	30/35 Remaining	\$ (325,580.38)	\$ (178,011.30)

Net Present Cost for Segment	\$ 2,529,840.48	Net Present Cost for Segment	\$ 3,205,754.66	Net Present Cost for Segment	\$ 4,072,221.10
Maintenance - Net Present Cost for Segment	\$ 1,389,837.39	Maintenance - Net Present Cost for Segment	\$ 1,307,548.23	Maintenance - Net Present Cost for Segment	\$ 2,192,789.92
Equivalent Annual Cost	97,119.23	Equivalent Annual Cost	123,067.22	Equivalent Annual Cost	156,330.40

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
28	2	35	28	2	35	28	2	35
Total Shdr Width	# of Shldrs	ML Mix	Total Shdr Width	# of Shldrs	ML Mix	Total Shdr Width	# of Shldrs	ML Mix
12	2	WEARING COURSE MIXTURE (3.5	12	2	WEARING COURSE MIXTURE (3.	12	2	WEARING COURSE MIXTURE (3.
Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix
1.5	N		1.5	N		1.5	N	
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			N			N		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
1.5			2			6		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
16	3		20	4		45		

35-Year Analysis Period	35 - Year	50-Year Analysis Period
Project Number:	Analysis Period:	
601129	35	
Highway:	Discount Rate:	
0%	1.1%	
Date:		
10/26/2015		
Planning Stage:		
Planning		
Notes:		
CLEAR ALL		
District 2 - 2015/2016 prices.		

Segment 1												Segment 2												
SEG	Length	W&G	Length	SEG	Length	W&G	Length	SEG	Length	W&G	Length	SEG	Length	W&G	Length	SEG	Length	W&G	Length	SEG	Length	W&G		
1	400'ft	\$ 234,388.85	400'ft	1	400'ft	\$ 234,388.85	400'ft	1	400'ft	\$ 152,079.51	400'ft	0	\$ 614,387.28	400'ft	\$ 614,387.28	0	\$ 830,807.71	400'ft	\$ 830,807.71	0	\$ 830,807.71	400'ft	\$ 830,807.71	
ALT	Description:	ALT	Description:	ALT	Description:	ALT	Description:	ALT	Description:	ALT	Description:	ALT	Description:	ALT	Description:	ALT	Description:	ALT	Description:	ALT	Description:	ALT	Description:	
1	Performance Type: 2" mil. 3" bit OL	Pavement Type: PCC	Primary Category: Overlay, 20-21 ft to 2 years	Secondary Category: Design Life = 20 Years	ShoalCategory: Bituminous	Notes: This Blt	CLICK HERE TO EDIT THIS ALTERNATE	1	Performance Type: 2" mil. 3" bit OL	Pavement Type: PCC	Primary Category: Overlay, 20-21 ft to 2 years	Secondary Category: Design Life = 20 Years	ShoalCategory: Bituminous	Notes: This Blt	CLICK HERE TO EDIT THIS ALTERNATE	1	Performance Type: 2" mil. 3" bit OL	Pavement Type: PCC	Primary Category: Overlay, 20-21 ft to 2 years	Secondary Category: Design Life = 20 Years	ShoalCategory: Aggregate	Notes: This Blt	CLICK HERE TO EDIT THIS ALTERNATE	
2	Performance Type: 2" mil. 3" bit OL	Pavement Type: PCC	Primary Category: Overlay, 20-21 ft to 2 years	Secondary Category: Design Life = 20 Years	ShoalCategory: Bituminous	Notes: This Blt	CLICK HERE TO EDIT THIS ALTERNATE	2	Performance Type: 2" mil. 3" bit OL	Pavement Type: PCC	Primary Category: Overlay, 20-21 ft to 2 years	Secondary Category: Design Life = 20 Years	ShoalCategory: Bituminous	Notes: This Blt	CLICK HERE TO EDIT THIS ALTERNATE	2	Performance Type: 2" mil. 3" bit OL	Pavement Type: PCC	Primary Category: Overlay, 20-21 ft to 2 years	Secondary Category: Design Life = 20 Years	ShoalCategory: Aggregate	Notes: This Blt	CLICK HERE TO EDIT THIS ALTERNATE	
3	Crack Treatment	S 2,112.00	S 2,005.48	3	Crack Treatment	S 2,112.00	S 2,005.48	3	Crack Treatment	S 2,464.00	S 2,339.73	3	Crack Treatment	S 2,464.00	S 2,339.73	3	Crack Treatment	S 2,464.00	S 2,339.73	3	Crack Treatment	S 2,464.00	S 2,339.73	
4				4				4				4			4				4			4		
5				5				5				5			5				5			5		
6				6				6				6			6				6			6		
7	Seal	S 8,678.30	S 7,864.42	7	Seal	S 8,678.30	S 7,864.42	7	Seal	S 8,544.30	S 7,572.45	7	Seal	S 8,544.30	S 7,572.45	7	Seal	S 8,544.30	S 7,572.45	7	Seal	S 8,544.30	S 7,572.45	
8				8				8				8			8				8			8		
9				9				9				9			9				9			9		
10				10				10				10			10				10			10		
11				11				11				11			11				11			11		
12				12				12				12			12				12			12		
13				13				13				13			13				13			13		
14				14				14				14			14				14			14		
15				15				15				15			15				15			15		
16				16				16				16			16				16			16		
17	ML Overlay 3.5"	S 196,279.75	S 146,391.56	17	ML Overlay 3.5"	S 196,279.75	S 146,391.56	17	ML Overlay 3.5"	S 176,514.17	S 131,649.77	17	ML Overlay 3.5"	S 176,514.17	S 131,649.77	17	ML Overlay 3.5"	S 176,514.17	S 131,649.77	17	ML Overlay 3.5"	S 176,514.17	S 131,649.77	
18				18				18				18			18				18			18		
19				19				19				19			19				19			19		
20	Crack Treatment	S 2,112.00	S 1,495.75	20	Crack Treatment	S 2,112.00	S 1,495.75	20	Crack Treatment	S 299,293.87	S 211,604.52	20	Crack Treatment	S 299,293.87	S 211,604.52	20	Crack Treatment	S 299,293.87	S 211,604.52	20	Crack Treatment	S 299,293.87	S 211,604.52	
21				21				21				21			21				21			21		
22				22				22				22			22				22			22		
23				23				23				23			23				23			23		
24	Seal	S 8,678.30	S 5,866.52	24	Seal	S 8,678.30	S 5,866.52	24	Seal	S 8,544.30	S 5,647.77	24	Seal	S 8,544.30	S 5,647.77	24	Seal	S 8,544.30	S 5,647.77	24	Seal	S 8,544.30	S 5,647.77	
25				25				25				25			25				25			25		
26				26				26				26			26				26			26		
27				27				27				27			27				27			27		
28				28				28				28			28				28			28		
29				29				29				29			29				29			29		
30				30				30				30			30				30			30		
31				31				31				31			31				31			31		
32				32				32				32			32				32			32		
33	ML Overlay 3.5"	S 196,279.75	S 110,081.18	33	ML Overlay 3.5"	S 196,279.75	S 110,081.18	33	ML Overlay 3.5"	S 176,514.17	S 99,896.04	33	ML Overlay 3.5"	S 176,514.17	S 99,896.04	33	ML Overlay 3.5"	S 176,514.17	S 99,896.04	33	ML Overlay 3.5"	S 176,514.17	S 99,896.04	
34				34				34				34			34				34			34		
35	Remaining Life	S 170,109.12	S 60,007.28	35	Remaining Life	S 170,109.12	S 60,007.28	35	Remaining Life	S 152,978.90	S 63,641.34	35	Remaining Life	S 152,978.90	S 63,641.34	35	Remaining Life	S 152,978.90	S 63,641.34	35	Remaining Life	S 152,978.90	S 63,641.34	
	Total Lane Width	# of Lanes	Analysis Period:		Total Lane Width	# of Lanes	Analysis Period:		Total Lane Width	# of Lanes	Analysis Period:		Total Lane Width	# of Lanes	Analysis Period:		Total Lane Width	# of Lanes	Analysis Period:		Total Lane Width	# of Lanes	Analysis Period:	
24	Total Lane Width	# of Sheds	Mt. Mix		25	Total Lane Width	# of Sheds	Mt. Mix		26	Total Lane Width	# of Sheds	Mt. Mix		27	Total Lane Width	# of Sheds	Mt. Mix		28	Total Lane Width	# of Sheds	Mt. Mix	
20		2	WEARING COURSE MIXTURE (3.0)		29		2	WEARING COURSE MIXTURE (3.0)		30		2	WEARING COURSE MIXTURE (3.0)		31		2	WEARING COURSE MIXTURE (3.0)		32		2	WEARING COURSE MIXTURE (3.0)	
Width of Roundin Averages: white/2 million	SL Mix		Width of Roundin Averages: white/2 million	SL Mix	Width of Roundin Averages: white/2 million	SL Mix		Width of Roundin Averages: white/2 million	SL Mix	Width of Roundin Averages: white/2 million	SL Mix		Width of Roundin Averages: white/2 million	SL Mix		Width of Roundin Averages: white/2 million	SL Mix		Width of Roundin Averages: white/2 million	SL Mix		Width of Roundin Averages: white/2 million	SL Mix	
3	Sealed/UTWC	ML Thickness		3	Sealed/UTWC	ML Thickness		3	Sealed/UTWC	ML Thickness		3	Sealed/UTWC	ML Thickness		3	Sealed/UTWC	ML Thickness		3	Sealed/UTWC	ML Thickness		
14	ML Top Lift / joint spacing	# Dowels per Lane		14	ML Top Lift / joint spacing	# Dowels per Lane		14	ML Top Lift / joint spacing	# Dowels per Lane		14	ML Top Lift / joint spacing	# Dowels per Lane		14	ML Top Lift / joint spacing	# Dowels per Lane		14	ML Top Lift / joint spacing	# Dowels per Lane		
15	Dens life	Shd Thickness		15	Dens life	Shd Thickness		15	Dens life	Shd Thickness		15	Dens life	Shd Thickness		15	Dens life	Shd Thickness		15	Dens life	Shd Thickness		
16				16				16				16			16				16			16		
17		3		17				17				17			17				17			17		
	Total Lane Width	# of Lanes	Analysis Period:		Total Lane Width	# of Lanes	Analysis Period:		Total Lane Width	# of Lanes	Analysis Period:		Total Lane Width	# of Lanes	Analysis Period:		Total Lane Width	# of Lanes	Analysis Period:		Total Lane Width	# of Lanes	Analysis Period:	
24	Total Lane Width	# of Sheds	Mt. Mix		25	Total Lane Width	# of Sheds	Mt. Mix		26	Total Lane Width	# of Sheds	Mt. Mix		27	Total Lane Width	# of Sheds	Mt. Mix		28	Total Lane Width	# of Sheds	Mt. Mix	
20		2	WEARING COURSE MIXTURE (3.0)		29		2	WEARING COURSE MIXTURE (3.0)		30		2	WEARING COURSE MIXTURE (3.0)		31		2	WEARING COURSE MIXTURE (3.0)		32		2	WEARING COURSE MIXTURE (3.0)	
Width of Roundin Averages: white/2 million	SL Mix		Width of Roundin Averages: white/2 million	SL Mix	Width of Roundin Averages: white/2 million	SL Mix		Width of Roundin Averages: white/2 million	SL Mix	Width of Roundin Averages: white/2 million	SL Mix		Width of Roundin Averages: white/2 million	SL Mix		Width of Roundin Averages: white/2 million	SL Mix		Width of Roundin Averages: white/2 million	SL Mix		Width of Roundin Averages: white/2 million	SL Mix	
3	Sealed/UTWC	ML Thickness		3	Sealed/UTWC	ML Thickness		3	Sealed/UTWC	ML Thickness		3	Sealed/UTWC	ML Thickness		3	Sealed/UTWC	ML Thickness		3	Sealed/UTWC	ML Thickness		
14	ML Top Lift / joint spacing	# Dowels per Lane		14	ML Top Lift / joint spacing	# Dowels per Lane		14	ML Top Lift / joint spacing	# Dowels per Lane		14	ML Top Lift / joint spacing	# Dowels per Lane		14	ML Top Lift / joint spacing	# Dowels per Lane		14	ML Top Lift / joint spacing	# Dowels per Lane		
15	Dens life	Shd Thickness		15	Dens life	Shd Thickness		15	Dens life	Shd Thickness		15	Dens life	Shd Thickness		15	Dens life	Shd Thickness		15	Dens life	Shd Thickness		
16				16				16				16			16				16			16		
17		3		17				17				17			17				17			17		

35-Year Analysis Period	35 - Year	50-Year Analysis Period
Project Number: Highways 12 State 30/06/2014 Performed By: All	Analysis Period Discount Rate: 1.72% CLEAR ALL	
<small>District 2 - 2013/2015 prices</small>		

Segment 2					
SEG	Length	SEG	Length	SEG	Length
1	#01#1	2	#01#1	2	#01#1
ALT	Description	ALT	Description	ALT	Description
1	2" MIL & 5" BL COL	2	6" UBL	1	5" MIL & 5" BL COL
Payment Type	Primary Category	Payment Type	Primary Category	Payment Type	Primary Category
MMIA	Overall, 21-24 Years	MMIA	Overall, 21-24 Years	MMIA	Overall, 21-24 Years
Primary Category	Secondary Category	Primary Category	Secondary Category	Primary Category	Secondary Category
Overall, 21-24 Years	Design Up to 20 Years	Overall, 21-24 Years	Design Up to 20 Years	Overall, 21-24 Years	Design Up to 20 Years
Seasonal Category	Rural	Seasonal Category	Rural	Seasonal Category	Rural
Overall, 21-24 Years		Overall, 21-24 Years		Overall, 21-24 Years	
Seasonal Category		Seasonal Category		Seasonal Category	
Rural		Rural		Rural	
CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE	

LCCA SUMMARY					
	Alternative #1	Alternative #2	Alternative #3	Alternative #4	Length
Segment #3	2" MDH, 1" Silt CL.	4" UBLD	5" MDH & 5" Silt CL.	4" UBLD	4,600'
Segment #4 Not Present Cost	2" MDH & 5" Silt CL	6" UBLD	7" MDH & 5" Silt CL	6" UBLD	4,600'
Segment #5					
Segment #6					
Segment #7					
Segment #8					
Project Not Present Cost	4000\$	4000\$	4000\$	4000\$	Total
% of Total Cost	100%	100%	100%	100%	100%

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #5 Not Present Cost	2" MDL & 3" SHL CL	4" UBCS	5" MDL & 3" SHL CL	#E2#1
Segment #4 Not Present Cost	2" MDL & 3" SHL CL	4" UBCS	5" MDL & 3" SHL CL	#E2#2
Segment #3 Not Present Cost				Miles
Segment #4 Not Present Cost				Miles
Segment #5 Not Present Cost				Miles
Segment #6 Not Present Cost				Miles
Segment #7 Not Present Cost				Miles
Segment #8 Not Present Cost				Miles
Project Net Present Cost	#E2#1	#E2#1	#E2#1	Total
Bid Adjustment Factor	#E2#1	#E2#1	#E2#1	#E2#1

Net Present Cost for Segment	#001	Net Present Cost for Segment	#001	Net Present Cost for Segment	#001
Maintenance - Net Present Cost for Segment	#001	Maintenance - Net Present Cost for Segment	#001	Maintenance - Net Present Cost for Segment	#001
Equivalent Annual Cost	#001	Equivalent Annual Cost	#001	Equivalent Annual Cost	#001
Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24			24	2	15
Total Shoulder	# of Shds	Mt. Min.	Total Shoulder	# of Shds	Mt. Min.
20	2	WEARING COURSE NATURE (I)	18	2	WEARING COURSE NATURE (I)
Width of Roundline Awareness	white/ ² /7' million	SL Min.	Width of Roundline Awareness	white/ ² /7' million	SL Max.
Sealed/UTWC	MT. Thickness	WEARING COURSE NATURE (I)	Sealed/UTWC	MT. Thickness	WEARING COURSE NATURE (I)
MT. Top Lip / joint spacing	# Dovels per Lane		MT. Top Lip / joint spacing	# Dovels per Lane	
1.5	12		1.5	22	
Design Life	SHD#	Thickness	Design Life	SHD#	Thickness
10	1	in	10	1	in

Net Present Cost for Segment		#001	Net Present Cost for Segment		#001	Net Present Cost for Segment		#001
Maintenance	- Net Present Cost for Segment	#001	Maintenance	- Net Present Cost for Segment	#001	Maintenance	- Net Present Cost for Segment	#001
Equivalent Annual Cost		#001	Equivalent Annual Cost		#001	Equivalent Annual Cost		#001
Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
20			20		35	20		35
# of Sheds			Total Sheds	# of Sheds		Total Sheds	# of Sheds	
8		WEARING COURSE MORTAR	8		Mt. Mix	8		Mt. Mix
Width of Roundabout Areas	white/ ² >? million	SL Mix	Width of Roundabout Areas	white/ ² >? million	SL Mix	Width of Roundabout Areas	white/ ² >? million	SL Mix
Sealed/UTBWC	MT. Thickness		Sealed/UTBWC	MT. Thickness		Sealed/UTBWC	MT. Thickness	
N	1		N	1		N	1	
MT. Top Lift / joint spacing	# Dovels per Lane		MT. Top Lift / joint spacing	# Dovels per Lane		MT. Top Lift / joint spacing	# Dovels per Lane	
1.5			12	23		1.5		
Design Life	Shd# Thickness		Design Life	Shd# Thickness		Design Life	Shd# Thickness	

35-Year Analysis Period **50 - Year** **50-Year Analysis Period**

Project Number	Analysis Period
6402-22	50
Highway	Discount Rate
	1.58%
Date	
Performed By	CLEAR ALL

D8 - 2016/2017 prices

(Redacted)

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	4.5" CIR + 1.5" HMA	6" PCC UBL on 1.5" PASSRC	6" PCC UBL on 1.5" PASSRC	20.0 Miles
Net Present Cost	\$7,679,743.98	\$20,208,257.42	\$15,509,711.00	
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 7,679,743.98	\$ 20,208,257.42	\$ 15,509,711.00	Total
% of Low Cost	100.0%	263.1%	202.0%	20.0

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	4.5" CIR + 1.5" HMA	6" PCC UBL on 1.5" PASSRC	6" PCC UBL on 1.5" PASSRC	20.0 Miles
Net Present Cost	\$4,406,310.77	\$9,763,946.99	\$4,554,315.38	
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 4,406,310.77	\$ 9,763,946.99	\$ 4,554,315.38	Total
Bid Adjustment Factor	\$ -	\$ 5,357,636.22	\$ 148,004.61	20.0

Segment 1											
SEG	Length	SEG	Length	SEG							
1	20.041	1	20.041	1	20.041						
ALT		ALT		ALT							
1	4.5" CIR + 1.5" HMA	2	6" PCC UBL on 1.5" PASSRC	3	6" PCC UBL on 1.5" PASSRC						
Pavement Type	PCC	Pavement Type	PCC	Pavement Type	PCC						
Primary Category	>12 Joint Spacing	Primary Category	>12 Joint Spacing	Primary Category	>12 Joint Spacing						
Secondary Category	Rural	Secondary Category	Design Life > 20 Years	Secondary Category	Design Life 35 Years						
ShoulderCategory	Bituminous	ShoulderCategory	Thin Bit	ShoulderCategory	PCC						
	DELETE		DELETE		DELETE						
Notes:		Notes:		Notes:							
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	4.5" CIR + 1.5" HMA	\$ 163,336.82	\$ 163,336.82	0	6" PCC UBL	\$ 521,147.17	\$ 521,147.17	0	6" PCC UBL	\$ 546,649.15	\$ 546,649.15
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ -	\$ -	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8	Crack Treatment	\$ 1,056.00	\$ 931.53	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12	Seal	\$ 11,130.21	\$ 9,221.57	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	ML Overlay 3.5	\$ 168,692.29	\$ 123,290.91	20	1st CPR	\$ 304,841.61	\$ 222,197.38	20	1st CPR	\$ 158,497.42	\$ 115,839.86
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Crack Treatment	\$ 2,112.00	\$ 1,472.67	23		\$ -	\$ -	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26	Seal	\$ 6,482.80	\$ 4,245.62	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27		\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35		\$ -	\$ -	35	Remove and Replace	\$ 570,383.82	\$ 329,518.58	35	2nd CPR	\$ 192,846.46	\$ 111,410.05
36		\$ -	\$ -	36		\$ -	\$ -	36		\$ -	\$ -
37	ML Overlay 3.5"	\$ 168,692.29	\$ 94,447.73	37		\$ -	\$ -	37		\$ -	\$ -
38		\$ -	\$ -	38		\$ -	\$ -	38		\$ -	\$ -
39		\$ -	\$ -	39		\$ -	\$ -	39		\$ -	\$ -
40	Crack Treatment	\$ 2,112.00	\$ 1,128.15	40		\$ -	\$ -	40		\$ -	\$ -
41		\$ -	\$ -	41		\$ -	\$ -	41		\$ -	\$ -
42		\$ -	\$ -	42		\$ -	\$ -	42		\$ -	\$ -
43	Chip Seal	\$ 6,482.80	\$ 3,252.38	43		\$ -	\$ -	43		\$ -	\$ -
44		\$ -	\$ -	44		\$ -	\$ -	44		\$ -	\$ -
45		\$ -	\$ -	45		\$ -	\$ -	45		\$ -	\$ -
46		\$ -	\$ -	46		\$ -	\$ -	46		\$ -	\$ -
47		\$ -	\$ -	47		\$ -	\$ -	47		\$ -	\$ -
48		\$ -	\$ -	48		\$ -	\$ -	48		\$ -	\$ -
49		\$ -	\$ -	49		\$ -	\$ -	49		\$ -	\$ -
50	4/17 Remaining Life	\$ (39,692.30)	\$ (18,125.75)	50	5/20 Remaining	\$ (142,595.96)	\$ (65,117.36)	50	0/0 Remaining	\$ -	\$ -
	Net Present Cost for Segment	\$ 7,679,743.98	\$ 20,208,257.42		Net Present Cost for Segment	\$ 5,357,636.22	\$ 148,004.61		Net Present Cost for Segment	\$ 15,509,711.00	
	Maintenance - Net Present Cost for Segment	\$ 4,406,310.77	\$ 9,763,946.99		Maintenance - Net Present Cost for Segment	\$ 4,554,315.38	\$ 148,004.61		Maintenance - Net Present Cost for Segment	\$ 4,554,315.38	
	Equivalent Annual Cost	\$ 223,320.86	\$ 587,640.09		Equivalent Annual Cost	\$ 148,004.61	\$ 451,010.09		Equivalent Annual Cost	\$ 451,010.09	

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	50	27	2	50	27	2	50
Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix
14	2	WEARING COURSE MIXTURE (4,1)	12	2	WEARING COURSE MIXTURE (2,1)	3	N	WEARING COURSE MIXTURE (2,8)
Width of Rounding Aggregate	white/ >7 million	SL Mix	Width of Rounding Aggregate	white/ >7 million	SL Mix	Width of Rounding Aggregate	white/ >7 million	SL Mix
3	N	WEARING COURSE MIXTURE (2,1)	3	N	WEARING COURSE MIXTURE (2,1)	3	N	WEARING COURSE MIXTURE (2,8)
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			N	6		N	6	
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
1.5	6		12	6		12	6	
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
20	4.5		3	3		4	4	

35-Year Analysis Period	35 - Year	50-Year Analysis Period
Project Number: <input type="text" value="123456789"/> Highway: <input type="text" value="I-94"/> Date: <input type="text" value="12/31/2015"/> Performed By: <input type="text" value="John Doe"/>	Analysis Period <input type="radio"/> 35 Years <input type="radio"/> 50 Years Discount Rate <input type="text" value="3.5%"/>	
		CLEAR ALL

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
genrate#1	2.5" Soil and 4" Overlay \$4,400,400.43	4" Soil and 4" Whiteopping \$4,400,400.43	4" MBG 4" FOB + 4" Overlay \$4,793,846.73	4" MBG 4" FOB + 4" Overlay \$4,607,881.99
genrate#2				3.7
genrate#3				0.0
genrate#4				0.0
genrate#5				0.0
genrate#6				0.0
genrate#7				0.0
genrate#8				0.0
Net Present Cost	\$ 4,400,400.43	\$ 4,793,846.73	\$ 4,607,881.99	\$ 13,799,130.15
Net of Loss	100.0%	115.8%	107.6%	114.4%

Segment 1					
Start	Length	Start	Length	Start	Length
1	5.688	5.688	5.688	5.688	5.688
		Description	#11	Description	#11
1	2.5" Mill and 4" Overlay	2	#1" Mill and 4" Whitewashing	3	#1" Mill, #1" For, 4" Overlay
Pawnshop Type	MM&A	Pawnshop Type	MM&A	Pawnshop Type	MM&A
Primary Category	Collectibles	Primary Category	Collectibles	Primary Category	Collectibles
Secondary Category	Rural	Secondary Category	Design Life > 20 Years	Secondary Category	Design Life > 20 Years
Subsecondary Category	Aggregate	Subsecondary Category	Aggregate	Subsecondary Category	Aggregate
CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE	

Notes: Considered 2' shoulder as mainline				Notes: Considered 2' shoulder as mainline				Notes: Considered 2' shoulder as mainline			
Year	Activity	Cost/ ^{per} Mile	Pres. Cost/ ^{per} Mile	Year	Activity	Cost	Pres. Cost/ ^{per} Mile	Year	Activity	Cost	Pres. Cost/ ^{per} Mile
0	2.5' Mill and 4" Overlay	\$ 203,790.00	\$ 203,790.00	0	4" Mill and 4" Whitestoppe	\$ 208,641.00	\$ 208,641.00	0	5" Mill, 9' 7"OR and 4" Overlay	\$ 270,683.00	\$ 270,683.00
1		\$ 5	\$ 5	1		\$ 5	\$ 5	1		\$ 5	\$ 5
2		\$ 5	\$ 5	2		\$ 5	\$ 5	2		\$ 5	\$ 5
3	Crack Treatment	\$ 2,464.00	\$ 2,393.73	3		\$ 5	\$ 5	3		\$ 5	\$ 5
4		\$ 5	\$ 5	4		\$ 5	\$ 5	4		\$ 5	\$ 5
5		\$ 5	\$ 5	5		\$ 5	\$ 5	5		\$ 5	\$ 5
6		\$ 5	\$ 5	6		\$ 5	\$ 5	6		\$ 5	\$ 5
7	Seal	\$ 8,733.73	\$ 7,740.29	7		\$ 5	\$ 5	7		\$ 5	\$ 5
8		\$ 5	\$ 5	8		\$ 5	\$ 5	8	Crack Treatment	\$ 1,213.00	\$ 1,073.19
9		\$ 5	\$ 5	9		\$ 5	\$ 5	9		\$ 5	\$ 5
10		\$ 5	\$ 5	10		\$ 5	\$ 5	10		\$ 5	\$ 5
11		\$ 5	\$ 5	11		\$ 5	\$ 5	11		\$ 5	\$ 5
12		\$ 5	\$ 5	12		\$ 5	\$ 5	12	Seal	\$ 12,742.80	\$ 10,360.10
13		\$ 5	\$ 5	13		\$ 5	\$ 5	13		\$ 5	\$ 5
14		\$ 5	\$ 5	14		\$ 5	\$ 5	14		\$ 5	\$ 5
15		\$ 5	\$ 5	15		\$ 5	\$ 5	15		\$ 5	\$ 5
16		\$ 5	\$ 5	16		\$ 5	\$ 5	16		\$ 5	\$ 5
17		\$ 5	\$ 5	17		\$ 5	\$ 5	17		\$ 5	\$ 5
18	Mr. Overlay 3.5"	\$ 192,137.27	\$ 140,851.16	18		\$ 5	\$ 5	18		\$ 5	\$ 5
19		\$ 5	\$ 5	19		\$ 5	\$ 5	19		\$ 5	\$ 5
20		\$ 5	\$ 5	20	1st CPR	\$ 378,864.41	\$ 268,117.59	20	Mr. Overlay 4	\$ 219,249.92	\$ 155,276.10
21	Crack Treatment	\$ 2,464.00	\$ 1,715.20	21		\$ 5	\$ 5	21		\$ 5	\$ 5

Not Present Cost for Segment	\$ 3,200,649.07	Not Present Cost for Segment	\$ 2,095,461.60	Not Present Cost for Segment	\$ 2,482,404.56
Maintainance - Not Present Cost for Segment	900,527.35	Maintainance - Not Present Cost for Segment	1,801,718.58	Maintainance - Not Present Cost for Segment	1,088,121.43
Equivalent Annual Cost	73,072.21	Equivalent Annual Cost	114,935.03	Equivalent Annual Cost	78,093.53
<hr/>					
Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
28	2	1L	28	2	35
Total Slab Width	# of Lanes		Total Slab Width	# of Lanes	Mt. Thickn.
16	2	WEARING COURSE MATURE 13.	16	2	WEARING COURSE MATURE 13.
Width of Roundabout Area white/ ² >7 million	SL Mix	Width of Roundabout Area white/ ² >7 million	SL Mix	Width of Roundabout Area white/ ² >7 million	SL Mix
Sealed(U)TBWC	Mt. Thickness	Sealed(U)TBWC	Mt. Thickness	Sealed(U)TBWC	Mt. Thickness
N		N	4	N	
Mt. Top Lift / Joint spacing	# Dovetails per Lane	Mt. Top Lift / Joint spacing	# Dovetails per Lane	Mt. Top Lift / Joint spacing	# Dovetails per Lane
Shrd Thickness	Design Life	Shrd Thickness	Design Life	Shrd Thickness	Design Life

Notes: 2nd Mill and 3.5° Overlay, and 4th Mill and Overlay have been removed from the table as they are no longer in use.				Notes: 2nd Mill and 3.5° Overlay, and 4th Mill and Overlay have been removed from the table as they are no longer in use.				Notes:			
Year	Activity	Cost	Pres./Cost per Mile	Year	Activity	Cost	Pres./Cost per Mile	Year	Activity	Cost	Pres./Cost per Mile
0	2nd Mill and 4° Overlay	\$ 159,847.00	\$ 15,445.00	0	4th Mill and 4° Whiskership	\$ 212,445.00	\$ 21,244.00	0	4th Mill, 4° FOR and 4° Overlay	\$ 298,088.00	\$ 20,490.00
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ -	\$ -	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 8,350.01	\$ 7,408.20	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	ML Overlay 5.5°	\$ 187,104.02	\$ 137,185.40	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	1st CPR	\$ 325,277.48	\$ 26,036.50	20	ML Overlay 4	\$ 250,100.80	\$ 17,711.00
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23		\$ -	\$ -	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26	Seal	\$ 8,350.01	\$ 5,430.77	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27		\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30	Remove and Replace	\$ 395,295.44	\$ 235,597.03	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ -	\$ -	35	30/35 Remaining	\$ (338,024.66)	\$ (185,252.81)	35	2/17 Remaining Life	\$ (29,421.26)	\$ (16,086.00)

Net Present Cost for Segment	\$ 2,405,752.41	Net Present Cost for Segment	\$ 1,732,446.71	Net Present Cost for Segment	\$ 1,667,814.21
Maintenance - Net Present Cost for Segment	\$ 1,380,184.13	Maintenance - Net Present Cost for Segment	\$ 2,135,670.42	Maintenance - Net Present Cost for Segment	\$ 1,972,113.00
Accumulated Equal	\$9,720,600	Accumulated Equal	\$15,620,371	Accumulated Equal	\$14,800,371
Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	15	24	2	15
Total Lane Width	# of Lanes	ML/Mile	Total Lane Width	# of Lanes	ML/Mile
10	2		10	2	
Width of Roundine Areawhite/ >7'mil			Width of Roundine Areawhite/ >7'mil		
Sealed/UTBCW	ML/Thickness		Sealed/UTBCW	ML/Thickness	
N			N		
Mc. Top Up joint spacing	# Dowels per Lane		Mc. Top Up joint spacing	# Dowels per Lane	
Design Life	SLR/Shink Thickness		Design Life	SLR/Shink Thickness	

35-Year Analysis Period	35 - Year	50-Year Analysis Period																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Project Number:</th> <th style="width: 50%;">Analysis Period:</th> </tr> </thead> <tbody> <tr> <td>SDOT-00000000000000000000</td> <td>Discount Rate:</td> </tr> <tr> <td>Highway</td> <td>1.74%</td> </tr> <tr> <td>1.0% Off From T-1 to T-50 CAAH + 10% more</td> <td></td> </tr> <tr> <td>View Details</td> <td></td> </tr> <tr> <td>Print PDF</td> <td></td> </tr> <tr> <td>Perform By</td> <td></td> </tr> <tr> <td>View</td> <td></td> </tr> </tbody> </table>		Project Number:	Analysis Period:	SDOT-00000000000000000000	Discount Rate:	Highway	1.74%	1.0% Off From T-1 to T-50 CAAH + 10% more		View Details		Print PDF		Perform By		View		CLEAR ALL
Project Number:	Analysis Period:																	
SDOT-00000000000000000000	Discount Rate:																	
Highway	1.74%																	
1.0% Off From T-1 to T-50 CAAH + 10% more																		
View Details																		
Print PDF																		
Perform By																		
View																		

Segment 1									
SIS#	Length								
ALT:	Description								
1	3" M&B & 3" Bl. CL	2	3" M&B & 3" Bl. CL	3	3" M&B & 3" Bl. CL	4	3" M&B & 3" Bl. CL	5	3" M&B & 3" Bl. CL
Program Type	Program Type								
HSNA	HSNA								
Overlays, DS->13 to 17 rows.	Overlays, DS->13 to 17 rows.	Overlays, DS->13 to 17 rows.	Overlays, DS->13 to 17 rows.	Overlays, DS->13 to 17 rows.	Overlays, DS->13 to 17 rows.	Overlays, DS->13 to 17 rows.	Overlays, DS->13 to 17 rows.	Overlays, DS->13 to 17 rows.	Overlays, DS->13 to 17 rows.
Secondary Category	Secondary Category								
ShoulderCategory	ShoulderCategory								
Thick	Thick								
CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE	

Year	Activity	Cost/ ^{per Mile}	Pres. Cost/ ^{per Mile}	Year	Activity	Cost	Pres. Cost/ ^{per Mile}	Year	Activity	Cost	Pres. Cost/ ^{per Mile}
0		\$ 349,210.38	\$ 349,210.38	0		\$ 349,210.38	\$ 349,210.38	0		\$ 349,210.38	\$ 349,210.38
1				1		\$ -	\$ -	1		\$ -	\$ -
2				2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 1,909.25	\$ 1,812.96	3	Crack Treatment	\$ 1,909.25	\$ 1,812.96	3	Crack Treatment	\$ 1,909.25	\$ 1,812.96
4				4		\$ -	\$ -	4		\$ -	\$ -
5				5		\$ -	\$ -	5		\$ -	\$ -
6				6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 9,934.37	\$ 8,884.37	7	Seal	\$ 9,934.37	\$ 8,804.17	7	Seal	\$ 9,934.37	\$ 8,804.17
8				8		\$ -	\$ -	8		\$ -	\$ -
9				9		\$ -	\$ -	9		\$ -	\$ -
10				10		\$ -	\$ -	10		\$ -	\$ -
11				11		\$ -	\$ -	11		\$ -	\$ -
12				12		\$ -	\$ -	12		\$ -	\$ -
13				13		\$ -	\$ -	13		\$ -	\$ -
14				14		\$ -	\$ -	14		\$ -	\$ -
15	ML Overlay 3.5"	\$ 289,824.17	\$ 223,747.71	15	ML Overlay 3.5"	\$ 289,824.17	\$ 223,747.71	15	ML Overlay 3.5"	\$ 289,824.17	\$ 223,747.71
16				16		\$ -	\$ -	16		\$ -	\$ -
17				17		\$ -	\$ -	17		\$ -	\$ -
18	Crack Treatment	\$ 1,909.25	\$ 1,890.62	18	Crack Treatment	\$ 1,909.25	\$ 1,899.62	18	Crack Treatment	\$ 1,909.25	\$ 1,899.62
19				19		\$ -	\$ -	19		\$ -	\$ -
20				20		\$ -	\$ -	20		\$ -	\$ -
21				21		\$ -	\$ -	21		\$ -	\$ -
22				22		\$ -	\$ -	22		\$ -	\$ -
23	Seal	\$ 9,934.37	\$ 6,797.08	23	Seal	\$ 9,934.37	\$ 6,797.08	23	Seal	\$ 9,934.37	\$ 6,797.08
24				24		\$ -	\$ -	24		\$ -	\$ -
25				25		\$ -	\$ -	25		\$ -	\$ -
26				26		\$ -	\$ -	26		\$ -	\$ -
27				27		\$ -	\$ -	27		\$ -	\$ -
28	ML Overlay 4.0"	\$ 350,244.01	\$ 213,371.45	28	ML Overlay 4.0"	\$ 350,244.01	\$ 212,378.45	28	ML Overlay 4.0"	\$ 350,244.01	\$ 212,378.45
29				29		\$ -	\$ -	29		\$ -	\$ -
30				30		\$ -	\$ -	30		\$ -	\$ -
31				31		\$ -	\$ -	31		\$ -	\$ -
32	Crack Treatment	\$ 1,909.25	\$ 1,097.33	32	Crack Treatment	\$ 1,909.25	\$ 1,209.13	32	Crack Treatment	\$ 1,909.25	\$ 1,099.13
33				33		\$ -	\$ -	33		\$ -	\$ -
34				34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (188,592.93)	\$ (101,113.11)	35	Remaining Life	\$ (188,592.93)	\$ (101,113.11)	35	Remaining Life	\$ (188,592.93)	\$ (101,113.11)

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
Total Width Shred	# of Shreds	Mt Mix	Total Width Shred	# of Shreds	Mt Mix	Total Width Shred	# of Shreds	Mt Mix
Width of Resinous Aggregate	white/millimeter	N	WEARING COURSE Mixture (I)			Width of Resinous Aggregate	white/millimeter	N
Sealed/UTBC	Mt. Thickness	N	WEARING COURSE Mixture (I,B)			Sealed/UTBC	Mt. Thickness	N
Mt. Top & Top joint spacing	# Dovels per Lane		Mt. Top & Top joint spacing	# Dovels per Lane		Mt. Top & Top joint spacing	# Dovels per Lane	
Design Life	Shdle thickness		Design Life	Shdle thickness		Design Life	Shdle thickness	

Segment 2					
SID	Length	SID	Length	SID	Length
AZT	Description	AZT	Description	AZT	Description
1	Payment Type HMO	1	CIP & S* BIL OI	2	CIP & S* BIL OI
Overlays: Secondary Category	10-13 to 17 rows	Overlays: Secondary Category	10-13 to 17 rows	Overlays: Secondary Category	10-13 to 17 rows
ShoulderCategory	Blurredtext	ShoulderCategory	Blurredtext	ShoulderCategory	Blurredtext
Modifiers		Modifiers		Modifiers	

Year	Activity	Cost	Prev. Cost/Per Mile	Year	Activity	Cost	Prev. Cost/Per Mile	Year	Activity	Cost	Prev. Cost/Per Mile
0		\$ 211,537.40	\$ 211,537.40	0		\$ 286,154.41	\$ 286,154.41	0		\$ 452,304.37	\$ 452,304.37
1				1				1			
2				2				2			
3				3				3			
4				4				4			
5				5				5			
6				6				6			
7	Seal	\$ 8,376.96	\$ 7,424.11	7				7			
8				8	Crack Treatment	\$ 554.81	\$ 831.57	8			
9				9				9			
10				10				10			
11				11				11			
12				12	Seal	\$ 12,039.38	\$ 9,788.21	12			
13				13				13			
14				14				14			
15	M1 Overlay 3.5"	\$ 226,381.51	\$ 174,069.23	15				15			
16				16				16			
17				17				17			
18	Crack Treatment	\$ 1,900.25	\$ 1,999.62	18				18			
19				19				19			
20				20	M1 Overlay 3.5"	\$ 296,381.51	\$ 160,376.86	20	1st CRR	\$ 249,847.02	\$ 276,946.86
21				21				21			
22	Seal	\$ 8,376.96	\$ 5,731.50	22	Crack Treatment	\$ 1,900.25	\$ 1,283.96	22			
23				23				23			
24				24				24			
25				25				25			
26				26				26			
27				27	Seal	\$ 8,376.96	\$ 5,257.87	27			
28	M1 Overlay 3.5"	\$ 226,381.51	\$ 137,271.60	28				28			
29				29				29			
30				30				30			
31				31				31			
32	Crack Treatment	\$ 1,900.25	\$ 1,099.31	32				32			
33				33				33			
34				34				34			
35	Remaining Life	\$ (121,897.74)	\$ (66,647.67)	35	2/17 Remaining Life	\$ (26,633.12)	\$ (14,561.68)	35	O/D Remaining	\$ -	\$ -

Total Line Width	# of Lunes	Analysis Period	Total Line Width	# of Lunes	Analysis Period	Total Line Width	# of Lunes	Analysis Period
Total Side Width	# of Shelves	M/S/M	Total Side Width	# of Shelves	M/S/M	Total Side Width	# of Shelves	M/S/M
Width of Preform Aseptic	#, million square inches		Width of Preform Aseptic	#, million square inches		Width of Preform Aseptic	#, million square inches	
B	N		WEARING COURSE MATURE (I)			WEARING COURSE MATURE (I)		
Sealed/JWBC	M/L Thickness		Sealed/JWBC	M/L Thickness		Sealed/JWBC	M/L Thickness	
M/L Top Lip joint spacing	# Dovens per Lane		M/L Top Lip joint spacing	# Dovens per Lane		M/L Top Lip joint spacing	# Dovens per Lane	
Design Life	Shelf Thickness		Design Life	Shelf Thickness		Design Life	Shelf Thickness	

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
7001-12	35
Highway	Discount Rate
13	1.58%
Date	
10/13/2016	
Performed By	
cc	CLEAR ALL

DS - 2016/2017 prices



LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill & 4" Overlay	Full Depth Reclamation	Whitetopping	1.9 Miles
	\$2,433,792.50	\$3,432,592.49	\$4,019,932.47	
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 2,433,792.50	\$ 3,432,592.49	\$ 4,019,932.47	Total
% of Low Cost	100.0%	141.0%	165.2%	1.9

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill & 4" Overlay	Full Depth Reclamation	Whitetopping	1.9 Miles
	\$836,654.94	\$936,534.79	\$707,826.35	
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 836,654.94	\$ 936,534.79	\$ 707,826.35	Total
Bid Adjustment Factor	\$ 128,828.59	\$ 226,708.43	\$ -	1.9

Segment 1											
SEG	Length	SEG	Length	SEG							
1	1.89	1	1.89	1	1.89						
ALT	Description	ALT	Description	ALT	Description						
1	2" Mill & 4" Overlay	2	Full Depth Reclamation	3	Whitetopping						
Pavement Type		Pavement Type		Pavement Type							
HMA	HMA	PCC	PCC								
Primary Category	Primary Category	Primary Category	Primary Category								
Overlay, DL >13 to 17 years	20 Year HMA	>12 Joint spacing	>12 Joint spacing								
Secondary Category	Secondary Category	Secondary Category	Secondary Category								
Rural	Rural	Design Life = 20 Years	Design Life = 20 Years								
ShoulderCategory	ShoulderCategory	ShoulderCategory	ShoulderCategory								
Bituminous	Bituminous	PCC	PCC								
CLICK HERE TO EDIT THIS ALTERNATE	DELETE	CLICK HERE TO EDIT THIS ALTERNATE	DELETE	CLICK HERE TO EDIT THIS ALTERNATE	DELETE						
Notes:	Notes:	Notes:	Notes:	Notes:							
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	Construction	\$ 845,046.33	\$ 845,046.33	0	Construction	\$ 1,320,665.45	\$ 1,320,665.45	0	Construction	\$ 1,752,437.10	\$ 1,752,437.10
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 5,068.80	\$ 4,835.94	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8	Crack Treatment	\$ 2,534.40	\$ 2,235.68	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17	ML Overlay 3.5"	\$ 503,937.22	\$ 386,044.08	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	Crack Treatment	\$ 5,068.80	\$ 3,704.60	20	ML Overlay 4	\$ 738,804.65	\$ 539,964.80	20	1st CPR	\$ 512,423.57	\$ 374,511.30
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23	Crack Treatment	\$ 5,068.80	\$ 3,534.41	23		\$ -	\$ -
24	Seal	\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33	ML Overlay 3.5"	\$ 503,937.22	\$ 300,403.89	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (436,745.59)	\$ (252,311.93)	35	2/17 Remaining Life	\$ (86,918.19)	\$ (50,213.84)	35	0/0 Remaining	\$ -	\$ -

Net Present Cost for Segment	\$ 2,433,792.50	Net Present Cost for Segment	\$ 3,432,592.49	Net Present Cost for Segment	\$ 4,019,932.47
Maintenance - Net Present Cost for Segment	\$ 836,654.94	Maintenance - Net Present Cost for Segment	\$ 936,534.79	Maintenance - Net Present Cost for Segment	\$ 707,826.35
Equivalent Annual Cost	\$ 91,061.27	Equivalent Annual Cost	\$ 128,431.75	Equivalent Annual Cost	\$ 150,407.30

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
48	4	35	48	4	35	48	4	35
Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix
27	4	WEARING COURSE MIXTURE (4, SL Mix	27	4	WEARING COURSE MIXTURE (4, SL Mix	27	4	WEARING COURSE MIXTURE (4, SL Mix
Width of Rounding Aggregate	white/>7 million	Y	Width of Rounding Aggregate	white/>7 million	Y	Width of Rounding Aggregate	white/>7 million	Y
3	Y	Y	3	Y	Y	3	Y	Y
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
2	2		2	2		2	2	
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
17	4		20	4		20	4	

35-Year Analysis Period	35 - Year	50-Year Analysis Period																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Project Number:</th> <th style="width: 33%;">Analysis Period:</th> <th style="width: 33%;"> </th> </tr> </thead> <tbody> <tr> <td>Highways</td> <td>Discount Rate:</td> <td>1.74%</td> </tr> <tr> <td>Date:</td> <td colspan="2"></td> </tr> <tr> <td>11/01/2015</td> <td colspan="2"></td> </tr> <tr> <td>Interest (%)</td> <td colspan="2"></td> </tr> <tr> <td>8%</td> <td colspan="2"></td> </tr> </tbody> </table>			Project Number:	Analysis Period:		Highways	Discount Rate:	1.74%	Date:			11/01/2015			Interest (%)			8%		
Project Number:	Analysis Period:																			
Highways	Discount Rate:	1.74%																		
Date:																				
11/01/2015																				
Interest (%)																				
8%																				
CLEAR ALL																				

LCGA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	4" Mail & Fill S232 2452-1	Mail 4" Recumbent Four 4" S232 2452-1	4.5" Whitewater S232 2452-1	34.8
Segment #2	4" Mail & Fill S232 2452-1	Mail 4" Recumbent Four 4" S232 0151-01	Whitewater 4.5" S232 1693-92	0.41
Segment #3	No Present Cost			Minus
Segment #4	No Present Cost			0.0
Segment #5	No Present Cost			0.0
Segment #6	No Present Cost			0.0
Segment #7	No Present Cost			0.0
Segment #8	No Present Cost			0.0
Project Net Present Cost	\$ 5,920,701.73	\$ 7,102,134.80	\$ 9,492,258.45	Total
S/L at Zone End	100.00%	142.0%	160.4%	

BUD ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	4" Mist & Fill 14.45 ft. 14.45 ft.	Mist 4" Recirc 12" Face 4" 14.45 ft. 14.45 ft.	4.5" Mist & Fill 14.45 ft. 14.45 ft.	14.45 ft.
Segment #2	4" Mist & Fill 12.59 ft. 12.59 ft.	Mist 4" Recirc 12" Face 4" 12.59 ft. 12.59 ft.	Whirlspiropr 4.5" 12.59 ft. 12.59 ft.	0.4 ft.
Segment #3	Not Present			0 ft.
Segment #4	Not Present			0 ft.
Segment #5	4" Mist & Fill 12.59 ft. 12.59 ft.	Mist 4" Recirc 12" Face 4" 12.59 ft. 12.59 ft.	4.5" Mist & Fill 12.59 ft. 12.59 ft.	12.59 ft.
Segment #6	Not Present			0 ft.
Segment #7	Not Present			0 ft.
Segment #8	Not Present			0 ft.
Project Net Present Cost	\$ 2,920,180.35	\$ 2,935,064.27	\$ 3,400,224.11	None
Bud Adjustment Factor	1.423618	1	1.264274	1.22

Segment 1					
Seq#	Length	MSL	Length	MSL	Length
1	14.709	1	14.709	1	14.709
ALT		description	ALT	description	ALT
			2	NHS 4" Reclaim 12" Panel A	1
Payout Type		Payout Type		Payout Type	
Primary Measure		Primary Measure		Primary Measure	
20 Year FRA		20 Year FRA		6/60 4.5" Thickness	
Secondary Category		Secondary Category		Design Life - 20 Years	
ShoulderCategory		ShoulderCategory		ShoulderCategory	
CLICK HERE TO EDIT THIS ALTERNATE			CLICK HERE TO EDIT THIS ALTERNATE		
CLICK HERE TO EDIT THIS ALTERNATE					

Segment 2					
MSD	Length	MSD	Length	MSD	Length
2	0.364	2	0.364	2	0.364
ALT	Description	ALT	Description	ALT	Description
1	4" Miss & Fill	1	Miss A - Backline 32" Face	1	Whitetrace 4.5"
Payment Type		Payment Type		Payment Type	
Primary Category		Primary Category		Primary Category	
Overlay DS - 3.5 to 37 years		20 Year MDA		6/6/0.45" Thickness	
Session Category		Session Category		Design DS - 20 Years	
Null		Null		ShoulderCategory	
ShoulderCategory		ShoulderCategory		ShoulderCategory	
CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE		CLICK HERE TO EDIT THIS ALTERNATE	

Year	Activity	Cost/ ^{per} Mile	Pres. Cost/ ^{per} Mile	Year	Activity	Cost	Pres. Cost/ ^{per} Mile	Year	Activity	Cost	Pres. Cost/ ^{per} Mile
0	4" Mill & Fill	\$ 241,775.64	\$ 241,775.64	0	MH 4" Reclaim 12" Pavc 4"	\$ 298,529.36	\$ 298,529.36	0	4.5" Whitenagging	\$ 265,866.27	\$ 265,866.27
1				1				1		\$ 5	
2				2				2		\$ 5	
3				3				3		\$ 5	
4				4				4		\$ 5	
5				5				5		\$ 5	
6				6				6		\$ 5	
7				7				7		\$ 5	
8				8				8		\$ 5	
9				9				9		\$ 5	
10				10				10		\$ 5	
11				11				11		\$ 5	
12	Seal	\$ 12,706.22	\$ 10,330.37	12	Seal	\$ 12,706.22	\$ 10,330.37	12			
13				13				13		\$ 5	
14				14				14		\$ 5	
15				15				15		\$ 5	
16				16				16		\$ 5	
17				17				17		\$ 5	
18				18				18		\$ 5	
19				19				19		\$ 5	
20				20				20		\$ 5	
21	Mt Overlay 4	\$ 230,043.03	\$ 162,926.01	21	Mt Overlay 4	\$ 230,043.03	\$ 162,926.01	21	1st CPR	\$ 447,172.26	\$ 316,996,722.26
22				22				22		\$ 5	
23				23				23		\$ 5	
24				24				24		\$ 5	
25				25				25		\$ 5	
26				26				26		\$ 5	
27				27				27		\$ 5	
28				28				28		\$ 5	
29				29				29		\$ 5	
30				30				30		\$ 5	
31				31				31		\$ 5	
32				32				32		\$ 5	
33				33				33		\$ 5	
34				34				34		\$ 5	
35	2/27 Remaining Life	\$ (27,063.89)	\$ (14,797.20)	35	2/27 Remaining Life	\$ (27,063.89)	\$ (14,797.20)	35	30/35 Remaining	\$ (261,055.96)	\$ (143,055.11)
<hr/>											
Net Present Cost for Segment				Net Present Cost for Segment				Net Present Cost for Segment			
\$ 6,004,821.50				\$ 6,870,402.76				\$ 19,133,719,490.00			
Maintenance - Net Present Cost for Segment				Maintenance - Net Present Cost for Segment				Maintenance - Net Present Cost for Segment			
\$ 2,443,030.45				\$ 2,461,051.56				\$ 5,282,052.22			

Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile
0	4" Mil & Filt	\$ 399,212.51	\$ 199,212.51	0	Mil 4" Reclean 12' Panel 4"	\$ 437,147.32	\$ 437,147.32	0	4.5" Wholeslapping	\$ 440,132.11	\$ 440,132.11
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,464.00	\$ 2,339.73	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 8,659.00	\$ 7,716.22	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8	Crack Treatment	\$ 1,232.00	\$ 1,232.00	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 14,712.13	\$ 11,961.20	12		\$ -	\$ -
13	ML Overlay 3.5"	\$ 203,084.47	\$ 156,783.63	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	Crack Treatment	\$ 2,464.00	\$ 2,806.30	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	Mt. Overlay 4	\$ 276,348.85	\$ 197,380.56	20	1st CDR	\$ 447,823.30	\$ 317,155.31
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22	Seal	\$ 8,659.00	\$ 5,952.39	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23	Crack Treatment	\$ 2,464.00	\$ 1,657.63	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ 10,098.92	\$ 6,338.67	27		\$ -	\$ -
28	ML Overlay 3.5"	\$ 203,084.47	\$ 123,144.91	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30	Remove and Replace	\$ 498,662.95	\$ 297,204.31
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32	Crack Treatment	\$ 2,464.00	\$ 3,418.75	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (109,155.14)	\$ (99,788.92)	35	2/27 Remaining Life	\$ (32,746.92)	\$ (17,904.46)	35	30/35 Remaining	\$ (427,425.38)	\$ (233,095.12)

Net Present Cost for Segment

Maintenance - Net Present Cost for Segment

Remaining Life - Net Present Cost for Segment

35-Year Analysis Period

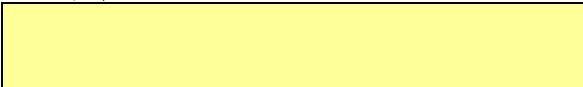
35 - Year

50-Year Analysis Period

Project Number	Analysis Period
8101-57	35
Highway	Discount Rate
13	1.74%
Date	
12/4/2015	
Performed By	C Fenske

CLEAR ALL

District 6 - 2015/2016 prices



LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	15 yr med M&OL Net Present Cost \$6,141,538.28	20yr new bit \$8,617,363.22	20yr UBOL \$6,392,040.27	10.9 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 6,141,538.28	\$ 8,617,363.22	\$ 6,392,040.27	Total
% of Low Cost	100.0%	140.3%	104.1%	10.9

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	15 yr med M&OL Net Present Cost \$3,006,536.20	20yr new bit \$2,661,467.52	20yr UBOL \$1,816,360.66	10.9 Miles
Segment #2				0.0 Miles
Segment #3				0.0 Miles
Segment #4				0.0 Miles
Segment #5				0.0 Miles
Segment #6				0.0 Miles
Segment #7				0.0 Miles
Segment #8				0.0 Miles
Project Net Present Cost	\$ 3,006,536.20	\$ 2,661,467.52	\$ 1,816,360.66	Total
Bid Adjustment Factor	\$ 1,190,175.53	\$ 845,106.85	\$ -	10.9

Segment 1											
SEG	Length	SEG	Length	SEG							
1	10.9	1	10.9	1	10.9						
ALT	Description	ALT	Description	ALT	Description						
1	15 yr med M&OL	2	20yr new bit	3	20yr UBOL						
Pavement Type		Pavement Type		Pavement Type							
HMA		HMA		PCC							
Primary Category		Primary Category		Primary Category							
Overlay, DL >13 to 17 years		20 Year HMA		>12 Joint spacing							
Secondary Category		Secondary Category		Secondary Category							
Rural		Rural		Design Life = 20 Years							
ShoulderCategory		ShoulderCategory		ShoulderCategory							
Aggregate		Aggregate		Aggregate							
CLICK HERE TO EDIT THIS ALTERNATE											
Notes:											
Notes:											
Notes:											
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	Med m&ol	\$ 287,614.87	\$ 287,614.87	0	New Bit	\$ 546,412.45	\$ 546,412.45	0	UBOL	\$ 419,787.12	\$ 419,787.12
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,227.46	\$ 2,115.11	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 8,864.63	\$ 7,856.30	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8	Crack Treatment	\$ 1,113.73	\$ 970.16	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 12,873.70	\$ 10,466.52	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15	ML Overlay 3.5"	\$ 236,975.65	\$ 182,948.02	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	Crack Treatment	\$ 2,227.46	\$ 1,632.89	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	ML Overlay 4	\$ 350,482.42	\$ 248,217.03	20	1st CPR	\$ 235,293.68	\$ 166,638.59
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22	Seal	\$ 8,864.63	\$ 6,065.16	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23	Crack Treatment	\$ 2,227.46	\$ 1,497.96	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ 8,864.63	\$ 5,563.95	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29	ML Overlay 3.5"	\$ 236,975.65	\$ 143,695.60	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32	Crack Treatment	\$ 2,227.46	\$ 1,282.55	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (127,602.27)	\$ (69,766.63)	35	2/17 Remaining Life	\$ (41,233.23)	\$ (22,544.29)	35	0/0 Remaining	\$ -	\$ -
Net Present Cost for Segment					Net Present Cost for Segment					Net Present Cost for Segment	
\$ 6,141,538.28					\$ 8,617,363.22					\$ 6,392,040.27	
Maintenance - Net Present Cost for Segment					Maintenance - Net Present Cost for Segment					\$ 2,661,467.52	
\$ 3,006,536.20					\$ 1,816,360.66					\$ 1,816,360.66	
Equivalent Annual Cost					Equivalent Annual Cost					\$ 330,815.99	
Equivalent Annual Cost					Equivalent Annual Cost					\$ 245,387.02	
Total Lane Width					# of Lanes					Analysis Period	
28					28					28	
Total Shdr Width					# of Shdtrs					2	
8					35					35	
Width of Rounding Aggregate					WEARING COURSE MIXTURE (4,					WEARING COURSE MIXTURE (4,	
white/>7 million					8					8	
SL Mix					2					2	
Sealed/UTBWC					ML Mix					ML Mix	
N					N					N	
ML Top Lift / joint spacing					# Dowels per Lane					6	
2					2					12	
Design Life					Shldr Thickness					11	
15					20					Design Life	
Z					2					Shldr Thickness	

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
8408-57	35
Highway	Discount Rate
	2.00%
Date	
Performed By	CLEAR ALL

District 4 - 2014/2015 prices

Segment 1			
SEG	Length	SEG	Length
1	6.4	1	6.4
ALT	Description	ALT	Description
1	2" mill and 3" overlay	2	5" mill and fill
Pavement Type	Pavement Type	Pavement Type	Pavement Type
HMA	HMA	PCC	PCC
Primary Category	Primary Category	Primary Category	Primary Category
Overlay, DL >13 to 17 years	Overlay, DL >17 years	6X6' >5.5" Thickness	6X6' >5.5" Thickness
Secondary Category	Secondary Category	Secondary Category	Secondary Category
Rural	Rural	Design Life = 20 Years	Design Life = 20 Years
ShoulderCategory	ShoulderCategory	ShoulderCategory	ShoulderCategory
Aggregate	Aggregate	Thick Bit	Thick Bit

CLICK HERE TO EDIT THIS ALTERNATE

CLICK HERE TO EDIT THIS ALTERNATE

CLICK HERE TO EDIT THIS ALTERNATE

Notes:	Notes:	Notes:									
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	2" mill and 3" overlay	\$ 145,006.00	\$ 145,006.00	0	5" bituminous	\$ 272,000.00	\$ 272,000.00	0	6" unbonded	\$ 505,971.00	\$ 505,971.00
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,568.19	\$ 2,420.06	3	Crack Treatment	\$ 2,568.19	\$ 2,420.06	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 6,929.91	\$ 6,032.91	7	Seal	\$ 6,929.91	\$ 6,032.91	7		\$ -	\$ -
8		\$ -	\$ -	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16	ML Overlay 3.5"	\$ 148,495.24	\$ 108,170.74	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19	Crack Treatment	\$ 2,568.19	\$ 1,762.89	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	ML Overlay 3.5"	\$ 49,965.76	\$ 33,625.53	20	1st CPR	\$ 263,447.36	\$ 177,292.52
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Seal	\$ 6,929.91	\$ 4,394.64	23	Crack Treatment	\$ 2,568.19	\$ 1,628.63	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ 6,929.91	\$ 4,059.97	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31	ML Overlay 3.5"	\$ 148,495.24	\$ 80,372.45	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34	Crack Treatment	\$ 2,568.19	\$ 1,309.85	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (106,068.03)	\$ (53,036.94)	35	Remaining Life	\$ (10,519.11)	\$ (5,259.84)	35	0/0 Remaining	\$ -	\$ -

BID ADJUSTMENT FACTOR SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" mill and 3" overlay	5" mill and fill	6" unbonded	6.4 Miles
Net Present Cost	\$969,130.23	\$272,046.45	\$1,134,672.13	Total
Segment #2				Miles
Net Present Cost				0.0 Miles
Segment #3				0.0 Miles
Net Present Cost				0.0 Miles
Segment #4				0.0 Miles
Net Present Cost				0.0 Miles
Segment #5				0.0 Miles
Net Present Cost				0.0 Miles
Segment #6				0.0 Miles
Net Present Cost				0.0 Miles
Segment #7				0.0 Miles
Net Present Cost				0.0 Miles
Segment #8				0.0 Miles
Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 969,130.23	\$ 272,046.45	\$ 1,134,672.13	Total
Bid Adjustment Factor	\$ 697,083.77	\$ -	\$ 862,625.68	6.4

Net Present Cost for Segment	\$ 1,897,168.63	Net Present Cost for Segment	\$ 2,012,846.45	Net Present Cost for Segment	\$ 4,372,886.53
Maintenance - Net Present Cost for Segment	\$ 969,130.23	Maintenance - Net Present Cost for Segment	\$ 272,046.45	Maintenance - Net Present Cost for Segment	\$ 1,134,672.13
Equivalent Annual Cost	\$ 75,890.94	Equivalent Annual Cost	\$ 80,518.30	Equivalent Annual Cost	\$ 174,925.12

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	35	24	2	35	24	2	35
Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix	Total Shdr Width	# of Shdtrs	ML Mix
12	2	12.5 Wearing Course (3,B)	12	2	12.5 Wearing Course (3,B)	12	2	12.5 Wearing Course (3,B)
Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix	Width of Rounding Aggregate	white/>7 million	SL Mix
3	N	12.5 Wearing Course (3,C)	3	N	12.5 Wearing Course (3,B)	3	N	12.5 Wearing Course (3,B)
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			N			N		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
1.5			1.5			1.5		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
16	1		20	1		6		

35-Year Analysis Period		50-Year Analysis Period	
Project Number	Analysis Period		
8801-09	35		
Highway	Discount Rate		
1.0%			
Date			
Performed By			
CLEAR ALL			
03 - 2016/2017 prices			

LCCA SUMMARY

Alternative #1			Alternative #2			Alternative #3		
Length	Cost	Pres. Cost	Length	Cost	Pres. Cost	Length	Cost	Pres. Cost
37' Mill & Overlay	\$ 4,001,205.00	\$ 517,095.00	4" Mill & 4" Overlay	\$ 4,001,205.00	\$ 517,095.00	4" Mill & 4" White-topping	\$ 4,001,205.00	\$ 517,095.00
514.5 ft.			514.5 ft.			514.5 ft.		
Segment #1	\$ 1,044,444.00	\$ 133,000.00	Segment #1	\$ 1,044,444.00	\$ 133,000.00	Segment #1	\$ 1,044,444.00	\$ 133,000.00
Segment #2	\$ 1,044,444.00	\$ 133,000.00	Segment #2	\$ 1,044,444.00	\$ 133,000.00	Segment #2	\$ 1,044,444.00	\$ 133,000.00
Segment #3	\$ 1,044,444.00	\$ 133,000.00	Segment #3	\$ 1,044,444.00	\$ 133,000.00	Segment #3	\$ 1,044,444.00	\$ 133,000.00
Net Present Cost	\$ 3,089,332.00	\$ 399,000.00	Net Present Cost	\$ 3,089,332.00	\$ 399,000.00	Net Present Cost	\$ 3,089,332.00	\$ 399,000.00
Total Present Cost	\$ 9,267,096.00	\$ 1,197,000.00	Total Present Cost	\$ 9,267,096.00	\$ 1,197,000.00	Total Present Cost	\$ 9,267,096.00	\$ 1,197,000.00
Bid Adjustment Factor	\$ 425,515.72	\$ 5	Bid Adjustment Factor	\$ 425,515.72	\$ 5	Bid Adjustment Factor	\$ 425,515.72	\$ 5

Segment 1								
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG
1	4,412	1	4,412	1	4,412	1	4,412	1
ALT		ALT		ALT		ALT		ALT
1		1		1		1		1
Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type
HMA		HMA		HMA		HMA		HMA
Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment
Notes:		Notes:		Notes:		Notes:		Notes:

Segment 2								
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG
1	7,459	1	7,459	1	7,459	1	7,459	1
ALT		ALT		ALT		ALT		ALT
1		1		1		1		1
Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type
HMA		HMA		HMA		HMA		HMA
Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment
Notes:		Notes:		Notes:		Notes:		Notes:

Segment 3								
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG
1	7,459	1	7,459	1	7,459	1	7,459	1
ALT		ALT		ALT		ALT		ALT
1		1		1		1		1
Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type
HMA		HMA		HMA		HMA		HMA
Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment
Notes:		Notes:		Notes:		Notes:		Notes:

Segment 1								
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG
1	4,412	1	4,412	1	4,412	1	4,412	1
ALT		ALT		ALT		ALT		ALT
1		1		1		1		1
Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type
HMA		HMA		HMA		HMA		HMA
Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment
Notes:		Notes:		Notes:		Notes:		Notes:

Segment 2								
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG
1	7,459	1	7,459	1	7,459	1	7,459	1
ALT		ALT		ALT		ALT		ALT
1		1		1		1		1
Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type
HMA		HMA		HMA		HMA		HMA
Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment
Notes:		Notes:		Notes:		Notes:		Notes:

Segment 3								
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG
1	7,459	1	7,459	1	7,459	1	7,459	1
ALT		ALT		ALT		ALT		ALT
1		1		1		1		1
Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type
HMA		HMA		HMA		HMA		HMA
Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment
Notes:		Notes:		Notes:		Notes:		Notes:

Segment 4								
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG
1	7,459	1	7,459	1	7,459	1	7,459	1
ALT		ALT		ALT		ALT		ALT
1		1		1		1		1
Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type
HMA		HMA		HMA		HMA		HMA
Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment
Notes:		Notes:		Notes:		Notes:		Notes:

Segment 5								
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG
1	7,459	1	7,459	1	7,459	1	7,459	1
ALT		ALT		ALT		ALT		ALT
1		1		1		1		1
Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type	1" Mill & 2" Overlay	Pavement Type
HMA		HMA		HMA		HMA		HMA
Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment		Crack Treatment
Notes:		Notes:		Notes:		Notes:		Notes:

35-Year Analysis Period 35 - Year 50-Year Analysis Period

Project Number	Analysis Period
8712-32	35
Highway	Discount Rate
	1.58%
Date	
Performed By	CLEAR ALL

D8 - 2016/2017 prices

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	1.5" Mill and 3" Overlay \$4,676,534.74	4.5" CIR, 1.5" Overlay \$3,440,316.19	6" Unbonded Overlay \$8,421,839.97	11.1 Miles
Segment #2 Net Present Cost				0.0 Miles
Segment #3 Net Present Cost				0.0 Miles
Segment #4 Net Present Cost				0.0 Miles
Segment #5 Net Present Cost				0.0 Miles
Segment #6 Net Present Cost				0.0 Miles
Segment #7 Net Present Cost				0.0 Miles
Segment #8 Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 4,676,534.74	\$ 3,440,316.19	\$ 8,421,839.97	Total
% of Low Cost	135.9%	100.0%	244.8%	11.1

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	1.5" Mill and 3" Overlay \$2,503,896.01	4.5" CIR, 1.5" Overlay \$1,555,214.83	6" Unbonded Overlay \$2,120,432.85	11.1 Miles
Segment #2 Net Present Cost				0.0 Miles
Segment #3 Net Present Cost				0.0 Miles
Segment #4 Net Present Cost				0.0 Miles
Segment #5 Net Present Cost				0.0 Miles
Segment #6 Net Present Cost				0.0 Miles
Segment #7 Net Present Cost				0.0 Miles
Segment #8 Net Present Cost				0.0 Miles
Project Net Present Cost	\$ 2,503,896.01	\$ 1,555,214.83	\$ 2,120,432.85	Total
Bid Adjustment Factor	\$ 948,681.17	\$ -	\$ 565,218.01	11.1

Segment 1											
SEG	Length	SEG	Length	SEG							
1	11.1	1	11.1	1	11.1						
ALT	Description	ALT	Description	ALT	Description						
1	1.5" Mill and 3" Overlay	2	4.5" CIR, 1.5" Overlay	3	6" Unbonded Overlay						
Pavement Type	HMA	Pavement Type	HMA	Pavement Type	PCC						
Primary Category	Overlay, DL >13 to 17 years	Primary Category	20 Year HMA	Primary Category	>12 joint spacing						
Secondary Category	Rural	Secondary Category	Rural	Secondary Category	>12 joint spacing						
ShoulderCategory	Bituminous	ShoulderCategory	Bituminous	ShoulderCategory	Thick Bit						
	DELETE		DELETE		DELETE						
Notes:		Notes:		Notes:							
Year	Activity	Cost/Per Mile	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile
0	1.5" M + 3" Overlay	\$ 195,733.22	\$ 195,733.22	0	3" CIR and 2" Overlay	\$ 169,828.95	\$ 169,828.95	0	6" Unbonded PCC	\$ 567,694.34	\$ 567,694.34
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,112.00	\$ 2,014.97	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8	Crack Treatment	\$ 1,056.00	\$ 931.53	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15	ML Overlay 3.5"	\$ 193,921.28	\$ 153,285.95	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	Crack Treatment	\$ 2,112.00	\$ 1,592.74	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	ML Overlay 3.5	\$ 201,249.53	\$ 147,085.79	20	1st CPR	\$ 261,376.00	\$ 191,029.99
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22	Seal	\$ 6,562.24	\$ 4,648.06	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23	Crack Treatment	\$ 2,112.00	\$ 1,472.67	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ 6,562.24	\$ 4,297.65	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29	ML Overlay 3.5"	\$ 193,921.28	\$ 123,079.98	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32	Crack Treatment	\$ 2,112.00	\$ 1,278.88	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (104,419.15)	\$ (60,324.38)	35	2/17 Remaining Life	\$ (23,676.42)	\$ (13,678.19)	35	0/0 Remaining	\$ -	\$ -
Net Present Cost for Segment	\$ 4,676,534.74	Net Present Cost for Segment	\$ 3,440,316.19	Net Present Cost for Segment	\$ 8,421,839.97						
Maintenance - Net Present Cost for Segment	\$ 2,503,896.01	Maintenance - Net Present Cost for Segment	\$ 1,555,214.83	Maintenance - Net Present Cost for Segment	\$ 2,120,432.85						
Equivalent Annual Cost	174,974.32	Equivalent Annual Cost	128,720.73	Equivalent Annual Cost	315,106.33						

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	35	24	2	35	26	2	35
Total Shdr Width	# of Shdrs	ML Mix	Total Shdr Width	# of Shdrs	ML Mix	Total Shdr Width	# of Shdrs	ML Mix
16	2	WEARING COURSE MIXTURE (3,B)	16	2	WEARING COURSE MIXTURE (3,B)	14	2	WEARING COURSE MIXTURE (3,B)
Width of Rounding Aggregate	white/ >7 million	SL Mix	Width of Rounding Aggregate	white/ >7 million	SL Mix	Width of Rounding Aggregate	white/ >7 million	SL Mix
3	N	WEARING COURSE MIXTURE (3,B)	3	N	WEARING COURSE MIXTURE (3,B)	3	N	WEARING COURSE MIXTURE (3,B)
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			N			N		
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
1.5			1.5			1.2		
Design Life	Shdr Thickness		Design Life	Shdr Thickness		Design Life	Shdr Thickness	
15	4.5		20	4.5		12	6	

Appendix C: Copies of LCCA Exceptions

Office Memorandum

TO: Steve Henrichs
Pavement Engineer

FROM: Darren Nelson
Materials Engineer

DATE: September 26, 2016

SUBJECT: REQUEST FOR AN EXCEPTION TO
SELECTING THE LOW COST ALTERNATE

SP #	3003-47
Highway #	65
Project Limits	S.B. RP 30+00.382 to RP 35+00.247 N.B. RP 34+00.845 to RP 38+00.226 N.B. & S.B. RP 38+00.226 to RP 44+00.648
Project Description	White Topping, Bituminous Mill & Overlay and Turn Lane Extensions

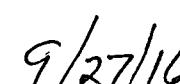
LCCA Results

Alternative	Design Life	Total Present Cost	Requested Selection	% of Low Cost
2" Mill w/5" White Topping	20 year	\$9,350,706.83	Yes	162.4%
2" Mill w/ 8" FDR & 5" Bit.	20 year	\$7,211,246.90	No	125.2%
2" Mainline Mill & Fill w/1 1/2" Full Width Overlay	13-17 years	\$5,758,712.74	No	100%

Reason for Request

The district was directed by the Maplewood Pavement Engineering Section to go with the most expensive option, the 2" Mill with a 5" White-Topping and 4" bituminous shoulders. The reason for this decision was to get more bonded concrete overlays constructed in the field so that the department can analyze the performance of the pavement in a "real world" setting.


District Engineer


Date

LCCA EXCEPTION

SP 6607-49 & 2511-49-T.H. 60 From Faribault to Kenyon

A Life Cycle Cost Analysis was performed in accordance with Tech Memo No. 07-17-MAT-01.

Both PCC and HMA alternatives were considered.

The lowest LCCA fix is 4" CIR(Cold Inplace Recycling) & 3" Bituminous Overlay

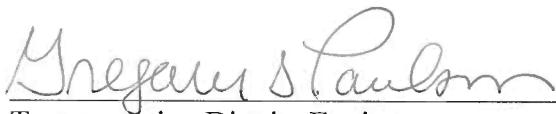
The Preservation fix selected by our District is 2" Bituminous Mill and 3.5" Overlay

LCCA is a project specific tool used in selecting preservation treatments. The District program is selected based on: Total project costs, preservation performance, material availability, available funding, traffic impacts, safety needs and other considerations.

Factors considered in this Preservation Project selection include:

This section of T.H. 60 has a traffic volume of 3000 ADT and 3,813,000-35yr. CESALS). It has a RQI rating of 2.8-2.9 and SR rating of 3.3-3.4 in 2015. This road was reconstructed in the 1990's and the pavement is all BFD(Bituminous Full Depth). The road was cored and determined that the bituminous was still in good condition underneath. Because of this relatively recent new reconstruction the SR is still quite high but the RQI has started to drop. This project will restore the RQI to an acceptable level again. A CIR project was not selected because the bituminous road core is still in relatively good condition and the district has a lack of funds to do a longer term rehabilitation on this lower ADT road.

I concur with the selected Preservation Project:



Fo2

Transportation District Engineer