DEPARTMENT OF TRANSPORTATION

2021 Report on the

Pavement Life-Cycle Cost Analysis

January 2022

Prepared by:

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Contents

Legislative Request

This report is issued to comply with Minnesota Statutes 174.185.

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

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

174.185 PAVEMENT LIFE-CYCLE COST ANALYSIS.

Subdivision 1. Definitions.

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

Subd. 2. Required analysis.

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

Subd. 3. Report.

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

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

Pavement Life-Cycle Cost Analysis Report

Implementation

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

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

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

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

Results

In 2021, 27 construction projects were in the reconditioning, resurfacing and road repair funding categories and required a LCCA according to the MnDOT Pavement Design Manual. One project required two LCCAs for a total of 28 LCCAs.

The results of the 28 LCCAs are as follows:

- Hot-mix asphalt was the low-cost option for 26 LCCAs and 25 selected the low-cost option for construction. One project selected the second choice hot-mix asphalt option. The difference between the second choice HMA option and PCC was still greater than 10 percent; therefore, no signed exception was provided.
- Portland cement concrete was the low-cost option for two LCCAs and both projects selected this option for construction.

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

Discussion

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

MnDOT continues to improve and refine its portland cement pavement design procedures. The design program for portland cement pavement thickness design has been updated and a research project is developing a new procedure to design portland cement concrete pavements that are built on top of existing portland cement concrete pavements.

No projects used the alternate bidding process in 2021, but MnDOT continued to provide for its use on projects that were likely to have competitive hot-mix asphalt and portland cement concrete options.

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

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

Conclusion

MnDOT implemented the requirements of Minn. Stat. 174.185 and provided the required results in this report. MnDOT continues 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: Copies of LCCAs

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)
0104-06	HMA	No	13	HMA Overlay/ FDR	$7,165,941.61	HMA		No
			20	HMA on FDR	$6,433,264.57	HMA	X	
			20	New PCC	$7,944,756.26	PCC		
0603-16	HMA	No	20	PCC Overlay	$23,752,376.25	PCC		No
			20	HMA on FDR	$16,239,980.13	HMA	X	
			35	New PCC	$23,693,127.82	PCC		
1102-69	HMA	No	20	PCC Overlay	$4,852,775.78	PCC		No
			20	HMA Overlay	$2,514,821.19	HMA	X	
			20	New HMA	$5,291,205.00	HMA		
1504-15	HMA	No	20	New PCC	$14,758,367.18	PCC		No
			20	HMA on FDR	$4,736,218.68	HMA	X	
			35	New PCC	$11,492,492.24	PCC		
1506-41	HMA	No	20	New PCC	$10,147,740.88	PCC		No
			20	HMA on FDR	$4,588,347.27	HMA	X	
			35	New PCC	$7,879,422.19	PCC		
2306-26*	HMA	No	15	HMA Overlay	$6,590,318.00	HMA		No
			20	HMA Overlay	$6,823,669.00	HMA	X	
			20	PCC Overlay	$9,107,055.00	PCC		
2319-20	HMA	No	15	HMA Overlay	$3,321,662.00	HMA	X	No
			20	HMA Overlay	$3,585,979.00	HMA		
			20	PCC Overlay	$5,557,117.00	PCC		
2706-239	HMA	No	15	HMA Overlay	$4,180,761.75	HMA	X	No
			20	HMA on SFDR	$5,584,811.91	HMA		
			20	PCC Overlay	$6,923,003.09	PCC		
3006-41	HMA	No	20	PCC Overlay	$12,305,961.52	PCC		No
			20	HMA on FDR	$8,799,566.55	HMA	X	
			35	New PCC	$11,651,586.11	PCC		
3104-60	HMA	No	20	PCC Overlay	$18,511,136.32	PCC		No
			20	HMA on FDR	$11,777,448.74	HMA	X	
			35	New PCC	$22,102,778.71	PCC		
3106-24	PCC	No	14	HMA Overlay	$5,126,406.95	HMA	X	No
			20	HMA on CIR	$5,473,262.23	HMA		
			20	PCC Overlay	$6,129,971.46	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)
3280-131	PCC	No	20	PCC Overlay	$11,549,312.29	PCC		No
			20	New HMA	$14,095,029.00	HMA		
			35	PCC Overlay	$11,006,761.94	PCC	X	
3804-61		No	13	HMA Overlay	$6,649,408.00	HMA	X	No
			20	PCC Overlay	$12,655,224.00	PCC		
			20	New HMA	$6,719,750.00	HMA		
4006-35	HMA	No	20	HMA on FDR	$11,209,529.00	HMA	X	No
			20	PCC Overlay	$14,861,833.00	PCC		
			35	New PCC	$18,890,813.00	PCC		
4110-14	HMA	No	20	HMA on SFDR	$1,345,397.28	HMA	X	No
			20	NEW PCC	$2,531,912.07	PCC		
			35	New PCC	$1,920,113.99	PCC		
4680-132	PCC	No	17	HMA Overlay	$5,469,313.08	HMA	X	No
			20	HMA Overlay	$7,469,392.72	HMA		
			20	PCC Overlay	$13,024,974.53	PCC		
5007-34	HMA	No	15	HMA Overlay	$3,437,707.00	HMA	X	No
			20	HMA Overlay	$3,771,325.00	HMA		
			20	PCC Overlay	$5,836,312.00	PCC		
5503-47	HMA	No	15	HMA Overlay	$3,927,077.00	HMA	X	No
			20	HMA Overlay	$4,053,872.00	HMA		
			20	PCC Overlay	$6,642,902.00	PCC		
5802-24	HMA	No	20	PCC Overlay	$2,238,893.21	PCC		No
			20	HMA on FDR	$1,247,756.41	HMA	X	
			35	New PCC	$3,321,597.14	PCC		
6001-61	PCC	No	20	Crack & Seat	$7,450,191.00	HMA	X	No
			20	New PCC	$19,818,645.00	PCC		
			20	PCC Overlay	$22,015,546.00	PCC		
6008-17	PCC	No	17	HMA Overlay	$3,067,661.00	HMA	X	No
			20	New HMA	$7,279,412.00	HMA		
			20	New PCC	$12,046,699.00	PCC		
6916-110	PCC	No	20	PCC Overlay	$9,877,755.73	PCC		No
			20	New HMA	$8,620,212.92	HMA		
			35	PCC Overlay	$8,421,037.07	PCC	X	

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)
7403-30	HMA	No	15	HMA Overlay	$2,767,116.00	HMA	X	No
			20	PCC Overlay	$3,625,679.00	PCC		
			20	HMA Overlay	$2,980,461.00	HMA		
7703-16	HMA	No	20	HMA on FDR	$8,790,956.09	HMA	X	No
			20	PCC Overlay	$11,463,948.42	PCC		
			35	New PCC	$11,294,707.37	PCC		
7902-25-1	HMA	No	20	New PCC	$763,251.00	PCC		No
			20	New HMA	$486,164.00	HMA	X	
			35	New PCC	$592,528.00	PCC		
7902-25-2	HMA	No	15	HMA Overlay	$5,542,817.00	HMA	X	No
			20	HMA Overlay	$6,108,328.00	HMA		
			20	PCC Overlay	$9,561,781.00	PCC		
7904-44	HMA	Yes	15	HMA Overlay	$12,519,827.00	HMA	X	No
			20	PCC Overlay	$18,929,301.00	PCC		
			20	HMA Overlay	$12,508,963.00	HMA		
8404-47	HMA	No	20	HMA on FDR	$9,694,028.43	HMA	X	No
			20	New PCC	$17,363,595.00	PCC		
			35	PCC Overlay	$13,809,632.00	PCC		

**2306-26 This project chose the second-choice hot-mix asphalt option.*

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

(2) **Selected Option**- This is marked (X) if the pavement option was selected to be constructed.
If the project uses alternate bidding, more than one option will be marked and
and the constructed option will be the low-cost option as determined by alternate bidding.

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

Definitions:

HMA = Hot-Mix Asphalt

PCC = Portland Cement Concrete

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

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

CPR = Concrete Pavement Repair

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

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

35-Year Analysis Period

Project Number	Analysis Period
0104-06	35
Highway	Discount Rate
27	1.275%
Date	Inflation Rate
8/31/2020	1
Performed By	ia/(1+r)
Thorsen	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	Mil 2 and Pave 3, include 2' shoulders	Reclaim	Concrete	10.0
Net Present Cost	$5,010,640.58	$4,439,385.36	$5,639,456.30	Miles
Segment #2	Reclaim	reclaim	Concrete	4.3
Net Present Cost	$2,155,301.02	$1,993,879.21	$2,305,299.96	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$7,165,941.61**	**$6,433,264.57**	**$7,944,756.26**	**Total**
% of Low Cost	**111.4%**	**100.0%**	**123.5%**	**14.3**

Segment 1

SEG	Length
1	9.974
ALT	Description
1	Mil 2 and Pave 3, include 2' shoulders
Pavement Type	
HMA	
Primary Category	
Overlay	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 1,891,098.38	$ 1,891,098.38
1		$ -	$ -
2		$ -	$ -
3	Crack Treatment	$ 20,631.38	$ 19,894.33
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7	Seal	$ 89,392.90	$ 82,118.06
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13	Mill/Overlay	$ 1,862,190.02	$ 1,590,602.52
14		$ -	$ -
15		$ -	$ -
16	Crack Treatment	$ 20,631.38	$ 16,992.88
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Seal	$ 89,392.90	$ 70,141.71
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25	Mill/Overlay	$ 1,862,190.02	$ 1,375,199.39
26		$ -	$ -
27		$ -	$ -
28	Crack Treatment	$ 20,631.38	$ 14,691.66
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32	Seal	$ 89,392.90	$ 60,642.96
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ (169,290.00)	$ (110,741.31)
LCCA - Net Present Cost/ per Mile			$ 5,010,640.58
Maintenance - Net Present Cost/per Mile			$ 3,119,542.20
Net Present Cost for Segment			$ 5,010,640.58
Maintenance - Net Present Cost for Segment			$ 3,119,542.20
Equivalent Annual Cost			176,753.16

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	Mt. Mix
8	2	9.5 WE (3,8)
Rounding Agg. Width	white/ >7 million	SL Mix
3	No	9.5 WE (3,8)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/lt spacing		
1.5		
Design Life	Shldr Thickness	
13	3	

SEG	Length
1	9.974
ALT	Description
2	Reclaim
Pavement Type	
HMA	
Primary Category	
20-year HMA	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 2,783,270.88	$ 2,783,270.88
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 10,329.56	$ 9,374.57
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 145,854.32	$ 126,102.39
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 2,038,618.49	$ 1,599,592.28
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 20,601.93	$ 15,587.70
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 86,498.90	$ 62,347.58
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ (239,837.47)	$ (156,890.04)
LCCA - Net Present Cost/ per Mile			$ 4,439,385.36
Maintenance - Net Present Cost/per Mile			$ 1,656,114.48
Net Present Cost for Segment			$ 4,439,385.36
Maintenance - Net Present Cost for Segment			$ 1,656,114.48
Equivalent Annual Cost			156,601.81

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	Mt. Mix
8	2	9.5 WE (3,8)
Rounding Agg. Width	white/ >7 million	SL Mix
3	No	9.5 WE (3,8)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/lt spacing		
2		
Design Life	Shldr Thickness	
20	4	

SEG	Length
1	9.974
ALT	Description
3	Concrete
Pavement Type	
PCC	
Primary Category	
> 11' Joint Spacing	
Secondary Category	
Design Life > 35 years	
Shoulder Category	
Thin Bit.	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 3,984,110.72	$ 3,984,110.72
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 2,109,673.92	$ 1,655,345.58
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 5,639,456.30
Maintenance - Net Present Cost/per Mile			$ 1,655,345.58
Net Present Cost for Segment			$ 5,639,456.30
Maintenance - Net Present Cost for Segment			$ 1,655,345.58
Equivalent Annual Cost			198,934.99

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	Mt. Mix
8	2	9.5 WE (3,8)
Rounding Agg. Width	white/ >7 million	SL Mix
3	No	9.5 WE (3,8)
Sealed/UTBWC	ML Thickness	
No	6	
ML Top Lift/lt spacing		
15		
Design Life	Shldr Thickness	
35	3	

Segment 2

SEG	Length
2	4.282
ALT	Description
1	Reclaim
Pavement Type	
HMA	
Primary Category	
20-year HMA	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 1,302,567.53	$ 1,302,567.53
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 4,456.04	$ 4,044.06
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 69,530.04	$ 60,114.11
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 1,061,632.27	$ 833,004.70
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 8,887.40	$ 6,724.33
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 41,826.93	$ 30,148.45
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ (124,897.91)	$ (81,702.16)
LCCA - Net Present Cost/ per Mile			$ 2,155,301.02
Maintenance - Net Present Cost/per Mile			$ 852,333.50
Net Present Cost for Segment			$ 2,155,301.02
Maintenance - Net Present Cost for Segment			$ 852,333.50
Equivalent Annual Cost			76,029.46

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	Mt. Mix
6	2	12.5 WE (3,8)
Rounding Agg. Width	white/ >7 million	SL Mix
3	No	12.5 WE (3,C)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/lt spacing		
2		
Design Life	Shldr Thickness	
20	4	

SEG	Length
2	4.282
ALT	Description
2	reclaim
Pavement Type	
HMA	
Primary Category	
20-year HMA	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 1,143,035.26	$ 1,143,035.26
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 4,434.65	$ 4,024.65
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 61,750.52	$ 53,388.12
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 1,074,567.55	$ 843,154.31
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 8,844.74	$ 6,692.05
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 36,463.38	$ 26,282.45
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ (126,419.71)	$ (82,697.65)
LCCA - Net Present Cost/ per Mile			$ 1,993,879.21
Maintenance - Net Present Cost/per Mile			$ 850,843.96
Net Present Cost for Segment			$ 1,993,879.21
Maintenance - Net Present Cost for Segment			$ 850,843.96
Equivalent Annual Cost			70,335.21

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	Mt. Mix
6	2	9.5 WE (3,C)
Rounding Agg. Width	white/ >7 million	SL Mix
3	No	9.5 WE (3,8)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/lt spacing		
2		
Design Life	Shldr Thickness	
20	4	

SEG	Length
2	4.282
ALT	Description
3	Concrete
Pavement Type	
PCC	
Primary Category	
> 11' Joint Spacing	
Secondary Category	
Design Life > 35 years	
Shoulder Category	
Thin Bit.	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 1,643,676.96	$ 1,643,676.96
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 843,212.92	$ 661,623.00
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 2,305,299.96
Maintenance - Net Present Cost/per Mile			$ 661,623.00
Net Present Cost for Segment			$ 2,305,299.96
Maintenance - Net Present Cost for Segment			$ 661,623.00
Equivalent Annual Cost			81,320.75

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	Mt. Mix
6	2	12.5 WE (3,8)
Rounding Agg. Width	white/ >7 million	SL Mix
3	No	12.5 WE (3,8)
Sealed/UTBWC	ML Thickness	
No	6	
ML Top Lift/lt spacing		
15		
Design Life	Shldr Thickness	
35	3	

35-Year Analysis Period

Project Number	Analysis Period
7403-30	35
Highway	**Discount Rate**
30	1.22%
Date	**Inflation Rate**
11/4/2019	1
Performed By	**Ia/(1+r)**
trm	0.9879

TH 30 From 0.28 Mi. W. Ellendale to 1 Mi. E. CSAH 45

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	Whitetopping-20 YR FIX	Medium Bit. Mill and Overlay-15 YR FIX	Heavy Bit. Mill and Overlay-20 YR FIX	5.6
Net Present Cost	$3,625,678.59	$2,767,115.57	$2,980,461.43	Miles
Segment #2				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$3,625,678.59**	**$2,767,115.57**	**$2,980,461.43**	**Total**
% of Low Cost	**131.0%**	**100.0%**	**107.7%**	**5.6**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	5.62	1	5.62	1	5.62
ALT	**Description**	**ALT**	**Description**	**ALT**	**Description**
1	Whitetopping-20 YR FIX	2	Medium Bit. Mill and Overlay-15 YR FIX	3	Heavy Bit. Mill and Overlay-20 YR FIX
Pavement Type		**Pavement Type**		**Pavement Type**	
PCC		HMA		HMA	
Primary Category		**Primary Category**		**Primary Category**	
> 11' Joint Spacing		Overlay		20-year HMA	
Secondary Category		**Secondary Category**		**Secondary Category**	
Design Life = 20 years		Rural		Rural	
Shoulder Category		**Shoulder Category**		**Shoulder Category**	
Aggregate		Bituminous		Bituminous	
Notes:		Notes:		Notes:	

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 2,472,895.57	$ 2,472,895.57	0	Construction	$ 1,138,369.70	$ 1,138,369.70	0	Construction	$ 1,863,078.77	$ 1,863,078.77
1		$ -	$ -	1		$ -	$ -	1		$ -	$ -
2		$ -	$ -	2		$ -	$ -	2		$ -	$ -
3		$ -	$ -	3	Crack Treatment	$ 11,651.77	$ 11,235.51	3		$ -	$ -
4		$ -	$ -	4		$ -	$ -	4		$ -	$ -
5		$ -	$ -	5		$ -	$ -	5		$ -	$ -
6		$ -	$ -	6		$ -	$ -	6		$ -	$ -
7		$ -	$ -	7	Seal	$ 52,370.67	$ 48,108.72	7		$ -	$ -
8		$ -	$ -	8		$ -	$ -	8	Crack Treatment	$ 5,842.06	$ 5,301.95
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12		$ -	$ -	12		$ -	$ -	12	Seal	$ 87,736.55	$ 75,855.06
13		$ -	$ -	13		$ -	$ -	13		$ -	$ -
14		$ -	$ -	14		$ -	$ -	14		$ -	$ -
15		$ -	$ -	15	Mill/Overlay	$ 1,215,886.92	$ 1,013,673.73	15		$ -	$ -
16		$ -	$ -	16		$ -	$ -	16		$ -	$ -
17		$ -	$ -	17		$ -	$ -	17		$ -	$ -
18		$ -	$ -	18	Crack Treatment	$ 11,651.77	$ 9,366.94	18		$ -	$ -
19		$ -	$ -	19		$ -	$ -	19		$ -	$ -
20	1st CPR	$ 1,469,177.37	$ 1,152,783.02	20		$ -	$ -	20	Mill/Overlay	$ 1,373,604.14	$ 1,077,791.94
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22		$ -	$ -	22	Seal	$ 52,370.67	$ 40,107.80	22		$ -	$ -
23		$ -	$ -	23		$ -	$ -	23	Crack Treatment	$ 11,651.77	$ 8,815.89
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27		$ -	$ -	27		$ -	$ -	27	Seal	$ 52,370.67	$ 37,748.28
28		$ -	$ -	28		$ -	$ -	28		$ -	$ -
29		$ -	$ -	29	Mill/Overlay	$ 1,215,886.92	$ 855,400.56	29		$ -	$ -
30		$ -	$ -	30		$ -	$ -	30		$ -	$ -
31		$ -	$ -	31		$ -	$ -	31		$ -	$ -
32		$ -	$ -	32	Crack Treatment	$ 11,651.77	$ 7,904.40	32		$ -	$ -
33		$ -	$ -	33		$ -	$ -	33		$ -	$ -
34		$ -	$ -	34		$ -	$ -	34		$ -	$ -
35	Remaining Life	$ -	$ -	35	Remaining Life	$ -	$ -	35	Remaining Life	$ -	$ -
Net Present Cost for Segment			$ 3,625,678.59	Net Present Cost for Segment			$ 2,767,115.57	Net Present Cost for Segment			$ 2,980,461.43
Maintenance - Net Present Cost for Segment			$ 1,152,783.02	Maintenance - Net Present Cost for Segment			$ 1,628,745.87	Maintenance - Net Present Cost for Segment			$ 1,117,382.66
Equivalent Annual Cost			127,897.85	Equivalent Annual Cost			97,611.56	Equivalent Annual Cost			105,137.45

Total Lane Width	# of Lanes	Analysis Period
26	2	35
Total Shldr Width	# of Shldrs	ML Mix
5	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	Yes	
Sealed/UTBWC	ML Thickness	
Yes	6	
ML Top Lift/Jt spacing		
15		
Design Life	Shldr Thickness	
20	2.5	

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
4	2	12.5 WE (3,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (3,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
1.5		
Design Life	Shldr Thickness	
15	3	

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
4	2	12.5 WE (3,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (3,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
2		
Design Life	Shldr Thickness	
20	5	

50 Year Analysis Period

Project Number	Analysis Period
0603-16	50
Highway	Discount Rate
16.12	2.5%
Date	Inflation Rate
3/14/2020	1
Performed By	Up/Down
Nathan Bessmer	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2.5" Mill, 11" FDR & 5" Bituminous Overlay	2.5" Mill & 4.5" Whitetopping	7" Concrete Reconstruction	21.7
Net Present Cost	$13,334,004.81	$18,932,382.73	$19,231,176.01	Miles
Segment #2	5" Bituminous Reconstruction	7" Concrete Reconstruction	7" Concrete Reconstruction	4.1
Net Present Cost	$2,815,975.32	$4,799,999.51	$3,771,851.81	Miles
Segment #3				0.0
Net Present Cost				Miles
Segment #4				0.0
Net Present Cost				Miles
Project Net Present Cost	**$16,239,980.13**	**$23,752,376.25**	**$23,693,127.82**	**Total**
% of Low Cost	**100.0%**	**146.3%**	**145.9%**	**25.8**

Segment 1

SEG	Length
1	21.683
ALT	Description
1	2.5" Mill, 11" FDR & 5" Bituminous Overlay

Pavement Type
HMA
Primary Category
20-year HMA
Secondary Category
Rural
Shoulder Category
Aggregate
Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 7,310,237.00	$ 7,310,237.00
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 29,836.14	$ 27,077.71
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 380,137.71	$ 328,658.57
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 4,083,940.16	$ 3,204,444.18
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 59,507.06	$ 45,023.88
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 220,815.35	$ 159,161.59
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36		$ -	$ -
37	Mill/Overlay	$ 4,083,940.16	$ 2,607,504.40
38		$ -	$ -
39		$ -	$ -
40	Crack Treatment	$ 59,507.06	$ 36,636.60
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44	Seal	$ 220,815.35	$ 129,512.18
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (960,927.10)	$ (524,051.29)
LCCA - Net Present Cost/ Lane Mile			$ 13,124,004.81
Maintenance - Net Present Cost/per Mile			$ 4,211,567.31
Net Present Cost for Segment			$ 13,124,004.81
Maintenance - Net Present Cost for Segment			$ 4,211,567.31
Equivalent Annual Cost			357,541.99

Total Lane Width	# of Lanes	Analysis Period
32	2	50
Total Shldr Width	# of Shldrs	Mt. Mix
8	2	12.5 WS (3.8)
Rounding Agg. Width	white/ >7 million	SL Mix
4	No	12.5 WS (3.8)
Sealed/UTBWC	Mt. Thickness	
No	4.5	
Mt. Top Lift/It spacing		
6	Shldr Thickness	
Design Life	4.5	
20		

SEG	Length
1	21.683
ALT	Description
2	2.5" Mill & 4.5" Whitetopping

Pavement Type
PCC
Primary Category
ICAC 5.0 in. or Thinner
Secondary Category
Design Life < 20 years
Shoulder Category
Thick Bit.
Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 7,909,005.09	$ 7,909,005.09
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 8,447,519.46	$ 6,628,305.87
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30	R & R Mainline	$ 9,570,631.18	$ 6,651,974.74
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (4,101,698.08)	$ (2,238,902.97)
LCCA - Net Present Cost/ Lane Mile			$ 18,932,382.73
Maintenance - Net Present Cost/per Mile			$ 11,243,177.44
Net Present Cost for Segment			$ 18,932,382.73
Maintenance - Net Present Cost for Segment			$ 11,243,177.44
Equivalent Annual Cost			508,576.37

Total Lane Width	# of Lanes	Analysis Period
24	2	50
Total Shldr Width	# of Shldrs	Mt. Mix
8	2	SL Mix
Rounding Agg. Width	white/ >7 million	SL Mix
4	Yes	12.5 WS (3.8)
Sealed/UTBWC	Mt. Thickness	
No	4.5	
Mt. Top Lift/It spacing		
6	Shldr Thickness	
Design Life	4.5	
20		

SEG	Length
1	21.683
ALT	Description
3	7" Concrete Reconstruction

Pavement Type
PCC
Primary Category
> 11" Joint Spacing
Secondary Category
Design Life = 35 years
Shoulder Category
Thick Bit.
Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 14,110,569.15	$ 14,110,569.15
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 3,943,581.22	$ 3,094,312.20
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	2nd CPR	$ 4,152,546.66	$ 2,716,394.65
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ Lane Mile			$ 19,921,276.01
Maintenance - Net Present Cost/per Mile			$ 9,815,706.86
Net Present Cost for Segment			$ 19,921,276.01
Maintenance - Net Present Cost for Segment			$ 9,815,706.86
Equivalent Annual Cost			534,575.96

Total Lane Width	# of Lanes	Analysis Period
24	2	50
Total Shldr Width	# of Shldrs	Mt. Mix
8	2	SL Mix
Rounding Agg. Width	white/ >7 million	SL Mix
4	No	12.5 WS (3.8)
Sealed/UTBWC	Mt. Thickness	
No	7	
Mt. Top Lift/It spacing		
6	Shldr Thickness	
Design Life	5	
20		

Segment 2

SEG	Length
2	4.094
ALT	Description
1	5" Bituminous Reconstruction

Pavement Type
HMA
Primary Category
20-year HMA
Secondary Category
Rural
Shoulder Category
Aggregate
Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 1,781,242.52	$ 1,781,242.52
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 5,618.65	$ 5,100.10
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 71,599.06	$ 61,902.85
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 769,211.46	$ 603,558.10
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 11,208.18	$ 8,480.26
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 41,590.64	$ 29,978.14
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36		$ -	$ -
37	Mill/Overlay	$ 769,211.46	$ 491,124.30
38		$ -	$ -
39		$ -	$ -
40	Crack Treatment	$ 11,208.18	$ 6,900.52
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44	Seal	$ 41,590.64	$ 24,393.66
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (180,990.93)	$ (98,706.23)
LCCA - Net Present Cost/ Lane Mile			$ 2,915,975.32
Maintenance - Net Present Cost/per Mile			$ 1,153,732.80
Net Present Cost for Segment			$ 2,915,975.32
Maintenance - Net Present Cost for Segment			$ 1,153,732.80
Equivalent Annual Cost			78,248.52

Total Lane Width	# of Lanes	Analysis Period
32	2	50
Total Shldr Width	# of Shldrs	Mt. Mix
8	2	12.5 WS (3.8)
Rounding Agg. Width	white/ >7 million	SL Mix
4	No	12.5 WS (3.8)
Sealed/UTBWC	Mt. Thickness	
No	4.5	
Mt. Top Lift/It spacing		
6	Shldr Thickness	
Design Life	4	
20		

SEG	Length
2	4.094
ALT	Description
2	7" Concrete Reconstruction

Pavement Type
PCC
Primary Category
> 11" Joint Spacing
Secondary Category
Design Life = 35 years
Shoulder Category
Thick Bit.
Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 3,592,336.05	$ 3,592,336.05
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 795,001.39	$ 623,794.05
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	2nd CPR	$ 892,550.75	$ 583,865.42
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ Lane Mile			$ 4,799,993.51
Maintenance - Net Present Cost/per Mile			$ 1,707,457.47
Net Present Cost for Segment			$ 4,799,993.51
Maintenance - Net Present Cost for Segment			$ 1,707,457.47
Equivalent Annual Cost			128,805.06

Total Lane Width	# of Lanes	Analysis Period
24	2	50
Total Shldr Width	# of Shldrs	Mt. Mix
8	2	SL Mix
Rounding Agg. Width	white/ >7 million	SL Mix
4	No	12.5 WS (3.8)
Sealed/UTBWC	Mt. Thickness	
No	7	
Mt. Top Lift/It spacing		
15	Shldr Thickness	
Design Life	4	
35		

SEG	Length
2	4.094
ALT	Description
3	7" Concrete Reconstruction

Pavement Type
PCC
Primary Category
> 11" Joint Spacing
Secondary Category
Design Life = 35 years
Shoulder Category
Thick Bit.
Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 2,677,403.10	$ 2,677,403.10
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 742,774.80	$ 582,814.70
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	2nd CPR	$ 782,133.51	$ 511,613.81
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ Lane Mile			$ 3,773,841.81
Maintenance - Net Present Cost/per Mile			$ 1,094,468.51
Net Present Cost for Segment			$ 3,773,841.81
Maintenance - Net Present Cost for Segment			$ 1,094,468.51
Equivalent Annual Cost			101,215.47

Total Lane Width	# of Lanes	Analysis Period
24	2	50
Total Shldr Width	# of Shldrs	Mt. Mix
8	2	SL Mix
Rounding Agg. Width	white/ >7 million	SL Mix
4	No	12.5 WS (3.8)
Sealed/UTBWC	Mt. Thickness	
No	7	
Mt. Top Lift/It spacing		
15	Shldr Thickness	
Design Life	4	
35		

35-Year Analysis Period

Project Number	Analysis Period
1102-69	35
Highway	Discount Rate
2	1.22%
Date	Inflation Rate
9/12/2018	1
Performed By	Ia/(1+r)
KO	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	4.5" Mill & Overlay	5" BCOA	New HMA	4.9
Net Present Cost	$2,514,821.19	$4,852,775.78	$5,291,204.90	Miles
Segment #2				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$2,514,821.19**	**$4,852,775.78**	**$5,291,204.90**	**Total**
% of Low Cost	**100.0%**	**193.0%**	**210.4%**	**4.9**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	4.923	1	4.923	1	4.923
ALT	Description	ALT	Description	ALT	Description
1	4.5" Mill & Overlay	2	5" BCOA	3	New HMA
Pavement Type		Pavement Type		Pavement Type	
HMA		PCC		HMA	
Primary Category		Primary Category		Primary Category	
Overlay		6'x6', 5.0 in. or Thinner		20-year HMA	
Secondary Category		Secondary Category		Secondary Category	
Rural		Design Life = 20 years		Rural	
Shoulder Category		Shoulder Category		Shoulder Category	
Bituminous		Thin Bit.		Bituminous	
Notes:		Notes:		Notes:	

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 1,647,941.93	$ 1,647,941.93	0	Construction	$ 2,977,899.20	$ 2,977,899.20	0	Construction	$ 4,245,038.22	$ 4,245,038.22
1		$ -	$ -	1		$ -	$ -	1		$ -	$ -
2		$ -	$ -	2		$ -	$ -	2		$ -	$ -
3	Crack Treatment	$ 10,212.11	$ 9,847.28	3		$ -	$ -	3		$ -	$ -
4		$ -	$ -	4		$ -	$ -	4		$ -	$ -
5		$ -	$ -	5		$ -	$ -	5		$ -	$ -
6		$ -	$ -	6		$ -	$ -	6		$ -	$ -
7	Seal	$ 38,014.69	$ 34,921.03	7		$ -	$ -	7		$ -	$ -
8		$ -	$ -	8		$ -	$ -	8	Crack Treatment	$ 5,120.23	$ 4,646.85
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12		$ -	$ -	12		$ -	$ -	12	Seal	$ 63,209.45	$ 54,649.47
13		$ -	$ -	13		$ -	$ -	13		$ -	$ -
14		$ -	$ -	14		$ -	$ -	14		$ -	$ -
15		$ -	$ -	15		$ -	$ -	15		$ -	$ -
16		$ -	$ -	16		$ -	$ -	16		$ -	$ -
17		$ -	$ -	17		$ -	$ -	17		$ -	$ -
18		$ -	$ -	18		$ -	$ -	18		$ -	$ -
19		$ -	$ -	19		$ -	$ -	19		$ -	$ -
20	Mill/Overlay	$ 1,216,491.37	$ 954,514.15	20	1st CPR	$ 1,691,813.81	$ 1,327,473.64	20	Mill/Overlay	$ 1,344,865.94	$ 1,055,242.65
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22		$ -	$ -	22		$ -	$ -	22		$ -	$ -
23	Crack Treatment	$ 10,212.11	$ 7,726.62	23		$ -	$ -	23	Crack Treatment	$ 10,212.11	$ 7,726.62
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27	Seal	$ 38,014.69	$ 27,400.62	27		$ -	$ -	27	Seal	$ 38,014.69	$ 27,400.62
28		$ -	$ -	28		$ -	$ -	28		$ -	$ -
29		$ -	$ -	29		$ -	$ -	29		$ -	$ -
30		$ -	$ -	30	R & R Mainline	$ 4,074,786.53	$ 2,832,141.01	30		$ -	$ -
31		$ -	$ -	31		$ -	$ -	31		$ -	$ -
32		$ -	$ -	32		$ -	$ -	32		$ -	$ -
33		$ -	$ -	33		$ -	$ -	33		$ -	$ -
34		$ -	$ -	34		$ -	$ -	34		$ -	$ -
35	Remaining Life	$ (256,103.45)	$ (167,530.46)	35	Remaining Life	$ (3,492,674.16)	$ (2,284,738.07)	35	Remaining Life	$ (158,219.52)	$ (103,499.54)
LCCA - Net Present Cost/ per Mile			$ 2,514,821.19	LCCA - Net Present Cost/ per Mile			$ 4,852,775.78	LCCA - Net Present Cost/ per Mile			$ 5,291,204.90
Maintenance - Net Present Cost/per Mile			$ 866,879.26	Maintenance - Net Present Cost/per Mile			$ 1,874,876.58	Maintenance - Net Present Cost/per Mile			$ 1,046,166.68
Net Present Cost for Segment			$ 2,514,821.19	Net Present Cost for Segment			$ 4,852,775.78	Net Present Cost for Segment			$ 5,291,204.90
Maintenance - Net Present Cost for Segment			$ 866,879.26	Maintenance - Net Present Cost for Segment			$ 1,874,876.58	Maintenance - Net Present Cost for Segment			$ 1,046,166.68
Equivalent Annual Cost			88,711.73	Equivalent Annual Cost			171,184.39	Equivalent Annual Cost			186,650.23

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
20	2	12.5 WE (4,F)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (2,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
2		
Design Life	Shldr Thickness	
20	3	

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
20	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	Yes	12.5 WE (2,B)
Sealed/UTBWC	ML Thickness	
No	5.0	
ML Top Lift/Jt spacing		
6		
Design Life	Shldr Thickness	
20	3.0	

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
20	2	12.5 WE (4,F)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (2,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
2.0		
Design Life	Shldr Thickness	
20	3	

50-Year Analysis Period

Project Number	Analysis Period
1504-15	50
Highway	**Discount Rate**
200	1.22%
Date	**Inflation Rate**
8/21/2019	1
Performed By	**Ia/(1+r)**
KO	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	Reclaim	20Yr Conc.	35 Yr. Conc.	7.7
Net Present Cost	$4,736,218.68	$14,758,367.18	$11,492,492.24	Miles
Segment #2				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$4,736,218.68**	**$14,758,367.18**	**$11,492,492.24**	**Total**
% of Low Cost	**100.0%**	**311.6%**	**242.7%**	**7.7**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	7.655	1	7.655	1	7.655
ALT	**Description**	**ALT**	**Description**	**ALT**	**Description**
1	Reclaim	2	20Yr Conc.	3	35 Yr. Conc.
Pavement Type		**Pavement Type**		**Pavement Type**	
HMA		PCC		PCC	
Primary Category		**Primary Category**		**Primary Category**	
20-year HMA		> 11' Joint Spacing		> 11' Joint Spacing	
Secondary Category		**Secondary Category**		**Secondary Category**	
Rural		Design Life = 20 years		Design Life = 35 years	
Shoulder Category		**Shoulder Category**		**Shoulder Category**	
Bituminous		Aggregate		Aggregate	
Notes:		Notes:		Notes:	

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 2,438,114.65	$ 2,438,114.65	0	Construction	$ 9,288,237.95	$ 9,288,237.95	0	Construction	$ 9,288,237.95	$ 9,288,237.95
1		$ -	$ -	1		$ -	$ -	1		$ -	$ -
2		$ -	$ -	2		$ -	$ -	2		$ -	$ -
3		$ -	$ -	3		$ -	$ -	3		$ -	$ -
4		$ -	$ -	4		$ -	$ -	4		$ -	$ -
5		$ -	$ -	5		$ -	$ -	5		$ -	$ -
6		$ -	$ -	6		$ -	$ -	6		$ -	$ -
7		$ -	$ -	7		$ -	$ -	7		$ -	$ -
8	Crack Treatment	$ 7,947.64	$ 7,212.86	8		$ -	$ -	8		$ -	$ -
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12	Seal	$ 116,177.73	$ 100,444.67	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	$ 1,605,192.37	$ 1,259,506.54	20	1st CPR	$ 2,093,447.30	$ 1,642,613.45	20	1st CPR	$ 1,404,482.20	$ 1,102,020.26
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22		$ -	$ -	22		$ -	$ -	22		$ -	$ -
23	Crack Treatment	$ 15,851.26	$ 11,993.29	23		$ -	$ -	23		$ -	$ -
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27	Seal	$ 69,062.87	$ 49,779.86	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	$ 7,391,716.68	$ 4,835,302.61	35	2nd CPR	$ 1,684,982.78	$ 1,102,234.02
36		$ -	$ -	36		$ -	$ -	36		$ -	$ -
37	Mill/Overlay	$ 1,605,192.37	$ 1,024,879.41	37		$ -	$ -	37		$ -	$ -
38		$ -	$ -	38		$ -	$ -	38		$ -	$ -
39		$ -	$ -	39		$ -	$ -	39		$ -	$ -
40	Crack Treatment	$ 15,851.26	$ 9,759.12	40		$ -	$ -	40		$ -	$ -
41		$ -	$ -	41		$ -	$ -	41		$ -	$ -
42		$ -	$ -	42		$ -	$ -	42		$ -	$ -
43		$ -	$ -	43		$ -	$ -	43		$ -	$ -
44	Seal	$ 69,062.87	$ 40,506.62	44		$ -	$ -	44		$ -	$ -
45		$ -	$ -	45		$ -	$ -	45		$ -	$ -
46		$ -	$ -	46		$ -	$ -	46		$ -	$ -
47		$ -	$ -	47		$ -	$ -	47		$ -	$ -
48		$ -	$ -	48		$ -	$ -	48		$ -	$ -
49		$ -	$ -	49		$ -	$ -	49		$ -	$ -
50	Remaining Life	$ (377,692.32)	$ (205,978.32)	50	Remaining Life	$ (1,847,929.17)	$ (1,007,786.82)	50	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 4,736,218.68	LCCA - Net Present Cost/ per Mile			$ 14,758,367.18	LCCA - Net Present Cost/ per Mile			$ 11,492,492.24
Maintenance - Net Present Cost/per Mile			$ 2,298,104.03	Maintenance - Net Present Cost/per Mile			$ 5,470,129.24	Maintenance - Net Present Cost/per Mile			$ 2,204,254.29
Net Present Cost for Segment			$ 4,736,218.68	Net Present Cost for Segment			$ 14,758,367.18	Net Present Cost for Segment			$ 11,492,492.24
Maintenance - Net Present Cost for Segment			$ 2,298,104.03	Maintenance - Net Present Cost for Segment			$ 5,470,129.24	Maintenance - Net Present Cost for Segment			$ 2,204,254.29
Equivalent Annual Cost			127,093.70	Equivalent Annual Cost			396,032.28	Equivalent Annual Cost			308,394.41

Total Lane Width	# of Lanes	Analysis Period
24	2	50
Total Shldr Width	# of Shldrs	ML Mix
4	2	12.5 WE (3,C)
Rounding Agg. Width	white/ >7 milliom	SL Mix
8	No	12.5 WE (3,C)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
1.5		
Design Life	Shldr Thickness	
20	4.5	

Total Lane Width	# of Lanes	Analysis Period
28	2	50
Total Shldr Width	# of Shldrs	ML Mix
0	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix
8	No	
Sealed/UTBWC	ML Thickness	
No	7	
ML Top Lift/Jt spacing		
15		
Design Life	Shldr Thickness	
20	7	

Total Lane Width	# of Lanes	Analysis Period
28	2	50
Total Shldr Width	# of Shldrs	ML Mix
0	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix
8	No	
Sealed/UTBWC	ML Thickness	
No	7	
ML Top Lift/Jt spacing		
15		
Design Life	Shldr Thickness	
35	7	

50-Year Analysis Period

Project Number	Analysis Period
1506-41	50
Highway	**Discount Rate**
92	1.72%
Date	**Inflation Rate**
9/16/2019	1
Performed By	**Ia/(1+r)**
KO	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	4" mill, 11" reclaim	7" Conc 20 year	7" Conc 35 year	4.9
Net Present Cost	$4,373,677.07	$9,765,035.43	$7,590,511.36	Miles
Segment #2	Bit Regrade	7" Conc 20 year	7" Conc 35 year	0.2
Net Present Cost	$214,670.19	$382,705.45	$288,910.83	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$4,588,347.27**	**$10,147,740.88**	**$7,879,422.19**	**Total**
% of Low Cost	**100.0%**	**221.2%**	**171.7%**	**5.1**

Segment 1

SEG	Length
1	4.9
ALT	Description
1	4" mill, 11" reclaim
Pavement Type	
HMA	
Primary Category	
20-year HMA	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 2,685,612.12	$ 2,685,612.12
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 5,095.59	$ 4,624.49
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 80,050.94	$ 69,210.26
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 1,187,107.94	$ 931,458.59
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 10,162.96	$ 7,689.44
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 48,353.57	$ 34,852.79
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36		$ -	$ -
37	Mill/Overlay	$ 1,187,107.94	$ 757,941.86
38		$ -	$ -
39		$ -	$ -
40	Crack Treatment	$ 10,162.96	$ 6,257.01
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44	Seal	$ 48,353.57	$ 28,360.24
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (279,319.52)	$ (152,329.72)
LCCA - Net Present Cost/ per Mile			$ 4,373,677.07
Maintenance - Net Present Cost/per Mile			$ 1,688,064.96
Net Present Cost for Segment			$ 4,373,677.07
Maintenance - Net Present Cost for Segment			$ 1,688,064.96
Equivalent Annual Cost			117,365.10

Total Lane Width	24
Total Shldr Width	12
Rounding Agg. Width	4
Sealed/UTBWC	No
ML Top Lift/lt spacing	1.5
Design Life	20
# of Lanes	2
# of Shldrs	2
white/ >7 million	No
ML Thickness	
Shldr Thickness	4.5
Analysis Period	50
ML Mix	12.5 WE (3,C)
SL Mix	12.5 WE (3,C)

SEG	Length
1	4.9
ALT	Description
2	7" Conc 20 year
Pavement Type	
PCC	
Primary Category	
> 11' Joint Spacing	
Secondary Category	
Design Life = 20 years	
Shoulder Category	
Thin Bit.	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 5,977,482.39	$ 5,977,482.39
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 1,603,294.61	$ 1,258,017.47
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	R & R Mainline	$ 4,885,051.11	$ 3,195,563.55
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (1,221,262.78)	$ (666,027.98)
LCCA - Net Present Cost/ per Mile			$ 9,765,035.43
Maintenance - Net Present Cost/per Mile			$ 3,787,553.04
Net Present Cost for Segment			$ 9,765,035.43
Maintenance - Net Present Cost for Segment			$ 3,787,553.04
Equivalent Annual Cost			262,039.10

Total Lane Width	36
Total Shldr Width	10
Rounding Agg. Width	4
Sealed/UTBWC	No
ML Top Lift/lt spacing	15
Design Life	20
# of Lanes	2
# of Shldrs	2
white/ >7 million	No
ML Thickness	7
Shldr Thickness	3
Analysis Period	50
ML Mix	
SL Mix	9.5 WE (2,A)

SEG	Length
1	4.9
ALT	Description
3	7" Conc 35 year
Pavement Type	
PCC	
Primary Category	
> 11' Joint Spacing	
Secondary Category	
Design Life = 35 years	
Shoulder Category	
Thin Bit.	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 5,979,001.52	$ 5,979,001.52
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 1,173,544.63	$ 920,816.20
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	2nd CPR	$ 1,055,861.87	$ 690,693.63
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 7,590,511.36
Maintenance - Net Present Cost/per Mile			$ 1,611,509.84
Net Present Cost for Segment			$ 7,590,511.36
Maintenance - Net Present Cost for Segment			$ 1,611,509.84
Equivalent Annual Cost			203,687.00

Total Lane Width	26
Total Shldr Width	10
Rounding Agg. Width	4
Sealed/UTBWC	No
ML Top Lift/lt spacing	15
Design Life	35
# of Lanes	2
# of Shldrs	2
white/ >7 million	No
ML Thickness	7
Shldr Thickness	3
Analysis Period	50
ML Mix	
SL Mix	9.5 WE (2,A)

Segment 2

SEG	Length
2	.2
ALT	Description
1	Bit Regrade
Pavement Type	
HMA	
Primary Category	
20-year HMA	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 145,769.58	$ 145,769.58
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 207.98	$ 188.75
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 3,267.39	$ 2,824.91
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 48,453.39	$ 38,018.72
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 414.81	$ 313.85
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 1,973.62	$ 1,422.56
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36		$ -	$ -
37	Mill/Overlay	$ 48,453.39	$ 30,936.40
38		$ -	$ -
39		$ -	$ -
40	Crack Treatment	$ 414.81	$ 255.39
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44	Seal	$ 1,973.62	$ 1,157.56
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (11,400.80)	$ (6,217.54)
LCCA - Net Present Cost/ per Mile			$ 214,670.19
Maintenance - Net Present Cost/per Mile			$ 68,900.61
Net Present Cost for Segment			$ 214,670.19
Maintenance - Net Present Cost for Segment			$ 68,900.61
Equivalent Annual Cost			5,760.55

Total Lane Width	24
Total Shldr Width	12
Rounding Agg. Width	4
Sealed/UTBWC	No
ML Top Lift/lt spacing	1.5
Design Life	20
# of Lanes	2
# of Shldrs	2
white/ >7 million	No
ML Thickness	
Shldr Thickness	4.5
Analysis Period	50
ML Mix	12.5 WE (1,C)
SL Mix	12.5 WE (3,C)

SEG	Length
2	.2
ALT	Description
2	7" Conc 20 year
Pavement Type	
PCC	
Primary Category	
> 11' Joint Spacing	
Secondary Category	
Design Life = 20 years	
Shoulder Category	
Thick Bit.	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 231,913.24	$ 231,913.24
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 60,595.36	$ 47,545.86
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	R & R Mainline	$ 199,389.84	$ 130,431.17
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (49,847.46)	$ (27,184.82)
LCCA - Net Present Cost/ per Mile			$ 382,705.45
Maintenance - Net Present Cost/per Mile			$ 150,792.21
Net Present Cost for Segment			$ 382,705.45
Maintenance - Net Present Cost for Segment			$ 150,792.21
Equivalent Annual Cost			10,269.68

Total Lane Width	26
Total Shldr Width	10
Rounding Agg. Width	4
Sealed/UTBWC	No
ML Top Lift/lt spacing	15
Design Life	20
# of Lanes	2
# of Shldrs	2
white/ >7 million	No
ML Thickness	7
Shldr Thickness	3
Analysis Period	50
ML Mix	
SL Mix	9.5 WE (2,A)

SEG	Length
2	.2
ALT	Description
3	7" Conc 35 year
Pavement Type	
PCC	
Primary Category	
> 11' Joint Spacing	
Secondary Category	
Design Life = 35 years	
Shoulder Category	
Thin Bit.	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 223,134.91	$ 223,134.91
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 47,899.78	$ 37,584.33
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	2nd CPR	$ 43,096.40	$ 28,191.58
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 288,910.83
Maintenance - Net Present Cost/per Mile			$ 65,775.91
Net Present Cost for Segment			$ 288,910.83
Maintenance - Net Present Cost for Segment			$ 65,775.91
Equivalent Annual Cost			7,752.76

Total Lane Width	26
Total Shldr Width	10
Rounding Agg. Width	4
Sealed/UTBWC	No
ML Top Lift/lt spacing	15
Design Life	35
# of Lanes	2
# of Shldrs	2
white/ >7 million	No
ML Thickness	7
Shldr Thickness	3
Analysis Period	50
ML Mix	
SL Mix	9.5 WE (2,A)

35-Year Analysis Period

Project Number	Analysis Period
2306-26	35
Highway	**Discount Rate**
43	1.22%
Date	**Inflation Rate**
12/10/2018	1
Performed By	**la/(1+r)**
trm	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	Medium Bit. Mill and Overlay-15 YR FIX	Whitetopping-20 YR FIX	Heavy Bit. Mill and Overlay-20 YR FIX	21.7
Net Present Cost	$6,590,317.62	$9,107,055.40	$6,823,668.81	Miles
Segment #2				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$6,590,317.62**	**$9,107,055.40**	**$6,823,668.81**	**Total**
% of Low Cost	**100.0%**	**138.2%**	**103.5%**	**21.7**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	21.713	1	21.713	1	21.713
ALT	Description	ALT	Description	ALT	Description
1	Medium Bit. Mill and Overlay-15 YR FIX	2	Whitetopping-20 YR FIX	3	Heavy Bit. Mill and Overlay-20 YR FIX
Pavement Type		**Pavement Type**		**Pavement Type**	
HMA		PCC		HMA	
Primary Category		**Primary Category**		**Primary Category**	
Overlay		6'x6', 5.5 in. or Thicker		20-year HMA	
Secondary Category		**Secondary Category**		**Secondary Category**	
Rural		Design Life = 20 years		Rural	
Shoulder Category		**Shoulder Category**		**Shoulder Category**	
Bituminous		PCC		Bituminous	
Notes:		Notes:		Notes:	

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 2,742,990.22	$ 2,742,990.22	0	Construction	$ 6,217,468.75	$ 6,217,468.75	0	Construction	$ 4,137,814.53	$ 4,137,814.53
1		$ -	$ -	1		$ -	$ -	1		$ -	$ -
2		$ -	$ -	2		$ -	$ -	2		$ -	$ -
3	Crack Treatment	$ 44,774.15	$ 43,174.61	3		$ -	$ -	3		$ -	$ -
4		$ -	$ -	4		$ -	$ -	4		$ -	$ -
5		$ -	$ -	5		$ -	$ -	5		$ -	$ -
6		$ -	$ -	6		$ -	$ -	6		$ -	$ -
7	Seal	$ 177,680.99	$ 163,221.22	7		$ -	$ -	7		$ -	$ -
8		$ -	$ -	8		$ -	$ -	8	Crack Treatment	$ 22,449.23	$ 20,373.74
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12		$ -	$ -	12		$ -	$ -	12	Seal	$ 260,767.50	$ 225,453.75
13		$ -	$ -	13		$ -	$ -	13		$ -	$ -
14		$ -	$ -	14		$ -	$ -	14		$ -	$ -
15	Mill/Overlay	$ 2,901,737.60	$ 2,419,151.92	15		$ -	$ -	15		$ -	$ -
16		$ -	$ -	16		$ -	$ -	16		$ -	$ -
17		$ -	$ -	17		$ -	$ -	17		$ -	$ -
18	Crack Treatment	$ 44,774.15	$ 35,994.27	18		$ -	$ -	18		$ -	$ -
19		$ -	$ -	19		$ -	$ -	19		$ -	$ -
20		$ -	$ -	20	1st CPR	$ 3,682,666.42	$ 2,889,586.65	20	Mill/Overlay	$ 3,219,052.71	$ 2,525,814.37
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22	Seal	$ 177,680.99	$ 136,076.03	22		$ -	$ -	22		$ -	$ -
23		$ -	$ -	23		$ -	$ -	23	Crack Treatment	$ 44,774.15	$ 33,876.75
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27		$ -	$ -	27		$ -	$ -	27	Seal	$ 177,680.99	$ 128,070.75
28		$ -	$ -	28		$ -	$ -	28		$ -	$ -
29	Mill/Overlay	$ 2,901,737.60	$ 2,041,429.94	29		$ -	$ -	29		$ -	$ -
30		$ -	$ -	30		$ -	$ -	30		$ -	$ -
31		$ -	$ -	31		$ -	$ -	31		$ -	$ -
32	Crack Treatment	$ 44,774.15	$ 30,374.19	32		$ -	$ -	32		$ -	$ -
33		$ -	$ -	33		$ -	$ -	33		$ -	$ -
34		$ -	$ -	34		$ -	$ -	34		$ -	$ -
35	Remaining Life	$ (1,562,474.09)	$ (1,022,094.78)	35	Remaining Life	$ -	$ -	35	Remaining Life	$ (378,712.08)	$ (247,735.08)
LCCA - Net Present Cost/ per Mile			$ 6,590,317.62	LCCA - Net Present Cost/ per Mile			$ 9,107,055.40	LCCA - Net Present Cost/ per Mile			$ 6,823,668.81
Maintenance - Net Present Cost/per Mile			$ 3,847,327.40	Maintenance - Net Present Cost/per Mile			$ 2,889,586.65	Maintenance - Net Present Cost/per Mile			$ 2,685,854.28
Net Present Cost for Segment			$ 6,590,317.62	Net Present Cost for Segment			$ 9,107,055.40	Net Present Cost for Segment			$ 6,823,668.81
Maintenance - Net Present Cost for Segment			$ 3,847,327.40	Maintenance - Net Present Cost for Segment			$ 2,889,586.65	Maintenance - Net Present Cost for Segment			$ 2,685,854.28
Equivalent Annual Cost			232,477.16	Equivalent Annual Cost			321,256.50	Equivalent Annual Cost			240,708.75

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
4	2	12.5 WE (3,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (3,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
1.5		
Design Life	Shldr Thickness	
15	3	

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
4	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	Yes	
Sealed/UTBWC	ML Thickness	
Yes	6	
ML Top Lift/Jt spacing		
6		
Design Life	Shldr Thickness	
20	6	

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
4	2	12.5 WE (3,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (3,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
2		
Design Life	Shldr Thickness	
20	5	

35-Year Analysis Period

Project Number	Analysis Period
2319-20	35
Highway	**Discount Rate**
250	1.22%
Date	**Inflation Rate**
2/10/2020	1
Performed By	**Ia/(1+r)**
Ethan Ihlenfeld / Tom Meath	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	Medium Bit. Mill and Overlay-15 YR FIX $3,321,661.73	Whitetopping-20 YR FIX $5,557,116.57	Heavy Bit. Mill and Overlay-20 YR FIX $3,585,978.62	8.5 Miles
Segment #2 Net Present Cost	$0.00	$0.00	$0.00	0.0 Miles
Segment #3 Net Present Cost	$0.00	$0.00	$0.00	0.0 Miles
Segment #4 Net Present Cost	$0.00	$0.00	$0.00	0.0 Miles
Project Net Present Cost	**$3,321,661.73**	**$5,557,116.57**	**$3,585,978.62**	**Total**
% of Low Cost	**100.0%**	**167.3%**	**108.0%**	**8.5**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	8.46	1	8.46	1	8.46
ALT	Description	ALT	Description	ALT	Description
1	Medium Bit. Mill and Overlay-15 YR FIX	2	Whitetopping-20 YR FIX	3	Heavy Bit. Mill and Overlay-20 YR FIX
Pavement Type		**Pavement Type**		**Pavement Type**	
HMA		PCC		HMA	
Primary Category		**Primary Category**		**Primary Category**	
Overlay		6'x6', 5.0 in. or Thinner		20-year HMA	
Secondary Category		**Secondary Category**		**Secondary Category**	
Rural		Design Life = 20 years		Rural	
Shoulder Category		**Shoulder Category**		**Shoulder Category**	
Bituminous		PCC		Bituminous	
Notes:		Notes:		Notes:	

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 1,344,083.89	$ 1,344,083.89	0	Construction	$ 2,481,201.56	$ 2,481,201.56	0	Construction	$ 2,181,973.49	$ 2,181,973.49
1		$ -	$ -	1		$ -	$ -	1		$ -	$ -
2		$ -	$ -	2		$ -	$ -	2		$ -	$ -
3	Crack Treatment	$ 16,057.50	$ 15,483.85	3		$ -	$ -	3		$ -	$ -
4		$ -	$ -	4		$ -	$ -	4		$ -	$ -
5		$ -	$ -	5		$ -	$ -	5		$ -	$ -
6		$ -	$ -	6		$ -	$ -	6		$ -	$ -
7	Seal	$ 64,668.35	$ 59,405.61	7		$ -	$ -	7		$ -	$ -
8		$ -	$ -	8		$ -	$ -	8	Crack Treatment	$ 8,051.04	$ 7,306.70
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12		$ -	$ -	12		$ -	$ -	12	Seal	$ 110,844.14	$ 95,833.36
13		$ -	$ -	13		$ -	$ -	13		$ -	$ -
14		$ -	$ -	14		$ -	$ -	14		$ -	$ -
15	Mill/Overlay	$ 1,543,796.48	$ 1,287,048.91	15		$ -	$ -	15		$ -	$ -
16		$ -	$ -	16		$ -	$ -	16		$ -	$ -
17		$ -	$ -	17		$ -	$ -	17		$ -	$ -
18	Crack Treatment	$ 16,057.50	$ 12,908.74	18		$ -	$ -	18		$ -	$ -
19		$ -	$ -	19		$ -	$ -	19		$ -	$ -
20		$ -	$ -	20	1st CPR	$ 3,265,177.73	$ 2,562,006.14	20	Mill/Overlay	$ 1,755,161.20	$ 1,377,178.87
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22	Seal	$ 64,668.35	$ 49,525.91	22		$ -	$ -	22		$ -	$ -
23		$ -	$ -	23		$ -	$ -	23	Crack Treatment	$ 16,057.50	$ 12,149.33
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27		$ -	$ -	27		$ -	$ -	27	Seal	$ 64,668.35	$ 46,612.33
28		$ -	$ -	28		$ -	$ -	28		$ -	$ -
29	Mill/Overlay	$ 1,543,796.48	$ 1,086,091.44	29		$ -	$ -	29		$ -	$ -
30		$ -	$ -	30	R & R Mainline	$ 3,825,461.57	$ 2,658,850.11	30		$ -	$ -
31		$ -	$ -	31		$ -	$ -	31		$ -	$ -
32	Crack Treatment	$ 16,057.50	$ 10,893.19	32		$ -	$ -	32		$ -	$ -
33		$ -	$ -	33		$ -	$ -	33		$ -	$ -
34		$ -	$ -	34		$ -	$ -	34		$ -	$ -
35	Remaining Life	$ (831,275.03)	$ (543,779.81)	35	Remaining Life	$ (3,278,967.06)	$ (2,144,941.24)	35	Remaining Life	$ (206,489.55)	$ (135,075.45)
LCCA - Net Present Cost/ per Mile			$ 3,321,661.73	LCCA - Net Present Cost/ per Mile			$ 5,557,116.57	LCCA - Net Present Cost/ per Mile			$ 3,585,978.62
Maintenance - Net Present Cost/per Mile			$ 1,977,577.84	Maintenance - Net Present Cost/per Mile			$ 3,075,915.00	Maintenance - Net Present Cost/per Mile			$ 1,404,005.13
Net Present Cost for Segment			$ 3,321,661.73	Net Present Cost for Segment			$ 5,557,116.57	Net Present Cost for Segment			$ 3,585,978.62
Maintenance - Net Present Cost for Segment			$ 1,977,577.84	Maintenance - Net Present Cost for Segment			$ 3,075,915.00	Maintenance - Net Present Cost for Segment			$ 1,404,005.13
Equivalent Annual Cost			117,173.48	Equivalent Annual Cost			196,030.41	Equivalent Annual Cost			126,497.41

Total Lane Width	# of Lanes	Analysis Period
22	2	35
Total Shldr Width	# of Shldrs	ML Mix
0	2	12.5 WE (3,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
4	No	12.5 WE (3,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
1.5		
Design Life	Shldr Thickness	
15	0	

Total Lane Width	# of Lanes	Analysis Period
22	2	35
Total Shldr Width	# of Shldrs	ML Mix
0	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix
4	Yes	
Sealed/UTBWC	ML Thickness	
Yes	5	
ML Top Lift/Jt spacing		
6		
Design Life	Shldr Thickness	
20	0	

Total Lane Width	# of Lanes	Analysis Period
22	2	35
Total Shldr Width	# of Shldrs	ML Mix
0	2	12.5 WE (3,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
4	No	12.5 WE (3,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
2		
Design Life	Shldr Thickness	
20	0	

35-Year Analysis Period

Project Number	Analysis Period
2706-239	35
Highway	**Discount Rate**
7	1.22%
Date	**Inflation Rate**
4/15/2020	1
Performed By	**Ia/(1+r)**
EL	0.9879

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	Mill and overlay $4,180,761.75	SFDR (6"Mill, 2.5" Grade Raise) $5,584,811.91	20-year Whitetopping (6.5") $6,923,003.09	2.6 Miles
Segment #2 Net Present Cost	$0.00	$0.00	$0.00	0.0 Miles
Segment #3 Net Present Cost	$0.00	$0.00	$0.00	0.0 Miles
Segment #4 Net Present Cost	$0.00	$0.00	$0.00	0.0 Miles
Project Net Present Cost	**$4,180,761.75**	**$5,584,811.91**	**$6,923,003.09**	**Total**
% of Low Cost	**100.0%**	**133.6%**	**165.6%**	**2.6**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	2.574	1	2.574	1	2.574
ALT	**Description**	**ALT**	**Description**	**ALT**	**Description**
1	Mill and overlay	2	SFDR (6"Mill, 2.5" Grade Raise)	3	20-year Whitetopping (6.5")
Pavement Type		**Pavement Type**		**Pavement Type**	
HMA		HMA		PCC	
Primary Category		**Primary Category**		**Primary Category**	
Overlay		20-year HMA		6'x6', 5.5 in. or Thicker	
Secondary Category		**Secondary Category**		**Secondary Category**	
Urban		Urban		Design Life = 20 years	
Shoulder Category		**Shoulder Category**		**Shoulder Category**	
Thick Bit.		Thick Bit.		PCC	
Notes:		Notes:		Notes:	

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 2,390,628.93	$ 2,390,628.93	0	Construction	$ 4,607,031.82	$ 4,607,031.82	0	Construction	$ 5,863,131.30	$ 5,863,131.30
1		$ -	$ -	1		$ -	$ -	1		$ -	$ -
2		$ -	$ -	2		$ -	$ -	2		$ -	$ -
3	Crack Treatment	$ 10,676.93	$ 10,295.50	3		$ -	$ -	3		$ -	$ -
4		$ -	$ -	4		$ -	$ -	4		$ -	$ -
5		$ -	$ -	5		$ -	$ -	5		$ -	$ -
6		$ -	$ -	6		$ -	$ -	6		$ -	$ -
7	Seal	$ 50,285.91	$ 46,193.62	7		$ -	$ -	7		$ -	$ -
8		$ -	$ -	8	Crack Treatment	$ 5,353.29	$ 4,858.36	8		$ -	$ -
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12		$ -	$ -	12	Seal	$ 83,429.86	$ 72,131.59	12		$ -	$ -
13		$ -	$ -	13		$ -	$ -	13		$ -	$ -
14		$ -	$ -	14		$ -	$ -	14		$ -	$ -
15	Mill/Overlay	$ 1,352,790.63	$ 1,127,809.10	15		$ -	$ -	15		$ -	$ -
16		$ -	$ -	16		$ -	$ -	16		$ -	$ -
17		$ -	$ -	17		$ -	$ -	17		$ -	$ -
18	Crack Treatment	$ 10,676.93	$ 8,583.26	18		$ -	$ -	18		$ -	$ -
19		$ -	$ -	19		$ -	$ -	19		$ -	$ -
20		$ -	$ -	20	Mill/Overlay	$ 1,210,234.39	$ 949,604.65	20	1st CPR	$ 1,350,765.61	$ 1,059,871.80
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22	Seal	$ 50,285.91	$ 38,511.20	22		$ -	$ -	22		$ -	$ -
23		$ -	$ -	23	Crack Treatment	$ 10,676.93	$ 8,078.31	23		$ -	$ -
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27		$ -	$ -	27	Seal	$ 50,285.91	$ 36,245.61	27		$ -	$ -
28		$ -	$ -	28		$ -	$ -	28		$ -	$ -
29	Mill/Overlay	$ 1,569,944.60	$ 1,104,487.16	29		$ -	$ -	29		$ -	$ -
30		$ -	$ -	30		$ -	$ -	30		$ -	$ -
31		$ -	$ -	31		$ -	$ -	31		$ -	$ -
32	Crack Treatment	$ 10,676.93	$ 7,243.09	32		$ -	$ -	32		$ -	$ -
33		$ -	$ -	33		$ -	$ -	33		$ -	$ -
34		$ -	$ -	34		$ -	$ -	34		$ -	$ -
35	Remaining Life	$ (845,354.78)	$ (552,990.11)	35	Remaining Life	$ (142,380.52)	$ (93,138.43)	35	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 4,180,761.75	LCCA - Net Present Cost/ per Mile			$ 5,584,811.91	LCCA - Net Present Cost/ per Mile			$ 6,923,003.09
Maintenance - Net Present Cost/per Mile			$ 1,790,132.82	Maintenance - Net Present Cost/per Mile			$ 977,780.09	Maintenance - Net Present Cost/per Mile			$ 1,059,871.80
Net Present Cost for Segment			$ 4,180,761.75	Net Present Cost for Segment			$ 5,584,811.91	Net Present Cost for Segment			$ 6,923,003.09
Maintenance - Net Present Cost for Segment			$ 1,790,132.82	Maintenance - Net Present Cost for Segment			$ 977,780.09	Maintenance - Net Present Cost for Segment			$ 1,059,871.80
Equivalent Annual Cost			147,478.72	Equivalent Annual Cost			197,007.38	Equivalent Annual Cost			244,212.83

Total Lane Width	# of Lanes	Analysis Period
48	4	35
Total Shldr Width	# of Shldrs	ML Mix
20	4	12.5 WE (4,F)
Rounding Agg. Width	white/ >7 milliom	SL Mix
0	No	12.5 WE (3,C)
Sealed/UTBWC	ML Thickness	
Yes		
ML Top Lift/lt spacing		
2		
Design Life	Shldr Thickness	
15	7	

Total Lane Width	# of Lanes	Analysis Period
48	4	35
Total Shldr Width	# of Shldrs	ML Mix
20	4	12.5 WE (4,F)
Rounding Agg. Width	white/ >7 milliom	SL Mix
0	No	12.5 WE (3,C)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/lt spacing		
2		
Design Life	Shldr Thickness	
20	8.5	

Total Lane Width	# of Lanes	Analysis Period
48	4	35
Total Shldr Width	# of Shldrs	ML Mix
20	4	
Rounding Agg. Width	white/ >7 milliom	SL Mix
0	Yes	
Sealed/UTBWC	ML Thickness	
No	6.5	
ML Top Lift/lt spacing		
6		
Design Life	Shldr Thickness	
20	6.5	

50-Year Analysis Period

Project Number	Analysis Period
3006-41	50
Highway	**Discount Rate**
95	1.22%
Date	**Inflation Rate**
10/1/2019	1
Performed By	**Ia/(1+r)**
Samuel Nigon	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	5.5" Mill, 7.5" FDR, 5.5" HMA w/3" Bit Shld $8,799,566.55	7" PCC with 3" Bit Shoulder $11,651,586.11	5" Mill, 6" White-topping w/ 3" Bit Shld $12,305,961.52	11.4 Miles
Segment #2 Net Present Cost	$0.00	$0.00	$0.00	0.0 Miles
Segment #3 Net Present Cost	$0.00	$0.00	$0.00	0.0 Miles
Segment #4 Net Present Cost	$0.00	$0.00	$0.00	0.0 Miles
Project Net Present Cost	**$8,799,566.55**	**$11,651,586.11**	**$12,305,961.52**	**Total**
% of Low Cost	**100.0%**	**132.4%**	**139.8%**	**11.4**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	11.42	1	11.42	1	11.42
ALT	Description	ALT	Description	ALT	Description
1	5.5" Mill, 7.5" FDR, 5.5" HMA w/3" Bit Shld	2	7" PCC with 3" Bit Shoulder	3	5" Mill, 6" White-topping w/ 3" Bit Shld
Pavement Type		**Pavement Type**		**Pavement Type**	
HMA		PCC		PCC	
Primary Category		**Primary Category**		**Primary Category**	
20-year HMA		> 11' Joint Spacing		6'x6', 5.5 in. or Thicker	
Secondary Category		**Secondary Category**		**Secondary Category**	
Rural		Design Life = 35 years		Design Life = 20 years	
Shoulder Category		**Shoulder Category**		**Shoulder Category**	
Bituminous		Thin Bit.		Thin Bit.	
Notes:		Notes:		Notes:	

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 4,750,359.79	$ 4,750,359.79	0	Construction	$ 7,737,054.70	$ 7,737,054.70	0	Construction	$ 6,350,927.58	$ 6,350,927.58
1		$ -	$ -	1		$ -	$ -	1		$ -	$ -
2		$ -	$ -	2		$ -	$ -	2		$ -	$ -
3		$ -	$ -	3		$ -	$ -	3		$ -	$ -
4		$ -	$ -	4		$ -	$ -	4		$ -	$ -
5		$ -	$ -	5		$ -	$ -	5		$ -	$ -
6		$ -	$ -	6		$ -	$ -	6		$ -	$ -
7		$ -	$ -	7		$ -	$ -	7		$ -	$ -
8	Crack Treatment	$ 11,837.61	$ 10,743.19	8		$ -	$ -	8		$ -	$ -
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12	Seal	$ 172,876.65	$ 149,465.29	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	$ 2,982,393.37	$ 2,340,120.74	20	1st CPR	$ 3,056,917.95	$ 2,398,596.10	20	1st CPR	$ 4,172,607.35	$ 3,274,016.47
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22		$ -	$ -	22		$ -	$ -	22		$ -	$ -
23	Crack Treatment	$ 23,609.67	$ 17,863.40	23		$ -	$ -	23		$ -	$ -
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27	Seal	$ 103,273.77	$ 74,438.74	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	2nd CPR	$ 2,317,407.05	$ 1,515,935.31	35	R & R Mainline	$ 5,675,734.98	$ 3,712,790.59
36		$ -	$ -	36		$ -	$ -	36		$ -	$ -
37	Mill/Overlay	$ 2,707,923.48	$ 1,728,948.54	37		$ -	$ -	37		$ -	$ -
38		$ -	$ -	38		$ -	$ -	38		$ -	$ -
39		$ -	$ -	39		$ -	$ -	39		$ -	$ -
40	Crack Treatment	$ 23,609.67	$ 14,535.72	40		$ -	$ -	40		$ -	$ -
41		$ -	$ -	41		$ -	$ -	41		$ -	$ -
42		$ -	$ -	42		$ -	$ -	42		$ -	$ -
43		$ -	$ -	43		$ -	$ -	43		$ -	$ -
44	Seal	$ 103,273.77	$ 60,571.93	44		$ -	$ -	44		$ -	$ -
45		$ -	$ -	45		$ -	$ -	45		$ -	$ -
46		$ -	$ -	46		$ -	$ -	46		$ -	$ -
47		$ -	$ -	47		$ -	$ -	47		$ -	$ -
48		$ -	$ -	48		$ -	$ -	48		$ -	$ -
49		$ -	$ -	49		$ -	$ -	49		$ -	$ -
50	Remaining Life	$ (637,158.47)	$ (347,480.80)	50	Remaining Life	$ -	$ -	50	Remaining Life	$ (1,891,911.66)	$ (1,031,773.11)
LCCA - Net Present Cost/ per Mile			$ 8,799,566.55	LCCA - Net Present Cost/ per Mile			$ 11,651,586.11	LCCA - Net Present Cost/ per Mile			$ 12,305,961.52
Maintenance - Net Present Cost/per Mile			$ 4,049,206.75	Maintenance - Net Present Cost/per Mile			$ 3,914,531.41	Maintenance - Net Present Cost/per Mile			$ 5,955,033.95
Net Present Cost for Segment			$ 8,799,566.55	Net Present Cost for Segment			$ 11,651,586.11	Net Present Cost for Segment			$ 12,305,961.52
Maintenance - Net Present Cost for Segment			$ 4,049,206.75	Maintenance - Net Present Cost for Segment			$ 3,914,531.41	Maintenance - Net Present Cost for Segment			$ 5,955,033.95
Equivalent Annual Cost			236,131.30	Equivalent Annual Cost			312,663.60	Equivalent Annual Cost			330,223.38

Total Lane Width	# of Lanes	Analysis Period
24	2	50
Total Shldr Width	# of Shldrs	ML Mix
16	2	9.5 WE (3,C)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (2,C)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
2		
Design Life	Shldr Thickness	
20	3	

Total Lane Width	# of Lanes	Analysis Period
26	2	50
Total Shldr Width	# of Shldrs	ML Mix
14	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (2,B)
Sealed/UTBWC	ML Thickness	
No	7	
ML Top Lift/Jt spacing		
15		
Design Life	Shldr Thickness	
35	3	

Total Lane Width	# of Lanes	Analysis Period
26	2	50
Total Shldr Width	# of Shldrs	ML Mix
14	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	Yes	12.5 WE (2,B)
Sealed/UTBWC	ML Thickness	
No	6	
ML Top Lift/Jt spacing		
6		
Design Life	Shldr Thickness	
20	3	

50-Year Analysis Period

Project Number	Analysis Period
3104-60	50
Highway	**Discount Rate**
2	1.02%
Date	**Inflation Rate**
8/19/2020	1
Performed By	**Ia/(1+r)**
Ed Welch	0.9899

Notes:

LCCA SUMMARY	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	Full Depth Reclaim	20 year PCC	35 year PCC	15.3
Net Present Cost	$11,777,448.74	$18,511,136.32	$22,102,778.71	Miles
Segment #2				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$11,777,448.74**	**$18,511,136.32**	**$22,102,778.71**	**Total**
% of Low Cost	**100.0%**	**157.2%**	**187.7%**	**15.3**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	15.3	1	15.3	1	15.3
ALT	**Description**	**ALT**	**Description**	**ALT**	**Description**
1	Full Depth Reclaim	2	20 year PCC	3	35 year PCC
Pavement Type		**Pavement Type**		**Pavement Type**	
HMA		PCC		PCC	
Primary Category		**Primary Category**		**Primary Category**	
20-year HMA		6'x6', 5.0 in. or Thinner		> 11' Joint Spacing	
Secondary Category		**Secondary Category**		**Secondary Category**	
Rural		Design Life = 20 years		Design Life = 35 years	
Shoulder Category		**Shoulder Category**		**Shoulder Category**	
Bituminous		Thick Bit.		Thick Bit.	
Notes:		Notes:		Notes:	

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 7,057,350.35	$ 7,057,350.35	0	Construction	$ 7,984,420.78	$ 7,984,420.78	0	Construction	$ 16,778,819.63	$ 16,778,819.63
1		$ -	$ -	1		$ -	$ -	1		$ -	$ -
2		$ -	$ -	2		$ -	$ -	2		$ -	$ -
3		$ -	$ -	3		$ -	$ -	3		$ -	$ -
4		$ -	$ -	4		$ -	$ -	4		$ -	$ -
5		$ -	$ -	5		$ -	$ -	5		$ -	$ -
6		$ -	$ -	6		$ -	$ -	6		$ -	$ -
7		$ -	$ -	7		$ -	$ -	7		$ -	$ -
8	Crack Treatment	$ 15,840.95	$ 14,605.70	8		$ -	$ -	8		$ -	$ -
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12	Seal	$ 228,822.78	$ 202,586.68	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	$ 3,140,249.19	$ 2,563,402.65	20	1st CPR	$ 7,046,208.66	$ 5,751,858.80	20	1st CPR	$ 3,715,558.79	$ 3,033,031.03
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22		$ -	$ -	22		$ -	$ -	22		$ -	$ -
23	Crack Treatment	$ 31,594.18	$ 25,017.14	23		$ -	$ -	23		$ -	$ -
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27	Seal	$ 129,319.84	$ 98,325.54	27		$ -	$ -	27		$ -	$ -
28		$ -	$ -	28		$ -	$ -	28		$ -	$ -
29		$ -	$ -	29		$ -	$ -	29		$ -	$ -
30		$ -	$ -	30	R & R Mainline	$ 9,957,825.33	$ 7,344,184.50	30		$ -	$ -
31		$ -	$ -	31		$ -	$ -	31		$ -	$ -
32		$ -	$ -	32		$ -	$ -	32		$ -	$ -
33		$ -	$ -	33		$ -	$ -	33		$ -	$ -
34		$ -	$ -	34		$ -	$ -	34		$ -	$ -
35		$ -	$ -	35		$ -	$ -	35	2nd CPR	$ 3,267,903.30	$ 2,290,928.05
36		$ -	$ -	36		$ -	$ -	36		$ -	$ -
37	Mill/Overlay	$ 3,140,249.19	$ 2,157,206.09	37		$ -	$ -	37		$ -	$ -
38		$ -	$ -	38		$ -	$ -	38		$ -	$ -
39		$ -	$ -	39		$ -	$ -	39		$ -	$ -
40	Crack Treatment	$ 31,594.18	$ 21,052.93	40		$ -	$ -	40		$ -	$ -
41		$ -	$ -	41		$ -	$ -	41		$ -	$ -
42		$ -	$ -	42		$ -	$ -	42		$ -	$ -
43		$ -	$ -	43		$ -	$ -	43		$ -	$ -
44	Seal	$ 129,319.84	$ 82,744.88	44		$ -	$ -	44		$ -	$ -
45		$ -	$ -	45		$ -	$ -	45		$ -	$ -
46		$ -	$ -	46		$ -	$ -	46		$ -	$ -
47		$ -	$ -	47		$ -	$ -	47		$ -	$ -
48		$ -	$ -	48		$ -	$ -	48		$ -	$ -
49		$ -	$ -	49		$ -	$ -	49		$ -	$ -
50	Remaining Life	$ (738,882.16)	$ (444,843.22)	50	Remaining Life	$ (4,267,639.43)	$ (2,569,327.76)	50	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 11,777,448.74	LCCA - Net Present Cost/ per Mile			$ 18,511,136.32	LCCA - Net Present Cost/ per Mile			$ 22,102,778.71
Maintenance - Net Present Cost/per Mile			$ 4,720,098.39	Maintenance - Net Present Cost/per Mile			$ 10,526,715.54	Maintenance - Net Present Cost/per Mile			$ 5,323,959.08
Net Present Cost for Segment			$ 11,777,448.74	Net Present Cost for Segment			$ 18,511,136.32	Net Present Cost for Segment			$ 22,102,778.71
Maintenance - Net Present Cost for Segment			$ 4,720,098.39	Maintenance - Net Present Cost for Segment			$ 10,526,715.54	Maintenance - Net Present Cost for Segment			$ 5,323,959.08
Equivalent Annual Cost			301,871.23	Equivalent Annual Cost			474,464.34	Equivalent Annual Cost			566,522.78

Total Lane Width	# of Lanes	Analysis Period
24	2	50
Total Shldr Width	# of Shldrs	ML Mix
20	2	9.5 WE (4,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	9.5 WE (4,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
1.5		
Design Life	Shldr Thickness	
20	3	

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

Total Lane Width	# of Lanes	Analysis Period
24	2	50
Total Shldr Width	# of Shldrs	ML Mix
20	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	9.5 WE (4,B)
Sealed/UTBWC	ML Thickness	
No	7.5	
ML Top Lift/Jt spacing		
12		
Design Life	Shldr Thickness	
35	4.5	

35-Year Analysis Period

Project Number	Analysis Period
3106-24	35
Highway	**Discount Rate**
6	1.22%
Date	**Inflation Rate**
1/28/2020	1
Performed By	**Ia/(1+r)**
Scott Zeidler	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	3" Mill & Overlay	6" Unbonded Concrete Overlay	4" Mill w/4" CIR & 4" Bit Overlay	10.3
Net Present Cost	$5,126,406.95	$6,129,971.46	$5,473,262.23	Miles
Segment #2				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$5,126,406.95**	**$6,129,971.46**	**$5,473,262.23**	**Total**
% of Low Cost	**100.0%**	**119.6%**	**106.8%**	**10.3**

Segment 1

SEG	Length
1	10.275
ALT	Description
1	3" Mill & Overlay
Pavement Type	
HMA	
Primary Category	
Overlay	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 2,080,461.98	$ 2,080,461.98
1		$ -	$ -
2		$ -	$ -
3	Crack Treatment	$ 21,251.48	$ 20,492.27
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7	Seal	$ 90,062.56	$ 82,733.22
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14	Mill/Overlay	$ 2,065,352.64	$ 1,742,872.24
15		$ -	$ -
16		$ -	$ -
17	Crack Treatment	$ 21,251.48	$ 17,292.65
18		$ -	$ -
19		$ -	$ -
20		$ -	$ -
21	Seal	$ 90,062.56	$ 69,815.41
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Mill/Overlay	$ 2,065,352.64	$ 1,488,686.41
28		$ -	$ -
29		$ -	$ -
30	Crack Treatment	$ 21,251.48	$ 14,770.63
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34	Seal	$ 90,062.56	$ 59,633.31
35	Remaining Life	$ (688,450.88)	$ (450,351.18)
LCCA - Net Present Cost/ per Mile			$ 5,126,406.95
Maintenance - Net Present Cost/per Mile			$ 3,045,944.96
Net Present Cost for Segment			$ 5,126,406.95
Maintenance - Net Present Cost for Segment			$ 3,045,944.96
Equivalent Annual Cost			180,836.89

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
4	2	9.5 WE (3,C)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	9.5 WE (3,C)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
1.5		
Design Life	Shldr Thickness	
14	3	

SEG	Length
1	10.275
ALT	Description
2	6" Unbonded Concrete Overlay
Pavement Type	
PCC	
Primary Category	
> 11' Joint Spacing	
Secondary Category	
Design Life = 20 years	
Shoulder Category	
PCC	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 4,199,877.49	$ 4,199,877.49
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 2,459,830.12	$ 1,930,093.97
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 6,129,971.46
Maintenance - Net Present Cost/per Mile			$ 1,930,093.97
Net Present Cost for Segment			$ 6,129,971.46
Maintenance - Net Present Cost for Segment			$ 1,930,093.97
Equivalent Annual Cost			216,238.19

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
4	2	9.5 WE (3,C)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	Yes	9.5 WE (3,C)
Sealed/UTBWC	ML Thickness	
No	6	
ML Top Lift/Jt spacing		
15		
Design Life	Shldr Thickness	
20	6	

SEG	Length
1	10.275
ALT	Description
3	4" Mill w/4" CIR & 4" Bit Overlay
Pavement Type	
HMA	
Primary Category	
20-year HMA	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 3,613,216.24	$ 3,613,216.24
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 10,655.24	$ 9,670.14
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 152,035.79	$ 131,446.75
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 2,314,491.42	$ 1,816,054.66
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 21,251.48	$ 16,079.16
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 90,062.56	$ 64,916.23
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ (272,293.11)	$ (178,120.95)
LCCA - Net Present Cost/ per Mile			$ 5,473,262.23
Maintenance - Net Present Cost/per Mile			$ 1,860,045.99
Net Present Cost for Segment			$ 5,473,262.23
Maintenance - Net Present Cost for Segment			$ 1,860,045.99
Equivalent Annual Cost			193,072.40

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
4	2	9.5 WE (3,C)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	9.5 WE (3,C)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
2		
Design Life	Shldr Thickness	
20	4	

50-Year Analysis Period

Project Number	Analysis Period
3280-131	50
Highway	**Discount Rate**
	1.22%
Date	**Inflation Rate**
	1
Performed By	**Ia/(1+r)**
	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	Bituminous Reconstruct $14,095,029.08	UBOL - 35 year (doweled) $11,006,761.94	UBOL - 20 year (undoweled) $11,549,312.29	11.0 Miles
Segment #2 Net Present Cost	$0.00	$0.00	$0.00	0.0 Miles
Segment #3 Net Present Cost	$0.00	$0.00	$0.00	0.0 Miles
Segment #4 Net Present Cost	$0.00	$0.00	$0.00	0.0 Miles
Project Net Present Cost	**$14,095,029.08**	**$11,006,761.94**	**$11,549,312.29**	**Total**
% of Low Cost	**128.1%**	**100.0%**	**104.9%**	**11.0**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	11.0	1	11.0	1	11.0
ALT	Description	ALT	Description	ALT	Description
1	Bituminous Reconstruct	2	UBOL - 35 year (doweled)	3	UBOL - 20 year (undoweled)
Pavement Type		**Pavement Type**		**Pavement Type**	
HMA		PCC		PCC	
Primary Category		**Primary Category**		**Primary Category**	
20-year HMA		> 11' Joint Spacing		6'x6', 5.5 in. or Thicker	
Secondary Category		**Secondary Category**		**Secondary Category**	
Rural		Design Life = 35 years		Design Life = 20 years	
Shoulder Category		**Shoulder Category**		**Shoulder Category**	
Bituminous		Thick Bit.		Thick Bit.	
Notes:		Notes:		Notes:	

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 10,046,591.54	$ 10,046,591.54	0	Construction	$ 7,508,061.86	$ 7,508,061.86	0	Construction	$ 6,141,963.31	$ 6,141,963.31
1		$ -	$ -	1		$ -	$ -	1		$ -	$ -
2		$ -	$ -	2		$ -	$ -	2		$ -	$ -
3		$ -	$ -	3		$ -	$ -	3		$ -	$ -
4		$ -	$ -	4		$ -	$ -	4		$ -	$ -
5		$ -	$ -	5		$ -	$ -	5		$ -	$ -
6		$ -	$ -	6		$ -	$ -	6		$ -	$ -
7		$ -	$ -	7		$ -	$ -	7		$ -	$ -
8	Crack Treatment	$ 12,823.41	$ 11,637.85	8		$ -	$ -	8		$ -	$ -
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12	Seal	$ 183,154.58	$ 158,351.36	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	$ 2,975,706.53	$ 2,334,873.94	20	1st CPR	$ 2,399,865.31	$ 1,883,042.88	20	1st CPR	$ 3,592,546.10	$ 2,818,874.17
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22		$ -	$ -	22		$ -	$ -	22		$ -	$ -
23	Crack Treatment	$ 25,575.81	$ 19,351.02	23		$ -	$ -	23		$ -	$ -
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27	Seal	$ 108,797.37	$ 78,420.10	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	2nd CPR	$ 2,469,851.69	$ 1,615,657.20	35	R & R Mainline	$ 5,479,821.41	$ 3,584,633.43
36		$ -	$ -	36		$ -	$ -	36		$ -	$ -
37	Mill/Overlay	$ 2,678,085.02	$ 1,709,897.36	37		$ -	$ -	37		$ -	$ -
38		$ -	$ -	38		$ -	$ -	38		$ -	$ -
39		$ -	$ -	39		$ -	$ -	39		$ -	$ -
40	Crack Treatment	$ 25,575.81	$ 15,746.21	40		$ -	$ -	40		$ -	$ -
41		$ -	$ -	41		$ -	$ -	41		$ -	$ -
42		$ -	$ -	42		$ -	$ -	42		$ -	$ -
43		$ -	$ -	43		$ -	$ -	43		$ -	$ -
44	Seal	$ 108,797.37	$ 63,811.62	44		$ -	$ -	44		$ -	$ -
45		$ -	$ -	45		$ -	$ -	45		$ -	$ -
46		$ -	$ -	46		$ -	$ -	46		$ -	$ -
47		$ -	$ -	47		$ -	$ -	47		$ -	$ -
48		$ -	$ -	48		$ -	$ -	48		$ -	$ -
49		$ -	$ -	49		$ -	$ -	49		$ -	$ -
50	Remaining Life	$ (630,137.65)	$ (343,651.93)	50	Remaining Life	$ -	$ -	50	Remaining Life	$ (1,826,607.14)	$ (996,158.63)
LCCA - Net Present Cost/ per Mile			$ 14,095,029.08	LCCA - Net Present Cost/ per Mile			$ 11,006,761.94	LCCA - Net Present Cost/ per Mile			$ 11,549,312.29
Maintenance - Net Present Cost/per Mile			$ 4,048,437.54	Maintenance - Net Present Cost/per Mile			$ 3,498,700.08	Maintenance - Net Present Cost/per Mile			$ 5,407,348.98
Net Present Cost for Segment			$ 14,095,029.08	Net Present Cost for Segment			$ 11,006,761.94	Net Present Cost for Segment			$ 11,549,312.29
Maintenance - Net Present Cost for Segment			$ 4,048,437.54	Maintenance - Net Present Cost for Segment			$ 3,498,700.08	Maintenance - Net Present Cost for Segment			$ 5,407,348.98
Equivalent Annual Cost			378,231.98	Equivalent Annual Cost			295,360.11	Equivalent Annual Cost			309,919.14

Total Lane Width	# of Lanes	Analysis Period
27	2	50
Total Shldr Width	# of Shldrs	ML Mix
10	1	12.5 WE (4,8)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (3,8)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
2		
Design Life	Shldr Thickness	
20	4	

Total Lane Width	# of Lanes	Analysis Period
29	2	50
Total Shldr Width	# of Shldrs	ML Mix
8	1	
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (3,8)
Sealed/UTBWC	ML Thickness	
No	7	
ML Top Lift/Jt spacing		
15		
Design Life	Shldr Thickness	
35	4	

Total Lane Width	# of Lanes	Analysis Period
29	2	50
Total Shldr Width	# of Shldrs	ML Mix
8	1	
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (3,8)
Sealed/UTBWC	ML Thickness	
Yes	6	
ML Top Lift/Jt spacing		
6		
Design Life	Shldr Thickness	
20	4	

35-Year Analysis Period

Project Number	Analysis Period
3804-61	35
Highway	**Discount Rate**
TH 61	1.22%
Date	**Inflation Rate**
5/29/2020	1
Performed By	**Ia/(1+r)**
Sarah and Amy	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	3" mill and 3" overlay	remove all HMA and pave 4"	unbonded concrete overlay	13.7
Net Present Cost	$6,649,407.96	$6,719,749.69	$12,655,224.30	Miles
Segment #2				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$6,649,407.96**	**$6,719,749.69**	**$12,655,224.30**	**Total**
% of Low Cost	**100.0%**	**101.1%**	**190.3%**	**13.7**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	13.7	1	13.7	1	13.7
ALT	Description	ALT	Description	ALT	Description
1	3" mill and 3" overlay	2	remove all HMA and pave 4"	3	unbonded concrete overlay
Pavement Type		Pavement Type		Pavement Type	
HMA		HMA		PCC	
Primary Category		Primary Category		Primary Category	
Overlay		20-year HMA		> 11' Joint Spacing	
Secondary Category		Secondary Category		Secondary Category	
Rural		Rural		Design Life = 20 years	
Shoulder Category		Shoulder Category		Shoulder Category	
Bituminous		Bituminous		Thick Bit.	
Notes:		Notes:		Notes:	

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 2,202,584.14	$ 2,202,584.14	0	Construction	$ 4,329,936.71	$ 4,329,936.71	0	Construction	$ 9,482,937.58	$ 9,482,937.58
1		$ -	$ -	1		$ -	$ -	1		$ -	$ -
2		$ -	$ -	2		$ -	$ -	2		$ -	$ -
3	Crack Treatment	$ 28,302.72	$ 27,291.61	3		$ -	$ -	3		$ -	$ -
4		$ -	$ -	4		$ -	$ -	4		$ -	$ -
5		$ -	$ -	5		$ -	$ -	5		$ -	$ -
6		$ -	$ -	6		$ -	$ -	6		$ -	$ -
7	Seal	$ 120,853.55	$ 111,018.43	7		$ -	$ -	7		$ -	$ -
8		$ -	$ -	8	Crack Treatment	$ 14,190.65	$ 12,878.69	8		$ -	$ -
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12		$ -	$ -	12	Seal	$ 203,063.51	$ 175,564.17	12		$ -	$ -
13	Mill/Overlay	$ 2,666,518.25	$ 2,277,625.05	13		$ -	$ -	13		$ -	$ -
14		$ -	$ -	14		$ -	$ -	14		$ -	$ -
15		$ -	$ -	15		$ -	$ -	15		$ -	$ -
16	Crack Treatment	$ 28,302.72	$ 23,311.32	16		$ -	$ -	16		$ -	$ -
17		$ -	$ -	17		$ -	$ -	17		$ -	$ -
18		$ -	$ -	18		$ -	$ -	18		$ -	$ -
19		$ -	$ -	19		$ -	$ -	19		$ -	$ -
20	Seal	$ 120,853.55	$ 94,827.16	20	Mill/Overlay	$ 2,957,307.52	$ 2,320,437.25	20	1st CPR	$ 4,042,956.71	$ 3,172,286.71
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22		$ -	$ -	22		$ -	$ -	22		$ -	$ -
23		$ -	$ -	23	Crack Treatment	$ 28,302.72	$ 21,414.23	23		$ -	$ -
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25	Mill/Overlay	$ 2,666,518.25	$ 1,969,183.71	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27		$ -	$ -	27	Seal	$ 120,853.55	$ 87,110.08	27		$ -	$ -
28	Crack Treatment	$ 28,302.72	$ 20,154.44	28		$ -	$ -	28		$ -	$ -
29		$ -	$ -	29		$ -	$ -	29		$ -	$ -
30		$ -	$ -	30		$ -	$ -	30		$ -	$ -
31		$ -	$ -	31		$ -	$ -	31		$ -	$ -
32	Seal	$ 120,853.55	$ 81,985.45	32		$ -	$ -	32		$ -	$ -
33		$ -	$ -	33		$ -	$ -	33		$ -	$ -
34		$ -	$ -	34		$ -	$ -	34		$ -	$ -
35	Remaining Life	$ (242,410.75)	$ (158,573.36)	35	Remaining Life	$ (347,918.53)	$ (227,591.43)	35	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 6,649,407.96	LCCA - Net Present Cost/ per Mile			$ 6,719,749.69	LCCA - Net Present Cost/ per Mile			$ 12,655,224.30
Maintenance - Net Present Cost/per Mile			$ 4,446,823.82	Maintenance - Net Present Cost/per Mile			$ 2,389,812.99	Maintenance - Net Present Cost/per Mile			$ 3,172,286.71
Net Present Cost for Segment			$ 6,649,407.96	Net Present Cost for Segment			$ 6,719,749.69	Net Present Cost for Segment			$ 12,655,224.30
Maintenance - Net Present Cost for Segment			$ 4,446,823.82	Maintenance - Net Present Cost for Segment			$ 2,389,812.99	Maintenance - Net Present Cost for Segment			$ 3,172,286.71
Equivalent Annual Cost			234,561.60	Equivalent Annual Cost			237,042.95	Equivalent Annual Cost			446,420.15

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
14	2	9.5 WE (4,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	9.5 WE (4,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
1.5		
Design Life	Shldr Thickness	
13	4	

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
14	2	9.5 WE (4,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	9.5 WE (4,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
2		
Design Life	Shldr Thickness	
20	4	

Total Lane Width	# of Lanes	Analysis Period
27	2	35
Total Shldr Width	# of Shldrs	ML Mix
11	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (3,B)
Sealed/UTBWC	ML Thickness	
No	7	
ML Top Lift/Jt spacing		
15		
Design Life	Shldr Thickness	
20	4	

50-Year Analysis Period

Project Number	Analysis Period
HWA 1L	50
Highway	Discount Rate
4L	3.0%
Date	Inflation Rate
14-Oct-2021	4
Performed By	Split Lvl
Mike Schaub	12.5%

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	FDR and Overlay	BCOA	Concrete Reconstruct	3.5
Net Present Cost	$2,277,004.10	$3,536,185.72	$4,620,837.38	Miles
Segment #2	FDR and Overlay	BCOA	Concrete Reconstruct	12.9
Net Present Cost	$9,714,906.36	$15,102,532.73	$19,731,528.07	Miles
Segment #3	Medium Lane Reconstruct	Concrete Reconstruct		0.4
Net Present Cost	$653,698.33	$486,907.13		Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$11,309,528.91**	**$14,861,833.31**	**$18,890,813.37**	**Total**
% of Low Cost	**100.0%**	**132.6%**	**168.5%**	**16.8**

Segment 1

SEG	Length
1	3.5
ALT	Description
1	FDR and Overlay
2	BCOA
3	Concrete Reconstruct

Pavement Type	Pavement Type	Pavement Type
HMA	RCC	RCC
Primary Category	Primary Category	Primary Category
20 year HMA	Sub-Urban Category	Sub-Urban Category
Secondary Category	Secondary Category	Secondary Category
Rural	Design Life = 20 years	Design Life = 35 years
Shoulder Category	Shoulder Category	Shoulder Category
Aggregate	Aggregate	Aggregate
Notes:	Notes:	Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 1,137,408.38	$ 1,137,408.38
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 4,220.38	$ 3,833.10
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 59,417.56	$ 47,912.78
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 834,927.18	$ 655,121.43
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 8,423.76	$ 6,373.54
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 32,243.40	$ 23,241.46
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36		$ -	$ -
37	Mill/Overlay	$ 742,940.14	$ 474,350.66
38		$ -	$ -
39		$ -	$ -
40	Crack Treatment	$ 8,423.76	$ 5,186.24
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44	Seal	$ 32,243.40	$ 18,911.92
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (174,809.45)	$ (91,334.28)
LCCA - Net Present Cost/ per Mile			$ 2,277,004.10
Maintenance - Net Present Cost/per Mile			$ 1,139,157.23
Net Present Cost for Segment			$ 2,277,004.10
Maintenance - Net Present Cost for Segment			$ 1,139,157.23
Equivalent Annual Cost			$3,332.30

Year	Activity	Cost	Present Cost
0	Construction	$ 1,110,113.61	$ 1,110,113.61
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 1,603,243.69	$ 1,257,993.21
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30	R & R Mainline	$ 1,582,779.78	$ 1,000,090.79
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (879,234.19)	$ (369,936.39)
LCCA - Net Present Cost/ per Mile			$ 1,968,245.71
Maintenance - Net Present Cost/per Mile			$ 1,968,245.71
Net Present Cost for Segment			$ 1,968,245.71
Maintenance - Net Present Cost for Segment			$ 1,968,245.71
Equivalent Annual Cost			$3,140.79

Year	Activity	Cost	Present Cost
0	Construction	$ 3,668,274.93	$ 3,668,274.93
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 613,192.68	$ 481,138.71
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34	2nd CPR	$ 732,901.40	$ 479,463.98
35		$ -	$ -
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (644,267.67)	$ (311,374.23)
LCCA - Net Present Cost/ per Mile			$ 4,168,814.46
Maintenance - Net Present Cost/per Mile			$ 4,456,219.81
Net Present Cost for Segment			$ 4,168,814.46
Maintenance - Net Present Cost for Segment			$ 4,456,219.81
Equivalent Annual Cost			$13,445.79

Total Lane Width	24	# of Lanes	2
Total Shldr Width	10	# of Shldrs	50
Rounding Agg. Width	12	Mi./Mo.	12.5 WE (4.8)
Seal(w/o)/TSWHC	No	Mill/Overlay > 2 million	Si. Mix
ML Top Lift/ch spacing	2	ML Thickness	12.5 WE (4.8)
Design Life	20	Shldr Thickness	10

Total Lane Width	24	# of Lanes	2
Total Shldr Width	10	# of Shldrs	50
Rounding Agg. Width	12	Mi./Mo.	Mi. Mix
Seal(w/o)/TSWHC	Yes	Mill/Overlay > 2 million	Si. Mix
ML Top Lift/ch spacing	2	ML Thickness	5
Design Life	20	Shldr Thickness	5

Total Lane Width	24	# of Lanes	2
Total Shldr Width	10	# of Shldrs	50
Rounding Agg. Width	12	Mi./Mo.	Mi. Mix
Seal(w/o)/TSWHC	No	Mill/Overlay > 2 million	Si. Mix
ML Top Lift/ch spacing	2	ML Thickness	8
Design Life	20	Shldr Thickness	8

Segment 2

SEG	Length
2	12.9
ALT	Description
1	FDR and Overlay
2	BCOA
3	Concrete Reconstruct

Pavement Type	Pavement Type	Pavement Type
HMA	RCC	RCC
Primary Category	Primary Category	Primary Category
20 year HMA	Sub-Urban Category	Sub-Urban Category
Secondary Category	Secondary Category	Secondary Category
Rural	Design Life = 20 years	Design Life = 35 years
Shoulder Category	Shoulder Category	Shoulder Category
Aggregate	Aggregate	Aggregate
Notes:	Notes:	Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 4,058,386.51	$ 4,058,386.51
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 15,566.88	$ 14,127.69
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 204,253.29	$ 176,592.83
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 3,077,303.12	$ 2,414,591.22
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 31,047.59	$ 23,491.04
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 118,843.65	$ 85,661.27
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36		$ -	$ -
37	Mill/Overlay	$ 2,738,360.08	$ 1,948,320.88
38		$ -	$ -
39		$ -	$ -
40	Crack Treatment	$ 31,047.59	$ 19,101.01
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44	Seal	$ 118,843.65	$ 69,703.94
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (2,550,146.92)	$ (1,302,479.85)
LCCA - Net Present Cost/ per Mile			$ 9,714,906.36
Maintenance - Net Present Cost/per Mile			$ 5,417,622.00
Net Present Cost for Segment			$ 9,714,906.36
Maintenance - Net Present Cost for Segment			$ 5,417,622.00
Equivalent Annual Cost			$15,420.85

Year	Activity	Cost	Present Cost
0	Construction	$ 3,991,570.24	$ 3,991,570.24
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 5,909,171.90	$ 4,636,601.56
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30	R & R Mainline	$ 5,833,674.04	$ 4,054,638.78
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (1,302,479.85)	$ (551,574.96)
LCCA - Net Present Cost/ per Mile			$ 14,861,833.31
Maintenance - Net Present Cost/per Mile			$ 9,472,260.78
Net Present Cost for Segment			$ 14,861,833.31
Maintenance - Net Present Cost for Segment			$ 9,472,260.78
Equivalent Annual Cost			$23,585.67

Total Lane Width	24	# of Lanes	2
Total Shldr Width	10	# of Shldrs	50
Rounding Agg. Width	12	Mi./Mo.	Mi. Mix
Seal(w/o)/TSWHC	No	Mill/Overlay > 2 million	Si. Mix
ML Top Lift/ch spacing	2	ML Thickness	8
Design Life	20	Shldr Thickness	8

Total Lane Width	24	# of Lanes	2
Total Shldr Width	10	# of Shldrs	50
Rounding Agg. Width	12	Mi./Mo.	Mi. Mix
Seal(w/o)/TSWHC	Yes	Mill/Overlay > 2 million	Si. Mix
ML Top Lift/ch spacing	2	ML Thickness	5
Design Life	20	Shldr Thickness	5

Total Lane Width	24	# of Lanes	2
Total Shldr Width	10	# of Shldrs	50
Rounding Agg. Width	12	Mi./Mo.	Mi. Mix
Seal(w/o)/TSWHC	No	Mill/Overlay > 2 million	Si. Mix
ML Top Lift/ch spacing	2	ML Thickness	8
Design Life	20	Shldr Thickness	8

Segment 3

SEG	Length
3	0.4
ALT	Description
1	Medium Lane Reconstruct
2	BCOA
3	Concrete Reconstruct

Pavement Type	Pavement Type	Pavement Type
HMA	RCC	RCC
Primary Category	Primary Category	Primary Category
Urban Category	Sub-Urban Category	Sub-Urban Category
Secondary Category	Secondary Category	Secondary Category
Urban	Design Life = 35 years	Design Life = 35 years
Shoulder Category	Shoulder Category	Shoulder Category
Thick Ex	ACC	ACC
Notes:	Notes:	Notes: not analyzed due to significant grade raise in urban areas.

Year	Activity	Cost	Present Cost
0	Construction	$ 419,857.54	$ 419,857.54
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 419.74	$ 375.49
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 9,289.84	$ 8,031.79
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 140,131.47	$ 112,451.80
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 825.18	$ 624.35
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 6,151.05	$ 4,432.62
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36		$ -	$ -
37	Mill/Overlay	$ 164,278.62	$ 104,888.21
38		$ -	$ -
39		$ -	$ -
40	Crack Treatment	$ 825.18	$ 508.09
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44	Seal	$ 6,151.05	$ 3,607.70
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (58,019.80)	$ (21,080.24)
LCCA - Net Present Cost/ per Mile			$ 653,698.33
Maintenance - Net Present Cost/per Mile			$ 211,941.71
Net Present Cost for Segment			$ 653,698.33
Maintenance - Net Present Cost for Segment			$ 211,941.71
Equivalent Annual Cost			$1,920.25

Year	Activity	Cost	Present Cost
0	Construction	$ 210,023.21	$ 210,023.21
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 157,002.47	$ 123,887.42
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30	R & R Mainline	$ 237,765.58	$ 165,254.67
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (101,899.53)	$ (55,571.98)
LCCA - Net Present Cost/ per Mile			$ 486,907.13
Maintenance - Net Present Cost/per Mile			$ 157,941.41
Net Present Cost for Segment			$ 486,907.13
Maintenance - Net Present Cost for Segment			$ 157,941.41
Equivalent Annual Cost			$1,431.47

Total Lane Width	24	# of Lanes	2
Total Shldr Width	10	# of Shldrs	50
Rounding Agg. Width	12	Mi./Mo.	Mi. Mix
Seal(w/o)/TSWHC	No	Mill/Overlay > 2 million	Si. Mix
ML Top Lift/ch spacing	2	ML Thickness	8
Design Life	20	Shldr Thickness	8

Total Lane Width	24	# of Lanes	2
Total Shldr Width	10	# of Shldrs	50
Rounding Agg. Width	12	Mi./Mo.	Mi. Mix
Seal(w/o)/TSWHC	Yes	Mill/Overlay > 2 million	Si. Mix
ML Top Lift/ch spacing	2	ML Thickness	5
Design Life	20	Shldr Thickness	5

Total Lane Width	24	# of Lanes	2
Total Shldr Width	10	# of Shldrs	50
Rounding Agg. Width	12	Mi./Mo.	Mi. Mix
Seal(w/o)/TSWHC	No	Mill/Overlay > 2 million	Si. Mix
ML Top Lift/ch spacing	2	ML Thickness	8
Design Life	20	Shldr Thickness	8

Project Number	Analysis Period
4110-14	50
Highway	**Discount Rate**
	1.58%
Date	**Inflation Rate**
	1
Performed By	**Ia/(1+r)**
	0.9844

D8 - 2016/2017 prices

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	SFDR & 2.0" HMA	FDR & 6.0" PCC	FDR & 6.0" PCC	3.2
Net Present Cost	$1,345,397.28	$2,531,912.07	$1,920,113.99	Miles
Segment #2	0	0	0	0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3	0	0	0	0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4	0	0	0	0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #5	0	0	0	0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #6	0	0	0	0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #7	0	0	0	0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #8	0	0	0	0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost				**Total**
% of Low Cost				**3.2**

BID ADJUSTMENT FACTOR SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	SFDR & 2.0" HMA	FDR & 6.0" PCC	FDR & 6.0" PCC	3.2
Net Present Cost	$774,722.16	$1,292,898.05	$681,099.97	Miles
Segment #2	0	0	0	0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3	0	0	0	0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4	0	0	0	0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #5	0	0	0	0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #6	0	0	0	0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #7	0	0	0	0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #8	0	0	0	0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost				**Total**
Bid Adjustment Factor				**3.2**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	3.2	1	3.2	1	3.2
ALT	**Description**	**ALT**	**Description**	**ALT**	**Description**
1	SFDR & 2.0" HMA	2	FDR & 6.0" PCC	3	FDR & 6.0" PCC
Pavement Type		**Pavement Type**		**Pavement Type**	
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**	
Aggregate		Thick Bit		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		$ 178,335.97	$ 178,335.97	0	FDR & 6.0" PCC	$ 387,191.88	$ 387,191.88	0	FDR & 6.0" PCC	$ 387,191.88	$ 387,191.88
1			$ -	1			$ -	1			$ -
2			$ -	2			$ -	2			$ -
3			$ -	3			$ -	3			$ -
4			$ -	4			$ -	4			$ -
5			$ -	5			$ -	5			$ -
6			$ -	6			$ -	6			$ -
7			$ -	7			$ -	7			$ -
8	Crack Treatment	$ 1,232.00	$ 1,086.79	8			$ -	8			$ -
9			$ -	9			$ -	9			$ -
10			$ -	10			$ -	10			$ -
11			$ -	11			$ -	11			$ -
12	Seal	$ 12,148.14	$ 10,064.94	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	$ 185,851.51	$ 135,831.95	20	1st CPR	$ 223,126.51	$ 163,074.86	20	1st CPR	$ 159,576.43	$ 116,628.47
21			$ -	21			$ -	21			$ -
22			$ -	22			$ -	22			$ -
23	Crack Treatment	$ 2,464.00	$ 1,718.11	23			$ -	23			$ -
24			$ -	24			$ -	24			$ -
25			$ -	25			$ -	25			$ -
26			$ -	26			$ -	26			$ -
27	Seal	$ 6,914.52	$ 4,528.35	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	$ 519,805.78	$ 300,298.95	35	2nd CPR	$ 166,544.89	$ 96,215.27
36			$ -	36			$ -	36			$ -
37	ML Overlay 3.5"	$ 185,851.51	$ 104,054.86	37			$ -	37			$ -
38			$ -	38			$ -	38			$ -
39			$ -	39			$ -	39			$ -
40	Crack Treatment	$ 2,464.00	$ 1,316.17	40			$ -	40			$ -
41			$ -	41			$ -	41			$ -
42			$ -	42			$ -	42			$ -
43			$ -	43			$ -	43			$ -
44	Chip Seal	$ 6,914.52	$ 3,468.97	44			$ -	44			$ -
45			$ -	45			$ -	45			$ -
46			$ -	46			$ -	46			$ -
47			$ -	47			$ -	47			$ -
48			$ -	48			$ -	48			$ -
49			$ -	49			$ -	49			$ -
50	4/17 Remaining Life	$ (43,729.77)	$ (19,969.48)	50	5/20 Remaining	$ (129,951.45)	$ (59,343.16)	50	0/0 Remaining	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 420,436.65	LCCA - Net Present Cost/ per Mile			$ 791,222.52	LCCA - Net Present Cost/ per Mile			$ 600,035.62
Maintenance - Net Present Cost/per Mile			$ 242,100.67	Maintenance - Net Present Cost/per Mile			$ 404,030.64	Maintenance - Net Present Cost/per Mile			$ 212,843.74
Net Present Cost for Segment			$ 1,345,397.28	Net Present Cost for Segment			$ 2,531,912.07	Net Present Cost for Segment			$ 1,920,113.99
Maintenance - Net Present Cost for Segment			$ 774,722.16	Maintenance - Net Present Cost for Segment			$ 1,292,898.05	Maintenance - Net Present Cost for Segment			$ 681,099.97
Equivalent Annual Cost			39,123.09	Equivalent Annual Cost			73,625.99	Equivalent Annual Cost			55,835.39

Total Lane Width	# of Lanes	Analysis Period
28	2	50
Total Shldr Width	# of Shldrs	ML Mix
8	2	TYPE SP 9.5 WEARING COURSE MIXTURE (3,B)
Width of Rounding Aggregate	white/ >7 milliom	SL Mix
0	N	
Sealed/UTBWC	ML Thickness	
N		
ML Top Lift / joint spacing	# Dowels per Lane	
1.5		
Design Life	Shldr Thickness	
20	3	

Total Lane Width	# of Lanes	Analysis Period
24	2	50
Total Shldr Width	# of Shldrs	ML Mix
6	2	
Width of Rounding Aggregate	white/ >7 milliom	SL Mix
6	N	TYPE SP 12.5 WEARING COURSE MIXTURE (2,A)
Sealed/UTBWC	ML Thickness	
N	6	
ML Top Lift / joint spacing	# Dowels per Lane	
12	11	
Design Life	Shldr Thickness	
20	4	

Total Lane Width	# of Lanes	Analysis Period
24	2	50
Total Shldr Width	# of Shldrs	ML Mix
6	2	
Width of Rounding Aggregate	white/ >7 milliom	SL Mix
6	N	TYPE SP 12.5 WEARING COURSE MIXTURE (2,A)
Sealed/UTBWC	ML Thickness	
N	6	
ML Top Lift / joint spacing	# Dowels per Lane	
12	11	
Design Life	Shldr Thickness	
	4	

35-Year Analysis Period

Project Number	Analysis Period
SP 4680-132	35
Highway	**Discount Rate**
90	1.02%
Date	**Inflation Rate**
12/31/2020	1
Performed By	**Ia/(1+r)**
Mike Schoeb	0.9899

LCCA SUMMARY	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	2" Mill and 3" Bituminous Overlay	5" Mill and 5" Bituminous Overlay	Unbonded Concrete Overlay (UBOL)	14.3
Net Present Cost	$5,469,313.08	$7,469,392.72	$13,024,974.53	Miles
Segment #2				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$5,469,313.08**	**$7,469,392.72**	**$13,024,974.53**	**Total**
% of Low Cost	**100.0%**	**136.6%**	**238.1%**	**14.3**

Segment 1

SEG	Length		SEG	Length		SEG	Length	
1	14.3		1	14.3		1	14.3	
ALT	Description		ALT	Description		ALT	Description	
1	2" Mill and 3" Bituminous Overlay		2	5" Mill and 5" Bituminous Overlay		3	Unbonded Concrete Overlay (UBOL)	
Pavement Type			Pavement Type			Pavement Type		
HMA			HMA			PCC		
Primary Category			Primary Category			Primary Category		
20-year HMA			20-year HMA			> 11' Joint Spacing		
Secondary Category			Secondary Category			Secondary Category		
Rural			Rural			Design Life = 20 years		
Shoulder Category			Shoulder Category			Shoulder Category		
Bituminous			Bituminous			Thick Bit.		
Notes:			Notes:			Notes:		

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 3,122,550.96	$ 3,122,550.96	0	Construction	$ 4,679,092.36	$ 4,679,092.36	0	Construction	$ 9,259,716.07	$ 9,259,716.07
1		$ -	$ -	1		$ -	$ -	1		$ -	$ -
2		$ -	$ -	2		$ -	$ -	2		$ -	$ -
3		$ -	$ -	3		$ -	$ -	3		$ -	$ -
4		$ -	$ -	4		$ -	$ -	4		$ -	$ -
5		$ -	$ -	5		$ -	$ -	5		$ -	$ -
6		$ -	$ -	6		$ -	$ -	6		$ -	$ -
7		$ -	$ -	7		$ -	$ -	7		$ -	$ -
8	Crack Treatment	$ 14,809.60	$ 13,654.77	8	Crack Treatment	$ 14,809.60	$ 13,654.77	8		$ -	$ -
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12	Seal	$ 92,001.66	$ 81,453.04	12	Seal	$ 92,001.66	$ 81,453.04	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	$ 3,036,486.71	$ 2,478,700.77	20	Mill/Overlay	$ 3,640,901.99	$ 2,972,088.28	20	1st CPR	$ 4,612,560.51	$ 3,765,258.46
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22		$ -	$ -	22		$ -	$ -	22		$ -	$ -
23	Crack Treatment	$ 29,537.19	$ 23,388.36	23	Crack Treatment	$ 29,537.19	$ 23,388.36	23		$ -	$ -
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27	Seal	$ -	$ -	27	Seal	$ -	$ -	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	$ (357,233.73)	$ (250,434.82)	35	Remaining Life	$ (428,341.41)	$ (300,284.09)	35	Remaining Life	$ -	$ -

LCCA - Net Present Cost/ per Mile			$ 5,469,313.08	LCCA - Net Present Cost/ per Mile			$ 7,469,392.72	LCCA - Net Present Cost/ per Mile			$ 13,024,974.53
Maintenance - Net Present Cost/per Mile			$ 2,346,762.12	Maintenance - Net Present Cost/per Mile			$ 2,790,300.36	Maintenance - Net Present Cost/per Mile			$ 3,765,258.46
Net Present Cost for Segment			$ 5,469,313.08	Net Present Cost for Segment			$ 7,469,392.72	Net Present Cost for Segment			$ 13,024,974.53
Maintenance - Net Present Cost for Segment			$ 2,346,762.12	Maintenance - Net Present Cost for Segment			$ 2,790,300.36	Maintenance - Net Present Cost for Segment			$ 3,765,258.46
Equivalent Annual Cost			186,602.99	Equivalent Annual Cost			254,842.06	Equivalent Annual Cost			444,388.38

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
14	2	12.5 WE (4,E)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	Yes	12.5 WE (3,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
1.5		
Design Life	Shldr Thickness	
20	6	

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
14	2	12.5 WE (4,E)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	Yes	12.5 WE (3,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
2.5		
Design Life	Shldr Thickness	
20	5	

Total Lane Width	# of Lanes	Analysis Period
29	2	35
Total Shldr Width	# of Shldrs	ML Mix
9	1	
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (3,B)
Sealed/UTBWC	ML Thickness	
No	7	
ML Top Lift/Jt spacing		
15		
Design Life	Shldr Thickness	
20	4	

35-Year Analysis Period

Project Number	Analysis Period
S.P. 5007-34	35
Highway	**Discount Rate**
105	1.32%
Date	**Inflation Rate**
5/24/2018	1
Performed By	**Ia/(1+r)**
trm	0.9870

T.H. 105 From Iowa/MN SL to Br#5971(Austin)

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	1.5" Bit. Mill and 3" Overly(15 Year Fix)	6" Whitetopping(20 Year Fix)	3" Bit. Mill and 5" Overlay(20 Year Fix)	11.3
Net Present Cost	$3,437,707.37	$5,836,312.92	$3,771,324.56	Miles
Segment #2				1.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3				1.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				1.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$3,437,707.37**	**$5,836,312.92**	**$3,771,324.56**	**Total**
% of Low Cost	**100.0%**	**169.8%**	**109.7%**	**14.3**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	11.273	1	11.273	1	11.273
ALT	**Description**	**ALT**	**Description**	**ALT**	**Description**
1	1.5" Bit. Mill and 3" Overly(15 Year Fix)	2	6" Whitetopping(20 Year Fix)	3	3" Bit. Mill and 5" Overlay(20 Year Fix)
Pavement Type		**Pavement Type**		**Pavement Type**	
HMA		PCC		HMA	
Primary Category		**Primary Category**		**Primary Category**	
Overlay		> 11' 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	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 1,389,133.32	$ 1,389,133.32	0	Construction	$ 4,083,448.39	$ 4,083,448.39	0	Construction	$ 2,315,494.30	$ 2,315,494.30
1		$ -	$ -	1		$ -	$ -	1		$ -	$ -
2		$ -	$ -	2		$ -	$ -	2		$ -	$ -
3	Crack Treatment	$ 28,400.99	$ 27,305.36	3		$ -	$ -	3		$ -	$ -
4		$ -	$ -	4		$ -	$ -	4		$ -	$ -
5		$ -	$ -	5		$ -	$ -	5		$ -	$ -
6		$ -	$ -	6		$ -	$ -	6		$ -	$ -
7	Seal	$ 62,694.60	$ 57,195.76	7		$ -	$ -	7		$ -	$ -
8		$ -	$ -	8		$ -	$ -	8	Crack Treatment	$ 14,200.49	$ 12,786.21
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12		$ -	$ -	12		$ -	$ -	12	Seal	$ 106,561.90	$ 91,045.77
13		$ -	$ -	13		$ -	$ -	13		$ -	$ -
14		$ -	$ -	14		$ -	$ -	14		$ -	$ -
15	Mill/Overlay	$ 1,610,539.62	$ 1,322,950.81	15		$ -	$ -	15		$ -	$ -
16		$ -	$ -	16		$ -	$ -	16		$ -	$ -
17		$ -	$ -	17		$ -	$ -	17		$ -	$ -
18	Crack Treatment	28,400.99	$ 22,429.53	18		$ -	$ -	18		$ -	$ -
19		$ -	$ -	19		$ -	$ -	19		$ -	$ -
20		$ -	$ -	20	1st CPR	$ 2,278,515.45	$ 1,752,864.54	20	Mill/Overlay	$ 1,851,902.22	$ 1,424,670.49
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22	Seal	$ 62,694.60	$ 46,982.50	22		$ -	$ -	22		$ -	$ -
23		$ -	$ -	23		$ -	$ -	23	Crack Treatment	$ 28,400.99	$ 21,006.04
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27		$ -	$ -	27		$ -	$ -	27	Seal	$ 62,694.60	$ 44,000.76
28		$ -	$ -	28		$ -	$ -	28		$ -	$ -
29	Mill/Overlay	$ 1,610,539.62	$ 1,101,060.44	29		$ -	$ -	29		$ -	$ -
30		$ -	$ -	30		$ -	$ -	30		$ -	$ -
31		$ -	$ -	31		$ -	$ -	31		$ -	$ -
32	Crack Treatment	$ 28,400.99	$ 18,667.56	32		$ -	$ -	32		$ -	$ -
33		$ -	$ -	33		$ -	$ -	33		$ -	$ -
34		$ -	$ -	34		$ -	$ -	34		$ -	$ -
35	Remaining Life	$ (867,213.64)	$ (548,017.92)	35	Remaining Life	$ -	$ -	35	Remaining Life	$ (217,870.85)	$ (137,679.03)
LCCA - Net Present Cost/ per Mile			$ 3,437,707.37	LCCA - Net Present Cost/ per Mile			$ 5,836,312.92	LCCA - Net Present Cost/ per Mile			$ 3,771,324.56
Maintenance - Net Present Cost/per Mile			$ 2,048,574.05	Maintenance - Net Present Cost/per Mile			$ 1,752,864.54	Maintenance - Net Present Cost/per Mile			$ 1,455,830.26
Net Present Cost for Segment			$ 3,437,707.37	Net Present Cost for Segment			$ 5,836,312.92	Net Present Cost for Segment			$ 3,771,324.56
Maintenance - Net Present Cost for Segment			$ 2,048,574.05	Maintenance - Net Present Cost for Segment			$ 1,752,864.54	Maintenance - Net Present Cost for Segment			$ 1,455,830.26
Equivalent Annual Cost			123,285.47	Equivalent Annual Cost			209,305.93	Equivalent Annual Cost			135,249.88

Total Lane Width	# of Lanes	Analysis Period
22	2	35
Total Shldr Width	# of Shldrs	ML Mix
0	0	12.5 WE (3,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing	# Dowels per Lane	
1.5		
Design Life	Shldr Thickness	
15	0	

Total Lane Width	# of Lanes	Analysis Period
22	2	35
Total Shldr Width	# of Shldrs	ML Mix
0	0	
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	
	0	

Total Lane Width	# of Lanes	Analysis Period
22	2	35
Total Shldr Width	# of Shldrs	ML Mix
0	0	12.5 WE (3,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing	# Dowels per Lane	
2		
Design Life	Shldr Thickness	
20	0	

35-Year Analysis Period

Project Number	Analysis Period
5503-47	35
Highway	Discount Rate
14 EB & WB	1.02%
Date	Inflation Rate
2/8/2021	1
Performed By	Ln[1+r]
tim	0.9899

EB & WB TH 14 From 0.1 Mi. E. Marion RD. to 0.169 Mi. E. CSAH 19

LCCA SUMMARY	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	15 YR HMA 1.5" mill and 3" overlay	20 YR PCA 7" whitetopping	20 YR HMA 3" mill and 5" overlay	4.6
Net Present Cost	$2,492,051.08	$4,232,198.42	$2,582,952.75	Miles
Segment #2	15 YR HMA 1.5" mill and 3" overlay	20 YR PCA 7" whitetopping	20 YR HMA 3" mill and 5" overlay	2.7
Net Present Cost	$1,435,026.02	$2,410,703.49	$1,470,919.58	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$3,927,077.10**	**$6,642,901.90**	**$4,053,872.33**	**Total**
% of Low Cost	**100.0%**	**169.2%**	**103.2%**	**7.3**

Segment 1

SEG	Length
1	4.632
ALT	Description
1	15 YR HMA 1.5" mill and 3" overlay
2	
Pavement Type	
HMA	
Primary Category	
Overlay	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 1,007,702.02	$ 1,007,702.02
1		$ -	$ -
2		$ -	$ -
3	Crack Treatment	$ 10,789.12	$ 10,465.59
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7	Seal	$ 43,183.76	$ 40,222.48
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15	Mill/Overlay	$ 1,127,179.75	$ 968,016.40
16		$ -	$ -
17		$ -	$ -
18	Crack Treatment	$ 10,789.12	$ 8,987.80
19		$ -	$ -
20		$ -	$ -
21		$ -	$ -
22	Seal	$ 43,183.76	$ 34,542.87
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29	Mill/Overlay	$ 1,127,179.75	$ 839,807.24
30		$ -	$ -
31		$ -	$ -
32	Crack Treatment	$ 10,789.12	$ 7,797.41
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ (606,942.94)	$ (425,490.75)

LCCA - Net Present Cost/ per Mile	$ 2,492,051.08
Maintenance - Net Present Cost/per Mile	$ 1,404,149.05
Net Present Cost for Segment	$ 2,492,051.08
Maintenance - Net Present Cost for Segment	$ 1,404,149.05
Equivalent Annual Cost	85,024.24

SEG	Length
1	4.632
ALT	Description
2	20 YR PCA 7" whitetopping
Pavement Type	
PCC	
Primary Category	
> 11' Joint Spacing	
Secondary Category	
Design Life = 20 years	
Shoulder Category	
Thick Bit.	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 2,993,566.97	$ 2,993,566.97
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 1,517,362.63	$ 1,238,631.44
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ -	$ -

LCCA - Net Present Cost/ per Mile	$ 4,232,198.42
Maintenance - Net Present Cost/per Mile	$ 1,238,631.44
Net Present Cost for Segment	$ 4,232,198.42
Maintenance - Net Present Cost for Segment	$ 1,238,631.44
Equivalent Annual Cost	144,994.89

SEG	Length
1	4.632
ALT	Description
3	20 YR HMA 3" mill and 5" overlay
Pavement Type	
HMA	
Primary Category	
20-year HMA	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 1,548,613.29	$ 1,548,613.29
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 5,409.54	$ 4,987.71
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 76,822.98	$ 68,014.70
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 1,253,641.48	$ 1,023,354.42
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 10,789.12	$ 8,543.12
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 43,183.76	$ 32,833.83
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ (147,487.23)	$ (103,394.32)

LCCA - Net Present Cost/ per Mile	$ 2,582,952.75
Maintenance - Net Present Cost/per Mile	$ 1,034,339.46
Net Present Cost for Segment	$ 2,582,952.75
Maintenance - Net Present Cost for Segment	$ 1,034,339.46
Equivalent Annual Cost	88,175.64

Total Lane Width	# of Lanes	Analysis Period
27	2	35
Total Shldr Width	# of Shldrs	Mi. Mix
10	1	12.5 WE (4.E)
Rounding Agg. Width	white/ >7 million	SL Mix
3	No	12.5 WE (2,B)
Sealed/UTBWC	Mi. Thickness	
No		
Mi. Too Lift /in seacine		
1.5		
Design Life	Shldr Thickness	
15	4	

Total Lane Width	# of Lanes	Analysis Period
28	2	35
Total Shldr Width	# of Shldrs	Mi. Mix
9	1	12.5 WE (4.E)
Rounding Agg. Width	white/ >7 million	SL Mix
3	Yes	12.5 WE (2,B)
Sealed/UTBWC	Mi. Thickness	
Yes	7	
Mi. Too Lift /in seacine		
15		
Design Life	Shldr Thickness	
20	4	

Total Lane Width	# of Lanes	Analysis Period
27	2	35
Total Shldr Width	# of Shldrs	Mi. Mix
10	1	12.5 WE (4.E)
Rounding Agg. Width	white/ >7 million	SL Mix
3	No	12.5 WE (2,B)
Sealed/UTBWC	Mi. Thickness	
No		
Mi. Too Lift /in seacine		
2		
Design Life	Shldr Thickness	
20	4	

Segment 2

SEG	Length
2	2.685
ALT	Description
1	15 YR HMA 1.5" mill and 3" overlay
Pavement Type	
HMA	
Primary Category	
Overlay	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 586,530.74	$ 586,530.74
1		$ -	$ -
2		$ -	$ -
3	Crack Treatment	$ 5,559.16	$ 5,392.46
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7	Seal	$ 23,321.31	$ 21,722.08
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15	Mill/Overlay	$ 647,505.24	$ 556,074.30
16		$ -	$ -
17		$ -	$ -
18	Crack Treatment	$ 5,559.16	$ 4,631.02
19		$ -	$ -
20		$ -	$ -
21		$ -	$ -
22	Seal	$ 23,321.31	$ 18,654.82
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29	Mill/Overlay	$ 647,505.24	$ 482,424.91
30		$ -	$ -
31		$ -	$ -
32	Crack Treatment	$ 5,559.16	$ 4,017.66
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ (348,656.67)	$ (244,421.96)

LCCA - Net Present Cost/ per Mile	$ 1,435,026.02
Maintenance - Net Present Cost/per Mile	$ 848,499.29
Net Present Cost for Segment	$ 1,435,026.02
Maintenance - Net Present Cost for Segment	$ 848,499.29
Equivalent Annual Cost	48,960.47

SEG	Length
2	2.685
ALT	Description
2	20 YR PCA 7" whitetopping
Pavement Type	
PCC	
Primary Category	
> 11' Joint Spacing	
Secondary Category	
Design Life = 20 years	
Shoulder Category	
Thick Bit.	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 1,693,726.28	$ 1,693,726.28
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 878,319.72	$ 716,977.21
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ -	$ -

LCCA - Net Present Cost/ per Mile	$ 2,410,703.49
Maintenance - Net Present Cost/per Mile	$ 716,977.21
Net Present Cost for Segment	$ 2,410,703.49
Maintenance - Net Present Cost for Segment	$ 716,977.21
Equivalent Annual Cost	82,248.83

SEG	Length
2	2.685
ALT	Description
3	20 YR HMA 3" mill and 5" overlay
Pavement Type	
HMA	
Primary Category	
20-year HMA	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 886,972.35	$ 886,972.35
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 2,787.30	$ 2,569.95
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 40,964.95	$ 36,268.04
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 712,665.44	$ 581,752.71
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 5,559.16	$ 4,401.90
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 23,321.31	$ 17,731.85
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ (83,842.99)	$ (58,777.22)

LCCA - Net Present Cost/ per Mile	$ 1,470,919.58
Maintenance - Net Present Cost/per Mile	$ 583,947.23
Net Present Cost for Segment	$ 1,470,919.58
Maintenance - Net Present Cost for Segment	$ 583,947.23
Equivalent Annual Cost	50,185.09

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	Mi. Mix
16	2	12.5 WE (4.E)
Rounding Agg. Width	white/ >7 million	SL Mix
3	No	12.5 WE (2,B)
Sealed/UTBWC	Mi. Thickness	
No		
Mi. Too Lift /in seacine		
2		
Design Life	Shldr Thickness	
20	4	

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	Mi. Mix
16	2	12.5 WE (4.E)
Rounding Agg. Width	white/ >7 million	SL Mix
3	No	12.5 WE (2,B)
Sealed/UTBWC	Mi. Thickness	
No		
Mi. Too Lift /in seacine		
1.5		
Design Life	Shldr Thickness	
15	4	

Total Lane Width	# of Lanes	Analysis Period
26	2	35
Total Shldr Width	# of Shldrs	Mi. Mix
14	2	
Rounding Agg. Width	white/ >7 million	SL Mix
3	Yes	12.5 WE (2,B)
Sealed/UTBWC	Mi. Thickness	
Yes	7	
Mi. Too Lift /in seacine		
15		
Design Life	Shldr Thickness	
20	4	

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	Mi. Mix
16	2	12.5 WE (4.E)
Rounding Agg. Width	white/ >7 million	SL Mix
3	No	12.5 WE (2,B)
Sealed/UTBWC	Mi. Thickness	
No		
Mi. Too Lift /in seacine		
2		
Design Life	Shldr Thickness	
20	4	

50-Year Analysis Period

Project Number	Analysis Period
5802-24	50
Highway	Discount Rate
	1.22%
Date	Inflation Rate
	1
Performed By	Ia/(1+r)
	0.9879

Notes:

LCCA SUMMARY				
	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1 Net Present Cost	Regrade/New HMA $167,308.88	20 year Concrete - reconstruct $306,916.78	35 Year Concrete $205,017.44	0.1 Miles
Segment #2 Net Present Cost	FDR $343,577.38	20 year Concrete $621,596.10	35 Year Concrete $646,640.98	0.5 Miles
Segment #3 Net Present Cost	Full Depth Reclaim, widen shoulders $736,870.15	20 year concrete $1,310,380.33	35 Year Concrete $2,469,938.72	2.8 Miles
Segment #4 Net Present Cost	$0.00	$0.00	$0.00	0.0 Miles
Project Net Present Cost	**$1,247,756.41**	**$2,238,893.21**	**$3,321,597.14**	**Total**
% of Low Cost	**100.0%**	**179.4%**	**266.2%**	**3.4**

Segment 1

SEG	1	1	1
Length	0.11	0.11	0.11
ALT	1	2	3
Description	Regrade/New HMA	20 year Concrete - reconstruct	35 Year Concrete
Pavement Type	HMA	PCC	PCC
Primary Category	20-year HMA	6'x6', 5.0 in. or Thinner	> 11' Joint Spacing
Secondary Category	Rural	Design Life = 20 years	Design Life = 35 years
Shoulder Category	Bituminous	PCC	Thick Bit.
Notes:			

Year	Activity	Cost	Present Cost	Activity	Cost	Present Cost	Activity	Cost	Present Cost
0	Construction	$ 129,618.30	$ 129,618.30	Construction	$ 164,616.19	$ 164,616.19	Construction	$ 147,544.10	$ 147,544.10
1		$ -	$ -		$ -	$ -		$ -	$ -
2		$ -	$ -		$ -	$ -		$ -	$ -
3		$ -	$ -		$ -	$ -		$ -	$ -
4		$ -	$ -		$ -	$ -		$ -	$ -
5		$ -	$ -		$ -	$ -		$ -	$ -
6		$ -	$ -		$ -	$ -		$ -	$ -
7		$ -	$ -		$ -	$ -		$ -	$ -
8	Crack Treatment	$ 115.26	$ 104.60		$ -	$ -		$ -	$ -
9		$ -	$ -		$ -	$ -		$ -	$ -
10		$ -	$ -		$ -	$ -		$ -	$ -
11		$ -	$ -		$ -	$ -		$ -	$ -
12	Seal	$ 1,854.85	$ 1,603.66		$ -	$ -		$ -	$ -
13		$ -	$ -		$ -	$ -		$ -	$ -
14		$ -	$ -		$ -	$ -		$ -	$ -
15		$ -	$ -		$ -	$ -		$ -	$ -
16		$ -	$ -		$ -	$ -		$ -	$ -
17		$ -	$ -		$ -	$ -		$ -	$ -
18		$ -	$ -		$ -	$ -		$ -	$ -
19		$ -	$ -		$ -	$ -		$ -	$ -
20	Mill/Overlay	$ 26,483.48	$ 20,780.14	1st CPR	$ 95,384.02	$ 74,842.62	1st CPR	$ 37,574.44	$ 29,482.60
21		$ -	$ -		$ -	$ -		$ -	$ -
22		$ -	$ -		$ -	$ -		$ -	$ -
23	Crack Treatment	$ 229.88	$ 173.93		$ -	$ -		$ -	$ -
24		$ -	$ -		$ -	$ -		$ -	$ -
25		$ -	$ -		$ -	$ -		$ -	$ -
26		$ -	$ -		$ -	$ -		$ -	$ -
27	Seal	$ 1,100.62	$ 793.32		$ -	$ -		$ -	$ -
28		$ -	$ -		$ -	$ -		$ -	$ -
29		$ -	$ -		$ -	$ -		$ -	$ -
30		$ -	$ -	R & R Mainline	$ 146,229.88	$ 101,635.66		$ -	$ -
31		$ -	$ -		$ -	$ -		$ -	$ -
32		$ -	$ -		$ -	$ -		$ -	$ -
33		$ -	$ -		$ -	$ -		$ -	$ -
34		$ -	$ -		$ -	$ -		$ -	$ -
35		$ -	$ -		$ -	$ -	2nd CPR	$ 42,789.38	$ 27,990.74
36		$ -	$ -		$ -	$ -		$ -	$ -
37	Mill/Overlay	$ 26,360.20	$ 16,830.40		$ -	$ -		$ -	$ -
38		$ -	$ -		$ -	$ -		$ -	$ -
39		$ -	$ -		$ -	$ -		$ -	$ -
40	Crack Treatment	$ 229.88	$ 141.53		$ -	$ -		$ -	$ -
41		$ -	$ -		$ -	$ -		$ -	$ -
42		$ -	$ -		$ -	$ -		$ -	$ -
43		$ -	$ -		$ -	$ -		$ -	$ -
44	Seal	$ 1,100.62	$ 645.53		$ -	$ -		$ -	$ -
45		$ -	$ -		$ -	$ -		$ -	$ -
46		$ -	$ -		$ -	$ -		$ -	$ -
47		$ -	$ -		$ -	$ -		$ -	$ -
48		$ -	$ -		$ -	$ -		$ -	$ -
49		$ -	$ -		$ -	$ -		$ -	$ -
50	Remaining Life	$ (6,202.40)	$ (3,382.54)	Remaining Life	$ (62,669.95)	$ (34,177.69)	Remaining Life	$ -	$ -

LCCA - Net Present Cost/ per Mile	$ 167,308.88	$ 306,916.78	$ 205,017.44
Maintenance - Net Present Cost/per Mile	$ 37,690.57	$ 142,300.59	$ 57,473.34
Net Present Cost for Segment	$ 167,308.88	$ 306,916.78	$ 205,017.44
Maintenance - Net Present Cost for Segment	$ 37,690.57	$ 142,300.59	$ 57,473.34
Equivalent Annual Cost	4,489.64	8,235.94	5,501.52

Total Lane Width	24	45	40
# of Lanes	2	2	2
Analysis Period	50	50	50
Total Shldr Width	8	0	5
# of Shldrs	2	0	1
ML Mix	9.5 WE (3,B)		
Rounding Agg. Width	4	3	3
white/ >7 milliom	No	Yes	No
SL Mix	9.5 WE (3,B)	9.5 WE (3,B)	9.5 WE (3,B)
Sealed/UTBWC	No	Yes	No
ML Thickness		5	7.5
ML Top Lift/Jt spacing	1.5	6	15
Design Life	20	20	35
Shldr Thickness	4	0	4

Segment 2

SEG	2	2	2
Length	.527	.527	.527
ALT	1	2	3
Description	FDR	20 year Concrete	35 Year Concrete
Pavement Type	HMA	PCC	PCC
Primary Category	20-year HMA	6'x6', 5.0 in. or Thinner	> 11' Joint Spacing
Secondary Category	Rural	Design Life = 20 years	Design Life = 35 years
Shoulder Category	Bituminous	Thick Bit.	Thick Bit.
Notes:			

Year	Activity	Cost	Present Cost	Activity	Cost	Present Cost	Activity	Cost	Present Cost
0	Construction	$ 129,329.71	$ 129,329.71	Construction	$ 223,837.30	$ 223,837.30	Construction	$ 472,134.08	$ 472,134.08
1		$ -	$ -		$ -	$ -		$ -	$ -
2		$ -	$ -		$ -	$ -		$ -	$ -
3		$ -	$ -		$ -	$ -		$ -	$ -
4		$ -	$ -		$ -	$ -		$ -	$ -
5		$ -	$ -		$ -	$ -		$ -	$ -
6		$ -	$ -		$ -	$ -		$ -	$ -
7		$ -	$ -		$ -	$ -		$ -	$ -
8	Crack Treatment	$ 690.25	$ 626.43		$ -	$ -		$ -	$ -
9		$ -	$ -		$ -	$ -		$ -	$ -
10		$ -	$ -		$ -	$ -		$ -	$ -
11		$ -	$ -		$ -	$ -		$ -	$ -
12	Seal	$ 10,680.71	$ 9,234.30		$ -	$ -		$ -	$ -
13		$ -	$ -		$ -	$ -		$ -	$ -
14		$ -	$ -		$ -	$ -		$ -	$ -
15		$ -	$ -		$ -	$ -		$ -	$ -
16		$ -	$ -		$ -	$ -		$ -	$ -
17		$ -	$ -		$ -	$ -		$ -	$ -
18		$ -	$ -		$ -	$ -		$ -	$ -
19		$ -	$ -		$ -	$ -		$ -	$ -
20	Mill/Overlay	$ 157,097.38	$ 123,265.71	1st CPR	$ 245,947.93	$ 192,981.87	1st CPR	$ 118,644.26	$ 93,093.65
21		$ -	$ -		$ -	$ -		$ -	$ -
22		$ -	$ -		$ -	$ -		$ -	$ -
23	Crack Treatment	$ 1,376.68	$ 1,041.61		$ -	$ -		$ -	$ -
24		$ -	$ -		$ -	$ -		$ -	$ -
25		$ -	$ -		$ -	$ -		$ -	$ -
26		$ -	$ -		$ -	$ -		$ -	$ -
27	Seal	$ 6,260.04	$ 4,512.18		$ -	$ -		$ -	$ -
28		$ -	$ -		$ -	$ -		$ -	$ -
29		$ -	$ -		$ -	$ -		$ -	$ -
30		$ -	$ -	R & R Mainline	$ 443,898.66	$ 308,527.47		$ -	$ -
31		$ -	$ -		$ -	$ -		$ -	$ -
32		$ -	$ -		$ -	$ -		$ -	$ -
33		$ -	$ -		$ -	$ -		$ -	$ -
34		$ -	$ -		$ -	$ -		$ -	$ -
35		$ -	$ -		$ -	$ -	2nd CPR	$ 124,456.26	$ 81,413.25
36		$ -	$ -		$ -	$ -		$ -	$ -
37	Mill/Overlay	$ 139,267.23	$ 88,919.01		$ -	$ -		$ -	$ -
38		$ -	$ -		$ -	$ -		$ -	$ -
39		$ -	$ -		$ -	$ -		$ -	$ -
40	Crack Treatment	$ 1,376.68	$ 847.58		$ -	$ -		$ -	$ -
41		$ -	$ -		$ -	$ -		$ -	$ -
42		$ -	$ -		$ -	$ -		$ -	$ -
43		$ -	$ -		$ -	$ -		$ -	$ -
44	Seal	$ 6,260.04	$ 3,671.63		$ -	$ -		$ -	$ -
45		$ -	$ -		$ -	$ -		$ -	$ -
46		$ -	$ -		$ -	$ -		$ -	$ -
47		$ -	$ -		$ -	$ -		$ -	$ -
48		$ -	$ -		$ -	$ -		$ -	$ -
49		$ -	$ -		$ -	$ -		$ -	$ -
50	Remaining Life	$ (32,768.76)	$ (17,870.77)	Remaining Life	$ (190,242.28)	$ (103,750.55)	Remaining Life	$ -	$ -

LCCA - Net Present Cost/ per Mile	$ 343,577.38	$ 621,596.10	$ 646,640.98
Maintenance - Net Present Cost/per Mile	$ 214,247.67	$ 397,758.80	$ 174,506.90
Net Present Cost for Segment	$ 343,577.38	$ 621,596.10	$ 646,640.98
Maintenance - Net Present Cost for Segment	$ 214,247.67	$ 397,758.80	$ 174,506.90
Equivalent Annual Cost	9,219.70	16,680.17	17,352.24

Total Lane Width	30	24	24
# of Lanes	2	2	2
Analysis Period	50	50	50
Total Shldr Width	0	6	6
# of Shldrs	0	2	2
ML Mix	9.5 WE (3,B)		
Rounding Agg. Width	4	4	4
white/ >7 milliom	No	Yes	No
SL Mix	9.5 WE (3,B)	9.5 WE (3,B)	9.5 WE (3,B)
Sealed/UTBWC	No	Yes	No
ML Thickness		5	7.5
ML Top Lift/Jt spacing	2	6	15
Design Life	20	20	35
Shldr Thickness	0	4	4

Segment 3

SEG	3	3	3
Length	2.808	2.808	2.808
ALT	1	2	3
Description	Full Depth Reclaim, widen shoulders	20 year concrete	35 Year Concrete
Pavement Type	HMA	PCC	PCC
Primary Category	20-year HMA	6'x6', 5.0 in. or Thinner	> 11' Joint Spacing
Secondary Category	Rural	Design Life = 20 years	Design Life = 35 years
Shoulder Category	Bituminous	PCC	PCC
Notes:			

Year	Activity	Cost	Present Cost	Activity	Cost	Present Cost	Activity	Cost	Present Cost
0	Construction	$ 736,870.15	$ 736,870.15	Construction	$ 1,310,380.33	$ 1,310,380.33	Construction	$ 2,469,938.72	$ 2,469,938.72
1		$ -	$ -		$ -	$ -		$ -	$ -
2		$ -	$ -		$ -	$ -		$ -	$ -
3		$ -	$ -		$ -	$ -		$ -	$ -
4		$ -	$ -		$ -	$ -		$ -	$ -
5		$ -	$ -		$ -	$ -		$ -	$ -
6		$ -	$ -		$ -	$ -		$ -	$ -
7		$ -	$ -		$ -	$ -		$ -	$ -
8	Crack Treatment	$ -	$ -		$ -	$ -		$ -	$ -
9		$ -	$ -		$ -	$ -		$ -	$ -
10		$ -	$ -		$ -	$ -		$ -	$ -
11		$ -	$ -		$ -	$ -		$ -	$ -
12	Seal	$ -	$ -		$ -	$ -		$ -	$ -
13		$ -	$ -		$ -	$ -		$ -	$ -
14		$ -	$ -		$ -	$ -		$ -	$ -
15		$ -	$ -		$ -	$ -		$ -	$ -
16		$ -	$ -		$ -	$ -		$ -	$ -
17		$ -	$ -		$ -	$ -		$ -	$ -
18		$ -	$ -		$ -	$ -		$ -	$ -
19		$ -	$ -		$ -	$ -		$ -	$ -
20	Mill/Overlay	$ -	$ -	1st CPR	$ -	$ -	1st CPR	$ -	$ -
21		$ -	$ -		$ -	$ -		$ -	$ -
22		$ -	$ -		$ -	$ -		$ -	$ -
23	Crack Treatment	$ -	$ -		$ -	$ -		$ -	$ -
24		$ -	$ -		$ -	$ -		$ -	$ -
25		$ -	$ -		$ -	$ -		$ -	$ -
26		$ -	$ -		$ -	$ -		$ -	$ -
27	Seal	$ -	$ -		$ -	$ -		$ -	$ -
28		$ -	$ -		$ -	$ -		$ -	$ -
29		$ -	$ -		$ -	$ -		$ -	$ -
30		$ -	$ -	R & R Mainline	$ -	$ -		$ -	$ -
31		$ -	$ -		$ -	$ -		$ -	$ -
32		$ -	$ -		$ -	$ -		$ -	$ -
33		$ -	$ -		$ -	$ -		$ -	$ -
34		$ -	$ -		$ -	$ -		$ -	$ -
35		$ -	$ -		$ -	$ -	2nd CPR	$ -	$ -
36		$ -	$ -		$ -	$ -		$ -	$ -
37	Mill/Overlay	$ -	$ -		$ -	$ -		$ -	$ -
38		$ -	$ -		$ -	$ -		$ -	$ -
39		$ -	$ -		$ -	$ -		$ -	$ -
40	Crack Treatment	$ -	$ -		$ -	$ -		$ -	$ -
41		$ -	$ -		$ -	$ -		$ -	$ -
42		$ -	$ -		$ -	$ -		$ -	$ -
43		$ -	$ -		$ -	$ -		$ -	$ -
44	Seal	$ -	$ -		$ -	$ -		$ -	$ -
45		$ -	$ -		$ -	$ -		$ -	$ -
46		$ -	$ -		$ -	$ -		$ -	$ -
47		$ -	$ -		$ -	$ -		$ -	$ -
48		$ -	$ -		$ -	$ -		$ -	$ -
49		$ -	$ -		$ -	$ -		$ -	$ -
50	Remaining Life	$ -	$ -	Remaining Life	$ -	$ -	Remaining Life	$ -	$ -

LCCA - Net Present Cost/ per Mile	$ 736,870.15	$ 1,310,380.33	$ 2,469,938.72
Maintenance - Net Present Cost/per Mile	$ -	$ -	$ -
Net Present Cost for Segment	$ 736,870.15	$ 1,310,380.33	$ 2,469,938.72
Maintenance - Net Present Cost for Segment	$ -	$ -	$ -
Equivalent Annual Cost	19,773.49	35,163.30	66,279.38

Total Lane Width	24	24	24
# of Lanes	2	2	2
Analysis Period	50	50	50
Total Shldr Width	0	21	21
# of Shldrs	0	2	2
ML Mix	9.5 WE (3,B)		
Rounding Agg. Width	0	3	3
white/ >7 milliom	No	Yes	No
SL Mix	9.5 WE (3,B)		
Sealed/UTBWC	No	No	No
ML Thickness		5	7.5
ML Top Lift/Jt spacing	2	6	12
Design Life	20	20	35
Shldr Thickness	0	5	7.5

50-Year Analysis Period

Project Number	Analysis Period
6001-61	50
Highway	Discount Rate
2	1.22%
Date	Inflation Rate
5/23/2019	1
Performed By	Ia/(1+r)
KO	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	C&S,PASB, HMA	unbonded conc. Overlay	New 35 yr conc.	9.6
Net Present Cost	$4,809,090.98	$16,273,416.91	$12,879,439.41	Miles
Segment #2	Mill, C&S PASB,HMA	unbonded conc. Overlay	New 35 yr conc.	5.2
Net Present Cost	$2,641,100.51	$7,740,129.00	$6,939,206.01	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$7,450,191.49**	**$22,015,545.91**	**$19,818,645.42**	**Total**
% of Low Cost	**100.0%**	**295.5%**	**266.0%**	**14.8**

Segment 1

SEG	Length
1	9.589
ALT	Description
1	C&S,PASB, HMA

Pavement Type
HMA
Primary Category
20-year HMA
Secondary Category
Rural
Shoulder Category
Bituminous
Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 2,517,876.90	$ 2,517,876.90
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 11,165.41	$ 10,133.14
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 116,941.55	$ 101,105.05
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 1,586,171.81	$ 1,244,582.15
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 22,268.98	$ 16,849.02
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 73,155.51	$ 52,729.79
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36		$ -	$ -
37	Mill/Overlay	$ 1,586,171.81	$ 1,012,735.20
38		$ -	$ -
39		$ -	$ -
40	Crack Treatment	$ 22,268.98	$ 13,710.30
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44	Seal	$ 73,155.51	$ 42,907.03
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (373,216.90)	$ (203,537.60)
LCCA - Net Present Cost/ per Mile			$ 4,809,090.98
Maintenance - Net Present Cost/per Mile			$ 2,291,214.08
Net Present Cost for Segment			$ 4,809,090.98
Maintenance - Net Present Cost for Segment			$ 2,291,214.08
Equivalent Annual Cost			129,049.18

Total Lane Width	# of Lanes	Analysis Period
27	2	50
Total Shldr Width	# of Shldrs	ML Mix
10	1	12.5 WE (3,C)
Rounding Agg. Width	white/ >7 milliom	SL Mix
4	No	12.5 WE (3,C)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/It spacing		
1.5		
Design Life	Shldr Thickness	
20	5	

Segment 1

SEG	Length
1	9.589
ALT	Description
2	unbonded conc. Overlay

Pavement Type
PCC
Primary Category
> 11' Joint Spacine
Secondary Category
Design Life = 20 years
Shoulder Category
Thick Bit.
Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 8,351,752.38	$ 8,351,752.38
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 2,186,869.87	$ 1,715,917.02
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	R & R Mainline	$ 8,126,021.99	$ 5,315,649.53
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (2,031,505.50)	$ (1,107,902.02)
LCCA - Net Present Cost/ per Mile			$ 14,275,416.91
Maintenance - Net Present Cost/per Mile			$ 5,923,664.53
Net Present Cost for Segment			$ 14,275,416.91
Maintenance - Net Present Cost for Segment			$ 5,923,664.53
Equivalent Annual Cost			383,072.59

Total Lane Width	# of Lanes	Analysis Period
27	2	50
Total Shldr Width	# of Shldrs	ML Mix
10	1	12.5 WE (2,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
4	No	12.5 WE (2,B)
Sealed/UTBWC	ML Thickness	
No	7	
ML Top Lift/It spacing		
15		
Design Life	Shldr Thickness	
20	4	

Segment 1

SEG	Length
1	9.589
ALT	Description
3	New 35 yr conc.

Pavement Type
PCC
Primary Category
> 11' Joint Spacine
Secondary Category
Design Life = 35 years
Shoulder Category
Thick Bit.
Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 10,558,938.17	$ 10,558,938.17
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 1,578,217.60	$ 1,238,340.92
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	2nd CPR	$ 1,654,296.16	$ 1,082,160.33
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 12,879,439.41
Maintenance - Net Present Cost/per Mile			$ 2,320,501.24
Net Present Cost for Segment			$ 12,879,439.41
Maintenance - Net Present Cost for Segment			$ 2,320,501.24
Equivalent Annual Cost			345,612.33

Total Lane Width	# of Lanes	Analysis Period
28	2	50
Total Shldr Width	# of Shldrs	ML Mix
9	1	12.5 WE (2,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
4	No	12.5 WE (2,B)
Sealed/UTBWC	ML Thickness	
No	7	
ML Top Lift/It spacing		
15		
Design Life	Shldr Thickness	
35	4	

Segment 2

SEG	Length
2	5.1620
ALT	Description
1	Mill, C&S PASB,HMA

Pavement Type
HMA
Primary Category
20-year HMA
Secondary Category
Rural
Shoulder Category
Bituminous
Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 1,407,682.32	$ 1,407,682.32
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 6,010.62	$ 5,454.92
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 62,952.58	$ 54,427.39
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 853,876.19	$ 669,989.88
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 11,987.95	$ 9,070.25
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 39,381.45	$ 28,385.77
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36		$ -	$ -
37	Mill/Overlay	$ 853,876.19	$ 545,180.84
38		$ -	$ -
39		$ -	$ -
40	Crack Treatment	$ 11,987.95	$ 7,380.60
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44	Seal	$ 39,381.45	$ 23,097.93
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (200,912.09)	$ (109,569.41)
LCCA - Net Present Cost/ per Mile			$ 2,641,100.51
Maintenance - Net Present Cost/per Mile			$ 1,233,418.18
Net Present Cost for Segment			$ 2,641,100.51
Maintenance - Net Present Cost for Segment			$ 1,233,418.18
Equivalent Annual Cost			70,872.41

Total Lane Width	# of Lanes	Analysis Period
27	2	50
Total Shldr Width	# of Shldrs	ML Mix
10	1	12.5 WE (3,C)
Rounding Agg. Width	white/ >7 milliom	SL Mix
4	No	12.5 WE (3,C)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/It spacing		
1.5		
Design Life	Shldr Thickness	
20	5.0	

Segment 2

SEG	Length
2	5.1620
ALT	Description
2	unbonded conc. Overlay

Pavement Type
PCC
Primary Category
> 11' Joint Spacine
Secondary Category
Design Life = 20 years
Shoulder Category
Thick Bit.
Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 4,551,271.33	$ 4,551,271.33
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 1,177,247.07	$ 923,721.30
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	R & R Mainline	$ 4,374,442.12	$ 2,861,547.90
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ (1,093,610.53)	$ (596,411.53)
LCCA - Net Present Cost/ per Mile			$ 7,740,129.00
Maintenance - Net Present Cost/per Mile			$ 3,188,857.67
Net Present Cost for Segment			$ 7,740,129.00
Maintenance - Net Present Cost for Segment			$ 3,188,857.67
Equivalent Annual Cost			207,701.90

Total Lane Width	# of Lanes	Analysis Period
27	2	50
Total Shldr Width	# of Shldrs	ML Mix
10	1	
Rounding Agg. Width	white/ >7 milliom	SL Mix
4	No	12.5 WE (2,B)
Sealed/UTBWC	ML Thickness	
No	7	
ML Top Lift/It spacing		
15		
Design Life	Shldr Thickness	
20	4	

Segment 2

SEG	Length
2	5.1620
ALT	Description
3	New 35 yr conc.

Pavement Type
PCC
Primary Category
> 11' Joint Spacine
Secondary Category
Design Life = 35 years
Shoulder Category
Thick Bit.
Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 5,690,021.80	$ 5,690,021.80
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 849,594.24	$ 666,630.07
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	2nd CPR	$ 890,549.24	$ 582,554.13
36		$ -	$ -
37		$ -	$ -
38		$ -	$ -
39		$ -	$ -
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43		$ -	$ -
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 6,939,206.01
Maintenance - Net Present Cost/per Mile			$ 1,249,184.20
Net Present Cost for Segment			$ 6,939,206.01
Maintenance - Net Present Cost for Segment			$ 1,249,184.20
Equivalent Annual Cost			186,209.59

Total Lane Width	# of Lanes	Analysis Period
28	2	50
Total Shldr Width	# of Shldrs	ML Mix
9	1	
Rounding Agg. Width	white/ >7 milliom	SL Mix
4	No	12.5 WE (2,B)
Sealed/UTBWC	ML Thickness	
No	7	
ML Top Lift/It spacing		
15		
Design Life	Shldr Thickness	
35	4	

35-Year Analysis Period

Project Number	Analysis Period
6008-17	35
Highway	Discount Rate
59	1.22%
Date	Inflation Rate
7/22/2019	1
Performed By	Ia/(1+r)
KO	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	17 yr Mill & OL	20 Yr HMA	20 Yr PCC	9.1
Net Present Cost	$2,926,116.33	$7,008,536.05	$11,559,021.73	Miles
Segment #2	Urban Mill & OL	20 Yr HMA	20 Yr PCC	0.4
Net Present Cost	$141,544.33	$270,875.84	$487,676.88	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$3,067,660.66**	**$7,279,411.89**	**$12,046,698.61**	**Total**
% of Low Cost	**100.0%**	**237.3%**	**392.7%**	**9.4**

Segment 1

SEG	Length
1	9.079
ALT	Description
1	17 yr Mill & OL
Pavement Type	
HMA	
Primary Category	
Overlay	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 1,374,284.79	$ 1,374,284.79
1		$ -	$ -
2		$ -	$ -
3	Crack Treatment	$ 18,784.28	$ 18,113.22
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7	Seal	$ 64,736.04	$ 59,467.79
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17	Mill/Overlay	$ 1,539,087.86	$ 1,252,378.93
18		$ -	$ -
19		$ -	$ -
20	Crack Treatment	$ 18,784.28	$ 14,739.00
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24	Seal	$ 64,736.04	$ 48,389.83
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33	Mill/Overlay	$ 1,537,030.67	$ 1,030,133.58
34		$ -	$ -
35	Remaining Life	$ (1,332,093.24)	$ (871,390.80)
LCCA - Net Present Cost/ per Mile			$ 2,926,116.33
Maintenance - Net Present Cost/per Mile			$ 1,551,831.55
Net Present Cost for Segment			$ 2,926,116.33
Maintenance - Net Present Cost for Segment			$ 1,551,831.55
Equivalent Annual Cost			103,220.40

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
12	2	12.5 WE (3,C)
Rounding Agg. Width	white/ >7 milliom	SL Mix
4	No	12.5 WE (3,C)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/it spacing		
1.5		
Design Life	Shldr Thickness	
17	5	

Segment 1

SEG	Length
1	9.079
ALT	Description
2	20 Yr HMA
Pavement Type	
HMA	
Primary Category	
20-year HMA	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 5,757,774.95	$ 5,757,774.95
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 9,418.22	$ 8,547.48
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 105,619.59	$ 91,316.33
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 1,540,264.13	$ 1,208,560.91
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 18,784.28	$ 14,212.45
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 64,736.04	$ 46,661.12
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ (181,207.55)	$ (118,537.19)
LCCA - Net Present Cost/ per Mile			$ 7,008,536.05
Maintenance - Net Present Cost/per Mile			$ 1,250,761.10
Net Present Cost for Segment			$ 7,008,536.05
Maintenance - Net Present Cost for Segment			$ 1,250,761.10
Equivalent Annual Cost			247,230.06

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
12	2	12.5 WE (3,C)
Rounding Agg. Width	white/ >7 milliom	SL Mix
4	No	12.5 WE (3,C)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/it spacing		
1.5		
Design Life	Shldr Thickness	
20	5	

Segment 1

SEG	Length
1	9.079
ALT	Description
3	20 Yr PCC
Pavement Type	
PCC	
Primary Category	
> 11' Joint Spacing	
Secondary Category	
Design Life = 20 years	
Shoulder Category	
Thin Bit.	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 9,644,817.04	$ 9,644,817.04
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 2,439,579.84	$ 1,914,204.69
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 11,559,021.73
Maintenance - Net Present Cost/per Mile			$ 1,914,204.69
Net Present Cost for Segment			$ 11,559,021.73
Maintenance - Net Present Cost for Segment			$ 1,914,204.69
Equivalent Annual Cost			407,750.99

Total Lane Width	# of Lanes	Analysis Period
26	2	35
Total Shldr Width	# of Shldrs	ML Mix
10	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix
4	Yes	12.5 WE (2,A)
Sealed/UTBWC	ML Thickness	
No	7	
ML Top Lift/it spacing		
15		
Design Life	Shldr Thickness	
20	3	

Segment 2

SEG	Length
2	35
ALT	Description
1	Urban Mill & OL
Pavement Type	
HMA	
Primary Category	
Overlay	
Secondary Category	
Urban	
Shoulder Category	
Thick Bit.	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 72,406.01	$ 72,406.01
1		$ -	$ -
2		$ -	$ -
3	Crack Treatment	$ 724.14	$ 698.27
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7	Seal	$ 2,495.61	$ 2,292.51
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17	Mill/Overlay	$ 68,321.11	$ 55,593.92
18		$ -	$ -
19		$ -	$ -
20	Crack Treatment	$ 724.14	$ 568.20
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24	Seal	$ 2,495.61	$ 1,865.45
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33	Mill/Overlay	$ 78,621.79	$ 52,693.12
34		$ -	$ -
35	Remaining Life	$ (68,138.88)	$ (44,573.15)
LCCA - Net Present Cost/ per Mile			$ 141,544.33
Maintenance - Net Present Cost/per Mile			$ 69,138.32
Net Present Cost for Segment			$ 141,544.33
Maintenance - Net Present Cost for Segment			$ 69,138.32
Equivalent Annual Cost			4,993.06

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
12	2	12.5 WE (3,C)
Rounding Agg. Width	white/ >7 milliom	SL Mix
0	No	12.5 WE (3,C)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/it spacing		
1.5		
Design Life	Shldr Thickness	
17	5	

Segment 2

SEG	Length
2	35
ALT	Description
2	20 Yr HMA
Pavement Type	
HMA	
Primary Category	
20-year HMA	
Secondary Category	
Urban	
Shoulder Category	
Thick Bit.	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 221,965.11	$ 221,965.11
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 363.08	$ 329.51
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 4,071.69	$ 3,520.29
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 60,357.57	$ 47,359.28
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 724.14	$ 547.90
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 2,495.61	$ 1,798.81
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ (7,100.89)	$ (4,645.06)
LCCA - Net Present Cost/ per Mile			$ 270,875.84
Maintenance - Net Present Cost/per Mile			$ 48,910.73
Net Present Cost for Segment			$ 270,875.84
Maintenance - Net Present Cost for Segment			$ 48,910.73
Equivalent Annual Cost			9,555.30

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
12	2	12.5 WE (3,C)
Rounding Agg. Width	white/ >7 milliom	SL Mix
0	No	12.5 WE (3,C)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/it spacing		
1.5		
Design Life	Shldr Thickness	
20	5	

Segment 2

SEG	Length
2	35
ALT	Description
3	20 Yr PCC
Pavement Type	
PCC	
Primary Category	
> 11' Joint Spacing	
Secondary Category	
Design Life = 20 years	
Shoulder Category	
PCC	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 433,588.06	$ 433,588.06
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 68,934.11	$ 54,088.82
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 487,676.88
Maintenance - Net Present Cost/per Mile			$ 54,088.82
Net Present Cost for Segment			$ 487,676.88
Maintenance - Net Present Cost for Segment			$ 54,088.82
Equivalent Annual Cost			17,203.08

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
12	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix
0	No	
Sealed/UTBWC	ML Thickness	
Yes	7	
ML Top Lift/it spacing		
15		
Design Life	Shldr Thickness	
20	7	

50-Year Analysis Period

Project Number	Analysis Period
6916-110	50
Highway	**Discount Rate**
US 53	1.22%
Date	**Inflation Rate**
Jan-19	1
Performed By	**Ia/(1+r)**
Amy Thorson	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	20 year UBOL	20 year HMA	35 year concrete	8.8
Net Present Cost	$9,877,755.73	$8,620,212.92	$8,421,037.07	Miles
Segment #2				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$9,877,755.73**	**$8,620,212.92**	**$8,421,037.07**	**Total**
% of Low Cost	**117.3%**	**102.4%**	**100.0%**	**8.8**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	8.820	1	8.820	1	8.820
ALT	**Description**	**ALT**	**Description**	**ALT**	**Description**
1	20 year UBOL	2	20 year HMA	3	35 year concrete
Pavement Type		**Pavement Type**		**Pavement Type**	
PCC		HMA		PCC	
Primary Category		**Primary Category**		**Primary Category**	
> 11' Joint Spacing		20-year HMA		> 11' Joint Spacing	
Secondary Category		**Secondary Category**		**Secondary Category**	
Design Life = 20 years		Rural		Design Life = 35 years	
Shoulder Category		**Shoulder Category**		**Shoulder Category**	
Thick Bit.		Bituminous		Thick Bit.	
Notes:		Notes:		Notes:	

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 5,564,603.37	$ 5,564,603.37	0	Construction	$ 6,404,292.51	$ 6,404,292.51	0	Construction	$ 6,131,312.46	$ 6,131,312.46
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	$ 10,291.13	$ 9,339.69	8		$ -	$ -
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12		$ -	$ -	12	Seal	$ 130,617.59	$ 112,929.05	12		$ -	$ -
13		$ -	$ -	13		$ -	$ -	13		$ -	$ -
14		$ -	$ -	14		$ -	$ -	14		$ -	$ -
15		$ -	$ -	15		$ -	$ -	15		$ -	$ -
16		$ -	$ -	16		$ -	$ -	16		$ -	$ -
17		$ -	$ -	17		$ -	$ -	17		$ -	$ -
18		$ -	$ -	18		$ -	$ -	18		$ -	$ -
19		$ -	$ -	19		$ -	$ -	19		$ -	$ -
20	1st CPR	$ 2,286,838.15	$ 1,794,356.65	20	Mill/Overlay	$ 1,567,475.68	$ 1,229,912.32	20	1st CPR	$ 1,550,782.19	$ 1,216,813.85
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22		$ -	$ -	22		$ -	$ -	22		$ -	$ -
23		$ -	$ -	23	Crack Treatment	$ 20,525.28	$ 15,529.71	23		$ -	$ -
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27		$ -	$ -	27	Seal	$ 86,612.48	$ 62,429.44	27		$ -	$ -
28		$ -	$ -	28		$ -	$ -	28		$ -	$ -
29		$ -	$ -	29		$ -	$ -	29		$ -	$ -
30		$ -	$ -	30		$ -	$ -	30		$ -	$ -
31		$ -	$ -	31		$ -	$ -	31		$ -	$ -
32		$ -	$ -	32		$ -	$ -	32		$ -	$ -
33		$ -	$ -	33		$ -	$ -	33		$ -	$ -
34		$ -	$ -	34		$ -	$ -	34		$ -	$ -
35	R & R Mainline	$ 4,864,310.26	$ 3,181,995.88	35		$ -	$ -	35	2nd CPR	$ 1,640,156.36	$ 1,072,910.75
36		$ -	$ -	36		$ -	$ -	36		$ -	$ -
37		$ -	$ -	37	Mill/Overlay	$ 1,415,922.57	$ 904,034.87	37		$ -	$ -
38		$ -	$ -	38		$ -	$ -	38		$ -	$ -
39		$ -	$ -	39		$ -	$ -	39		$ -	$ -
40		$ -	$ -	40	Crack Treatment	$ 20,525.28	$ 12,636.76	40		$ -	$ -
41		$ -	$ -	41		$ -	$ -	41		$ -	$ -
42		$ -	$ -	42		$ -	$ -	42		$ -	$ -
43		$ -	$ -	43		$ -	$ -	43		$ -	$ -
44		$ -	$ -	44	Seal	$ 86,612.48	$ 50,799.78	44		$ -	$ -
45		$ -	$ -	45		$ -	$ -	45		$ -	$ -
46		$ -	$ -	46		$ -	$ -	46		$ -	$ -
47		$ -	$ -	47		$ -	$ -	47		$ -	$ -
48		$ -	$ -	48		$ -	$ -	48		$ -	$ -
49		$ -	$ -	49		$ -	$ -	49		$ -	$ -
50	Remaining Life	$ (1,216,077.56)	$ (663,200.17)	50	Remaining Life	$ (333,158.25)	$ (181,691.21)	50	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 9,877,755.73	LCCA - Net Present Cost/ per Mile			$ 8,620,212.92	LCCA - Net Present Cost/ per Mile			$ 8,421,037.07
Maintenance - Net Present Cost/per Mile			$ 4,313,152.37	Maintenance - Net Present Cost/per Mile			$ 2,215,920.41	Maintenance - Net Present Cost/per Mile			$ 2,289,724.61
Net Present Cost for Segment			$ 9,877,755.73	Net Present Cost for Segment			$ 8,620,212.92	Net Present Cost for Segment			$ 8,421,037.07
Maintenance - Net Present Cost for Segment			$ 4,313,152.37	Maintenance - Net Present Cost for Segment			$ 2,215,920.41	Maintenance - Net Present Cost for Segment			$ 2,289,724.61
Equivalent Annual Cost			265,063.88	Equivalent Annual Cost			231,318.45	Equivalent Annual Cost			225,973.68

Total Lane Width	# of Lanes	Analysis Period
28	2	50
Total Shldr Width	# of Shldrs	ML Mix
9	1	
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (2,B)
Sealed/UTBWC	ML Thickness	
No	6.5	
ML Top Lift/Jt spacing		
12		
Design Life	Shldr Thickness	
20	4	

Total Lane Width	# of Lanes	Analysis Period
27	2	50
Total Shldr Width	# of Shldrs	ML Mix
10	1	9.5 WE (3,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	9.5 WE (3,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
2		
Design Life	Shldr Thickness	
20	4	

Total Lane Width	# of Lanes	Analysis Period
28	2	50
Total Shldr Width	# of Shldrs	ML Mix
9	1	
Rounding Agg. Width	white/ >7 milliom	SL Mix
4	No	12.5 WE (2,B)
Sealed/UTBWC	ML Thickness	
No	7	
ML Top Lift/Jt spacing		
15		
Design Life	Shldr Thickness	
35	4	

35-Year Analysis Period

Project Number	Analysis Period
7703-16	35
Highway	Discount Rate
27	1.02%
Date	Inflation Rate
8/19/2020	1
Performed By	Ia/(1+r)
Scott Zeidler	0.9899

Notes:

LCCA SUMMARY	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	10 1/2" FDR w/ 4" Agg. Base Cl. 6 and 6" HMA	7" Unbonded Concrete Overlay	7" Concrete Reconstruct	10.1
Net Present Cost	$8,790,956.09	$11,463,948.42	$11,294,707.37	Miles
Segment #2				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$8,790,956.09**	**$11,463,948.42**	**$11,294,707.37**	**Total**
% of Low Cost	**100.0%**	**130.4%**	**128.5%**	**10.1**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	10.1	1	10.1	1	10.1
ALT	Description	ALT	Description	ALT	Description
1	10 1/2" FDR w/ 4" Agg. Base Cl. 6 and 6" HMA	2	7" Unbonded Concrete Overlay	3	7" Concrete Reconstruct
Pavement Type		Pavement Type		Pavement Type	
HMA		PCC		PCC	
Primary Category		Primary Category		Primary Category	
20-year HMA		> 11' Joint Spacing		> 11' Joint Spacing	
Secondary Category		Secondary Category		Secondary Category	
Rural		Design Life = 20 years		Design Life = 35 years	
Shoulder Category		Shoulder Category		Shoulder Category	
Bituminous		Thin Bit.		Thin Bit.	
Notes:		Notes:		Notes:	

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 6,614,044.05	$ 6,614,044.05	0	Construction	$ 8,452,047.59	$ 8,452,047.59	0	Construction	$ 9,022,736.60	$ 9,022,736.60
1		$ -	$ -	1		$ -	$ -	1		$ -	$ -
2		$ -	$ -	2		$ -	$ -	2		$ -	$ -
3		$ -	$ -	3		$ -	$ -	3		$ -	$ -
4		$ -	$ -	4		$ -	$ -	4		$ -	$ -
5		$ -	$ -	5		$ -	$ -	5		$ -	$ -
6		$ -	$ -	6		$ -	$ -	6		$ -	$ -
7		$ -	$ -	7		$ -	$ -	7		$ -	$ -
8	Crack Treatment	$ 10,474.48	$ 9,657.70	8		$ -	$ -	8		$ -	$ -
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12	Seal	$ 151,819.14	$ 134,412.03	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	$ 2,658,574.96	$ 2,170,209.33	20	1st CPR	$ 3,689,673.63	$ 3,011,900.84	20	1st CPR	$ 2,783,235.94	$ 2,271,970.78
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22		$ -	$ -	22		$ -	$ -	22		$ -	$ -
23	Crack Treatment	$ 20,890.97	$ 16,542.04	23		$ -	$ -	23		$ -	$ -
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27	Seal	$ 85,959.45	$ 65,357.40	27		$ -	$ -	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	$ (312,773.52)	$ (219,266.48)	35	Remaining Life	$ -	$ -	35	Remaining Life	$ -	$ -
LCCA - Net Present Cost/ per Mile			$ 8,790,956.09	LCCA - Net Present Cost/ per Mile			$ 11,463,948.42	LCCA - Net Present Cost/ per Mile			$ 11,294,707.37
Maintenance - Net Present Cost/per Mile			$ 2,176,912.03	Maintenance - Net Present Cost/per Mile			$ 3,011,900.84	Maintenance - Net Present Cost/per Mile			$ 2,271,970.78
Net Present Cost for Segment			$ 8,790,956.09	Net Present Cost for Segment			$ 11,463,948.42	Net Present Cost for Segment			$ 11,294,707.37
Maintenance - Net Present Cost for Segment			$ 2,176,912.03	Maintenance - Net Present Cost for Segment			$ 3,011,900.84	Maintenance - Net Present Cost for Segment			$ 2,271,970.78
Equivalent Annual Cost			299,931.39	Equivalent Annual Cost			391,129.01	Equivalent Annual Cost			385,354.82

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
16	2	9.5 WE (3,C)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (2,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/lt spacing		
2		
Design Life	Shldr Thickness	
20	3	

Total Lane Width	# of Lanes	Analysis Period
26	2	35
Total Shldr Width	# of Shldrs	ML Mix
14	2	9.5 WE (3,C)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (2,B)
Sealed/UTBWC	ML Thickness	
No	7	
ML Top Lift/lt spacing		
15		
Design Life	Shldr Thickness	
20	3	

Total Lane Width	# of Lanes	Analysis Period
26	2	35
Total Shldr Width	# of Shldrs	ML Mix
14	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (2,B)
Sealed/UTBWC	ML Thickness	
No	7	
ML Top Lift/lt spacing		
15		
Design Life	Shldr Thickness	
35	3	

50-Year Analysis Period

Project Number	Analysis Period
7905-25-1	50
Highway	**Discount Rate**
60	1.22%
Date	**Inflation Rate**
3/30/2021	1
Performed By	**Ia/(1+r)**
TRM	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	7" PCC - 35 YR	New HMA Reconstruction 2 layers - 20 YR	7" PCC - 20 YR	0.2
Net Present Cost	$592,527.92	$486,163.82	$763,251.13	Miles
Segment #2				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$592,527.92**	**$486,163.82**	**$763,251.13**	**Total**
% of Low Cost	**121.9%**	**100.0%**	**157.0%**	**0.2**

Segment 1

SEG	Length	SEG	Length	SEG	Length
1	0.23	1	0.23	1	0.23
ALT	**Description**	**ALT**	**Description**	**ALT**	**Description**
1	7" PCC - 35 YR	2	New HMA Reconstruction 2 layers - 20 YR	3	7" PCC - 20 YR
Pavement Type		**Pavement Type**		**Pavement Type**	
PCC		HMA		PCC	
Primary Category		**Primary Category**		**Primary Category**	
> 11' Joint Spacing		20-year HMA		> 11' Joint Spacing	
Secondary Category		**Secondary Category**		**Secondary Category**	
Design Life = 35 years		Urban		Design Life = 20 years	
Shoulder Category		**Shoulder Category**		**Shoulder Category**	
PCC		Thick Bit.		PCC	
Notes:		Notes:		Notes:	

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 481,649.71	$ 481,649.71	0	Construction	$ 350,137.41	$ 350,137.41	0	Construction	$ 481,649.71	$ 481,649.71
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	$ 382.72	$ 347.34	8		$ -	$ -
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12		$ -	$ -	12	Seal	$ 6,179.46	$ 5,342.62	12		$ -	$ -
13		$ -	$ -	13		$ -	$ -	13		$ -	$ -
14		$ -	$ -	14		$ -	$ -	14		$ -	$ -
15		$ -	$ -	15		$ -	$ -	15		$ -	$ -
16		$ -	$ -	16		$ -	$ -	16		$ -	$ -
17		$ -	$ -	17		$ -	$ -	17		$ -	$ -
18		$ -	$ -	18		$ -	$ -	18		$ -	$ -
19		$ -	$ -	19		$ -	$ -	19		$ -	$ -
20	1st CPR	$ 69,864.48	$ 54,818.83	20	Mill/Overlay	$ 90,657.65	$ 71,134.09	20	1st CPR	$ 107,629.31	$ 84,450.83
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22		$ -	$ -	22		$ -	$ -	22		$ -	$ -
23		$ -	$ -	23	Crack Treatment	$ 763.32	$ 577.54	23		$ -	$ -
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27		$ -	$ -	27	Seal	$ 3,637.30	$ 2,621.73	27		$ -	$ -
28		$ -	$ -	28		$ -	$ -	28		$ -	$ -
29		$ -	$ -	29		$ -	$ -	29		$ -	$ -
30		$ -	$ -	30		$ -	$ -	30		$ -	$ -
31		$ -	$ -	31		$ -	$ -	31		$ -	$ -
32		$ -	$ -	32		$ -	$ -	32		$ -	$ -
33		$ -	$ -	33		$ -	$ -	33		$ -	$ -
34		$ -	$ -	34		$ -	$ -	34		$ -	$ -
35	2nd CPR	$ 85,697.86	$ 56,059.38	35		$ -	$ -	35	R & R Mainline	$ 380,738.17	$ 249,060.45
36		$ -	$ -	36		$ -	$ -	36		$ -	$ -
37		$ -	$ -	37	Mill/Overlay	$ 104,673.12	$ 66,831.44	37		$ -	$ -
38		$ -	$ -	38		$ -	$ -	38		$ -	$ -
39		$ -	$ -	39		$ -	$ -	39		$ -	$ -
40		$ -	$ -	40	Crack Treatment	$ 763.32	$ 469.95	40		$ -	$ -
41		$ -	$ -	41		$ -	$ -	41		$ -	$ -
42		$ -	$ -	42		$ -	$ -	42		$ -	$ -
43		$ -	$ -	43		$ -	$ -	43		$ -	$ -
44		$ -	$ -	44	Seal	$ 3,637.30	$ 2,133.34	44		$ -	$ -
45		$ -	$ -	45		$ -	$ -	45		$ -	$ -
46		$ -	$ -	46		$ -	$ -	46		$ -	$ -
47		$ -	$ -	47		$ -	$ -	47		$ -	$ -
48		$ -	$ -	48		$ -	$ -	48		$ -	$ -
49		$ -	$ -	49		$ -	$ -	49		$ -	$ -
50	Remaining Life	$ -	$ -	50	Remaining Life	$ (24,628.97)	$ (13,431.66)	50	Remaining Life	$ (95,184.54)	$ (51,909.85)
LCCA - Net Present Cost/ per Mile			$ 592,527.92	LCCA - Net Present Cost/ per Mile			$ 486,163.82	LCCA - Net Present Cost/ per Mile			$ 763,251.13
Maintenance - Net Present Cost/per Mile			$ 110,878.21	Maintenance - Net Present Cost/per Mile			$ 136,026.41	Maintenance - Net Present Cost/per Mile			$ 281,601.42
Net Present Cost for Segment			$ 592,527.92	Net Present Cost for Segment			$ 486,163.82	Net Present Cost for Segment			$ 763,251.13
Maintenance - Net Present Cost for Segment			$ 110,878.21	Maintenance - Net Present Cost for Segment			$ 136,026.41	Maintenance - Net Present Cost for Segment			$ 281,601.42
Equivalent Annual Cost			15,900.15	Equivalent Annual Cost			13,045.93	Equivalent Annual Cost			20,481.40

Total Lane Width	# of Lanes	Analysis Period
38	2	50
Total Shldr Width	**# of Shldrs**	**ML Mix**
0	0	12.5 WE (4,F)
Rounding Agg. Width	**white/ >7 milliom**	**SL Mix**
0	No	12.5 WE (4,F)
Sealed/UTBWC	**ML Thickness**	
Yes	7	
ML Top Lift/Jt spacing		
15		
Design Life	**Shldr Thickness**	
35	0	

Total Lane Width	# of Lanes	Analysis Period
38	2	50
Total Shldr Width	**# of Shldrs**	**ML Mix**
0	0	12.5 WE (3,B)
Rounding Agg. Width	**white/ >7 milliom**	**SL Mix**
0	No	12.5 WE (3,B)
Sealed/UTBWC	**ML Thickness**	
No		
ML Top Lift/Jt spacing		
2		
Design Life	**Shldr Thickness**	
20	0	

Total Lane Width	# of Lanes	Analysis Period
38	2	50
Total Shldr Width	**# of Shldrs**	**ML Mix**
0	0	
Rounding Agg. Width	**white/ >7 milliom**	**SL Mix**
0	No	
Sealed/UTBWC	**ML Thickness**	
Yes	7	
ML Top Lift/Jt spacing		
15		
Design Life	**Shldr Thickness**	
20	0	

35-Year Analysis Period

Project Number	Analysis Period
7902-25-2	35
Highway	**Discount Rate**
60	1.22%
Date	**Inflation Rate**
3/26/2020	1
Performed By	**Ia/(1+r)**
Tom Meath	0.9879

Notes:

LCCA SUMMARY

	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	Medium Bit. Mill and Overlay-15 YR FIX	Whitetopping-20 YR FIX	Heavy Bit. Mill and Overlay-20 YR FIX	11.9
Net Present Cost	$5,542,817.28	$9,561,780.93	$6,108,328.43	Miles
Segment #2				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$5,542,817.28**	**$9,561,780.93**	**$6,108,328.43**	**Total**
% of Low Cost	**100.0%**	**172.5%**	**110.2%**	**11.9**

Segment 1

SEG	Length
1	11.87
ALT	**Description**
1	Medium Bit. Mill and Overlay-15 YR FIX
Pavement Type	
HMA	
Primary Category	
Overlay	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 2,391,191.24	$ 2,391,191.24
1		$ -	$ -
2		$ -	$ -
3	Crack Treatment	$ 24,536.20	$ 23,659.65
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7	Seal	$ 103,660.32	$ 95,224.39
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15	Mill/Overlay	$ 2,461,641.76	$ 2,052,248.07
16		$ -	$ -
17		$ -	$ -
18	Crack Treatment	$ 24,536.20	$ 19,724.83
19		$ -	$ -
20		$ -	$ -
21		$ -	$ -
22	Seal	$ 103,660.32	$ 79,387.70
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29	Mill/Overlay	$ 2,461,641.76	$ 1,731,813.80
30		$ -	$ -
31		$ -	$ -
32	Crack Treatment	$ 24,536.20	$ 16,645.03
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ (1,325,499.41)	$ (867,077.44)
LCCA - Net Present Cost/ per Mile			$ 5,542,817.28
Maintenance - Net Present Cost/per Mile			$ 3,151,626.04
Net Present Cost for Segment			$ 5,542,817.28
Maintenance - Net Present Cost for Segment			$ 3,151,626.04
Equivalent Annual Cost			195,526.00

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
6	2	12.5 WE (3,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (3,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
1.5		
Design Life	Shldr Thickness	
15	3	

SEG	Length
1	11.87
ALT	**Description**
2	Whitetopping-20 YR FIX
Pavement Type	
PCC	
Primary Category	
6'x6', 5.0 in. or Thinner	
Secondary Category	
Design Life = 20 years	
Shoulder Category	
PCC	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 3,993,767.65	$ 3,993,767.65
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	1st CPR	$ 5,951,789.29	$ 4,670,043.09
21		$ -	$ -
22		$ -	$ -
23		$ -	$ -
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27		$ -	$ -
28		$ -	$ -
29		$ -	$ -
30	R & R Mainline	$ 6,684,357.23	$ 4,645,897.91
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ (5,729,449.05)	$ (3,747,927.73)
LCCA - Net Present Cost/ per Mile			$ 9,561,780.93
Maintenance - Net Present Cost/per Mile			$ 5,568,013.27
Net Present Cost for Segment			$ 9,561,780.93
Maintenance - Net Present Cost for Segment			$ 5,568,013.27
Equivalent Annual Cost			337,297.20

Total Lane Width	# of Lanes	Analysis Period
30	2	35
Total Shldr Width	# of Shldrs	ML Mix
6	2	
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	Yes	
Sealed/UTBWC	ML Thickness	
Yes	5	
ML Top Lift/Jt spacing		
6		
Design Life	Shldr Thickness	
20	5	

SEG	Length
1	11.87
ALT	**Description**
3	Heavy Bit. Mill and Overlay-20 YR FIX
Pavement Type	
HMA	
Primary Category	
20-year HMA	
Secondary Category	
Rural	
Shoulder Category	
Bituminous	
Notes:	

Year	Activity	Cost	Present Cost
0	Construction	$ 3,893,098.76	$ 3,893,098.76
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5		$ -	$ -
6		$ -	$ -
7		$ -	$ -
8	Crack Treatment	$ 12,302.16	$ 11,164.80
9		$ -	$ -
10		$ -	$ -
11		$ -	$ -
12	Seal	$ 174,861.54	$ 151,181.38
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 2,769,026.17	$ 2,172,703.19
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 24,536.20	$ 18,564.43
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 103,660.32	$ 74,717.36
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35	Remaining Life	$ (325,767.79)	$ (213,101.49)
LCCA - Net Present Cost/ per Mile			$ 6,108,328.43
Maintenance - Net Present Cost/per Mile			$ 2,215,229.67
Net Present Cost for Segment			$ 6,108,328.43
Maintenance - Net Present Cost for Segment			$ 2,215,229.67
Equivalent Annual Cost			215,474.72

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	# of Shldrs	ML Mix
6	2	12.5 WE (3,B)
Rounding Agg. Width	white/ >7 milliom	SL Mix
3	No	12.5 WE (3,B)
Sealed/UTBWC	ML Thickness	
No		
ML Top Lift/Jt spacing		
2		
Design Life	Shldr Thickness	
20	5	

35-Year Analysis Period

Project Number	Analysis Period
S.P. 7904-44	35
Highway	**Discount Rate**
61 SB	1.02%
Date	**Inflation Rate**
9/20/2020	1
Performed By	**Ia/(1+r)**
trm	0.9899

TH 61 SB From 1.7 Mi. NW TH 60 to 0.153 Mi. N. TH 248(R.P. 34.352-61.868)

LCCA SUMMARY	Alternate #1	Alternate #2	Alternate #3	Length
Segment #1	7" Whitetopping-20 YR	1.5" Mill & 3" HMA Overlay-15 YR	3" Mill & 5" HMA Overlay-20 YR	26.9
Net Present Cost	$18,929,300.66	$12,519,827.14	$12,508,963.15	Miles
Segment #2				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #3				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Segment #4				0.0
Net Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$18,929,300.66**	**$12,519,827.14**	**$12,508,963.15**	**Total**
% of Low Cost	**151.3%**	**100.1%**	**100.0%**	**26.9**

Segment 1

SEG	Length		SEG	Length		SEG	Length	
1	26.9		1	26.9		1	26.9	
ALT	**Description**		**ALT**	**Description**		**ALT**	**Description**	
1	7" Whitetopping-20 YR		2	1.5" Mill & 3" HMA Overlay-15 YR		3	3" Mill & 5" HMA Overlay-20 YR	
Pavement Type			**Pavement Type**			**Pavement Type**		
PCC			HMA			HMA		
Primary Category			**Primary Category**			**Primary Category**		
> 11' Joint Spacing			Overlay			20-year HMA		
Secondary Category			**Secondary Category**			**Secondary Category**		
Design Life = 20 years			Rural			Rural		
Shoulder Category			**Shoulder Category**			**Shoulder Category**		
Thick Bit.			Bituminous			Bituminous		
Notes:			Notes:			Notes:		

Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost	Year	Activity	Cost	Present Cost
0	Construction	$ 12,692,218.87	$ 12,692,218.87	0	Construction	$ 4,588,977.46	$ 4,588,977.46	0	Construction	$ 6,982,409.56	$ 6,982,409.56
1		$ -	$ -	1		$ -	$ -	1		$ -	$ -
2		$ -	$ -	2		$ -	$ -	2		$ -	$ -
3		$ -	$ -	3	Crack Treatment	$ 55,422.70	$ 53,760.79	3		$ -	$ -
4		$ -	$ -	4		$ -	$ -	4		$ -	$ -
5		$ -	$ -	5		$ -	$ -	5		$ -	$ -
6		$ -	$ -	6		$ -	$ -	6		$ -	$ -
7		$ -	$ -	7	Seal	$ 207,689.72	$ 193,447.64	7		$ -	$ -
8		$ -	$ -	8		$ -	$ -	8	Crack Treatment	$ 27,788.29	$ 25,621.40
9		$ -	$ -	9		$ -	$ -	9		$ -	$ -
10		$ -	$ -	10		$ -	$ -	10		$ -	$ -
11		$ -	$ -	11		$ -	$ -	11		$ -	$ -
12		$ -	$ -	12		$ -	$ -	12	Seal	$ 376,861.77	$ 333,651.98
13		$ -	$ -	13		$ -	$ -	13		$ -	$ -
14		$ -	$ -	14		$ -	$ -	14		$ -	$ -
15		$ -	$ -	15	Mill/Overlay	$ 6,059,607.14	$ 5,203,960.67	15		$ -	$ -
16		$ -	$ -	16		$ -	$ -	16		$ -	$ -
17		$ -	$ -	17		$ -	$ -	17		$ -	$ -
18		$ -	$ -	18	Crack Treatment	$ 55,422.70	$ 46,169.50	18		$ -	$ -
19		$ -	$ -	19		$ -	$ -	19		$ -	$ -
20	1st CPR	$ 7,640,622.14	$ 6,237,081.79	20		$ -	$ -	20	Mill/Overlay	$ 6,766,527.12	$ 5,523,553.22
21		$ -	$ -	21		$ -	$ -	21		$ -	$ -
22		$ -	$ -	22	Seal	$ 207,689.72	$ 166,131.88	22		$ -	$ -
23		$ -	$ -	23		$ -	$ -	23	Crack Treatment	$ 55,422.70	$ 43,885.22
24		$ -	$ -	24		$ -	$ -	24		$ -	$ -
25		$ -	$ -	25		$ -	$ -	25		$ -	$ -
26		$ -	$ -	26		$ -	$ -	26		$ -	$ -
27		$ -	$ -	27		$ -	$ -	27	Seal	$ 207,689.72	$ 157,912.37
28		$ -	$ -	28		$ -	$ -	28		$ -	$ -
29		$ -	$ -	29	Mill/Overlay	$ 6,059,607.14	$ 4,514,720.90	29		$ -	$ -
30		$ -	$ -	30		$ -	$ -	30		$ -	$ -
31		$ -	$ -	31		$ -	$ -	31		$ -	$ -
32		$ -	$ -	32	Crack Treatment	$ 55,422.70	$ 40,054.57	32		$ -	$ -
33		$ -	$ -	33		$ -	$ -	33		$ -	$ -
34		$ -	$ -	34		$ -	$ -	34		$ -	$ -
35	Remaining Life	$ -	$ -	35	Remaining Life	$ (3,262,865.38)	$ (2,287,396.28)	35	Remaining Life	$ (796,062.01)	$ (558,070.61)

LCCA - Net Present Cost/ per Mile	$ 18,929,300.66	LCCA - Net Present Cost/ per Mile		$ 12,519,827.14	LCCA - Net Present Cost/ per Mile		$ 12,508,963.15
Maintenance - Net Present Cost/per Mile	$ 6,237,081.79	Maintenance - Net Present Cost/per Mile		$ 7,930,849.67	Maintenance - Net Present Cost/per Mile		$ 5,526,553.59
Net Present Cost for Segment	$ 18,929,300.66	Net Present Cost for Segment		$ 12,519,827.14	Net Present Cost for Segment		$ 12,508,963.15
Maintenance - Net Present Cost for Segment	$ 6,237,081.79	Maintenance - Net Present Cost for Segment		$ 7,930,849.67	Maintenance - Net Present Cost for Segment		$ 5,526,553.59
Equivalent Annual Cost	645,833.22	Equivalent Annual Cost		427,153.67	Equivalent Annual Cost		426,783.01

Total Lane Width	# of Lanes	Analysis Period
26	2	35
Total Shldr Width	**# of Shldrs**	**ML Mix**
9	2	
Rounding Agg. Width	**white/ >7 milliom**	**SL Mix**
3	Yes	12.5 WE (2,B)
Sealed/UTBWC	**ML Thickness**	
Yes	7	
ML Top Lift/Jt spacing		
15		
Design Life	**Shldr Thickness**	
20	4	

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	**# of Shldrs**	**ML Mix**
11	2	12.5 WE (4,B)
Rounding Agg. Width	**white/ >7 milliom**	**SL Mix**
3	No	12.5 WE (2,B)
Sealed/UTBWC	**ML Thickness**	
No		
ML Top Lift/Jt spacing		
1.5		
Design Life	**Shldr Thickness**	
15	6.5	

Total Lane Width	# of Lanes	Analysis Period
24	2	35
Total Shldr Width	**# of Shldrs**	**ML Mix**
11	2	12.5 WE (4,B)
Rounding Agg. Width	**white/ >7 milliom**	**SL Mix**
3	No	12.5 WE (2,B)
Sealed/UTBWC	**ML Thickness**	
No		
ML Top Lift/Jt spacing		
2		
Design Life	**Shldr Thickness**	
20	7	

50-Year Analysis Period

Project Number	Analysis Period
Begin LC	50
Name	Discount Rate
Date	Inflation Rate
Estimator	3.00%
Performed By	Deflation
Version Number	2.00%

Notes:

LCCA SUMMARY

	Alternative #1	Alternative #2	Alternative #3	Length
Segment #1	4" MAC 9" Revision & 6.5" MAC Overlay	7" Concrete Reconstruction	3.5" MAC & 9" MillAndLaying	0.5
Total Present Cost	$5,625,788.68	$6,832,326.76	$6,885,796.76	Miles
Segment #2	4" MAC, 9" Revision & 6.5" MAC Overlay	7" Concrete Reconstruction	3.5" MAC & 9" MillAndLaying	7.2
Total Present Cost	$5,625,788.68	$6,832,326.76	$6,885,796.76	Miles
Segment #3	4" MAC, 9" Revision & 6.5" MAC Overlay	7" Concrete Reconstruction	3.5" MAC & 9" MillAndLaying	11.9
Total Present Cost	$5,625,788.68	$6,698,126.76	$7,102,386.40	Miles
Segment #4				0.0
Total Present Cost	$0.00	$0.00	$0.00	Miles
Project Net Present Cost	**$9,694,028.43**	**$17,363,595.29**	**$13,809,632.92**	**Total**
% of Low Cost	**100.0%**	**179.1%**	**142.5%**	**22.5**

Segment 1

SEG	Length
1	5.00
ALT	Description
A	4" MAC, 9" Revision & 6.5" MAB (Overlay

Pavement Type
ASC
Primary Category
4 Lan Undiv, in Climate
Secondary Category
Rural, Undiv, < 35 mph
Shoulder Category
Thick Ps

Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 904,354.00	$ 904,354.00
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5	Crack Treatment	$ 4,209.53	$ 3,952.18
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11	Seal	$ 35,965.10	$ 31,050.60
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 490,610.90	$ 361,985.35
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 8,377.76	$ 6,168.72
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 21,098.87	$ 15,357.48
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36	Mill/Overlay	$ 490,610.90	$ 351,371.56
37		$ -	$ -
38		$ -	$ -
39	Crack Treatment	$ 8,377.76	$ 5,557.40
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43	Seal	$ 21,098.87	$ 13,191.87
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Reconstruction	$ 1,026,162.00	$ 732,982.55

2023 - Net Present Cost Calculation	$ 1,521,726.85
Net Present Cost for Segment	$ 1,521,726.85
Maintenance - Net Present Cost Per Segment	$ 104,061.83
Rejuvenation Annual Cost	$ 46,700.57

Total Lane Width	# of Lanes	Analysis Period	
24	2	50	
Total Slab Width	# of Slabs	Mk Mix	
24	2	1	
Rounding Agg. Width	w/Acc / F-inches	% Mix	
0	No	12.5 MX (1,4)	
Jointed/CRCP/WC	Mk Thickness		
No	7		
Mk Type/Dir spacing			
1.5	1		
Design Life	Widt Thickness		
20	1.5		

Segment 2

SEG	Length
2	7.20
ALT	Description
A	4" MAC, 9" Revision & 6.5" MAB (Overlay

Pavement Type
ASC
Primary Category
4 Lan Undiv, in Climate
Secondary Category
Rural, Undiv, < 35 mph
Shoulder Category
Thick Ps

Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 5,600,548.68	$ 5,600,548.68
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5	Crack Treatment	$ 8,085.32	$ 7,598.99
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11	Seal	$ 70,457.05	$ 60,729.07
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 966,109.12	$ 779,175.46
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 17,182.67	$ 13,114.89
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 43,690.76	$ 33,353.69
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36	Mill/Overlay	$ 966,109.12	$ 650,559.87
37		$ -	$ -
38		$ -	$ -
39	Crack Treatment	$ 17,182.67	$ 10,475.35
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43	Seal	$ 43,690.76	$ 25,665.99
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Reconstruction	$ 1,026,162.00	$ 727,187.19

2023 - Net Present Cost Calculation	$ 1,198,168.45
Net Present Cost for Segment	$ 1,198,168.45
Maintenance - Net Present Cost Per Segment	$ 148,454.38
Rejuvenation Annual Cost	$ 66,617.66

Total Lane Width	# of Lanes	Analysis Period	
24	2	50	
Total Slab Width	# of Slabs	Mk Mix	
24	2	1	
Rounding Agg. Width	w/Acc / F-inches	% Mix	
0	No	12.5 MX (1,4)	
Jointed/CRCP/WC	Mk Thickness		
No	7		
Mk Type/Dir spacing			
1.5	1		
Design Life	Widt Thickness		
20	1.5		

Segment 3

SEG	Length
3	11.90
ALT	Description
A	4" MAC, 9" Revision & 6.5" MAB (Overlay

Pavement Type
ASC
Primary Category
4 Lan Undiv, in Climate
Secondary Category
Rural, Undiv, < 35 mph
Shoulder Category
Thick Ps

Notes:

Year	Activity	Cost	Present Cost
0	Construction	$ 9,701,368.96	$ 9,701,368.96
1		$ -	$ -
2		$ -	$ -
3		$ -	$ -
4		$ -	$ -
5	Crack Treatment	$ 13,115.07	$ 12,322.68
6		$ -	$ -
7		$ -	$ -
8		$ -	$ -
9		$ -	$ -
10		$ -	$ -
11	Seal	$ 101,765.18	$ 89,379.87
12		$ -	$ -
13		$ -	$ -
14		$ -	$ -
15		$ -	$ -
16		$ -	$ -
17		$ -	$ -
18		$ -	$ -
19		$ -	$ -
20	Mill/Overlay	$ 1,626,065.90	$ 1,275,305.49
21		$ -	$ -
22		$ -	$ -
23	Crack Treatment	$ 28,860.55	$ 21,860.35
24		$ -	$ -
25		$ -	$ -
26		$ -	$ -
27	Seal	$ 71,995.46	$ 51,888.58
28		$ -	$ -
29		$ -	$ -
30		$ -	$ -
31		$ -	$ -
32		$ -	$ -
33		$ -	$ -
34		$ -	$ -
35		$ -	$ -
36	Mill/Overlay	$ 1,626,065.90	$ 1,097,370.41
37		$ -	$ -
38		$ -	$ -
39	Crack Treatment	$ 28,860.55	$ 17,462.95
40		$ -	$ -
41		$ -	$ -
42		$ -	$ -
43	Seal	$ 71,995.46	$ 43,857.49
44		$ -	$ -
45		$ -	$ -
46		$ -	$ -
47		$ -	$ -
48		$ -	$ -
49		$ -	$ -
50	Reconstruction	$ 1,726,162.00	$ 1,222,580.40

2023 - Net Present Cost Calculation	$ 1,521,726.85
Net Present Cost for Segment	$ 1,521,726.85
Maintenance - Net Present Cost Per Segment	$ 1,414,061.73
Rejuvenation Annual Cost	$ 786,782.74

Total Lane Width	# of Lanes	Analysis Period	
24	2	50	
Total Slab Width	# of Slabs	Mk Mix	
24	2	1	
Rounding Agg. Width	w/Acc / F-inches	% Mix	
0	No	12.5 MX (1,4)	
Jointed/CRCP/WC	Mk Thickness		
No	7		
Mk Type/Dir spacing			
1.5	1		
Design Life	Widt Thickness		
20	1.5		