

Life-Cycle Cost Adjustment Worksheet

J9P3751 Mainline

Total Area of Paving
Area of Traveled Way
Area of Shoulders

77,725.8	SY
60,687.8	SY
0.0	SY

SP125BSM Weight Factor

1.927 Tons/CY

Estimated Unit Price for SP125C
Estimated Unit Price for BP-1 - Shoulders
Estimated Unit Price for Cold Milling
Estimated Unit Price for Diamond Grinding
Estimated Unit Price for Pavement Repair**

\$83.02	/Ton
\$0.00	/Ton
\$1.68	/SY
\$2.99	/SY
\$288.00	/SY

Estimated Unit Prices Based off of a 5 mile Project for Future Operations

last revised March 2023

Cost per lane Mile

\$110,031.39

This Documentation should be filed with all other Final Engineer's Estimate Documentation. Also include a copy along with the pavement estimation worksheet in the Alternate Pavements Notebook.

Total LCCA Adjustment Factor
For Job Special Provision

\$948,517
\$948,500

5-Year 10-Year 20-Year 25-Year* 30-Year +
**Includes all related Pavement

*Straight Line Interpolation From Published Rates

Repair
Items

MoDOT AC Projection

	% or Thick. (in.)	Year	Quantity	Unit	Unit Price	Cost	Present Worth
20 Year Maintenance							
Discount Rate:	0.940%						
Mill Surface Lift Traveled Way	1	20	60,688 SY		\$1.68	\$101,956	\$84,556
AC Resurfacing Traveled Way	2	20	6,497 TON		\$83.02	\$539,378	\$447,329
Miscellaneous	11.7%	20	1 Price		\$75,036.04	\$75,036	\$62,231
Mobilization	4.6%	20	1 Price		\$32,953.00	\$32,953	\$27,329
Construction added costs	10.1%	20	1 Price		\$75,681.59	\$75,682	\$62,766
33 Year Maintenance							
Discount Rate:	1.020%						
Mill Surface Lift - all	1	33	77,726 SY		\$1.68	\$130,579	\$93,418
AC Resurfacing - all	2	33	8,321 TON		\$83.02	\$690,808	\$494,213
Resurfacing Shoulders	2	33	0 TON		\$0.00	\$0	\$0
Miscellaneous	11.7%	33	1 Price		\$96,102.28	\$96,102	\$68,753
Mobilization	4.6%	33	1 Price		\$42,204.51	\$42,205	\$30,194
Construction added costs	10.1%	33	1 Price		\$96,929.07	\$96,929	\$69,344
Years in analysis:			Total Cost:			\$1,881,627	\$1,440,133
Discount Rate:	45						
			Equivalent Uniform Annual Cost:				\$40,068

MoDOT PCC Projection

	% or Thick. (in.)	Year	Quantity	Unit	Unit Price	Cost	Present Worth
25 Year Maintenance							
Discount Rate:	0.980%						
Traveled Way Slab Replacements	1.5%	25	910 SY		\$288.00	\$262,171	\$205,448
Diamond Grinding of Traveled Way		25	60,688 SY		\$2.99	\$181,457	\$142,196
Miscellaneous	23.0%	25	1 Price		\$102,034.40	\$102,034	\$79,958
Mobilization	4.9%	25	1 Price		\$26,737.45	\$26,737	\$20,952
Construction added costs	9.6%	25	1 Price		\$54,950.37	\$54,950	\$43,061
Years in analysis:			Total Cost:			\$627,350	\$491,616
Discount Rate:	45						
			Equivalent Uniform Annual Cost:				\$13,678

Life-Cycle Cost Adjustment Worksheet

J9P3751 Mainline A2 Shoulder

last revised March 2023

Shoulder

Total Area of Paving	0.0	SY
Area of Traveled Way	0.0	SY
Area of Shoulders	20,954.4	SY
BP-1 Weight Factor		1.948 Tons/CY
Estimated Unit Price for SP125BSM		\$0.00/Ton
Estimated Unit Price for BP-1 - Shoulders		\$74.47/Ton
Estimated Unit Price for Cold Milling		\$1.68/SY
Estimated Unit Price for Diamond Grinding		\$2.99/SY
Estimated Unit Price for Pavement Repair**		\$288.00 /SY
Estimated Unit Prices Based off of a 5 mile Project for Future Operations		
		5-Year 10-Year 20-Year 25-Year* 30-Year +
**Includes all related Pavement Repair Items		0.200% 0.540% 0.940% 0.9800% 1.020%
		*Straight Line Interpolation From Published Rates
Total LCCA Adjustment Factor	\$155,418	
For Job Special Provision	\$155,400	

This Documentation should be filed with all other Final Engineer's Estimate Documentation. Also include a copy along with the pavement estimation worksheet in the Alternate Pavements Notebook.

MoDOT AC Projection						
	% or Thick. (in.)	Year	Quantity	Unit	Unit Price	Present Worth
20 Year Maintenance						
Discount Rate:	0.940%					
Mill Surface Lift Traveled Way	1	20	0 SY		\$1.68	\$0
AC Resurfacing Traveled Way	2	20	0 TON		\$0.00	\$0
Miscellaneous	11.7%	20	1 Price		\$0.00	\$0
Mobilization	4.6%	20	1 Price		\$0.00	\$0
Construction added costs	10.1%	20	1 Price		\$0.00	\$0
33 Year Maintenance						
Discount Rate:	1.020%					
Mill Surface Lift - all	1	33	0 SY		\$1.68	\$0
AC Resurfacing - all	2	33	-2,268 TON		\$0.00	\$0
Resurfacing Shoulders	2	33	2,268 TON		\$74.47	\$168,878
Miscellaneous	11.7%	33	1 Price		\$19,758.72	\$19,759
Mobilization	4.6%	33	1 Price		\$8,677.29	\$8,677
Construction added costs	10.1%	33	1 Price		\$19,928.71	\$19,929
Years in analysis:	Total Cost:				\$217,243	\$155,418
Discount Rate:	45					
	Equivalent Uniform Annual Cost:					\$4,324

MoDOT PCC Projection						
	% or Thick. (in.)	Year	Quantity	Unit	Unit Price	Present Worth
25 Year Maintenance						
Discount Rate:	0.980%					
Traveled Way Slab Replacements	1.5%	25	0 SY		\$288.00	\$0
Diamond Grinding of Traveled Way		25	0 SY		\$2.99	\$0
Miscellaneous	23.0%	25	1 Price		\$0.00	\$0
Mobilization	4.9%	25	1 Price		\$0.00	\$0
Construction added costs	9.6%	25	1 Price		\$0.00	\$0
Years in analysis:	Total Cost:				\$0	\$0
Discount Rate:	45					
	Equivalent Uniform Annual Cost:					\$0

Life-Cycle Cost Adjustment Worksheet

J9P3751 Outer Rd.

last revised March 2023

Cost per lane Mile

\$107,421.95

Total Area of Paving
Area of Traveled Way
Area of Shoulders

1,915.9	SY
1,324.1	SY
591.8	SY

BP-1 Weight Factor 1.948 Tons/CY

Estimated Unit Price for BP-1	\$74.47	/Ton
Estimated Unit Price for BP-1 - Shoulders	\$74.47	/Ton
Estimated Unit Price for Cold Milling	\$1.68	/SY
Estimated Unit Price for Diamond Grinding	\$2.99	/SY
Estimated Unit Price for Pavement Repair**	\$288.00	/SY

Estimated Unit Prices Based off of a 5 mile Project for Future Operations

This Documentation should be filed with all other Final Engineer's Estimate Documentation. Also include a copy along with the pavement estimation worksheet in the Alternate Pavements Notebook.

Total LCCA Adjustment Factor \$20,204
For Job Special Provision \$20,200

5-Year	10-Year	20-Year	25-Year*	30-Year +
0.200%	0.540%	0.940%	0.9800%	1.020%

**Includes all related Pavement Repair Items

*Straight Line Interpolation From Published Rates

MoDOT AC Projection

	% or Thick. (in.)	Year	Quantity	Unit	Unit Price	Cost	Present Worth
20 Year Maintenance							
Discount Rate:	0.940%						
Mill Surface Lift Traveled Way	1	20	1,324 SY		\$1.68	\$2,224	\$1,845
AC Resurfacing Traveled Way	2	20	143 TON		\$74.47	\$10,671	\$8,850
Miscellaneous	11.7%	20	1 Price		\$1,508.81	\$1,509	\$1,251
Mobilization	4.6%	20	1 Price		\$662.61	\$663	\$550
Construction added costs	10.1%	20	1 Price		\$1,521.79	\$1,522	\$1,262
33 Year Maintenance							
Discount Rate:	1.020%						
Mill Surface Lift - all	1	33	1,916 SY		\$1.68	\$3,219	\$2,303
AC Resurfacing - all	2	33	143 TON		\$74.47	\$10,671	\$7,634
Resurfacing Shoulders	2	33	64 TON		\$74.47	\$4,769	\$3,412
Miscellaneous	11.7%	33	1 Price		\$2,183.17	\$2,183	\$1,562
Mobilization	4.6%	33	1 Price		\$958.76	\$959	\$686
Construction added costs	10.1%	33	1 Price		\$2,201.95	\$2,202	\$1,575
Years in analysis:				Total Cost:		\$40,592	\$30,930
Discount Rate:	45						
				Equivalent Uniform Annual Cost:			\$861

MoDOT PCC Projection

	% or Thick. (in.)	Year	Quantity	Unit	Unit Price	Cost	Present Worth
25 Year Maintenance							
Discount Rate:	0.980%						
Traveled Way Slab Replacements	1.5%	25	20 SY		\$288.00	\$5,720	\$4,483
Diamond Grinding of Traveled Way		25	1,324 SY		\$2.99	\$3,959	\$3,102
Miscellaneous	23.0%	25	1 Price		\$2,226.21	\$2,226	\$1,745
Mobilization	4.9%	25	1 Price		\$583.36	\$583	\$457
Construction added costs	9.6%	25	1 Price		\$1,198.92	\$1,199	\$940
Years in analysis:				Total Cost:		\$13,688	\$10,726
Discount Rate:	45						
				Equivalent Uniform Annual Cost:			\$298

Life-Cycle Cost Adjustment Worksheet

J9P3764_Mainline

last revised March 2023

Cost per lane Mile

\$109,059.05

Total Area of Paving
Area of Traveled Way
Area of Shoulders

55,832.2	SY
44,650.2	SY
0.0	SY

SP125C Weight Factor

1.927 Tons/CY

Estimated Unit Price for SP125C
Estimated Unit Price for BP-1 - Shoulders

\$83.68	/Ton
\$0.00	/Ton

Estimated Unit Price for Cold Milling

\$1.68 /SY

Estimated Unit Price for Diamond Grinding

\$2.99 /SY

Estimated Unit Price for Pavement Repair**

\$288.00 /SY

Estimated Unit Prices Based off of a 5 mile Project for Future Operations

This Documentation should be filed with all other Final Engineer's Estimate Documentation. Also include a copy along with the pavement estimation worksheet in the Alternate Pavements Notebook.

5-Year	10-Year	20-Year	25-Year*	30-Year +	
**Includes all related Pavement Repair	0.200%	0.540%	0.940%	0.9800%	1.020%

Total LCCA Adjustment Factor \$691,692
For Job Special Provision \$691,700

Repair Items

MoDOT AC Projection

	% or Thick. (in.)	Year	Quantity	Unit	Unit Price	Cost	Present Worth
20 Year Maintenance							
Discount Rate:	0.940%						
Mill Surface Lift Traveled Way		1	20	44,650 SY	\$1.68	\$75,012	\$62,211
AC Resurfacing Traveled Way		2	20	4,780 TON	\$83.68	\$399,995	\$331,733
Miscellaneous	11.7%	20		1 Price	\$55,575.83	\$55,576	\$46,091
Mobilization	4.6%	20		1 Price	\$24,406.81	\$24,407	\$20,242
Construction added costs	10.1%	20		1 Price	\$56,053.96	\$56,054	\$46,488
33 Year Maintenance							
Discount Rate:	1.020%						
Mill Surface Lift - all		1	33	55,832 SY	\$1.68	\$93,798	\$67,104
AC Resurfacing - all		2	33	5,977 TON	\$83.68	\$500,168	\$357,827
Resurfacing Shoulders		2	33	0 TON	\$0.00	\$0	\$0
Miscellaneous	11.7%	33		1 Price	\$69,494.00	\$69,494	\$49,717
Mobilization	4.6%	33		1 Price	\$30,519.15	\$30,519	\$21,834
Construction added costs	10.1%	33		1 Price	\$70,091.87	\$70,092	\$50,145
Years in analysis:				Total Cost:		\$1,375,114	\$1,053,391
Discount Rate:	45						
				Equivalent Uniform Annual Cost:			\$29,308

MoDOT PCC Projection

Life-Cycle Cost Adjustment Worksheet

J9P3764 Mainline A2 Shoulder

last revised March 2023

Shoulder

Total Area of Paving	0.0	SY
Area of Traveled Way	0.0	SY
Area of Shoulders	15,066.9	SY

BP-1 Weight Factor 1.948 Tons/CY

Estimated Unit Price for SP125BSM	\$0.00	/Ton
Estimated Unit Price for BP-1 - Shoulders	\$84.76	/Ton
Estimated Unit Price for Cold Milling	\$1.68	/SY
Estimated Unit Price for Diamond Grinding	\$2.99	/SY
Estimated Unit Price for Pavement Repair**	\$288.00	/SY

Estimated Unit Prices Based off of a 5 mile Project for Future Operations

This Documentation should be filed with all other Final Engineer's Estimate Documentation. Also include a copy along with the pavement estimation worksheet in the Alternate Pavements Notebook.

	5-Year	10-Year	20-Year	25-Year*	30-Year +
**Includes	0.200%	0.540%	0.940%	0.9800%	1.020%

Includes all related Pavement Repair *Straight Line Interpolation From Published Rates

Total LCCA Adjustment Factor \$127,192
For Job Special Provision **\$127,200** A2 Shoulder

MoDOT AC Projection

	% or				Unit		Present
	Thick. (in.)	Year	Quantity	Unit	Price	Cost	Worth
20 Year Maintenance							
Discount Rate:	0.940%						
Mill Surface Lift Traveled Way		1	20	0 SY	\$1.68	\$0	\$0
AC Resurfacing Traveled Way		2	20	0 TON	\$0.00	\$0	\$0
Miscellaneous	11.7%		20	1 Price	\$0.00	\$0	\$0
Mobilization	4.6%		20	1 Price	\$0.00	\$0	\$0
Construction added costs	10.1%		20	1 Price	\$0.00	\$0	\$0
33 Year Maintenance							
Discount Rate:	1.020%						
Mill Surface Lift - all		1	33	0 SY	\$1.68	\$0	\$0
AC Resurfacing - all		2	33	-1,631 TON	\$0.00	\$0	\$0
Resurfacing Shoulders	2		33	1,631 TON	\$84.76	\$138,207	\$98,875
Miscellaneous	11.7%		33	1 Price	\$16,170.27	\$16,170	\$11,568
Mobilization	4.6%		33	1 Price	\$7,101.37	\$7,101	\$5,080
Construction added costs	10.1%		33	1 Price	\$16,309.38	\$16,309	\$11,668
Years in analysis:		Total Cost:				\$177,788	\$127,192
	45						
Discount Rate:	1.020%						
		Equivalent Uniform Annual Cost:					\$3,539

MoDOT PCC Projection

Life-Cycle Cost Adjustment Worksheet

J9P3764_Outer Rd.

last revised March 2023

Cost per lane Mile

\$106,448.44

Total Area of Paving	32,210.8	SY
Area of Traveled Way	27,632.6	SY
Area of Shoulders	4,578.2	SY

BP-1 Weight Factor	1.948 Tons/CY
--------------------	---------------

Estimated Unit Price for BP-1	\$84.76	/Ton
Estimated Unit Price for BP-1 - Shoulders	\$84.76	/Ton
Estimated Unit Price for Cold Milling	\$1.68	/SY
Estimated Unit Price for Diamond Grinding	\$2.99	/SY
Estimated Unit Price for Pavement Repair**	\$288.00	/SY

Estimated Unit Prices Based off of a 5 mile Project for Future Operations

This Documentation should be filed with all other Final Engineer's Estimate Documentation. Also include a copy along with the pavement estimation worksheet in the Alternate Pavements Notebook.

	5-Year	10-Year	20-Year	25-Year*	30-Year +
**Includes all related Pavement Repair Items	0.200%	0.540%	0.940%	0.9800%	1.020%

*Straight Line Interpolation From Published Rates

Total LCCA Adjustment Factor	\$417,819
For Job Special Provision	\$417,800

MoDOT AC Projection						
	% or Thick. (in.)	Year	Quantity	Unit	Unit Price	Present Cost
20 Year Maintenance						
Discount Rate:	0.940%					
Mill Surface Lift Traveled Way	1	20	27,633 SY		\$1.68	\$46,423
AC Resurfacing Traveled Way	2	20	2,990 TON		\$84.76	\$253,472
Miscellaneous	11.7%	20	1 Price		\$35,087.63	\$35,088
Mobilization	4.6%	20	1 Price		\$15,409.17	\$15,409
Construction added costs	10.1%	20	1 Price		\$35,389.50	\$35,389
33 Year Maintenance						
Discount Rate:	1.020%					
Mill Surface Lift - all	1	33	32,211 SY		\$1.68	\$54,114
AC Resurfacing - all	2	33	2,990 TON		\$84.76	\$253,472
Resurfacing Shoulders	2	33	495 TON		\$84.76	\$41,995
Miscellaneous	11.7%	33	1 Price		\$40,900.99	\$40,901
Mobilization	4.6%	33	1 Price		\$17,962.18	\$17,962
Construction added costs	10.1%	33	1 Price		\$41,252.87	\$41,253
Years in analysis:			Total Cost:			\$835,478
	45					\$641,664
Discount Rate:	1.020%					
			Equivalent Uniform Annual Cost:			\$17,852

MoDOT PCC Projection						
	% or Thick. (in.)	Year	Quantity	Unit	Unit Price	Present Cost
25 Year Maintenance						
Discount Rate:	0.980%					
Traveled Way Slab Replacements	1.5%	25	414 SY		\$288.00	\$119,373
Diamond Grinding of Traveled Way		25	27,633 SY		\$2.99	\$82,621
Miscellaneous	23.0%	25	1 Price		\$46,458.69	\$46,459
Mobilization	4.9%	25	1 Price		\$12,174.20	\$12,174
Construction added costs	9.6%	25	1 Price		\$25,020.21	\$25,020
Years in analysis:			Total Cost:			\$285,647
	45					\$223,844
Discount Rate:	1.020%					
			Equivalent Uniform Annual Cost:			\$6,228