

NCTA Toll NC-540

New Morrisville Parkway Interchange

Proposed Toll Schedule

1. Introduction

This document presents CDM Smith's proposed toll rate schedule for the two segments of Toll NC-540 (the Triangle Expressway) that will require toll schedule adjustments associated with the opening of the Morrisville Parkway full-access interchange in early 2020. As seen in Figure 1, the Morrisville Parkway interchange will be located between the existing NC 55 and Green Level West Road interchanges.

2. Toll Schedule Development

CDM Smith developed the proposed 2020 toll rate adjustments needed to maintain the per-mile toll rates both for a through trip on the Triangle Expressway and on the affected mainline section between the existing NC 55 and Green Level West Road in 2020 and through the forecast period (2058).

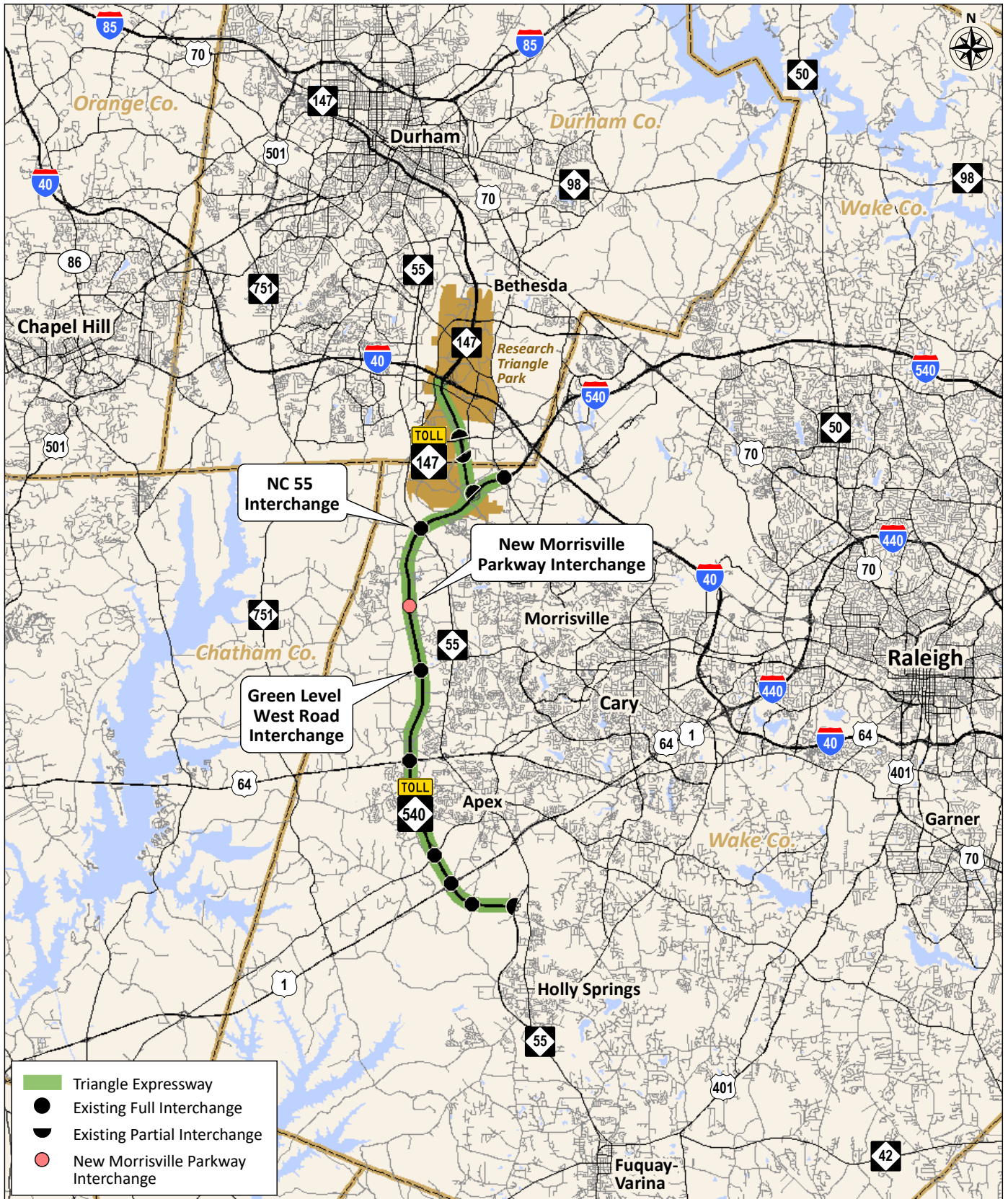
Figure 2 shows the detail area of the Triangle Expressway between the NC 55 and Green Level West Road interchanges. The schematic on the left side of Figure 2 shows the current configuration and the currently approved 2020 Class 1 toll rates of \$0.87 for electronic toll collection (ETC) transactions and \$1.33 for Bill by Mail (BBM) transactions. The \$0.87 Class 1 ETC toll covers travel between NC 55 and Green Level West Road, a distance of 4.0 miles, that equates to 21.8 cents per mile in 2020. Tolls are collected in each direction at a mainline toll gantry located north of Green Level West Road. There are two toll zones, one per direction, identified by Toll Zone IDs T17/T18.

When the Morrisville Parkway interchange opens in 2020, as shown on the right side of Figure 2, the original 4.0 mile section between NC 55 and Green Level West Road will be divided into two mainline sections comprised of a 2.2-mile section between NC 55 and the Morrisville Parkway, and a 1.8-mile section between Morrisville Parkway and Green Level West Road. A new mainline toll gantry will be located north of the Morrisville Parkway interchange, with two new toll zones identified by Toll Zone IDs T14/T15. This change in configuration requires toll rates to be set at the new Toll Zones T14/T15 and adjusted at the existing Toll Zones T17/T18 in order to maintain the 21.8 cents per mile toll rate.

As shown in Figure 2, the new toll rates for the two mainline sections of the Triangle Expressway were developed by apportioning the original toll into two components based on the distance of each mainline segment. For example, the 2.2-mile section between NC 55 and Morrisville Parkway is 55 percent of the original 4.0 miles, so the resulting Class 1 ETC toll is 55 percent of the \$0.87 toll, or \$0.48. The per-mile toll rate is maintained at 21.8 cents per mile in 2020.

Similarly, the 1.8-mile section of the Triangle Expressway between Morrisville Parkway and Green Level West road is 45 percent of the original 4.0 miles, so the resulting Class 1 ETC toll is \$0.39, maintaining the per-mile toll rate of 21.8 cents.

NCTA Toll NC 540/Morrisville Parkway Interchange Proposed Toll Schedule

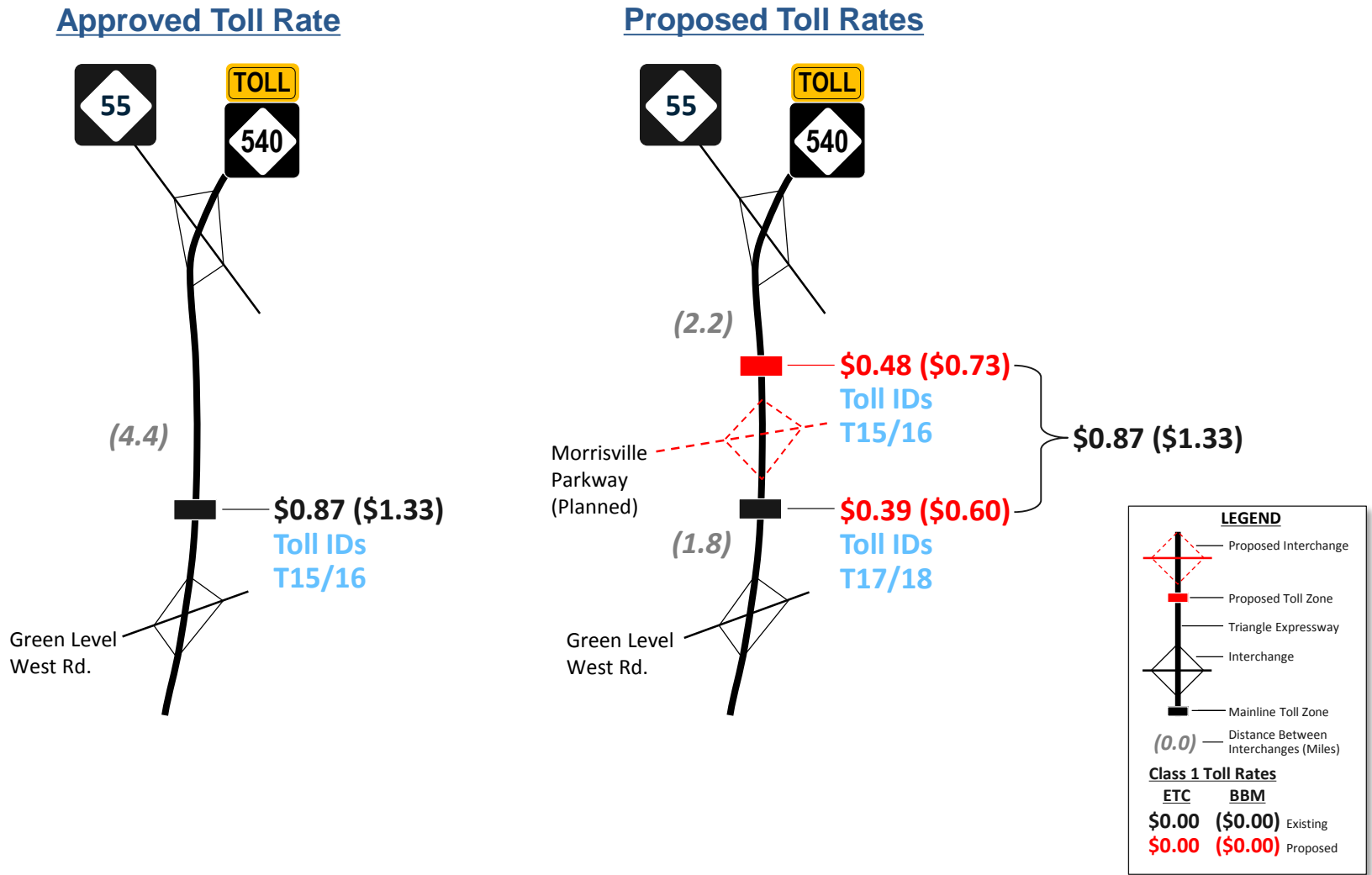


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MORRISVILLE PARKWAY INTERCHANGE LOCATION MAP

FIGURE 1



2020 Class 1 Toll Rates for Toll Zones North of Morrisville Parkway and Green Level West Road Interchanges

This apportioning methodology was employed to distribute the toll costs of the original Triangle Expressway segment from NC 55 to Green Level West Road to the two new mainline segments.

3. Proposed Toll Schedule

Table 1 presents CDM Smith's proposed toll rate schedule for the two mainline sections discussed, by payment type and toll class, for calendar years 2020 through 2058. The following summarizes key points to the proposed toll schedule associated with the opening of the Morrisville Parkway interchange:

1. These proposed rates are consistent with the rates presented in the recent ***Triangle Expressway Traffic and Revenue Study - Final Report***, dated November 2018 (2018 Triangle Expressway Report), that was used for bond refinancing.
1. The proposed rates are consistent with the Triangle Expressway tolling convention in that:
 - Class 2 (three-axle vehicle) toll rates equal two times the Class 1 (two-axle vehicle) toll rates.
 - Class 3 (four-or-more axle vehicle) toll rates equal four times the Class 1 toll rates.
 - Electronic toll collection (ETC) toll rates are discounted by 35 percent of the Bill by Mail (BBM) toll rates for each of the existing three toll classes.
2. The addition of the Morrisville Parkway interchange and new mainline tolling zones will not affect the approved rate schedule for existing toll zones other than T17/T18 north of Green Level West Road.
3. The cost of travel will not change for motorists traveling between NC 55 and Green Level Road West.
4. The Morrisville Parkway interchange and proposed toll rates shown in Table 1 will not negatively impact toll revenue on the Triangle Expressway.

Table 1
Proposed Toll Rate Schedule Associated with the Opening of the Morrisville Parkway Interchange

Calendar Year (1)	Mainline Section between NC 55 and Morrisville Parkway (2.2 miles)						Mainline Section between Morrisville Parkway and Green Level West Road (1.8 miles)					
	Toll IDs T15/T16						Toll IDs T17/T18					
	Class 1 (two axles)		Class 2 (three axles)		Class 4 (four or more axles)		Class 1 (two axles)		Class 2 (three axles)		Class 4 (four or more axles)	
	ETC	BBM	ETC	BBM	ETC	BBM	ETC	BBM	ETC	BBM	ETC	BBM
2020	0.48	0.73	0.96	1.46	1.92	2.92	0.39	0.60	1.92	2.92	7.68	11.68
2021	0.49	0.76	0.98	1.52	1.96	3.04	0.41	0.63	1.96	3.04	7.84	12.16
2022	0.51	0.78	1.02	1.56	2.04	3.12	0.42	0.65	2.04	3.12	8.16	12.48
2023	0.52	0.80	1.04	1.60	2.08	3.20	0.43	0.66	2.08	3.20	8.32	12.80
2024	0.54	0.83	1.08	1.66	2.16	3.32	0.45	0.69	2.16	3.32	8.64	13.28
2025	0.55	0.85	1.10	1.70	2.20	3.40	0.46	0.71	2.20	3.40	8.80	13.60
2026	0.57	0.88	1.14	1.76	2.28	3.52	0.47	0.72	2.28	3.52	9.12	14.08
2027	0.59	0.90	1.18	1.80	2.36	3.60	0.49	0.75	2.36	3.60	9.44	14.40
2028	0.61	0.93	1.22	1.86	2.44	3.72	0.50	0.77	2.44	3.72	9.76	14.88
2029	0.62	0.96	1.24	1.92	2.48	3.84	0.52	0.80	2.48	3.84	9.92	15.36
2030	0.64	0.99	1.28	1.98	2.56	3.96	0.53	0.82	2.56	3.96	10.24	15.84
2031	0.66	1.01	1.32	2.02	2.64	4.04	0.55	0.85	2.64	4.04	10.56	16.16
2032	0.68	1.05	1.36	2.10	2.72	4.20	0.57	0.88	2.72	4.20	10.88	16.80
2033	0.70	1.07	1.40	2.14	2.80	4.28	0.58	0.89	2.80	4.28	11.20	17.12
2034	0.72	1.11	1.44	2.22	2.88	4.44	0.60	0.92	2.88	4.44	11.52	17.76
2035	0.74	1.14	1.48	2.28	2.96	4.56	0.62	0.95	2.96	4.56	11.84	18.24
2036	0.76	1.17	1.52	2.34	3.04	4.68	0.63	0.97	3.04	4.68	12.16	18.72
2037	0.77	1.19	1.54	2.38	3.08	4.76	0.65	1.00	3.08	4.76	12.32	19.04
2038	0.79	1.22	1.58	2.44	3.16	4.88	0.66	1.02	3.16	4.88	12.64	19.52
2039	0.80	1.23	1.60	2.46	3.20	4.92	0.68	1.05	3.20	4.92	12.80	19.68
2040	0.82	1.26	1.64	2.52	3.28	5.04	0.69	1.06	3.28	5.04	13.12	20.16
2041	0.84	1.29	1.68	2.58	3.36	5.16	0.70	1.08	3.36	5.16	13.44	20.64
2042	0.86	1.32	1.72	2.64	3.44	5.28	0.71	1.09	3.44	5.28	13.76	21.12
2043	0.87	1.34	1.74	2.68	3.48	5.36	0.74	1.14	3.48	5.36	13.92	21.44
2044	0.89	1.37	1.78	2.74	3.56	5.48	0.75	1.16	3.56	5.48	14.24	21.92
2045	0.91	1.40	1.82	2.80	3.64	5.60	0.76	1.17	3.64	5.60	14.56	22.40
2046	0.93	1.43	1.86	2.86	3.72	5.72	0.77	1.19	3.72	5.72	14.88	22.88
2047	0.95	1.46	1.90	2.92	3.80	5.84	0.79	1.22	3.80	5.84	15.20	23.36
2048	0.97	1.49	1.94	2.98	3.88	5.96	0.80	1.23	3.88	5.96	15.52	23.84
2049	0.99	1.52	1.98	3.04	3.96	6.08	0.82	1.26	3.96	6.08	15.84	24.32
2050	1.00	1.54	2.00	3.08	4.00	6.16	0.84	1.29	4.00	6.16	16.00	24.64
2051	1.02	1.57	2.04	3.14	4.08	6.28	0.86	1.32	4.08	6.28	16.32	25.12
2052	1.04	1.60	2.08	3.20	4.16	6.40	0.87	1.34	4.16	6.40	16.64	25.60
2053	1.06	1.63	2.12	3.26	4.24	6.52	0.89	1.37	4.24	6.52	16.96	26.08
2054	1.08	1.66	2.16	3.32	4.32	6.64	0.91	1.40	4.32	6.64	17.28	26.56
2055	1.10	1.69	2.20	3.38	4.40	6.76	0.93	1.43	4.40	6.76	17.60	27.04
2056	1.13	1.74	2.26	3.48	4.52	6.96	0.94	1.45	4.52	6.96	18.08	27.84
2057	1.15	1.77	2.30	3.54	4.60	7.08	0.96	1.48	4.60	7.08	18.40	28.32
2058	1.17	1.80	2.34	3.60	4.68	7.20	0.99	1.52	4.68	7.20	18.72	28.80

(1) Annual toll rate increases are assumed to occur on or around January 1 of each year.