ITEM 9 - Information
June 18, 2008

Briefing on Two Versions of the draft 2008 CLRP, the FY 2009-2014 TIP (with and without Northern Virginia Transportation Authority (NVTA) Funded Projects), and the Related Air Quality Conformity Assessments

Staff Recommendation: Receive briefing on the two versions of the draft 2008 CLRP and FY 2009-2014 TIP (with and without NVTA funded projects), and the related conformity assessments. The Board is scheduled to approve one of these versions at its July 16 meeting.

Copies of the TIP document will be available at the TPB meeting and can be viewed at http://www.mwcog.org/clrp/projects/tip/fy0914.asp

Issues: None

Background: At the February 20 meeting, the Board approved the attached major projects submitted for inclusion in the air quality conformity assessment for the 2008 CLRP and FY 2009-2014 TIP. On April 16, the Board approved the attached contingency course of action which does not rely on NVTA funding for the conformity assessment for the 2008 CLRP and FY 2009-2014 TIP.

A public meeting on the development of the FY 2009-2014 TIP was held in conjunction with the Citizens Advisory Committee (CAC) on May 15. The draft CLRP, TIP and Air Quality Conformity Determination were released for public comment at the CAC meeting on June 12, 2008. Comments can be submitted on the COG web site at www.mwcog.org/transportation/public/comments.asp. The public comment period ends on July 12, 2008 and the TPB will be asked to act on these documents on July 18.

The CLRP website at www.mwcog.org/clrp. provides information on the proposed significant changes to the CLRP, existing projects in the 2007 CLRP, and the draft FY 2009-2014 TIP.

National Capital Region Transportation Planning Board
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M E M O R A N D U M

April 10, 2008

TO: Transportation Planning Board

FROM: Ronald F. Kirby
Director, Department of
Transportation Planning

SUBJECT: A Contingency Course of Action for the 2008 CLRP and FY 2009-2014 TIP Conformity Assessment

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Background

On February 20, 2008, the TPB approved a set of project submissions for inclusion in the air quality conformity assessment for the 2008 CLRP and FY 2009 -2014 TIP. The draft 2008 CLRP, TIP and conformity assessment are scheduled to be released for public comment in June and adopted by the TPB on July 16.

On February 29, the Virginia Supreme Court declared that the taxing ability of the Northern Virginia Transportation Authority (NVTA) was unconstitutional. Unless the Virginia General Assembly acts by June to restore this NVTA funding, certain projects approved by the TPB on February 20 for inclusion in the conformity assessment will have to be delayed or removed entirely from the 2008 CLRP and FY 2009 -2014 TIP. Due to the uncertainty of the NVTA funding for some of the projects approved by the TPB on February 20, we need a contingency course of action for the conformity assessment for the 2008 CLRP and FY 2009 -2014 TIP.

Original Course of Action

The original course of action utilizes the conformity inputs and schedule approved by the TPB at its February 20 meeting, including all of the NVTA funded projects and the BRAC projects. This conformity analysis will be ready to be released for public comment in June and adopted in July, along with the 2008 CLRP and FY 2009 -2014 TIP. By June, we will know if the NVTA funding has been restored by the Commonwealth. If this funding has been restored, the TPB will be able to proceed in accordance with the original conformity analysis and schedule. If not, we will need a contingency course of action.

Contingency Course of Action

The TPB needs to adopt an FY 2009 -2014 TIP in July so the VDOT portion of the TIP can be included in the FY 2009 VDOT State Transportation Improvement Program (STIP). VDOT did not develop a FY 2008 STIP and is currently working on having a new FY 2009 STIP approved by the FHWA and FTA by September of this year when the current STIP expires. DDOT and MDOT also need to be able to proceed with an FY 2009-2014 TIP in accordance with the original schedule. In order to accomplish these objectives, the contingency course of action will have two components:

(1) Utilizing the conformity determination for the 2007 CLRP and FY 2008-2013 TIP approved by the TPB in January 2008, create an FY 2009-2014 TIP that can be released for public comment in June and adopted in July. This TIP will not include any of the project updates affecting conformity that were submitted for the 2008 CLRP and FY 2009 -2014 TIP conformity assessment, but will include all project funding and timing changes that do not affect conformity. Adopting this FY 2009 - 2014 TIP in July will allow VDOT to meet the September deadline to have a FY 2009 STIP adopted for the state, and will also allow DDOT and MDOT to proceed with a FY 2009 -2014 TIP on the original schedule.

(2) Remove from the proposed 2008 CLRP and FY 2009 -2014 TIP those project inputs approved by the TPB in February which are dependent on NVTA funding and for which full funding may no longer be reasonably expected to be available. The TPB will be asked to approve this list of changes to the project submissions for the conformity assessment of the 2008 CLRP at its April 16 meeting. This conformity assessment, the 2008 CLRP and amended FY 2009 -2014 TIP will be ready for public release in September, and for adoption by the TPB in October. Once the conformity determination for the 2008 CLRP and amended FY 2009-2014 TIP is approved by FHWA and FTA (likely in early December), DDOT, MDOT and VDOT will be able to amend their FY 2009 STIPs to incorporate updates, changes and new projects.

National Capital Region Transportation Planning Board

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MEMORANDUM

June 11, 2008

To: Transportation Planning Board

From: Michael J. Clifford
Systems Planning Applications Director

Subject: Air Quality Conformity Assessment for the 2008 Update of the Constrained Long Range Plan (CLRP) and FY2009-2014 Transportation Improvement Program (TIP); Comments and Responses to Comments

INTRODUCTION

This memo documents summary results of the air quality conformity assessment of the 2008 CLRP and the FY2009-2014 TIP with respect to ozone season and fine particle (PM2.5) pollutants, and wintertime carbon monoxide (CO). The results have been presented to the TPB Technical Committee for review and comment. A public comment period for the Plan, TIP, and conformity assessment begins at the June 12, 2008 TPB Citizens Advisory Committee meeting and ends on July 12, 2008.

Conformity assessment criteria vary by pollutant. Tests include adherence to mobile source emissions budgets in the case of ozone season pollutants (VOC and NOx) and CO, and a demonstration that forecast year PM2.5 (including both directly emitted PM2.5 and precursor NOx) emissions are not greater than base year 2002 emissions. One hour ozone precursor mobile emissions budgets are taken from the Metropolitan Washington Air Quality Committee (MWAQC)'s Severe Area State Implementation Plan (SIP) (1-hour ozone non-attainment area) document, Plan to Improve Air Quality in the Washington, DC-MD-VA Region, February 19, 2004. In addition, last year MWAQC completed the development of the 8-hour ozone SIP with new mobile emissions budgets, which also correspond to a different geographic area (relevant planning areas are shown in Exhibit 1) Similarly, in March 2008 MWAQC approved, and the state air agencies subsequently submitted to EPA, the region's PM2.5 Attainment Plan. Adherence to both the 8-hour ozone and PM2.5 budgets is also documented in this report, even though EPA has not yet acted upon them.

BACKGROUND

On February 20, 2008 the TPB approved the scope of work and the project submissions for inclusion in the conformity analysis for the year 2008 update of the CLRP and FY2009-2014 TIP. Key technical inputs to the analysis included: Round 7.1 Cooperative Forecasts; the Version 2.2 Travel Demand Model utilizing the new project submissions, and reflecting updated transit service; EPA's Mobile6.2 Emissions Factor Model with use of 2005 vehicle registration data for

all jurisdictions, use of hourly temperatures, relative humidity, barometric pressure and NOx rebuild effects.

Staff proceeded with the technical analyses described below to ascertain whether the draft plan and program would meet the specific conformity criteria.

WORK ACTIVITIES

Technical work activities for the conformity assessment of the 2008 CLRP and FY2009-2014 TIP included the preparation of volatile organic compound (VOC), nitrogen oxide (NOx), and PM2.5 emissions inventories for specified forecast years associated with the plan and program (forecast years: 2009, 2010, 2020 and 2030). Wintertime carbon monoxide (CO) analyses for conformity were also conducted for the three later forecast years. While ozone season pollutants (VOC and NOx) and wintertime CO are inventoried for average weekday conditions, precursor NOx and direct PM2.5 are inventoried to reflect emissions on a yearly total basis. Accordingly, staff applied seasonal adjustment factors to convert daily travel (annual average weekday traffic or AAWDT) to annual values.

These inventories address a primary conformity assessment criterion to demonstrate that emissions associated with the plan and program adhere to the established mobile source emissions levels. In anticipation of possible emissions increases associated with implementation of the plan and program, staff (in conjunction with the TPB Technical Committee and its Travel Management Subcommittee) conducted parallel analyses of committed and potential new transportation emissions reduction measures (TERM)s, and documented emissions benefits for each analysis year.

Plan Amendments and Program Elements

There have been some new projects and changes advanced for the CLRP / TIP in this year's approval cycle. Attachment A presents a listing of significant new projects or changes to existing major projects since the 2007 CLRP and the FY2008-2013 TIP were approved by the Board on January 16, 2008.

Land Activity Forecasts

This exercise included use of the Round 7.1 Cooperative Forecast data, which was originally approved for use in the 2007 CLRP air quality conformity analysis. The Round 7.1 data reflect not only the forecast small area land use distributions throughout the Washington area, but also the latest planning assumptions for areas outside the Washington region. For example, the Baltimore land use input to Round 7.1 reflects the Baltimore Metropolitan Council's 'Round 7' adopted figures.

Travel Modeling Process

For this conformity analysis staff used TPB's travel demand model, Version 2.2, with updated toll calculation capabilities. Using the Version 2.2 model, COG/TPB staff prepared travel demand forecasts for each of the required forecast years. Exhibit 1 presents the geographic areas for travel modeling and for emissions reporting for each non-attainment area. Exhibit 2 presents the resulting average weekday transit trips, vehicle trips, and vehicle miles traveled (VMT) results through time for each conformity analysis year, for the full modeled area.

Emissions Factors

Staff developed motor vehicle emissions factors through execution of EPA's MOBILE6.2 emissions factor model. These rates for each pollutant, shown for NOx using Fairfax County freeway data as an illustration in Exhibit 3, were developed following execution of the model in one mph speed increments, by jurisdiction, for each analysis year. The chart shows significantly reduced rates through time, primarily due to the impacts of having cleaner fuel and vehicles in the fleet. Exhibit 4 presents direct PM2.5 emissions rates through time for each of the three seasons; data are arrayed in a bar chart since these emissions rates do not vary by vehicle speed.

Emissions Analyses

Mobile Emissions Inventories

Ozone Season and Wintertime CO – Daily Emissions

Prior to calculation of daily mobile source emissions, the above (AAWDT) travel forecasts produced through the travel demand modeling process were first factored by seasonal adjustments (a 1.05 ozone season factor or a 0.97 winter season factor) to yield VMT appropriate to each season being analyzed. Staff then applied the appropriate Mobile6.2 emissions factors to the travel demand forecasts to prepare mobile source emissions inventories for each forecast year. These emissions results for ozone season pollutants are summarized in Exhibits 5 - 8 and indicate total VOC and NOx emissions for each analysis year. The charts show dramatic reductions throughout the period. Historical emissions reductions from the clean air act amendments 1990 base have been well documented in the past; 2030 VOC and NOx emissions represent about 12 and one half percent and less than 10 percent, respectively, of their 1990 levels. The results reflect the impact of the cleaner fuel / fleet and related programs, in conjunction with slowing VMT growth rates through time.

PM2.5 – Yearly Emissions

To develop the yearly total PM2.5 emissions, travel and emissions were estimated throughout the year by applying (three) seasonal factors to the primary travel data, followed by applying emissions rates for each of the seasons, and summarizing to obtain yearly totals. Direct PM2.5 and precursor NOx emissions, shown in the Exhibit 9 bar chart, exhibit similar dramatic reductions through time despite increases in vehicle trips and VMT in the forecast years. These reductions are also largely attributable to Tier II vehicle standards, cleaner fuels, and the heavy duty engine rule, and continue to generate additional emissions reductions through time as fleet turnover replaces older vehicles / truck engines with much cleaner ones.

Plan and Program Emissions Versus Emissions Budgets

Reference to Exhibits 5 – 9 provides a comparison of emissions levels associated with the CLRP and TIP to the maximum allowable for each pollutant. Net emissions for each forecast year are shown in comparison to emissions budgets, and are seen to be within the mobile budgets for all forecast years. Wintertime CO emissions (contained in a full technical report but not summarized here) follow these same general trends and are easily within the CO emissions budget level.

Exhibit 9 shows that both direct PM2.5 and precursor NOx emissions are much lower than base year 2002 conditions and are within the new mobile budgets, for all forecast years, satisfying this

additional conformity assessment criterion for PM2.5. In view of the fact that estimated emissions are within the mobile source budget for each pollutant, no additional transportation emissions reduction measures are required to demonstrate conformity.

SUMMARY

The analytical results described in this air quality assessment provide a basis for a determination by the TPB of conformity of the 2008 CLRP and the FY2009-2014 TIP.

Following: Exhibits 1-9
Attachments A

EXHIBIT 1
Washington, D.C. - Maryland - Virginia
Planning Areas

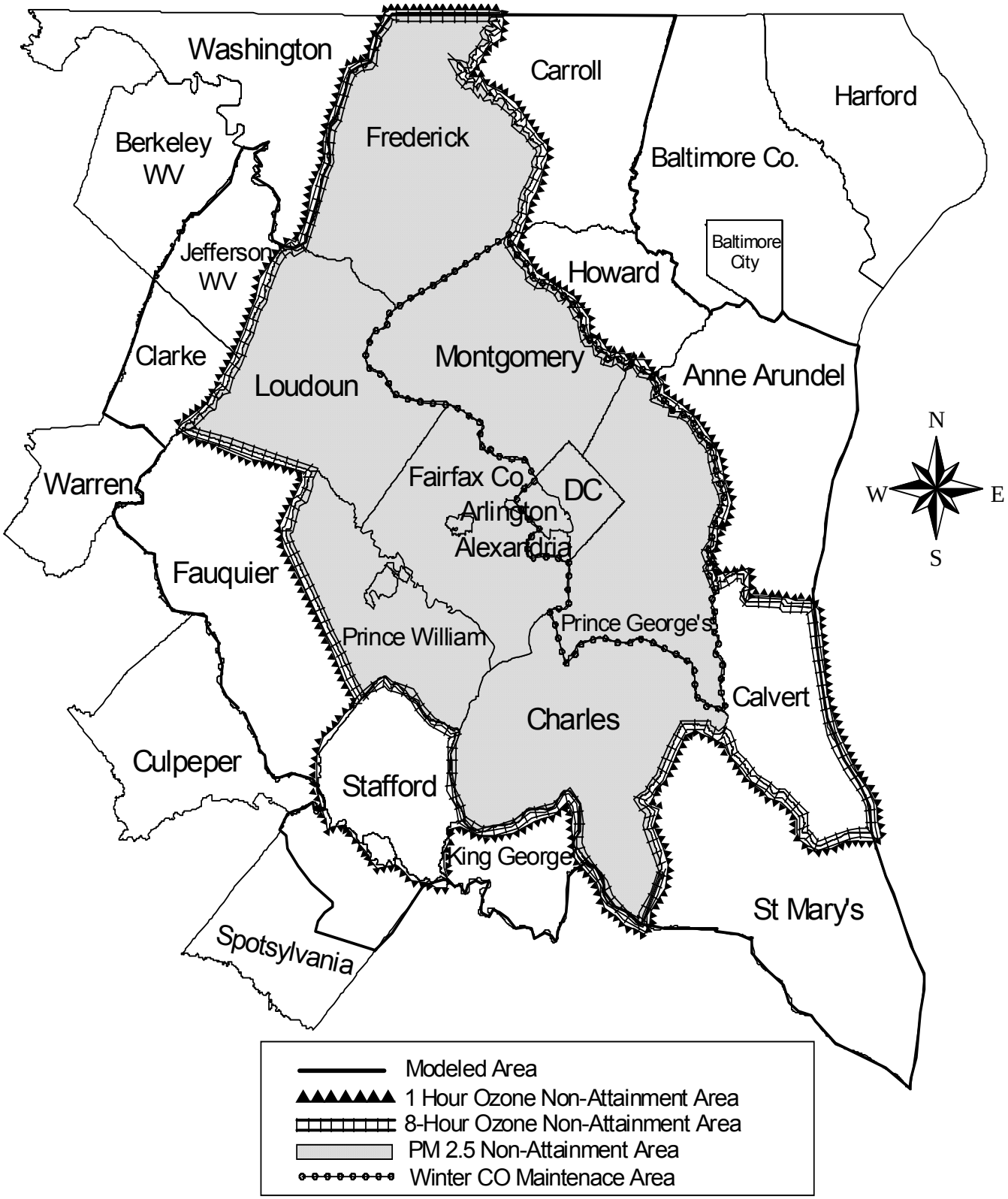


Exhibit 2

Travel Demand Summary
Modeled Area Trips and Vehicle Miles Traveled (000's)
Annualized Average Weekday Traffic (AAWDT)

	2002	2009	2010	2020	2030
Transit Trips	1,058.9	1,132.5	1,163.4	1,406.8	1,516.1
Vehicle Trips	19,551.8	22,234.4	22,552.9	25,496.0	27,711.8
VMT	146,488.4	162,135.4	165,612.7	187,908.9	200,227.7

Adjustment Factors to Convert AAWDT to Appropriate Season:

Ozone Season AWDT: 1.05

Winter Season AWDT: 0.97

PM2.5 Annual:

Season (ADT)	Factor
Season 1 (Jan- Apr)	0.9216
Season 2 (May- Sept)	0.9873
Season 3 (Oct- Dec)	0.9282

NOTE: AWDT reflects a five day average
ADT reflects a seven day average

Exhibit 3
2002-2030 NOx COMPOSITE MOBILE6.2 ARTERIAL RUNNING EMISSION RATES FOR FAIRFAX COUNTY

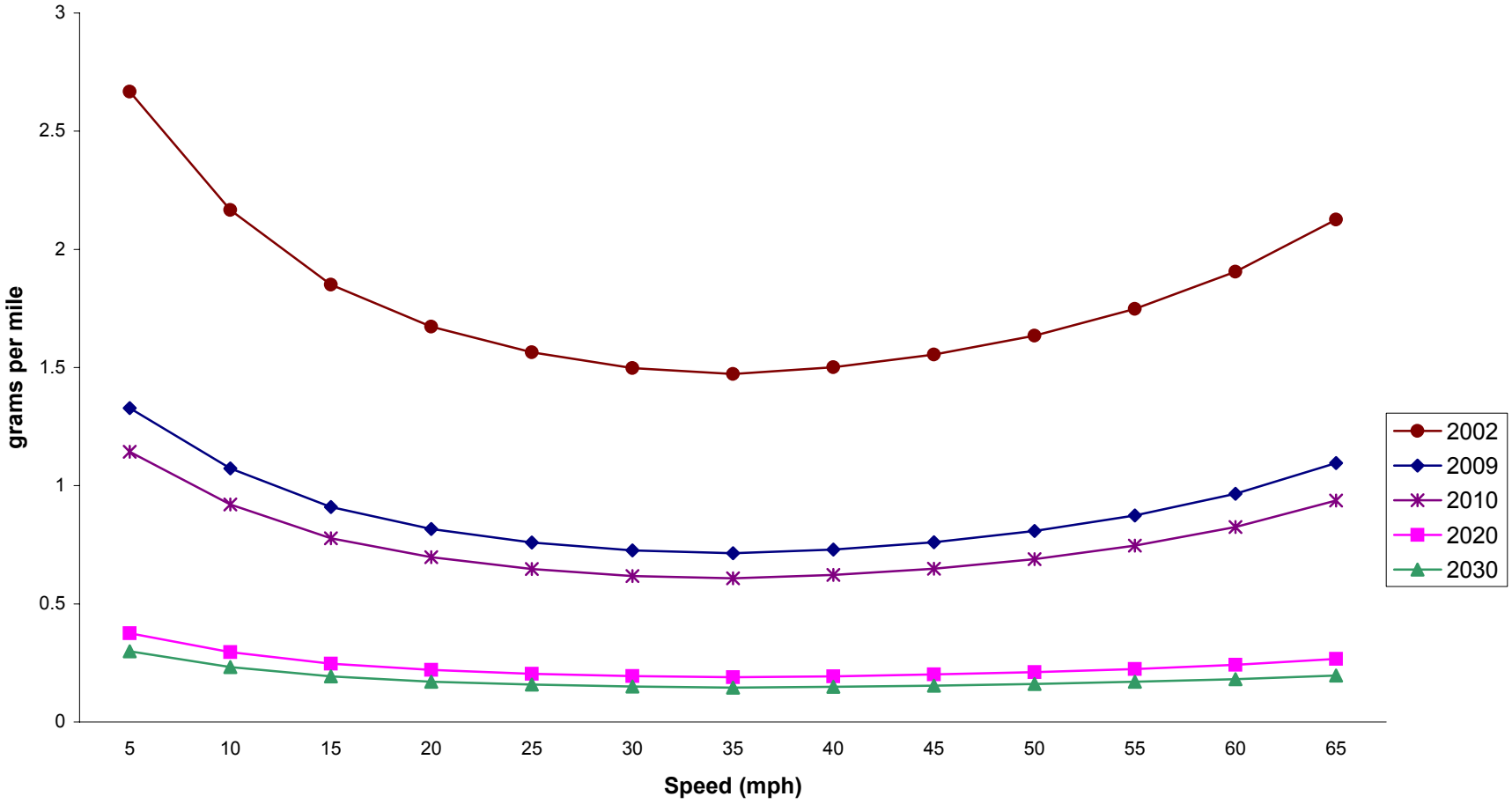


Exhibit 4
DIRECT PM2.5 EMISSION RATES FOR FAIRFAX COUNTY (MAJOR ROADS NETWORK)

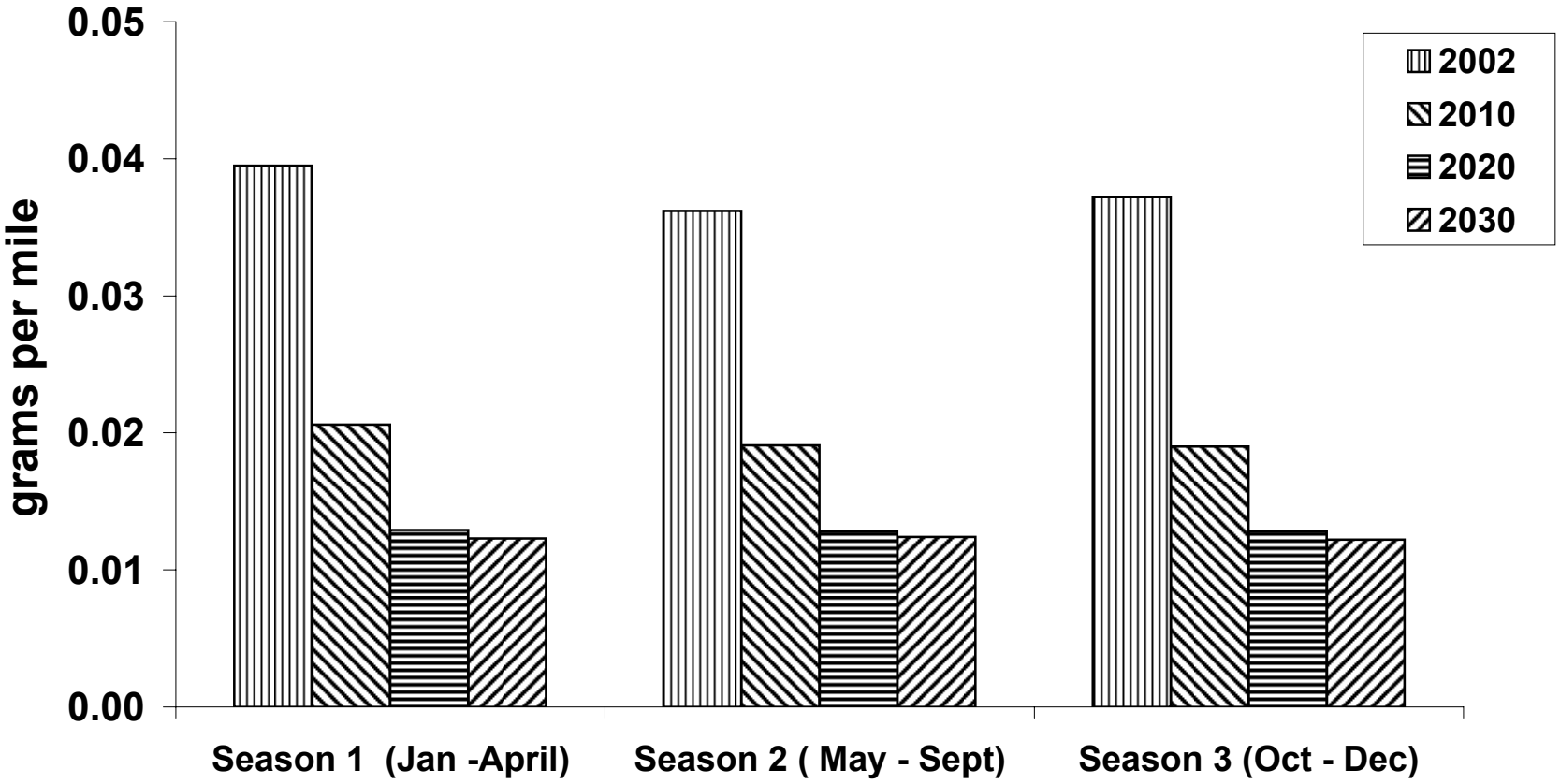


EXHIBIT 5
Mobile Source VOC Emissions for the 1-Hour Ozone Nonattainment Area 2008 CLRP and FY 2009-2014 TIP

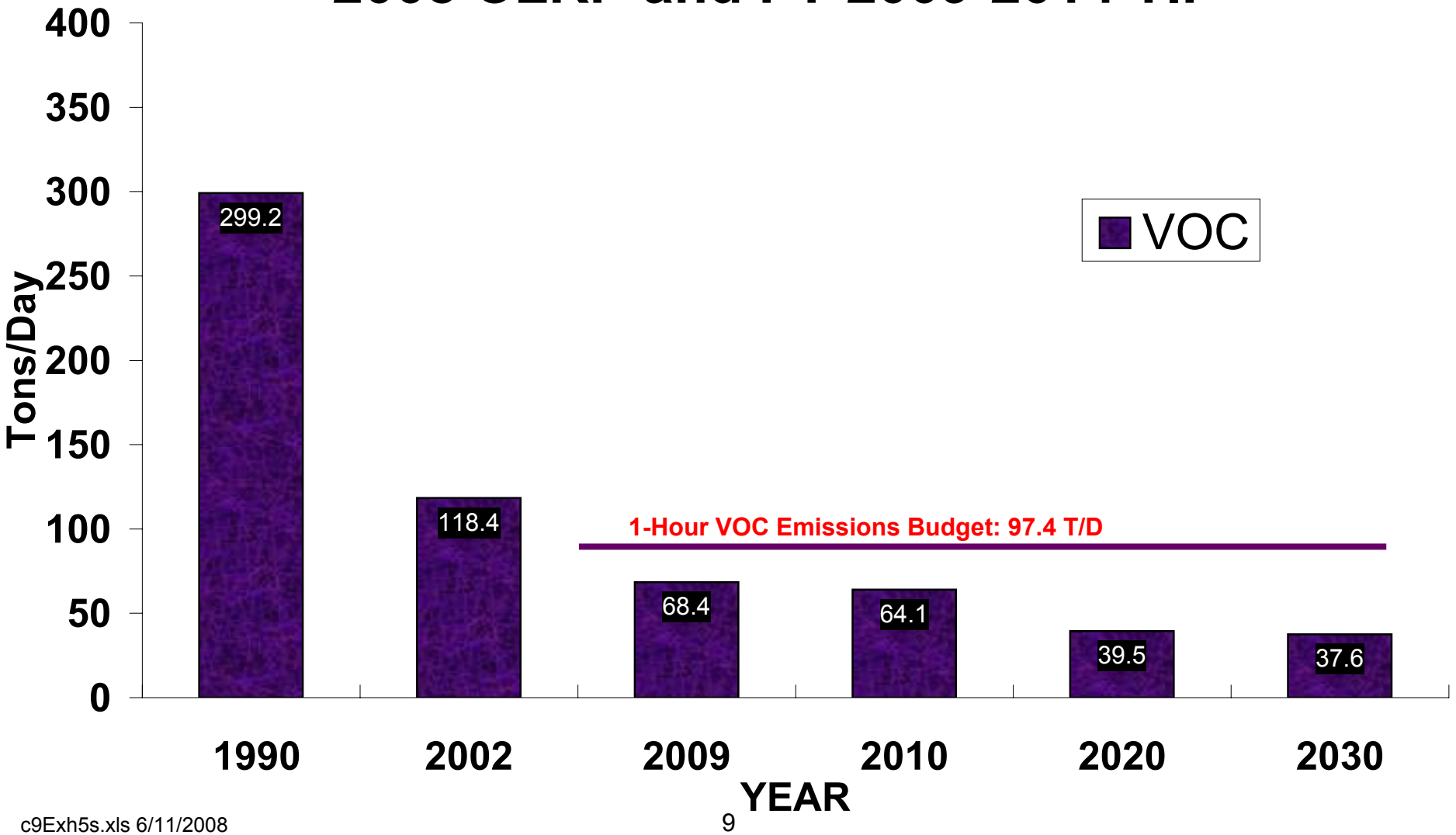


EXHIBIT 6
Mobile Source VOC Emissions for the 8-Hour Ozone Nonattainment Area 2008 CLRP and FY 2009-2014 TIP

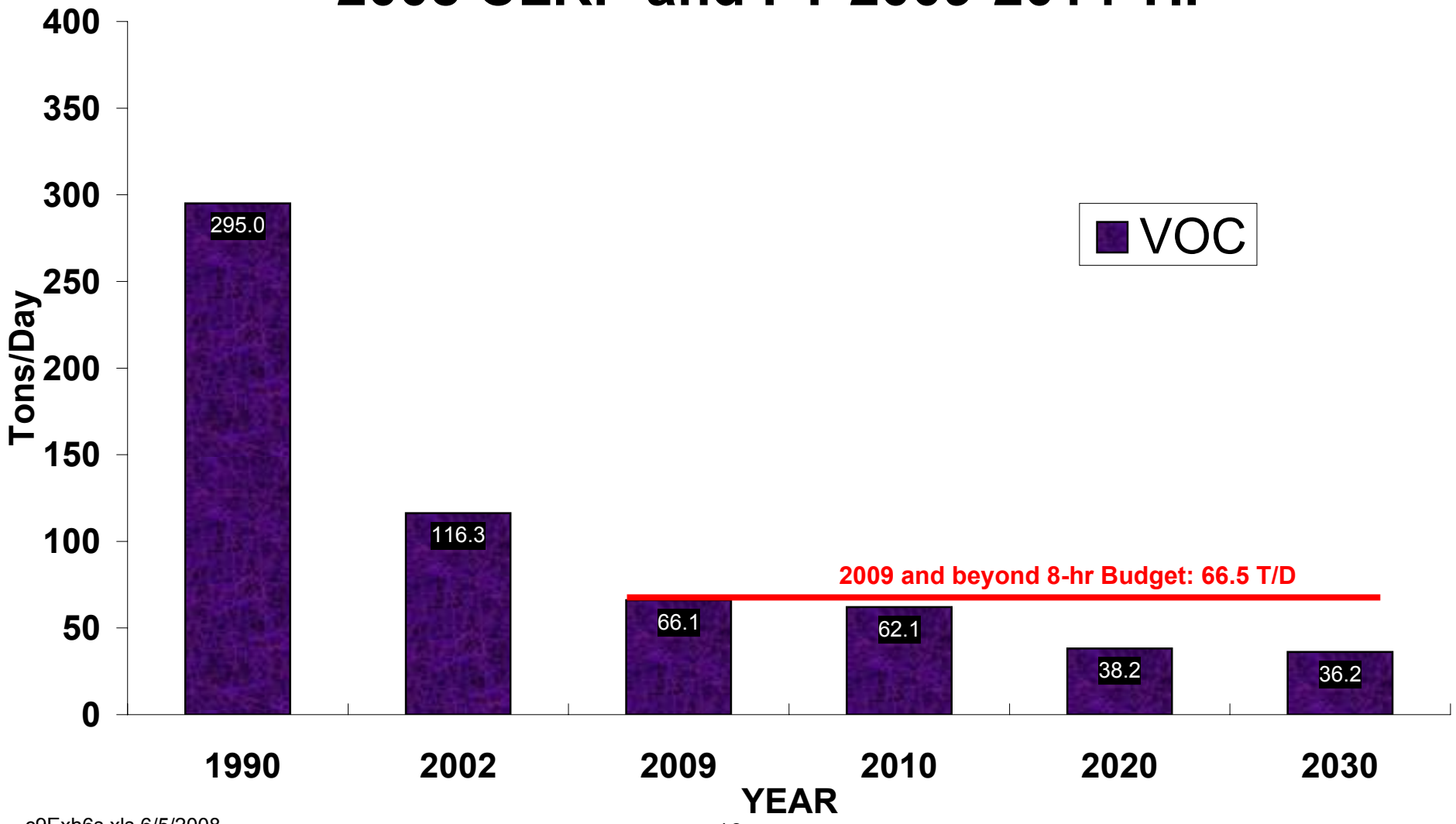


EXHIBIT 7
Mobile Source NOx Emissions for the 1-Hour Ozone Nonattainment Area 2008 CLRP and FY 2009-2014 TIP

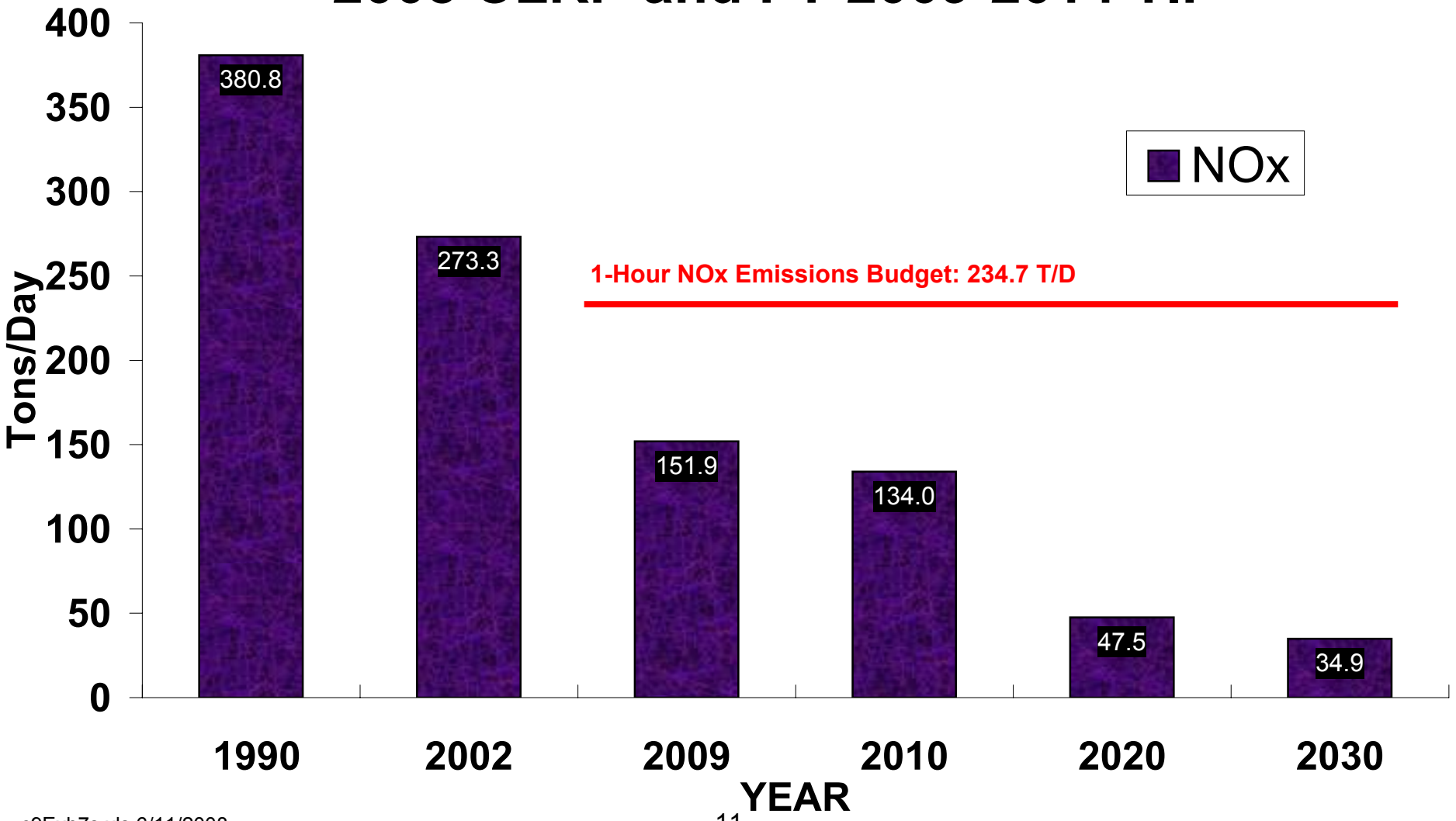
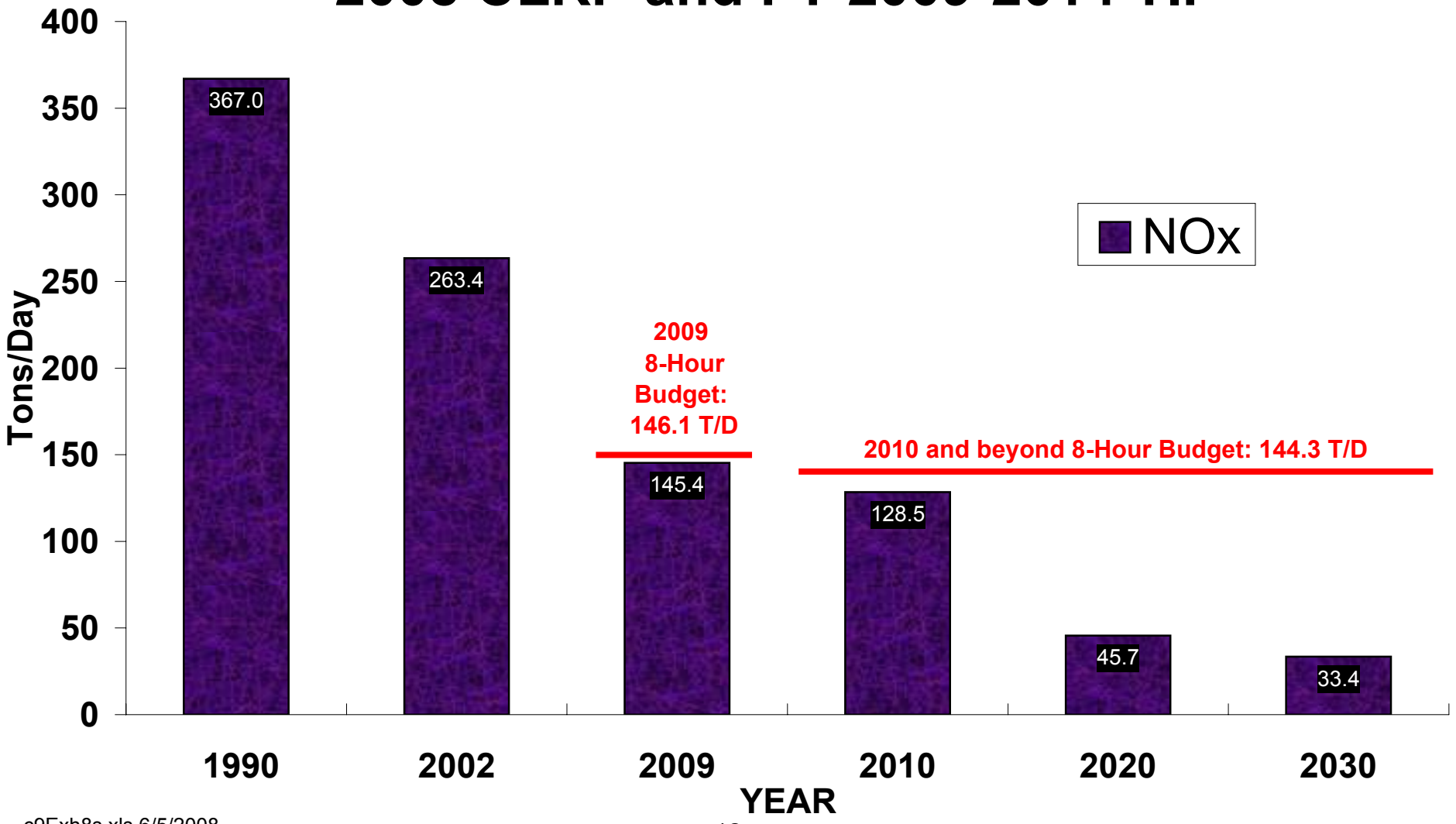
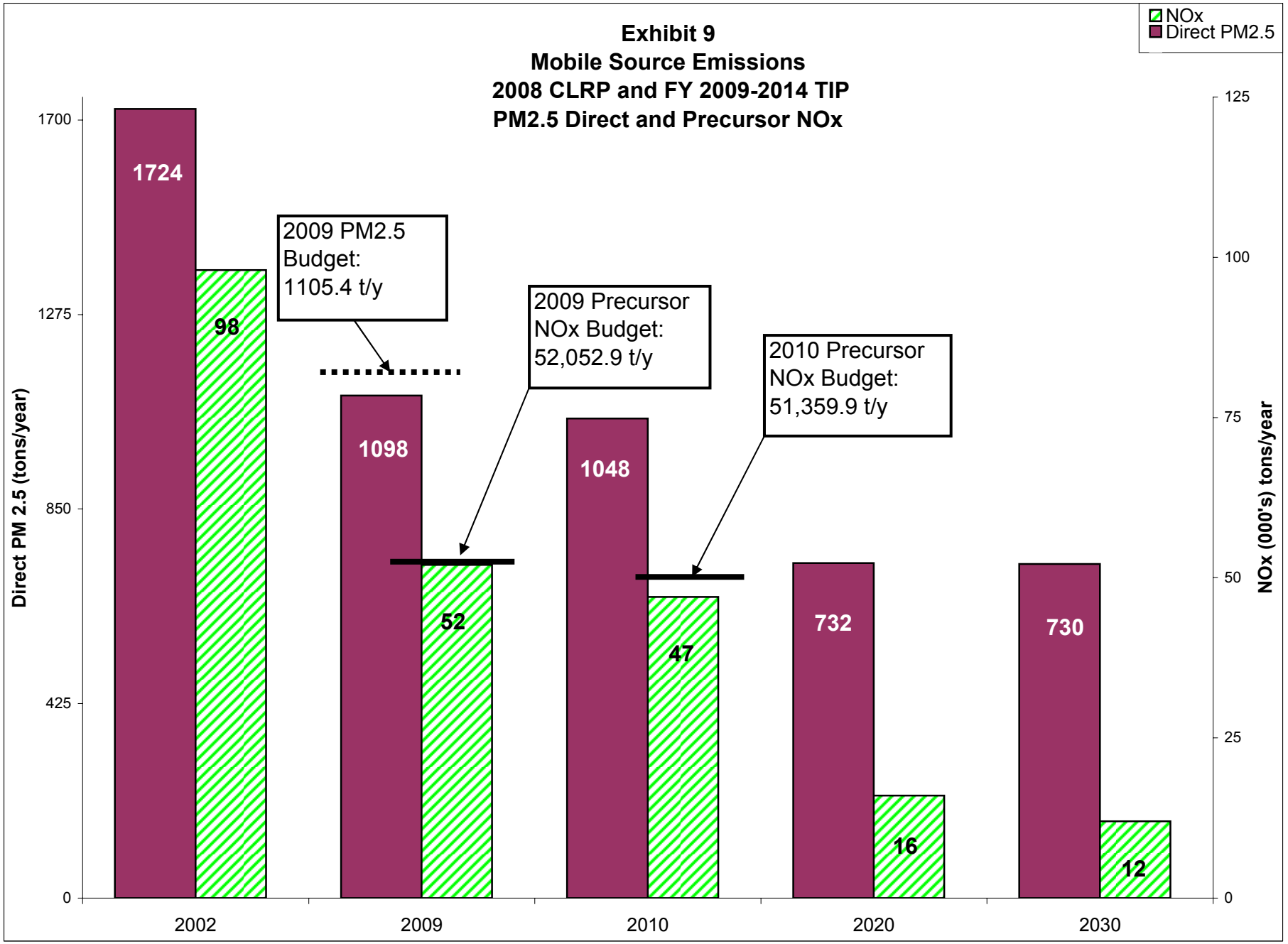


EXHIBIT 8
Mobile Source NOx Emissions for the 8-Hour Ozone Nonattainment Area 2008 CLRP and FY 2009-2014 TIP



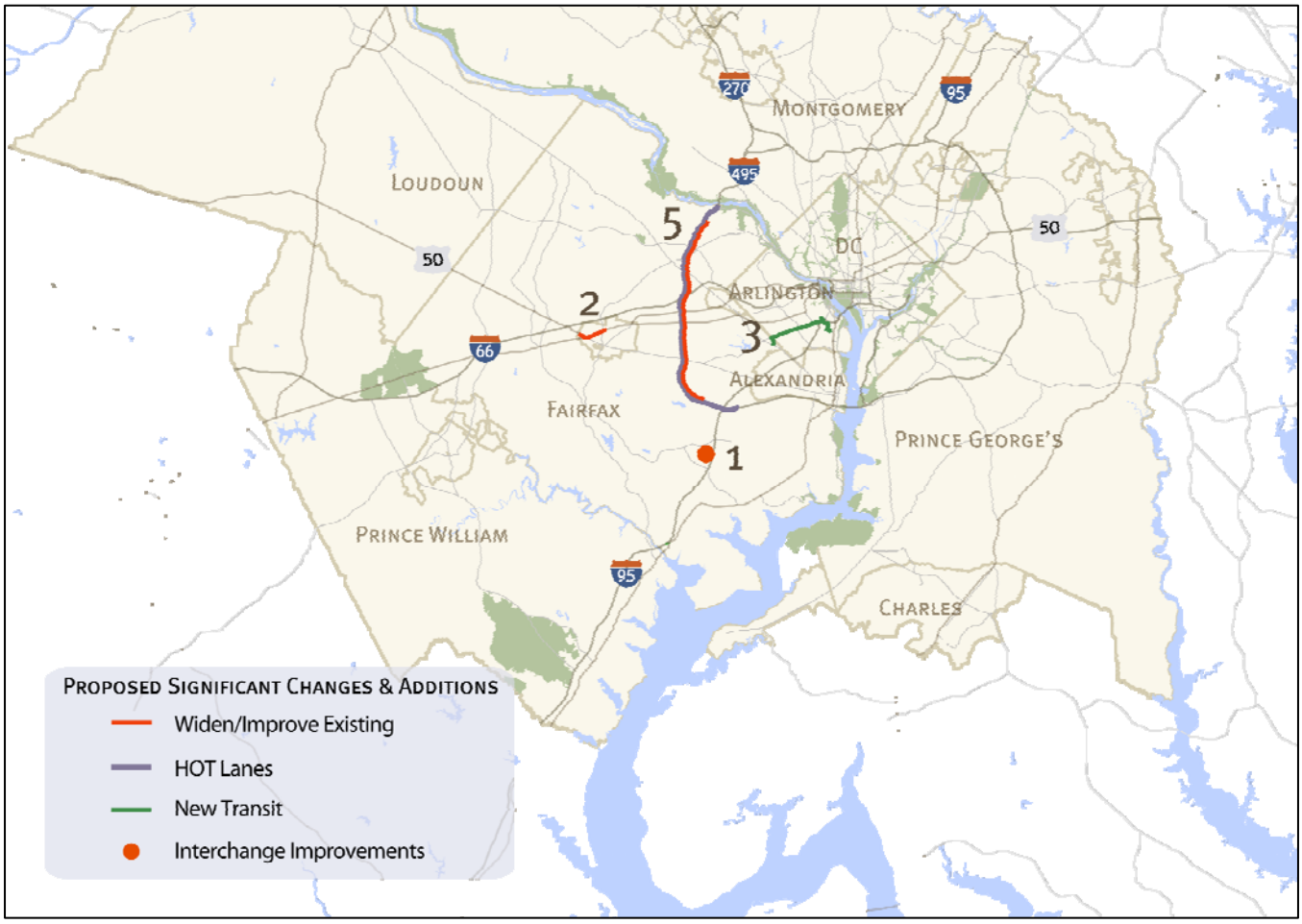


NOTE: The 2009 Precursor NOx emission total is 51,740.6 tons/year

ATTACHMENT A

Significant Additions and Changes to The 2008 Update to the Financially Constrained Long-Range Transportation Plan (CLRP)

Figure 1: Significant Additions and Changes to the 2008 Update to the CLRP



Significant Additions to the CLRP

1. Access to Ft. Belvoir Engineering Proving Grounds (EPG): I-95 and Fairfax County Parkway (BRAC)
2. Widen Segments of US 50 between Eaton Place and Jermantown Road Within the City of Fairfax
3. Columbia Pike Streetcar From Skyline to Pentagon City
4. Fairfax Connector Service Transit Development Plan (Not shown on map)

Significant Changes to the CLRP

5. I-495 Capital Beltway HOV-HOT Lanes
6. I-95/395 HOV-HOT-Bus Lanes Transit Plan Revisions (Not shown on map)

Significant Additions to the CLRP

1. Access to Ft. Belvoir Engineering Proving Grounds (EPG): I-95 and Fairfax County Parkway (BRAC)

Two projects have been proposed to meet expected demand at the Fort Belvoir EPG due to the Base Realignment and Closures (BRAC) act.

A. I-95 Access to Fort Belvoir includes the following improvements:

- Widen the existing ramp from southbound I-95 to the Fairfax County Parkway and EPG southern loop road with an additional barrier-separated lane, providing dedicated access to the EPG for DOD personnel only.
- A new reversible, single-lane approach bridge from the northbound HOV/Bus/HOT lanes to the EPG's southern loop road. This connection will provide access from the northbound I-95 HOV lanes in the morning. In the evening, access will reverse to the northbound I-95 general purpose lanes and the southbound HOV lanes.

Complete: 2011, 2013
Cost: $28.8 million
Source: Federal funding

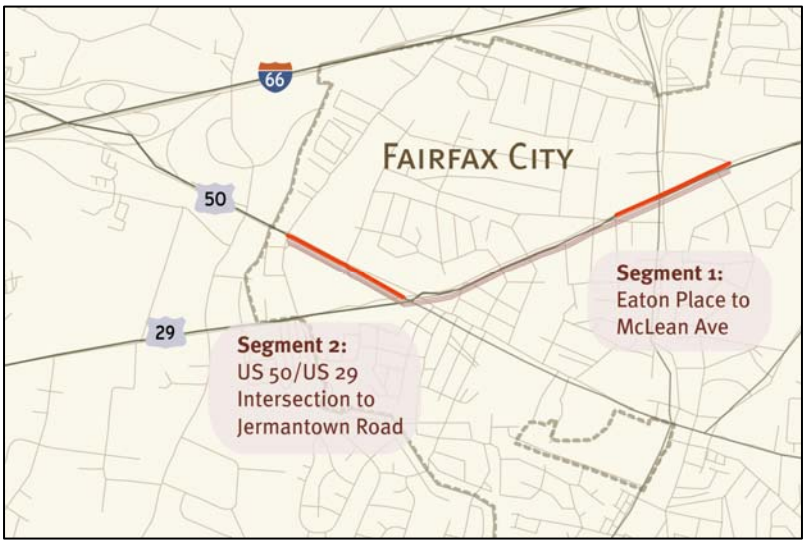
B. Fairfax County Parkway Access to Fort Belvoir

- A one-lane ramp from the EPG Access Road to northbound Fairfax County Parkway and a two-lane ramp from the Access Road to southbound Fairfax County Parkway. The proposed ramps will connect to the proposed interchange at Rolling Road, which is already included in the CLRP.

Complete: 2011
Cost: $6.8 million
Source: Federal funding

2. Widen Segments of US 50 between Eaton Place and Jermantown Road Within the City of Fairfax

Widen two segments of US 50 from Eaton Place to McLean Avenue and from the VA 236/VA 29 to Jermantown Road from four to five lanes. Project will also include pedestrian improvements and support the development of express shuttle service to the Vienna/Fairfax-GMU Metrorail Station and other circulator shuttle services to connect activity centers.

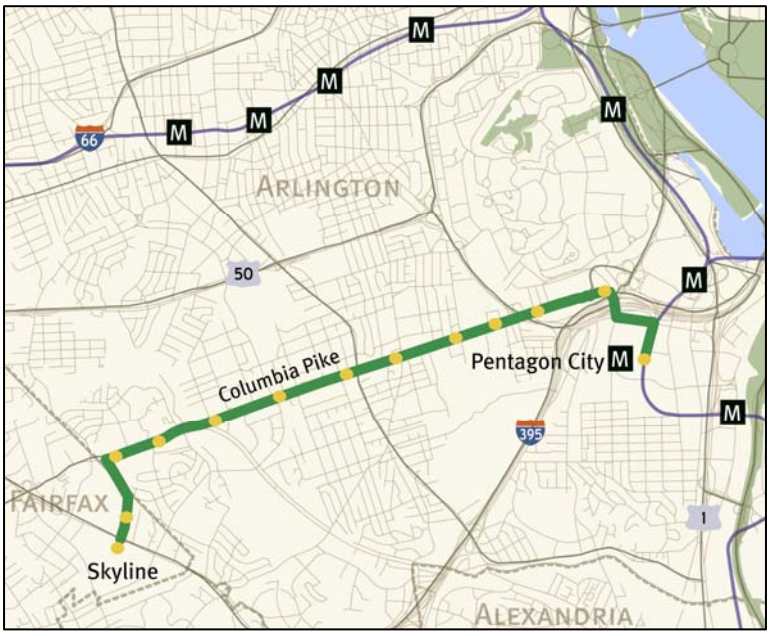


Length: 5 miles
Complete: 2009

Cost: $2 million
Source: Local funding

3. Columbia Pike Streetcar From Skyline to Pentagon City

Design, construct and operate a streetcar system running approximately 4.7 miles between Pentagon City in Arlington County and Skyline in Fairfax County. For most of the route, streetcars will travel in mixed traffic.



Length: 4.7 miles
Complete: 2014
Cost: $138.5 million
Source: State and local funding

4. Fairfax Connector Service Transit Development Plan

Not shown on map.

Increase bus service on priority routes and purchase 76 new Fairfax Connector buses. Expand the West Ox Bus Operations Facility to accommodate new buses and increased service. Also includes bus stop access and safety improvements identified as part of the Bus Stop Inventory and Safety Study.

Complete: 2010
Cost: $91.9
Source: Local funding

Significant Changes to the CLRP

The following projects are included in the 2007 CLRP, but significant changes have been proposed for the 2008 CLRP.

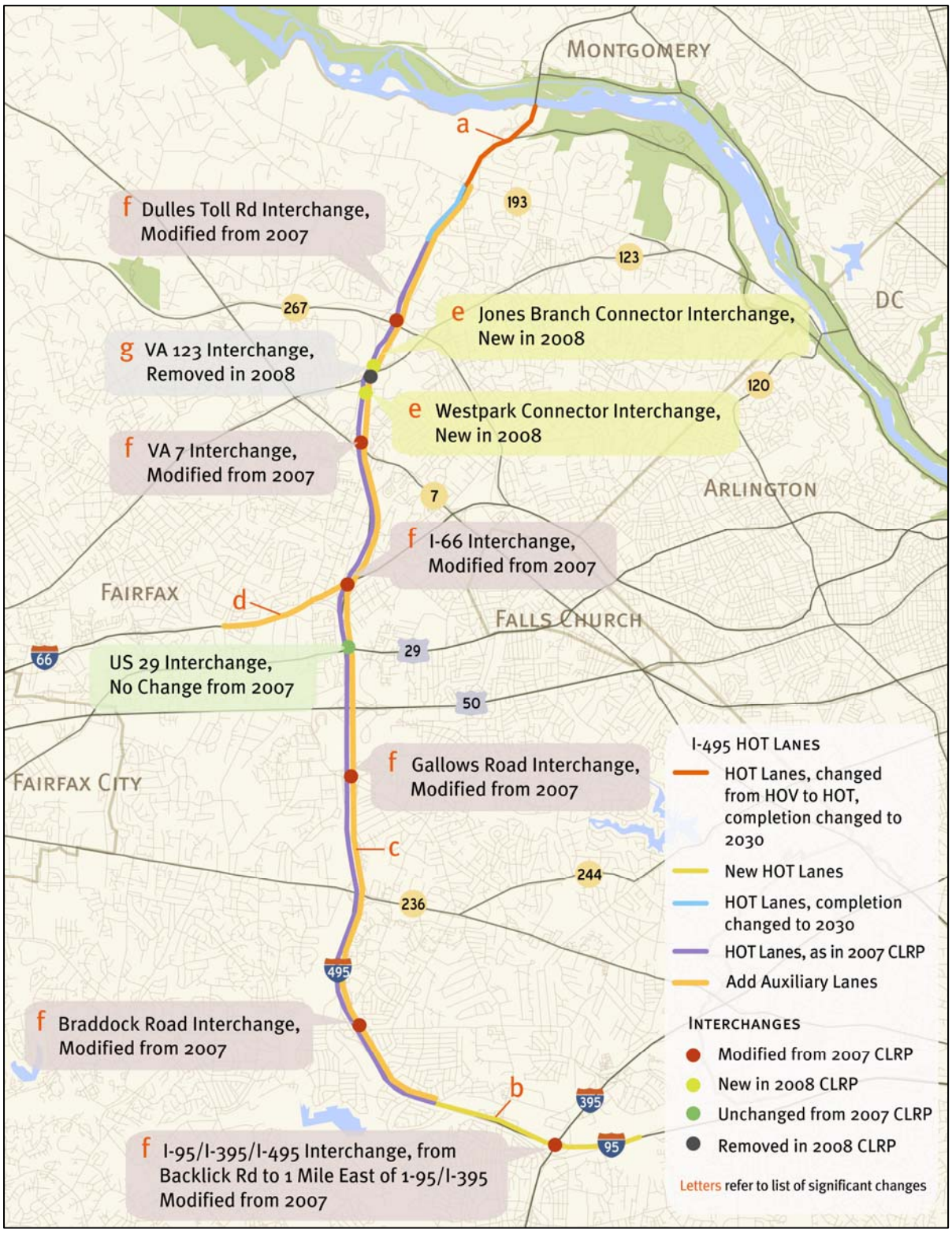
5. I-495 Capital Beltway HOV-HOT Lanes

The 14 mile stretch of HOV-HOT Lanes on the Capital Beltway between Backlick Road and Old Dominion Drive is scheduled to be complete in 2013. The following changes have been proposed for the Capital Beltway HOT-HOV Lanes Project, as shown in the figure on the following page:

a) The northern terminus of the HOT lanes will extend 2 lanes from Georgetown Pike to the American Legion Bridge. These were previously planned as HOV lanes to be complete in 2015 and are now proposed as HOT lanes to be complete in 2030.
   A 4 lane stretch of HOT lanes from Georgetown Pike (193) to Old Dominion Drive will be complete in 2030 instead of 2013.
b) The southern terminus of the HOT lanes has been extended to include 2 HOT lanes from the Hemming Avenue underpass to one mile east of the I-95/395/495 Interchange. This segment is scheduled to be completed by 2013.
c) One additional general purpose auxiliary lane from Georgetown Pike to the Hemming Avenue underpass will be added in each direction to connect the on-ramps and off-ramps between interchanges.
d) Auxiliary lanes will be added on eastbound and westbound I-66 between the I-495 interchange and Cedar Lane (see accompanying CLRP description Form for details).
e) Two new interchanges are planned at the westbound Jones Branch Connector and the westbound WestPark Connector.
f) Planned HOT lane interchanges at the Dulles toll Road, VA 7, I-66, Gallows Road, Braddock Road and I-95/395 will be modified (see accompanying CLRP Description Form for details).
g) A planned HOT lane interchange at VA 123 is being removed from the project scope.

Length: 14 miles
Complete: 2013, 2030
Cost: $1.619 billion
Source: Federal, state, private and bond funding

Proposed Changes to the I-495 Capital Beltway HOV-HOT Lanes Project for the 2008 CLRP



6. I-95/395 HOV-HOT-Bus Lanes Transit Plan Revisions

Not shown on map.

The Transit Plan for the I-95/395 HOT Lanes project has been revised to reflect the results of the Transit/Transportation Demand Management (TDM) Study conducted by the Virginia Department of Rail and Public transportation (DRPT) and the Technical Advisory Committee. The following significant changes have been proposed for the Transit Plan. Full details can be found in Attachment A to the accompanying CLRP Description Form).

- The Transit/TDM plan's cost and revenue estimates have been revised to reflect the revised transit investment strategy for the corridor.
    - Earlier capital investments of $76 million revised to $152 million to reflect increased investment into transit facilities
    - Earlier operating expenses of $314 million revised to $245 million to reflect revised service plan, service duration and fare box recovery

- Greater level of improvement/investment into transit facilities.
    - 3 new transit stations along the corridor
    - Improvements at 4 VRE stations – platform extension and overnight storage
    - 9 new or enhanced TDM initiatives
    - 3,750 park and ride spaces in addition to the 3,000 proposed earlier
    - 3 new/improved transit centers instead of 1 bus maintenance facility
    - 76 new buses and 6 VRE rail cars instead of 184 new buses