

I-95/I-395 HOV/HOT Lanes Project

Exhibit C-4

Technical Requirements

Attachment 4.6c

Major Pavement Maintenance Plan

Attachment Includes:

- I-95 HOV/HOT Lanes Project, Exhibit C, Technical Requirements, Attachment 4.6c Major Pavement Maintenance Plan dated July 31, 2012 (Execution Version) and revised as of January 2019.
- Attachment 4.6c – Supplement, Major Pavement Maintenance Plan from the Southern Terminus Extension Agreement dated May 26, 2016 (Execution Version) and revised as of January 2019.
- 395 Northern Express Lanes Major Pavement Maintenance Plan dated June 8, 2017 (Execution Version) and revised as of January 2019.
- I-95 Fredericksburg Extension (Fred Ex) Major Pavement Maintenance Plan dated January 2019 (Execution Version).

EXECUTION VERSION – JULY 31, 2012
[REVISED JANUARY 2019]

I-95 HOV/HOT Lanes Project

Exhibit C-4

Technical Requirements

Attachment 4.6c

Major Pavement Maintenance Plan – 95 Express Lanes

EXECUTION VERSION – JULY 31, 2012
[REVISED JANUARY 2019]

Attachment 4.6c
Major Pavement Maintenance Plan

		Segment 1	Segment 2	Segment 3	Segment 4		
		(Sta. 30+50 to 475+00)	From Sta. 475+00 to 926+00	From Sta. 926+00 to Sta. 1478+00	From Sta. 1478+00 to Sta. 1560+00		
Year	+ Year	73-Yr Schedule	73-Yr Schedule	73-Yr Schedule	73-Yr Schedule	+ Year	Year
2014	0	New Full Depth Pavement - D.B.	2" M&O of Existing Pavement - D.B.	2" M&O of Existing Pavement - D.B.	2" M&O of Existing Pavement - D.B.	0	2014
2015	1					1	2015
2016	2					2	2016
2017	3					3	2017
2018	4					4	2018
2019	5					5	2019
2020	6					6	2020
2021	7					7	2021
2022	8					8	2022
2023	9					9	2023
2024	10					10	2024

EXECUTION VERSION – JULY 31, 2012
[REVISED JANUARY 2019]

		Segment 1	Segment 2	Segment 3	Segment 4		
		(Sta. 30+50 to 475+00)	From Sta. 475+00 to 926+00	From Sta. 926+00 to Sta. 1478+00	From Sta. 1478+00 to Sta. 1560+00		
Year	+ Year	73-Yr Schedule	73-Yr Schedule	73-Yr Schedule	73-Yr Schedule	+ Year	Year
2025	11					11	2025
2026	12			2" M&O of Travel Lns + 1% Patching		12	2026
2027	13	2" M&O of Travel Lns + 1% Patching	4" M&O of Travel Lns (See Note 1 below)		2" M&O of Travel Lns + 1% Patching	13	2027
2028	14					14	2028
2029	15					15	2029
2030	16					16	2030
2031	17					17	2031
2032	18					18	2032
2033	19					19	2033
2034	20			6" M&O of Travel Lns + 90% Joints Fabric Repair + 10% Joints ACC Repair+ Shldr 1" M&O		20	2034
2035	21					21	2035
2036	22					22	2036

Note 1: The 4" M&O of Travel Lns is not required where the pavement was resurfaced by the Opitz Boulevard Ramp Project, between approximately Sta. 655+46 and Sta. 745+05.

EXECUTION VERSION – JULY 31, 2012

[REVISED JANUARY 2019]

		Segment 1	Segment 2	Segment 3	Segment 4		
		(Sta. 30+50 to 475+00)	From Sta. 475+00 to 926+00	From Sta. 926+00 to Sta. 1478+00	From Sta. 1478+00 to Sta. 1560+00		
Year	+ Year	73-Yr Schedule	73-Yr Schedule	73-Yr Schedule	73-Yr Schedule	+ Year	Year
2037	23					23	2037
2038	24					24	2038
2039	25					25	2039
2040	26	2" M&O of Travel Lns + 1% Patching + Shldr 1" M&O	2" M&O of Travel Lns + 1% Patching + Shldr 1" M&O		4" M&O of Travel Lns + Shldr 1" M&O	26	2040
2041	27					27	2041
2042	28					28	2042
2043	29					29	2043
2044	30					30	2044
2045	31					31	2045
2046	32					32	2046
2047	33			2" M&O of Travel Lns + 1% Patching		33	2047
2048	34					34	2048

EXECUTION VERSION – JULY 31, 2012
[REVISED JANUARY 2019]

		Segment 1	Segment 2	Segment 3	Segment 4		
		(Sta. 30+50 to 475+00)	From Sta. 475+00 to 926+00	From Sta. 926+00 to Sta. 1478+00	From Sta. 1478+00 to Sta. 1560+00		
Year	+ Year	73-Yr Schedule	73-Yr Schedule	73-Yr Schedule	73-Yr Schedule	+ Year	Year
2049	35					35	2049
2050	36					36	2050
2051	37					37	2051
2052	38					38	2052
2053	39	4" M&O of Travel Lns	2" M&O of Travel Lns + 1% Patching		2" M&O of Travel Lns + 1% Patching	39	2053
2054	40					40	2054
2055	41					41	2055
2056	42					42	2056
2057	43					43	2057
2058	44					44	2058
2059	45					45	2059
2060	46			2" M&O of Travel Lns + 1% Patching + Shldr 1" M&O		46	2060

EXECUTION VERSION – JULY 31, 2012

[REVISED JANUARY 2019]

		Segment 1	Segment 2	Segment 3	Segment 4		
		(Sta. 30+50 to 475+00)	From Sta. 475+00 to 926+00	From Sta. 926+00 to Sta. 1478+00	From Sta. 1478+00 to Sta. 1560+00		
Year	+ Year	73-Yr Schedule	73-Yr Schedule	73-Yr Schedule	73-Yr Schedule	+ Year	Year
2061	47					47	2061
2062	48					48	2062
2063	49					49	2063
2064	50					50	2064
2065	51					51	2065
2066	52	2" M&O of Travel Lns + 1% Patching + Shldr 1" M&O	4" M&O of Travel Lns + Shldr 1" M&O		2" M&O of Travel Lns + 1% Patching + Shldr 1" M&O	52	2066
2067	53					53	2067
2068	54					54	2068
2069	55					55	2069
2070	56					56	2070
2071	57					57	2071
2072	58					58	2072
2073	59			4" M&O of Travel Lns		59	2073

EXECUTION VERSION – JULY 31, 2012
[REVISED JANUARY 2019]

		Segment 1	Segment 2	Segment 3	Segment 4		
		(Sta. 30+50 to 475+00)	From Sta. 475+00 to 926+00	From Sta. 926+00 to Sta. 1478+00	From Sta. 1478+00 to Sta. 1560+00		
Year	+ Year	75-Yr Schedule	75-Yr Schedule	75-Yr Schedule	75-Yr Schedule	+ Year	Year
2074	60					60	2074
2075	61					61	2075
2076	62					62	2076
2077	63					63	2077
2078	64					64	2078
2079	65	2" M&O of Travel Lns + 1% Patching2	2" M&O of Travel Lns + 1% Patching		4" M&O of Travel Lns	65	2079
2080	66					66	2080
2081	67					67	2081
2082	68					68	2082
2083	69					69	2083
2084	70					70	2084
2085	71					71	2085
2086	72			2" M&O of Travel Lns + 1% Patching + Shldr 1" M&O		72	2086
2087	73	4" M&O of Travel Lns + Shldr 1" M&O	4" M&O of Travel Lns + Shldr 1" M&O		2" M&O of Travel Lns + 4% Patching + Shldr 1" M&O	73	2087

EXECUTION VERSION – JULY 31, 2012
[REVISED JANUARY 2019]

"2" M&O" - Functional mill & overlay of travel lanes. "4" M&O" - Structural mill & overlay of travel lanes

"1% Patching" - Patching repair as-needed for 1% of travel lane pavement surface

"Shldr 1" M&O" - 1" mill & overlay of shoulder pavement.

"90% Joints Fabric Repair" - Estimated 90% of the joints in this section to be repaired by replacing 6" asphalt overlay and overlaid with fabric.

"10% Joints ACC Repair" - Estimated 10% of the joints in this section to be repaired by replacing the entire existing asphalt concrete overlay.

NOTE: For details on the above joint repairs, refer to the *Virginia Department of Transportation Special Provision for Sawing and Sealing Joints in Asphalt Overlays Over Jointed Concrete Pavements* listed in Attachment 1.5a.

Any full depth pavement replacement, other than as indicated in Attachment 4.6c, will not be the Concessionaire's responsibility.

The pavement treatments specified above will be performed earlier by the Concessionaire if the conditions specified in Attachment 4.5 to the Technical Requirements require it, or if undertaken voluntarily. If a pavement treatment is performed earlier than the specified interval, the interval period is reset to a 13-year maximum from the completion date to the next specified pavement treatment, and Exhibit C-4, Attachment 4.6c to the Technical Requirements will be updated accordingly.

EXECUTION VERSION – MAY 26, 2016

[REVISED JANUARY 2019]

I-95 HOV/HOT Lanes Project

Exhibit C-4

Technical Requirements

Attachment 4.6c - Supplement

Major Pavement Maintenance Plan – Southern Terminus Extension

Attachment 4.6c - Supplement

Major Pavement Maintenance Plan – Southern Terminus Extension

		South Bound Ramp	North Bound Ramp		
		From Sta. 2205+00 to 2310+84	From Sta. 3219+70 to 3237+72		
Year	+ Year	69-Yr Schedule	69-Yr Schedule	+ Year	Year
2018	0	New Full Depth Pavement - D.B.	New Full Depth Pavement - D.B.	0	2018
2019	1			1	2019
2020	2			2	2020
2021	3			3	2021
2022	4			4	2022
2023	5			5	2023
2024	6			6	2024
2025	7			7	2025
2026	8			8	2026
2027	9			9	2027
2028	10			10	2028
2029	11			11	2029
2030	12			12	2030
2031	13	2" M&O of Travel Lns + 1% Patching	2" M&O of Travel Lns + 1% Patching	13	2031
2032	14			14	2032
2033	15			15	2033
2034	16			16	2034
2035	17			17	2035

EXECUTION VERSION – MAY 26, 2016

[REVISED JANUARY 2019]

		South Bound Ramp	North Bound Ramp		
		From Sta. 2205+00 to 2310+84	From Sta. 3219+70 to 3237+72		
Year	+ Year	69-Yr Schedule	69-Yr Schedule	+ Year	Year
2036	18			18	2036
2037	19			19	2037
2038	20			20	2038
2039	21			21	2039
2040	22			22	2040
2041	23			23	2041
2042	24			24	2042
2043	25			25	2043
2044	26	2" M&O of Travel Lns + 1% Patching + Shldr 1" M&O	2" M&O of Travel Lns + 1% Patching + Shldr 1" M&O	26	2044
2045	27			27	2045
2046	28			28	2046
2047	29			29	2047
2048	30			30	2048
2049	31			31	2049
2050	32			32	2050
2051	33			33	2051
2052	34			34	2052
2053	35			35	2053
2054	36			36	2054
2055	37			37	2055

EXECUTION VERSION – MAY 26, 2016

[REVISED JANUARY 2019]

		South Bound Ramp	North Bound Ramp		
		From Sta. 2205+00 to 2310+84	From Sta. 3219+70 to 3237+72		
Year	+ Year	69-Yr Schedule	69-Yr Schedule	+ Year	Year
2056	38			38	2056
2057	39	4" M&O of Travel Lns	4" M&O of Travel Lns	39	2057
2058	40			40	2058
2059	41			41	2059
2060	42			42	2060
2061	43			43	2061
2062	44			44	2062
2063	45			45	2063
2064	46			46	2064
2065	47			47	2065
2066	48			48	2066
2067	49			49	2067
2068	50			50	2068
2069	51			51	2069
2070	52	2" M&O of Travel Lns + 1% Patching + Shldr 1" M&O	2" M&O of Travel Lns + 1% Patching + Shldr 1" M&O	52	2070
2071	53			53	2071
2072	54			54	2072
2073	55			55	2073
2074	56			56	2074
2075	57			57	2075

EXECUTION VERSION – MAY 26, 2016

[REVISED JANUARY 2019]

		South Bound Ramp	North Bound Ramp		
		From Sta. 2205+00 to 2310+84	From Sta. 3219+70 to 3237+72		
Year	+ Year	69-Yr Schedule	69-Yr Schedule	+ Year	Year
2076	58			58	2076
2077	59			59	2077
2078	60			60	2078
2079	61			61	2079
2080	62			62	2080
2081	63			63	2081
2082	64			64	2082
2083	65	2" M&O of Travel Lns + 1% Patching	2" M&O of Travel Lns + 1% Patching	65	2083
2084	66			66	2084
2085	67			67	2085
2086	68			68	2086
2087	69			69	2087

"2" M&O" - Functional mill & overlay of travel lanes.

"4" M&O" - Structural mill & overlay of travel lanes

"1% Patching" - Patching repair as-needed for 1% of travel lane pavement surface

"Shldr 1" M&O" - 1" mill & overlay of shoulder pavement

"90% Joints Fabric Repair" - Estimated 90% of the joints in this section to be repaired by replacing 6" asphalt overlay and overlaid with fabric.

"10% Joints ACC Repair" - Estimated 10% of the joints in this section to be repaired by replacing the entire existing asphalt concrete overlay.

EXECUTION VERSION – MAY 26, 2016

[REVISED JANUARY 2019]

NOTE: For details on the above joint repairs, refer to the *Virginia Department of Transportation Special Provision for Sawing and Sealing Joints in Asphalt Overlays Over Jointed Concrete Pavements* listed in Attachment 1.5a.

Any full depth pavement replacement, other than as indicated in Attachment 4.6c, will not be the Concessionaire's responsibility.

The pavement treatments specified above will be performed earlier by the Concessionaire if the conditions specified in Attachment 4.5 to the Technical Requirements require it, or if undertaken voluntarily. If a pavement treatment is performed earlier than the specified interval, the interval period is reset to a 13-year maximum from the completion date to the next specified pavement treatment, and Exhibit C-4, Attachment 4.6c to the Technical Requirements will be updated accordingly.

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EXECUTION VERSION – JUNE 8, 2017

[REVISED JANUARY 2019]

I-95/I-395 HOV/HOT Lanes Project

Exhibit C-4

Technical Requirements

Attachment 4.6c

395 Major Pavement Maintenance Plan – 395 Northern Express Lanes

EXECUTION VERSION – JUNE 8, 2017

[REVISED JANUARY 2019]

395 Northern Express Lanes				
From Sta. 1533+64 (from existing Northern Terminus) to 1941+11 (to DC Line)				
Year	+ Year	68-Yr Schedule	+ Year	Year
2019	0	New Full Depth Pavement	0	2019
2020	1		1	2020
2021	2		2	2021
2022	3		3	2022
2023	4		4	2023
2024	5		5	2024
2025	6		6	2025
2026	7		7	2026
2027	8		8	2027
2028	9		9	2028
2029	10		10	2029
2030	11		11	2030
2031	12		12	2031
2032	13	2" M&O of Travel Lns + 1% Patching	13	2032
2033	14		14	2033
2034	15		15	2034
2035	16		16	2035
2036	17		17	2036
2037	18		18	2037
2038	19		19	2038

EXECUTION VERSION – JUNE 8, 2017

[REVISED JANUARY 2019]

395 Northern Express Lanes				
From Sta. 1533+64 (from existing Northern Terminus) to 1941+11 (to DC Line)				
Year	+ Year	68-Yr Schedule	+ Year	Year
2039	20		20	2039
2040	21		21	2040
2041	22		22	2041
2042	23		23	2042
2043	24		24	2043
2044	25		25	2044
2045	26	4" M&O of Travel Lns + Shldr 2" M&O	26	2045
2046	27		27	2046
2047	28		28	2047
2048	29		29	2048
2049	30		30	2049
2050	31		31	2050
2051	32		32	2051
2052	33		33	2052
2053	34		34	2053
2054	35		35	2054
2055	36		36	2055
2056	37		37	2056
2057	38		38	2057
2058	39	2" M&O of Travel Lns + 1% Patching	39	2058
2059	40		40	2059

EXECUTION VERSION – JUNE 8, 2017

[REVISED JANUARY 2019]

395 Northern Express Lanes				
From Sta. 1533+64 (from existing Northern Terminus) to 1941+11 (to DC Line)				
Year	+ Year	68-Yr Schedule	+ Year	Year
2060	41		41	2060
2061	42		42	2061
2062	43		43	2062
2063	44		44	2063
2064	45		45	2064
2065	46		46	2065
2066	47		47	2066
2067	48		48	2067
2068	49		49	2068
2069	50		50	2069
2070	51		51	2070
2071	52	2" M&O of Travel Lns + 1% Patching + Shldr 2" M&O	52	2071
2072	53		53	2072
2073	54		54	2073
2074	55		55	2074
2075	56		56	2075
2076	57		57	2076
2077	58		58	2077
2078	59		59	2078
2079	60		60	2079
2080	61		61	2080

EXECUTION VERSION – JUNE 8, 2017

[REVISED JANUARY 2019]

395 Northern Express Lanes				
From Sta. 1533+64 (from existing Northern Terminus) to 1941+11 (to DC Line)				
Year	+ Year	68-Yr Schedule	+ Year	Year
2081	62		62	2081
2082	63		63	2082
2083	64		64	2083
2084	65	4" M&O of Travel Lns	65	2084
2085	66		66	2085
2086	67		67	2086
2087	68		68	2087

"2" M&O" - Functional mill & overlay of travel lanes.

"4" M&O" - Structural mill & overlay of travel lanes

"1% Patching" - Patching repair as-needed for 1% of travel lane pavement surface

"Shldr 2" M&O" - 2" mill & overlay of shoulder pavement

"90% Joints Fabric Repair" - Estimated 90% of the joints in this section to be repaired by replacing 6" asphalt overlay and overlaid with fabric.

"10% Joints ACC Repair" - Estimated 10% of the joints in this section to be repaired by replacing the entire existing asphalt concrete overlay.

NOTE: For details on the above joint repairs, refer to the *Virginia Department of Transportation Special Provision for Sawing and Sealing Joints in Asphalt Overlays Over Jointed Concrete Pavements* listed in Attachment 1.5a.

Any full depth pavement replacement, other than as indicated in Attachment 4.6c, will not be the Concessionaire's responsibility.

The pavement treatments specified above will be performed earlier by the Concessionaire if the conditions specified in Attachment 4.5 to the Technical Requirements require it, or if undertaken voluntarily. If a pavement treatment is performed earlier than the specified interval, the interval period is reset to a 13-year maximum from the completion date to the next specified pavement treatment, and Exhibit C-4, Attachment 4.6c to the Technical Requirements will be updated accordingly.

I-95/I-395 HOV/HOT Lanes Project

Exhibit C-4

Technical Requirements

Attachment 4.6c

**Major Pavement Maintenance Plan –
95 Express Lanes Fredericksburg Extension**

EXECUTION VERSION – JANUARY 2019

I-95 HOV/HOT Lanes Extension to Fredericksburg				
Year	+ Year	Major Pavement Maintenance (65-Year Schedule)	+ Year	Year
2022	0	New Full Depth Pavement	0	2022
2023	1		1	2023
2024	2		2	2024
2025	3		3	2025
2026	4		4	2026
2027	5		5	2027
2028	6		6	2028
2029	7		7	2029
2030	8		8	2030
2031	9		9	2031
2032	10		10	2032
2033	11		11	2033
2034	12		12	2034
2035	13	2" M&O of Travel Lns + 1% Patching	13	2035
2036	14		14	2036
2037	15		15	2037
2038	16		16	2038
2039	17		17	2039
2040	18		18	2040
2041	19		19	2041
2042	20		20	2042
2043	21		21	2043
2044	22		22	2044
2045	23		23	2045
2046	24		24	2046
2047	25		25	2047

EXECUTION VERSION – JANUARY 2019

I-95 HOV/HOT Lanes Extension to Fredericksburg				
Year	+ Year	Major Pavement Maintenance (65-Year Schedule)	+ Year	Year
2048	26	4" M&O of Travel Lns + Shldr 2" M&O	26	2048
2049	27		27	2049
2050	28		28	2050
2051	29		29	2051
2052	30		30	2052
2053	31		31	2053
2054	32		32	2054
2055	33		33	2055
2056	34		34	2056
2057	35		35	2057
2058	36		36	2058
2059	37		37	2059
2060	38		38	2060
2061	39	2" M&O of Travel Lns + 1% Patching	39	2061
2062	40		40	2062
2063	41		41	2063
2064	42		42	2064
2065	43		43	2065
2066	44		44	2066
2067	45		45	2067
2068	46		46	2068
2069	47		47	2069
2070	48		48	2070
2071	49		49	2071
2072	50		50	2072
2073	51		51	2073

EXECUTION VERSION – JANUARY 2019

I-95 HOV/HOT Lanes Extension to Fredericksburg				
Year	+ Year	Major Pavement Maintenance (65-Year Schedule)	+ Year	Year
2074	52	2" M&O of Travel Lns + 1% Patching + Shldr 2" M&O	52	2074
2075	53		53	2075
2076	54		54	2076
2077	55		55	2077
2078	56		56	2078
2079	57		57	2079
2080	58		58	2080
2081	59		59	2081
2082	60		60	2082
2083	61		61	2083
2084	62		62	2084
2085	63		63	2085
2086	64		64	2086
2087	65	4" M&O of Travel Lns	65	2087

"2" M&O" - Functional mill & overlay of travel lanes.

"4" M&O" - Structural mill & overlay of travel lanes

"1% Patching" - Patching repair as-needed for 1% of travel lane pavement surface

"Shldr 2" M&O" - 2" mill & overlay of shoulder pavement

"90% Joints Fabric Repair" - Estimated 90% of the joints in this section to be repaired by replacing 6" asphalt overlay and overlaid with fabric.

"10% Joints ACC Repair" - Estimated 10% of the joints in this section to be repaired by replacing the entire existing asphalt concrete overlay.

NOTE: For details on the above joint repairs, refer to the *Virginia Department of Transportation Special Provision for Sawing and Sealing Joints in Asphalt Overlays Over Jointed Concrete Pavements* listed in Attachment 1.5a.

Any full depth pavement replacement, other than as indicated in Attachment 4.6c, will not be the Concessionaire's responsibility.

EXECUTION VERSION – JANUARY 2019

The pavement treatments specified above will be performed earlier by the Concessionaire if the conditions specified in Attachment 4.5 to the Technical Requirements require it, or if undertaken voluntarily. If a pavement treatment is performed earlier than the specified interval, the interval period is reset to a 13-year maximum from the completion date to the next specified pavement treatment, and Exhibit C-4, Attachment 4.6c to the Technical Requirements will be updated accordingly.