

2017 Report on

# Life-Cycle Cost Analyses

January 2018

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Prepared by:

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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 report 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

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[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 31<sup>st</sup>, 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

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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 LCCAs 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 LCCAs submitted by MnDOT districts are attached.

## Discussion

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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

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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 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	CLEAR ALL
Performed By	

District 3 - 2015/2016 prices

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill & 3 1/2" Overlay	3" Mill & 4 1/2" Overlay	2" Mill & 6" UBICO	17.6 Miles
	Net Present Cost \$7,391,553.08	\$7,655,313.48	\$8,739,778.25	
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
<b>Project Net Present Cost</b>	<b>\$ 7,391,553.08</b>	<b>\$ 7,655,313.48</b>	<b>\$ 8,739,778.25</b>	<b>Total</b>
<b>% of Low Cost</b>	<b>100.0%</b>	<b>103.6%</b>	<b>118.2%</b>	<b>17.6</b>

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill & 3 1/2" Overlay	3" Mill & 4 1/2" Overlay	2" Mill & 6" UBICO	17.6 Miles
	Net Present Cost \$4,158,174.37	\$2,087,912.33	\$2,507,377.48	
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
<b>Project Net Present Cost</b>	<b>\$ 4,158,174.37</b>	<b>\$ 2,087,912.33</b>	<b>\$ 2,507,377.48</b>	<b>Total</b>
<b>Bid Adjustment Factor</b>	<b>\$ 2,070,262.04</b>	<b>\$ -</b>	<b>\$ 419,465.15</b>	<b>17.6</b>

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
1	17.603	1	17.603	1	17.603						
ALT	Description	ALT	Description	ALT	Description						
1	2" Mill & 3 1/2" Overlay	2	3" Mill & 4 1/2" Overlay	3	2" Mill & 6" UBICO						
Pavement Type		Pavement Type		Pavement Type							
HMA		HMA		PCC							
Primary Category		Primary Category		Primary Category							
Overlay, DL = 13 to 17 years		Overlay, DL = 17 years		512 Joint Spacing							
Secondary Category		Secondary Category		Secondary Category							
Rural		Rural		Design Life = 20 Years							
ShoulderCategory		ShoulderCategory		ShoulderCategory							
Bituminous		Bituminous		PCC							
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 & 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" UBICO	\$ 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 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 (3,E)	4	2	WEARING COURSE MIXTURE (3,E)	4	2	WEARING COURSE MIXTURE (3,E)
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
3	N	WEARING COURSE MIXTURE (3,E)	3	N	WEARING COURSE MIXTURE (3,E)	3	N	WEARING COURSE MIXTURE (3,E)
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N	Y		N	Y		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	
3 1/2	12		4.5	12		3 1/2	12	
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
14	3 1/2		20	4 1/2		14	3 1/2	

35-Year Analysis Period

# 35 - Year

50-Year Analysis Period

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

District 7 - 2015/2016 prices

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

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

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
1	6.101	1	6.101	1	6.101						
ALT	Description	ALT	Description	ALT	Description						
1	Mill & Overlay, Rural	2	New HMA, Rural	3	New PCC, Rural						
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							
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	Mill & Overlay, Rural	\$ 301,154.81	\$ 301,154.81	0	New HMA, Rural	\$ 539,150.86	\$ 539,150.86	0	New PCC, Rural	\$ 585,557.58	\$ 585,557.58
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,112.00	\$ 2,005.48	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 9,545.02	\$ 8,459.30	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	\$ 14,883.26	\$ 12,100.33	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14	ML Overlay 3.5"	\$ 232,077.78	\$ 182,284.31	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 4	\$ 279,224.64	\$ 197,751.18	20	1st CPR	\$ 256,006.65	\$ 181,307.84
21	Seal	\$ 9,545.02	\$ 6,644.32	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23	Crack Treatment	\$ 2,464.00	\$ 1,657.03	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27	ML Overlay 3.5"	\$ 232,077.78	\$ 145,665.52	27	Seal	\$ 10,422.04	\$ 6,541.48	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	\$ 9,545.02	\$ 5,309.55	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (77,359.26)	\$ (42,296.23)	35	2/17 Remaining Life	\$ (32,849.96)	\$ (17,960.74)	35	0/0 Remaining	\$ -	\$ -
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		179,610.73	

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

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
Net Present Cost	\$3,739,160.12	\$3,923,432.72	\$7,071,656.37	
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				
<b>Project Net Present Cost</b>	<b>\$ 3,739,160.12</b>	<b>\$ 3,923,432.72</b>	<b>\$ 7,071,656.37</b>	<b>Total</b>
<b>% of Low Cost</b>	<b>100.0%</b>	<b>104.9%</b>	<b>189.1%</b>	<b>10.8</b>

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
Net Present Cost	\$1,937,718.37	\$1,365,254.29	\$3,317,176.26	
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				
<b>Project Net Present Cost</b>	<b>\$ 1,937,718.37</b>	<b>\$ 1,365,254.29</b>	<b>\$ 3,317,176.26</b>	<b>Total</b>
<b>Bid Adjustment Factor</b>	<b>\$ 572,464.08</b>	<b>\$ -</b>	<b>\$ 1,951,921.97</b>	<b>10.8</b>

Segment 1									
SEG	Length	SEG	Length	SEG	Length				
1	10.784	1	10.784	1	10.784				
ALT	Description	ALT	Description	ALT	Description				
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 S 5.0" Thickness					
Secondary Category		Secondary Category		Secondary Category					
Rural		Rural		Design Life = 20 Years					
ShoulderCategory		ShoulderCategory		ShoulderCategory					
Bituminous		Bituminous		PCC					
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	ML Overlay 3.5"	\$ 146,530.83	\$ 93,001.71	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30	Remove and Replace	\$ 354,419.37	\$ 221,447.71
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32	Crack Treatment	\$ 2,112.00	\$ 1,278.88	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	\$ 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	\$ 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	139,902.09	Equivalent Annual Cost	146,796.72	Equivalent Annual Cost	264,588.70

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 (4,E	4	2	WEARING COURSE MIXTURE (4,E	4	2	
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
3	N	WEARING COURSE MIXTURE (4,E	3	N	WEARING COURSE MIXTURE (4,E	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			2			12		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
15	1.5		20	2		4	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	CLEAR ALL
9/14/2015	
Performed By	
KR	

District 4 - 2015/2016 prices



LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	3" Mill & Fill	3" CIR & HMA	4.5" Whitetopping	15.5 Miles
Net Present Cost	\$5,288,098.65	\$5,523,800.04	\$9,354,680.63	
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				
<b>Project Net Present Cost</b>	<b>\$ 5,288,098.65</b>	<b>\$ 5,523,800.04</b>	<b>\$ 9,354,680.63</b>	<b>Total</b>
<b>% of Low Cost</b>	<b>100.0%</b>	<b>104.5%</b>	<b>176.9%</b>	<b>15.5</b>

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	3" Mill & Fill	3" CIR & HMA	4.5" Whitetopping	15.5 Miles
Net Present Cost	\$3,051,789.65	\$2,247,765.45	\$5,540,726.45	
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				
<b>Project Net Present Cost</b>	<b>\$ 3,051,789.65</b>	<b>\$ 2,247,765.45</b>	<b>\$ 5,540,726.45</b>	<b>Total</b>
<b>Bid Adjustment Factor</b>	<b>\$ 804,024.19</b>	<b>\$ -</b>	<b>\$ 3,292,960.99</b>	<b>15.5</b>

Segment 1											
SEG	Length	ALT	Description	SEG	Length	ALT	Description	SEG	Length	ALT	Description
1	15.5	1	3" Mill & Fill	1	15.5	1	3" CIR & HMA	1	15.5	1	4.5" Whitetopping
Pavement Type			HMA	Pavement Type			HMA	Pavement Type			PCC
Primary Category			Overlay, DL = 13 to 17 years	Primary Category			20 Year HMA	Primary Category			6X6 S 5.0" Thickness
Secondary Category			Rural	Secondary Category			Rural	Secondary Category			Design Life = 20 Years
ShoulderCategory			Aggregate	ShoulderCategory			Aggregate	ShoulderCategory			PCC
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 & 3" 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	\$ 126,705.11	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 Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
0	0	WEARING COURSE MIXTURE (3,	0	0	WEARING COURSE MIXTURE (3,	0	0	
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
3	N		3	N		3	Y	
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			N			Y	4.5	
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
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

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

50-Year  
Analysis  
Period

35-Year  
Analysis  
Period

Notes:

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

### Segment 1

<b>DELETE</b>	<b>DELETE</b>	<b>DELETE</b>																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th>SEG</th><th>Length</th></tr> <tr><td>1</td><td>4.292</td></tr> <tr><th>ALT</th><th>Description</th></tr> <tr><td>1</td><td>Mill, CIR, HMA Overlay</td></tr> <tr><th>Pavement Type</th><td>HMA</td></tr> <tr><th>Primary Category</th><td>20-year HMA</td></tr> <tr><th>Secondary Category</th><td>Rural</td></tr> <tr><th>Shoulder Category</th><td>Bituminous</td></tr> </table>	SEG	Length	1	4.292	ALT	Description	1	Mill, CIR, HMA Overlay	Pavement Type	HMA	Primary Category	20-year HMA	Secondary Category	Rural	Shoulder Category	Bituminous	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th>INITIAL COST</th></tr> <tr><th>LCCA FORM</th></tr> </table>	INITIAL COST	LCCA FORM	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th>INITIAL COST</th></tr> <tr><th>LCCA FORM</th></tr> </table>	INITIAL COST	LCCA FORM
SEG	Length																					
1	4.292																					
ALT	Description																					
1	Mill, CIR, HMA Overlay																					
Pavement Type	HMA																					
Primary Category	20-year HMA																					
Secondary Category	Rural																					
Shoulder Category	Bituminous																					
INITIAL COST																						
LCCA FORM																						
INITIAL COST																						
LCCA FORM																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th>SEG</th><th>Length</th></tr> <tr><td>1</td><td>4.292</td></tr> <tr><th>ALT</th><th>Description</th></tr> <tr><td>2</td><td>5" Mill, 5" PCC, 3" HMA S</td></tr> <tr><th>Pavement Type</th><td>PCC</td></tr> <tr><th>Primary Category</th><td>&gt; 11' Joint Spacing</td></tr> <tr><th>Secondary Category</th><td>Design Life = 20 years</td></tr> <tr><th>Shoulder Category</th><td>Thin Bit.</td></tr> </table>	SEG	Length	1	4.292	ALT	Description	2	5" Mill, 5" PCC, 3" HMA S	Pavement Type	PCC	Primary Category	> 11' Joint Spacing	Secondary Category	Design Life = 20 years	Shoulder Category	Thin Bit.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th>INITIAL COST</th></tr> <tr><th>LCCA FORM</th></tr> </table>	INITIAL COST	LCCA FORM	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th>INITIAL COST</th></tr> <tr><th>LCCA FORM</th></tr> </table>	INITIAL COST	LCCA FORM
SEG	Length																					
1	4.292																					
ALT	Description																					
2	5" Mill, 5" PCC, 3" HMA S																					
Pavement Type	PCC																					
Primary Category	> 11' Joint Spacing																					
Secondary Category	Design Life = 20 years																					
Shoulder Category	Thin Bit.																					
INITIAL COST																						
LCCA FORM																						
INITIAL COST																						
LCCA FORM																						

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

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th>Total Lane Width</th><th># of Lanes</th><th>Analysis Period</th></tr> <tr><td>24</td><td>2</td><td>50</td></tr> <tr><th>Total Shldr Width</th><th># of Shldrs</th><th>ML Mix</th></tr> <tr><td>14</td><td>2</td><td>9.5 WE (4,C)</td></tr> <tr><th>Rounding Agg. Width</th><th>white/ &gt;7 milliom</th><th>SL Mix</th></tr> <tr><td>3</td><td>No</td><td>12.5 WE (3,C)</td></tr> <tr><th>Sealed/UTBWC</th><th>ML Thickness</th><td></td></tr> <tr><td>No</td><td></td><td></td></tr> <tr><th>ML Top Lift/Jt spacing</th><th># Dowels per Lane</th><td></td></tr> <tr><td>3</td><td></td><td></td></tr> <tr><th>Design Life</th><th>Shldr Thickness</th><td></td></tr> <tr><td>20</td><td>3</td><td></td></tr> </table>	Total Lane Width	# of Lanes	Analysis Period	24	2	50	Total Shldr Width	# of Shldrs	ML Mix	14	2	9.5 WE (4,C)	Rounding Agg. Width	white/ >7 milliom	SL Mix	3	No	12.5 WE (3,C)	Sealed/UTBWC	ML Thickness		No			ML Top Lift/Jt spacing	# Dowels per Lane		3			Design Life	Shldr Thickness		20	3		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th>Total Lane Width</th><th># of Lanes</th><th>Analysis Period</th></tr> <tr><td>24</td><td>2</td><td>50</td></tr> <tr><th>Total Shldr Width</th><th># of Shldrs</th><th>ML Mix</th></tr> <tr><td>14</td><td>2</td><td></td></tr> <tr><th>Rounding Agg. Width</th><th>white/ &gt;7 milliom</th><th>SL Mix</th></tr> <tr><td>3</td><td>Yes</td><td>12.5 WE (3,C)</td></tr> <tr><th>Sealed/UTBWC</th><th>ML Thickness</th><td></td></tr> <tr><td>Yes</td><td>5</td><td></td></tr> <tr><th>ML Top Lift/Jt spacing</th><th># Dowels per Lane</th><td></td></tr> <tr><td>12</td><td></td><td></td></tr> <tr><th>Design Life</th><th>Shldr Thickness</th><td></td></tr> <tr><td></td><td>3</td><td></td></tr> </table>	Total Lane Width	# of Lanes	Analysis Period	24	2	50	Total Shldr Width	# of Shldrs	ML Mix	14	2		Rounding Agg. Width	white/ >7 milliom	SL Mix	3	Yes	12.5 WE (3,C)	Sealed/UTBWC	ML Thickness		Yes	5		ML Top Lift/Jt spacing	# Dowels per Lane		12			Design Life	Shldr Thickness			3		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th>Total Lane Width</th><th># of Lanes</th><th>Analysis Period</th></tr> <tr><td>24</td><td>2</td><td>50</td></tr> <tr><th>Total Shldr Width</th><th># of Shldrs</th><th>ML Mix</th></tr> <tr><td>14</td><td>2</td><td></td></tr> <tr><th>Rounding Agg. Width</th><th>white/ &gt;7 milliom</th><th>SL Mix</th></tr> <tr><td>3</td><td>Yes</td><td></td></tr> <tr><th>Sealed/UTBWC</th><th>ML Thickness</th><td></td></tr> <tr><td>Yes</td><td>6</td><td></td></tr> <tr><th>ML Top Lift/Jt spacing</th><th># Dowels per Lane</th><td></td></tr> <tr><td>12</td><td></td><td></td></tr> <tr><th>Design Life</th><th>Shldr Thickness</th><td></td></tr> <tr><td></td><td>6</td><td></td></tr> </table>	Total Lane Width	# of Lanes	Analysis Period	24	2	50	Total Shldr Width	# of Shldrs	ML Mix	14	2		Rounding Agg. Width	white/ >7 milliom	SL Mix	3	Yes		Sealed/UTBWC	ML Thickness		Yes	6		ML Top Lift/Jt spacing	# Dowels per Lane		12			Design Life	Shldr Thickness			6	
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12																																																																																																														
Design Life	Shldr Thickness																																																																																																													
	6																																																																																																													

## Segment 2

SEG	Length	<b>DELETE</b>	SEG	Length	<b>DELETE</b>	SEG	Length	<b>DELETE</b>
2	4.330		2	4.330		2	4.330	
ALT	Description		ALT	Description		ALT	Description	
1	Mill, CIR, HMA Overlay	<b>INITIAL COST</b>	2	5" Mill, 5" PCC, 3" HMA S	<b>INITIAL COST</b>	3	5" Mill, 6" PCC	<b>INITIAL COST</b>
	Pavement Type			Pavement Type			Pavement Type	
	HMA			PCC			PCC	
	Primary Category			Primary Category			Primary Category	
	20-year HMA	<b>LCCA FORM</b>		> 11' Joint Spacing	<b>LCCA FORM</b>		> 11' Joint Spacing	<b>LCCA FORM</b>
	Secondary Category			Secondary Category			Secondary Category	
	Rural			Design Life = 20 years			Design Life = 35 years	
	Shoulder Category			Shoulder Category			Shoulder Category	
	Bituminous		Thin Bit.		PCC			

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		\$ -	\$ -	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		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			6	

### Segment 3

SEG	Length	<b>DELETE</b>	SEG	Length	<b>DELETE</b>	SEG	Length	<b>DELETE</b>
3	1.512		3	1.512		3	1.512	
ALT	Description		ALT	Description		ALT	Description	
1	Mill & Overlay	<b>INITIAL COST</b>	2	5" Mill, 5" PCC, 3" HMA S	<b>INITIAL COST</b>	3	5" Mill, 6" PCC	<b>INITIAL COST</b>
	Pavement Type			Pavement Type			Pavement Type	
	HMA			PCC			PCC	
	Primary Category			Primary Category			Primary Category	
	20-year HMA	<b>LCCA FORM</b>		> 11' Joint Spacing	<b>LCCA FORM</b>		> 11' Joint Spacing	<b>LCCA FORM</b>
	Secondary Category			Secondary Category			Secondary Category	
	Urban			Design Life = 20 years			Design Life = 35 years	
	Shoulder Category			Shoulder Category			Shoulder Category	
	Thin Bit.		Thin Bit.		PCC			

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		\$ -	\$ -	37		\$ -	\$ -	37		\$ -	\$ -
38	Mill/Overlay	\$ 364,355.13	\$ 224,286.53	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	

<table style="width: 100%;"> <tr><td>Total Lane Width</td><td># of Lanes</td><td>Analysis Period</td></tr> <tr><td>24</td><td>2</td><td>50</td></tr> <tr><td>Total Shldr Width</td><td># of Shldrs</td><td>ML Mix</td></tr> <tr><td>14</td><td>2</td><td>9.5 WE (4,C)</td></tr> <tr><td>Rounding Agg. Width</td><td>white/ &gt;7 milliom</td><td>SL Mix</td></tr> <tr><td>3</td><td>No</td><td>12.5 WE (3,C)</td></tr> <tr><td>Sealed/UTBWC</td><td>ML Thickness</td><td></td></tr> <tr><td>No</td><td></td><td></td></tr> <tr><td>ML Top Lift/Jt spacing</td><td># Dowels per Lane</td><td></td></tr> <tr><td>3</td><td></td><td></td></tr> <tr><td>Design Life</td><td>Shldr Thickness</td><td></td></tr> <tr><td>20</td><td>3</td><td></td></tr> </table>	Total Lane Width	# of Lanes	Analysis Period	24	2	50	Total Shldr Width	# of Shldrs	ML Mix	14	2	9.5 WE (4,C)	Rounding Agg. Width	white/ >7 milliom	SL Mix	3	No	12.5 WE (3,C)	Sealed/UTBWC	ML Thickness		No			ML Top Lift/Jt spacing	# Dowels per Lane		3			Design Life	Shldr Thickness		20	3		<table style="width: 100%;"> <tr><td>Total Lane Width</td><td># of Lanes</td><td>Analysis Period</td></tr> <tr><td>24</td><td>2</td><td>50</td></tr> <tr><td>Total Shldr Width</td><td># of Shldrs</td><td>ML Mix</td></tr> <tr><td>14</td><td>2</td><td></td></tr> <tr><td>Rounding Agg. Width</td><td>white/ &gt;7 milliom</td><td>SL Mix</td></tr> <tr><td>3</td><td>Yes</td><td>12.5 WE (3,C)</td></tr> <tr><td>Sealed/UTBWC</td><td>ML Thickness</td><td></td></tr> <tr><td>Yes</td><td>5</td><td></td></tr> <tr><td>ML Top Lift/Jt spacing</td><td># Dowels per Lane</td><td></td></tr> <tr><td>12</td><td></td><td></td></tr> <tr><td>Design Life</td><td>Shldr Thickness</td><td></td></tr> <tr><td></td><td>3</td><td></td></tr> </table>	Total Lane Width	# of Lanes	Analysis Period	24	2	50	Total Shldr Width	# of Shldrs	ML Mix	14	2		Rounding Agg. Width	white/ >7 milliom	SL Mix	3	Yes	12.5 WE (3,C)	Sealed/UTBWC	ML Thickness		Yes	5		ML Top Lift/Jt spacing	# Dowels per Lane		12			Design Life	Shldr Thickness			3		<table style="width: 100%;"> <tr><td>Total Lane Width</td><td># of Lanes</td><td>Analysis Period</td></tr> <tr><td>24</td><td>2</td><td>50</td></tr> <tr><td>Total Shldr Width</td><td># of Shldrs</td><td>ML Mix</td></tr> <tr><td>14</td><td>2</td><td></td></tr> <tr><td>Rounding Agg. Width</td><td>white/ &gt;7 milliom</td><td>SL Mix</td></tr> <tr><td>3</td><td>Yes</td><td></td></tr> <tr><td>Sealed/UTBWC</td><td>ML Thickness</td><td></td></tr> <tr><td>Yes</td><td>6</td><td></td></tr> <tr><td>ML Top Lift/Jt spacing</td><td># Dowels per Lane</td><td></td></tr> <tr><td>12</td><td></td><td></td></tr> <tr><td>Design Life</td><td>Shldr Thickness</td><td></td></tr> <tr><td></td><td>6</td><td></td></tr> </table>	Total Lane Width	# of Lanes	Analysis Period	24	2	50	Total Shldr Width	# of Shldrs	ML Mix	14	2		Rounding Agg. Width	white/ >7 milliom	SL Mix	3	Yes		Sealed/UTBWC	ML Thickness		Yes	6		ML Top Lift/Jt spacing	# Dowels per Lane		12			Design Life	Shldr Thickness			6	
Total Lane Width	# of Lanes	Analysis Period																																																																																																												
24	2	50																																																																																																												
Total Shldr Width	# of Shldrs	ML Mix																																																																																																												
14	2	9.5 WE (4,C)																																																																																																												
Rounding Agg. Width	white/ >7 milliom	SL Mix																																																																																																												
3	No	12.5 WE (3,C)																																																																																																												
Sealed/UTBWC	ML Thickness																																																																																																													
No																																																																																																														
ML Top Lift/Jt spacing	# Dowels per Lane																																																																																																													
3																																																																																																														
Design Life	Shldr Thickness																																																																																																													
20	3																																																																																																													
Total Lane Width	# of Lanes	Analysis Period																																																																																																												
24	2	50																																																																																																												
Total Shldr Width	# of Shldrs	ML Mix																																																																																																												
14	2																																																																																																													
Rounding Agg. Width	white/ >7 milliom	SL Mix																																																																																																												
3	Yes	12.5 WE (3,C)																																																																																																												
Sealed/UTBWC	ML Thickness																																																																																																													
Yes	5																																																																																																													
ML Top Lift/Jt spacing	# Dowels per Lane																																																																																																													
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Design Life	Shldr Thickness																																																																																																													
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Total Lane Width	# of Lanes	Analysis Period																																																																																																												
24	2	50																																																																																																												
Total Shldr Width	# of Shldrs	ML Mix																																																																																																												
14	2																																																																																																													
Rounding Agg. Width	white/ >7 milliom	SL Mix																																																																																																												
3	Yes																																																																																																													
Sealed/UTBWC	ML Thickness																																																																																																													
Yes	6																																																																																																													
ML Top Lift/Jt spacing	# Dowels per Lane																																																																																																													
12																																																																																																														
Design Life	Shldr Thickness																																																																																																													
	6																																																																																																													

### Segment 4

<b>DELETE</b>	<b>DELETE</b>	<b>DELETE</b>
SEG 4 Length 1.617	SEG 4 Length 1.617	SEG 4 Length 1.617
ALT 1 Description Mill & Overlay	ALT 2 Description 5" Mill, 5" PCC, 3" HMA S	ALT 3 Description 5" Mill, 6" PCC
<b>INITIAL COST</b>	<b>INITIAL COST</b>	<b>INITIAL COST</b>
<b>LCCA FORM</b>	<b>LCCA FORM</b>	<b>LCCA FORM</b>

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	

<table style="width: 100%;"> <tr><td>Total Lane Width</td><td># of Lanes</td><td>Analysis Period</td></tr> <tr><td>24</td><td>2</td><td>50</td></tr> <tr><td>Total Shldr Width</td><td># of Shldrs</td><td>ML Mix</td></tr> <tr><td>14</td><td>2</td><td>9.5 WE (4,C)</td></tr> <tr><td>Rounding Agg. Width</td><td>white/ &gt;7 milliom</td><td>SL Mix</td></tr> <tr><td>3</td><td>No</td><td>12.5 WE (3,C)</td></tr> <tr><td>Sealed/UTBWC</td><td>ML Thickness</td><td></td></tr> <tr><td>No</td><td></td><td></td></tr> <tr><td>ML Top Lift/Jt spacing</td><td># Dowels per Lane</td><td></td></tr> <tr><td>3</td><td></td><td></td></tr> <tr><td>Design Life</td><td>Shldr Thickness</td><td></td></tr> <tr><td>20</td><td>3</td><td></td></tr> </table>	Total Lane Width	# of Lanes	Analysis Period	24	2	50	Total Shldr Width	# of Shldrs	ML Mix	14	2	9.5 WE (4,C)	Rounding Agg. Width	white/ >7 milliom	SL Mix	3	No	12.5 WE (3,C)	Sealed/UTBWC	ML Thickness		No			ML Top Lift/Jt spacing	# Dowels per Lane		3			Design Life	Shldr Thickness		20	3		<table style="width: 100%;"> <tr><td>Total Lane Width</td><td># of Lanes</td><td>Analysis Period</td></tr> <tr><td>24</td><td>2</td><td>50</td></tr> <tr><td>Total Shldr Width</td><td># of Shldrs</td><td>ML Mix</td></tr> <tr><td>14</td><td>2</td><td></td></tr> <tr><td>Rounding Agg. Width</td><td>white/ &gt;7 milliom</td><td>SL Mix</td></tr> <tr><td>3</td><td>Yes</td><td>12.5 WE (3,C)</td></tr> <tr><td>Sealed/UTBWC</td><td>ML Thickness</td><td></td></tr> <tr><td>Yes</td><td>5</td><td></td></tr> <tr><td>ML Top Lift/Jt spacing</td><td># Dowels per Lane</td><td></td></tr> <tr><td>12</td><td></td><td></td></tr> <tr><td>Design Life</td><td>Shldr Thickness</td><td></td></tr> <tr><td></td><td>3</td><td></td></tr> </table>	Total Lane Width	# of Lanes	Analysis Period	24	2	50	Total Shldr Width	# of Shldrs	ML Mix	14	2		Rounding Agg. Width	white/ >7 milliom	SL Mix	3	Yes	12.5 WE (3,C)	Sealed/UTBWC	ML Thickness		Yes	5		ML Top Lift/Jt spacing	# Dowels per Lane		12			Design Life	Shldr Thickness			3		<table style="width: 100%;"> <tr><td>Total Lane Width</td><td># of Lanes</td><td>Analysis Period</td></tr> <tr><td>24</td><td>2</td><td>50</td></tr> <tr><td>Total Shldr Width</td><td># of Shldrs</td><td>ML Mix</td></tr> <tr><td>14</td><td>2</td><td></td></tr> <tr><td>Rounding Agg. Width</td><td>white/ &gt;7 milliom</td><td>SL Mix</td></tr> <tr><td>3</td><td>Yes</td><td></td></tr> <tr><td>Sealed/UTBWC</td><td>ML Thickness</td><td></td></tr> <tr><td>Yes</td><td>6</td><td></td></tr> <tr><td>ML Top Lift/Jt spacing</td><td># Dowels per Lane</td><td></td></tr> <tr><td>12</td><td></td><td></td></tr> <tr><td>Design Life</td><td>Shldr Thickness</td><td></td></tr> <tr><td></td><td>6</td><td></td></tr> </table>	Total Lane Width	# of Lanes	Analysis Period	24	2	50	Total Shldr Width	# of Shldrs	ML Mix	14	2		Rounding Agg. Width	white/ >7 milliom	SL Mix	3	Yes		Sealed/UTBWC	ML Thickness		Yes	6		ML Top Lift/Jt spacing	# Dowels per Lane		12			Design Life	Shldr Thickness			6	
Total Lane Width	# of Lanes	Analysis Period																																																																																																												
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ML Top Lift/Jt spacing	# Dowels per Lane																																																																																																													
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Rounding Agg. Width	white/ >7 milliom	SL Mix																																																																																																												
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Sealed/UTBWC	ML Thickness																																																																																																													
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ML Top Lift/Jt spacing	# Dowels per Lane																																																																																																													
12																																																																																																														
Design Life	Shldr Thickness																																																																																																													
	6																																																																																																													

35-Year Analysis Period

# 35 - Year

50-Year Analysis Period

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

District 3 - 2015/2016 prices

The District LCCA is used because the longest mainline segment is 8,716 sq. yds. > 7,500 sq. yds. & < 60,000 sq. yds..

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

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

Segment 1											
SEG	Length	ALT	Description	SEG	Length	ALT	Description	SEG	Length	ALT	Description
1	1	1	6" HMA over 8" Agg. Base Cl. 6	1	1	1	6" PCC over 4" Agg. Base Cl. 6	1	1	1	6" PCC over 4" Agg. Base Cl. 6
Pavement Type			HMA	Pavement Type			PCC	Pavement Type			PCC
Primary Category			20 Year HMA	Primary Category			212 Joint spacing	Primary Category			212 Joint spacing
Secondary Category			Urban	Secondary Category			Design Life = 20 Years	Secondary Category			Design Life 35 Years
ShoulderCategory			Thick	ShoulderCategory			PCC	ShoulderCategory			PCC

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	\$ -	\$ -

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	69,732.29	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,E	8	2	WEARING COURSE MIXTURE (3,C	8	2	
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
N		WEARING COURSE MIXTURE (2,B)	N		WEARING COURSE MIXTURE (2,B)	N		
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	CLEAR ALL
Performed By	

Metro - 2015/2016 prices

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

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

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
1	5.9	1	5.9	1	5.9						
ALT	Description	ALT	Description	ALT	Description						
1	HMA Mill & Overlay	2	HMA	3	UBCO						
Pavement Type: HMA		Pavement Type: HMA		Pavement Type: PCC							
Primary Category: Overlay, DL=13 to 17 years		Primary Category: 20 Year HMA		Primary Category: 6'X6' 25.5" Thickness							
Secondary Category: Rural		Secondary Category: Rural		Secondary Category: Design Life = 20 Years							
ShoulderCategory: Bituminous		ShoulderCategory: Bituminous		ShoulderCategory: 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 (2,6	4	2	WEARING COURSE MIXTURE (2,6	4	2	WEARING COURSE MIXTURE (2,6
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
3	N	WEARING COURSE MIXTURE (2,6	3	N	WEARING COURSE MIXTURE (2,6	3	N	WEARING COURSE MIXTURE (2,6
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	CLEAR ALL
3/26/2015	
Performed By	
KY	

Metro - 2014/2015 prices

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LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	C2S1	C1S1	B2S1	3.5 Miles
Net Present Cost	\$5,267,017.19	\$7,202,657.70	\$4,705,267.69	
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				
<b>Project Net Present Cost</b>	<b>\$ 5,267,017.19</b>	<b>\$ 7,202,657.70</b>	<b>\$ 4,705,267.69</b>	<b>Total</b>
<b>% of Low Cost</b>	<b>111.9%</b>	<b>153.1%</b>	<b>100.0%</b>	<b>3.5</b>

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	C2S1	C1S1	B2S1	3.5 Miles
Net Present Cost	\$1,340,287.91	\$3,482,984.38	\$2,001,299.80	
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				
<b>Project Net Present Cost</b>	<b>\$ 1,340,287.91</b>	<b>\$ 3,482,984.38</b>	<b>\$ 2,001,299.80</b>	<b>Total</b>
<b>Bid Adjustment Factor</b>	<b>\$ -</b>	<b>\$ 2,142,696.47</b>	<b>\$ 661,011.89</b>	<b>3.5</b>

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
1	3.509	1	3.509	1	3.509						
ALT	Description	ALT	Description	ALT	Description						
1	C2S1	2	C1S1	3	B2S1						
Pavement Type	Pavement Type	Pavement Type	Pavement Type	Pavement Type	Pavement Type						
PCC	PCC	PCC	PCC	HMA	HMA						
Primary Category	Primary Category	Primary Category	Primary Category	Primary Category	Primary Category						
312 Joint spacing	312 Joint spacing	6'X6' 35.5' Thickness	6'X6' 35.5' Thickness	20 Year HMA	20 Year HMA						
Secondary Category	Secondary Category	Secondary Category	Secondary Category	Secondary Category	Secondary Category						
Design Life = 35 Years	Design Life = 20 Years	Design Life = 20 Years	Design Life = 20 Years	Rural	Rural						
ShoulderCategory	ShoulderCategory	ShoulderCategory	ShoulderCategory	ShoulderCategory	ShoulderCategory						
PCC	PCC	PCC	PCC	Rituminous	Rituminous						
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		\$ -	\$ -			
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -			
23		\$ -	\$ -	23		\$ -	\$ -	23	Crack Treatment	\$ 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		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -			
35	2nd CPR	\$ 370,652.73	\$ 185,336.60	35	Remove and Replace	\$ 1,594,659.68	\$ 797,373.87	35		\$ -	\$ -			
36		\$ -	\$ -	36		\$ -	\$ -	36		\$ -	\$ -			
37		\$ -	\$ -	37		\$ -	\$ -	37	ML Overlay 3.5"	\$ 484,069.69	\$ 232,649.19			
38		\$ -	\$ -	38		\$ -	\$ -	38		\$ -	\$ -			
39		\$ -	\$ -	39		\$ -	\$ -	39		\$ -	\$ -			
40		\$ -	\$ -	40		\$ -	\$ -	40	Crack Treatment	\$ 3,424.26	\$ 1,550.81			
41		\$ -	\$ -	41		\$ -	\$ -	41		\$ -	\$ -			
42		\$ -	\$ -	42		\$ -	\$ -	42		\$ -	\$ -			
43		\$ -	\$ -	43		\$ -	\$ -	43		\$ -	\$ -			
44		\$ -	\$ -	44		\$ -	\$ -	44	Chip Seal	\$ 23,373.50	\$ 9,779.49			
45		\$ -	\$ -	45		\$ -	\$ -	45		\$ -	\$ -			
46		\$ -	\$ -	46		\$ -	\$ -	46		\$ -	\$ -			
47		\$ -	\$ -	47		\$ -	\$ -	47		\$ -	\$ -			
48		\$ -	\$ -	48		\$ -	\$ -	48		\$ -	\$ -			
49		\$ -	\$ -	49		\$ -	\$ -	49		\$ -	\$ -			
50	0/0 Remaining	\$ -	\$ -	50	5/15 Remaining	\$ (398,664.92)	\$ (148,115.13)	50	4/17 Remaining Life	\$ (113,898.75)	\$ (42,316.56)			
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
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	4	12.5 Wearing Course(4,F)	26	4	12.5 Wearing Course (4,E)	26	4	12.5 Wearing Course (4,E)
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
1.5	Y	12.5 Wearing Course (3,C)	6	Y	N	6	N	12.5 Wearing Course (3,B)
Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	
Y	6.5	Y	6	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	
12	11	6	11	1.5	1.5	1.5	1.5	
Design Life	Shldr Thickness	Design Life	Shldr Thickness	Design Life	Shldr Thickness	Design Life	Shldr Thickness	
35	6.5	6	6	20	4	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	CLEAR ALL
12/29/2016	
Performed By	
You Vu	

D5 - 2016/2017 prices

Alt 1 - 20 yr bit w/UTBWC	Alt 2 - 20 yr conc	Alt 3 - 35 yr conc
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LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	ALT 1	ALT 2	ALT 3	1.8 Miles
Net Present Cost	\$2,509,279.20	\$2,803,684.99	\$2,653,619.83	
Segment #2				1.8 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				
<b>Project Net Present Cost</b>	<b>\$ 2,509,279.20</b>	<b>\$ 2,803,684.99</b>	<b>\$ 2,653,619.83</b>	<b>Total</b>
<b>% of Low Cost</b>	<b>100.0%</b>	<b>111.7%</b>	<b>105.8%</b>	<b>3.6</b>

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	ALT 1	ALT 2	ALT 3	1.8 Miles
Net Present Cost	\$676,830.60	\$950,868.05	\$448,053.52	
Segment #2				1.8 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				
<b>Project Net Present Cost</b>	<b>\$ 676,830.60</b>	<b>\$ 950,868.05</b>	<b>\$ 448,053.52</b>	<b>Total</b>
<b>Bid Adjustment Factor</b>	<b>\$ 228,777.08</b>	<b>\$ 502,814.53</b>	<b>\$ -</b>	<b>3.6</b>

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
1	1.793	1	1.793	1	1.793						
ALT	Description	ALT	Description	ALT	Description						
1		2		3							
Pavement Type	ALT 1	Pavement Type	ALT 2	Pavement Type	ALT 3						
HMA		PCC		PCC							
Primary Category		Primary Category		Primary Category							
20 Year HMA		212 Joint spacing		212 Joint spacing							
Secondary Category		Secondary Category		Secondary Category							
Urban		Design Life = 20 Years		Design Life = 20 Years							
ShoulderCategory		ShoulderCategory		ShoulderCategory							
Thick		PCC		PCC							
<a href="#">CLICK HERE TO EDIT THIS ALTERNATE</a> <a href="#">DELETE</a>			<a href="#">CLICK HERE TO EDIT THIS ALTERNATE</a> <a href="#">DELETE</a>			<a href="#">CLICK HERE TO EDIT THIS ALTERNATE</a> <a href="#">DELETE</a>					
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	\$ 219,703.45	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	O/O Remaining Life	\$ (79,852.02)	\$ (36,464.94)	50	5/20 Remaining	\$ (178,469.97)	\$ (81,499.46)	50	O/O Remaining	\$ -	\$ -
Net Present Cost for Segment				Net Present Cost for Segment				Net Present Cost for Segment			
\$ 2,509,279.20				\$ 2,803,684.99				\$ 2,653,619.83			
Maintenance - Net Present Cost for Segment				Maintenance - Net Present Cost for Segment				Maintenance - Net Present Cost for Segment			
\$ 676,830.60				\$ 950,868.05				\$ 448,053.52			
Equivalent Annual Cost				Equivalent Annual Cost				Equivalent Annual Cost			
72,967.85				81,528.94				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 Shldr Width	# of Shldr	ML Mix	Total Shldr Width	# of Shldr	ML Mix	Total Shldr Width	# of Shldr	ML Mix
12	2	WEARING COURSE MIXTURE (3,	12	2	WEARING COURSE MIXTURE (3,	12	2	WEARING COURSE MIXTURE (3,
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
1.5	N	WEARING COURSE MIXTURE (3,	1.5	Y	WEARING COURSE MIXTURE (3,	1.5	Y	WEARING COURSE MIXTURE (3,
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
Y	6.5		Y	6.5		Y	7.5	
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
2	12		2	11		2	11	
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
20	4		20	6.5		35	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	CLEAR ALL
BAT	

District 7 - 2015/2016 prices



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

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

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
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		212 Joint spacing							
Secondary Category		Secondary Category		Secondary Category							
Rural		Rural		Design Life = 20 Years							
ShoulderCategory		ShoulderCategory		ShoulderCategory							
Aggregate		Aggregate		Aggregate							
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	Mill and Overlay	\$ 275,374.02	\$ 275,374.02	0	New HMA	\$ 544,061.51	\$ 544,061.51	0	New PCC UBOL	\$ 419,381.62	\$ 419,381.62
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,112.00	\$ 2,005.48	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 7,598.25	\$ 6,733.97	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8	Crack Treatment	\$ 1,056.00	\$ 919.88	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 11,034.60	\$ 8,971.31	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16	ML Overlay 3.5"	\$ 207,056.59	\$ 157,116.33	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19	Crack Treatment	\$ 2,112.00	\$ 1,521.78	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	ML Overlay 4	\$ 234,496.28	\$ 166,073.86	20	1st CPR	\$ 170,110.42	\$ 120,474.81
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Seal	\$ 7,598.25	\$ 5,109.80	23	Crack Treatment	\$ 2,112.00	\$ 1,420.31	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ 7,598.25	\$ 4,769.10	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31	ML Overlay 3.5"	\$ 207,056.59	\$ 121,295.68	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34	Crack Treatment	\$ 2,112.00	\$ 1,174.83	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (147,897.56)	\$ (80,863.09)	35	2/17 Remaining Life	\$ (27,587.80)	\$ (15,083.65)	35	0/0 Remaining	\$ -	\$ -
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 Shldr Width	# of Shldr	ML Mix	Total Shldr Width	# of Shldr	ML Mix	Total Shldr Width	# of Shldr	ML Mix
4	2	WEARING COURSE MIXTURE (4,	4	2	WEARING COURSE MIXTURE (4,	15	2	
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
15	N		15	N			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	11	
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
16	4		20	4			1	

35-Year Analysis Period

# 35 - Year

50-Year Analysis Period

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

D6 - 2016/2017 prices

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

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

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
1	13.741	1	13.741	1	13.741						
ALT	Description	ALT	Description	ALT	Description						
1	1.5" Mill & 3.0" Bit. Overlay	2	3" Mill & 4.5" Bit. Overlay with UTBWC	3	8" UBOL						
Pavement Type HMA Primary Category Overlay, DL > 17 years Secondary Category Rural Shoulder Category Bituminous		Pavement Type HMA Primary Category Overlay, DL > 17 years Secondary Category Rural Shoulder Category Bituminous		Pavement Type PCC Primary Category ≥12 Joint spacing Secondary Category Design Life = 20 Years Shoulder Category 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	ML Overlay 3.5"	\$ 216,565.50	\$ 137,452.05	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		\$ 5,968,851.66	\$ 6,918,132.97	Net Present Cost for Segment		\$ 6,918,132.97	\$ 12,194,633.12	Net Present Cost for Segment		\$ 12,194,633.12	\$ 12,194,633.12
Maintenance - Net Present Cost for Segment		\$ 3,375,974.70	\$ 1,856,312.02	Maintenance - Net Present Cost for Segment		\$ 1,856,312.02	\$ 2,863,604.66	Maintenance - Net Present Cost for Segment		\$ 2,863,604.66	\$ 2,863,604.66
Equivalent Annual Cost		223,326.84	258,844.56	Equivalent Annual Cost		258,844.56	456,266.82	Equivalent Annual Cost		456,266.82	456,266.82

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 Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
14	2	WEARING COURSE MIXTURE (4,I	14	2	WEARING COURSE MIXTURE (4,I	11	2	
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
3	Y	WEARING COURSE MIXTURE (2,I	3	Y	WEARING COURSE MIXTURE (2,I	3	N	WEARING COURSE MIXTURE (2,8
Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	
N		Y		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	1.5	2	1.5	11	1.5	11	
Design Life	Shldr Thickness	Design Life	Shldr Thickness	Design Life	Shldr Thickness	Design Life	Shldr Thickness	
15	7	20	7.5				3	

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

Project Number	Analysis Period
SP 2726.074	50
Highway	Shoulder Type
MS-17	4.0M
State	CLEAR ALL
20 Year FMS	
Performed By	
Team	

01 - 2016/2017 project

ICCA SUMMARY			
Segment #1	Alternate #1	Alternate #2	Alternate #3
Segment #1	HMA-NO BUS SHLD	PCC-NO BUS SHLD	PCC-NO BUS SHLD
Segment #2	HMA-BUS SHLD	PCC-BUS SHLD	PCC-BUS SHLD
Segment #3	Crack Treatment		
Segment #4			
Segment #5			
Segment #6			
Segment #7			
Segment #8			
Segment #9			
Segment #10			
Segment #11			
Segment #12			
Segment #13			
Segment #14			
Segment #15			
Segment #16			
Segment #17			
Segment #18			
Segment #19			
Segment #20			
Segment #21			
Segment #22			
Segment #23			
Segment #24			
Segment #25			
Segment #26			
Segment #27			
Segment #28			
Segment #29			
Segment #30			
Segment #31			
Segment #32			
Segment #33			
Segment #34			
Segment #35			
Segment #36			
Segment #37			
Segment #38			
Segment #39			
Segment #40			
Segment #41			
Segment #42			
Segment #43			
Segment #44			
Segment #45			
Segment #46			
Segment #47			
Segment #48			
Segment #49			
Segment #50			
Segment #51			
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Segment #58			
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Segment #62			
Segment #63			
Segment #64			
Segment #65			
Segment #66			
Segment #67			
Segment #68			
Segment #69			
Segment #70			
Segment #71			
Segment #72			
Segment #73			
Segment #74			
Segment #75			
Segment #76			
Segment #77			
Segment #78			
Segment #79			
Segment #80			
Segment #81			
Segment #82			
Segment #83			
Segment #84			
Segment #85			
Segment #86			
Segment #87			
Segment #88			
Segment #89			
Segment #90			
Segment #91			
Segment #92			
Segment #93			
Segment #94			
Segment #95			
Segment #96			
Segment #97			
Segment #98			
Segment #99			
Segment #100			
Project Net Present Cost	\$ 2,674,959.27	\$ 4,456,259.93	\$ 4,264,269.92
Cost/Lane/Year	100.0%	180.8%	159.4%

BIJ ADJUSTMENT FACTOR SUMMARY			
Segment #1	Alternate #1	Alternate #2	Alternate #3
Segment #1	HMA-NO BUS SHLD	PCC-NO BUS SHLD	PCC-NO BUS SHLD
Segment #2	HMA-BUS SHLD	PCC-BUS SHLD	PCC-BUS SHLD
Segment #3	Crack Treatment		
Segment #4			
Segment #5			
Segment #6			
Segment #7			
Segment #8			
Segment #9			
Segment #10			
Segment #11			
Segment #12			
Segment #13			
Segment #14			
Segment #15			
Segment #16			
Segment #17			
Segment #18			
Segment #19			
Segment #20			
Segment #21			
Segment #22			
Segment #23			
Segment #24			
Segment #25			
Segment #26			
Segment #27			
Segment #28			
Segment #29			
Segment #30			
Segment #31			
Segment #32			
Segment #33			
Segment #34			
Segment #35			
Segment #36			
Segment #37			
Segment #38			
Segment #39			
Segment #40			
Segment #41			
Segment #42			
Segment #43			
Segment #44			
Segment #45			
Segment #46			
Segment #47			
Segment #48			
Segment #49			
Segment #50			
Segment #51			
Segment #52			
Segment #53			
Segment #54			
Segment #55			
Segment #56			
Segment #57			
Segment #58			
Segment #59			
Segment #60			
Segment #61			
Segment #62			
Segment #63			
Segment #64			
Segment #65			
Segment #66			
Segment #67			
Segment #68			
Segment #69			
Segment #70			
Segment #71			
Segment #72			
Segment #73			
Segment #74			
Segment #75			
Segment #76			
Segment #77			
Segment #78			
Segment #79			
Segment #80			
Segment #81			
Segment #82			
Segment #83			
Segment #84			
Segment #85			
Segment #86			
Segment #87			
Segment #88			
Segment #89			
Segment #90			
Segment #91			
Segment #92			
Segment #93			
Segment #94			
Segment #95			
Segment #96			
Segment #97			
Segment #98			
Segment #99			
Segment #100			
Project Net Present Cost	\$ 1,864,422.01	\$ 1,681,080.58	\$ 874,444.34
Cost Adjustment Factor	493.5%	304.6%	154.6%

Segment 1											
SSS	Length										
ALT	0.763										
1		2		3		4		5		6	
Payment Type		Payment Type		Payment Type		Payment Type		Payment Type		Payment Type	
HMA-NO BUS SHLD		PCC-NO BUS SHLD		HMA-NO BUS SHLD		PCC-NO BUS SHLD		HMA-NO BUS SHLD		PCC-NO BUS SHLD	
SMA		PCC		SMA		PCC		SMA		PCC	
Primary Category		Primary Category		Primary Category		Primary Category		Primary Category		Primary Category	
20 Year FMS		112 Joint spacing		20 Year FMS		112 Joint spacing		20 Year FMS		112 Joint spacing	
Secondary Category		Secondary Category		Secondary Category		Secondary Category		Secondary Category		Secondary Category	
Shoulder		Shoulder		Shoulder		Shoulder		Shoulder		Shoulder	
Design Life - 20 Years		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	
DELETE		DELETE		DELETE		DELETE		DELETE		DELETE	

Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile
0	PVMT Refurb	\$ 665,948.92	\$ 665,948.92	0	PVMT Refurb	\$ 1,272,694.91	\$ 1,272,694.91	0	PVMT Refurb	\$ 1,871,137.87	\$ 1,871,137.87
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		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20		\$ -	\$ -	20		\$ -	\$ -
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23		\$ -	\$ -	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	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		\$ -	\$ -	35		\$ -	\$ -
36		\$ -	\$ -	36		\$ -	\$ -	36		\$ -	\$ -
37		\$ -	\$ -	37		\$ -	\$ -	37		\$ -	\$ -
38		\$ -	\$ -	38		\$ -	\$ -	38		\$ -	\$ -
39		\$ -	\$ -	39		\$ -	\$ -	39		\$ -	\$ -
40		\$ -	\$ -	40		\$ -	\$ -	40		\$ -	\$ -
41		\$ -	\$ -	41		\$ -	\$ -	41		\$ -	\$ -
42		\$ -	\$ -								



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

Project Number	Analysis Period
2906-18	50
Highway	Discount Rate
71	1.74%
Date	CLEAR ALL
1/13/2016	
Performed By	
AW	

District 2 - 2015/2016 prices

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	Reclaim HMA	PCC	PCC	7.5 Miles
Net Present Cost	\$4,711,936.13	\$7,478,203.73	\$6,047,719.61	
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				
<b>Project Net Present Cost</b>	<b>\$ 4,711,936.13</b>	<b>\$ 7,478,203.73</b>	<b>\$ 6,047,719.61</b>	<b>Total</b>
<b>% of Low Cost</b>	<b>100.0%</b>	<b>158.7%</b>	<b>128.3%</b>	<b>7.5</b>

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	Reclaim HMA	PCC	PCC	7.5 Miles
Net Present Cost	\$2,055,527.01	\$3,131,684.06	\$1,701,199.94	
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				
<b>Project Net Present Cost</b>	<b>\$ 2,055,527.01</b>	<b>\$ 3,131,684.06</b>	<b>\$ 1,701,199.94</b>	<b>Total</b>
<b>Bid Adjustment Factor</b>	<b>\$ 354,327.07</b>	<b>\$ 1,430,484.12</b>	<b>\$ -</b>	<b>7.5</b>

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
1	7.51	1	7.51	1	7.51						
ALT	Description	ALT	Description	ALT	Description						
1	Reclaim HMA	2	PCC	3	PCC						
Pavement Type		PCC		PCC							
HMA		PCC		PCC							
Primary Category		Primary Category		Primary Category							
20 Year HMA		≥12 Joint spacing		≥12 Joint spacing							
Secondary Category		Secondary Category		Secondary Category							
Rural		Design Life = 20 Years		Design Life 35 Years							
ShoulderCategory		ShoulderCategory		ShoulderCategory							
Bituminous		Thick Bit		Thick Bit							
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		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27	Seal	\$ 8,567.38	\$ 5,377.39	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	\$ 536,575.96	\$ 293,373.28	35	2nd CPR	\$ 168,773.20	\$ 92,276.86
36		\$ -	\$ -	36		\$ -	\$ -	36		\$ -	\$ -
37	ML Overlay 3.5"	\$ 220,523.21	\$ 116,482.36	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	\$ 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	\$ (134,143.99)	\$ (56,621.92)	50	0/0 Remaining	\$ -	\$ -
Net Present Cost for Segment		\$ 4,711,936.13		Net Present Cost for Segment		\$ 7,478,203.73		Net Present Cost for Segment		\$ 6,047,719.61	
Maintenance - Net Present Cost for Segment		\$ 2,055,527.01		Maintenance - Net Present Cost for Segment		\$ 3,131,684.06		Maintenance - Net Present Cost for Segment		\$ 1,701,199.94	
Equivalent Annual Cost		141,871.28		Equivalent Annual Cost		225,160.59		Equivalent Annual Cost		182,090.27	

Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period	Total Lane Width	# of Lanes	Analysis Period
24	2	50	25	2	50	25	2	50
Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
16	2	WEARING COURSE MIXTURE (3,4)	14	2		14	2	
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
3	N	WEARING COURSE MIXTURE (2,7)	3	N	WEARING COURSE MIXTURE (2,7)	3	N	WEARING COURSE MIXTURE (2,7)
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	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr 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	CLEAR ALL
10/30/2015	
Performed By	
Darren Nelson	

District 3 - 2015/2016 prices

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

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

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
1	13.4	1	13.4	1	13.4						
ALT	Description	ALT	Description	ALT	Description						
1	2" Mill, 5" Conc WT, 3" Bit Shldr	2	2" Mill, 8" Reclaim, 5" Bit ML, 3: Bit Shldr	3	2" ML M&F, 1.5" Full Width OL						
Pavement Type		Pavement Type		Pavement Type							
PCC		HMA		HMA							
Primary Category		Primary Category		Primary Category							
6'X6' <= 5.0" Thickness		20 Year HMA		Overlay, DL = 13 to 17 years							
Secondary Category		Secondary Category		Secondary Category							
Rural		Rural		Rural							
Shoulder Category		Shoulder Category		Shoulder Category							
Thin Bit		Bituminous		Bituminous							
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, 5" WT, 3" Bit Shldr	\$ 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	Crack Treatment	\$ 2,112.00	\$ 2,005.48
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ -	\$ -	7		\$ -	\$ -	7	Seal	\$ 8,334.20	\$ 7,386.21
8		\$ -	\$ -	8	Crack Treatment	\$ 1,056.00	\$ 919.88	8		\$ -	\$ -
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		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18	Crack Treatment	\$ 2,112.00	\$ 1,548.26
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
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		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29	ML Overlay 3.5"	\$ 197,900.62	\$ 120,001.56
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)	\$ (15,887.00)	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		276,835.93		Equivalent Annual Cost		221,073.92	

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	WEARING COURSE MIXTURE (3,C	13	2	WEARING COURSE MIXTURE (3,B)
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
4	Y		4	N	WEARING COURSE MIXTURE (2,F	4	N	WEARING COURSE MIXTURE (2,E)
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		6	1.5		6	1.5	
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
20	3		20	3		15	1.5	

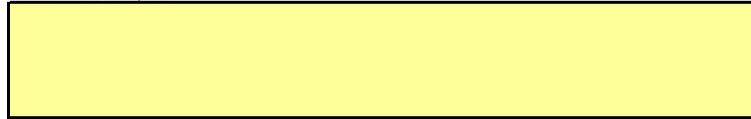
35-Year Analysis Period

35 - Year

50-Year Analysis Period

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

District 2 - 2014/2015 prices



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

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

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

Project Number	Analysis Period
3108-70	50
Highway	Discount Rate
38	1.74%
Date	<b>CLEAR ALL</b>
2/25/2016	
Performed By	
kp	

District 1 - 2015/2016 prices

Segment 1											
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG	Length
1	10.28	1	10.28	1	10.28	1	10.28	1	10.28	1	10.28
ALT		ALT		ALT		ALT		ALT		ALT	
Description		Description		Description		Description		Description		Description	
18" regrade HMA		18" Regrade - conc		18" Regrade - conc		18" Regrade - conc		18" Regrade - conc		18" Regrade - conc	
Pavement Type			Pavement Type			Pavement Type			Pavement Type		
HMA			PCC			PCC			PCC		
Primary Category			Primary Category			Primary Category			Primary Category		
20 Year HMA			212 Joint spacing			212 Joint spacing			212 Joint spacing		
Secondary Category			Secondary Category			Secondary Category			Secondary Category		
Rural			Design Life = 20 Years			Design Life = 20 Years			Design Life = 20 Years		
ShoulderCategory			ShoulderCategory			ShoulderCategory			ShoulderCategory		
Aggregate			Aggregate			Aggregate			Aggregate		
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		\$ 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)	\$ (42,360.32)	50	0/0 Remaining	\$ -	\$ -
Net Present Cost for Segment				Net Present Cost for Segment				Net Present Cost for Segment			
\$ 6,804,716.36				\$ 9,535,836.73				\$ 8,447,151.95			
Maintenance - Net Present Cost for Segment				Maintenance - Net Present Cost for Segment				Maintenance - Net Present Cost for Segment			
\$ 1,959,762.64				\$ 3,233,651.89				\$ 1,855,482.31			
Equivalent Annual Cost				Equivalent Annual Cost				Equivalent Annual Cost			
204,882.61				287,113.68				254,334.57			

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

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

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 Shldr	ML Mix	Total Shldr Width	# of Shldr	ML Mix	Total Shldr Width	# of Shldr	ML Mix
2	2	WEARING COURSE MIXTURE (3,	2	2	Y	2	2	6.5
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
2	N		2	N		2	N	
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N			Y	6		Y	6.5	
ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane		ML Top Lift / joint spacing	# Dowels per Lane	
1.5			12	11		12	11	
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
20	5		6	6		35	6.5	

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	CLEAR ALL
10/3/2016	
Performed By	
Amy Thorson	

D1 - 2016/2017 prices

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill, 4" Overlay	20 Year HMA	PCC	6.3
Net Present Cost	\$1,736,109.90	\$3,630,709.62	\$4,234,245.09	Miles
Segment #2				0.0
Net Present Cost				Miles
Segment #3				0.0
Net Present Cost				Miles
Segment #4				0.0
Net Present Cost				Miles
Segment #5				0.0
Net Present Cost				Miles
Segment #6				0.0
Net Present Cost				Miles
Segment #7				0.0
Net Present Cost				Miles
Segment #8				0.0
Net Present Cost				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	20 Year HMA	PCC	6.3
Net Present Cost	\$862,539.30	\$975,990.42	\$780,295.29	Miles
Segment #2				0.0
Net Present Cost				Miles
Segment #3				0.0
Net Present Cost				Miles
Segment #4				0.0
Net Present Cost				Miles
Segment #5				0.0
Net Present Cost				Miles
Segment #6				0.0
Net Present Cost				Miles
Segment #7				0.0
Net Present Cost				Miles
Segment #8				0.0
Net Present Cost				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	Length						
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		Primary Category		Primary Category	≥12 Joint spacing						
Secondary Category		Secondary Category		Secondary Category	Design Life 35 Years						
Shoulder Category	Rural	Shoulder Category	Rural	Shoulder Category	Thin Bit						
Shoulder Category	Bituminous	Shoulder Category	Bituminous	Shoulder Category	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		\$ 138,662.00	\$ 138,662.00	0		\$ 421,384.00	\$ 421,384.00	0		\$ 548,246.00	\$ 548,246.00
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	\$ 931.53	8	Crack Treatment	\$ 1,056.00	\$ 931.53	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12	Seal	\$ 15,018.15	\$ 12,442.80	12	Seal	\$ 15,018.15	\$ 12,442.80	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 4	\$ 173,673.64	\$ 126,931.60	20	ML Overlay 4	\$ 200,839.45	\$ 146,786.07	20	1st CPR	\$ 169,466.01	\$ 123,856.39
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Crack Treatment	\$ 2,112.00	\$ 1,472.67	23	Crack Treatment	\$ 2,112.00	\$ 1,472.67	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27	Seal	\$ 10,591.40	\$ 6,936.36	27	Seal	\$ 10,591.40	\$ 6,936.36	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	\$ (20,432.19)	\$ (11,803.96)	35	2/17 Remaining Life	\$ (23,628.17)	\$ (13,650.32)	35	0/0 Remaining	\$ -	\$ -
Net Present Cost for Segment		\$ 1,736,109.90	\$ 3,630,709.62	Net Present Cost for Segment		\$ 3,630,709.62	\$ 3,630,709.62	Net Present Cost for Segment		\$ 4,234,245.09	\$ 4,234,245.09
Maintenance - Net Present Cost for Segment		\$ 862,539.30	\$ 975,990.42	Maintenance - Net Present Cost for Segment		\$ 975,990.42	\$ 975,990.42	Maintenance - Net Present Cost for Segment		\$ 780,295.29	\$ 780,295.29
Equivalent Annual Cost		64,957.21	135,844.38	Equivalent Annual Cost		135,844.38	135,844.38	Equivalent Annual Cost		158,425.88	158,425.88

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
8	2	WEARING COURSE MIXTURE (3,I	8	2	WEARING COURSE MIXTURE (3,C	8	2	WEARING COURSE MIXTURE (3,B)
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
0	N	WEARING COURSE MIXTURE (3,I	1.5	N	WEARING COURSE MIXTURE (3,I	1.5	N	WEARING COURSE MIXTURE (3,B)
Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	
N	4	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	ML Top Lift / joint spacing	# Dowels per Lane	
2	2	2	2	2	2	2	2	
Design Life	Shldr Thickness	Design Life	Shldr Thickness	Design Life	Shldr Thickness	Design Life	Shldr Thickness	
15	2	20	3	15	3	15	3	



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

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

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

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
1	16.433	1	16.433	1	16.433						
ALT	Description	ALT	Description	ALT	Description						
1	6" Whitetopping (35 YR)	2	6" Whitetopping (20 YR)	3	FDR + 4.5" HMA						
Pavement Type	PCC	Pavement Type	PCC	Pavement Type	HMA						
Primary Category		Primary Category		Primary Category							
Secondary Category		Secondary Category		Secondary Category							
ShoulderCategory		ShoulderCategory		ShoulderCategory							
Aggregate		Aggregate		Aggregate							
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	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	Crack Treatment	\$ 1,232.00	\$ 1,073.19
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	\$ -	\$ -	50	5/20 Remaining	\$ (124,632.36)	\$ (52,607.07)	50	4/17 Remaining Life	\$ (45,128.17)	\$ (19,048.51)
Net Present Cost for Segment			\$ 9,207,481.74	Net Present Cost for Segment			\$ 12,005,133.52	Net Present Cost for Segment			\$ 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 Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
12	2		12	2		12	2	WEARING COURSE MIXTURE (3,8)
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	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		
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	1.5	
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
20	7		20	7		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

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

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

Segment 1																															
SEG	Length	SEG	Length	SEG	Length																										
1	9.021	1	9.021	1	9.021																										
ALT	Description	ALT	Description	ALT	Description																										
1	7" Whitetopping w/ PCC shldr	2	3.5" CIR + 3" HMA	3	9" FDR (5" SFDR) + 2" HMA																										
<table border="1"> <tr><td>Pavement Type</td><td>PCC</td></tr> <tr><td>Primary Category</td><td>≥12 Joint spacing</td></tr> <tr><td>Secondary Category</td><td>Rural</td></tr> <tr><td>Design Life 35 Years</td><td></td></tr> <tr><td>ShoulderCategory</td><td>PCC</td></tr> </table>		Pavement Type	PCC	Primary Category	≥12 Joint spacing	Secondary Category	Rural	Design Life 35 Years		ShoulderCategory	PCC	<table border="1"> <tr><td>Pavement Type</td><td>HMA</td></tr> <tr><td>Primary Category</td><td>20 Year HMA</td></tr> <tr><td>Secondary Category</td><td>Rural</td></tr> <tr><td>ShoulderCategory</td><td>Bituminous</td></tr> </table>		Pavement Type	HMA	Primary Category	20 Year HMA	Secondary Category	Rural	ShoulderCategory	Bituminous	<table border="1"> <tr><td>Pavement Type</td><td>HMA</td></tr> <tr><td>Primary Category</td><td>20 Year HMA</td></tr> <tr><td>Secondary Category</td><td>Rural</td></tr> <tr><td>ShoulderCategory</td><td>Bituminous</td></tr> </table>		Pavement Type	HMA	Primary Category	20 Year HMA	Secondary Category	Rural	ShoulderCategory	Bituminous
Pavement Type	PCC																														
Primary Category	≥12 Joint spacing																														
Secondary Category	Rural																														
Design Life 35 Years																															
ShoulderCategory	PCC																														
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ShoulderCategory	Bituminous																														
Pavement Type	HMA																														
Primary Category	20 Year HMA																														
Secondary Category	Rural																														
ShoulderCategory	Bituminous																														
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	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	1st CPR	\$ 117,095.07	\$ 82,928.53	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	2nd CPR	\$ 151,610.32	\$ 82,893.05	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	O/O Remaining	\$ -	\$ -	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																					
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																					
Equivalent Annual Cost		174,704.13		Equivalent Annual Cost		154,129.50		Equivalent Annual Cost		158,263.15																					

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 Shldr	ML Mix	Total Shldr Width	# of Shldr	ML Mix	Total Shldr Width	# of Shldr	ML Mix
14	2		16	2	WEARING COURSE MIXTURE (4,1	14	2	WEARING COURSE MIXTURE (4,8)
Width of Rounding Aggregate	white / >7 milliom	SL Mix	Width of Rounding Aggregate	white / >7 milliom	SL Mix	Width of Rounding Aggregate	white / >7 milliom	SL Mix
5	N	WEARING COURSE MIXTURE (3,8	5	N	WEARING COURSE MIXTURE (3,8	5	N	WEARING COURSE MIXTURE (3,8)
Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness		Sealed/UTBWC	ML Thickness	
N	7		N	7		N	7	
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		15	6	
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	CLEAR ALL
1/5/2016	
Performed By	
KO	

District 2 - 2015/2016 prices

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

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

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
1	9.649	1	9.649	1	9.649						
ALT	Description	ALT	Description	ALT	Description						
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							
Shoulder Category		Shoulder Category		Shoulder Category							
Aggregate		Aggregate		Aggregate							
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		\$ 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	\$ 160,449.81	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 Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
12	2	WEARING COURSE MIXTURE (3,F	12	2		12	2	WEARING COURSE MIXTURE (3,C
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL 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	2		12	2		2	2	
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
17	1		20	2		20	1	



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
Low Cost Option #	1
Chosen Option #	1

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
Low Cost Option #	1
Chosen Option #	1

OPTION #1 (Bituminous Mill and Overlay)			
DESCRIPTION			
2.0" Mill & 2.0" Overlay			
Year	#	Life	Cost/Mile
1	AJ		\$ 98,316
2			\$ -
3	AA	Crack Treatment	\$ 7,000
4			\$ -
5			\$ -
6			\$ -
7	AB	Surface Treatment (Chip Seal)	\$ 19,000
8			\$ -
9			\$ -
10			\$ -
11			\$ -
12			\$ -
13			\$ -
14			\$ -
15	AN	2.5" Mill & 3.0" Overlay	\$ 140,646
16			\$ -
17			\$ -
18	AA	Crack Treatment	\$ 7,000
19			\$ -
20			\$ -
21			\$ -
22	AB	Surface Treatment (Chip Seal)	\$ 19,000
23			\$ -
24			\$ -
25			\$ -
26			\$ -
27			\$ -
28	AJ	2.0" Mill & 2.0" Overlay	\$ 98,316
29			\$ -
30			\$ -
31	AA	Crack Treatment	\$ 7,000
32			\$ -
33			\$ -
34			\$ -
35	AJ	6 Remaining Service Life Value**	\$ (45,377)
Total Present Worth			\$ 275,004
Eq. Annual Cost*			\$11,349
% of Low Cost			100%

OPTION #2			
DESCRIPTION			
panel length			
Year	#	Life	Cost/Mile
1			\$ -
2			\$ -
3			\$ -
4			\$ -
5			\$ -
6			\$ -
7			\$ -
8			\$ -
9			\$ -
10			\$ -
11			\$ -
12			\$ -
13			\$ -
14			\$ -
15			\$ -
16			\$ -
17			\$ -
18			\$ -
19			\$ -
20			\$ -
21			\$ -
22			\$ -
23			\$ -
24			\$ -
25			\$ -
26			\$ -
27			\$ -
28			\$ -
29			\$ -
30			\$ -
31			\$ -
32			\$ -
33			\$ -
34			\$ -
35		5 Remaining Service Life Value**	\$ -
Total Present Worth			\$ -
Eq. Annual Cost*			\$ -
% of Low Cost			

OPTION #3			
DESCRIPTION			
Whitetopping (mill 2.5 in. and place 4.5 in. PCC)			
Year	#	Life	Cost/Mile
1			\$ 229,786
2			\$ -
3			\$ -
4			\$ -
5			\$ -
6			\$ -
7			\$ -
8			\$ -
9			\$ -
10			\$ -
11			\$ -
12			\$ -
13	bb	13 year PCC (20 yr design life)	\$ 87,586
14			\$ -
15			\$ -
16			\$ -
17			\$ -
18			\$ -
19			\$ -
20			\$ -
21			\$ -
22			\$ -
23			\$ -
24			\$ -
25	bc	25 year PCC (20 yr design life)	\$ 206,494
26			\$ -
27			\$ -
28			\$ -
29			\$ -
30			\$ -
31			\$ -
32			\$ -
33			\$ -
34			\$ -
35		Remaining Service Life Value**	\$ -
Total Present Worth			\$ 415,639
Eq. Annual Cost*			\$17,152
% of Low Cost			151%

OPTION #4			
DESCRIPTION			
Reclaim & 4" Overlay			
Year	#	Life	Cost/Mile
1			\$ 190,134
2			\$ -
3	AA	Crack Treatment	\$ 7,000
4			\$ -
5			\$ -
6			\$ -
7	AB	Surface Treatment (Chip Seal)	\$ 19,000
8			\$ -
9			\$ -
10			\$ -
11			\$ -
12			\$ -
13			\$ -
14			\$ -
15			\$ -
16	AL	2.0" Mill & 3.5" Overlay	\$ 162,867
17			\$ -
18			\$ -
19	AA	Crack Treatment	\$ 7,000
20			\$ -
21			\$ -
22			\$ -
23	AB	Surface Treatment (Chip Seal)	\$ 19,000
24			\$ -
25			\$ -
26			\$ -
27			\$ -
28			\$ -
29			\$ -
30			\$ -
31	AL	2.0" Mill & 3.5" Overlay	\$ 162,867
32			\$ -
33			\$ -
34	AA	Crack Treatment	\$ 7,000
35	AL	10 Remaining Service Life Value**	\$ (116,333)
Total Present Worth			\$ 376,115
Eq. Annual Cost*			\$15,521
% of Low Cost			137%

OPTION #5			
DESCRIPTION			
panel length			
Year	#	Life	Cost/Mile
1			\$ -
2			\$ -
3			\$ -
4			\$ -
5			\$ -
6			\$ -
7			\$ -
8			\$ -
9			\$ -
10			\$ -
11			\$ -
12			\$ -
13			\$ -
14			\$ -
15			\$ -
16			\$ -
17			\$ -
18			\$ -
19			\$ -
20			\$ -
21			\$ -
22			\$ -
23			\$ -
24			\$ -
25			\$ -
26			\$ -
27			\$ -
28			\$ -
29			\$ -
30			\$ -
31			\$ -
32			\$ -
33			\$ -
34			\$ -
35		Remaining Service Life Value**	\$ -
Total Present Worth			\$ -
Eq. Annual Cost*			\$ -
% of Low Cost			

OPTION #6			
DESCRIPTION			
panel length			
Year	#	Life	Cost/Mile
1			\$ -
2			\$ -
3			\$ -
4			\$ -
5			\$ -
6			\$ -
7			\$ -
8			\$ -
9			\$ -
10			\$ -
11			\$ -
12			\$ -
13			\$ -
14			\$ -
15			\$ -
16			\$ -
17			\$ -
18			\$ -
19			\$ -
20			\$ -
21			\$ -
22			\$ -
23			\$ -
24			\$ -
25			\$ -
26			\$ -
27			\$ -
28			\$ -
29			\$ -
30			\$ -
31			\$ -
32			\$ -
33			\$ -
34			\$ -
35		Remaining Service Life Value**	\$ -
Total Present Worth			\$ -
Eq. Annual Cost*			\$ -
% of Low Cost			

\* Equivalent Annual Cost is included for information only.  
 \*\*Remaining Service Life Value is reported as a negative value.

\* Equivalent Annual Cost is included for information only.

35-Year Analysis Period

# 35 - Year

50-Year Analysis Period

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

D1 - 2016/2017 prices



LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	3" Mill and Overlay	Thick Mill and Overlay (6")	Concret Overlay 35yr	15.2 Miles
Net Present Cost	\$5,984,666.98	\$6,808,351.63	\$9,344,371.69	
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				
<b>Project Net Present Cost</b>	<b>\$ 5,984,666.98</b>	<b>\$ 6,808,351.63</b>	<b>\$ 9,344,371.69</b>	<b>Total</b>
<b>% of Low Cost</b>	<b>100.0%</b>	<b>113.8%</b>	<b>156.1%</b>	<b>15.2</b>

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	3" Mill and Overlay	Thick Mill and Overlay (6")	Concret Overlay 35yr	15.2 Miles
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				
<b>Project Net Present Cost</b>	<b>\$ 3,577,972.82</b>	<b>\$ 1,935,965.73</b>	<b>\$ 1,336,429.26</b>	<b>Total</b>
<b>Bid Adjustment Factor</b>	<b>\$ 2,241,543.56</b>	<b>\$ 599,536.46</b>	<b>\$ -</b>	<b>15.2</b>

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
1	15.22	1	15.22	1	15.22						
ALT	Description	ALT	Description	ALT	Description						
1	3" Mill and Overlay	2	Thick Mill and Overlay (6")	3	Concret Overlay 35yr						
Pavement Type	HMA	Pavement Type	HMA	Pavement Type	PCC						
Primary Category		Primary Category		Primary Category							
Overlay, DL - 13 to 17 years		20 Year HMA		212 Joint spacing							
Secondary Category		Secondary Category		Secondary Category							
Urban		Rural		Design Life 35 Years							
ShoulderCategory		ShoulderCategory		ShoulderCategory							
Thin		Bituminous		PCC							
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		\$ 158,127.08	\$ 158,127.08	0		\$ 320,130.48	\$ 320,130.48	0		\$ 526,146.02	\$ 526,146.02
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 1,936.00	\$ 1,847.06	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 9,602.77	\$ 8,604.77	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8	Crack Treatment	\$ 968.00	\$ 853.91	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 13,629.85	\$ 11,292.57	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15	ML Overlay 3.5"	\$ 187,542.98	\$ 148,244.19	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	Crack Treatment	\$ 1,936.00	\$ 1,460.02	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	ML Overlay 4	\$ 162,036.59	\$ 118,426.50	20	1st CPR	\$ 120,142.18	\$ 87,807.44
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22	Seal	\$ 9,602.77	\$ 6,801.68	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23	Crack Treatment	\$ 1,936.00	\$ 1,349.95	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ 9,602.77	\$ 6,288.91	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29	ML Overlay 4.0"	\$ 206,893.52	\$ 131,313.34	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32	Crack Treatment	\$ 1,936.00	\$ 1,172.31	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (111,404.21)	\$ (64,359.74)	35	2/17 Remaining Life	\$ (19,063.13)	\$ (11,013.03)	35	0/0 Remaining	\$ -	\$ -
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	Net Present Cost for Segment		\$ 9,344,371.69	\$ 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	Maintenance - Net Present Cost for Segment		\$ 1,336,429.26	\$ 1,336,429.26
Equivalent Annual Cost		223,918.58	254,737.05	Equivalent Annual Cost		254,737.05	349,623.20	Equivalent Annual Cost		349,623.20	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 Shldr Width	# of Shldr	ML Mix	Total Shldr Width	# of Shldr	ML Mix	Total Shldr Width	# of Shldr	ML Mix
6	2	WEARING COURSE MIXTURE (4,E	6	2	WEARING COURSE MIXTURE (3,E	6	2	
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
1.5	N	WEARING COURSE MIXTURE (4,E	1.5	N	WEARING COURSE MIXTURE (3,E	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			15	11		15	11	
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	CLEAR ALL
Performed By	

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
Net Present Cost	\$4,995,771.71	\$5,218,843.43	\$8,175,191.49	
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				
<b>Project Net Present Cost</b>	<b>\$ 4,995,771.71</b>	<b>\$ 5,218,843.43</b>	<b>\$ 8,175,191.49</b>	<b>Total</b>
<b>% of Low Cost</b>	<b>100.0%</b>	<b>104.5%</b>	<b>163.6%</b>	<b>12.7</b>

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
Net Present Cost	\$2,926,048.87	\$2,681,916.82	\$2,187,046.05	
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				
<b>Project Net Present Cost</b>	<b>\$ 2,926,048.87</b>	<b>\$ 2,681,916.82</b>	<b>\$ 2,187,046.05</b>	<b>Total</b>
<b>Bid Adjustment Factor</b>	<b>\$ 739,002.82</b>	<b>\$ 494,870.77</b>	<b>\$ -</b>	<b>12.7</b>

Segment 1											
SEG	Length	ALT	Description	SEG	Length	ALT	Description	SEG	Length	ALT	Description
1	12.726	1	12.726	1	12.726	3	12.726	1	12.726	3	12.726
1		2	Bit M&O 3"	2		2	CIR and overlay	3		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			212 Joint spacing					
Secondary Category			Secondary Category			Secondary Category					
Rural			Rural			Design Life = 20 Years					
ShoulderCategory			ShoulderCategory			ShoulderCategory					
Aggregate			Aggregate			Aggregate					
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" M&O	\$ 162,637.34	\$ 162,637.34	0	CIR & overlay	\$ 199,349.88	\$ 199,349.88	0	6" UCOL	\$ 470,544.20	\$ 470,544.20			
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -			
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -			
3	Crack Treatment	\$ 2,464.00	\$ 2,350.80	3		\$ -	\$ -	3		\$ -	\$ -			
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -			
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -			
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -			
7	Seal	\$ 8,947.11	\$ 8,017.25	7		\$ -	\$ -	7		\$ -	\$ -			
8		\$ -	\$ -	8	Crack Treatment	\$ 1,232.00	\$ 1,086.79	8		\$ -	\$ -			
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -			
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -			
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -			
12		\$ -	\$ -	12	Seal	\$ 14,464.15	\$ 11,983.80	12		\$ -	\$ -			
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -			
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -			
15	ML Overlay 3.5"	\$ 188,382.78	\$ 148,908.01	15		\$ -	\$ -	15		\$ -	\$ -			
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -			
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -			
18	Crack Treatment	\$ 2,464.00	\$ 1,858.20	18		\$ -	\$ -	18		\$ -	\$ -			
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -			
20		\$ -	\$ -	20	ML Overlay 4	\$ 286,764.11	\$ 209,585.21	20	1st CPR	\$ 235,141.98	\$ 171,856.52			
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -			
22	Seal	\$ 8,947.11	\$ 6,337.27	22		\$ -	\$ -	22		\$ -	\$ -			
23		\$ -	\$ -	23	Crack Treatment	\$ 2,464.00	\$ 1,718.11	23		\$ -	\$ -			
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -			
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -			
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -			
27		\$ -	\$ -	27	Seal	\$ 8,947.11	\$ 5,859.51	27		\$ -	\$ -			
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -			
29	ML Overlay 3.5"	\$ 188,382.78	\$ 119,564.75	29		\$ -	\$ -	29		\$ -	\$ -			
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -			
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -			
32	Crack Treatment	\$ 2,464.00	\$ 1,492.03	32		\$ -	\$ -	32		\$ -	\$ -			
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -			
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -			
35	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	Net Present Cost for Segment				\$ 8,175,191.49
Maintenance - Net Present Cost for Segment				\$ 2,926,048.87	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 Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
12	2	WEARING COURSE MIXTURE (4,	12	2	WEARING COURSE MIXTURE (4,	12	2	
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	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			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	CLEAR ALL
Performed By	

District 8 - 2015/2016 prices



LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	UTBWC + 3" Overlay	5" Bituminous Reconstruct	6" UBOL	11.8 Miles
Net Present Cost	\$5,460,761.38	\$12,577,253.65	\$7,570,422.44	
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				
<b>Project Net Present Cost</b>	<b>\$ 5,460,761.38</b>	<b>\$ 12,577,253.65</b>	<b>\$ 7,570,422.44</b>	<b>Total</b>
<b>% of Low Cost</b>	<b>100.0%</b>	<b>230.3%</b>	<b>138.6%</b>	<b>11.8</b>

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	UTBWC + 3" Overlay	5" Bituminous Reconstruct	6" UBOL	11.8 Miles
Net Present Cost	\$2,008,468.59	\$2,122,699.64	\$1,658,776.34	
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				
<b>Project Net Present Cost</b>	<b>\$ 2,008,468.59</b>	<b>\$ 2,122,699.64</b>	<b>\$ 1,658,776.34</b>	<b>Total</b>
<b>Bid Adjustment Factor</b>	<b>\$ 349,692.25</b>	<b>\$ 463,923.30</b>	<b>\$ -</b>	<b>11.8</b>

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
1	11.819	1	11.819	1	11.819						
ALT	Description	ALT	Description	ALT	Description						
1	UTBWC + 3" Overlay	2	5" Bituminous Reconstruct	3	6" UBOL						
Pavement Type		Pavement Type		Pavement Type							
HMA		HMA		PCC							
Primary Category		Primary Category		Primary Category							
Overlay, DL > 17 years		20 Year HMA		212 Joint spacing							
Secondary Category		Secondary Category		Secondary Category							
Rural		Rural		Design Life = 20 Years							
ShoulderCategory		ShoulderCategory		ShoulderCategory							
Aggregate		Aggregate		Aggregate							
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" UBOL	\$ 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	ML Overlay 3.5"	\$ 233,152.55	\$ 167,995.34	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	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		Net Present Cost for Segment		\$ 7,570,422.44	
Maintenance - Net Present Cost for Segment		\$ 2,008,468.59		Maintenance - Net Present Cost for Segment		\$ 2,122,699.64		Maintenance - Net Present Cost for Segment		\$ 1,658,776.34	
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
26	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
12	2	WEARING COURSE MIXTURE (3,C	10	2	WEARING COURSE MIXTURE (3,C	10	2	
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	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			1.5			1.5		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
19	3.5		20	5		12	11	
						7.5		

35-Year Analysis Period

# 35 - Year

50-Year Analysis Period

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

D8 - 2016/2017 prices

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

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2.5" Mill and Overlay	4" Mill and 4" PCC Whitetopping	4" Mill + 4" CIR + 2" HMA	8.2 Miles
Net Present Cost	\$2,054,709.99	\$3,074,400.42	\$1,561,640.90	
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				
<b>Project Net Present Cost</b>	<b>\$ 2,054,709.99</b>	<b>\$ 3,074,400.42</b>	<b>\$ 1,561,640.90</b>	<b>Total</b>
<b>Bid Adjustment Factor</b>	<b>\$ 493,069.10</b>	<b>\$ 1,512,759.52</b>	<b>\$ -</b>	<b>8.2</b>

Segment 1																																											
SEG	Length	SEG	Length	SEG	Length																																						
1	8.213	1	8.213	1	8.213																																						
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																																						
<table border="1"> <tr><td>Pavement Type</td><td>HMA</td></tr> <tr><td>Primary Category</td><td>PCC</td></tr> <tr><td>Overlay, DL=13 to 17 years</td><td>6'X6' ≤ 5.0" Thickness</td></tr> <tr><td>Secondary Category</td><td>Secondary Category</td></tr> <tr><td>Rural</td><td>Design Life = 20 Years</td></tr> <tr><td>ShoulderCategory</td><td>Thin Bit</td></tr> <tr><td>Bituminous</td><td></td></tr> </table>		Pavement Type	HMA	Primary Category	PCC	Overlay, DL=13 to 17 years	6'X6' ≤ 5.0" Thickness	Secondary Category	Secondary Category	Rural	Design Life = 20 Years	ShoulderCategory	Thin Bit	Bituminous		<table border="1"> <tr><td>Pavement Type</td><td>PCC</td></tr> <tr><td>Primary Category</td><td>6'X6' ≤ 5.0" Thickness</td></tr> <tr><td>Secondary Category</td><td>Secondary Category</td></tr> <tr><td>Rural</td><td>Design Life = 20 Years</td></tr> <tr><td>ShoulderCategory</td><td>Thin Bit</td></tr> <tr><td>Bituminous</td><td></td></tr> </table>		Pavement Type	PCC	Primary Category	6'X6' ≤ 5.0" Thickness	Secondary Category	Secondary Category	Rural	Design Life = 20 Years	ShoulderCategory	Thin Bit	Bituminous		<table border="1"> <tr><td>Pavement Type</td><td>HMA</td></tr> <tr><td>Primary Category</td><td>20 Year HMA</td></tr> <tr><td>Secondary Category</td><td>Secondary Category</td></tr> <tr><td>Rural</td><td></td></tr> <tr><td>ShoulderCategory</td><td></td></tr> <tr><td>Bituminous</td><td></td></tr> </table>		Pavement Type	HMA	Primary Category	20 Year HMA	Secondary Category	Secondary Category	Rural		ShoulderCategory		Bituminous	
Pavement Type	HMA																																										
Primary Category	PCC																																										
Overlay, DL=13 to 17 years	6'X6' ≤ 5.0" Thickness																																										
Secondary Category	Secondary Category																																										
Rural	Design Life = 20 Years																																										
ShoulderCategory	Thin Bit																																										
Bituminous																																											
Pavement Type	PCC																																										
Primary Category	6'X6' ≤ 5.0" Thickness																																										
Secondary Category	Secondary Category																																										
Rural	Design Life = 20 Years																																										
ShoulderCategory	Thin Bit																																										
Bituminous																																											
Pavement Type	HMA																																										
Primary Category	20 Year HMA																																										
Secondary Category	Secondary Category																																										
Rural																																											
ShoulderCategory																																											
Bituminous																																											
<div style="border: 1px solid black; padding: 5px; text-align: center;">CLICK HERE TO EDIT THIS ALTERNATE</div>		<div style="border: 1px solid black; padding: 5px; text-align: center;">CLICK HERE TO EDIT THIS ALTERNATE</div>		<div style="border: 1px solid black; padding: 5px; text-align: center;">CLICK HERE TO EDIT THIS ALTERNATE</div>																																							
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	\$ 931.53																																
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	\$ 191,686.10																																
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)	\$ (17,825.78)																																
Net Present Cost for Segment		\$ 3,311,191.98	\$ 6,226,675.72	Net Present Cost for Segment		\$ 3,074,400.42	\$ 1,561,640.90	Net Present Cost for Segment		\$ 4,017,160.02	\$ 1,561,640.90																																
Maintenance - Net Present Cost for Segment		\$ 2,054,709.99	\$ 1,512,759.52	Maintenance - Net Present Cost for Segment		\$ 3,074,400.42	\$ 1,561,640.90	Maintenance - Net Present Cost for Segment		\$ 1,561,640.90	\$ 1,561,640.90																																
Equivalent Annual Cost		123,889.50	232,973.43	Equivalent Annual Cost		232,973.43	150,303.56	Equivalent Annual Cost		150,303.56	150,303.56																																

Total Lane Width			Analysis Period			Total Lane Width			Analysis Period			Total Lane Width			Analysis Period			
24	2	35	24	2	35	24	2	35	24	2	35	24	2	35	24	2	35	
Total Shldr Width			ML Mix			Total Shldr Width			ML Mix			Total Shldr Width			ML Mix			
20	2	WEARING COURSE MIXTURE (3,6)	16	2	WEARING COURSE MIXTURE (3,6)	20	2	WEARING COURSE MIXTURE (3,8)	20	2	WEARING COURSE MIXTURE (3,8)	20	2	WEARING COURSE MIXTURE (3,8)	20	2	WEARING COURSE MIXTURE (3,8)	
Width of Rounding Aggregate			SL Mix			Width of Rounding Aggregate			SL Mix			Width of Rounding Aggregate			SL Mix			
3	N	WEARING COURSE MIXTURE (2,6)	3	Y	WEARING COURSE MIXTURE (2,6)	3	N	WEARING COURSE MIXTURE (2,8)	3	N	WEARING COURSE MIXTURE (2,8)	3	N	WEARING COURSE MIXTURE (2,8)	3	N	WEARING COURSE MIXTURE (2,8)	
Sealed/UTBWC			ML Thickness			Sealed/UTBWC			ML Thickness			Sealed/UTBWC			ML Thickness			
N			N	4		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			
2.5			6	0		2			2			2			2			
Design Life			Shldr Thickness			Design Life			Shldr Thickness			Design Life			Shldr Thickness			
16		3.5		3		20		3		20		20		3		20		3

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	CLEAR ALL
7/18/2016	
Performed By	
Darren Nelson	

D3 - 2016/2017 prices

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

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

Segment 1														
SEG	Length			SEG	Length			SEG	Length					
1	9			1	9			1	9					
ALT	Description			ALT	Description			ALT	Description					
1	2" Mill and 3.5" OL			2	3" Mill, 6" FDR, 4.5" Bit			3	3" Mill, 4.5" White-Top					
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 S 5.0" Thickness						
Secondary Category				Secondary Category				Secondary Category						
Rural				Rural				Design Life = 20 Years						
ShoulderCategory				ShoulderCategory				ShoulderCategory						
Bituminous				Bituminous				PCC						
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				\$ 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				\$ 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				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 Shldr Width	# of Shldr	ML Mix	Total Shldr Width	# of Shldr	ML Mix	Total Shldr Width	# of Shldr	ML Mix
4	2	WEARING COURSE MIXTURE (3.E	4	2	WEARING COURSE MIXTURE (3.C	4	2	
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
2	N	WEARING COURSE MIXTURE (3.E	2	N	WEARING COURSE MIXTURE (3.C	2	Y	
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			6	0	
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
15	3.5		20	4.5			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	\$2,521,719.37	Mill & 3" Overlay	17	\$177,206	0.714	\$126,554	\$5,062
		<b>Total Cost:</b>		<b>\$2,884,163</b>	Rout & seal	19	\$6,300	0.686	\$4,325	\$173
		<b>Cost/Mile:</b>		<b>\$175,703</b>	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
					<b>Total Present Worth:</b>				<b>\$374,801</b>	\$14,993
					<b>Equivalent Annual Cost:</b>				<b>\$14,993</b>	\$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	\$81,681.04						
		<b>Total Cost:</b>		<b>\$5,217,719</b>	<b>Total Present Worth:</b>				<b>\$418,809</b>	\$16,753
		<b>Cost/Mile:</b>		<b>\$317,863</b>	<b>Equivalent Annual Cost:</b>				<b>\$16,753</b>	\$16,753

**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	\$3,782,579.05	Mill & 3" Overlay	22	\$177,206	0.647	\$114,624	\$4,585
		<b>Total Cost:</b>		<b>\$4,168,135</b>	Rout & seal	24	\$6,300	0.622	\$3,917	\$157
		<b>Cost/Mile:</b>		<b>\$253,922</b>	Chipseal	26	\$30,000	0.598	\$17,927	\$717
					Remaining Life Value	35	(\$41,696)	0.500	-\$20,849	-\$834
					<b>Total Present Worth:</b>				<b>\$403,312</b>	\$16,133
					<b>Equivalent Annual Cost:</b>				<b>\$16,133</b>	\$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							
Project Number	Analysis Period	50		50-Year Analysis Period							
SP 5209-74	Highway	TH 169		50 Year Analysis Period for Concrete UBOL and Bituminous Reconstruction							
Date	Discount Rate	1.58%		CLEAR ALL							
11/7/2016	Performed By	Kyle Vogt		CLEAR ALL							
D7 - 2016/2017 prices											
50 Year Analysis Period for Concrete UBOL and Bituminous Reconstruction											
<b>LCCA SUMMARY</b>											
Segment #1	Alternate #1	Alternate #2	Alternate #3	Length							
	8" UBOL w/ 15' joints	7.5" UBOL w/ 15' jts	8" Bituminous Reconstruction	9.5							
Net Present Cost	\$9,355,756.95	\$11,078,609.67	\$13,387,281.08								
Segment #2				0.0							
Net Present Cost											
Segment #3				0.0							
Net Present Cost											
Segment #4				0.0							
Net Present Cost											
Segment #5				0.0							
Net Present Cost											
Segment #6				0.0							
Net Present Cost											
Segment #7				0.0							
Net Present Cost											
Segment #8				0.0							
Net Present Cost											
Project Net Present Cost	\$ 9,355,756.95	\$ 11,078,609.67	\$ 13,387,281.08	Total							
% of Low Cost	100.0%	118.4%	143.1%	9.5							
<b>BID ADJUSTMENT FACTOR SUMMARY</b>											
Segment #1	Alternate #1	Alternate #2	Alternate #3	Length							
	8" UBOL w/ 15' joints	7.5" UBOL w/ 15' jts	8" Bituminous Reconstruction	9.5							
Net Present Cost	\$2,184,831.52	\$4,440,756.82	\$2,502,897.99								
Segment #2				0.0							
Net Present Cost											
Segment #3				0.0							
Net Present Cost											
Segment #4				0.0							
Net Present Cost											
Segment #5				0.0							
Net Present Cost											
Segment #6				0.0							
Net Present Cost											
Segment #7				0.0							
Net Present Cost											
Segment #8				0.0							
Net Present Cost											
Project Net Present Cost	\$ 2,184,831.52	\$ 4,440,756.82	\$ 2,502,897.99	Total							
Bid Adjustment Factor	\$ --	\$ 2,255,925.30	\$ 318,066.47	9.5							
<b>Segment 1</b>											
SEG	Length	SEG	Length	SEG	Length						
1	9.45	1	9.45	1	9.45						
ALT	Description	ALT	Description	ALT	Description						
1	8" UBOL w/ 15' joints	2	7.5" UBOL w/ 15' jts	3	8" Bituminous Reconstruction						
Pavement Type		Pavement Type		Pavement Type							
PCC		PCC		HMA							
Primary Category		Primary Category		Primary Category							
≥12 Joint spacing		≥12 Joint spacing		20 Year HMA							
Secondary Category		Secondary Category		Secondary Category							
Design Life = 35 Years		Design Life = 20 Years		Rural							
ShoulderCategory		ShoulderCategory		ShoulderCategory							
Thick Bit		Thick Bit		Bituminous							
Notes: 8" Unbonded Concrete Overlay w/ 15' Joints		Notes: 7.5" Unbonded Concrete Overlay w/ 15' Joints		Notes: 8" Bituminous Reconstruction							
Year	Activity	Cost/per Mile	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile	Year	Activity	Cost	Pres. Cost/per Mile
0	8" UBOL w/ 15' jts	\$ 758,828.09	\$ 758,828.09	0	7.5" UBOL w/ 15' jts	\$ 702,418.29	\$ 702,418.29	0	8" Bit. Reconstruction	\$ 1,151,786.57	\$ 1,151,786.57
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	\$ 1,232.00	\$ 1,086.79
9				9				9			
10				10				10			
11				11				11			
12				12				12	Seal	\$ 5,580.90	\$ 4,623.87
13				13				13			
14				14				14			
15				15				15			
16				16				16			
17				17				17			
18				18				18			
19				19				19			
20	1st CPR	\$ 173,579.78	\$ 126,863.00	20	1st CPR	\$ 246,785.22	\$ 180,366.13	20	ML Overlay 4	\$ 225,519.08	\$ 164,823.49
21				21				21			
22				22				22			
23				23				23	Crack Treatment	\$ 2,464.00	\$ 1,718.11
24				24				24			
25				25				25			
26				26				26			
27				27				27	Seal	\$ --	\$ --
28				28				28			
29				29				29			
30				30				30			
31				31				31			
32				32				32			
33				33				33			
34				34				34			
35	2nd CPR	\$ 180,601.73	\$ 104,336.10	35	Remove and Replace	\$ 624,647.72	\$ 360,867.58	35			
36				36				36			
37				37				37	ML Overlay 3.5"	\$ 201,772.34	\$ 112,968.64
38				38				38			
39				39				39			
40				40				40	Crack Treatment	\$ 2,464.00	\$ 1,316.17
41				41				41			
42				42				42			
43				43				43			
44				44				44	Chip Seal	\$ --	\$ --
45				45				45			
46				46				46			
47				47				47			
48				48				48			
49				49				49			
50	0/0 Remaining	\$ --	\$ --	50	5/20 Remaining	\$ (156,161.93)	\$ (71,312.35)	50	4/17 Remaining Life	\$ (47,475.84)	\$ (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			\$ 13,387,281.08
Maintenance - Net Present Cost for Segment			\$ 2,184,831.52	Maintenance - Net Present Cost for Segment			\$ 4,440,756.82	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			389,291.51
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 Shldr Width	# of Shldr	ML Mix		Total Shldr Width	# of Shldr	ML Mix		Total Shldr Width	# of Shldr	ML Mix	
7	1			7	1			7	1		
Width of Rounding Aggregat	white/>7 milliom	SL Mix		Width of Rounding Aggregat	white/>7 milliom	SL Mix		Width of Rounding Aggregat	white/>7 milliom	SL Mix	
3	N	WEARING COURSE MIXTURE (3)		3	N	WEARING COURSE MIXTURE (3)		3	Y	WEARING COURSE MIXTURE (3.B)	
Sealed/UTBWC	ML Thickness			Sealed/UTBWC	ML Thickness			Sealed/UTBWC	ML Thickness		
N	8			N	7.5			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	11			15	2			15	2		
Design Life	Shldr Thickness			Design Life	Shldr Thickness			Design Life	Shldr Thickness		
35	4			20	4			20	4		



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

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill & 3" Overlay	FDR & 4" HMA	4.5" PCC Whitetopping	6.9 Miles
Net Present Cost	\$2,529,840.48	\$3,205,754.66	\$4,072,221.10	
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				
<b>Project Net Present Cost</b>	<b>\$ 2,529,840.48</b>	<b>\$ 3,205,754.66</b>	<b>\$ 4,072,221.10</b>	<b>Total</b>
<b>% of Low Cost</b>	<b>100.0%</b>	<b>126.7%</b>	<b>161.0%</b>	<b>6.9</b>

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill & 3" Overlay	FDR & 4" HMA	4.5" PCC Whitetopping	6.9 Miles
Net Present Cost	\$1,389,837.39	\$1,307,548.23	\$2,192,789.92	
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				
<b>Project Net Present Cost</b>	<b>\$ 1,389,837.39</b>	<b>\$ 1,307,548.23</b>	<b>\$ 2,192,789.92</b>	<b>Total</b>
<b>Bid Adjustment Factor</b>	<b>\$ 82,289.16</b>	<b>\$ -</b>	<b>\$ 885,241.69</b>	<b>6.9</b>

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
1	6.924	1	6.924	1	6.924						
ALT	Description	ALT	Description	ALT	Description						
1	2" Mill & 3" Overlay	2	FDR & 4" HMA	3	4.5" PCC Whitetopping						
Pavement Type	Pavement Type	Pavement Type	Pavement Type	Pavement Type	Pavement Type						
HMA	HMA	HMA	HMA	PCC	PCC						
Primary Category	Primary Category	Primary Category	Primary Category	Primary Category	Primary Category						
Overlay, DL = 13 to 17 years	20 Year HMA	20 Year HMA	20 Year HMA	6X6 S 5.0" Thickness	Secondary Category						
Secondary Category	Secondary Category	Secondary Category	Secondary Category	Secondary Category	Secondary Category						
Rural	Rural	Rural	Rural	Design Life = 20 Years	ShoulderCategory						
ShoulderCategory	ShoulderCategory	ShoulderCategory	ShoulderCategory	ShoulderCategory	ShoulderCategory						
Aggregate	Aggregate	Aggregate	Aggregate	Aggregate	Aggregate						
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	Crack Treatment	\$ 2,464.00	\$ 2,339.73	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 8,733.73	\$ 7,740.29	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	ML Overlay 3.5"	\$ 190,369.50	\$ 144,454.02	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19	Crack Treatment	\$ 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	Seal	\$ 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	ML Overlay 3.5"	\$ 190,369.50	\$ 111,520.22	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34	Crack Treatment	\$ 2,464.00	\$ 1,370.63	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (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 Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
12	2	WEARING COURSE MIXTURE (3,6	12	2	WEARING COURSE MIXTURE (3,	12	2	
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	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			4.5	



35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
6012-19	35
Highway	Discount Rate
29	3.0%
Date	CLEAR ALL
10/20/2015	
Performed By	
10	

Revised: 2 - 2015/10/20 notes

Notes:

LCCA SUMMARY				
Segment #	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill, 3" bit OL	6" UBOL	5" Mill & 5 bit OL	#FEET
Segment #2	2" Mill & 3" bit OL	6" UBOL	5" Mill & 5" bit OL	#FEET
Segment #3				#FEET
Segment #4				#FEET
Segment #5				#FEET
Segment #6				#FEET
Segment #7				#FEET
Segment #8				#FEET
Project Net Present Cost	#FEET	#FEET	#FEET	Total
Life Cycle Cost	#FEET	#FEET	#FEET	#FEET

BID ADJUSTMENT FACTOR SUMMARY				
Segment #	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill, 3" bit OL	6" UBOL	5" Mill & 5 bit OL	#FEET
Segment #2	2" Mill & 3" bit OL	6" UBOL	5" Mill & 5" bit OL	#FEET
Segment #3				#FEET
Segment #4				#FEET
Segment #5				#FEET
Segment #6				#FEET
Segment #7				#FEET
Segment #8				#FEET
Segment #9				#FEET
Segment #10				#FEET
Segment #11				#FEET
Segment #12				#FEET
Segment #13				#FEET
Segment #14				#FEET
Segment #15				#FEET
Segment #16				#FEET
Segment #17				#FEET
Segment #18				#FEET
Segment #19				#FEET
Segment #20				#FEET
Segment #21				#FEET
Segment #22				#FEET
Segment #23				#FEET
Segment #24				#FEET
Segment #25				#FEET
Segment #26				#FEET
Segment #27				#FEET
Segment #28				#FEET
Segment #29				#FEET
Segment #30				#FEET
Segment #31				#FEET
Segment #32				#FEET
Segment #33				#FEET
Segment #34				#FEET
Segment #35				#FEET
Project Net Present Cost	#FEET	#FEET	#FEET	Total
Life Cycle Cost	#FEET	#FEET	#FEET	#FEET

Segment 1											
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG	Length		
ALT	ALT	ALT	ALT	ALT	ALT	ALT	ALT	ALT	ALT		
1	2" Mill, 3" bit OL	2	6" UBOL	3	5" Mill & 5 bit OL	4	2" Mill & 3 bit OL	5	6" UBOL		
Payment Type: PWA		Payment Type: PWA		Payment Type: PWA		Payment Type: PWA		Payment Type: PWA			
Primary Category: 20 Year PWA		Primary Category: 20 Year PWA		Primary Category: 20 Year PWA		Primary Category: 20 Year PWA		Primary Category: 20 Year PWA			
Secondary Category: Road		Secondary Category: Road		Secondary Category: Road		Secondary Category: Road		Secondary Category: Road			
Shoulder Category: Approach		Shoulder Category: Approach		Shoulder Category: Approach		Shoulder Category: Approach		Shoulder Category: Approach			
Notes:		Notes:		Notes:		Notes:		Notes:			
This file		This file		This file		This file		This file			
Year	Activity	Cost/Per Mile	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile
0		\$ 234,386.85	\$ 234,386.85	0		\$ 646,153.48	\$ 646,153.48	0		\$ 387,659.80	\$ 387,659.80
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,112.00	\$ 2,005.48	3		\$ -	\$ -	3	Crack Treatment	\$ 2,464.00	\$ 2,393.73
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 8,878.30	\$ 7,868.42	7		\$ -	\$ -	7	Seal	\$ 8,544.34	\$ 7,572.45
8		\$ -	\$ -	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9	Crack Treatment	\$ 1,056.00	\$ 919.88
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13	Seal	\$ 12,896.96	\$ 10,485.44
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17	ML Overlay 3.5"	\$ 196,279.75	\$ 146,991.56	17		\$ -	\$ -	17	ML Overlay 3.5"	\$ 176,514.17	\$ 131,649.77
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19	Crack Treatment	\$ 2,112.00	\$ 1,495.75	19	1st CR	\$ 299,293.87	\$ 212,964.53	19	ML Overlay 3.5"	\$ 231,766.29	\$ 164,140.44
20		\$ -	\$ -	20		\$ -	\$ -	20		\$ -	\$ -
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Seal	\$ 8,878.30	\$ 5,888.52	23		\$ -	\$ -	23	Crack Treatment	\$ 2,112.00	\$ 1,420.31
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27		\$ -	\$ -	27	Seal	\$ 8,878.30	\$ 5,572.54
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32	ML Overlay 3.5"	\$ 196,279.75	\$ 111,083.18	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34	Remaining Life	\$ (170,109.12)	\$ (93,007.28)	34		\$ -	\$ -	34		\$ -	\$ -
35		\$ -	\$ -	35	0/0 Remaining	\$ -	\$ -	35	2/17 Remaining Life	\$ (17,266.62)	\$ (14,938.04)
Net Present Cost for Segment		#FEET	Net Present Cost for Segment	#FEET	Net Present Cost for Segment		#FEET	Net Present Cost for Segment		#FEET	
Maintenance - Net Present Cost for Segment		#FEET	Maintenance - Net Present Cost for Segment	#FEET	Maintenance - Net Present Cost for Segment		#FEET	Maintenance - Net Present Cost for Segment		#FEET	
Equivalent Annual Cost		#FEET	Equivalent Annual Cost	#FEET	Equivalent Annual Cost		#FEET	Equivalent Annual Cost		#FEET	
Analysis Period		Analysis Period		Analysis Period		Analysis Period		Analysis Period			
Total Lane Width	# of Lanes	Total Lane Width	# of Lanes	Total Lane Width	# of Lanes	Total Lane Width	# of Lanes	Total Lane Width	# of Lanes		
24	2	25	35	24	2	25	35	28	35		
Total Shoulder Width	# of Shoulders	Total Shoulder Width	# of Shoulders	Total Shoulder Width	# of Shoulders	Total Shoulder Width	# of Shoulders	Total Shoulder Width	# of Shoulders		
0	2	18	0	0	2	18	0	0	2		
Width of Roundover Area	Width/2 million	Width of Roundover Area	Width/2 million	Width of Roundover Area	Width/2 million	Width of Roundover Area	Width/2 million	Width of Roundover Area	Width/2 million		
0	0	0	0	0	0	0	0	0	0		
Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness		
0	0	0	0	0	0	0	0	0	0		
ML Top LR / joint spacing	# Dowels per Lane	ML Top LR / joint spacing	# Dowels per Lane	ML Top LR / joint spacing	# Dowels per Lane	ML Top LR / joint spacing	# Dowels per Lane	ML Top LR / joint spacing	# Dowels per Lane		
1.5	12	1.5	12	1.5	12	1.5	12	1.5	12		
Design Life	SH&P Thickness	Design Life	SH&P Thickness	Design Life	SH&P Thickness	Design Life	SH&P Thickness	Design Life	SH&P Thickness		
27	3	20	3	20	3	20	3	20	3		

Segment 2											
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG	Length		
ALT	ALT	ALT	ALT	ALT	ALT	ALT	ALT	ALT	ALT		
1	3" Mill & 3" bit OL	2	6" UBOL	3	5" Mill & 5 bit OL	4	2" Mill & 3 bit OL	5	6" UBOL		
Payment Type: PWA		Payment Type: PWA		Payment Type: PWA		Payment Type: PWA		Payment Type: PWA			
Primary Category: 20 Year PWA		Primary Category: 20 Year PWA		Primary Category: 20 Year PWA		Primary Category: 20 Year PWA		Primary Category: 20 Year PWA			
Secondary Category: Road		Secondary Category: Road		Secondary Category: Road		Secondary Category: Road		Secondary Category: Road			
Shoulder Category: Approach		Shoulder Category: Approach		Shoulder Category: Approach		Shoulder Category: Approach		Shoulder Category: Approach			
Notes:		Notes:		Notes:		Notes:		Notes:			
This file		This file		This file		This file		This file			
Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile
0		\$ 152,679.57	\$ 152,679.57	0		\$ 614,387.28	\$ 614,387.28	0		\$ 308,262.55	\$ 308,262.55
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,464.00	\$ 2,393.73	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 8,544.34	\$ 7,572.45	7		\$ -	\$ -	7		\$ -	\$ -
8		\$ -	\$ -	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9	Crack Treatment	\$ 1,232.00	\$ 1,079.19
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12		\$ -	\$ -	12	Seal	\$ 12,706.22	\$ 10,390.97
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17	ML Overlay 3.5"	\$ 176,514.17	\$ 131,649.77	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19	Crack Treatment	\$ 2,464.00	\$ 1,745.34	19	1st CR	\$ 202,628.19	\$ 143,504.36	19	ML Overlay 3.5"	\$ 208,240.54	\$ 147,479.15
20		\$ -	\$ -	20		\$ -	\$ -	20		\$ -	\$ -
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Seal	\$ 8,544.34	\$ 5,647.77	23		\$ -	\$ -	23	Crack Treatment	\$ 2,464.00	\$ 1,657.89
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27		\$ -	\$ -	27	Seal	\$ 8,544.34	\$ 5,362.92
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	

35-Year Analysis Period

50 - Year

50-Year Analysis Period

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

D8 - 2016/2017 prices

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LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	4.5" CIR + 1.5" HMA	6" PCC UBOL on 1.5" PASSRC	6" PCC UBOL 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
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				
<b>Project Net Present Cost</b>	<b>\$ 7,679,743.98</b>	<b>\$ 20,208,257.42</b>	<b>\$ 15,509,711.00</b>	<b>Total</b>
<b>% of Low Cost</b>	<b>100.0%</b>	<b>263.1%</b>	<b>202.0%</b>	<b>20.0</b>

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

Segment 1																																									
SEG	Length	SEG	Length	SEG	Length																																				
1	20.041	1	20.041	1	20.041																																				
ALT	Description	ALT	Description	ALT	Description																																				
1	4.5" CIR + 1.5" HMA	2	6" PCC UBOL on 1.5" PASSRC	3	6" PCC UBOL on 1.5" PASSRC																																				
<table border="1"> <tr><td>Pavement Type</td><td>HMA</td></tr> <tr><td>Primary Category</td><td>&gt;12 Joint spacing</td></tr> <tr><td>Secondary Category</td><td>20 Year HMA</td></tr> <tr><td>ShoulderCategory</td><td>Rural</td></tr> <tr><td>Design Life</td><td>20 Years</td></tr> <tr><td>Thin Bit</td><td></td></tr> </table>		Pavement Type	HMA	Primary Category	>12 Joint spacing	Secondary Category	20 Year HMA	ShoulderCategory	Rural	Design Life	20 Years	Thin Bit		<table border="1"> <tr><td>Pavement Type</td><td>PCC</td></tr> <tr><td>Primary Category</td><td>&gt;12 Joint spacing</td></tr> <tr><td>Secondary Category</td><td>20 Year HMA</td></tr> <tr><td>ShoulderCategory</td><td>Rural</td></tr> <tr><td>Design Life</td><td>20 Years</td></tr> <tr><td>Thin Bit</td><td></td></tr> </table>		Pavement Type	PCC	Primary Category	>12 Joint spacing	Secondary Category	20 Year HMA	ShoulderCategory	Rural	Design Life	20 Years	Thin Bit		<table border="1"> <tr><td>Pavement Type</td><td>PCC</td></tr> <tr><td>Primary Category</td><td>&gt;12 Joint spacing</td></tr> <tr><td>Secondary Category</td><td>20 Year HMA</td></tr> <tr><td>ShoulderCategory</td><td>Rural</td></tr> <tr><td>Design Life</td><td>20 Years</td></tr> <tr><td>Thin Bit</td><td></td></tr> </table>		Pavement Type	PCC	Primary Category	>12 Joint spacing	Secondary Category	20 Year HMA	ShoulderCategory	Rural	Design Life	20 Years	Thin Bit	
Pavement Type	HMA																																								
Primary Category	>12 Joint spacing																																								
Secondary Category	20 Year HMA																																								
ShoulderCategory	Rural																																								
Design Life	20 Years																																								
Thin Bit																																									
Pavement Type	PCC																																								
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Secondary Category	20 Year HMA																																								
ShoulderCategory	Rural																																								
Design Life	20 Years																																								
Thin Bit																																									
Pavement Type	PCC																																								
Primary Category	>12 Joint spacing																																								
Secondary Category	20 Year HMA																																								
ShoulderCategory	Rural																																								
Design Life	20 Years																																								
Thin 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	4.5" CIR + 1.5" HMA	\$ 163,336.82	\$ 163,336.82	0	6" PCC UBOL	\$ 521,147.17	\$ 521,147.17	0	6" PCC UBOL	\$ 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	\$ 222,797.38	20	1st CPR	\$ 158,497.42	\$ 115,899.86																														
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -																														
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -																														
23	Crack Treatment	\$ 2,112.00	\$ 1,472.67	23		\$ -	\$ -	23		\$ -	\$ -																														
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -																														
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -																														
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -																														
27	Seal	\$ 6,482.80	\$ 4,245.62	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		\$ -	\$ -	43		\$ -	\$ -	43		\$ -	\$ -																														
44	Chip Seal	\$ 6,482.80	\$ 3,252.38	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		Net Present Cost for Segment		\$ 20,208,257.42		Net Present Cost for Segment		\$ 15,509,711.00																															
Maintenance - Net Present Cost for Segment		\$ 4,406,310.77		Maintenance - Net Present Cost for Segment		\$ 9,763,946.99		Maintenance - Net Present Cost for Segment		\$ 4,554,315.38																															
Equivalent Annual Cost		223,320.86		Equivalent Annual Cost		587,640.09		Equivalent Annual Cost		451,010.09																															

Analysis Period			Analysis Period			Analysis Period		
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 Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
14	2	WEARING COURSE MIXTURE (4,F	12	2	WEARING COURSE MIXTURE (4,F	12	2	WEARING COURSE MIXTURE (2,B
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
3	N	WEARING COURSE MIXTURE (2,F	3	N	WEARING COURSE MIXTURE (2,F	3	N	WEARING COURSE MIXTURE (2,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	
20	4.5		3			4		

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
Highway	Discount Rate
Date	Performed By
CLEAR ALL	

Version B - 2015/2016 prices

LCCA SUMMARY			
Segment #1	Alternate #1	Alternate #2	Length
Segment #1	2.5" Mill and 4" Overlay	4" Mill and 4" Whitetopping	4" Mill, 9" FDR, 4" Overlay
Segment #2	X" Mill and 8" Overlay	4" Mill and 4" Whitetopping	4" Mill, 9" FDR and 4" Overlay
Segment #3	Seal		
Segment #4			
Segment #5			
Segment #6			
Segment #7			
Segment #8			
Segment #9			
Segment #10			
Segment #11			
Segment #12			
Segment #13			
Segment #14			
Segment #15			
Segment #16			
Segment #17			
Segment #18			
Segment #19			
Segment #20			
Segment #21			
Segment #22			
Segment #23			
Segment #24			
Segment #25			
Segment #26			
Segment #27			
Segment #28			
Segment #29			
Segment #30			
Segment #31			
Segment #32			
Segment #33			
Segment #34			
Segment #35			
Project Net Present Cost	\$ 4,489,452.43	\$ 6,748,330.51	\$ 6,130,285.21
Cost per Mile	100,076	151,263	137,451

BID ADJUSTMENT FACTOR SUMMARY			
Segment #1	Alternate #1	Alternate #2	Length
Segment #1	2.5" Mill and 4" Overlay	4" Mill and 4" Whitetopping	4" Mill, 9" FDR, 4" Overlay
Segment #2	X" Mill and 8" Overlay	4" Mill and 4" Whitetopping	4" Mill, 9" FDR and 4" Overlay
Segment #3	Seal		
Segment #4			
Segment #5			
Segment #6			
Segment #7			
Segment #8			
Segment #9			
Segment #10			
Segment #11			
Segment #12			
Segment #13			
Segment #14			
Segment #15			
Segment #16			
Segment #17			
Segment #18			
Segment #19			
Segment #20			
Segment #21			
Segment #22			
Segment #23			
Segment #24			
Segment #25			
Segment #26			
Segment #27			
Segment #28			
Segment #29			
Segment #30			
Segment #31			
Segment #32			
Segment #33			
Segment #34			
Segment #35			
Project Net Present Cost	\$ 2,080,911.49	\$ 3,047,681.49	\$ 2,330,754.20
Bid Adjustment Factor	5	4,581,769.01	5

Segment 1											
SSS	Length	SSS	Length	SSS	Length	SSS	Length	SSS	Length	SSS	Length
ALT	7.001	ALT	7.001	ALT	7.001	ALT	7.001	ALT	7.001	ALT	7.001
1	2.5" Mill and 4" Overlay	2	4" Mill and 4" Whitetopping	3	4" Mill, 9" FDR, 4" Overlay	4	4" Mill, 9" FDR and 4" Overlay	5	4" Mill, 9" FDR, 4" Overlay	6	4" Mill, 9" FDR and 4" Overlay
Payment Year		Payment Year		Payment Year		Payment Year		Payment Year		Payment Year	
Primary Category		Primary Category		Primary Category		Primary Category		Primary Category		Primary Category	
Secondary Category		Secondary Category		Secondary Category		Secondary Category		Secondary Category		Secondary Category	
Shoulder/Category		Shoulder/Category		Shoulder/Category		Shoulder/Category		Shoulder/Category		Shoulder/Category	
Notes: Considered 2' shoulder as mainline		Notes: Considered 2' shoulder as mainline		Notes: Considered 2' shoulder as mainline		Notes: Considered 2' shoulder as mainline		Notes: Considered 2' shoulder as mainline		Notes: Considered 2' shoulder as mainline	
Year	Activity	Cost	Pres. Cost/Year Mile	Year	Activity	Cost	Pres. Cost/Year Mile	Year	Activity	Cost	Pres. Cost/Year Mile
0	1.5" Mill and 4" Overlay	\$ 203,790.00	\$ 203,790.00	0	4" Mill and 4" Whitetopping	\$ 208,641.00	\$ 208,641.00	0	4" Mill, 9" FDR and 4" Overlay	\$ 276,683.00	\$ 276,683.00
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,464.00	\$ 2,339.73	3		\$ -	\$ -	3	Crack Treatment	\$ 2,122.00	\$ 2,005.48
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 8,733.73	\$ 7,482.29	7		\$ -	\$ -	7	Seal	\$ 8,359.01	\$ 7,408.20
8		\$ -	\$ -	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9	Crack Treatment	\$ 1,232.00	\$ 1,071.19
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	ML Overlay 3.5"	\$ 182,187.27	\$ 140,851.16	18		\$ -	\$ -	18	ML Overlay 3.5"	\$ 182,187.27	\$ 137,165.40
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	1st CPH	\$ 378,864.41	\$ 298,217.59	20	ML Overlay 4	\$ 219,240.92	\$ 155,274.16
21	Crack Treatment	\$ 2,464.00	\$ 2,321.21	21		\$ -	\$ -	21	Crack Treatment	\$ 2,122.00	\$ 1,970.11
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23		\$ -	\$ -	23	Crack Treatment	\$ 2,464.00	\$ 1,657.03
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25	Seal	\$ 8,359.01	\$ 5,430.77
26	Seal	\$ 8,733.73	\$ 5,674.22	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27		\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30	Remove and Replace	\$ 390,028.31	\$ 232,457.41	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ -	\$ -	35	10/35 Remaining	\$ (334,309.98)	\$ (182,784.21)	35	2/17 Remaining Life	\$ (25,794.11)	\$ (14,102.95)
Net Present Cost for Segment		\$ 2,203,481.07		Net Present Cost for Segment		\$ 3,095,493.43		Net Present Cost for Segment		\$ 2,482,454.34	
Maintenance - Net Present Cost for Segment		\$ 805,527.55		Maintenance - Net Present Cost for Segment		\$ 1,148,001.23		Maintenance - Net Present Cost for Segment		\$ 1,153,447.42	
Equivalent Annual Cost		\$ 78,252.71		Equivalent Annual Cost		\$ 114,000.23		Equivalent Annual Cost		\$ 93,000.23	
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 Shoulder Width		# of Shoulders	ML Mix	Total Shoulder Width		# of Shoulders	ML Mix	Total Shoulder Width		# of Shoulders	ML Mix
16		2	1	16		2	1	16		2	1
Width of Boundaries Acreasm.		width / >7 million	SL Mix	Width of Boundaries Acreasm.		width / >7 million	SL Mix	Width of Boundaries Acreasm.		width / >7 million	SL Mix
0		N	4	0		N	4	0		N	4
Sealed/UTBWC		ML Thickness	N	Sealed/UTBWC		ML Thickness	N	Sealed/UTBWC		ML Thickness	N
0		4	0	0		4	0	0		4	0
ML Top L/R / Joint spacing		# Downls per Lane	2	ML Top L/R / Joint spacing		# Downls per Lane	2	ML Top L/R / Joint spacing		# Downls per Lane	2
2		0	0	2		0	0	2		0	0
Design Life		Shoulder Thickness	18	Design Life		Shoulder Thickness	18	Design Life		Shoulder Thickness	18
1.5		1.5	1.5	1.5		1.5	1.5	1.5		1.5	1.5

Segment 2											
SSS	Length	SSS	Length	SSS	Length	SSS	Length	SSS	Length	SSS	Length
ALT	7.001	ALT	7.001	ALT	7.001	ALT	7.001	ALT	7.001	ALT	7.001
1	4" Mill and 4" Overlay	2	4" Mill and 4" Whitetopping	3	4" Mill, 9" FDR, 4" Overlay	4	4" Mill, 9" FDR and 4" Overlay	5	4" Mill, 9" FDR, 4" Overlay	6	4" Mill, 9" FDR and 4" Overlay
Payment Year		Payment Year		Payment Year		Payment Year		Payment Year		Payment Year	
Primary Category		Primary Category		Primary Category		Primary Category		Primary Category		Primary Category	
Secondary Category		Secondary Category		Secondary Category		Secondary Category		Secondary Category		Secondary Category	
Shoulder/Category		Shoulder/Category		Shoulder/Category		Shoulder/Category		Shoulder/Category		Shoulder/Category	
Notes: 2" Mill and 3.5" Overlay, and 3" Mill and Overlay have been eliminated per segment, since the 20 year 30 and 40cc.		Notes: 2" Mill and 3.5" Overlay, and 3" Mill and Overlay have been eliminated per segment, since the 20 year 30 and 40cc.		Notes: 2" Mill and 3.5" Overlay, and 3" Mill and Overlay have been eliminated per segment, since the 20 year 30 and 40cc.		Notes: 2" Mill and 3.5" Overlay, and 3" Mill and Overlay have been eliminated per segment, since the 20 year 30 and 40cc.		Notes: 2" Mill and 3.5" Overlay, and 3" Mill and Overlay have been eliminated per segment, since the 20 year 30 and 40cc.		Notes: 2" Mill and 3.5" Overlay, and 3" Mill and Overlay have been eliminated per segment, since the 20 year 30 and 40cc.	
Year	Activity	Cost	Pres. Cost/Year Mile	Year	Activity	Cost	Pres. Cost/Year Mile	Year	Activity	Cost	Pres. Cost/Year Mile
0	4" Mill and 4" Overlay	\$ 158,847.00	\$ 158,847.00	0	4" Mill and 4" Whitetopping	\$ 212,443.00	\$ 212,443.00	0	4" Mill, 9" FDR and 4" Overlay	\$ 298,498.00	\$ 298,498.00
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,122.00	\$ 2,005.48	3		\$ -	\$ -	3	Crack Treatment	\$ 2,122.00	\$ 2,005.48
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 8,359.01	\$ 7,408.20	7		\$ -	\$ -	7	Seal	\$ 8,359.01	\$ 7,408.20
8		\$ -	\$ -	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9	Crack Treatment	\$ 1,056.00	\$ 919.88
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 12,048.80	\$ 9,995.87	12	Seal	\$ 12,048.80	\$ 9,995.87
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	ML Overlay 3.5"	\$ 182,187.27	\$ 137,165.40	18		\$ -	\$ -	18	ML Overlay 3.5"	\$ 182,187.27	\$ 137,165.40
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -</	

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
6607-01 & 0111-09	35
Highway	Discount Rate
I-40 from I-24 to I-240 & I-240 to I-40	5%
Date	CLEAR ALL
1/27/2016	
Performed By	
Year	

Default 6 - 2015/2016 prices

Notes:  Check

ICCA SUMMARY				
Segment #1	Alternate #1	Alternate #2	Alternate #3	Length
1	3" Mill & 3" Bit. CL	3" Mill & 3" Bit. CL	3" Mill & 3" Bit. CL	1.0
2	3" Mill & 3" Bit. CL	3" Mill & 3" Bit. CL	3" Mill & 3" Bit. CL	1.0
3	Crack Treatment	Crack Treatment	Crack Treatment	1.0
4	2" Mill & 3.5" Bit. CL	CR & 3" Bit. CL	4" Whitening	12.5
5	2" Mill & 3.5" Bit. CL	CR & 3" Bit. CL	4" Whitening	12.5
6	Seal	Seal	Seal	0.0
7	Seal	Seal	Seal	0.0
8	Seal	Seal	Seal	0.0
9	Seal	Seal	Seal	0.0
10	Seal	Seal	Seal	0.0
11	Seal	Seal	Seal	0.0
12	Seal	Seal	Seal	0.0
13	Seal	Seal	Seal	0.0
14	ML Overlay 3.5"	ML Overlay 3.5"	ML Overlay 3.5"	0.0
15	ML Overlay 3.5"	ML Overlay 3.5"	ML Overlay 3.5"	0.0
16	Crack Treatment	Crack Treatment	Crack Treatment	0.0
17	Crack Treatment	Crack Treatment	Crack Treatment	0.0
18	Crack Treatment	Crack Treatment	Crack Treatment	0.0
19	Crack Treatment	Crack Treatment	Crack Treatment	0.0
20	Seal	Seal	Seal	0.0
21	Seal	Seal	Seal	0.0
22	Seal	Seal	Seal	0.0
23	Seal	Seal	Seal	0.0
24	Seal	Seal	Seal	0.0
25	Seal	Seal	Seal	0.0
26	Seal	Seal	Seal	0.0
27	Seal	Seal	Seal	0.0
28	Seal	Seal	Seal	0.0
29	Seal	Seal	Seal	0.0
30	Seal	Seal	Seal	0.0
31	Seal	Seal	Seal	0.0
32	Crack Treatment	Crack Treatment	Crack Treatment	0.0
33	Crack Treatment	Crack Treatment	Crack Treatment	0.0
34	Crack Treatment	Crack Treatment	Crack Treatment	0.0
35	Remaining Life	Remaining Life	Remaining Life	0.0
Project Net Present Cost	\$ 6,688,013.02	\$ 6,127,018.01	\$ 6,579,066.67	Total
ICCA Cost	\$ 350,476.14	\$ 399,026.14	\$ 339,201.14	

BID ADJUSTMENT FACTOR SUMMARY				
Segment #1	Alternate #1	Alternate #2	Alternate #3	Length
1	3" Mill & 3" Bit. CL	3" Mill & 3" Bit. CL	3" Mill & 3" Bit. CL	1.0
2	3" Mill & 3" Bit. CL	3" Mill & 3" Bit. CL	3" Mill & 3" Bit. CL	1.0
3	Crack Treatment	Crack Treatment	Crack Treatment	1.0
4	2" Mill & 3.5" Bit. CL	CR & 3" Bit. CL	4" Whitening	12.5
5	2" Mill & 3.5" Bit. CL	CR & 3" Bit. CL	4" Whitening	12.5
6	Seal	Seal	Seal	0.0
7	Seal	Seal	Seal	0.0
8	Seal	Seal	Seal	0.0
9	Seal	Seal	Seal	0.0
10	Seal	Seal	Seal	0.0
11	Seal	Seal	Seal	0.0
12	Seal	Seal	Seal	0.0
13	Seal	Seal	Seal	0.0
14	ML Overlay 4.0"	ML Overlay 4.0"	ML Overlay 4.0"	0.0
15	ML Overlay 4.0"	ML Overlay 4.0"	ML Overlay 4.0"	0.0
16	Crack Treatment	Crack Treatment	Crack Treatment	0.0
17	Crack Treatment	Crack Treatment	Crack Treatment	0.0
18	Crack Treatment	Crack Treatment	Crack Treatment	0.0
19	Crack Treatment	Crack Treatment	Crack Treatment	0.0
20	Seal	Seal	Seal	0.0
21	Seal	Seal	Seal	0.0
22	Seal	Seal	Seal	0.0
23	Seal	Seal	Seal	0.0
24	Seal	Seal	Seal	0.0
25	Seal	Seal	Seal	0.0
26	Seal	Seal	Seal	0.0
27	Seal	Seal	Seal	0.0
28	Seal	Seal	Seal	0.0
29	Seal	Seal	Seal	0.0
30	Seal	Seal	Seal	0.0
31	Seal	Seal	Seal	0.0
32	Crack Treatment	Crack Treatment	Crack Treatment	0.0
33	Crack Treatment	Crack Treatment	Crack Treatment	0.0
34	Crack Treatment	Crack Treatment	Crack Treatment	0.0
35	Remaining Life	Remaining Life	Remaining Life	0.0
Project Net Present Cost	\$ 3,645,744.77	\$ 2,599,276.35	\$ 3,071,273.76	Total
BID Adjustment Factor	\$ 2,647,474.41	\$ 2,199,276.35	\$ 2,599,273.76	

Segment 1											
SSS	Length	SSS	Length	SSS	Length	SSS	Length	SSS	Length	SSS	Length
ALT	12.483	ALT	12.483	ALT	12.483	ALT	12.483	ALT	12.483	ALT	12.483
1	1" Mill & 1" Bit. CL	2	1" Mill & 1" Bit. CL	3	1" Mill & 1" Bit. CL	4	1" Mill & 1" Bit. CL	5	1" Mill & 1" Bit. CL	6	1" Mill & 1" Bit. CL
Year	Activity	Cost	Prevs. Cost/Year Mile	Year	Activity	Cost	Prevs. Cost/Year Mile	Year	Activity	Cost	Prevs. Cost/Year Mile
0		\$ 349,250.38	\$ 349,250.38	0		\$ 349,250.38	\$ 349,250.38	0		\$ 349,250.38	\$ 349,250.38
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	\$ 8,804.37	7	Seal	\$ 9,934.37	\$ 8,804.37	7	Seal	\$ 9,934.37	\$ 8,804.37
8		\$ -	\$ -	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12		\$ -	\$ -	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14	ML Overlay 3.5"	\$ 289,824.37	\$ 233,747.71	14	ML Overlay 3.5"	\$ 289,824.37	\$ 233,747.71	14	ML Overlay 3.5"	\$ 289,824.37	\$ 233,747.71
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	Crack Treatment	\$ 1,909.25	\$ 1,999.62	18	Crack Treatment	\$ 1,909.25	\$ 1,999.62	18	Crack Treatment	\$ 1,909.25	\$ 1,999.62
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20		\$ -	\$ -	20		\$ -	\$ -
21	Seal	\$ 9,934.37	\$ 6,797.08	21	Seal	\$ 9,934.37	\$ 6,797.08	21	Seal	\$ 9,934.37	\$ 6,797.08
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23		\$ -	\$ -	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27		\$ -	\$ -	27		\$ -	\$ -
28	ML Overlay 4.0"	\$ 350,244.01	\$ 212,378.45	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	\$ 1,999.33	32	Crack Treatment	\$ 1,909.25	\$ 1,999.33	32	Crack Treatment	\$ 1,909.25	\$ 1,999.33
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (188,592.93)	\$ (103,111.31)	35	Remaining Life	\$ (188,592.93)	\$ (103,111.31)	35	Remaining Life	\$ (188,592.93)	\$ (103,111.31)

Segment 2											
SSS	Length	SSS	Length	SSS	Length	SSS	Length	SSS	Length	SSS	Length
ALT	12.483	ALT	12.483	ALT	12.483	ALT	12.483	ALT	12.483	ALT	12.483
1	1" Mill & 1" Bit. CL	2	1" Mill & 1" Bit. CL	3	1" Mill & 1" Bit. CL	4	1" Mill & 1" Bit. CL	5	1" Mill & 1" Bit. CL	6	1" Mill & 1" Bit. CL
Year	Activity	Cost	Prevs. Cost/Year Mile	Year	Activity	Cost	Prevs. Cost/Year Mile	Year	Activity	Cost	Prevs. Cost/Year Mile
0		\$ 211,573.96	\$ 211,573.96	0		\$ 211,573.96	\$ 211,573.96	0		\$ 211,573.96	\$ 211,573.96
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	\$ 8,376.96	\$ 7,424.11	7	Seal	\$ 8,376.96	\$ 7,424.11	7	Seal	\$ 8,376.96	\$ 7,424.11
8		\$ -	\$ -	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 12,039.38	\$ 9,788.21	12	Seal	\$ 12,039.38	\$ 9,788.21
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14	ML Overlay 3.5"	\$ 226,381.51	\$ 174,769.32	14	ML Overlay 3.5"	\$ 226,381.51	\$ 174,769.32	14	ML Overlay 3.5"	\$ 226,381.51	\$ 174,769.32
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	Crack Treatment	\$ 1,909.25	\$ 1,999.62	18	Crack Treatment	\$ 1,909.25	\$ 1,999.62	18	Crack Treatment	\$ 1,909.25	\$ 1,999.62
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20		\$ -	\$ -	20		\$ -	\$ -
21	Seal	\$ 8,376.96	\$ 5,731.59	21	Seal	\$ 8,376.96	\$ 5,731.59	21	Seal	\$ 8,376.96	\$ 5,731.59
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23		\$ -	\$ -	23		\$ -	\$ -	23		\$ -	\$ -
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27		\$ -	\$ -	27		\$ -	\$ -
28	ML Overlay 3.5										

35-Year Analysis Period

35 - Year

50-Year Analysis Period

Project Number	Analysis Period
7001-112	35
Highway	Discount Rate
13	1.58%
Date	CLEAR ALL
10/13/2016	
Performed By	
CC	

D5 - 2016/2017 prices

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LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill & 4" Overlay	Full Depth Reclamation	Whitotopping	1.9 Miles
Net Present Cost	\$ 2,433,792.50	\$ 3,432,592.49	\$ 4,019,932.47	
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				
<b>Project Net Present Cost</b>	<b>\$ 2,433,792.50</b>	<b>\$ 3,432,592.49</b>	<b>\$ 4,019,932.47</b>	<b>Total</b>
<b>% of Low Cost</b>	<b>100.0%</b>	<b>141.0%</b>	<b>165.2%</b>	<b>1.9</b>

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill & 4" Overlay	Full Depth Reclamation	Whitotopping	1.9 Miles
Net Present Cost	\$ 836,654.94	\$ 936,534.79	\$ 707,826.35	
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				
<b>Project Net Present Cost</b>	<b>\$ 836,654.94</b>	<b>\$ 936,534.79</b>	<b>\$ 707,826.35</b>	<b>Total</b>
<b>Bid Adjustment Factor</b>	<b>\$ 128,828.59</b>	<b>\$ 228,708.43</b>	<b>\$ -</b>	<b>1.9</b>

Segment 1											
SEG	Length	ALT	Description	SEG	Length	ALT	Description	SEG	Length	ALT	Description
1	1.89	1	2" Mill & 4" Overlay	1	1.89	1	Full Depth Reclamation	1	1.89	1	Whitotopping
Pavement Type			Pavement Type			Pavement Type					
HMA			HMA			PCC					
Primary Category			Primary Category			Primary Category					
Overlay, DL = 13 to 17 years			20 Year HMA			512 Joint spacing					
Secondary Category			Secondary Category			Secondary Category					
Rural			Rural			Design Life = 20 Years					
ShoulderCategory			ShoulderCategory			ShoulderCategory					
Bituminous			Bituminous			PCC					
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)	\$ (252,313.93)	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 Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix
27	4	WEARING COURSE MIXTURE (4	27	4	WEARING COURSE MIXTURE (4	27	4	WEARING COURSE MIXTURE (4
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
3	Y	WEARING COURSE MIXTURE (4	3	Y	WEARING COURSE MIXTURE (4	3	Y	WEARING COURSE MIXTURE (4
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		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
17	4		20	4		20	9	

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

Project Number	Analysis Period
14270	35
Highway	Division Rate
34	
Date	
11/2/2014	
Performed By	CLEAR ALL
02	

Sheet 4 - 10/15/2014 02:16  
Notes:

LCCA SUMMARY			
Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	4" Mill & Fill	Mill 4" Reclaim 12" Pav 4"	4.5" Whitetopping 14.8
Segment #2	4" Mill & Fill	Mill 4" Reclaim 12" Pav 4"	Whitetopping 4.5" 0.4
Segment #3			
Segment #4			
Segment #5			
Segment #6			
Segment #7			
Segment #8			
Project Net Present Cost	\$ 6,950,291.72	\$ 7,103,624.89	\$ 6,952,348.46
Life Cycle Cost	100%	100%	100%

BID ADJUSTMENT FACTOR SUMMARY			
Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	4" Mill & Fill	Mill 4" Reclaim 12" Pav 4"	4.5" Whitetopping 14.8
Segment #2	4" Mill & Fill	Mill 4" Reclaim 12" Pav 4"	Whitetopping 4.5" 0.4
Segment #3			
Segment #4			
Segment #5			
Segment #6			
Segment #7			
Segment #8			
Project Net Present Cost	\$ 2,550,183.15	\$ 2,335,940.97	\$ 2,600,346.11
Life Cycle Cost	100%	100%	100%

Segment 1											
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG	Length		
ALT	Description	ALT	Description	ALT	Description	ALT	Description	ALT	Description		
1	4" Mill & Fill	2	Mill 4" Reclaim 12" Pav 4"	3	4.5" Whitetopping	4	4" Mill & Fill	5	Mill 4" Reclaim 12" Pav 4"		
1	ICMA	2	ICMA	3	ICMA	4	ICMA	5	ICMA		
1	20 Year HMA	2	20 Year HMA	3	20 Year HMA	4	20 Year HMA	5	20 Year HMA		
1	Shoulder Category	2	Shoulder Category	3	Shoulder Category	4	Shoulder Category	5	Shoulder Category		
1	Bluff	2	Bluff	3	Bluff	4	Bluff	5	Bluff		
1	Shoulder Category	2	Shoulder Category	3	Shoulder Category	4	Shoulder Category	5	Shoulder Category		
1	Approximate	2	Approximate	3	Approximate	4	Approximate	5	Approximate		
Notes:		Notes:		Notes:		Notes:		Notes:			
Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile
0	4" Mill & Fill	\$ 243,775.64	\$ 243,775.64	0	Mill 4" Reclaim 12" Pav 4"	\$ 298,029.36	\$ 298,029.36	0	4.5" Whitetopping	\$ 265,866.27	\$ 265,866.27
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3		\$ -	\$ -	3		\$ -	\$ -	3		\$ -	\$ -
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7		\$ -	\$ -	7		\$ -	\$ -	7		\$ -	\$ -
8	Crack Treatment	\$ 1,212.00	\$ 1,071.19	8	Crack Treatment	\$ 1,212.00	\$ 1,071.19	8	Crack Treatment	\$ 1,212.00	\$ 1,071.19
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12	Seal	\$ 12,706.22	\$ 10,300.37	12	Seal	\$ 12,706.22	\$ 10,300.37	12	Seal	\$ 12,706.22	\$ 10,300.37
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18		\$ -	\$ -	18		\$ -	\$ -	18		\$ -	\$ -
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20	ML Overlay 4	\$ 230,043.03	\$ 182,920.21	20	ML Overlay 4	\$ 230,043.03	\$ 182,920.21	20	1st CTR	\$ 447,472.26	\$ 316,936.72
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Crack Treatment	\$ 2,464.00	\$ 1,657.03	23	Crack Treatment	\$ 2,464.00	\$ 1,657.03	23	Crack Treatment	\$ 2,464.00	\$ 1,657.03
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27	Seal	\$ 8,344.34	\$ 5,362.70	27	Seal	\$ 8,344.34	\$ 5,362.70	27	Seal	\$ 8,344.34	\$ 5,362.70
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30	Remove and Replace	\$ 305,253.62	\$ 181,911.88	30	Remove and Replace	\$ 305,253.62	\$ 181,911.88
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32		\$ -	\$ -	32		\$ -	\$ -	32		\$ -	\$ -
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	2/7 Remaining Life	\$ (27,063.89)	\$ (14,797.20)	35	2/7 Remaining Life	\$ (27,063.89)	\$ (14,797.20)	35	30/35 Remaining	\$ (261,645.96)	\$ (143,005.11)
Net Present Cost for Segment	\$ 6,016,251.65	Net Present Cost for Segment	\$ 6,875,029.76	Net Present Cost for Segment	\$ 6,193,719.49						
Maintenance - Net Present Cost for Segment	\$ 2,451,011.54	Maintenance - Net Present Cost for Segment	\$ 2,481,911.54	Maintenance - Net Present Cost for Segment	\$ 2,451,011.54						
Equivalent Annual Cost	\$ 172,026.05	Equivalent Annual Cost	\$ 175,792.03	Equivalent Annual Cost	\$ 172,026.05						
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
28	2	35	28	2	35	28	2	35	28	2	35
Total Shoulder Width	# of Shoulders	ML Mix	Total Shoulder Width	# of Shoulders	ML Mix	Total Shoulder Width	# of Shoulders	ML Mix	Total Shoulder Width	# of Shoulders	ML Mix
22	2	W	22	2	W	22	2	W	22	2	W
Width of Roundline Area	width/2' million	SL Mix	Width of Roundline Area	width/2' million	SL Mix	Width of Roundline Area	width/2' million	SL Mix	Width of Roundline Area	width/2' million	SL Mix
22	0	W	22	0	W	22	0	W	22	0	W
Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness
0	0	0	0	0	0	0	0	0	0	0	0
ML Top LR / joint spacing	# Dowels per Lane	ML Top LR / joint spacing	# Dowels per Lane	ML Top LR / joint spacing	# Dowels per Lane	ML Top LR / joint spacing	# Dowels per Lane	ML Top LR / joint spacing	# Dowels per Lane	ML Top LR / joint spacing	# Dowels per Lane
0	0	0	0	0	0	0	0	0	0	0	0
Design Life	SHdR Thickness	Design Life	SHdR Thickness	Design Life	SHdR Thickness	Design Life	SHdR Thickness	Design Life	SHdR Thickness	Design Life	SHdR Thickness
20	1.5	20	1.5	20	1.5	20	1.5	20	1.5	20	1.5

Segment 2											
SEG	Length	SEG	Length	SEG	Length	SEG	Length	SEG	Length		
ALT	Description	ALT	Description	ALT	Description	ALT	Description	ALT	Description		
1	4" Mill & Fill	2	Mill 4" Reclaim 12" Pav 4"	3	4.5" Whitetopping	4	4" Mill & Fill	5	Mill 4" Reclaim 12" Pav 4"		
1	ICMA	2	ICMA	3	ICMA	4	ICMA	5	ICMA		
1	20 Year HMA	2	20 Year HMA	3	20 Year HMA	4	20 Year HMA	5	20 Year HMA		
1	Shoulder Category	2	Shoulder Category	3	Shoulder Category	4	Shoulder Category	5	Shoulder Category		
1	Bluff	2	Bluff	3	Bluff	4	Bluff	5	Bluff		
1	Shoulder Category	2	Shoulder Category	3	Shoulder Category	4	Shoulder Category	5	Shoulder Category		
1	Approximate	2	Approximate	3	Approximate	4	Approximate	5	Approximate		
Notes:		Notes:		Notes:		Notes:		Notes:			
Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile
0	4" Mill & Fill	\$ 399,232.55	\$ 399,232.55	0	Mill 4" Reclaim 12" Pav 4"	\$ 437,147.32	\$ 437,147.32	0	4.5" Whitetopping	\$ 440,132.15	\$ 440,132.15
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,464.00	\$ 2,393.73	3	Crack Treatment	\$ 2,464.00	\$ 2,393.73	3	Crack Treatment	\$ 2,464.00	\$ 2,393.73
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 8,699.80	\$ 7,710.22	7	Seal	\$ 8,699.80	\$ 7,710.22	7	Seal	\$ 8,699.80	\$ 7,710.22
8		\$ -	\$ -	8	Crack Treatment	\$ 1,212.00	\$ 1,071.19	8	Crack Treatment	\$ 1,212.00	\$ 1,071.19
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 14,712.13	\$ 11,961.20	12	Seal	\$ 14,712.13	\$ 11,961.20
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14	ML Overlay 3.5"	\$ 203,084.47	\$ 156,793.63	14	ML Overlay 3.5"	\$ 203,084.47	\$ 156,793.63	14	ML Overlay 3.5"	\$ 203,084.47	\$ 156,793.63
15		\$ -	\$ -	15		\$ -	\$ -	15		\$ -	\$ -
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	Crack Treatment	\$ 2,464.00	\$ 1,806.50	18	Crack Treatment	\$ 2,464.00	\$ 1,806.50	18	Crack Treatment	\$ 2,464.00	\$ 1,806.50
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	ML Overlay 4	\$ 278,348.83	\$ 197,130.93	20	ML Overlay 4	\$ 278,348.83	\$ 197,130.93
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22	Seal	\$ 8,699.80	\$ 5,992.39	22	Seal	\$ 8,699.80	\$ 5,992.39	22	Seal	\$ 8,699.80	\$ 5,992.39
23		\$ -	\$ -	23	Crack Treatment	\$ 2,464.00	\$ 1,657.03	23	Crack Treatment	\$ 2,464.00	\$ 1,657.03
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26	Seal	\$ 10,098.92	\$ 6,386.67	26	Seal	\$ 10,098.92	\$ 6,386.67
27		\$ -	\$ -	27		\$ -	\$ -	27		\$ -	\$ -
28		\$ -	\$ -	28	ML Overlay 3.5"	\$ 203,084.47	\$ 123,144.91	28	ML Overlay 3.5"	\$ 203,084.47	\$ 123,144.91
29		\$ -	\$ -	29		\$ -	\$ -	29		\$ -	\$ -
30		\$ -	\$ -	30	Remove and Replace	\$ 305,253.62	\$ 181,911.88	30	Remove and Replace	\$ 305,253.62	\$ 181,911.88
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32	Crack Treatment	\$ 2,464.00	\$ 1,418.79	32	Crack Treatment	\$ 2,464.00	\$ 1,418.79	32	Crack Treatment	\$ 2,464.00</	

35-Year Analysis Period

35 - Year

50-Year Analysis Period

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

District 6 - 2015/2016 prices



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

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

Segment 1									
SEG	Length	SEG	Length	SEG	Length				
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		212 Joint spacing					
Secondary Category		Secondary Category		Secondary Category					
Rural		Rural		Design Life = 20 Years					
ShoulderCategory		ShoulderCategory		ShoulderCategory					
Aggregate		Aggregate		Aggregate					
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	\$ 6,141,538.28	Net Present Cost for Segment	\$ 8,617,363.22	Net Present Cost for Segment	\$ 6,392,040.27
Maintenance - Net Present Cost for Segment	\$ 3,006,536.20	Maintenance - Net Present Cost for Segment	\$ 2,661,467.52	Maintenance - Net Present Cost for Segment	\$ 1,816,360.66
Equivalent Annual Cost	235,770.39	Equivalent Annual Cost	330,815.99	Equivalent Annual Cost	245,387.02

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 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 (4)	8	2	WEARING COURSE MIXTURE (4)	8	2	
Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	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	
2			2			2		
Design Life	Shldr Thickness		Design Life	Shldr Thickness		Design Life	Shldr Thickness	
15	2		20	2		2	2	

35-Year Analysis Period

35 - Year

50-Year Analysis Period

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

District 4 - 2014/2015 prices



LCCA 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	\$1,897,168.63	\$2,012,846.45	\$4,372,886.53	
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				
<b>Project Net Present Cost</b>	<b>\$ 1,897,168.63</b>	<b>\$ 2,012,846.45</b>	<b>\$ 4,372,886.53</b>	<b>Total</b>
<b>% of Low Cost</b>	<b>100.0%</b>	<b>106.1%</b>	<b>230.5%</b>	<b>6.4</b>

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	
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				
<b>Project Net Present Cost</b>	<b>\$ 969,130.23</b>	<b>\$ 272,046.45</b>	<b>\$ 1,134,672.13</b>	<b>Total</b>
<b>Bid Adjustment Factor</b>	<b>\$ 697,083.77</b>	<b>\$ -</b>	<b>\$ 862,625.68</b>	<b>6.4</b>

Segment 1											
SEG	Length	SEG	Length	SEG	Length						
1	6.4	1	6.4	1	6.4						
ALT	Description	ALT	Description	ALT	Description						
1	2" mill and 3' overlay	2	5" mill and fill	3	6" unbonded						
Pavement Type	Pavement Type	Pavement Type	Pavement Type	Pavement Type	Pavement Type						
HMA	HMA	HMA	PCC	PCC	PCC						
Primary Category	Primary Category	Primary Category	Primary Category	Primary Category	Primary Category						
Overlay, DL < 13 to 17 years	Overlay, DL > 17 years	Overlay, DL > 17 years	6X6" 25.5" Thickness	6X6" 25.5" Thickness	6X6" 25.5" Thickness						
Secondary Category	Secondary Category	Secondary Category	Secondary Category	Secondary Category	Secondary Category						
Rural	Rural	Rural	Design Life = 20 Years	Design Life = 20 Years	Design Life = 20 Years						
Shoulder Category	Shoulder Category	Shoulder Category	Shoulder Category	Shoulder Category	Shoulder Category						
Aggregate	Aggregate	Aggregate	Thick Bit	Thick Bit	Thick Bit						
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	\$ -	\$ -
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 Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	ML Mix	Total Shldr Width	# of Shldrs	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 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix	Width of Rounding Aggregate	white/ >7 milliom	SL Mix
3	N	12.5 Wearing Course (3,C)	3	N	12.5 Wearing Course (3,C)	3	N	12.5 Wearing Course (3,C)
Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC	ML Thickness	Sealed/UTBWC
N	5	N	5	N	5	N	5	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	ML Top Lift / joint spacing
1.5	6	1.5	6	1.5	6	1.5	6	1.5
Design Life	Shldr Thickness	Design Life	Shldr Thickness	Design Life	Shldr Thickness	Design Life	Shldr Thickness	Design Life
16	1	20	1	16	1	20	1	16

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

Project Number	Analysis Period
8102109	35
Highway	Shoulder Rate
Date	
Performed By	CLEAR ALL

03 - 2016/2017 price

LCCA SUMMARY			
Segment #1	Alternate #1	Alternate #2	Length
Segment #1	4" Mill & 3" Overlay	4" Mill, FDR, 4.5" Overlay	0.4
	\$1,016,824.35	\$1,016,824.35	Miles
Segment #2	3" Mill & 3" Overlay	4" Mill & 4" White-topping	7.9
	\$2,324,354.18	\$3,892,377.95	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	\$ 2,666,239.73	\$ 3,053,254.69	\$ 3,053,254.74
Cost/Lane/Year	100.26	114.96	115.21

BID ADJUSTMENT FACTOR SUMMARY			
Segment #1	Alternate #1	Alternate #2	Length
Segment #1	3" Mill & 3" Overlay	4" Mill, FDR, 4.5" Overlay	0.4
	\$77,927.68	\$64,307.86	Miles
Segment #2	3" Mill & 3" Overlay	4" Mill & 4" White-topping	7.9
	\$1,187,405.65	\$981,137.09	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	\$ 1,464,764.35	\$ 1,025,444.87	\$ 1,208,731.94
Bid Adjustment Factor	429.11%	323.27%	8.4

Segment 1											
SSS	Length	SSS	Length	SSS	Length	SSS	Length	SSS	Length	SSS	Length
ALT	7.939	ALT	0.419	ALT	7.939	ALT	0.419	ALT	7.939	ALT	0.419
1		2		3		4		5		6	
	1" Mill & 3" Overlay		4" Mill, FDR, 4.5" Overlay		3" Mill & 3" Overlay		4" Mill & 4" White-topping		4" Mill & 4" White-topping		4" Mill & 4" White-topping
	Pavement Type		Pavement Type		Pavement Type		Pavement Type		Pavement Type		Pavement Type
	MSA		MSA		MSA		MSA		MSA		MSA
	Primary Category		Primary Category		Primary Category		Primary Category		Primary Category		Primary Category
	Overlay, 05 - 13.10.13 years		20 Year HMA		20 Year HMA		20 Year HMA		20 Year HMA		20 Year HMA
	Secondary Category		Secondary Category		Secondary Category		Secondary Category		Secondary Category		Secondary Category
	Shoulder		Shoulder		Shoulder		Shoulder		Shoulder		Shoulder
	ShoulderCategory		ShoulderCategory		ShoulderCategory		ShoulderCategory		ShoulderCategory		ShoulderCategory
	DELETE		DELETE		DELETE		DELETE		DELETE		DELETE
	Notes:		Notes:		Notes:		Notes:		Notes:		Notes:
Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile
0		\$ 163,795.25	\$ 163,795.25	0		\$ 277,047.72	\$ 277,047.72	0		\$ 245,761.73	\$ 245,761.73
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,112.00	\$ 2,054.97	3		\$ -	\$ -	3	Crack Treatment	\$ 2,112.00	\$ 2,054.97
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 7,333.82	\$ 6,571.63	7	Crack Treatment	\$ 1,056.00	\$ 931.39	7	Seal	\$ 7,067.57	\$ 6,333.05
8		\$ -	\$ -	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 11,891.86	\$ 9,886.91	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15	ML Overlay 3.5"	\$ 151,170.30	\$ 118,483.24	15		\$ -	\$ -	15	ML Overlay 3.5"	\$ 142,300.73	\$ 112,482.25
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	Crack Treatment	\$ 2,112.00	\$ 1,952.74	18		\$ -	\$ -	18	Crack Treatment	\$ 2,112.00	\$ 1,952.74
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	ML Overlay 4	\$ 176,507.79	\$ 124,617.79	20	1st CRP	\$ 207,880.27	\$ 151,936.33
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Seal	\$ 7,333.82	\$ 5,204.57	23	Crack Treatment	\$ 2,112.00	\$ 1,472.67	23	Seal	\$ 7,067.57	\$ 5,005.89
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ 7,333.82	\$ 4,802.94	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29	ML Overlay 3.5"	\$ 151,170.30	\$ 95,968.34	29		\$ -	\$ -	29	ML Overlay 3.5"	\$ 142,300.73	\$ 90,116.91
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32	Crack Treatment	\$ 2,112.00	\$ 1,278.88	32		\$ -	\$ -	32	Crack Treatment	\$ 2,112.00	\$ 1,278.88
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (81,399.39)	\$ (47,022.55)	35	2/17 Remaining Life	\$ (20,059.74)	\$ (11,588.79)	35	0/0 Remaining	\$ -	\$ -

Segment 2											
SSS	Length	SSS	Length	SSS	Length	SSS	Length	SSS	Length	SSS	Length
ALT	7.939	ALT	7.939	ALT	7.939	ALT	7.939	ALT	7.939	ALT	7.939
1		2		3		4		5		6	
	1" Mill & 3" Overlay		4" Mill, FDR, 4.5" Overlay		3" Mill & 3" Overlay		4" Mill & 4" White-topping		4" Mill & 4" White-topping		4" Mill & 4" White-topping
	Pavement Type		Pavement Type		Pavement Type		Pavement Type		Pavement Type		Pavement Type
	MSA		MSA		MSA		MSA		MSA		MSA
	Primary Category		Primary Category		Primary Category		Primary Category		Primary Category		Primary Category
	Overlay, 05 - 13.10.13 years		20 Year HMA		20 Year HMA		20 Year HMA		20 Year HMA		20 Year HMA
	Secondary Category		Secondary Category		Secondary Category		Secondary Category		Secondary Category		Secondary Category
	Shoulder		Shoulder		Shoulder		Shoulder		Shoulder		Shoulder
	ShoulderCategory		ShoulderCategory		ShoulderCategory		ShoulderCategory		ShoulderCategory		ShoulderCategory
	DELETE		DELETE		DELETE		DELETE		DELETE		DELETE
	Notes:		Notes:		Notes:		Notes:		Notes:		Notes:
Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile	Year	Activity	Cost	Pres. Cost/Per Mile
0		\$ 141,955.88	\$ 141,955.88	0		\$ 240,076.76	\$ 240,076.76	0		\$ 212,993.50	\$ 212,993.50
1		\$ -	\$ -	1		\$ -	\$ -	1		\$ -	\$ -
2		\$ -	\$ -	2		\$ -	\$ -	2		\$ -	\$ -
3	Crack Treatment	\$ 2,112.00	\$ 2,054.97	3		\$ -	\$ -	3	Crack Treatment	\$ 2,112.00	\$ 2,054.97
4		\$ -	\$ -	4		\$ -	\$ -	4		\$ -	\$ -
5		\$ -	\$ -	5		\$ -	\$ -	5		\$ -	\$ -
6		\$ -	\$ -	6		\$ -	\$ -	6		\$ -	\$ -
7	Seal	\$ 7,067.57	\$ 6,333.05	7	Crack Treatment	\$ 1,056.00	\$ 931.39	7	Seal	\$ 7,067.57	\$ 6,333.05
8		\$ -	\$ -	8		\$ -	\$ -	8		\$ -	\$ -
9		\$ -	\$ -	9		\$ -	\$ -	9		\$ -	\$ -
10		\$ -	\$ -	10		\$ -	\$ -	10		\$ -	\$ -
11		\$ -	\$ -	11		\$ -	\$ -	11		\$ -	\$ -
12		\$ -	\$ -	12	Seal	\$ 11,348.31	\$ 9,402.27	12		\$ -	\$ -
13		\$ -	\$ -	13		\$ -	\$ -	13		\$ -	\$ -
14		\$ -	\$ -	14		\$ -	\$ -	14		\$ -	\$ -
15	ML Overlay 3.5"	\$ 142,300.73	\$ 112,482.25	15		\$ -	\$ -	15	ML Overlay 3.5"	\$ 142,300.73	\$ 112,482.25
16		\$ -	\$ -	16		\$ -	\$ -	16		\$ -	\$ -
17		\$ -	\$ -	17		\$ -	\$ -	17		\$ -	\$ -
18	Crack Treatment	\$ 2,112.00	\$ 1,952.74	18		\$ -	\$ -	18	Crack Treatment	\$ 2,112.00	\$ 1,952.74
19		\$ -	\$ -	19		\$ -	\$ -	19		\$ -	\$ -
20		\$ -	\$ -	20	ML Overlay 4	\$ 161,638.22	\$ 118,135.15	20	1st CRP	\$ 207,880.27	\$ 151,936.33
21		\$ -	\$ -	21		\$ -	\$ -	21		\$ -	\$ -
22		\$ -	\$ -	22		\$ -	\$ -	22		\$ -	\$ -
23	Seal	\$ 7,067.57	\$ 5,005.89	23	Crack Treatment	\$ 2,112.00	\$ 1,472.67	23	Seal	\$ 7,067.57	\$ 5,005.89
24		\$ -	\$ -	24		\$ -	\$ -	24		\$ -	\$ -
25		\$ -	\$ -	25		\$ -	\$ -	25		\$ -	\$ -
26		\$ -	\$ -	26		\$ -	\$ -	26		\$ -	\$ -
27		\$ -	\$ -	27	Seal	\$ 7,067.57	\$ 4,628.59	27		\$ -	\$ -
28		\$ -	\$ -	28		\$ -	\$ -	28		\$ -	\$ -
29	ML Overlay 3.5"	\$ 142,300.73	\$ 90,116.91	29		\$ -	\$ -	29	ML Overlay 3.5"	\$ 142,300.73	\$ 90,116.91
30		\$ -	\$ -	30		\$ -	\$ -	30		\$ -	\$ -
31		\$ -	\$ -	31		\$ -	\$ -	31		\$ -	\$ -
32	Crack Treatment	\$ 2,112.00	\$ 1,278.88	32		\$ -	\$ -	32	Crack Treatment	\$ 2,112.00	\$ 1,278.88
33		\$ -	\$ -	33		\$ -	\$ -	33		\$ -	\$ -
34		\$ -	\$ -	34		\$ -	\$ -	34		\$ -	\$ -
35	Remaining Life	\$ (76,621.47)	\$ (44,264.43)	35	2/17 Remaining Life	\$ (19,016.26)	\$ (10,985.96)	35	0/0 Remaining	\$ -	\$ -

Net Present Cost for Segment	\$ 145,824.35	Net Present Cost for Segment	\$ 170,099.32
------------------------------	---------------	------------------------------	---------------

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

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LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	1.5" Mill and 3" Overlay	4.5" CIR, 1.5" Overlay	6" Unbonded Overlay	11.1
Not Present Cost	\$4,676,534.74	\$3,440,316.19	\$8,421,839.97	Miles
Segment #2				0.0
Not Present Cost				Miles
Segment #3				0.0
Not Present Cost				Miles
Segment #4				0.0
Not Present Cost				Miles
Segment #5				0.0
Not Present Cost				Miles
Segment #6				0.0
Not Present Cost				Miles
Segment #7				0.0
Not Present Cost				Miles
Segment #8				0.0
Not Present Cost				Miles
<b>Project Net Present Cost</b>	<b>\$ 4,676,534.74</b>	<b>\$ 3,440,316.19</b>	<b>\$ 8,421,839.97</b>	<b>Total</b>
<b>% of Low Cost</b>	<b>135.9%</b>	<b>100.0%</b>	<b>244.8%</b>	<b>11.1</b>

BID ADJUSTMENT FACTOR SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	1.5" Mill and 3" Overlay	4.5" CIR, 1.5" Overlay	6" Unbonded Overlay	11.1
Not Present Cost	\$2,503,896.01	\$1,555,214.83	\$2,120,432.85	Miles
Segment #2				0.0
Not Present Cost				Miles
Segment #3				0.0
Not Present Cost				Miles
Segment #4				0.0
Not Present Cost				Miles
Segment #5				0.0
Not Present Cost				Miles
Segment #6				0.0
Not Present Cost				Miles
Segment #7				0.0
Not Present Cost				Miles
Segment #8				0.0
Not Present Cost				Miles
<b>Project Net Present Cost</b>	<b>\$ 2,503,896.01</b>	<b>\$ 1,555,214.83</b>	<b>\$ 2,120,432.85</b>	<b>Total</b>
<b>Bid Adjustment Factor</b>	<b>\$ 948,681.17</b>	<b>\$ -</b>	<b>\$ 565,218.01</b>	<b>11.1</b>

Segment 1									
SEG	Length	SEG	Length	SEG	Length				
1	11.1	1	11.1	1	11.1				
ALT		ALT		ALT					
1		2		3					
	Description		Description		Description				
	1.5" Mill and 3" Overlay		4.5" CIR, 1.5" Overlay		6" Unbonded Overlay				
	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				
	Bituminous		Bituminous		Thick Bit				
	DELETE		DELETE		DELETE				
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 Shldr Width			# of Shldrs	ML Mix	Total Shldr Width			# of Shldrs	ML Mix	Total Shldr Width			# of Shldrs	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 milliom	SL Mix	Width of Rounding Aggregate			white/ >7 milliom	SL Mix	Width of Rounding Aggregate			white/ >7 milliom	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	
15					15					12				
Design Life			Shldr Thickness		Design Life			Shldr Thickness		Design Life			Shldr Thickness	
15			4.5		20			4.5		12			4	

# 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

<b>SP #</b>	3003-47
<b>Highway #</b>	65
<b>Project Limits</b>	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
<b>Project Description</b>	White Topping, Bituminous Mill & Overlay and Turn Lane Extensions

## LCCA Results

<b>Alternative</b>	<b>Design Life</b>	<b>Total Present Cost</b>	<b>Requested Selection</b>	<b>% of Low Cost</b>
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

9/27/16  
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

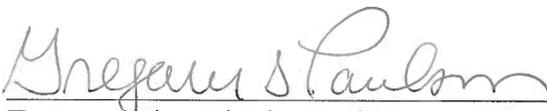
The Preservation fix selected by our District is 2" Bituminous Mill and 3.5" Overlay

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:*



Transportation District Engineer

FOR