



April 9, 2009

Mr. David Joyner
Executive Director
North Carolina Turnpike Authority
5400 Glenwood Avenue, Suite 400
Raleigh, NC 27612

**Re: Monroe Connector/Bypass
2009 Update to Preliminary Study**

Dear Mr. Joyner:

Wilbur Smith Associates (WSA) is pleased to provide herewith our updated traffic and revenue findings for the Monroe Connector/Bypass.

WSA prepared a preliminary traffic and revenue study¹ for the proposed facility in 2006. The 2006 study was conducted at a preliminary feasibility level, commonly referred to as a “Level 2” traffic and revenue analysis. The Level 2 analysis is intended to provide preliminary estimates of traffic, revenue and toll rate sensitivity. This level of study is not intended for use in direct support of project financing.

The NCTA needs to have preliminary financial information for planning purposes and has asked for an update to the preliminary study in advance of the completion of any investment grade studies. The purpose of this update is to provide new information sufficient to allow the NCTA to prepare new preliminary financing plans for the project. However, the forecasts are still considered to be at Level 2 and are not suitable for financial implementation. A comprehensive, investment-grade study of the Monroe Connector/Bypass is underway now, and the results will be available later this year.

Several key changes to the project have occurred since the completion of the preliminary study. These changes are significant enough to warrant updates to the traffic and revenue forecasts to be compatible with corresponding updates to capital, operating, and financing costs that have also been made over the past three years.

¹Proposed Monroe Connector Preliminary Traffic and Revenue Study, Wilbur Smith Associates for North Carolina Turnpike Authority, October 11, 2006.



- **Open Road Tolling** – The NCTA has decided to implement open road tolling (ORT) on the Triangle Expressway and will likely use the same collection method for other toll projects, including the Monroe Connector/Bypass. The preliminary study for the Monroe Connector/Bypass was based on an assumed barrier system for cash and electronic toll collection. Under the new plan, the system would operate at highway speeds and would use both video and ETC methods of collection without a cash option on the road. The toll rate plan has also changed with ETC rates assumed to be discounted from base video toll rates. The change in these assumptions effects expected toll revenues and toll operating and maintenance costs.
- **Alignment and Interchanges** - Environmental and engineering studies are underway for the Monroe project, and cost estimates have been updated accordingly. Potential alignments and interchanges are being considered which differ from the assumptions in the 2006 study. The two sections of the project, Monroe Bypass and Monroe Connector are now projected to begin operations at the same time in January 2014 instead in a phased opening.

UPDATE PROCEDURES

This update is based primarily upon the 2006 preliminary study including using the same regional transportation planning model available for the earlier study. Key revisions and updates to the analytical procedure include:

- **Metrolina Regional Transportation Demand Model** – The MPO regional model was the basis for the update. Various project-level calibration adjustments made for the preliminary study were carried through to the update.
- **Tolling Plan** – The tolling assumption for the preliminary study was for two toll collection methods, cash and electronic toll collection (ETC). The tolls were assumed to be collected via a barrier system for cash and high-speed collection for ETC customers. Following studies conducted for the Triangle Expressway in the Triangle Region, the NCTA decided to operate without cash and instead collect tolls either via ETC or video identification. Under the video collection procedure, images of vehicle license plates would be captured. NCTA account holders would be identified and accounts charged for each transaction. In the case of vehicles not preregistered with the NCTA, vehicle owners would be identified by DMV records and sent an invoice if the vehicle operator did not pay within specified time limits. This change in toll collection procedures was reflected by preparing a new toll zone location plan.



- **Alignment and Interchange Configuration** – Since completion of the preliminary study, alternative alignments and interchange configurations have been analyzed as part of the environmental review process. Alternative 1 described later is similar in location to one of the scenarios analyzed for the 2006 preliminary study except for the location of tolling zones. Alternative 2, described later, was not analyzed in the preliminary study, but is the same configuration as Alternative 1 except for the western terminus.
- **Historic Traffic Volumes** – The volumes along US 74, the key competitive route to the project, were reviewed and compared against the growth rates forecast in the regional transportation demand model. Adjustments were made to the traffic forecasts as a result of this review since the traffic, according to NCDOT traffic data, has decreased in the 2005-2007 period.
- **Value of Time and Vehicle Operating Cost** – The value of time and vehicle operating cost, two key model parameters, were reviewed. Adjustments to the base year model rates were made based on historical changes in inflation and in the price of fuel since the preliminary study.
- **Toll Rate Sensitivity** – The price sensitivity to the new plan for toll rates was analyzed for 2015 and 2030.
- **Toll Rates** – New toll rates were also developed as a result of the change in the tolling plan and the revised toll sensitivity. Under the new plan, the base rate is the video Class 1 (passenger vehicle rate). Class 1 ETC rates are discounted by 35 percent in accordance with legislation passed in 2008. Rates for medium, single-unit (Class 2) and heavy, multi-unit (Class 3) trucks are multiples of the Class 1 video and ETC rates. In addition, the toll rates were set so that the average toll per mile for all customers of the same vehicle class and collection method is uniform. Finally toll rates were assumed be increased annually rather than every five years as was assumed for the preliminary study. This assumption is similar to the plan adopted for the Triangle Expressway.
- **Fiscal Year Basis** – The traffic and revenue forecasts for this 2009 Update were prepared on a fiscal year basis (July-June) to be in conformity with the capital, maintenance, and operating costs used in the preliminary plan of finance. The forecasts in the 2006 study were on a calendar year basis. All yearly references in this report are to fiscal years except for historical references and the comparison to the traffic and revenue forecasts in the 2006 preliminary study.
- **Revenue Leakage** – Finally estimates were made for revenue losses from equipment/system failures or inability to identify or collect from video customers and to a lesser ex-



tent, ETC customers. The procedure was developed for the Triangle Expressway comprehensive traffic and revenue study and is based on assumed percentages for equipment failure and collection rates. The preliminary study for the Monroe project did not address potential revenue leakage.

PROJECT DESCRIPTION

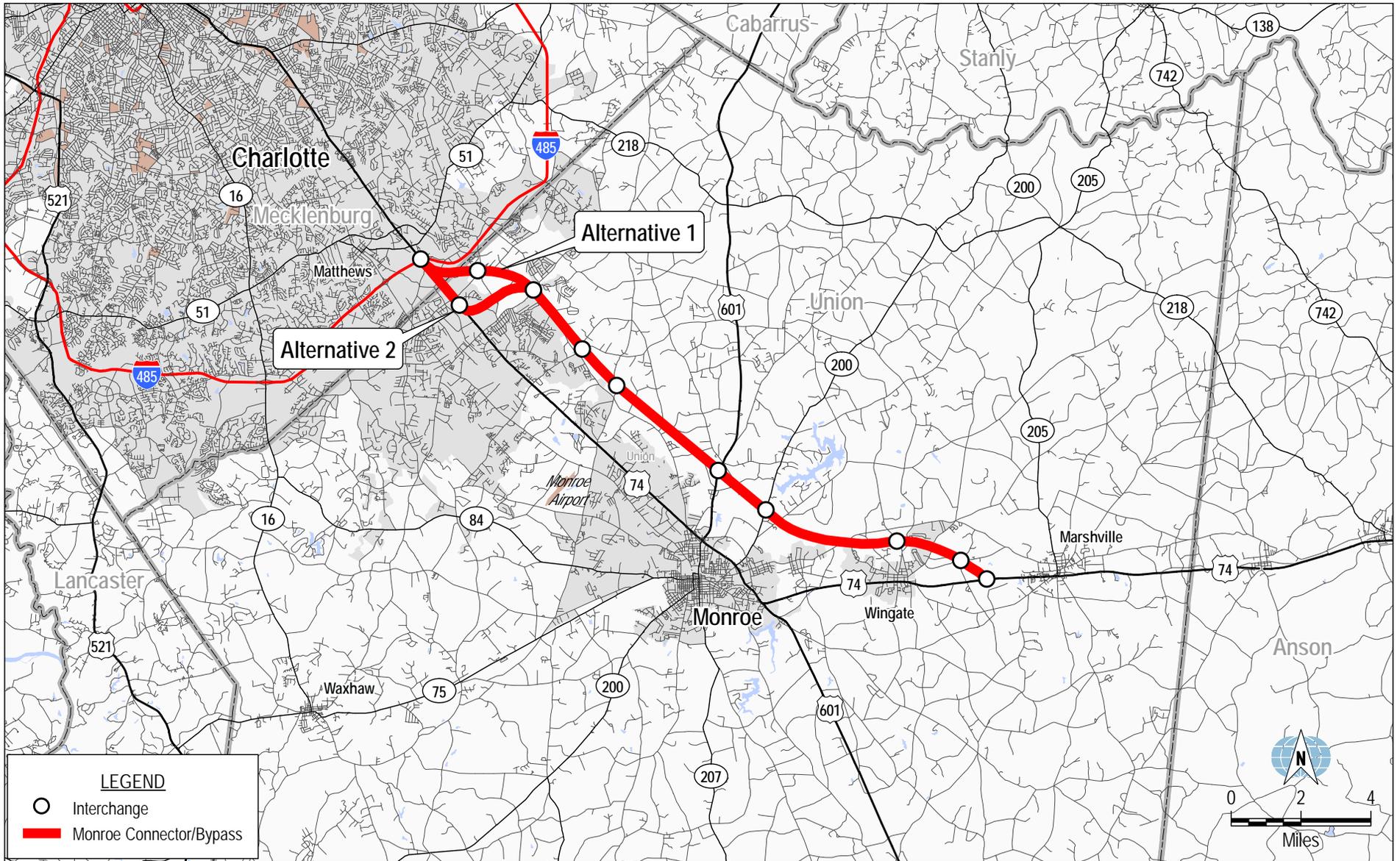
Figure 1 depicts the project location and its relationship to the surrounding transportation system. Two alternative alignments at the western end are under consideration. Alternative 1 provides a direct connection to I-485. Alternative 2 follows the same alignment for most of its length but does not connect directly to I-485. Instead it connects with US 74 and then to I-485 via a segment on US 74 that would be improved as part of Alternative 2.

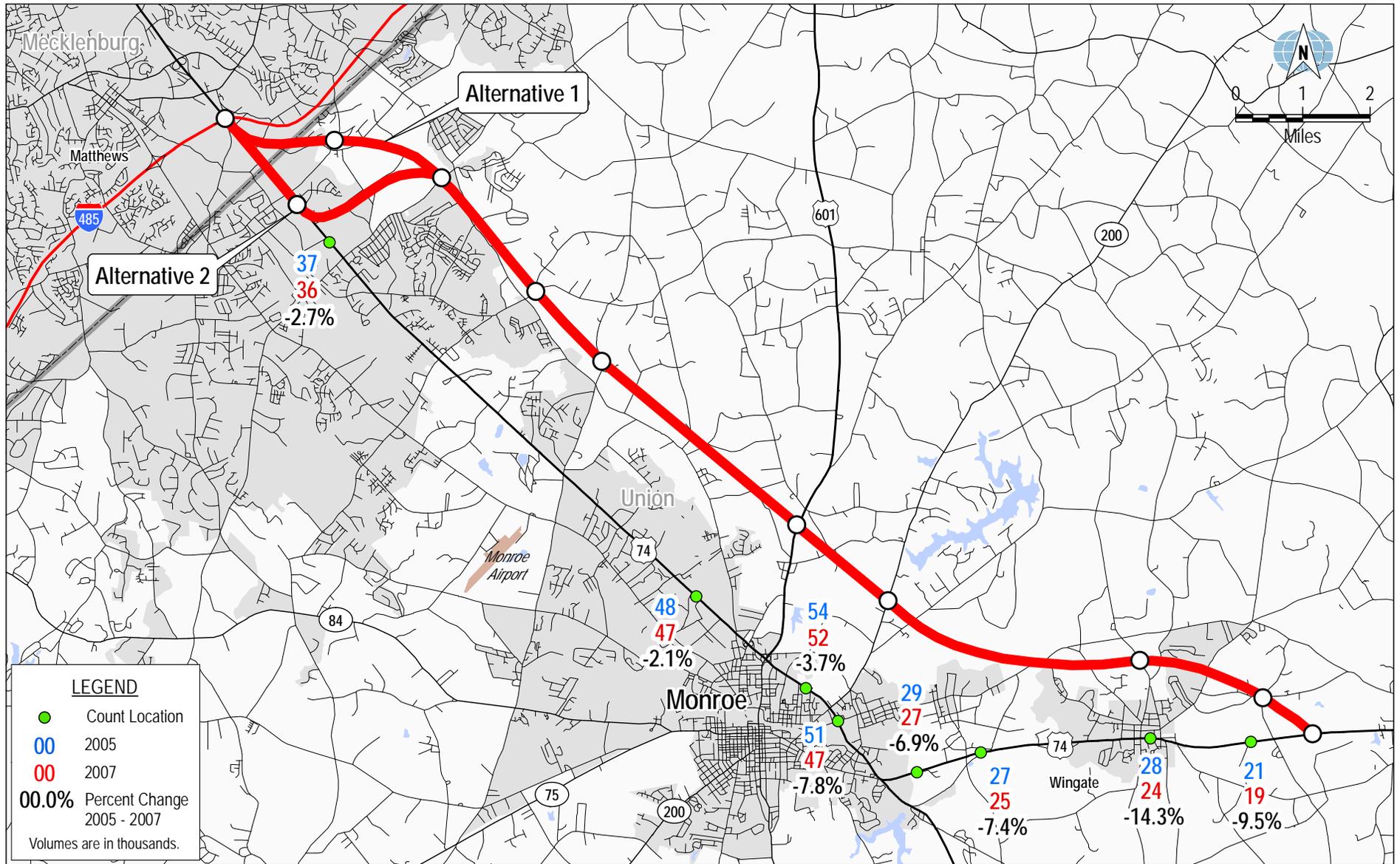
The Monroe Connector/Bypass would follow a generally northwest-southeast orientation, essentially paralleling US 74. US 74 is a major facility that connects southeastern North Carolina to the Charlotte metropolitan area. It provides access between the Port of Wilmington and the New Hanover and Brunswick County beaches and Charlotte and points west. With the Monroe Connector/Bypass, drivers would have a high-speed, controlled access facility between Monroe and Charlotte, which would reduce congestion on the heavily-utilized US 74. The proposed Monroe Connector/Bypass would provide significant time savings for travelers moving between I-485 south of Charlotte and Monroe or points south and east. US 74 would be the primary competing route to the Monroe Connector.

US 74, a signalized arterial route, currently carries very high traffic volumes, particularly between I-485 and Monroe as indicated on Figure 2. Near Monroe, over 50,000 vehicles per day (vpd) use US 74. East of Monroe the volumes drop to less than 25,000 vpd. However, as indicated in the figure, average annual daily traffic has reduced somewhat between 2005 and 2007, the last year for which traffic information was available from the NC Department of Transportation. The 2007 volumes are generally 2,000 vehicles per day less than the 2005 volumes.

ALTERNATIVE 1 CONFIGURATION

The proposed Monroe Connector/Bypass, as shown in Figure 3, would extend for approximately 19.5 miles from the interchange of US 74/I-485 near Matthews, at the northern end of the project to US 74 east of Wingate. Alternative 1 would have eight full interchanges and two half interchanges including an interchange where US 74 currently connects with I-485, the Charlotte Outer Loop. Figure 3 also shows the conceptual location of the five mainline and two ramp toll zones, which have been sited to allow for toll collection for all movements on the Monroe Bypass/Connector. Since the NCTA has adopted a cashless system, all toll zones would allow for



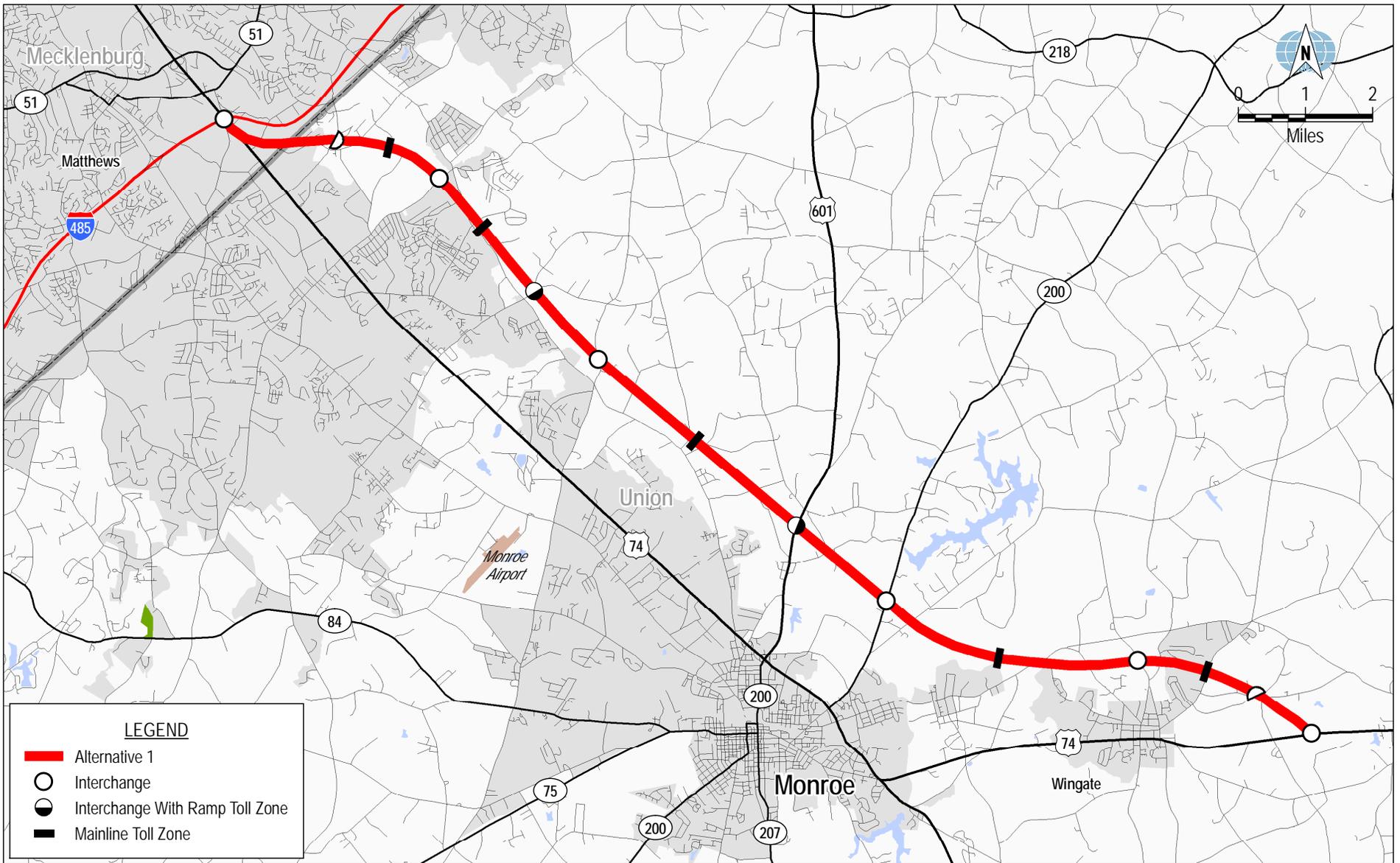


Source: North Carolina Department of Transportation.



ANNUAL AVERAGE DAILY TRAFFIC COUNTS AT SELECTED STUDY AREA LOCATIONS

FIGURE 2





either electronic or video toll collection as discussed earlier. Traffic would not slow down at any toll zone.

ALTERNATIVE 2 CONFIGURATION

Figure 4 depicts a 19.8-mile second alternative in which the western end would connect to I-485 via an improved US 74 that would allow toll road traffic to access I-485 along a mixed traffic segment of US 74. This improved segment would be grade-separated and high-speed and would allow for tolled and non-tolled through movements and local access via service roads. Effectively this short segment could be perceived as part of the toll road by toll road customers; therefore the tolls at the tolling zone between US 74 and Indian Trail-Fairview Road reflect this perception. Through traffic on US 74 would also be tolled. A non-toll alternative for US 74 through traffic would be available using the parallel service roads. Figure 5 illustrates the toll and non-toll traffic flow on US 74 under Alternative 2. The Stallings Road half interchange would be eliminated in Alternative 2. Access for potential toll road customers that would use this interchange in Alternative 1 would be via either US 74 or Indian Trail-Fairview Road, both of which involve longer travel times.

VEHICLE CLASSIFICATION AND TOLL RATES

Toll rates for the Monroe Connector/Bypass were reanalyzed for 2015 and 2030 and new toll rates developed to conform to current NCTA vehicle classification and toll policy. The vehicle classifications, toll premiums and discounts, and toll setting frequency developed for the Triangle Expressway were also assumed for the Monroe Connector/Bypass.

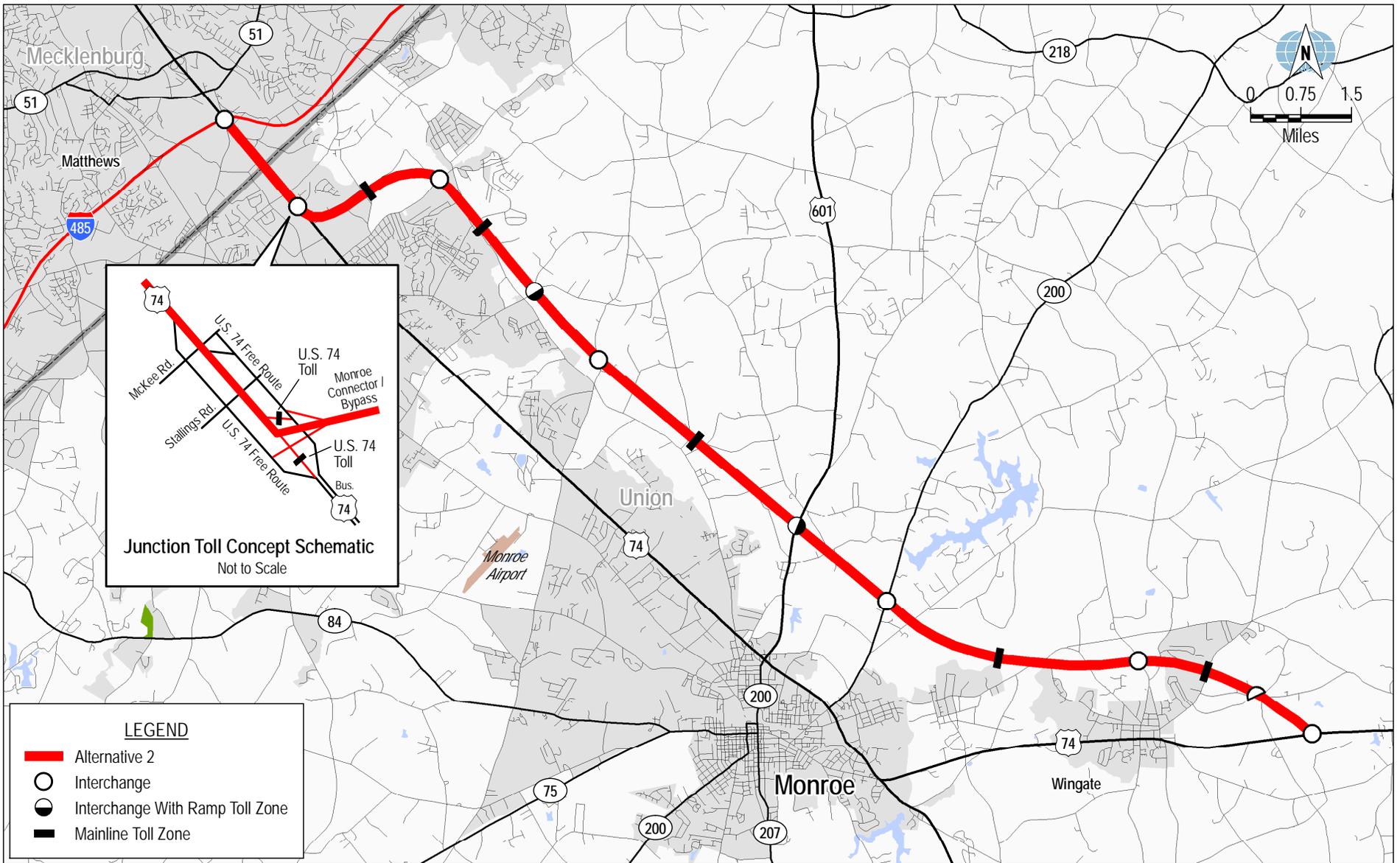
VEHICLE CLASSIFICATION POLICY

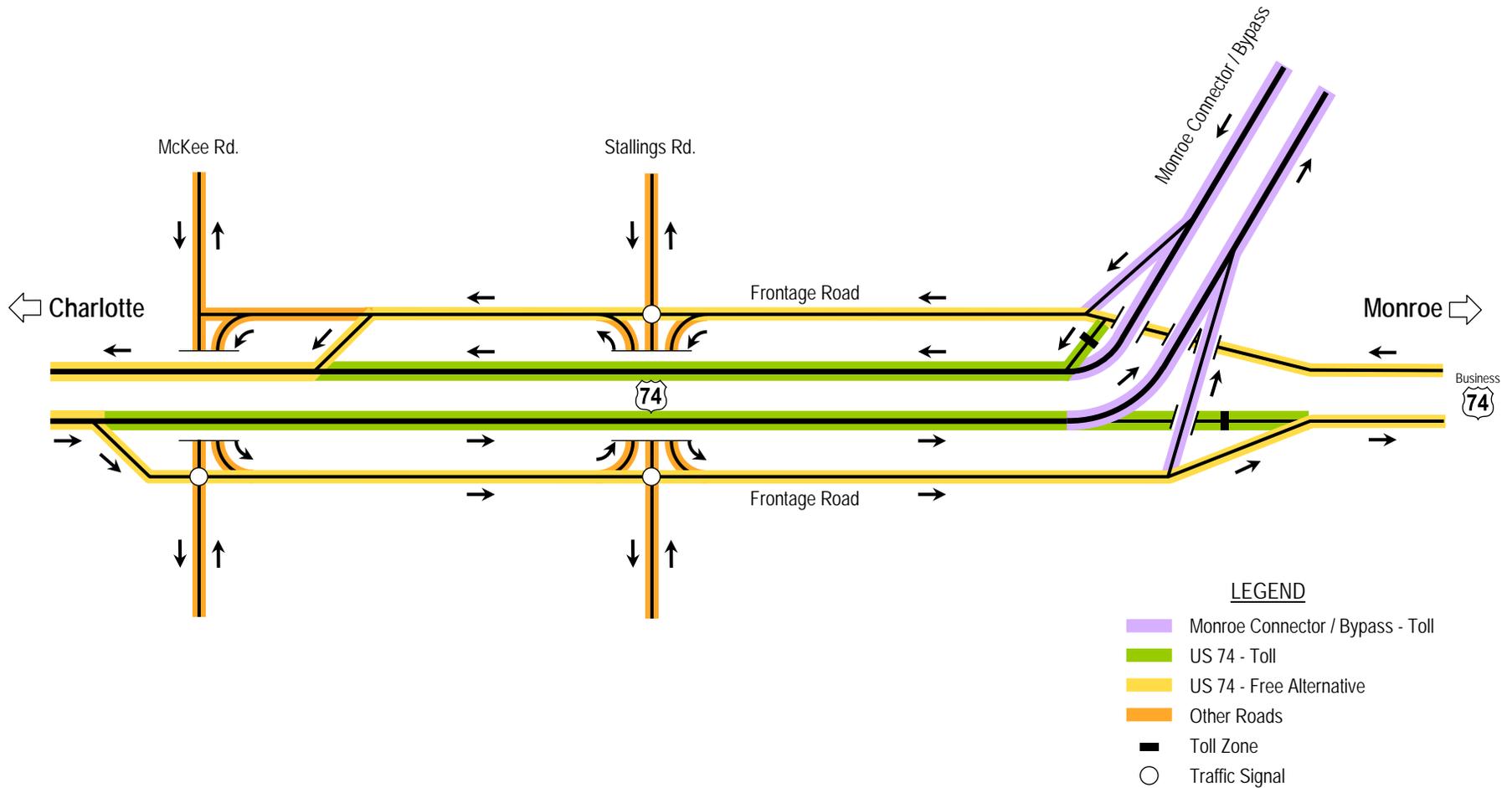
- **Class 1, Light Vehicles** – Included in this class are automobiles, pick-up trucks, passenger and service vans, sports utility vehicles, and motor cycles.
- **Class 2, Medium Vehicles** – Included in this class are single unit trucks larger than pickup trucks including 2-axle, 6-tire vehicles; passenger buses; recreational vehicles and any Class 1 vehicle that is towing a trailer.
- **Class 3, Heavy Trucks** – Included in this class are all multi-unit vehicles with four or more axles and all oversize vehicles.

TOLL RATE POLICY AND TOLL EQUITY

The toll rate for Class 1 vehicles is the rate on which the rates for other vehicle classes are based. The following premiums were selected for the Class 2 and Class 3 vehicles:

- **Class 2, Medium (Single-unit) Vehicles** – Two times the Class 1 rate.
- **Class 3, Heavy (Multi-unit) Trucks** – Four times the Class 1 rate.







Video toll customers would include users with registered video accounts and non-registered users of the toll road. Users that do not register for ETC or video toll accounts would be considered potential customers and provided an opportunity to pay before their transactions are classified as violations. The following rate differentials were assumed for video toll collection and ETC:

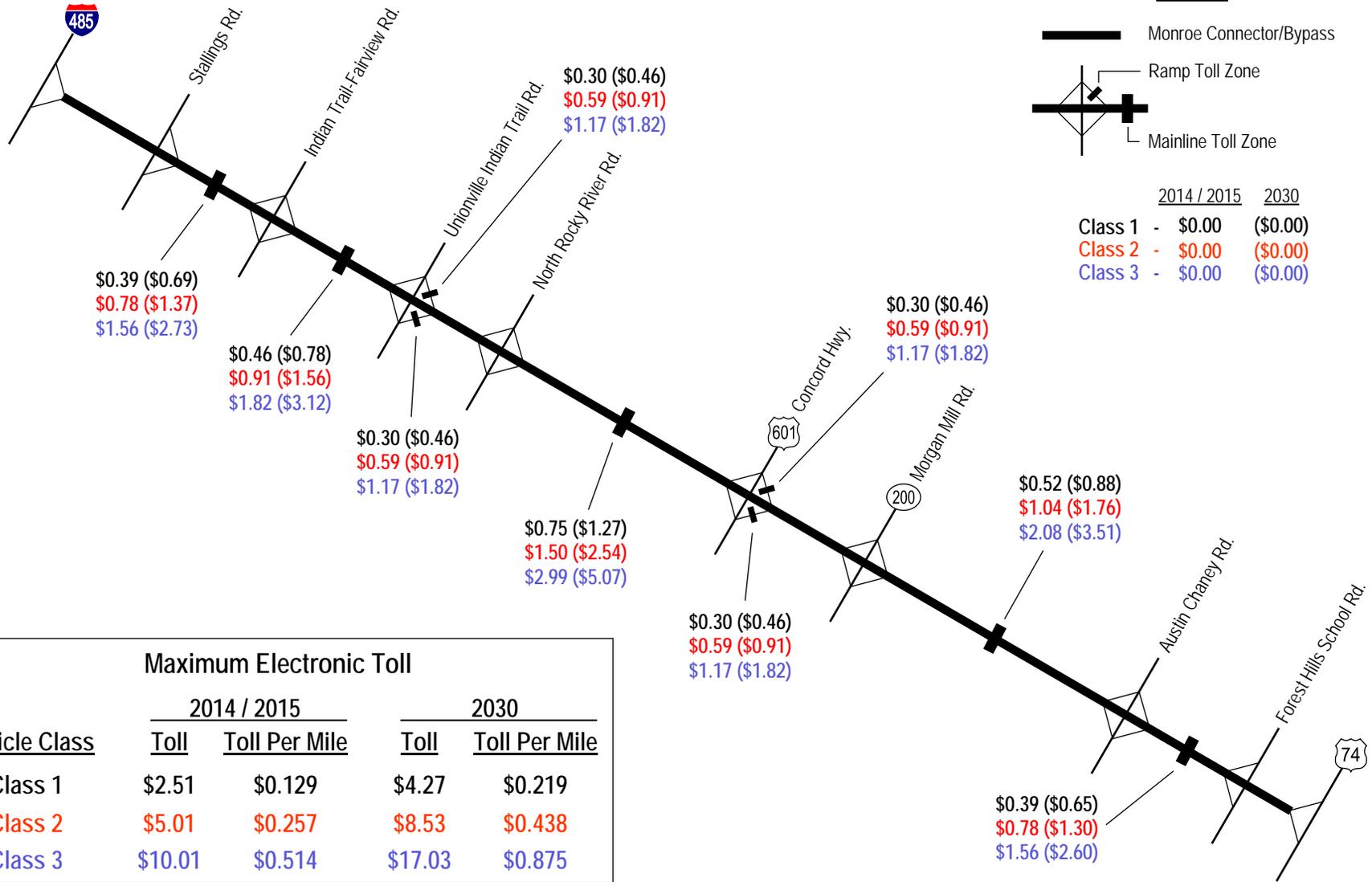
- **Video Toll Collection Rates** – The toll rates established for Class 1, Class 2 and Class 3 video toll customers; and
- **Electronic Toll Collection Rates** – The toll rates for Class 1, Class 2 and Class 3 toll customers discounted by no more than 35 percent from the corresponding video rates.

By having a cashless system, the NCTA can place the tolling zones between each interchange and have the rates on a per mile basis set equally. In certain cases, toll zones were located on ramps for operational reasons, but the same uniform toll rate per mile was adopted.

TOLL RATES

Figures 6 and 7 illustrate the assumed toll rates for the two alternatives for the three vehicle classes in 2014/2015 and 2030. Tables 1-1 and 1-2 contain ETC and video tolls for each tolling zone from the opening year through 2035. The maximum Class 1 ETC toll (five toll zones) would be \$2.51, or \$0.129 per mile in the opening year under Alternative 1 and \$0.127 per mile for the slightly longer Alternative 2. The highest single zone Class 1 ETC toll would be \$0.75 for movements between US 601 and North Rocky River Road. Minimum tolls of \$0.30 would be set at the two ramp tolling zones and the US 74 tolling zones. Finally, toll rates would be increased annually based on growth rates between the 2015 and 2030 rates that were established by toll sensitivity tests. In contrast, the 2006 study assumed toll increases every five years. The annual toll increase procedure is made relatively easy since all tolls are paid electronically.

Tables 2-1 and 2-2 compare the maximum Class 1 ETC and video toll rates established for the 2006 study and this 2009 update study. ETC rates are similar especially in the earlier years but are somewhat higher in later years following a new toll sensitivity analysis. Video rates are also shown for the current study and are higher than the ETC rates which are discounted from the video rates.



Vehicle Class	Maximum Electronic Toll			
	2014 / 2015		2030	
	Toll	Toll Per Mile	Toll	Toll Per Mile
Class 1	\$2.51	\$0.129	\$4.27	\$0.219
Class 2	\$5.01	\$0.257	\$8.53	\$0.438
Class 3	\$10.01	\$0.514	\$17.03	\$0.875

Proposed Monroe Connector/Bypass Preliminary Traffic and Revenue Study - 2009 Update

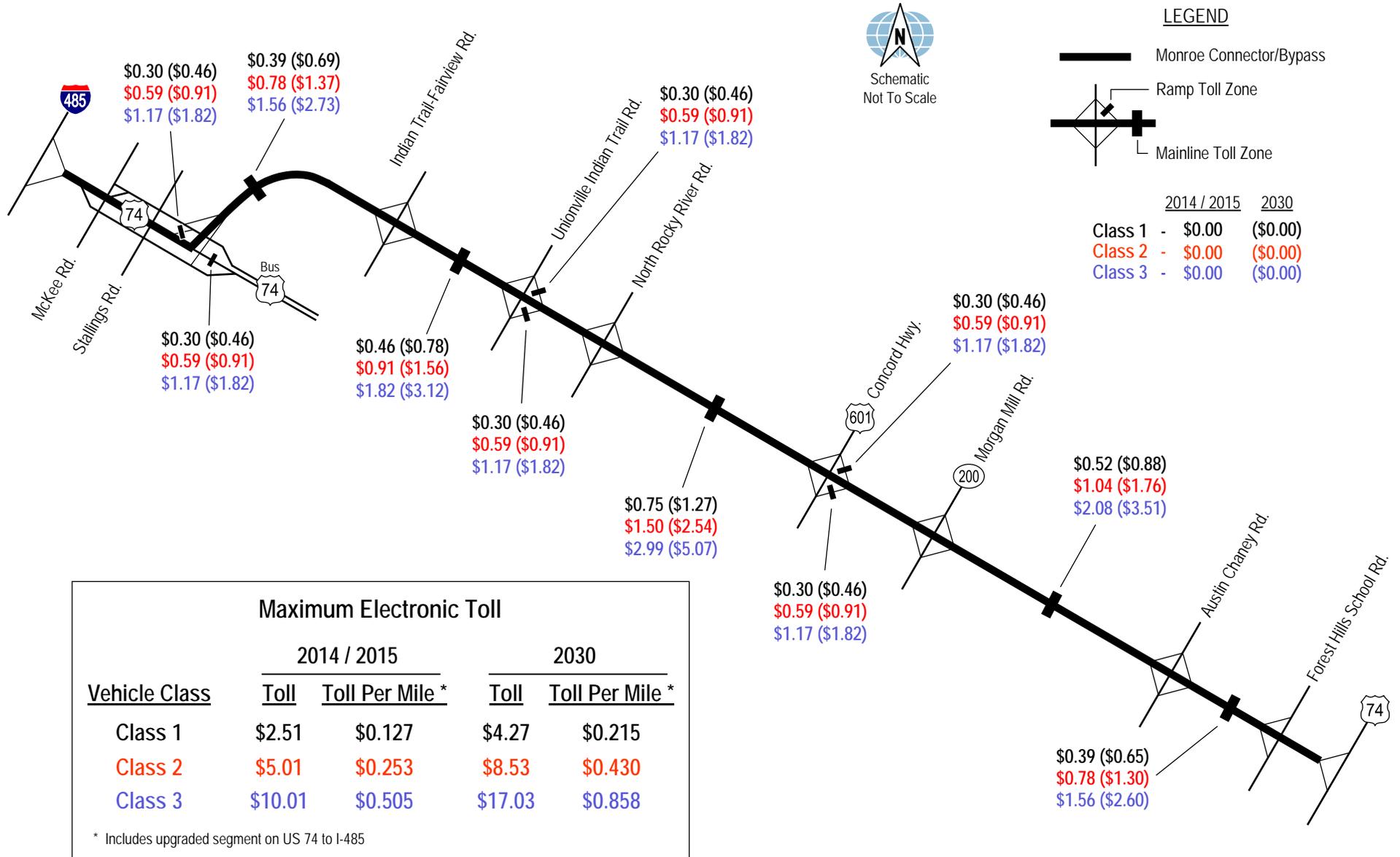




Table 1-1
Recommended Annual Toll Rates by Tolling Zone
Class 1 - ETC and Video
Monroe Connector/Bypass Preliminary Study Update, Alternative 1

Year	Mainline 1 US 74 - Austin Chaney Road		Mainline 2 Austin Chaney Road - NC 200		Ramp 1 NC 601		Mainline 3 US 601 - Rocky River Road		Ramp 2 Unionville - Indian Trail Road		Mainline 4 Unionville-Indian Trail Road - Indian Trail Fairview Road		Mainline 5 A Mainline Trail - Fairview Road - Stallings Road	
	ETC	Video	ETC	Video	ETC	Video	ETC	Video	ETC	Video	ETC	Video	ETC	Video
2014	\$0.39	\$0.60	\$0.52	\$0.80	\$0.30	\$0.45	\$0.75	\$1.15	\$0.30	\$0.45	\$0.46	\$0.70	\$0.39	\$0.60
2015	\$0.39	\$0.60	\$0.52	\$0.80	\$0.30	\$0.45	\$0.75	\$1.15	\$0.30	\$0.45	\$0.46	\$0.70	\$0.39	\$0.60
2016	\$0.41	\$0.62	\$0.54	\$0.83	\$0.31	\$0.47	\$0.78	\$1.19	\$0.31	\$0.47	\$0.48	\$0.73	\$0.41	\$0.62
2017	\$0.42	\$0.64	\$0.56	\$0.86	\$0.32	\$0.49	\$0.80	\$1.23	\$0.32	\$0.49	\$0.50	\$0.76	\$0.42	\$0.64
2018	\$0.43	\$0.66	\$0.58	\$0.89	\$0.34	\$0.51	\$0.83	\$1.27	\$0.34	\$0.51	\$0.52	\$0.79	\$0.43	\$0.66
2019	\$0.45	\$0.68	\$0.60	\$0.92	\$0.35	\$0.53	\$0.86	\$1.32	\$0.35	\$0.53	\$0.54	\$0.82	\$0.45	\$0.68
2020	\$0.47	\$0.72	\$0.63	\$0.96	\$0.36	\$0.54	\$0.90	\$1.37	\$0.36	\$0.54	\$0.55	\$0.84	\$0.47	\$0.72
2021	\$0.49	\$0.75	\$0.65	\$1.00	\$0.37	\$0.56	\$0.93	\$1.42	\$0.37	\$0.56	\$0.57	\$0.87	\$0.49	\$0.75
2022	\$0.51	\$0.78	\$0.68	\$1.04	\$0.38	\$0.58	\$0.96	\$1.47	\$0.38	\$0.58	\$0.59	\$0.90	\$0.51	\$0.78
2023	\$0.53	\$0.81	\$0.71	\$1.08	\$0.39	\$0.60	\$0.99	\$1.52	\$0.39	\$0.60	\$0.61	\$0.93	\$0.53	\$0.81
2024	\$0.55	\$0.84	\$0.73	\$1.12	\$0.41	\$0.62	\$1.03	\$1.58	\$0.41	\$0.62	\$0.63	\$0.96	\$0.55	\$0.84
2025	\$0.56	\$0.86	\$0.75	\$1.15	\$0.42	\$0.64	\$1.07	\$1.64	\$0.42	\$0.64	\$0.65	\$1.00	\$0.56	\$0.86
2026	\$0.58	\$0.89	\$0.78	\$1.19	\$0.43	\$0.65	\$1.11	\$1.70	\$0.43	\$0.65	\$0.68	\$1.04	\$0.59	\$0.90
2027	\$0.60	\$0.92	\$0.80	\$1.23	\$0.43	\$0.66	\$1.15	\$1.76	\$0.43	\$0.66	\$0.71	\$1.08	\$0.62	\$0.94
2028	\$0.62	\$0.95	\$0.83	\$1.27	\$0.44	\$0.67	\$1.19	\$1.82	\$0.44	\$0.67	\$0.73	\$1.12	\$0.64	\$0.98
2029	\$0.64	\$0.98	\$0.86	\$1.31	\$0.45	\$0.68	\$1.23	\$1.88	\$0.45	\$0.68	\$0.76	\$1.16	\$0.67	\$1.02
2030	\$0.65	\$1.00	\$0.88	\$1.35	\$0.46	\$0.70	\$1.27	\$1.95	\$0.46	\$0.70	\$0.78	\$1.20	\$0.69	\$1.05
2031	\$0.68	\$1.04	\$0.91	\$1.40	\$0.48	\$0.73	\$1.32	\$2.02	\$0.48	\$0.73	\$0.81	\$1.24	\$0.71	\$1.09
2032	\$0.71	\$1.08	\$0.95	\$1.45	\$0.50	\$0.76	\$1.36	\$2.09	\$0.50	\$0.76	\$0.84	\$1.28	\$0.74	\$1.13
2033	\$0.73	\$1.12	\$0.98	\$1.50	\$0.52	\$0.79	\$1.42	\$2.17	\$0.52	\$0.79	\$0.87	\$1.33	\$0.77	\$1.17
2034	\$0.76	\$1.16	\$1.01	\$1.55	\$0.54	\$0.82	\$1.47	\$2.25	\$0.54	\$0.82	\$0.90	\$1.38	\$0.79	\$1.21
2035	\$0.78	\$1.19	\$1.05	\$1.61	\$0.55	\$0.84	\$1.52	\$2.33	\$0.55	\$0.84	\$0.93	\$1.43	\$0.82	\$1.25

Note:
Class 2 tolls are two times the Class 1 video tolls.
Class 3 tolls are four times the Class 1 video tolls.
Electronic rates are 65 per cent of video rates.

Table 1-2
Recommended Annual Toll Rates by Tolling Zone
Class 1 - ETC and Video
Monroe Connector/Bypass Preliminary Study Update, Alternative 2

Year	Mainline 1 US 74 - Austin Chaney Road		Mainline 2 Austin Chaney Road - NC 200		Ramp 1 NC 601		Mainline 3 US 601 - Rocky River Road		Ramp 2 Unionville - Indian Trail Road		Mainline 4 Unionville-Indian Trail Road - Indian Trail Fairview Road		Mainline 5 B Indian Trail - Fairview Road - US 74		Mainline 6 US 74	
	ETC	Video	ETC	Video	ETC	Video	ETC	Video	ETC	Video	ETC	Video	ETC	Video	ETC	Video
2014	\$0.39	\$0.60	\$0.52	\$0.80	\$0.30	\$0.45	\$0.75	\$1.15	\$0.30	\$0.45	\$0.46	\$0.70	\$0.39	\$0.60	\$0.30	\$0.45
2015	\$0.41	\$0.62	\$0.54	\$0.83	\$0.31	\$0.47	\$0.78	\$1.19	\$0.31	\$0.47	\$0.48	\$0.73	\$0.41	\$0.62	\$0.31	\$0.47
2016	\$0.42	\$0.64	\$0.56	\$0.86	\$0.32	\$0.49	\$0.80	\$1.23	\$0.32	\$0.49	\$0.50	\$0.76	\$0.42	\$0.64	\$0.32	\$0.49
2017	\$0.43	\$0.66	\$0.58	\$0.89	\$0.34	\$0.51	\$0.83	\$1.27	\$0.34	\$0.51	\$0.52	\$0.79	\$0.43	\$0.66	\$0.34	\$0.51
2018	\$0.45	\$0.68	\$0.60	\$0.92	\$0.35	\$0.53	\$0.86	\$1.32	\$0.35	\$0.53	\$0.54	\$0.82	\$0.45	\$0.68	\$0.35	\$0.53
2019	\$0.47	\$0.72	\$0.63	\$0.96	\$0.36	\$0.54	\$0.90	\$1.37	\$0.36	\$0.54	\$0.55	\$0.84	\$0.47	\$0.72	\$0.36	\$0.54
2020	\$0.49	\$0.75	\$0.65	\$1.00	\$0.37	\$0.56	\$0.93	\$1.42	\$0.37	\$0.56	\$0.57	\$0.87	\$0.49	\$0.75	\$0.37	\$0.56
2021	\$0.51	\$0.78	\$0.68	\$1.04	\$0.38	\$0.58	\$0.96	\$1.47	\$0.38	\$0.58	\$0.59	\$0.90	\$0.51	\$0.78	\$0.38	\$0.58
2022	\$0.53	\$0.81	\$0.71	\$1.08	\$0.39	\$0.60	\$0.99	\$1.52	\$0.39	\$0.60	\$0.61	\$0.93	\$0.53	\$0.81	\$0.39	\$0.60
2023	\$0.55	\$0.84	\$0.73	\$1.12	\$0.41	\$0.62	\$1.03	\$1.58	\$0.41	\$0.62	\$0.63	\$0.96	\$0.55	\$0.84	\$0.41	\$0.62
2024	\$0.56	\$0.86	\$0.75	\$1.15	\$0.42	\$0.64	\$1.07	\$1.64	\$0.42	\$0.64	\$0.65	\$1.00	\$0.56	\$0.86	\$0.42	\$0.64
2025	\$0.58	\$0.89	\$0.78	\$1.19	\$0.43	\$0.66	\$1.11	\$1.70	\$0.43	\$0.66	\$0.66	\$1.04	\$0.58	\$0.89	\$0.43	\$0.66
2026	\$0.60	\$0.92	\$0.80	\$1.23	\$0.43	\$0.66	\$1.15	\$1.76	\$0.43	\$0.66	\$0.68	\$1.08	\$0.59	\$0.90	\$0.43	\$0.66
2027	\$0.62	\$0.95	\$0.83	\$1.27	\$0.44	\$0.67	\$1.19	\$1.82	\$0.44	\$0.67	\$0.71	\$1.12	\$0.62	\$0.94	\$0.44	\$0.67
2028	\$0.64	\$0.98	\$0.86	\$1.31	\$0.45	\$0.68	\$1.23	\$1.88	\$0.45	\$0.68	\$0.73	\$1.16	\$0.64	\$0.98	\$0.44	\$0.67
2029	\$0.65	\$1.00	\$0.88	\$1.35	\$0.46	\$0.70	\$1.27	\$1.95	\$0.46	\$0.70	\$0.76	\$1.20	\$0.67	\$1.02	\$0.45	\$0.68
2030	\$0.68	\$1.04	\$0.91	\$1.40	\$0.48	\$0.73	\$1.32	\$2.02	\$0.48	\$0.73	\$0.81	\$1.24	\$0.69	\$1.05	\$0.46	\$0.70
2031	\$0.71	\$1.08	\$0.95	\$1.45	\$0.50	\$0.76	\$1.36	\$2.09	\$0.50	\$0.76	\$0.84	\$1.28	\$0.71	\$1.09	\$0.48	\$0.73
2032	\$0.73	\$1.12	\$0.98	\$1.50	\$0.52	\$0.79	\$1.42	\$2.17	\$0.52	\$0.79	\$0.87	\$1.33	\$0.74	\$1.13	\$0.50	\$0.76
2033	\$0.76	\$1.16	\$1.01	\$1.55	\$0.54	\$0.82	\$1.47	\$2.25	\$0.54	\$0.82	\$0.90	\$1.38	\$0.77	\$1.17	\$0.52	\$0.79
2034	\$0.78	\$1.19	\$1.05	\$1.61	\$0.55	\$0.84	\$1.52	\$2.33	\$0.55	\$0.84	\$0.93	\$1.43	\$0.79	\$1.21	\$0.54	\$0.82
2035																

Note:
Class 2 tolls are two times the Class 1 video tolls.
Class 3 tolls are four times the Class 1 video tolls.
Electronic rates are 65 per cent of video rates.



Table 2-1
Maximum Class 1 Vehicle Toll Rates
Monroe Connector/Bypass Preliminary Study Update
Alternative 1

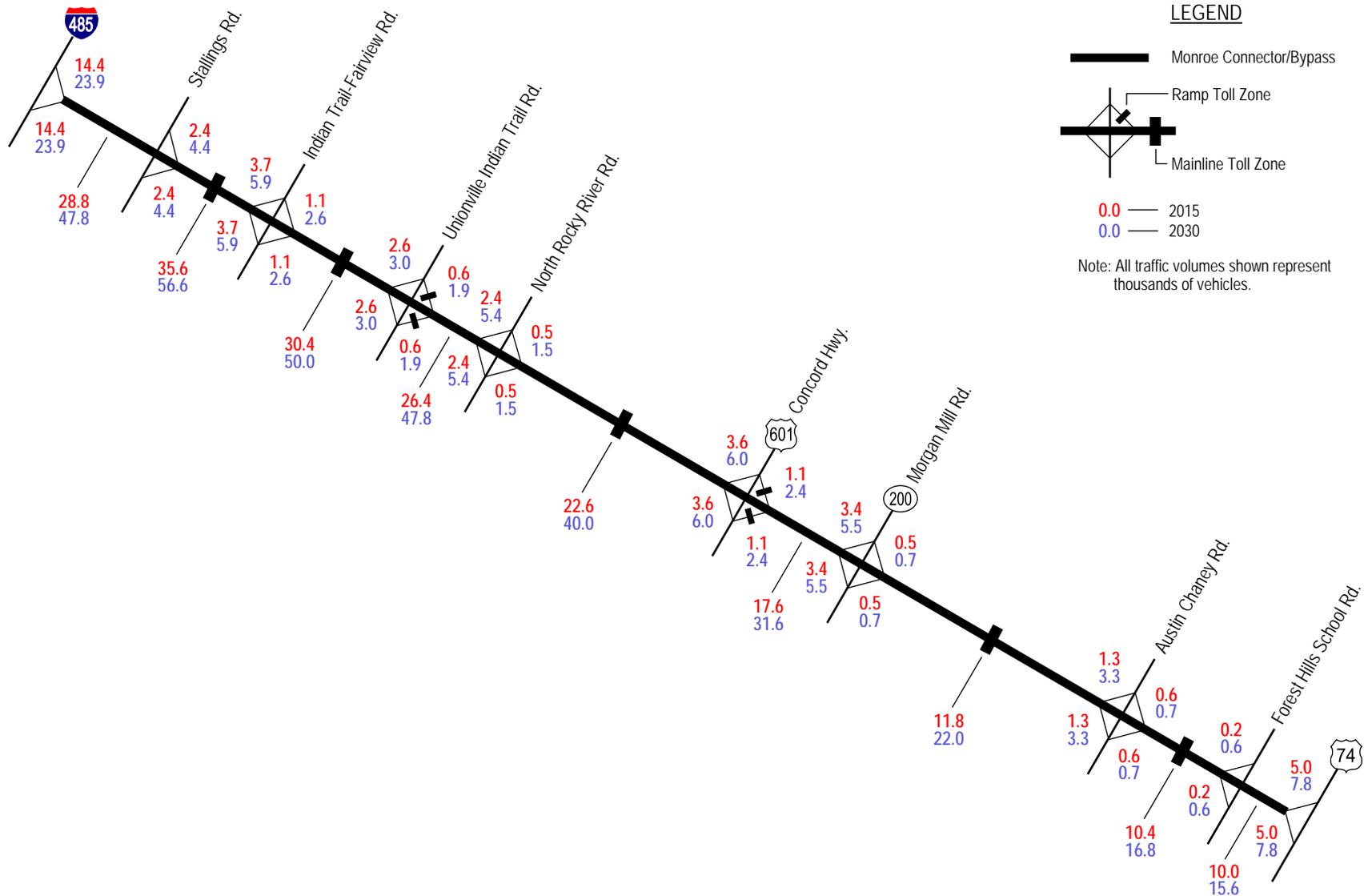
Year	2009 Update to Preliminary Study				2006 Preliminary Study	
	ETC		Video		Cash/ETC	
	Toll	Toll per Mile	Toll	Toll per Mile	Toll	Toll per Mile
2015	\$2.51	\$0.129	\$3.85	\$0.198	\$2.50	\$0.128
2020	\$3.02	\$0.155	\$4.61	\$0.237	\$3.00	\$0.154
2025	\$3.59	\$0.184	\$5.51	\$0.283	\$3.50	\$0.180
2030	\$4.27	\$0.219	\$6.55	\$0.336	\$4.00	\$0.205

Table 2-2
Maximum Class 1 Vehicle Toll Rates
Monroe Connector/Bypass Preliminary Study Update
Alternative 2

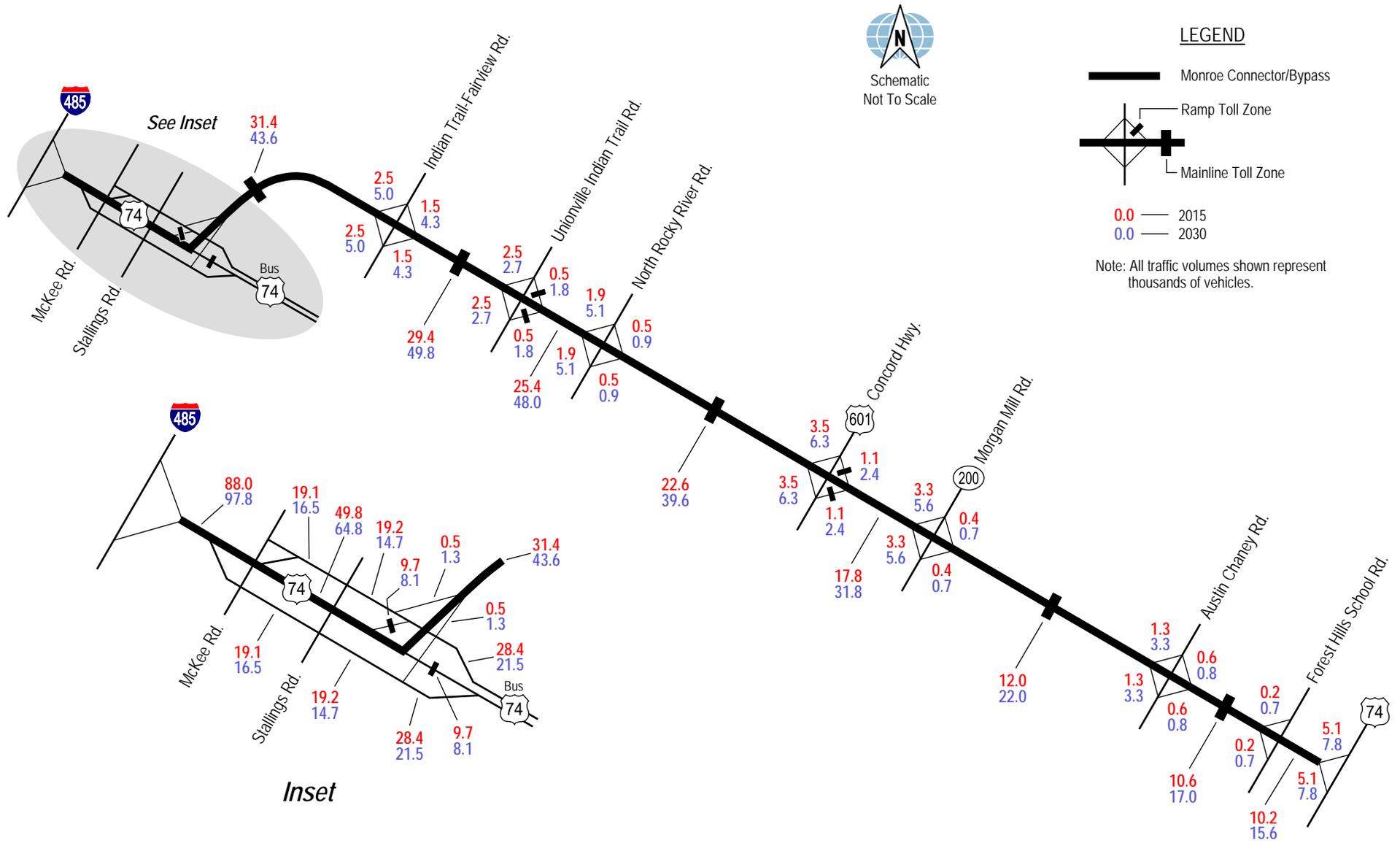
Year	2009 Update to Preliminary Study				2006 Preliminary Study	
	ETC		Video		Cash/ETC	
	Toll	Toll per Mile	Toll	Toll per Mile	Toll	Toll per Mile
2015	\$2.51	\$0.127	\$3.85	\$0.194		
2020	\$3.02	\$0.152	\$4.61	\$0.232		
2025	\$3.59	\$0.181	\$5.51	\$0.278		
2030	\$4.27	\$0.215	\$6.55	\$0.330		
					Not Analyzed	

ESTIMATED WEEKDAY TRAFFIC VOLUMES

Estimates of weekday traffic volumes in 2015 and 2030 are shown in Figures 8 and 9 for Alternatives 1 and 2 respectively. The highest volume would occur between Indian Trail-Fairview Road and Stalling Road for Alternative 1 where approximately 35,600 vehicles would use the facility in 2015. The expected volume west of Stallings Road would drop to approximately



Proposed Monroe Connector/Bypass Preliminary Traffic and Revenue Study - 2009 Update





29,000 vpd, which indicates that the Stallings Road interchange provides significant traffic to the toll road. Volumes east of US 601 in 2015 would be less than 18,000 vpd. By 2030 the maximum volume would be nearly 57,000 vpd. Under Alternative 2, the maximum load point on the Monroe Connector/Bypass would be between Indian Trail-Fairview Road and US 74 with a volume of 31,400 vpd. However, the tolled section of US 74 has a significantly higher volume at 49,800 vpd in 2015 because it includes not only the tolled traffic from the Monroe Connector/Bypass but also the toll traffic from US 74.

Tables 3-1 and 3-2 summarize the average trip length and number of transactions per trip by vehicle class and toll collection method for Alternatives 1 and 2 respectively. The average trip is expected to be approximately 9.3 miles long for Alternative 1 and 10.0 miles for the slightly longer Alternative 2. The average trip would use 2.6 toll zones for Alternative 1 and 2.7 toll zones for Alternative 2. Similar patterns with slightly different averages are expected by vehicle class and collection method.

ESTIMATED ANNUAL TOLL TRANSACTIONS AND REVENUE

Weekday traffic by vehicle class was calculated for each tolling zone and multiplied by the ETC or video toll rate to develop estimates of weekday revenue. The weekday revenue estimates were then annualized based on 319 equivalent weekdays per year which assumes lower weekend and holiday traffic. For annualization purposes, it was assumed that average weekend-day traffic would be 60 percent of average weekday traffic.

The annualized transactions and revenues in the early years of operation were further adjusted to reflect “ramp-up.” Ramp-up is the phenomenon experienced on most start-up toll facilities in which high levels of growth may be experienced over the first three years or so of operation as the motoring public gradually becomes aware of and begins using the new facility.

ANNUAL TRANSACTIONS

Estimated annual toll transactions by vehicle class and year are shown in Table 4-1 and 4-2 for the two alternatives. Figure 10 depicts the transactions stream graphically. For Alternative 1, annual transactions are expected to increase from about 4.4 million in the second half of FY 2014 to 61.2 million by FY 2030. Traffic estimates for FY 2014 through 2017 were adjusted downward to reflect the impact of successive ramp-up periods. In contrast, the opening six-month transactions for Alternative 2 are 5.1 million and rising to 64.8 million for FY 2030. The main reason for the higher toll traffic in Alternative 2 is the inclusion of a tolling zone on US 74.



Table 3-1
Average Daily Transactions and Trip Length
Monroe Connector/Bypass Preliminary Study Update, Alternative 1

Year	Class 1 Vehicles - ETC		Class 1 Vehicles - Video		Class 1 Vehicles - Total	
	Average Trip Length (Miles)	Average Transactions per Trip	Average Trip Length (Miles)	Average Transactions per Trip	Average Trip Length (Miles)	Average Transactions per Trip
2015	9.34	2.64	9.12	2.60	9.28	2.63
2020	9.51	2.68	9.27	2.64	9.46	2.67
2025	9.43	2.62	9.22	2.59	9.41	2.62
2030	8.98	2.52	8.77	2.48	8.96	2.51
Year	Class 1 and 3 Vehicles - ETC		Class 2 and 3 Vehicles - Video		Class 2 and 3 Vehicles - Total	
	Average Trip Length (Miles)	Average Transactions per Trip	Average Trip Length (Miles)	Average Transactions per Trip	Average Trip Length (Miles)	Average Transactions per Trip
2015	9.52	2.66	9.20	2.61	9.54	2.60
2020	9.65	2.69	9.25	2.62	9.61	2.77
2025	9.50	2.63	9.13	2.57	9.46	2.61
2030	8.89	2.50	8.52	2.43	8.85	2.51
Year	Total ETC		Total Video		Total Vehicles	
	Average Trip Length (Miles)	Average Transactions per Trip	Average Trip Length (Miles)	Average Transactions per Trip	Average Trip Length (Miles)	Average Transactions per Trip
2015	9.35	2.64	9.12	2.61	9.29	2.63
2020	9.51	2.68	9.27	2.63	9.47	2.67
2025	9.44	2.62	9.22	2.59	9.41	2.62
2030	8.98	2.52	8.76	2.49	8.95	2.51



Table 3-2
Average Daily Transactions and Trip Length
Monroe Connector/Bypass Preliminary Study Update, Alternative 2

Year	Class 1 Vehicles - ETC		Class 1 Vehicles - Video		Class 1 Vehicles - Total	
	Average Trip Length (Miles)	Average Transactions per Trip	Average Trip Length (Miles)	Average Transactions per Trip	Average Trip Length (Miles)	Average Transactions per Trip
2015	9.99	2.67	9.80	2.63	9.94	2.66
2020	9.86	2.61	9.65	2.57	9.82	2.61
2025	9.86	2.61	9.67	2.57	9.84	2.60
2030	9.45	2.53	9.26	2.50	9.43	2.52
Year	Class 2 and 3 Vehicles - ETC		Class 2 and 3 Vehicles - Video		Class 2 and 3 Vehicles - Total	
	Average Trip Length (Miles)	Average Transactions per Trip	Average Trip Length (Miles)	Average Transactions per Trip	Average Trip Length (Miles)	Average Transactions per Trip
2015	10.03	2.66	9.72	2.61	10.05	2.74
2020	9.92	2.62	9.55	2.55	9.96	2.68
2025	9.84	2.60	9.59	2.55	9.92	2.60
2030	9.28	2.50	8.90	2.43	9.13	2.48
Year	Total ETC		Total Video		Total Vehicles	
	Average Trip Length (Miles)	Average Transactions per Trip	Average Trip Length (Miles)	Average Transactions per Trip	Average Trip Length (Miles)	Average Transactions per Trip
2015	9.99	2.67	9.80	2.63	10.00	2.66
2020	9.86	2.61	9.64	2.57	9.82	2.61
2025	9.86	2.61	9.68	2.58	9.84	2.60
2030	9.45	2.53	9.26	2.50	9.43	2.52



Table 4-1
Annual Toll Transactions (Fiscal Year)
Monroe Connector/Bypass Preliminary Study Update, Alternative 1
(Thousands)

Fiscal Year	Class 1			Class 2			Class 3			Total Transactions	Percent ETC
	ETC	Video	Total Class 1	ETC	Video	Total Class 2	ETC	Video	Total Class 3		
2014 ⁽¹⁾	3,124	1,181	4,305	44	4	48	73	7	80	4,433	73.1%
2015	18,997	6,523	25,520	258	24	282	433	40	473	26,275	74.9%
2016	25,035	7,815	32,850	329	28	357	553	47	600	33,807	76.7%
2017	30,032	8,521	38,553	382	30	412	643	50	693	39,658	78.3%
2018	31,545	8,529	40,074	395	30	425	664	50	714	41,213	79.1%
2019	33,898	8,331	42,229	411	28	439	691	48	739	43,407	80.6%
2020	36,426	8,138	44,564	428	27	455	719	46	765	45,784	82.1%
2021	38,624	7,955	46,579	441	27	468	741	46	787	47,834	83.2%
2022	40,441	7,783	48,224	450	28	478	756	47	803	49,505	84.1%
2023	42,344	7,614	49,958	459	29	488	772	48	820	51,266	85.0%
2024	44,338	7,449	51,787	468	29	497	787	49	836	53,120	85.8%
2025	46,427	7,288	53,715	478	30	508	804	51	855	55,078	86.6%
2026	48,113	7,110	55,223	485	31	516	816	51	867	56,606	87.3%
2027	49,370	6,919	56,289	490	31	521	824	51	875	57,685	87.9%
2028	50,673	6,734	57,407	495	31	526	833	51	884	58,817	88.4%
2029	52,023	6,557	58,580	501	31	532	842	51	893	60,005	88.9%
2030	53,424	6,386	59,810	506	31	537	851	52	903	61,250	89.4%
2031	54,679	6,365	61,044	514	31	545	864	52	916	62,505	89.7%
2032	55,772	6,493	62,265	524	32	556	881	53	934	63,755	89.7%
2033	56,888	6,623	63,511	535	32	567	899	54	953	65,031	89.7%
2034	58,025	6,755	64,780	545	33	578	917	55	972	66,330	89.7%
2035	59,186	6,890	66,076	556	34	590	935	56	991	67,657	89.7%
2036	60,370	7,028	67,398	567	34	601	954	58	1,012	69,011	89.7%
2037	61,577	7,169	68,746	579	35	614	973	59	1,032	70,392	89.7%
2038	62,809	7,312	70,121	590	36	626	992	60	1,052	71,799	89.7%
2039	64,065	7,458	71,523	602	36	638	1,012	61	1,073	73,234	89.7%
2040	65,346	7,607	72,953	614	37	651	1,032	62	1,094	74,688	89.7%
2041	66,488	7,740	74,228	625	38	663	1,050	63	1,113	76,004	89.7%
2042	67,485	7,856	75,341	634	38	672	1,066	64	1,130	77,143	89.7%
2043	68,498	7,974	76,472	644	39	683	1,082	65	1,147	78,302	89.7%
2044	69,525	8,094	77,619	653	39	692	1,098	66	1,164	79,475	89.7%
2045	70,568	8,215	78,783	663	40	703	1,115	67	1,182	80,668	89.7%
2046	71,626	8,338	79,964	673	41	714	1,132	68	1,200	81,878	89.7%
2047	72,701	8,464	81,165	683	41	724	1,149	69	1,218	83,107	89.7%
2048	73,791	8,590	82,381	694	42	736	1,166	70	1,236	84,353	89.7%
2049	74,898	8,719	83,617	704	42	746	1,183	71	1,254	85,617	89.7%
2050	76,022	8,850	84,872	714	43	757	1,201	72	1,273	86,902	89.7%
2051	77,162	8,983	86,145	725	44	769	1,219	74	1,293	88,207	89.7%
2052	78,319	9,118	87,437	736	44	780	1,237	75	1,312	89,529	89.7%
2053	79,494	9,254	88,748	747	45	792	1,256	76	1,332	90,872	89.7%
2054	80,687	9,393	90,080	758	46	804	1,275	77	1,352	92,236	89.7%

⁽¹⁾ FY 2014, January - June only.

Note: Forecasts for FY 2014 - 2017 reflect an assumed ramp-up to full traffic volumes beginning in the second half of FY 2017.

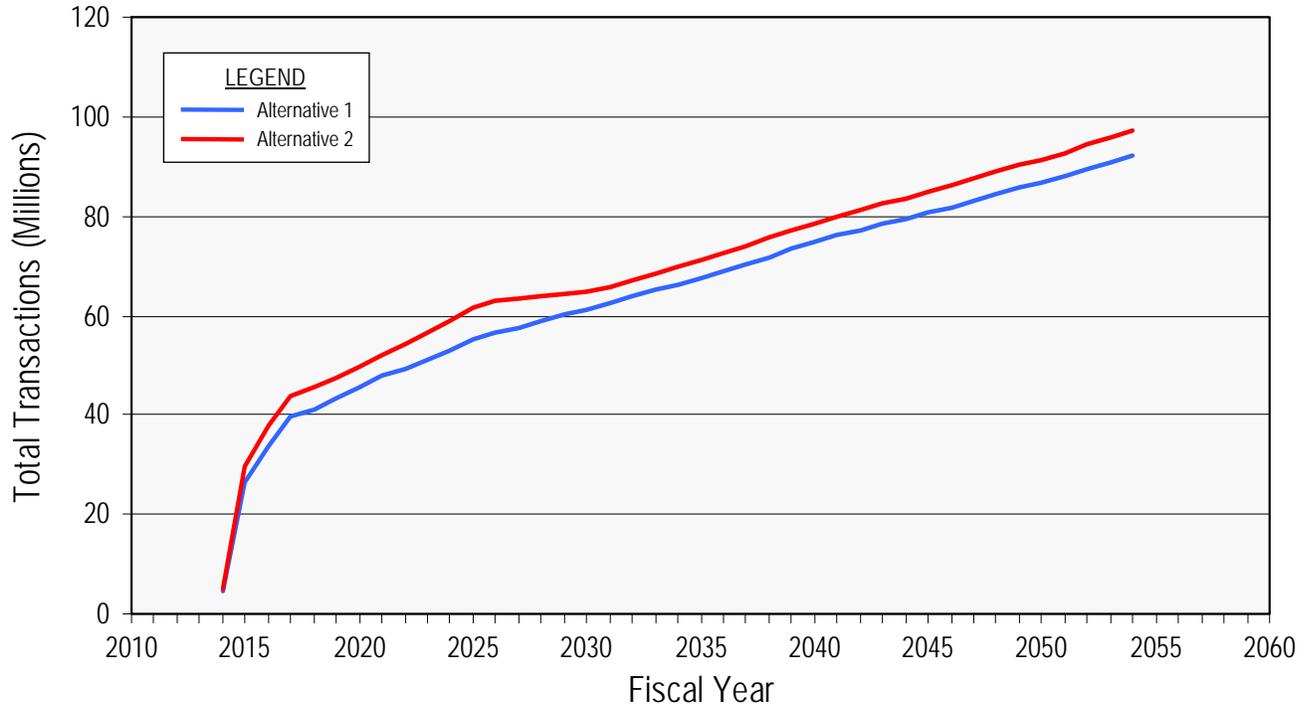


Table 4-2
 Annual Toll Transactions (Fiscal Year)
 Monroe Connector/Bypass Preliminary Study Update, Alternative 2
 (Thousands)

Fiscal Year	Class 1			Class 2			Class 3			Total Transactions	Percent ETC
	ETC	Video	Total Class 1	ETC	Video	Total Class 2	ETC	Video	Total Class 3		
2014 ⁽¹⁾	3,561	1,392	4,953	49	5	54	82	9	91	5,088	72.4%
2015	21,260	7,496	28,756	283	27	310	476	45	521	29,587	74.4%
2016	27,803	8,886	36,689	358	31	389	603	53	656	37,734	76.2%
2017	33,113	9,594	42,707	413	33	446	614	56	750	43,903	77.9%
2018	34,662	9,560	44,222	425	33	458	625	55	769	45,449	78.8%
2019	37,006	9,257	46,263	439	31	470	738	52	790	47,523	80.3%
2020	39,528	8,969	48,497	453	30	483	762	50	812	49,782	81.8%
2021	41,923	8,763	50,686	468	30	498	787	50	837	52,021	83.0%
2022	44,161	8,632	52,793	483	31	514	812	52	864	54,171	83.9%
2023	46,520	8,503	55,023	498	32	530	838	54	892	56,445	84.8%
2024	49,009	8,377	57,386	514	34	548	864	57	921	58,865	85.6%
2025	51,634	8,254	59,888	531	35	566	892	59	951	61,405	86.4%
2026	53,339	8,024	61,363	538	36	574	904	60	964	62,901	87.1%
2027	54,071	7,697	61,768	537	35	572	902	59	961	63,301	87.7%
2028	54,842	7,386	62,228	535	34	569	900	57	957	63,754	88.3%
2029	55,653	7,093	62,746	534	34	568	898	56	954	64,268	88.8%
2030	56,506	6,815	63,321	533	33	566	897	55	952	64,839	89.4%
2031	57,513	6,747	64,260	538	33	571	905	55	960	65,791	89.6%
2032	58,663	6,882	65,545	549	34	583	923	57	980	67,108	89.6%
2033	59,836	7,019	66,855	560	34	594	942	58	1,000	68,449	89.6%
2034	61,033	7,160	68,193	571	35	606	960	59	1,019	69,818	89.6%
2035	62,254	7,303	69,557	583	36	619	980	60	1,040	71,216	89.6%
2036	63,499	7,449	70,948	594	36	630	999	61	1,060	72,638	89.6%
2037	64,769	7,598	72,367	606	37	643	1,019	62	1,081	74,091	89.6%
2038	66,064	7,750	73,814	618	38	656	1,040	64	1,104	75,574	89.6%
2039	67,385	7,905	75,290	631	39	670	1,060	65	1,125	77,085	89.6%
2040	68,733	8,063	76,796	643	39	682	1,082	66	1,148	78,626	89.6%
2041	69,934	8,204	78,138	655	40	695	1,101	67	1,168	80,001	89.6%
2042	70,983	8,327	79,310	665	41	706	1,117	68	1,185	81,201	89.6%
2043	72,048	8,452	80,500	675	41	716	1,134	69	1,203	82,419	89.6%
2044	73,129	8,578	81,707	685	42	727	1,151	70	1,221	83,655	89.6%
2045	74,226	8,707	82,933	695	43	738	1,168	72	1,240	84,911	89.6%
2046	75,339	8,838	84,177	705	43	748	1,186	73	1,259	86,184	89.6%
2047	76,469	8,970	85,439	716	44	760	1,203	74	1,277	87,476	89.6%
2048	77,616	9,105	86,721	727	44	771	1,221	75	1,296	88,788	89.6%
2049	78,780	9,241	88,021	738	45	783	1,240	76	1,316	90,120	89.6%
2050	79,962	9,380	89,342	749	46	795	1,258	77	1,335	91,472	89.6%
2051	81,161	9,521	90,682	760	47	807	1,277	78	1,355	92,844	89.6%
2052	82,379	9,664	92,043	771	47	818	1,296	79	1,375	94,236	89.6%
2053	83,615	9,809	93,424	783	48	831	1,316	81	1,397	95,652	89.6%
2054	84,869	9,956	94,825	795	49	844	1,336	82	1,418	97,087	89.6%

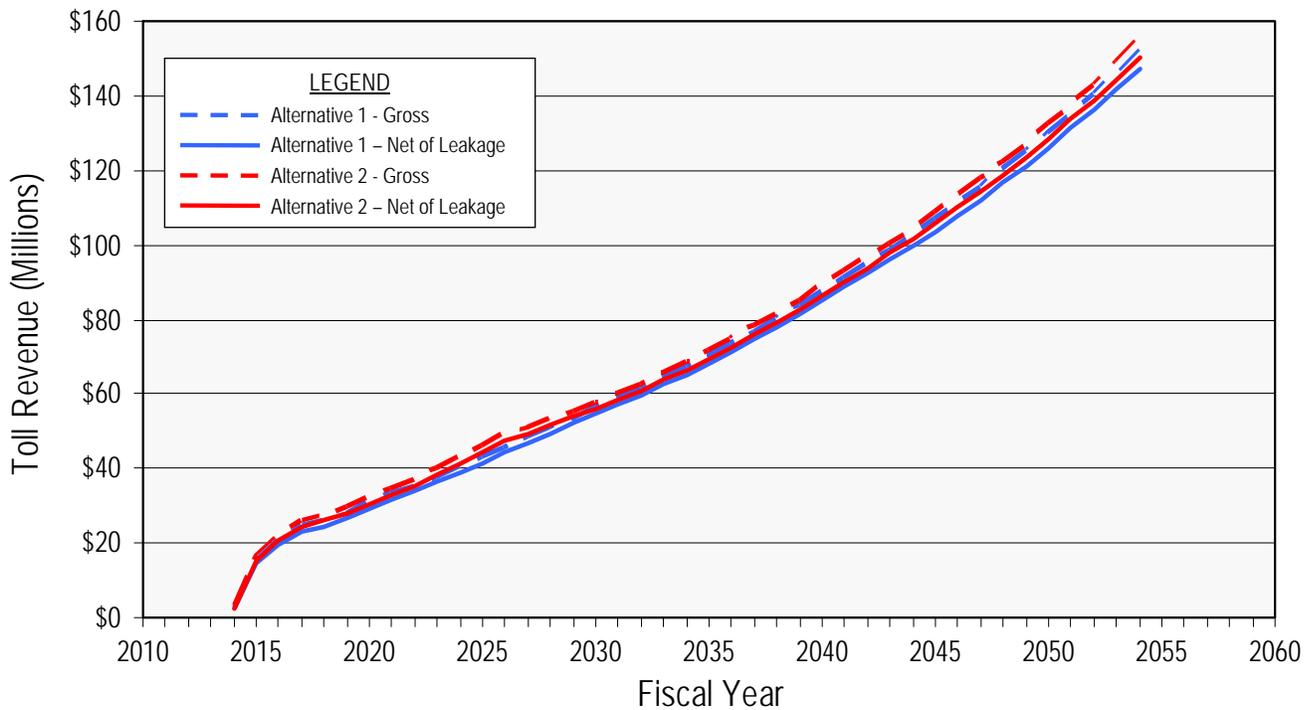
⁽¹⁾ FY 2014, January - June only.

Note: Forecasts for FY 2014 - 2017 reflect an assumed ramp-up to full traffic volumes beginning in the second half of FY 2017.



ANNUAL TRANSACTION FORECAST

FIGURE 10



ANNUAL REVENUE FORECAST

FIGURE 11



Electronic toll transactions are expected to be the largest proportion of users and are estimated to increase from 72 to 74 percent in the early period to nearly 90 percent by about FY 2031. Note that transaction estimates through 2030 are based on a detailed modeling analysis. Transactions between 2030 and 2055 were assumed to grow at the same rates assumed for the 2006 study.

ANNUAL GROSS REVENUE

Annual gross revenue estimates for the two alternatives are provided in Tables 5-1 and 5-2 illustrated in Figure 11. Revenue estimates are presented for each vehicles class by toll rate. For Alternative 1, the total annual gross revenue is expected to increase from about \$2.6 million in the last half of FY 2015 and rising to \$56.4 million by FY 2030. Revenues are higher for Alternative 2 because of the tolling of US 74, as discussed earlier. For Alternative 2, the opening year gross revenue is estimated at \$2.8 million, and the FY 2030 revenue is estimated at \$57.7 million. These forecasts reflect the impact of both traffic growth and annual toll adjustments. Revenue estimates during FY 2014 through FY 2017 were adjusted to reflect a progressive ramp-up pattern.

Electronic tolls are expected to account for between 65 and 86 percent of total revenue for the two alternatives. These are lower percentages than the proportion of transactions, but reflect the fact that video users are assessed a significant premium toll charge.

COMPARISON TO 2006 PRELIMINARY STUDY

Table 6 compares the current gross toll revenue forecasts with the forecasts contained in the 2006 preliminary study. The comparison is on a calendar year basis since the 2006 study was conducted on a calendar basis. The differences are attributable to the changes in the toll collection system and the higher rates for video customers. The ETC rates on a per mile basis are nearly the same as in the 2006 study, but these rates represent a 35 percent discount from video rates, which were not included in 2006. If the revenue stream is discounted by a standard rate and then totaled for a net present value in 2014 dollars, then the Alternative 1 gross revenue is higher than the preliminary study gross revenue for both alternatives. For Alternative 2, the present value of the revenue stream is estimated to be somewhat higher than for Alternative 1.

REVENUE COLLECTION AND LEAKAGE

The NCTA is planning to minimize revenue losses due to leakage by developing a system that is an adaptation of two toll collection systems: Open Road Tolling (ORT) using ETC supplemented by automated video imaging that will serve both as the primary collection system and as the violation enforcement system. The system assumed for the Monroe Connector/Bypass is the same as the system being planned for the Triangle Expressway. The same capture rate and collection assumptions were carried to the current project. Tables 7-1 and 7-2 contain the transaction estimates for each alternative so that estimates of revenue net of leakage can be developed.



Table 5-1
Annual Gross Toll Revenue (Fiscal Year)
Monroe Connector/Bypass Preliminary Study Update, Alternative 1
(Thousands)

Fiscal Year	Class 1			Class 2			Class 3			Total Gross Revenue ⁽²⁾	Percent ETC
	ETC	Video	Total Class 1	ETC	Video	Total Class 2	ETC	Video	Total Class 3		
2014 ⁽¹⁾	\$1,529	\$878	\$2,407	\$43	\$7	\$50	\$145	\$22	\$167	\$2,624	65.4%
2015	9,336	4,872	14,208	256	36	292	859	120	979	15,479	67.5%
2016	12,858	6,057	18,915	339	44	383	1,140	147	1,287	20,585	69.6%
2017	15,910	6,845	22,755	409	48	457	1,371	163	1,534	24,746	71.5%
2018	17,015	6,970	23,985	430	49	479	1,442	164	1,606	26,070	72.4%
2019	18,977	7,051	26,028	463	49	512	1,555	163	1,718	28,258	74.3%
2020	21,212	7,159	28,371	501	48	549	1,682	163	1,845	30,765	76.0%
2021	23,348	7,283	30,631	537	50	587	1,801	168	1,969	33,187	77.4%
2022	25,357	7,398	32,755	568	53	621	1,905	179	2,084	35,460	78.5%
2023	27,526	7,506	35,032	600	57	657	2,014	190	2,204	37,893	79.5%
2024	29,872	7,612	37,484	635	60	695	2,129	202	2,331	40,510	80.6%
2025	32,310	7,710	40,020	670	64	734	2,248	215	2,463	43,217	81.5%
2026	34,697	7,794	42,491	703	67	770	2,361	225	2,586	45,847	82.4%
2027	37,063	7,871	44,934	736	70	806	2,472	234	2,706	48,446	83.1%
2028	39,387	7,940	47,327	770	72	842	2,585	242	2,827	50,996	83.8%
2029	41,851	7,999	49,850	804	75	879	2,699	251	2,950	53,679	84.5%
2030	44,363	8,046	52,409	838	77	915	2,812	259	3,071	56,395	85.1%
2031	46,572	8,246	54,818	874	80	954	2,931	269	3,200	58,972	85.4%
2032	48,668	8,617	57,285	913	84	997	3,063	281	3,344	61,626	85.4%
2033	50,858	9,005	59,863	954	87	1,041	3,201	293	3,494	64,398	85.4%
2034	53,147	9,410	62,557	997	91	1,088	3,345	307	3,652	67,297	85.4%
2035	55,538	9,834	65,372	1,042	95	1,137	3,496	321	3,817	70,326	85.4%
2036	58,037	10,276	68,313	1,089	100	1,189	3,653	335	3,988	73,490	85.4%
2037	60,649	10,739	71,388	1,138	104	1,242	3,818	350	4,168	76,798	85.4%
2038	63,378	11,222	74,600	1,189	109	1,298	3,989	366	4,355	80,253	85.4%
2039	66,230	11,727	77,957	1,242	114	1,356	4,169	382	4,551	83,864	85.4%
2040	69,211	12,254	81,465	1,298	119	1,417	4,356	399	4,755	87,637	85.4%
2041	72,148	12,775	84,923	1,353	124	1,477	4,541	416	4,957	91,357	85.4%
2042	75,034	13,286	88,320	1,407	129	1,536	4,723	433	5,156	95,012	85.4%
2043	78,036	13,817	91,853	1,464	134	1,598	4,912	450	5,366	98,813	85.4%
2044	81,157	14,370	95,527	1,522	139	1,661	5,108	468	5,576	102,764	85.4%
2045	84,403	14,944	99,347	1,583	145	1,728	5,313	487	5,800	106,875	85.4%
2046	87,779	15,542	103,321	1,646	151	1,797	5,525	507	6,032	111,150	85.4%
2047	91,291	16,164	107,455	1,712	157	1,869	5,746	527	6,273	115,597	85.4%
2048	94,942	16,810	111,752	1,781	163	1,944	5,976	548	6,524	120,220	85.4%
2049	98,740	17,483	116,223	1,852	169	2,021	6,215	570	6,785	125,029	85.4%
2050	102,689	18,182	120,871	1,926	176	2,102	6,464	593	7,057	130,030	85.4%
2051	106,797	18,909	125,706	2,003	183	2,186	6,722	616	7,338	135,230	85.4%
2052	111,069	19,666	130,735	2,083	191	2,274	6,991	641	7,632	140,641	85.4%
2053	115,512	20,452	135,964	2,167	198	2,365	7,271	667	7,938	146,267	85.4%
2054	120,132	21,271	141,403	2,253	206	2,459	7,562	693	8,255	152,117	85.4%

⁽¹⁾ FY 2014, January - June only.

⁽²⁾ EXCLUDES ANY ALLOWANCE FOR UNCOLLECTIBLE REVENUE.

Note: Forecasts for FY 2014 - 2017 reflect an assumed ramp-up to full traffic volumes beginning in the second half of FY 2017.



Table 5-2
Annual Gross Toll Revenue (Fiscal Year)
Monroe Connector/Bypass Preliminary Study Update, Alternative 2
(Thousands)

Fiscal Year	Class 1		Class 2		Class 3		Total Gross Revenue ⁽²⁾	Percent ETC	
	ETC	Video	ETC	Video	ETC	Video			
2014 ⁽¹⁾	1,642	962	2,604	7	53	153	177	2,834	65.0%
2015	9,938	5,265	15,203	38	306	898	1,026	16,535	67.2%
2016	13,601	6,504	20,105	46	399	1,185	1,341	21,845	69.3%
2017	16,753	7,306	24,059	51	473	1,416	1,587	26,119	71.2%
2018	17,895	7,420	25,315	42	493	1,485	1,657	27,465	72.2%
2019	19,864	7,466	27,350	51	525	1,591	1,761	29,636	74.1%
2020	22,116	7,533	29,649	50	559	1,709	1,878	32,086	75.8%
2021	24,369	7,666	32,035	52	599	1,834	2,009	34,643	77.2%
2022	26,635	7,849	34,484	56	641	1,961	2,150	37,275	78.3%
2023	29,099	8,025	37,124	61	686	2,096	2,301	40,111	79.3%
2024	31,811	8,204	40,015	66	734	2,241	2,462	43,211	80.3%
2025	34,667	8,377	43,044	71	784	2,392	2,631	46,459	81.3%
2026	37,131	8,443	45,574	74	821	2,508	2,758	49,153	82.2%
2027	39,188	8,408	47,596	75	847	2,593	2,847	51,290	83.0%
2028	41,175	8,367	49,542	77	875	2,678	2,935	53,352	83.7%
2029	43,293	8,318	51,611	78	901	2,763	3,024	55,536	84.4%
2030	45,427	8,263	53,690	79	927	2,845	3,109	57,726	85.1%
2031	47,460	8,419	55,879	81	960	2,951	3,223	60,062	85.4%
2032	49,596	8,798	58,394	84	1,003	3,084	3,368	62,765	85.4%
2033	51,828	9,194	61,022	88	1,048	3,222	3,519	65,589	85.4%
2034	54,160	9,608	63,768	92	1,095	3,367	3,677	68,540	85.4%
2035	56,597	10,040	66,637	96	1,144	3,519	3,843	71,624	85.4%
2036	59,144	10,492	69,636	101	1,197	3,677	4,015	74,848	85.4%
2037	61,806	10,964	72,770	105	1,250	3,843	4,197	78,217	85.4%
2038	64,587	11,457	76,044	110	1,306	4,016	4,386	81,736	85.4%
2039	67,494	11,973	79,467	115	1,365	4,196	4,582	85,414	85.4%
2040	70,531	12,512	83,043	120	1,427	4,385	4,789	89,259	85.4%
2041	73,524	13,043	86,567	125	1,487	4,571	4,992	93,046	85.4%
2042	76,465	13,564	90,029	130	1,546	4,754	5,192	96,767	85.4%
2043	79,524	14,107	93,631	135	1,608	4,944	5,399	100,638	85.4%
2044	82,705	14,671	97,376	141	1,673	5,142	5,615	104,664	85.4%
2045	86,013	15,258	101,271	146	1,739	5,348	5,840	108,850	85.4%
2046	89,454	15,868	105,322	152	1,809	5,562	6,074	113,205	85.4%
2047	93,032	16,503	109,535	158	1,881	5,784	6,316	117,732	85.4%
2048	96,753	17,163	113,916	165	1,957	6,016	6,570	122,443	85.4%
2049	100,623	17,850	118,473	171	2,035	6,256	6,832	127,340	85.4%
2050	104,648	18,564	123,212	178	2,117	6,506	7,105	132,434	85.4%
2051	108,834	19,306	128,140	185	2,201	6,767	7,390	137,731	85.4%
2052	113,187	20,079	133,266	193	2,290	7,037	7,685	143,241	85.4%
2053	117,715	20,882	138,597	200	2,381	7,319	7,993	148,971	85.4%
2054	122,424	21,717	144,141	208	2,476	7,612	8,312	154,929	85.4%

⁽¹⁾ FY 2014, January - June only.

⁽²⁾ EXCLUDES ANY ALLOWANCE FOR UNCOLLECTIBLE REVENUE.

Note: Forecasts for FY 2014 - 2017 reflect an assumed ramp-up to full traffic volumes beginning in the second half of FY 2017.



Table 6
Comparison of Gross Revenue Forecasts
2006 Preliminary Study and 2009 Update
Monroe Connector/Bypass Preliminary Study Update
Calendar Year Basis
(Thousands)

Calendar Year	<u>2009 Update Study</u>		2006 Preliminary Study
	Alternative 1	Alternative 2	
2014	\$11,643	\$12,572	\$14,331
2015	17,455	18,645	18,680
2016	21,990	23,336	21,938
2017	25,059	26,451	24,256
2018	27,081	28,482	25,806
2019	29,435	30,791	27,458
2020	32,094	33,381	32,406
2021	34,280	35,904	34,475
2022	36,640	38,645	36,686
2023	39,144	41,576	39,048
2024	41,878	44,845	41,573
2025	44,553	48,071	46,192
2026	47,140	50,237	47,173
2027	49,750	52,344	48,217
2028	52,242	54,359	49,329
2029	55,114	56,711	50,515
2030	57,674	58,740	56,771
2031	60,270	61,384	59,326
2032	62,982	64,146	61,996
2033	65,816	67,032	64,785
2034	68,778	70,049	67,701
2035	71,873	73,201	70,747
2036	75,107	76,495	73,931
2037	78,487	79,937	77,258
2038	82,018	83,535	80,734
2039	85,709	87,294	84,367
2040	89,566	91,222	88,164
2041	93,149	94,871	91,691
2042	96,875	98,666	95,358
2043	100,750	102,612	99,172
2044	104,780	106,717	103,139
2045	108,971	110,985	107,265
2046	113,330	115,425	111,556
2047	117,863	120,042	116,018
2048	122,578	124,843	120,659
2049	127,481	129,837	125,485
2050	132,580	135,031	130,504
Net Present Value at	2.50%		
	\$1,401,720	\$1,443,814	\$1,382,092



Table 7-1
Annual Toll Transactions by Collection Method (Fiscal Year)
Monroe Connector/Bypass Preliminary Study Update, Alternative 1
(Thousands)

Fiscal Year	ETC				Video				Total Transactions				
	Collected		Uncollected		Collected		Uncollected						
	Collected	Uncollectible	Total ETC	Preregistered	Within 15 Days	After 30 Days	Total Video Collected	Unreadable Plate		Unbillable After 15 Days	Pending After 30 Days	Total Video Uncollected and Pending	Total Video
2014 ⁽¹⁾	3,224	17	3,241	296	200	307	803	95	89	205	389	1,192	4,433
2015	19,689	99	19,688	1,636	1,106	1,692	4,434	527	502	1,124	2,153	6,587	26,275
2016	25,787	130	25,917	1,750	1,148	2,441	5,339	536	523	1,492	2,551	7,890	33,807
2017	30,900	157	31,057	1,872	1,192	2,786	5,650	545	544	1,662	2,751	8,601	38,658
2018	32,442	162	32,604	2,003	1,238	2,629	5,670	555	565	1,619	2,739	8,609	41,213
2019	34,825	175	35,000	2,143	1,285	2,635	5,763	565	585	1,494	2,644	8,407	43,407
2020	37,386	187	37,573	2,292	1,335	2,031	5,658	575	606	1,372	2,553	8,211	45,784
2021	39,607	199	39,806	2,318	1,290	1,957	5,565	546	566	1,331	2,463	7,858	47,834
2022	41,439	208	41,647	2,344	1,246	1,885	5,485	518	566	1,289	2,373	7,858	49,505
2023	43,357	218	43,575	2,370	1,204	1,832	5,406	518	547	1,247	2,285	7,691	51,266
2024	45,366	227	45,593	2,397	1,163	1,769	5,329	466	529	1,203	2,198	7,527	53,120
2025	47,471	238	47,709	2,425	1,126	1,702	5,253	442	512	1,162	2,116	7,369	55,078
2026	49,168	246	49,414	2,432	1,082	1,650	5,164	415	491	1,122	2,028	7,192	56,606
2027	50,432	252	50,684	2,439	1,040	1,581	5,060	390	472	1,079	1,941	7,001	57,685
2028	51,741	260	52,001	2,446	999	1,515	4,960	367	454	1,035	1,856	6,816	58,817
2029	53,098	268	53,366	2,453	969	1,452	4,865	345	436	983	1,774	6,639	60,005
2030	54,506	275	54,781	2,459	921	1,394	4,774	324	420	951	1,695	6,469	61,250
2031	55,775	282	56,057	2,508	939	1,328	4,776	344	427	914	1,672	6,448	62,505
2032	56,892	285	57,177	2,558	958	1,353	4,870	345	445	927	1,708	6,578	63,755
2033	58,029	293	58,322	2,610	977	1,381	4,968	344	445	952	1,741	6,709	65,031
2034	59,190	297	59,487	2,662	997	1,408	5,067	351	453	976	1,776	6,843	66,330
2035	60,373	304	60,677	2,715	1,017	1,437	5,169	358	462	991	1,811	6,980	67,657
2036	61,582	309	61,891	2,769	1,037	1,466	5,272	365	472	1,011	1,848	7,120	69,011
2037	62,813	316	63,129	2,825	1,058	1,494	5,377	372	482	1,031	1,886	7,263	70,392
2038	64,068	323	64,391	2,881	1,079	1,525	5,485	380	492	1,052	1,923	7,408	71,799
2039	65,350	329	65,679	2,939	1,101	1,556	5,595	387	501	1,072	1,960	7,555	73,234
2040	66,657	335	66,992	2,998	1,123	1,586	5,706	395	511	1,094	2,000	7,706	74,698
2041	67,822	341	68,163	3,042	1,140	1,625	5,807	401	518	1,115	2,034	7,841	76,004
2042	69,840	345	69,185	3,085	1,157	1,649	5,894	407	526	1,131	2,064	7,958	77,143
2043	70,920	351	71,271	3,134	1,174	1,674	5,982	413	535	1,148	2,096	8,078	78,302
2044	71,984	355	72,339	3,181	1,192	1,699	6,072	419	542	1,166	2,127	8,199	79,475
2045	73,064	362	73,426	3,229	1,209	1,725	6,164	425	550	1,182	2,158	8,322	80,668
2046	74,160	367	74,527	3,275	1,228	1,751	6,256	432	556	1,201	2,191	8,447	81,876
2047	75,272	373	75,645	3,321	1,246	1,776	6,349	438	567	1,219	2,225	8,574	83,107
2048	76,401	384	76,785	3,377	1,265	1,803	6,444	445	576	1,238	2,258	8,702	84,353
2049	77,548	389	77,937	3,427	1,284	1,830	6,541	452	584	1,256	2,291	8,832	85,617
2050	78,711	389	79,100	3,479	1,303	1,858	6,640	458	592	1,274	2,325	8,965	86,902
2051	79,891	395	80,286	3,531	1,322	1,885	6,740	465	592	1,292	2,358	9,098	88,207
2052	81,090	401	81,491	3,584	1,342	1,914	6,840	472	612	1,313	2,397	9,237	89,529
2053	82,306	407	82,713	3,638	1,362	1,942	6,942	472	621	1,333	2,433	9,375	90,872
2054		414	82,720	3,692	1,383	1,972	7,047	486	630	1,353	2,469	9,516	92,236

⁽¹⁾ FY 2014, January - June only.

Note: Forecasts for FY 2014 - 2017 reflect an assumed ramp-up to full traffic volumes beginning in the second half of FY 2017.



ANNUAL NET REVENUE

Tables 8-1 and 8-2 summarize for the two alternatives the total revenue collected annually, the revenue collected under 30 days, the revenue collected over 30 days as estimated by the NCTA, and the administrative fee and civil penalty revenue as estimated by the NCTA. The percent of uncollected toll revenue ranges from approximately 9 percent in the opening year to approximately 3 percent in the later years. When the fee and penalty revenue is included, the total revenue collected is only slightly lower than the gross toll revenue. Figure 11 presented earlier also illustrates the toll revenue collected in comparison to the gross toll revenue for the two alternatives.

DISCLAIMER

Current accepted professional practices and procedures were used in the development of these traffic and revenue forecasts. However, as with any forecast of the future, it should be understood that there may be differences between forecasted and actual results caused by events and circumstances beyond the control of the forecasters. In formulating its forecasts, WSA has reasonably relied upon the accuracy and completeness of information provided (both written and oral) by North Carolina Turnpike Authority and other local and state agencies. WSA also has relied upon the reasonable assurances of some independent parties and are not aware of any facts that would make such information misleading.

WSA has made qualitative judgments related to several key variables in the development and analysis of the traffic and revenue forecasts that must be considered as a whole; therefore selecting portions of any individual result without consideration of the intent of the whole may create a misleading or incomplete view of the results and the underlying methodologies used to obtain the results. WSA gives no opinion as to the value or merit to partial information extracted from this report.

All estimates and projections reported herein are based on WSA's experience and judgment and on a review of information obtained from multiple state and local agencies, including North Carolina Turnpike Authority. These estimates and projections may not be indicative of actual or future values, and are therefore subject to substantial uncertainty. Future developments cannot be predicted with certainty, and may affect the estimates or projections expressed in this report, such that WSA does not specifically guarantee or warrant any estimate or projections contained within this report.



Table 8-1
Annual Toll Transactions and Net Revenue Forecasts (Fiscal Year)
Monroe Connector/Bypass Preliminary Study Update, Alternative 1
(Thousands)

Fiscal Year	Total Gross Transactions	Gross Toll Revenue	Collected Toll Revenue Under 30 Days	Collected Toll Revenue Over 30 Days ⁽²⁾	Total Collected Toll Revenue	Administrative Fees and Civil Penalty Revenue ⁽²⁾	Total Net Revenue	Percent Uncollected Toll Revenue	Percent Uncollected Revenue of Total Revenue
2014 ⁽¹⁾	4,433	\$2,624	\$2,318	\$66	\$2,384	\$44	\$2,428	9.2%	7.5%
2015	26,275	15,479	13,782	360	14,142	243	14,385	8.6%	7.1%
2016	33,807	20,584	18,492	494	18,986	322	19,308	7.8%	6.2%
2017	39,658	24,746	22,400	567	22,967	361	23,328	7.2%	5.7%
2018	41,213	26,070	23,691	563	24,254	354	24,608	7.0%	5.6%
2019	43,408	28,258	25,868	543	26,411	331	26,742	6.5%	5.4%
2020	45,785	30,765	28,356	524	28,880	310	29,190	6.1%	5.1%
2021	47,834	33,187	30,757	530	31,287	304	31,591	5.7%	4.8%
2022	49,504	35,460	33,017	536	33,553	297	33,850	5.4%	4.5%
2023	51,265	37,892	35,440	541	35,981	291	36,272	5.0%	4.3%
2024	53,122	40,511	38,049	545	38,594	284	38,878	4.7%	4.0%
2025	55,077	43,216	40,747	549	41,296	278	41,574	4.4%	3.8%
2026	56,607	45,847	43,376	554	43,930	272	44,202	4.2%	3.6%
2027	57,686	48,445	45,979	559	46,538	264	46,802	3.9%	3.4%
2028	58,817	50,996	48,535	561	49,096	257	49,353	3.7%	3.2%
2029	60,004	53,678	51,229	564	51,793	250	52,043	3.5%	3.0%
2030	61,249	56,394	53,959	564	54,523	243	54,766	3.3%	2.9%
2031	62,505	58,972	56,489	564	57,053	238	57,291	3.3%	2.9%
2032	63,755	61,626	59,032	585	59,617	241	59,858	3.3%	2.9%
2033	65,030	64,399	61,688	616	62,304	247	62,551	3.3%	2.9%
2034	66,331	67,297	64,465	643	65,108	252	65,360	3.3%	2.9%
2035	67,657	70,325	67,364	673	68,037	257	68,294	3.3%	2.9%
2036	69,010	73,490	70,397	702	71,099	262	71,361	3.3%	2.9%
2037	70,391	76,797	73,564	735	74,299	268	74,567	3.3%	2.9%
2038	71,798	80,253	76,875	768	77,643	273	77,916	3.3%	2.9%
2039	73,234	83,864	80,334	802	81,136	278	81,414	3.3%	2.9%
2040	74,699	87,638	83,951	838	84,789	284	85,073	3.3%	2.9%
2041	76,004	91,358	87,512	874	88,386	289	88,675	3.3%	2.9%
2042	77,145	95,012	91,012	909	91,921	293	92,214	3.3%	2.9%
2043	78,302	98,812	94,652	946	95,598	298	95,896	3.3%	3.0%
2044	79,476	102,765	98,440	983	99,423	302	99,725	3.3%	3.0%
2045	80,668	106,875	102,377	1,023	103,400	307	103,707	3.3%	3.0%
2046	81,878	111,150	106,472	1,064	107,536	311	107,847	3.3%	3.0%
2047	83,107	115,596	110,732	1,107	111,839	316	112,155	3.3%	3.0%
2048	84,353	120,220	115,161	1,151	116,312	321	116,633	3.3%	3.0%
2049	85,618	125,029	119,768	1,197	120,965	326	121,291	3.3%	3.0%
2050	86,903	130,030	124,557	1,244	125,801	330	126,131	3.3%	3.0%
2051	88,206	135,232	129,540	1,295	130,835	336	131,171	3.3%	3.0%
2052	89,529	140,641	134,722	1,346	136,068	340	136,408	3.3%	3.0%
2053	90,872	146,266	140,111	1,400	141,511	346	141,857	3.3%	3.0%
2054	92,235	152,117	145,714	1,456	147,170	351	147,521	3.3%	3.0%

⁽¹⁾ FY 2014, January - June only.

⁽²⁾ Applies to transactions for which a second bill is sent. Estimated by NCTA based on business rules.

Note: Forecasts for FY 2014 - 2017 reflect an assumed ramp-up to full traffic volumes beginning in the second half of FY 2017.



Table 8-2
Annual Toll Transactions and Net Revenue Forecasts (Fiscal Year)
Monroe Connector/Bypass Preliminary Study Update, Alternative 2
(Thousands)

Fiscal Year	Total Gross Transactions	Gross Toll Revenue	Collected Toll Revenue Under 30 Days	Collected Toll Revenue Over 30 Days ⁽²⁾	Total Collected Toll Revenue	Administrative Fees and Civil Penalty Revenue ⁽²⁾	Total Net Revenue	Percent Uncollected Toll Revenue	Percent Uncollected Revenue of Total Revenue
2014 ⁽¹⁾	5,098	\$2,834	\$2,500	\$72	\$2,572	\$51	\$2,623	9.2%	7.4%
2015	29,588	16,534	14,703	391	15,094	278	15,372	8.7%	7.0%
2016	37,734	21,844	19,600	531	20,131	365	20,496	7.8%	6.2%
2017	43,904	26,120	23,620	605	24,225	404	24,629	7.3%	5.7%
2018	45,449	27,466	24,937	602	25,539	396	25,935	7.0%	5.6%
2019	47,523	29,637	27,110	577	27,687	368	28,055	6.6%	5.3%
2020	49,792	32,086	29,554	554	30,108	341	30,449	6.2%	5.1%
2021	52,020	34,643	32,087	558	32,645	333	32,978	5.8%	4.8%
2022	54,170	37,275	34,684	568	35,252	328	35,580	5.4%	4.5%
2023	56,446	40,111	37,489	578	38,067	323	38,390	5.1%	4.3%
2024	58,855	43,211	40,558	589	41,147	319	41,466	4.8%	4.0%
2025	61,405	46,458	43,776	599	44,375	315	44,690	4.5%	3.8%
2026	62,901	49,154	46,478	606	47,084	308	47,392	4.2%	3.6%
2027	63,300	51,290	48,656	601	49,257	295	49,552	4.0%	3.4%
2028	63,755	53,351	50,761	594	51,355	282	51,637	3.7%	3.2%
2029	64,268	55,535	52,989	588	53,577	270	53,847	3.5%	3.0%
2030	64,839	57,726	55,225	582	55,807	260	56,067	3.3%	2.9%
2031	65,791	60,062	57,530	575	58,105	250	58,355	3.3%	2.8%
2032	67,107	62,765	60,118	593	60,711	252	60,963	3.3%	2.9%
2033	68,449	65,589	62,823	628	63,451	260	63,711	3.3%	2.9%
2034	69,818	68,541	65,650	655	66,305	265	66,570	3.3%	2.9%
2035	71,215	71,625	68,604	687	69,291	271	69,562	3.3%	2.9%
2036	72,639	74,848	71,693	716	72,409	276	72,685	3.3%	2.9%
2037	74,092	78,216	74,919	749	75,668	282	75,950	3.3%	2.9%
2038	75,573	81,736	78,289	783	79,072	288	79,360	3.3%	2.9%
2039	77,085	85,414	81,812	817	82,629	293	82,922	3.3%	2.9%
2040	78,627	89,258	85,494	855	86,349	299	86,648	3.3%	2.9%
2041	80,001	93,046	89,123	893	90,016	305	90,321	3.3%	2.9%
2042	81,201	96,768	92,687	929	93,616	310	93,926	3.3%	2.9%
2043	82,419	100,639	96,396	965	97,361	314	97,675	3.3%	2.9%
2044	83,655	104,664	100,249	1,004	101,253	319	101,572	3.3%	3.0%
2045	84,910	108,851	104,260	1,044	105,304	324	105,628	3.3%	3.0%
2046	86,183	113,205	108,432	1,085	109,517	328	109,845	3.3%	3.0%
2047	87,476	117,733	112,769	1,129	113,898	333	114,231	3.3%	3.0%
2048	88,788	122,443	117,280	1,174	118,454	338	118,792	3.3%	3.0%
2049	90,120	127,340	121,971	1,221	123,192	343	123,535	3.3%	3.0%
2050	91,472	132,434	126,850	1,270	128,120	349	128,469	3.3%	3.0%
2051	92,844	137,731	131,924	1,321	133,245	354	133,599	3.3%	3.0%
2052	94,237	143,241	137,202	1,373	138,575	359	138,934	3.3%	3.0%
2053	95,650	148,970	142,689	1,431	144,120	365	144,485	3.3%	3.0%
2054	97,085	154,929	148,396	1,487	149,883	370	150,253	3.3%	3.0%

⁽¹⁾ FY 2014, January - June only.

⁽²⁾ Applies to transactions for which a second bill is sent. Estimated by NCTA based on business rules.

Note: Forecasts for FY 2014 - 2017 reflect an assumed ramp-up to full traffic volumes beginning in the second half of FY 2017.



While WSA believes that some of the projections or other forward-looking statements contained within the report are based on reasonable assumptions as of the date in the report, such forward looking statements involve risks and uncertainties that may cause actual results to differ materially from the results predicted. Therefore, following the date of this report, WSA will take no responsibility or assume any obligation to advise of changes that may affect its assumptions contained within the report, as they pertain to: socioeconomic and demographic forecasts, proposed residential or commercial land use development projects and/or potential improvements to the regional transportation network.

It is also emphasized that this study is considered preliminary and findings are subject to considerable refinement. It was not performed at a sufficient level of detail to be used in project financing and is not intended for that purpose. Instead it is intended to provide additional information and analysis that was not available at the time of the 2006 preliminary study.

Very truly yours,

WILBUR SMITH ASSOCIATES

A handwritten signature in blue ink that reads "David R. Danforth". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

David R. Danforth
Vice President/Project Manager



Table 7-2
Annual Toll Transactions by Collection Method (Fiscal Year)
Monroe Connector/Bypass Preliminary Study Update, Alternative 2
(Thousands)

Fiscal Year	ETC				Collected				Uncollected				Total Video	
	Collected	Uncollectible	Total ETC	Preregistered	Within 15 Days		After 30 Days	Total Video Collected	Unreadable Plate	Unbillable After 15 Days	Pending After 30 Days	Total Video Uncollected and Pending	Total Video	Total Transactions
					Days	Days								
2014 ⁽¹⁾	3,675	17	3,692	349	236	361	946	112	106	242	460	1,406	5,098	
2015	21,910	109	22,019	1,880	1,272	1,943	5,095	606	575	1,292	2,473	7,568	29,587	
2016	28,621	143	28,764	1,994	1,310	2,766	6,070	611	595	1,694	2,900	8,970	37,734	
2017	34,049	171	34,220	2,115	1,349	3,123	6,597	617	614	1,865	3,096	9,683	43,903	
2018	35,623	178	35,801	2,244	1,389	2,946	6,579	623	631	1,815	3,069	9,648	45,449	
2019	37,992	191	38,183	2,380	1,430	2,592	6,402	629	649	1,660	2,938	9,340	47,523	
2020	40,539	204	40,743	2,524	1,473	2,236	6,233	633	668	1,515	2,816	9,049	49,792	
2021	42,963	215	43,178	2,567	1,431	2,130	6,128	604	649	1,462	2,715	8,843	52,021	
2022	45,228	228	45,456	2,611	1,350	2,083	6,084	576	630	1,425	2,631	8,715	54,171	
2023	47,617	239	47,856	2,656	1,380	2,033	6,039	549	612	1,389	2,550	8,589	56,445	
2024	50,136	251	50,387	2,701	1,311	1,983	5,995	524	586	1,353	2,473	8,468	58,855	
2025	52,791	266	53,057	2,746	1,275	1,930	5,951	501	578	1,318	2,397	8,348	61,405	
2026	54,507	274	54,781	2,721	1,211	1,897	5,829	465	549	1,277	2,291	8,120	63,301	
2027	55,232	278	55,510	2,696	1,150	1,784	5,630	432	522	1,207	2,161	7,791	63,301	
2028	55,996	281	56,277	2,671	1,092	1,680	5,443	401	484	1,139	2,034	7,477	63,754	
2029	56,800	285	57,085	2,646	1,037	1,581	5,264	373	469	1,077	1,919	7,183	64,268	
2030	57,646	290	57,936	2,624	984	1,486	5,094	346	446	1,017	1,809	6,903	64,839	
2031	58,662	294	58,956	2,676	1,004	1,381	5,061	353	455	966	1,774	6,835	65,791	
2032	59,835	300	60,135	2,730	1,024	1,409	5,163	373	469	968	1,810	6,973	67,108	
2033	61,031	307	61,338	2,785	1,044	1,437	5,266	367	473	1,004	1,845	7,111	68,449	
2034	62,253	311	62,564	2,840	1,065	1,467	5,372	375	483	1,025	1,882	7,254	69,818	
2035	63,497	320	63,817	2,897	1,086	1,494	5,478	382	493	1,046	1,921	7,399	71,216	
2036	64,767	325	65,092	2,955	1,108	1,525	5,588	390	503	1,066	1,958	7,546	72,638	
2037	66,062	332	66,394	3,014	1,130	1,555	5,699	397	512	1,088	1,988	7,697	74,091	
2038	67,383	339	67,722	3,074	1,153	1,587	5,814	405	523	1,109	2,038	7,852	75,574	
2039	68,731	345	69,076	3,136	1,176	1,619	5,931	414	533	1,131	2,078	8,009	77,085	
2040	70,105	353	70,458	3,199	1,199	1,651	6,049	422	544	1,154	2,119	8,168	78,626	
2041	71,500	360	71,860	3,247	1,217	1,691	6,155	435	552	1,176	2,156	8,311	80,001	
2042	72,900	365	73,265	3,295	1,236	1,716	6,247	435	560	1,195	2,189	8,436	81,201	
2043	74,387	370	74,757	3,345	1,254	1,742	6,341	441	569	1,211	2,221	8,562	82,419	
2044	75,909	376	76,285	3,395	1,273	1,768	6,436	448	577	1,229	2,254	8,690	83,655	
2045	76,844	382	77,226	3,446	1,292	1,795	6,533	454	585	1,248	2,289	8,822	84,911	
2046	77,986	386	78,372	3,498	1,312	1,822	6,631	461	595	1,267	2,323	8,954	86,184	
2047	79,166	388	79,554	3,550	1,331	1,849	6,730	468	603	1,286	2,358	9,088	87,476	
2048	80,354	396	80,750	3,603	1,351	1,876	6,830	475	613	1,306	2,394	9,224	88,788	
2049	81,559	404	82,003	3,657	1,371	1,904	6,933	482	622	1,325	2,429	9,362	90,120	
2050	82,783	410	83,193	3,712	1,392	1,933	7,037	489	631	1,345	2,466	9,503	91,472	
2051	84,024	415	84,439	3,768	1,413	1,961	7,142	497	640	1,367	2,504	9,646	92,844	
2052	85,284	422	85,706	3,824	1,434	1,992	7,250	504	650	1,386	2,540	9,790	94,236	
2053	86,564	430	87,000	3,882	1,456	2,021	7,358	512	660	1,408	2,580	9,938	95,652	
2054	87,864	436	88,300	3,940	1,477	2,052	7,469	520	670	1,428	2,618	10,087	97,087	

(1) FY 2014, January - June only.

Note: Forecasts for FY 2014 - 2017 reflect an assumed ramp-up to full traffic volumes beginning in the second half of FY 2017.