



## **INFORMATION PAPER**

### **FOR THE FINANCE COMMITTEE**

# **TRAFFIC AND REVENUE STUDY UPDATE AND 2012 PROCESS FOR ESTABLISHING TOLL RATES**

**FEBRUARY 2012**





## Overview

- Consistent with past practice, the Airports Authority engaged an independent Traffic & Revenue Consultant, CDM Smith, to conduct a 2012 comprehensive study as an input to its toll rate setting process
  - Wilbur Smith Associates conducted the Airports Authority's last T&R Study in 2009, which was refreshed in 2010
  - The 2012 Study includes recent data collection, research, and analysis
  - FAs and Staff asked CDM Smith to assume the Alternate Toll Rate Schedule, which served as the basis for the schedule attached to the MOA
  - CDM Smith produced transactions and revenue projections using those toll rate assumptions
- Financial Advisors analyzed the results of the 2012 T&R Study and conclude that toll revenue projections are sufficient to support the finance plan for the Metrorail Project
- The final step will be refinement and recommendation of potential toll rates



## Inputs to the 2012 Traffic & Revenue Study

- CDM Smith conducted a significant amount of data collection, research, and analysis, incorporating the following in the 2012 T&R Study:
  - Latest release of Metropolitan Washington Council of Governments (MWCOCG) regional travel demand model, including refined models for HOT Lanes and Transit and new state and local transportation improvement plans
  - Independent review of socioeconomic growth assumptions by Renaissance Planning Group, including 2010 Census data
  - Revised trip information, reflective of latest socioeconomic assumptions
  - New traffic counts, confirmation of travel speeds, and customer surveys
  - Construction impacts

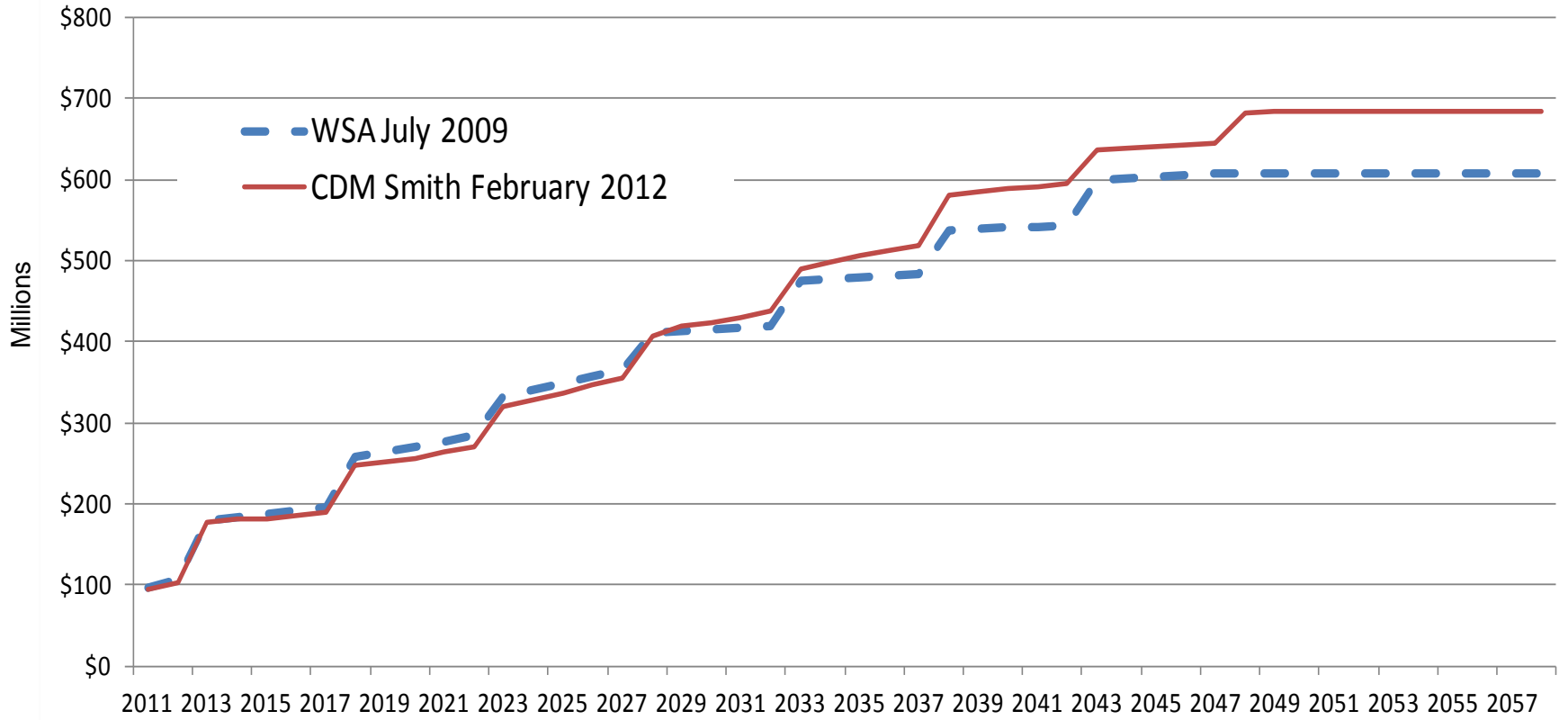


## Key Findings: 2012 T&R Study

- The DTR revenue forecasts included in our 2009 T&R Study were fairly accurate, given economic downturn
  - Actual 2010 revenue was 100.7% of forecast
  - Actual 2011 revenue was 97.5% of forecast
- Population and employment growth in the service area for the Dulles Toll Road through 2028 will be slightly less than levels forecasted in 2009, but by 2030, may exceed our previous forecast
- This results in lower levels of projected toll revenue in early years and higher levels of toll revenue beyond 2030 when compared to our 2009 forecast



## Comparison of 2009 and 2012 Toll Revenue Projections



Revenue and Transactions projections were calculated using the Alternate Toll Rate Schedule, which served as the basis for the schedule attached to the MOA





# Toll Revenue Projections in 2012 T&R Study

Calendar Year	Total Transactions	% Growth	Mainline Toll Rate	PV @ 3.0%	Ramp Toll Rate	PV @ 3.0%	Trip Cost	PV @ 3.0%	GROSS TOLL REVENUE
2009	107,457,000		\$0.75		\$0.50		\$1.25		64,894,000
2010	102,592,000	-4.5%	<b><u>\$1.00</u></b>		<b><u>\$0.75</u></b>		\$1.75		88,038,000
<b><u>2011</u></b>	99,923,000	-2.6%	<b><u>\$1.25</u></b>		\$0.75		\$2.00		94,646,000
2012	99,911,000	-0.0%	<b><u>\$1.50</u></b>		\$0.75		\$2.25		103,508,000
2013	81,908,000	-18.0%	<b><u>\$2.75</u></b>	\$2.67	<b><u>\$1.75</u></b>	\$1.70	\$4.50	\$4.37	177,107,000
2014	83,502,000	1.9%	\$2.75	\$2.59	\$1.75	\$1.65	\$4.50	\$4.24	181,740,000
2015	83,144,000	-0.4%	\$2.75	\$2.52	\$1.75	\$1.60	\$4.50	\$4.12	180,960,000
2016	85,118,000	2.4%	\$2.75	\$2.44	\$1.75	\$1.55	\$4.50	\$4.00	185,257,000
2017	87,008,000	2.2%	\$2.75	\$2.37	\$1.75	\$1.51	\$4.50	\$3.88	189,369,000
2018	75,062,000	-13.7%	<b><u>\$4.00</u></b>	\$3.35	<b><u>\$2.75</u></b>	\$2.30	\$6.75	\$5.65	246,441,000
2023	74,084,000	-10.0%	<b><u>\$5.00</u></b>	\$3.61	<b><u>\$3.75</u></b>	\$2.71	\$8.75	\$6.32	320,180,000
2028	76,311,000	-7.3%	<b><u>\$6.00</u></b>	\$3.74	<b><u>\$4.75</u></b>	\$2.96	\$10.75	\$6.70	407,841,000
2033	76,933,000	-6.1%	<b><u>\$7.00</u></b>	\$3.76	<b><u>\$5.75</u></b>	\$3.09	\$12.75	\$6.85	489,294,000
2038	77,507,000	-4.9%	<b><u>\$8.00</u></b>	\$3.71	<b><u>\$6.75</u></b>	\$3.13	\$14.75	\$6.84	581,330,000
2043	75,655,000	-4.6%	<b><u>\$9.00</u></b>	\$3.60	<b><u>\$7.75</u></b>	\$3.10	\$16.75	\$6.70	636,671,000

Revenue and Transactions projections were calculated using the Alternate Toll Rate Schedule, which served as the basis for the schedule attached to the MOA



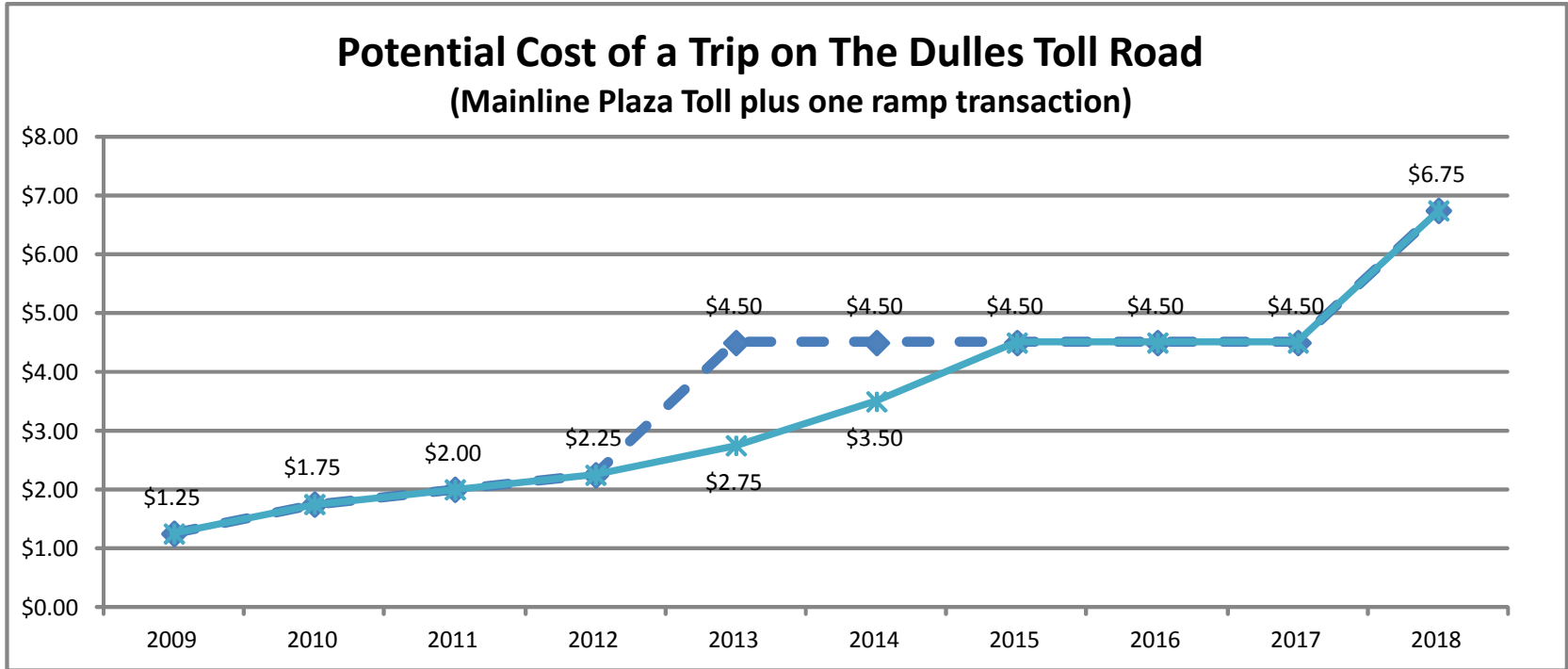
## Preliminary Financial Analysis

- As noted by CDM Smith, the 2012 toll revenue projections are slightly lower than previously estimated in years 2012 – 2028
- Thereafter, projected traffic and toll revenue is higher than previously projected

calendar year	<u>July 2009</u>	<u>February 2012</u>	<u>DIFFERENCE</u>		
	ESTIMATED GROSS TOLL REVENUE	ESTIMATED GROSS TOLL REVENUE	Amount \$	% Reduction	% of Prior
	(Millions)	(Millions)	(Millions)		
2011	\$ 97.13	\$ <b>94.65</b>	(2.48)	-2.6%	97.4%
2012	107.10	<b>103.51</b>	(3.60)	-3.4%	96.6%
2013	178.80	<b>177.11</b>	(1.69)	-0.9%	99.1%
2014	183.02	<b>181.74</b>	(1.27)	-0.7%	99.3%
2015	187.35	<b>180.96</b>	(6.38)	-3.4%	96.6%
2016	191.79	<b>185.26</b>	(6.54)	-3.4%	96.6%
2017	196.36	<b>189.37</b>	(6.99)	-3.6%	96.4%
2018	257.24	<b>246.44</b>	(10.80)	-4.2%	95.8%
2023	331.31	<b>320.18</b>	(11.13)	-3.4%	96.6%
2028	410.89	<b>407.84</b>	(3.05)	-0.7%	99.3%
2033	475.53	<b>489.29</b>	13.77	2.9%	102.9%
2038	537.04	<b>581.33</b>	44.29	8.2%	108.2%
2043	599.00	<b>636.67</b>	37.67	6.3%	106.3%



## Illustrative Toll Rate Options



- The dotted line shows the Toll Rate Schedule included in the 2012 T&R Study
- The solid line alternative illustrates one potential impact on projected toll rates in 2013 and 2014 assuming receipt of a \$150 million funding contribution that is used to pay near-term borrowing costs
- Estimates are for discussion purposes only



## Preliminary Financial Analysis Conclusions

- The updated toll revenue projections are sufficient to support the finance plan for the Rail Project
- As unknown project funding variables become finalized, there may be opportunities to lower toll rates
- Staff will work with CDM Smith to develop potential near-term tolling options for Board consideration in March 2012





## Process for Establishing Toll Rates

- The Airports Authority has the exclusive right to establish, charge, and collect tolls and other fees for the use of the Dulles Toll Road
- Prior to establishing toll rates, the Airports Authority follows its regulatory process, which includes:
  - Convening public hearings in the Dulles Corridor; and
  - Reporting back to the Board on views collected during public hearings
- The Airports Authority also consults with the Dulles Corridor Advisory Committee (DCAC), in accordance with the DTR Permit and Operating Agreement



## Proposed 2012 Schedule for Establishing Tolls

### **Finance Committee Meeting**

February 15, 2012

- Review 2012 process and schedule for establishing toll rates
- Receive Traffic and Revenue Study Update
- Receive Preliminary Financial Analysis of the Updated Dulles Toll Road Revenue Projections

### **Finance and/or Dulles Corridor Committee Meeting**

March 21, 2012

- Receive potential toll rate schedule(s) for 2013 and future years
- Discuss considerations in setting future toll rates

### **Finance and/or Dulles Corridor Committee Meeting**

April 18, 2012

- Receive staff and Financial Advisors recommendations for proposed tolls for 2013 and future years
- Solicit Committee concurrence or alternative direction

### **Proposed Dulles Corridor Advisory Committee Meeting**

Late April /  
Early May 2012

- Authority consultation on proposed tolls for 2013 and future years
- Solicit comments for Board consideration



## Proposed 2012 Schedule for Establishing Tolls (continued)

### **Finance and/or Dulles Corridor Committee Meeting**

May 16, 2012

- Receive staff report on DCAC comments on proposed toll rates
- Reconsider staff recommendation for proposed adjustments
- Provide Committee authorization to proceed with the regulatory process for proposed rate adjustments and effective dates

May 31, 2012

### **Estimated End of 90-Day Fairfax and Loudoun Option Period**

June and July 2012

### **Proposed Public Comment Period**

- Public comment period and public forums on proposed toll rate adjustments

August 15, 2012

### **Finance and/or Dulles Corridor Committee Meeting**

- Receive staff report on the Public Forums and public comments
- Decision whether to recommend proposed resolution to set DTR toll rates for 2013 and possibly future years



## Proposed 2012 Schedule for Establishing Tolls (continued)

September 19, 2012

### **Board of Directors Meeting**

- Consideration of resolution to set new DTR toll rates for 2013 and possibly future years

Late September /  
Early October 2012

### **Proposed Dulles Corridor Advisory Committee Meeting**

- Authority briefing to DCAC to report on Board's consideration of DCAC advice, public comments, and actions with regard to DTR toll rate schedule

4<sup>th</sup> Quarter 2012  
(October – December)

### **Potential issuance of Dulles Toll Road Revenue Bonds**

January 1, 2013

### **Implementation of Potential Toll Rate Adjustment**



## Conclusion

- The Financial Advisors conclude that toll revenue projections based on the Alternate Toll Rate Schedule presented as part of the MOA and updated 2012 T&R Study traffic forecasts are sufficient to support the finance plan for the Metrorail Project
- There are currently a number of outstanding variables that could impact recommended toll rates
- The Board will be presented initial toll rate options in March
- The draft schedule presented facilitates a potential DTR bond issuance in the 4<sup>th</sup> Quarter and future toll rate adjustments
  - The schedule should remain flexible and dynamic to accommodate changes in circumstance

**INFORMATION PAPER FOR THE  
FINANCE COMMITTEE**

**2012 TRAFFIC AND REVENUE STUDY UPDATE AND PROCESS FOR  
ESTABLISHING TOLL RATES ON THE DULLES TOLL ROAD**

**FEBRUARY 2012**

**PURPOSE**

To provide information on the process and proposed schedule for validating or potentially adjusting toll rates on the Dulles Toll Road (DTR). In addition, the Traffic and Revenue (T&R) Study Consultant will provide an update and overview of the 2012 T&R Study, and the Financial Advisors will present a preliminary financial analysis of updated DTR traffic and revenue projections.

**BACKGROUND**

The Airports Authority has the exclusive right to establish, charge, and collect tolls and other fees for the use of the Dulles Toll Road. Prior to adjusting toll rates, the Airports Authority must follow its process for promulgating regulations, including convening one or more public hearings in the Dulles Corridor to provide members of the public and others an opportunity to become informed about, and express their views on, any proposed toll rate changes. Consistent with past practice, the Airports Authority engaged an independent Traffic and Revenue Study Consultant to conduct a comprehensive study as an input to its toll rate setting process.

**DISCUSSION**

***2012 Traffic and Revenue Study***

CDM Smith (formerly Wilbur Smith Associates) was engaged to conduct a comprehensive, investment-grade Traffic and Revenue Study. Wilbur Smith Associates prepared the 2009 Traffic and Revenue Study for the Airports Authority and the 2010 update. Their 2012 preliminary report reflects a significant amount of data collection, research and analysis, including an independent review of socioeconomic growth assumptions.

CDM Smith's Transmittal Letter, DTR Traffic & Revenue Study Update 2012 Executive Brief and Preliminary T&R Results, and Draft Analysis of Population and Employment Forecasts for the Washington, D.C. Region 2010-2040 are included as Attachment A.

### ***Preliminary Financial Analysis***

The Financial Advisors have performed a preliminary financial analysis based on the updated Dulles Toll Road traffic and revenue projections in CDM Smith’s 2012 draft report. The Financial Advisors conclude that toll revenue projections based on the Alternative Toll Rate Schedule presented as part of the Memorandum of Agreement and updated 2012 T&R Study traffic forecasts are sufficient to support the finance plan for the Metrorail Project.

### ***Toll Setting Process and Schedule***

There are currently a number of outstanding variables that could impact recommended toll rates. Prior to establishing future toll rates, the Airports Authority follows its regulatory process, which includes convening public hearings in the Dulles Corridor and reporting back to the Board on public views collected during the public hearings. In addition, the Airports Authority also consults with the Dulles Corridor Advisory Committee (DCAC) with respect to any proposed toll rate adjustments, although DCAC consent or approval of toll rate adjustments is not required under the agreements with the Commonwealth.

To facilitate the potential issuance of Dulles Toll Road revenue bonds in the fourth quarter of 2012, Management proposes the following draft schedule for establishing toll rates on the Dulles Toll Road:

#### **Proposed 2012 Process & Schedule for Establishing Toll Rates**

2/15/12	<b>Finance Committee Meeting</b> <ul style="list-style-type: none"><li>• Review 2012 process and schedule for establishing toll rates</li><li>• Receive T&amp;R Study Update</li><li>• Receive Preliminary Financial Analysis of the Updated Dulles Toll Road Revenue Projections</li></ul>
3/21/12	<b>Finance and/or Dulles Corridor Committee Meeting</b> <ul style="list-style-type: none"><li>• Receive potential toll rate schedule(s) for 2013 and future years</li><li>• Discuss considerations in setting future toll rates</li></ul>
4/18/12	<b>Finance and/or Dulles Corridor Committee Meeting</b> <ul style="list-style-type: none"><li>• Receive staff and Financial Advisors’ recommendations for proposed tolls for 2013 and future years</li><li>• Solicit Committee concurrence or alternative direction</li></ul>
Late April – Early May	<b>Proposed Dulles Corridor Advisory Committee Meeting</b> <ul style="list-style-type: none"><li>• Authority consultation on proposed tolls for 2013 and future years</li><li>• Solicit comments for Board consideration</li></ul>



5/16/12	<b>Finance and/or Dulles Corridor Committee Meeting</b> <ul style="list-style-type: none"> <li>• Receive staff report on DCAC comments on proposed toll rates</li> <li>• Reconsider staff recommendation for proposed adjustments</li> <li>• Provide Committee authorization to proceed with the regulatory process for proposed rate adjustments and effective dates</li> </ul>
5/31/12	<b>Estimated End of 90-Day Fairfax and Loudoun Option Period</b>
June & July	<b>Proposed Public Comment Period</b> <ul style="list-style-type: none"> <li>• Public comment period and public forums on proposed toll rate adjustments</li> </ul>
8/15/12	<b>Finance and/or Dulles Corridor Committee Meeting</b> <ul style="list-style-type: none"> <li>• Receive staff report on the Public Forums and public comments</li> <li>• Decision whether to recommend proposed resolution to set DTR toll rates for 2013 and possibly future years</li> </ul>
9/19/12	<b>Board of Directors Meeting</b> <ul style="list-style-type: none"> <li>• Consideration of resolution to set new DTR toll rates for 2013 and possibly future years</li> </ul>
Late Sept/Early October	<b>Proposed Dulles Corridor Advisory Committee Meeting</b> <ul style="list-style-type: none"> <li>• Authority briefing to DCAC to report on Board's consideration of DCAC advice, public comments, and actions with regard to DTR toll rate schedule</li> </ul>
4Q 2012	<b>Potential issuance of Dulles Toll Road Revenue Bonds</b>
1/1/13	<b>Implementation of Potential Toll Rate Adjustment</b>

It is important to note that all dates are tentative and subject to many variables, which may change the proposed schedule.

## **CONCLUSION**

The Financial Advisors conclude that toll revenue projections based on the Alternative Toll Rate Schedule presented as part of the Memorandum of Agreement and updated 2012 T&R Study traffic forecasts are sufficient to support the finance plan for the Metrorail Project. There are currently a number of outstanding variables that could impact recommended toll rates. In addition, staff has proposed a schedule for establishing toll rates on the Dulles Toll Road, consistent with the regulatory process the Airports Authority is required to follow.

Prepared by:

Office of Finance  
February 2012



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 fax: 703 698-1250

# Transmittal

To: Mr. Andrew Rountree, CPA

From: Jonathan Pagan

Organization/ Address: MWAA

Date: February 3, 2012

Re: T&R Study 2012 – Preliminary Results

Job #: 87119/T8

Via: e-Mail:

Overnight:

Courier:

Enclosed please find:

For your information

For your review

For your signature


Approved

Approved as noted

Returned to you for correction

<b>P</b>

Message:

Dear Mr. Rountree:

I enclosed the following documents relating to the 2012 DTR Traffic and Revenue Study:

- Executive Brief and Preliminary Results, CDM Smith, January 2012
- Analysis of Population and Employment Forecasts, Renaissance Planning Group, October 2011

We look forward to presenting the preliminary results to MWAA on 2/15. We will provide detailed study documentation shortly thereafter. Following your review of the preliminary numbers and once you are able to provide us with final toll rate assumptions, we will provide a full draft Comprehensive T&R Report including final forecasts, sensitivity tests, and new toll sensitivity analysis within a timescale of approximately one month.

Signed

# DTR Traffic & Revenue Study Update 2012

## Executive Brief and Preliminary T&R Introduction

This Executive Brief summarizes preliminary results of a fully updated comprehensive traffic and toll revenue (T&R) study for Dulles Toll Road (DTR) in Virginia. The study is being conducted by CDM Smith. Full details of the study results will be provided initially as draft report chapters. A final report will be available later following MWAA's instructions of final toll rate assumptions.

These preliminary results will be reviewed by the finance team and Airports Authority Board to determine further refinements that may be required to toll structures and/or rates. Initially CDM Smith has been asked to assume a single toll rate schedule for comparison with the 2009 Study.

Constructed in 1984, and situated mostly in Fairfax County, the DTR is a 13.43 mile, eight-lane toll facility in the Dulles-Reston-Herndon-Tysons Corridor in Northern Virginia, shown in Figure ES-1. Toll collection is by means of cash and electronic toll collection (E-ZPass) at one Main Line plaza at the eastern end near the Capital Beltway (Interstate 495) and 19 ramp plazas, as shown in Figure ES-2. The tolling system is designed to capture revenues from DTR customers at one or more tolling locations. The majority of toll-paying customers pay both a Main Line and ramp toll. DTR links directly to the Dulles Greenway at a shared Main Line plaza providing rapid access to Leesburg and elsewhere in Loudoun County. Currently, most west-facing ramps, towards Washington Dulles International Airport (Dulles International), are toll-free providing local travelers on the Dulles corridor with free access to the DTR and the Dulles Airport Access Road.

The DTR complements and competes with a combination of non-tolled local arterials and highways but generally provides a superior limited-access free flow level of service. Its comparative advantage is somewhat reduced in peak hours when, for the past decade, levels of service have begun to reach less satisfactory levels. There is evidence that peak travel, and hence toll revenues, are constrained in the peak hours due to congestion. There is substantial midday and non-peak travel but there remains capacity for growth in non-commuting trips as development along the Dulles corridor continues to expand.

During the life of the DTR facility, toll rates have not kept pace with inflation; there were no toll rate adjustments between 1984 and 2005. In 2005 a 25-cent increase was implemented, in order to begin securing funds for the Metrorail Project, resulting in Main Line tolls for two-axle vehicles of 75 cents in both directions and ramp tolls established at a uniform 50 cents. A \$0.25 increase in January 2010 at both the Main Line plaza and all ramps was followed by an increase of \$0.25 at only the Main Line plaza in 2011.

Despite the economic slowdown and other negative factors, annual toll revenues increased from \$41.9 million in 2004 to \$65.2 million in 2006 and annual toll revenues increased to \$88.0 million and \$94.6(est.) million in 2010 and 2011 respectively. Toll rate increases have therefore provided solid revenue realization due to relatively inelastic impacts. Local trips have been more sensitive than

through-traffic passing the Main Line plaza. A further \$0.25 Main Line only adjustment has been approved and implemented for January 2012.

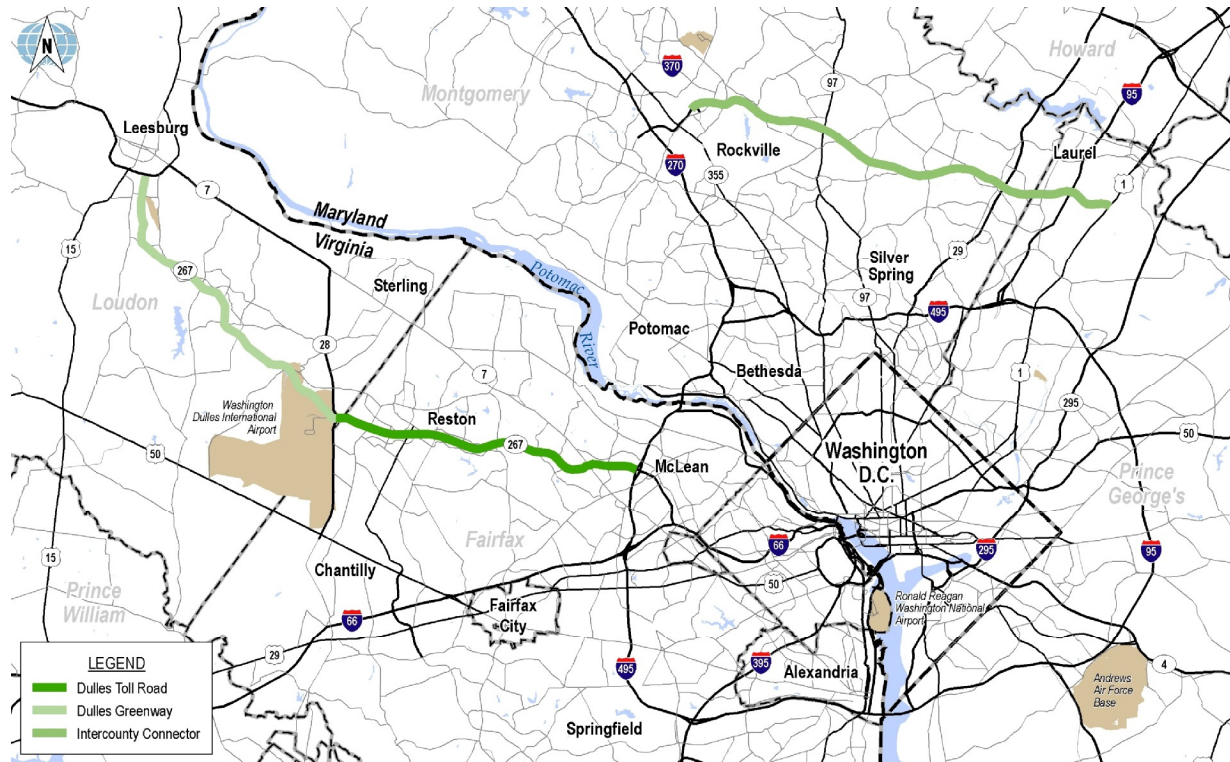


Figure ES-1  
DTR: Regional Location Map

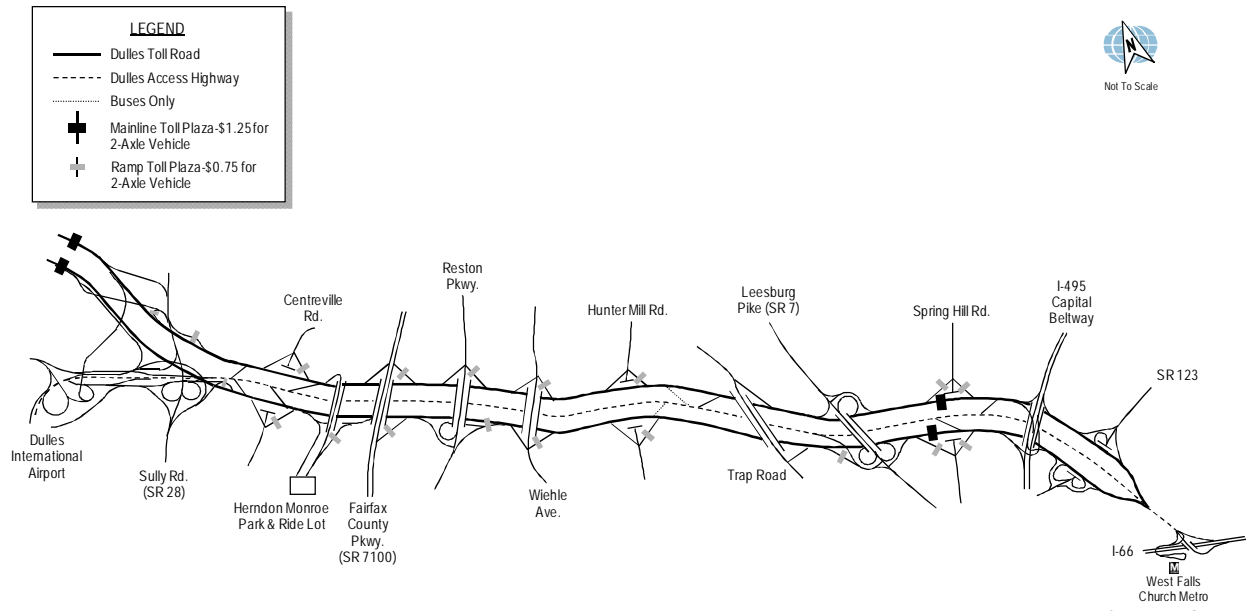
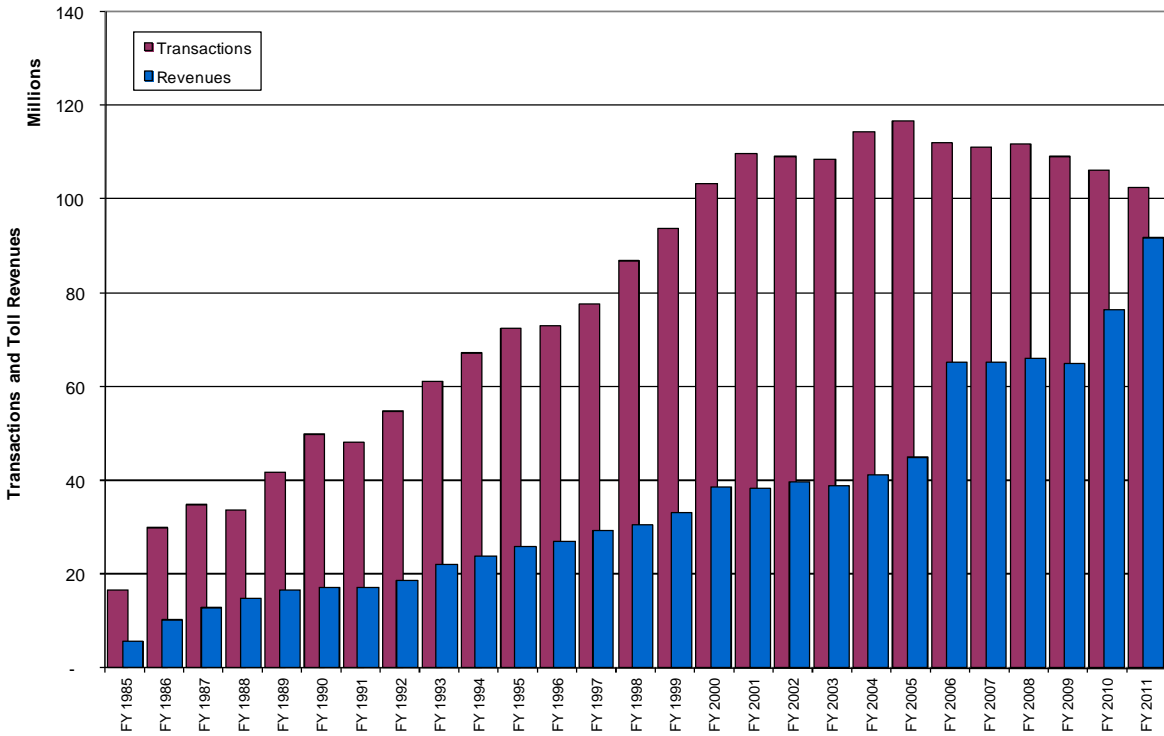


Figure ES-2  
DTR: Tolling Configuration Schematic

Multi-axle vehicles are charged an additional 25 cents per axle, however the proportion of multi-axle vehicles is relatively small. Dulles Greenway remits the current value of the DTR ramp toll (less fee) at the shared Greenway mainline plaza. Greenway transactions have been falling in recent years due to toll increases on that facility but this has resulted in traffic diverting to the DTR ramps at Route 28 mostly offsetting the reductions in DTR revenue at the Greenway.

The customer base for the DTR is mature and extremely stable showing minimal variations during the working week and by time of year. Unlike many other commuter toll facilities the DTR exhibits strong peak demand in both directions due to the spatial distribution of commercial and residential centers in its service area. Although growth has been muted, the DTR has fared relatively well during the current economic downturn compared to non-tolled routes in Virginia and comparable toll facilities throughout the nation.

Historically, demand has been somewhat sensitive to economic growth but has rebounded immediately after economic slowdowns as illustrated in Figure ES-3. Also shown, and as described above, the toll rate adjustments in 2005, 2010 and 2011 resulted in solid revenue realization.



Source: Virginia DOT & MWAA  
Note: Analysis by Fiscal Year ending June 30 for compatibility with historic VDOT data

Figure ES-3  
DTR: Transactions and Revenues FY1985-FY2011

## Study Approach Overview

The fully updated T&R study is being conducted at a full investment grade level and should be considered suitable for use in project financing. The study has benefited from the release of the latest Metropolitan Washington Council of Governments (MWCOC) travel demand model (adopted November 2011) and socio-economic projections (December 2010) and reflects the most recently approved future transportation improvement plans including HOT Lanes projects and Metrorail

expansions. This model was the basis of the CDM Smith T&R study and was updated and refined based on professional experience and judgment. The traffic and toll revenue estimates on the DTR were calculated by using the trip tables that were generated from updated demographic datasets and taking into account estimated toll diversions.

To refine the model, CDM Smith embarked on a significant fresh data collection program including current traffic data and information related to travel characteristics in the DTR corridor. In addition to detailed corridor reconnaissance, speed and delay surveys and traffic counts in the DTR corridor, CDM Smith conducted new travel pattern and characteristic surveys at Main Line and ramp toll locations. In addition CDM Smith performed video license plate matching entry/exit pattern surveys to assist in model development and validation.

The use of previous stated preference surveys conducted by CDM Smith for the 2009 study resulted in very accurate estimates of the impacts of the January 2010 and January 2011 toll adjustments. These surveys provide useful estimates of how travelers in the DTR corridor value time, as well as motorists' preferences regarding toll collection options and other inputs. The surveys found average values of time generally in the range of \$0.17 to \$0.21 per minute, depending on trip purpose. CDM Smith also conducted a DTR stated preference survey in 2005 for VDOT yielding an almost identical range of values of time. It was therefore not considered necessary to repeat the Stated Preference surveys instead focusing on updating models to represent the revealed preference of customers.

Reflective of the relatively high incomes in the Dulles corridor, the value of time range is relatively high compared with some other toll facilities. These values of time were applied in the travel demand model based on the distribution of incomes in the region. This analysis was refreshed for this study based on new data on income distributions. 2011 incomes are typically lower than predicted in the prior study.

An independent review of the socioeconomic growth of the DTR corridor was undertaken by Renaissance Planning Group (RPG). The original socioeconomic projections were as provided by the MWCOG, which were used in the latest version of the regional travel demand model. Based on the RPG review some modifications were made to the MWCOG data. All socioeconomic data has been updated to reflect the 2010 Census results. The independent economist's report by RPG is included as an appendix to the traffic and revenue study. The expected growth through 2020 in population and employment is shown in Figures ES-4 and ES-5 respectively. The long term economic and demographic outlook for the corridor remains very favorable.

For the initial T&R analysis for this draft report, a detailed traffic and revenue analysis was undertaken based on an initial toll rate schedule (see Table ES-1). This is as follows:

- § **Toll Rate Schedule:** following approved toll adjustments through 2012, a \$1.25 increase occurs at the Main Line plaza and a \$1.00 increase occurs at all ramp plazas in 2013 and 2018. Beginning in 2023, and occurring every five years thereafter, there is an increase of \$1.00 at the Main Line plaza and at all ramp plazas.

Dulles Greenway tolls were also adjusted in the model based on approved increases and expectations of additional future escalations. Base case traffic and toll revenue estimates were developed for the DTR, extending over a 40-year period up to 2050. A series of sensitivity tests are yet to be performed to assess the potential impacts on base case revenues associated with hypothetical changes in certain basic assumptions or other data inputs.

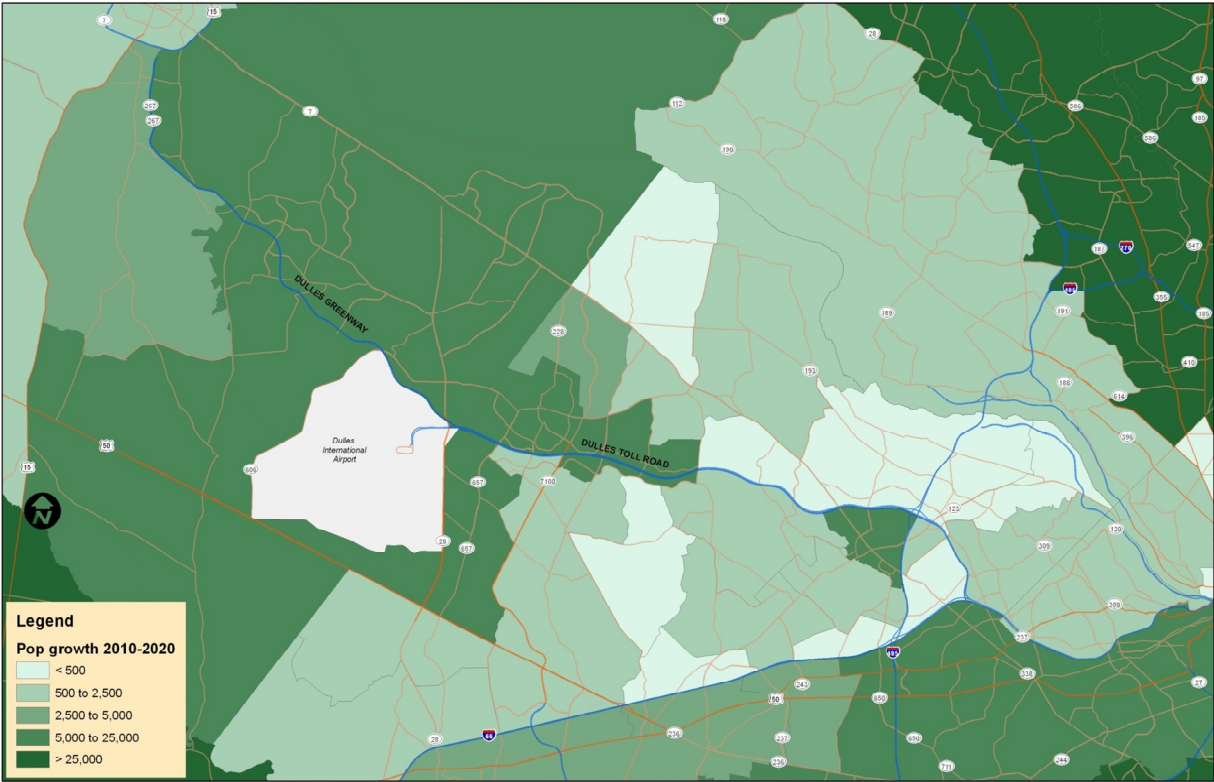


Figure ES-4  
Population Growth 2010 to 2020

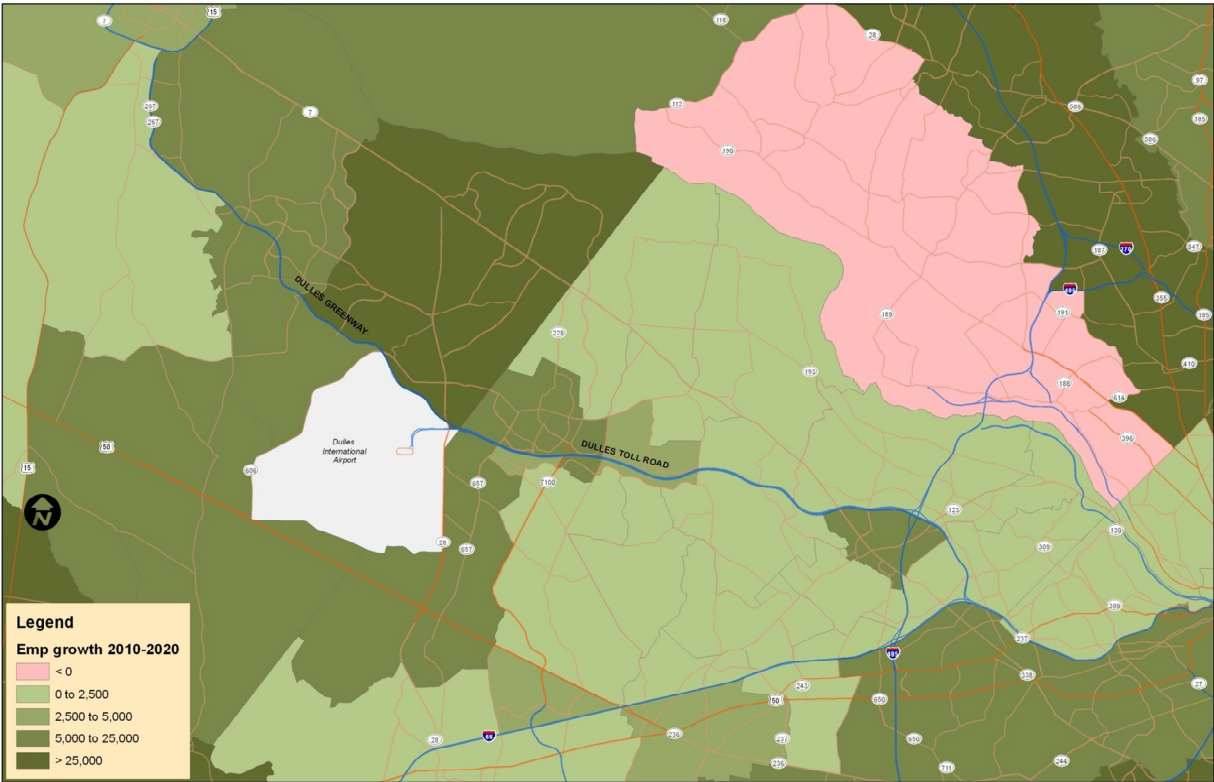


Figure ES-5  
Employment Growth 2010 to 2020

Table ES-1 Preliminary Draft Toll Rate Schedule

	Main Line		Ramps	
	Tolls	Change	Tolls	Change
1984-2005	\$0.50	..	\$0.35/\$0.25	..
2005-2009	0.75	+ \$ 0.25	0.50	+ \$ 0.15
2010	1.00	+ \$ 0.25	0.75	+ \$ 0.25
2011	1.25	+ \$ 0.25	0.75	..
2012	1.50	+ \$ 0.25	0.75	..
2013	2.75	+ \$ 1.25	1.75	+ \$ 1.00
2014	2.75	..	1.75	..
2015	2.75	..	1.75	..
2016	2.75	..	1.75	..
2017	2.75	..	1.75	..
2018	4.00	+ \$ 1.25	2.75	+ \$ 1.00
2019	4.00	..	2.75	..
2020	4.00	..	2.75	..
2021	4.00	..	2.75	..
2022	4.00	..	2.75	..
2023	5.00	+ \$ 1.00	3.75	+ \$ 1.00
2024	5.00	..	3.75	..
2025	5.00	..	3.75	..
2026	5.00	..	3.75	..
2027	5.00	..	3.75	..
2028	6.00	+ \$ 1.00	4.75	+ \$ 1.00
2029	6.00	..	4.75	..
2030	6.00	..	4.75	..
2031	6.00	..	4.75	..
2032	6.00	..	4.75	..
2033	7.00	+ \$ 1.00	5.75	+ \$ 1.00
2034	7.00	..	5.75	..
2035	7.00	..	5.75	..
2036	7.00	..	5.75	..
2037	7.00	..	5.75	..
2038	8.00	+ \$ 1.00	6.75	+ \$ 1.00
2039	8.00	..	6.75	..
2040	8.00	..	6.75	..
2041	8.00	..	6.75	..
2042	8.00	..	6.75	..
2043	9.00	+ \$ 1.00	7.75	+ \$ 1.00
2044	9.00	..	7.75	..
2045	9.00	..	7.75	..
2046	9.00	..	7.75	..
2047	9.00	..	7.75	..
2048	10.00	+ \$ 1.00	8.75	+ \$ 1.00
2049	10.00	..	8.75	..

Note: Draft Only



## Estimated Traffic and Toll Revenue

Travel demand models were obtained from the metropolitan planning organization, MWCOG. These were updated to reflect the latest project configurations and toll operations assumptions. Base year trip tables were also refined to reflect adjustments to socioeconomic forecasts and to better reflect observed travel patterns from the origin-destination and exit/entry pattern surveys. Future planned transportation improvement project information was obtained and appropriately reflected in the travel demand models.

A series of traffic assignments were performed at 2011, 2015, 2020, 2025, 2030, 2035 and 2040 levels. Separate assignments were made for morning peak, mid-day, afternoon peak and night conditions.

Future toll rates were tested in selected years and no other changes in toll collection methods were assumed at this stage, e.g. all electronic tolling, peak pricing, tolling un-tolled ramps, etc. All of the traffic assignments listed above were also modeled with the previous period's toll rates (i.e. no toll rate increase) to estimate toll impacts and aid interpolation.

Table ES-2 provides a summary of annual traffic and revenue estimates for the DTR under the Preliminary Draft Toll Rate Schedule. In CY2011 total annual transactions are estimated at more than 99.9 million per year. This translates to annual toll revenues of about \$94.6 million in 2011.

By 2013, with Main Line and ramp toll increases, annual total transactions decrease to approximately 81.9 million per year. These transactions produce almost \$177.1 million in annual toll revenues. By 2018, annual transactions are expected to be 75.1 million per year generating annual toll revenues of \$246.4 million.

In 2023, annual total transactions number more than 74.0 million. In the same year, the amount of toll revenue generated is over \$320.0 million. By 2033, the forecasted annual toll revenues are \$489.3 million based on nearly 76.9 million annual transactions.

With this toll schedule, toll revenues are estimated to surpass a half billion annual dollars in 2035 and reach almost \$685m by 2050.

For the final report, once the future toll rate schedule has been specified to us, a series of sensitivity tests will be performed to test the potential impacts on revenue associated with hypothetical changes in certain assumptions or basic study inputs. These tests will cover a range of potential risk factors, such as alternative economic growth, lower values of time and gas price increases.

Table ES-2 Dulles Toll Road Traffic and Toll Revenue Estimates 2009-2050

Preliminary Draft Toll Rate Schedule							
Forecast Year	Calendar Year	ML/Ramp Tolls	Total Transactions	% p.a.	Total Revenue	% p.a.	Average <sup>1</sup> Revenue
-1	2009	\$0.75 / \$0.50	107,457,000	-2.0%	64,894,000	-1.1%	0.60
0	2010	\$1.00 / \$0.75	102,592,000	-4.5%	88,038,000	+35.7%	0.86
1	2011 <sup>2</sup>	\$1.25 / \$0.75	99,923,000	-2.6%	94,646,000	+7.5%	0.95
2	2012	\$1.50 / \$0.75	99,911,000	-0.0%	103,508,000	+9.4%	1.04
3	2013	\$2.75 / \$1.75	81,908,000	-18.0%	177,107,000	+71.1%	2.16
4	2014	\$2.75 / \$1.75	83,502,000	+1.9%	181,740,000	+2.6%	2.18
5	2015	\$2.75 / \$1.75	83,144,000	-0.4%	180,960,000	-0.4%	2.18
6	2016	\$2.75 / \$1.75	85,118,000	+2.4%	185,257,000	+2.4%	2.18
7	2017	\$2.75 / \$1.75	87,008,000	+2.2%	189,369,000	+2.2%	2.18
8	2018	\$4.00 / \$2.75	75,062,000	-13.7%	246,441,000	+30.1%	3.28
9	2019	\$4.00 / \$2.75	76,595,000	+2.0%	251,473,000	+2.0%	3.28
10	2020	\$4.00 / \$2.75	78,158,000	+2.0%	256,605,000	+2.0%	3.28
11	2021	\$4.00 / \$2.75	80,225,000	+2.6%	263,393,000	+2.6%	3.28
12	2022	\$4.00 / \$2.75	82,347,000	+2.6%	270,360,000	+2.6%	3.28
13	2023	\$5.00 / \$3.75	74,084,000	-10.0%	320,180,000	+18.4%	4.32
14	2024	\$5.00 / \$3.75	76,044,000	+2.6%	328,650,000	+2.6%	4.32
15	2025	\$5.00 / \$3.75	78,056,000	+2.6%	337,343,000	+2.6%	4.32
16	2026	\$5.00 / \$3.75	80,152,000	+2.7%	346,406,000	+2.7%	4.32
17	2027	\$5.00 / \$3.75	82,306,000	+2.7%	355,711,000	+2.7%	4.32
18	2028	\$6.00 / \$4.75	76,311,000	-7.3%	407,841,000	+14.7%	5.34
19	2029	\$6.00 / \$4.75	78,361,000	+2.7%	418,798,000	+2.7%	5.34
20	2030	\$6.00 / \$4.75	79,097,000	+0.9%	422,731,000	+0.9%	5.34
21	2031	\$6.00 / \$4.75	80,493,000	+1.8%	430,194,000	+1.8%	5.34
22	2032	\$6.00 / \$4.75	81,914,000	+1.8%	437,788,000	+1.8%	5.34
23	2033	\$7.00 / \$5.75	76,933,000	-6.1%	489,294,000	+11.8%	6.36
24	2034	\$7.00 / \$5.75	78,291,000	+1.8%	497,932,000	+1.8%	6.36
25	2035	\$7.00 / \$5.75	79,673,000	+1.8%	506,723,000	+1.8%	6.36
26	2036	\$7.00 / \$5.75	80,566,000	+1.1%	512,401,000	+1.1%	6.36
27	2037	\$7.00 / \$5.75	81,469,000	+1.1%	518,143,000	+1.1%	6.36
28	2038	\$8.00 / \$6.75	77,507,000	-4.9%	581,330,000	+12.2%	7.50
29	2039	\$8.00 / \$6.75	77,962,000	+0.6%	584,740,000	+0.6%	7.50
30	2040	\$8.00 / \$6.75	78,419,000	+0.6%	588,169,000	+0.6%	7.50
31	2041	\$8.00 / \$6.75	78,879,000	+0.6%	591,619,000	+0.6%	7.50
32	2042	\$8.00 / \$6.75	79,341,000	+0.6%	595,089,000	+0.6%	7.50
33	2043	\$9.00 / \$7.75	75,655,000	-4.6%	636,671,000	+7.0%	8.42
34	2044	\$9.00 / \$7.75	75,912,000	+0.3%	638,828,000	+0.3%	8.42
35	2045	\$9.00 / \$7.75	76,169,000	+0.3%	640,992,000	+0.3%	8.42
36	2046	\$9.00 / \$7.75	76,427,000	+0.3%	643,163,000	+0.3%	8.42
37	2047	\$9.00 / \$7.75	76,686,000	+0.3%	645,342,000	+0.3%	8.42
38	2048	\$10.00 / \$8.75	73,223,000	-4.5%	683,209,000	+5.9%	9.33
39	2049	\$10.00 / \$8.75	73,290,000	+0.1%	683,830,000	+0.1%	9.33
40	2050	\$10.00 / \$8.75	73,357,000	+0.1%	684,453,000	+0.1%	9.33

Notes:

<sup>1</sup> Average revenue per transaction.<sup>2</sup> Estimate for 2011