



Illinois Department of Transportation

To: Paul Loete Attn: Kevin Marchek
From: Maureen M. Addis *MA*
Subject: Pavement Design
Date: February 1, 2016

FAI Route 74 (I-74)
81B & (81-1)R-1 & 81-1(HBR, HBR-1, HBR-2)
Rock Island County
Mississippi River Corridor in Moline

The original project, submitted to BDE and approved in 2011, will reconstruct I-74 in Moline to tie-in to a new highway structure spanning the Mississippi River. The BDE Manual mandates all pavement designs are to be re-evaluated after a 5 year period. The original design utilized a 12-inch CRC pavement, but a jointed concrete cross section is being proposed now. The project length is greater than 2 lane-miles, but the LCCA favors a rigid design by more than 10%.

The approved pavement design is as follows:

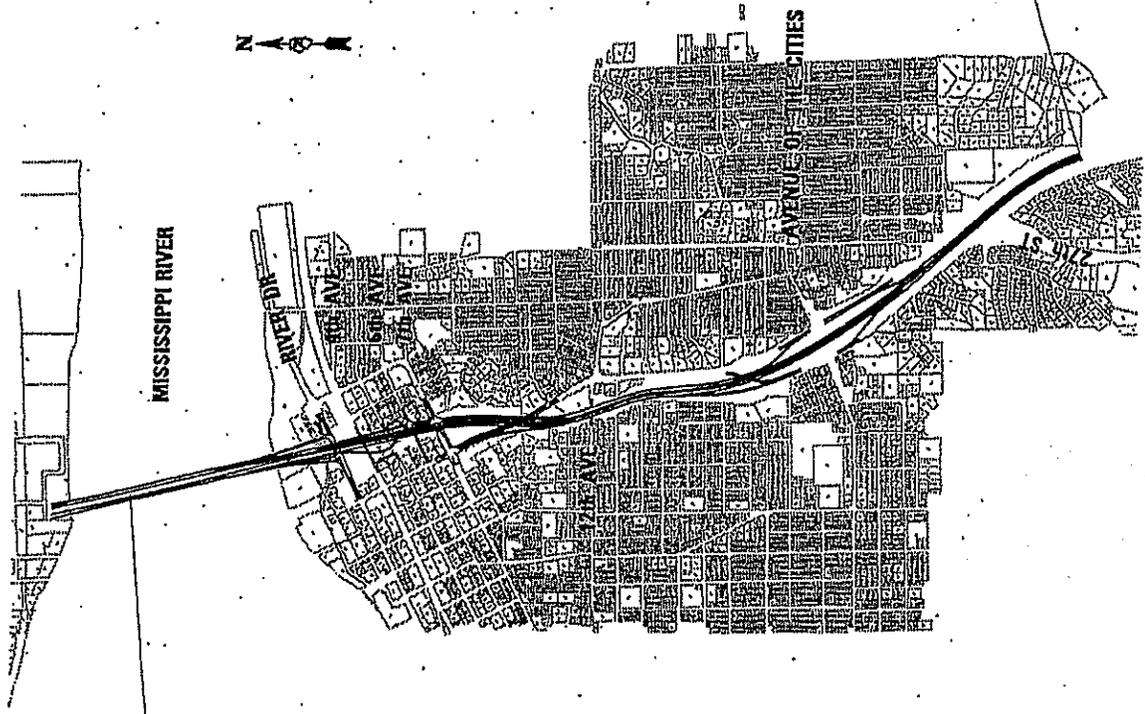
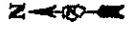
I-74 (New Pavement)

10.5 inches of PCC Pavement with tied curb & gutter or shoulder
4 inches of Stabilized Sub-Base
13.5 inches of Aggregate Subgrade

If you have any questions, please contact Paul Niedernhofer at (217) 524-1651.

PROJECT BEGINS
STA. 0+00 I-74

MISSISSIPPI RIVER



PROJECT ENDS
STA. 155+00 I-74

PROJECT AND TRAFFIC INPUTS

(Enter Data in Gray Shaded Cells)

Route: I-74	Comments:				
Section: 81B & (81-1)R-1 & 81-1(HBR, HBR-1, HBR-2)					
County: Rock Island	Design Date: 06/03/2015	RAM	<-- BY		
Location: Mississippi River Corridor in Moline	Modify Date:				
Facility Type: Interstate or Freeway	# of Lanes = 6 or more			ADT	Year
				Current: 79,900	2017
				Future: 101,000	2037

Structural Design Traffic				
	Minimum ADT	Actual ADT	Actual % of Total ADT	% of ADT in Design Lane
PV =	0	82,671	91.4%	P = 8%
SU =	500	4,342	4.8%	S = 37%
MU =	1500	3,437	3.8%	M = 37%
Struct. Design ADT =	90,450		(2027)	

Road Class: I	Rural or Urban ? Urban
Subgrade Support Rating (SSR): Poor	Construction Year: 2017
Design Period (DP) = 20 years	

FLEXIBLE PAVEMENT		RIGID PAVEMENT	
Cpv = 0.15	Csu = 132.5	Cpv = 0.15	Csu = 143.81
Cmu = 482.53	TF flexible (Actual) = 16.55 (Actual ADT)	Cmu = 696.42	TF rigid (Actual) = 22.35 (Actual ADT)
TF flexible (Min) = 5.85 (Min ADT Fig. 54-2.C)		TF rigid (Min) = 8.26 (Min ADT Fig. 54-2.C)	

TRAFFIC FACTOR CALCULATION

NEW CONSTRUCTION / RECONSTRUCTION PAVEMENT DESIGN CALCULATIONS

Full-Depth HMA Pavement		JPC Pavement	
Use TF flexible = 16.55	PG Grade Lower Binder Lifts = PG 64-22 (Fig. 53-4.R)	Use TF rigid = 22.35	Edge Support = Tied Shoulder or C.&G.
HMA Mixture Temp. = 75.5 deg. F (Fig. 54-5.C)	Design HMA Mixture Modulus (E _{HMA}) = 680 ksi (Fig. 54-5.D)	Rigid Pavt Thick. = 10.50 in. (Fig. 54-4.E)	
Design HMA Strain (ε _{HMA}) = 54 (Fig. 54-5.E)	Full Depth HMA Design Thickness = 13.50 in. (Fig. 54-5.F)	CRC Pavement	
Limiting Strain Criterion Thickness = 14.75 in. (Fig. 54-5.I)	Use Full-Depth HMA Thickness = 13.50 inches	Use TF rigid = 22.35	IBR value = 3
		CRCP Thickness = 10.00 in. (Fig. 54-4.M)	

TF MUST BE > 60 FOR CRCP

RECONSTRUCTION ONLY (SUPPLEMENTAL) PAVEMENT DESIGN CALCULATIONS

HMA Overlay of Rubblized PCC		Unbonded Concrete Overlay	
Use TF flexible = 16.55	HMA Overlay Design Thickness = 10.75 in. (Fig. 54-5.U)	Review 54-4.03 for limitations and special considerations.	
Limiting Strain Criterion Thickness = 999.00 inches	Use HMA Overlay Thickness = 999.00 inches	JPCP Thickness = NA inches	

CONTACT BMPR FOR ASSISTANCE

DESIGN TABLES FROM BDE MANUAL CHAPTER 54 - PAVEMENT DESIGN

Class I Roads	Class II Roads	Class III Roads	Class IV Roads
4 lanes or more Part of a future 4 lanes or more One-way Streets with ADT > 3500	2 lanes with ADT > 2000 One way Street with ADT <= 3500	2 Lanes (ADT 750 -2000)	2 Lanes (ADT < 750)

Facility Type	Min. Str. Design Traffic (Fig 54-2.C)		
	PV	SU	MU
Interstate or Freeway	0	500	1500
Other Marked State Route	0	250	750
Unmarked State Route	No Min	No Min	No Min

Class Table for One-Way Streets	
ADT	Class
0 - 3500	II
>3501	I

Class	Traffic Factor ESAL Coefficients			
	Rigid (Fig. 54-4.C)		Flexible (Fig. 54-5.B)	
	Csu	Cmu	Csu	Cmu
I	143.81	696.42	132.50	482.53
II	135.78	567.21	112.06	385.44
III	129.58	562.47	109.14	384.35
IV	129.58	562.47	109.14	384.35

Class Table for 2 or 3 lanes (not future 4 lane & not one-way street)	
ADT	Class
0 - 749	IV
750 - 2000	III
>2000	II

Number of Lanes	Design Lane Distribution Factors For Structural Design Traffic (Fig. 54-2.B)					
	Rural			Urban		
	P	S	M	P	S	M
1 Lane Ramp	100%	100%	100%	100%	100%	100%
2 or 3	50%	50%	50%	50%	50%	50%
4	32%	45%	45%	32%	45%	45%
6 or more	20%	40%	40%	8%	37%	37%

LIFE-CYCLE COST ANALYSIS: NEW CONSTRUCTION / RECONSTRUCTION

FULL-DEPTH HMA PAVEMENT

Standard Design

ROUTE SECTION I-74
 COUNTY 81B & (81-1)R-1 & 81-1(HBR, HBR-1, HBR-2)
 LOCATION Rock Island
 Mississippi River Corridor in Moline

FACILITY TYPE INTERSTATE

PROJECT LENGTH 13115 FT ==> 2.48 Miles
 # OF CENTERLINES 4 CL
 # OF LANES 6 LANES
 # OF EDGES 4 EP
 LANE WIDTH - AVERAGE 12 FT
 SHOULDER WIDTH HMA Inside 12 FT
 HMA Outside 12 FT
 Total Width of Paved Shoulders 48 FT

PAVEMENT THICKNESS (FLEXIBLE) 13.50 IN 14.75 IN MAX
 SHOULDER THICKNESS 8.00 IN HMA SD Standard Design
 POLICY OVERLAY THICKNESS 3.75 IN

FLEX PAVEMENT	TRAFFIC FACTORS	MINIMUM	ACTUAL	USE
		5.85	16.55	16.55

Read Me!

HMA COST PER TON	UNIT PRICE
HMA SURFACE	\$88.00 / TON
HMA TOP BINDER	\$83.00 / TON
HMA LOWER BINDER	\$78.00 / TON
HMA BINDER (LEVELING)	\$88.00 / TON
HMA SHOULDER	\$76.00 / TON

INITIAL COSTS

ITEM	THICKNESS	100% QUANTITY	UNIT	UNIT PRICE	COST
HMA PAVEMENT (FULL-DEPTH)	(13.50")	104,920	SQ YD	\$55.64 / SQ YD	\$5,837,749 ~
HMA SURFACE COURSE	(2.00")	11,805	TONS	\$88.00 / TON	\$0
HMA TOP BINDER COURSE	(2.25")	13,411	TONS	\$83.00 / TON	\$0
HMA LOWER BINDER COURSE	(9.25")	56,582	TONS	\$78.00 / TON	\$0
HMA SHOULDER	(8.00")	31,336	TONS	\$76.00 / TON	\$2,381,544 ~
CURB & GUTTER		0	LIN FT	\$30.00 / LIN FT	\$0
SUBBASE GRAN MATL TY C (TONS)		13,449	TONS	\$21.00 / TON	\$282,429
IMPROVED SUBGRADE:	Aggregate	184,339	SQ YD	\$8.00 / SQ YD	\$1,474,712
Reserved For User Supplied Item		0	UNITS	\$0.00 / UNITS	\$0
Reserved For User Supplied Item		0	UNITS	\$0.00 / UNITS	\$0
PAVEMENT REMOVAL		104,920	SQ YD	\$0.00 / SQ YD	\$0
SHOULDER REMOVAL		69,947	SQ YD	\$0.00 / SQ YD	\$0

Note: * Denotes User Supplied Quantity

FLEXIBLE CONSTRUCTION INITIAL COST \$9,976,434
 FLEXIBLE CONSTRUCTION ANNUAL COST PER MILE \$163,811

MAINTENANCE COSTS:

ITEM	THICKNESS	MATERIAL	T	UNIT COST
ROUTINE MAINTENANCE ACTIVITY				\$0.00 LANE-MILE / YEAR
HMA OVERLAY PVMT SURF	(2.00")	Surface Mix	2.00	\$9.90 / SQ YD
HMA OVERLAY PVMT	(3.75")	Surface Mix	3.75	\$18.00 / SQ YD
HMA SURFACE MIX	(1.50")	Surface Mix	1.60	\$7.42 / SQ YD
HMA BINDER MIX	(2.25")	Top Binder Mix	2.25	\$10.59 / SQ YD
HMA OVERLAY SHLD (Year 30)	(1.75")	Shoulder Mix	1.75	\$7.45 / SQ YD
HMA OVERLAY SHLD	(2.00")	Shoulder Mix	2.00	\$8.51 / SQ YD
MILLING (2.00 IN)			2.00	\$3.00 / SQ YD
PARTIAL DEPTH PVMT PATCH (Mill & Fill Surf)		Surface Mix	2.00	\$79.86 / SQ YD
PARTIAL DEPTH SHLD PATCH (Mill & Fill Surf)		Shoulder Mix	2.00	\$78.51 / SQ YD
PARTIAL DEPTH PVMT PATCH (Mill & Fill +2.00")		Leveling Binder Mix	2.00	\$79.86 / SQ YD
PARTIAL DEPTH SHLD PATCH (Mill & Fill +2.00")		Shoulder Mix	2.00	\$78.51 / SQ YD
LONGITUDINAL SHOULDER JOINT ROUT & SEAL				\$2.00 / LIN FT
CENTERLINE JOINT ROUT & SEAL				\$2.00 / LIN FT
RANDOM / THERMAL CRACK ROUT & SEAL (100% Rehab = 110.00' / Stallion / Lane)				\$2.00 / LIN FT

FLEXIBLE TOTAL LIFE-CYCLE COST \$13,687,041
 FLEXIBLE TOTAL ANNUAL COST PER MILE \$224,739

FULL-DEPTH HMA PAVEMENT
HMA OVERLAY OF RUBBLIZED PCC PAVEMENT
Figure 54-7.C
STANDARD DESIGN

MAINTENANCE COSTS:	ITEM	%	QUANTITY	UNIT	UNIT COST	COST	PRESENT WORTH
YEAR 5							
	LONG SHLD JT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	CNTR LINE JOINT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	RNDM / THRM CRACK R&S	50.00%	43,280	LIN FT	\$2.00	\$86,560	
	PD PVMT PATCH M&F SURF	0.10%	105	SQ YD	\$79.86	\$8,385	
	PWFn =	0.8626		PW =	0.8626 X	\$304,785	\$262,910
YEAR 10							
	LONG SHLD JT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	CNTR LINE JOINT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	RNDM / THRM CRACK R&S	50.00%	43,280	LIN FT	\$2.00	\$86,560	
	PD PVMT PATCH M&F SURF	0.50%	525	SQ YD	\$79.86	\$41,924	
	PWFn =	0.7441		PW =	0.7441 X	\$338,324	\$251,745
YEAR 15							
	MILL PVMT & SHLD 2.00"	100.00%	174,867	SQ YD	\$3.00	\$524,601	
	PD PVMT PATCH M&F ADD'L 2.00"	1.00%	1,049	SQ YD	\$79.86	\$83,769	
	HMA OVERLAY PVMT 2.00"	100.00%	104,920	SQ YD	\$9.90	\$1,038,879	
	HMA OVERLAY SHLD 2.00 "	100.00%	69,947	SQ YD	\$8.51	\$595,386	
	PWFn =	0.6419		PW =	0.6419 X	\$2,242,635	\$1,439,462
YEAR 20							
	LONG SHLD JT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	CNTR LINE JOINT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	RNDM / THRM CRACK R&S	50.00%	43,280	LIN FT	\$2.00	\$86,560	
	PD PVMT PATCH M&F SURF	0.10%	105	SQ YD	\$79.86	\$8,385	
	PWFn =	0.5537		PW =	0.5537 X	\$304,785	\$168,752
YEAR 25							
	LONG SHLD JT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	CNTR LINE JOINT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	RNDM / THRM CRACK R&S	50.00%	43,280	LIN FT	\$2.00	\$86,560	
	PD PVMT PATCH M&F SURF	0.50%	525	SQ YD	\$79.86	\$41,924	
	PWFn =	0.4776		PW =	0.4776 X	\$338,324	\$161,585
HMA SD INTERSTATE							
YEAR 30							
	MILL PVMT ONLY 2.00"	100.00%	104,920	SQ YD	\$3.00	\$314,760	
	PD PVMT PATCH M&F ADD'L 2.00"	2.00%	2,098	SQ YD	\$79.86	\$167,538	
	PD SHLD PATCH M&F SURF 2.00"	1.00%	699	SQ YD	\$78.51	\$54,880	
	HMA OVERLAY PVMT 3.75 "	100.00%	104,920	SQ YD	\$18.00	\$1,888,850	
	HMA OVERLAY SHLD 1.75 "	100.00%	69,947	SQ YD	\$7.45	\$520,963	
	PWFn =	0.4120		PW =	0.4120 X	\$2,946,991	\$1,214,121
YEAR 35							
	LONG SHLD JT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	CNTR LINE JOINT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	RNDM / THRM CRACK R&S	50.00%	43,280	LIN FT	\$2.00	\$86,560	
	PD PVMT PATCH M&F SURF	0.10%	105	SQ YD	\$79.86	\$8,385	
	PWFn =	0.3554		PW =	0.3554 X	\$304,785	\$108,316
YEAR 40							
	LONG SHLD JT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	CNTR LINE JOINT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	RNDM / THRM CRACK R&S	50.00%	43,280	LIN FT	\$2.00	\$86,560	
	PD PVMT PATCH M&F SURF	0.50%	525	SQ YD	\$79.86	\$41,924	
	PWFn =	0.3066		PW =	0.3066 X	\$338,324	\$103,716
							\$3,710,607
ROUTINE MAINTENANCE ACTIVITY				14.90 Lane Miles	0.00	\$0	\$0
						MAINTENANCE LIFE-CYCLE COST	\$3,710,607
45	YEAR LIFE CYCLE	CRFn = 0.0407852	MAINTENANCE ANNUAL COST PER MILE				\$60,927

PCC PAVEMENT

JPCP

ROUTE I-74
 SECTION 81B & (81-1)R-1 & 81-1(HBR, HBR-1, HBR-2)
 COUNTY Rock Island
 LOCATION Mississippi River Corridor in Moline

FACILITY TYPE INTERSTATE

PROJECT LENGTH 13115 FT ==> 2.48 Miles
 # OF CENTERLINES 4 CL
 # OF LANES 6 LANES
 # OF EDGES 4 EP
 LANE WIDTH - AVERAGE 12 FT
 SHOULDER WIDTH PCC Inside 12 FT
 PCC Outside 12 FT
 Total Width of Paved Shoulders 48 FT

PAVEMENT THICKNESS (RIGID) JPCP 10.50 IN TIED SHLD
 SHOULDER THICKNESS 10.50 IN

POLICY OVERLAY THICKNESS 3.75 IN

RIGID PAVEMENT	TRAFFIC FACTORS	MINIMUM	ACTUAL	USE
		8.26	22.35	22.35
Worksheet Construction Type is New Construction				The Pavement Type is JPCP

INITIAL COSTS

ITEM	THICKNESS	100% QUANTITY	UNIT	UNIT PRICE	COST
JPC PAVEMENT	(10.50")	104,920	SQ YD	\$45.00 /SQ YD	\$4,721,400
PAVEMENT REINFORCEMENT		0	SQ YD	\$22.00 /SQ YD	\$0
STABILIZED SUBBASE	(4.00")	113,663	SQ YD	\$12.00 /SQ YD	\$1,363,956
PCC SHOULDERS	(10.50" to 10.50")	69,947	SQ YD	\$34.00 /SQ YD	\$2,378,198
CURB & GUTTER		0	LIN FT	\$30.00 /LIN FT	\$0
SUBBASE GRAN MATL TY C	(~ 2.55")	6,618	TONS	\$21.00 /TON	\$138,978
IMPROVED SUBGRADE:	Modified Soil Width = 122.0	177,781	SQ YD	\$7.00 /SQ YD	\$1,244,467
Reserved For User Supplied Item		0	UNITS	\$0.00 /UNITS	\$0
Reserved For User Supplied Item		0	UNITS	\$0.00 /UNITS	\$0
PAVEMENT REMOVAL		104,920	SQ YD	\$0.00 /SQ YD	\$0
SHOULDER REMOVAL		69,947	SQ YD	\$0.00 /SQ YD	\$0

Note: * Denotes User Supplied Quantity

RIGID CONSTRUCTION INITIAL COST \$9,846,999
 RIGID CONSTRUCTION ANNUAL COST PER MILE \$161,686

MAINTENANCE COSTS:

ITEM	THICKNESS	MATERIAL	T	UNIT COST
ROUTINE MAINTENANCE ACTIVITY				\$0.00 /LANE-MILE / YEAR
HMA POLICY OVERLAY	(3.75")		3.75	
HMA POLICY OVERLAY PVMT	(3.75")	1.0067	3.75	\$18.00 /SQ YD
HMA SURFACE MIX	(1.50")	1.0035	1.50	\$7.42 /SQ YD
HMA BINDER MIX	(2.25")	1.0122	2.25	\$10.59 /SQ YD
HMA POLICY OVERLAY SHLD	(3.75")		3.75	\$15.96 /SQ YD
CLASS A PAVEMENT PATCHING				\$195.00 /SQ YD
CLASS B PAVEMENT PATCHING				\$150.00 /SQ YD
CLASS C SHOULDER PATCHING				\$145.00 /SQ YD
PARTIAL DEPTH PVMT PATCH (Mill & Fill HMA Surf)		Surface Mix	1.50	\$77.39 /SQ YD
PARTIAL DEPTH PVMT PATCH (Mill & Fill HMA 1.50")		Surface Mix	1.50	\$77.39 /SQ YD
LONGITUDINAL SHOULDER JOINT ROUT & SEAL				\$2.00 /LIN FT
CENTERLINE JOINT ROUT & SEAL				\$2.00 /LIN FT
REFLECTIVE TRANSVERSE CRACK ROUT & SEAL				\$2.00 /LIN FT
RANDOM CRACK ROUT & SEAL	(100% Rehab = 100.00' / Station / Lane)			\$2.00 /LIN FT

RIGID TOTAL LIFE-CYCLE COST \$12,303,042
 RIGID TOTAL ANNUAL COST PER MILE \$202,014

JOINTED PLAIN CONCRETE PAVEMENT
UNBONDED JOINTED PLAIN CONCRETE OVERLAY
Figure 54-7.A

MAINTENANCE COSTS:	ITEM	%	QUANTITY	UNIT	UNIT COST	COST	PRESENT WORTH
YEAR 10							
	PAVEMENT PATCH CLASS B	0.10%	105	SQ YD	\$150.00	\$15,750	
		PWF _n = 0.7441			PW = 0.7441 X	\$15,750	\$11,719
YEAR 15							
	PAVEMENT PATCH CLASS B	0.20%	210	SQ YD	\$150.00	\$31,500	
		PWF _n = 0.6419			PW = 0.6419 X	\$31,500	\$20,219
YEAR 20							
	PAVEMENT PATCH CLASS B	2.00%	2,098	SQ YD	\$150.00	\$314,700	
	SHOULDER PATCH CLASS C	0.50%	350	SQ YD	\$145.00	\$50,750	
	LONGITUDINAL SHLD JT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	CENTERLINE JT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
		PWF _n = 0.5537			PW = 0.5537 X	\$575,290	\$318,524
YEAR 25							
	PAVEMENT PATCH CLASS B	3.00%	3,148	SQ YD	\$150.00	\$472,200	
	SHOULDER PATCH CLASS C	1.00%	699	SQ YD	\$145.00	\$101,355	
		PWF _n = 0.4776			PW = 0.4776 X	\$573,555	\$273,933
YEAR 30							
	INTERSTATE						
	PAVEMENT PATCH CLASS B	4.00%	4,197	SQ YD	\$150.00	\$629,550	
	SHOULDER PATCH CLASS C	1.50%	1,049	SQ YD	\$145.00	\$152,105	
	HMA POLICY OVERLAY 3.75" (PVMT)	100.00%	104,920	SQ YD	\$18.00	\$1,888,850	
	HMA POLICY OVERLAY 3.75" (SHLD)	100.00%	69,947	SQ YD	\$15.96	\$1,116,349	
		PWF _n = 0.4120			PW = 0.4120 X	\$3,786,854	\$1,560,134
YEAR 35							
	INTERSTATE						
	LONGITUDINAL SHLD JT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	CENTERLINE JT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	RANDOM CRACK R&S	50.00%	39,345	LIN FT	\$2.00	\$78,690	
	REFLECTIVE TRANSVERSE CRACK R&S	40.00%	25,171	LIN FT	\$2.00	\$50,342	
	PD PVMT PATCH M&F HMA SURF 1.50"	0.10%	105	SQ YD	\$77.39	\$8,126	
		PWF _n = 0.3554			PW = 0.3554 X	\$346,998	\$123,317
YEAR 40							
	INTERSTATE						
	PAVEMENT PATCH CLASS B	0.50%	525	SQ YD	\$150.00	\$78,750	
	LONGITUDINAL SHLD JT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	CENTERLINE JT R&S	100.00%	52,460	LIN FT	\$2.00	\$104,920	
	REFLECTIVE TRANSVERSE CRACK R&S	60.00%	37,757	LIN FT	\$2.00	\$75,514	
	RANDOM CRACK R&S	50.00%	39,345	LIN FT	\$2.00	\$78,690	
	PD PVMT PATCH M&F HMA SURF 1.50"	0.50%	525	SQ YD	\$77.39	\$40,631	
		PWF _n = 0.3066			PW = 0.3066 X	\$483,425	\$148,197
							\$2,456,043
	ROUTINE MAINTENANCE ACTIVITY		14.90	Lane Miles	\$0.00	\$0	\$0
							MAINTENANCE LIFE-CYCLE COST \$2,456,043
45	YEAR LIFE CYCLE	CRF _n = 0.0407852					MAINTENANCE ANNUAL COST PER MILE \$40,328

LIFE-CYCLE COST ANALYSIS: NEW DESIGN

Calculated / Revised : 2/1/16 11:47 AM

			JPCP	HMA
CONSTRUCTION	INITIAL COST	PRESENT WORTH	\$9,846,999	\$9,976,434
		ANNUAL COST PER MILE	\$161,686	\$163,811
MAINTENANCE	LIFE-CYCLE COST	PRESENT WORTH	\$2,456,043	\$3,710,607
		ANNUAL COST PER MILE	\$40,328	\$60,927
TOTAL	LIFE-CYCLE COST	PRESENT WORTH	\$12,303,042	\$13,687,041
		ANNUAL COST PER MILE	\$202,014	\$224,739

LIFE-CYCLE COST ANALYSIS: FINAL SUMMARY

LOWEST COST OPTION	----->	JPCP	\$202,014	
OTHER OPTIONS (LOWEST TO HIGHEST):	TYPE / PERCENTAGE	HMA	\$224,739	11.2%