ITEM 10 - Action
January 19, 2005

Approval of Solicitation Document for the
2005 Constrained Long Range Plan (CLRP) and the
FY2006-2011 Transportation Improvement Program (TIP)

Staff Recommendation: Approve the final solicitation document for the 2005 CLRP and the FY2006-2011 TIP for distribution to state, regional, and local agencies.

Issues: None

Background: The Board was briefed on the draft document, which is an updated version of last year's document, at its December 15, 2004 meeting. At this meeting, Chairman Mendelson asked that the document include three priority areas related to the TPB Vision for consideration by the implementing agencies when submitting projects, proposals, and strategies to be included in the 2005 CLRP and new TIP. The three priority areas are on page 1-17 of the document.

The TPB Technical Committee reviewed the document on December 3, 2004 and January 7, 2005, and recommended that it be approved by the Board. The proposed schedule for the 2005 CLRP, the new TIP, and the air quality conformity determination, is on page v.

DRAFT

SOLICITATION DOCUMENT FOR

THE YEAR 2005 CONSTRAINED LONG-RANGE PLAN

AND

THE TRANSPORTATION IMPROVEMENT PROGRAM FOR FY 2006-2011

January 19, 2005

METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS
NATIONAL CAPITAL REGION TRANSPORTATION PLANNING BOARD

TABLE OF CONTENTS

SECTION 3: PROJECT SUBMISSION INSTRUCTIONS

APPENDICES

List of Figures

List of Tables

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PROPOSED YEAR 2005 CLRP AND FY 2006-2011 TIP
AIR QUALITY CONFORMITY SCHEDULE

*December 15, 2004	TPB Reviews Draft Solicitation Document
*January 19, 2005	TPB Releases Final Solicitation Document
February 4, 2005	DEADLINE: Implementing Agencies Complete Electronic Submissions of Project Information to staff --including CMS, CLRP, and TIP Data.
February 10, 2005	CLRP and TIP Project Submissions for inclusion in the Air Quality Conformity Analysis and Draft Scope of Work Released for Public Comment and Inter-Agency Review
*February 16, 2005	TPB Reviews Project Submissions and Scope of Work
March 13, 2005	Public Comment Period Ends for Project Submissions and Scope of Work
*March 16, 2005	TPB Reviews Public Comments, Approves Project Submissions for inclusion in the Air Quality Conformity Analysis for CLRP and TIP and Scope of Work
*June 15, 2005	TPB Receives Briefing on Draft Air Quality Conformity Determination, CLRP and TIP Documents
*July 20, 2005	TPB Releases Draft Air Quality Conformity Determination, Draft Year 2005 CLRP, and Draft FY 2006-2011 TIP for Public Comment and Inter-Agency Review
September 9, 2005	Public Comment Period Ends for Draft Documents
*September 21, 2005	TPB Reviews Public Comments on Draft Documents, Approves Responses to Comments, and Adopts the Air Quality Conformity Determination, the Year 2005 CLRP and FY 2006-2011 TIP

*TPB Meeting

INTRODUCTION

The National Capital Region Transportation Planning Board (TPB), the designated Metropolitan Planning Organization (MPO) for the Washington region, has responsibilities for both long-term transportation planning covering the next two to three decades (the financially Constrained Long Range Plan or CLRP) and short-term programming of projects covering the next six years (the Transportation Improvement Program or TIP). The planning horizon for the 2005 CLRP is from 2005 to 2030. The CLRP identifies transportation projects and strategies that can be implemented by 2030, within financial resources "reasonably expected to be available."

In accordance with federal planning regulations, the TPB conducts and publishes a comprehensive update to the region's CLRP every three years. (Amendments to the CLRP are made in intervening years, usually in conjunction with the annual adoption of the Transportation Improvement Program (TIP), but occasionally at other times.) The first three-year update under the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) provisions was adopted by the TPB in September of 1994. Subsequent three-year updates were adopted by the TPB in July 1997, October 2000 and December 2003. These updates are documented in published reports and are summarized in the 1995, 1997 and 2001, and 2004 Region magazines.

The 2003 CLRP adopted in December 2003, reflect the provisions of the 1998 Transportation Equity Act for the 21st Century (TEA-21). The plan also reflects the TPB Vision adopted in October 1998. The Vision statement, goals, objectives and strategies of the TPB Vision are the policy elements, replacing the previous policy element.

Purpose

Each year, the TPB issues a broad solicitation for proposals of projects and strategies to be included in the CLRP and TIP that will meet the goals in the TPB Vision as well as federal requirements. Individual counties, municipalities and state and federal agencies with the fiscal authority to fund transportation projects, as well as public groups and individuals, respond. The purpose of this document is: 1) to describe the policy framework for implementing agencies to use in deciding which projects to submit for inclusion in the plan; and 2) to review federal regulations related to the CLRP and TIP, and 3) to describe the project submission process for the CLRP and the TIP.

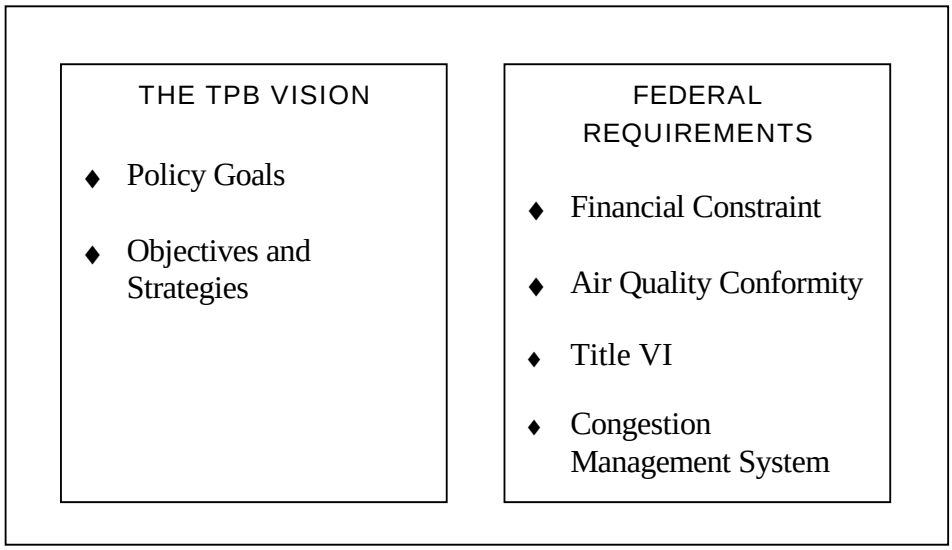
The TPB Vision and Federal Requirements

The CLRP and TIP will be developed to address the TPB Vision and federal requirements, and the key criteria are summarized in Figure 1. The Vision serves as the policy framework to guide the formation of the CLRP and TIP. The TPB adopted the Vision in October 1998 after an extensive public involvement process which considered creative new approaches to the region's transportation future without having to limit the discussion to measures that can be paid for with existing funds. Representatives of a broad range of viewpoints were involved in the process to consider innovative ways to assure the future sustainability of the region's infrastructure,

environment, air quality, economic development, and quality of life.

The CLRP and TIP must meet federal regulations involving financial constraint, air quality conformity, environmental justice, and other requirements including a Congestion Management System (CMS). A financial plan must show how the updated long-range plan can be implemented with expected revenues. The CLRP and TIP need to demonstrate conformity with national air quality standards. Environmental justice guidance issued in 1998 and 1999 provides additional requirements for the long-range plan, some of which were previously addressed on a project level.

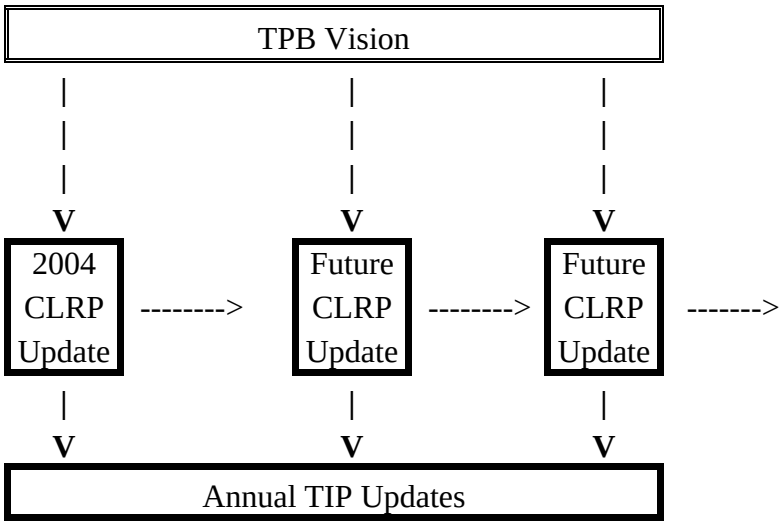
Figure 1:
Key Criteria for Developing the Constrained Long-Range Plan (CLRP) and Transportation Improvement Program (TIP)



Relationship Between the CLRP and TIP

Every year the TPB prepares a program for implementing the CLRP using federal, state, and local funds. This document, known as the TIP, provides detailed information showing how portions of the CLRP will be implemented over a six-year period. Like the CLRP, the TIP needs to address the TPB Vision and federal requirements. The TIP includes portions , or phases, of projects selected for implementation from the CLRP. While the entire project is described in the CLRP, in many instances only a portion of the project is included in the six-year TIP. The CLRP is reviewed every year and under federal regulations must be updated at least every three years. This overall process is illustrated in Figure 2.

Figure 2: The Process of Updating the Financially Constrained Long-Range Plan and Annual TIP



Key Dates in the Update Process

The first major step in the process of developing the CLRP and TIP occurs in February when the project submissions are released for public comment. In March, the TPB is scheduled to approve the project submissions for inclusion in the Air Quality Conformity analysis for the CLRP and TIP. The draft updated plan is assessed to ensure that it meets Air Quality Conformity and other federal planning requirements between April and June. The CLRP amendments, TIP, and Air Quality Conformity Determination are released for public comment in July. At the September meeting, the TPB responds to public comments and is scheduled to adopt the Air Quality Conformity Determination, the CLRP amendments, and TIP. The key dates for the update process this year are shown on page v.

SECTION 1:
POLICY FRAMEWORK

THE TPB VISION

To guide the planning and implementation of transportation strategies, actions, and projects for the National Capital Region the TPB adopted a Vision in October 1998 that is a comprehensive set of policy goals, objectives, and strategies. The federal Transportation Efficiency Act for the 21st Century (TEA-21) was enacted in 1998 and the seven TEA-21 planning factors are incorporated in the Vision. The Vision and TEA-21 will guide the development of the CLRP and TIP.

The Vision includes:

- a statement; and
- eight policy goals with numerous objectives and strategies.

These components of the TPB Vision will be used to review and assess the strategies and projects under consideration for inclusion in the CLRP and TIP. **In developing proposed projects and strategies in the CLRP, or for inclusion in the TIP, each agency must consider their contributions to meeting the Vision's policy goals and objectives set by the TPB.** In this way, the TPB will be able to ensure and document that consideration of the required planning factors has taken place. Consideration of regional goals and objectives may also prove useful to agencies in selecting among proposed projects or actions when the desired level of investment exceeds the projected available revenues. Especially important are projects and strategies that contribute to meeting the required emission reductions and achieving air quality conformity.

The policy goals, objectives, and strategies are provided in the following pages.

Policy Goals, Objectives, and Strategies

Vision Statement

In the 21st Century, the Washington metropolitan region remains a vibrant world capital, with a transportation system that provides efficient movement of people and goods. This system promotes the region's economy and environmental quality, and operates in an attractive and safe setting—it is a system that serves everyone. The system is fiscally sustainable, promotes areas of concentrated growth, manages both demand and capacity, employs the best technology, and joins rail, roadway, bus, air, water, pedestrian and bicycle facilities into a fully interconnected network.

Policy Goal 1: The Washington metropolitan region's transportation system will provide reasonable access at reasonable cost to everyone in the region.

Objectives:

1. A comprehensive range of choices for users of the region's transportation system.
2. Accurate, up-to-date and understandable transportation system information which is available to everyone in real time, and is user-friendly for first-time visitor and residents, regardless of mode of travel or language of the traveler.
3. Fair and reasonable opportunities for access and mobility for persons with special accessibility needs.
4. Convenient bicycle and pedestrian access.

Strategies:

1. Plan, implement, and maintain a truly integrated, multi-modal regional transportation system.
2. Plan and implement a tourist-friendly system that encourages the use of transit and provides international signage and information.
3. Make the region's transportation facilities safer, more accessible, and less intimidating for pedestrians, bicyclists, and persons with special needs.
4. Plan and implement a uniform fare system for transit and commuter rail.
5. Adopt a regional transit planning process and plan, with priority to uniformity, connectivity, equity, cost effectiveness and reasonable fares.

Policy Goal 2: The Washington metropolitan region will develop, implement, and maintain an interconnected transportation system that enhances quality of life and promotes a strong and growing economy throughout the entire region, including a healthy regional core and dynamic regional activity centers with a mix of jobs, housing and services in a walkable environment.

Objectives:

1. Economically strong regional core.
2. Economically strong regional activity centers with a mix of jobs, housing, services, and recreation in a walkable environment.
3. A web of multi-modal transportation connections which provide convenient access (including improved mobility with reduced reliance on the automobile) between the regional core

and regional activity centers, reinforcing existing transportation connections and creating new connections where appropriate.

4. Improved internal mobility with reduced reliance on the automobile within the regional core and within regional activity centers.

5. Efficient and safe movement of people, goods, and information, with minimal adverse impacts on residents and the environment.

Strategies:

1. Define and identify existing and proposed regional activity centers, taking full advantage of existing infrastructure, for the growth and prosperity of each jurisdiction in the region.

2. Encourage local jurisdictions to provide incentives for concentrations of residential and commercial development along transportation/transit corridors within and near the regional core and regional activity centers, such as zoning, financial incentives, transfer of development rights, priority infrastructure financing, and other measures.

3. Encourage the federal government to locate employment in the regional core and in existing and/or planned regional activity centers.

4. Give high priority to regional planning and funding for transportation facilities that serve the regional core and regional activity centers, including expanded rail service and transit centers where passengers can switch easily from one transportation mode to another.

5. Identify and develop additional highway and transit circumferential facilities and capacity, including Potomac River crossings where necessary and appropriate, that improve mobility and accessibility between and among regional activity centers and the regional core.

6. Intercept automotive traffic at key locations, encouraging "park once," and provide excellent alternatives to driving in the regional core and in regional activity centers.

7. Develop a system of water taxis serving key points along the Potomac and Anacostia Rivers.

Policy Goal 3: The Washington metropolitan region's transportation system will give priority to management, performance, maintenance, and safety of all modes and facilities.

Objectives:

1. Adequate maintenance, preservation, rehabilitation, and replacement of existing infrastructure.

2. Enhanced system safety through effective enforcement of all traffic laws and motor carrier safety regulations, achievement of national targets for seatbelt use, and appropriate safety features in facility design.

Strategies:

1. Factor life-cycle costs into the transportation system planning and decision process.

2. Identify and secure reliable sources of funding to ensure adequate maintenance, preservation, and rehabilitation of the region's transportation system.

3. Support the implementation of effective safety measures, including red light camera enforcement, skid-resistant pavements, elimination of roadside hazards, and better intersection controls.

Policy Goal 4: The Washington metropolitan region will use the best available technology to maximize system effectiveness.

Objectives:

1. Reduction in regional congestion and congestion-related incidents.

2. A user-friendly, seamless system with on-demand, timely travel information to users, and a simplified method of payment.

3. Improved management of weather emergencies and major incidents.

4. Improved reliability and predictability of operating conditions on the region's transportation facilities.

5. Full utilization of future advancements in transportation technology.

Strategies:

1. Deploy technologically advanced systems to monitor and manage traffic, and to control and coordinate traffic control devices, such as traffic signals, including providing priority to transit vehicles where appropriate.

2. Improve incident management capabilities in the region through enhanced detection technologies and improved incident response.

3. Improve highway lighting, lane markings, and other roadway delineation through the use of advanced and emerging technologies.

4. Establish a unified, technology-based method of payment for all transit fares, public parking fees, and toll roads in the region.

5. Utilize public/private partnerships to provide travelers with comprehensive, timely, and accurate information on traffic and transit conditions and available alternatives.

6. Use technology to manage and coordinate snow plowing, road salting operations, and other responses to extreme weather conditions, and to share with the public assessments of road conditions and how much time it will take to clear roadways.

7. Use advanced communications and real-time scheduling methods to improve time transfers between transit services.

8. Develop operating strategies and supporting systems to smooth the flow of traffic and transit vehicles, reduce variances in traffic speed, and balance capacity and demand.

9. Maintain international leadership in taking advantage of new technologies for transportation, such as automated highway systems and personal rapid transit.

Policy Goal 5: The Washington metropolitan region will plan and develop a transportation system that enhances and protects the region's natural environmental quality, cultural and historic resources, and communities.

Objectives:

1. The Washington region becomes a model for protection and enhancement

of natural, cultural, and historical resources.

2. Reduction in reliance on the single-occupant vehicle (SOV) by offering attractive, efficient and affordable alternatives.

3. Increased transit, ridesharing, bicycling and walking mode shares.

4. Compliance with federal clean air, clean water and energy conservation requirements, including reductions in 1999 levels of mobile source pollutants.

5. Reduction of per capita vehicle miles traveled (VMT).

6. Protection of sensitive environmental, cultural, historical and neighborhood locations from negative traffic and developmental impacts through focusing of development in selected areas consistent with adopted jurisdictional plans.

Strategies:

1. Implement a regional congestion management program, including coordinated regional bus service, traffic operations improvements, transit, ridesharing, and telecommuting incentives, and pricing strategies.

2. Develop a transportation system supportive of multiple use and higher density (commercial and residential) in the regional core and regional activity centers as a means of preserving land; natural, cultural and historic resources; and existing communities.

3. Support regional, state and federal programs which promote a cost-effective combination of technological improvements and transportation strategies to reduce air pollution, including promoting use of transit options, financial incentives, and voluntary emissions reduction measures.

4. Develop a regional tourism initiative to encourage air and train arrival in the region, and additional transit access and automobile parking at the termini of Metrorail/rail services.

5. Provide equivalent employer subsidies to employees with the intent of "leveling the playing field" between automobile and transit/ridesharing.

6. Plan and implement transportation and related facilities that are aesthetically pleasing.

7. Implement a regional bicycle/trail/pedestrian plan and include bicycle and pedestrian facilities in new transportation projects and improvements.

8. Reduce energy consumption per unit of travel, taking maximum advantage of technology options.

Policy Goal 6: The Washington metropolitan region will achieve better inter-jurisdictional coordination of transportation and land use planning.

Objectives:

1. A composite general land use and transportation map of the region that identifies the key elements needed for regional transportation planning--regional activity centers, principal transportation corridors and facilities, and designated "green space."

2. Region-wide coordination of land use and transportation planning in accordance with the recommendations of the Partnership for Regional Excellence report approved by the COG

Board of Directors in 1993.

Strategies:

1. Develop a regional process to notify local governments formally of regional growth and transportation policy issues, and encourage local governments to specifically address such issues in their comprehensive plans.

2. Identify an agreed-upon set of definitions and assumptions to facilitate regional cooperation.

3. Ensure that major corridor studies include options that serve the regional core and regional activity centers shown on the regional map.

4. Develop, in cooperation with local governments, model zoning and land use guidelines that encourage multiple use development patterns and reduce non-work automobile dependency.

5. Plan for development to be located where it can be served by existing or planned infrastructure.

Policy Goal 7: The Washington metropolitan region will achieve an enhanced funding mechanism(s) for regional and local transportation system priorities that cannot be implemented with current and forecasted federal, state, and local funding.

Objectives:

1. Consensus on a set of critical transportation projects and a funding mechanism(s) to address the region's growing mobility and accessibility needs.

2. A fiscally sustainable transportation system.

3. Users of all modes pay an equitable share of costs.

Strategies:

1. Conduct outreach and education activities to promote public participation.

2. Develop public support and approval for a specific set of regional and local transportation priorities and a funding mechanism(s) to supplement (and not supplant) priorities to be implemented with current and forecasted federal, state, and local funding.

Policy Goal 8: The Washington metropolitan region will support options for international and inter-regional travel and commerce.

Objectives:

1. The Washington region will be among the most accessible in the nation for international and inter-regional passenger and goods movements.

2. Continued growth in passenger and goods movements between the Washington region and other nearby regions in the mid-Atlantic area.

3. Connectivity to and between Washington Dulles International, National, and Baltimore-Washington International airports.

Strategies:

1. Maintain convenient access to all of the region's major airports for both people and goods.

2. Support efficient, fast, cost-effective operation of inter-regional passenger and freight rail services.

3. Support the development of a seamless regional transportation system.

4. Support coordinated ticketing and scheduling among Amtrak, MARC, VRE, WMATA, local bus and inter-city bus service.

5. Develop a regional plan for freight movement.

The Regional Activity Centers and Clusters

Background

Policy Goal 6 in the TPB Vision calls for "a composite map that identifies key elements needed for regional transportation planning—regional activity centers, principal transportation corridors and facilities, and designated 'green space.'" In response to the TPB Vision, a regional committee of planning directors from the local jurisdictions undertook the task of developing composite regional maps. The two-year process produced six maps and a set of data tables describing 58 Regional Activity Centers and the 24 Regional Activity Clusters. "Green space" layers have not yet been developed, due to challenges in identifying a common set of regional definitions for green space.

On April 17, 2002, the TPB passed a resolution regarding the Regional Activity Centers and in the "resolved" clause stated that the TPB accepts the six maps and data, acknowledges and respects each local jurisdiction's authority to determine it's own future pursuant to powers, and that the maps have been developed for use by local jurisdictions to encourages mixed-use development and to significantly increase the percentage of jobs and households that are found in regional activity centers.

Definitions of Centers and Clusters

The 58 Regional Activity Centers are based on local government growth forecasts and categorized according to similar employment, residential, and growth pattern characteristics. Recognizing that significant concentrations of residential and commercial development exist immediately adjacent to the tightly defined Activity Centers along the region's transportation facilities, the committee also designated 24 Regional Activity Clusters. The Clusters tend to be groupings of Centers and are a more conceptual, stylized depiction of development than the Centers. On the following pages, three figures are provided: Figure 3 shows the locations of the Regional Activity Centers; Figure 4 shows the locations of the Regional Activity *Clusters;* and Figure 5 shows the employment in the Clusters in 2005 and 2030[1]. The Regional Activity Centers and Clusters will be reviewed and amended following the adoption of the Round 7.0 cooperative forecasts which is anticipated in the fall of 2005.

Forecast Growth and the Regional Activity Clusters

The 24 Regional Activity Clusters comprise about 455 square miles (13 percent) of the region's total land area and capture 71 percent of the region's employment and 40 percent of the region's households in both 2000 and 2030, based on Round 6.4a forecasts.

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[1]For more information and additional maps on the Regional Activity Centers and Clusters, see http://www.mwcog.org/planning/planning/activitycenters/

The percent of regional growth in employment and households that will occur within Regional Activity Clusters differs between jurisdictions. For some jurisdictions, such as the District of Columbia, Arlington County in Virginia, and Montgomery County in Maryland, a large majority of the growth will occur within Regional Activity Clusters. For other jurisdictions, such as Prince William County in Virginia and Prince George's County in Maryland, much of the growth will occur outside regional activity clusters.

It should be noted that the Regional Activity Clusters contain significant concentrations of both residential and commercial development, but the 58 Activity Centers include less development. Therefore, the percentage of growth captured by the Regional Activity Centers will be less than that captured by the Clusters. Figures on the growth captured in the Regional Activity Centers for Round 6.4a forecasts are not available, but estimates are under development[2]. The Activity Centers were first developed with Round 6.2 forecasts, and based on these forecasts the centers capture 55% of the employment and 11% of households in 2025**.**

[2]The COG Planning Department updated the growth figures for the Regional Activity Clusters for the 2004 CLRP, but not the Centers. The Center boundaries were created by the local jurisdictions and do not match up with the transportation analysis zones as well as the Cluster boundaries.

Figure 3: Regional Activity Centers

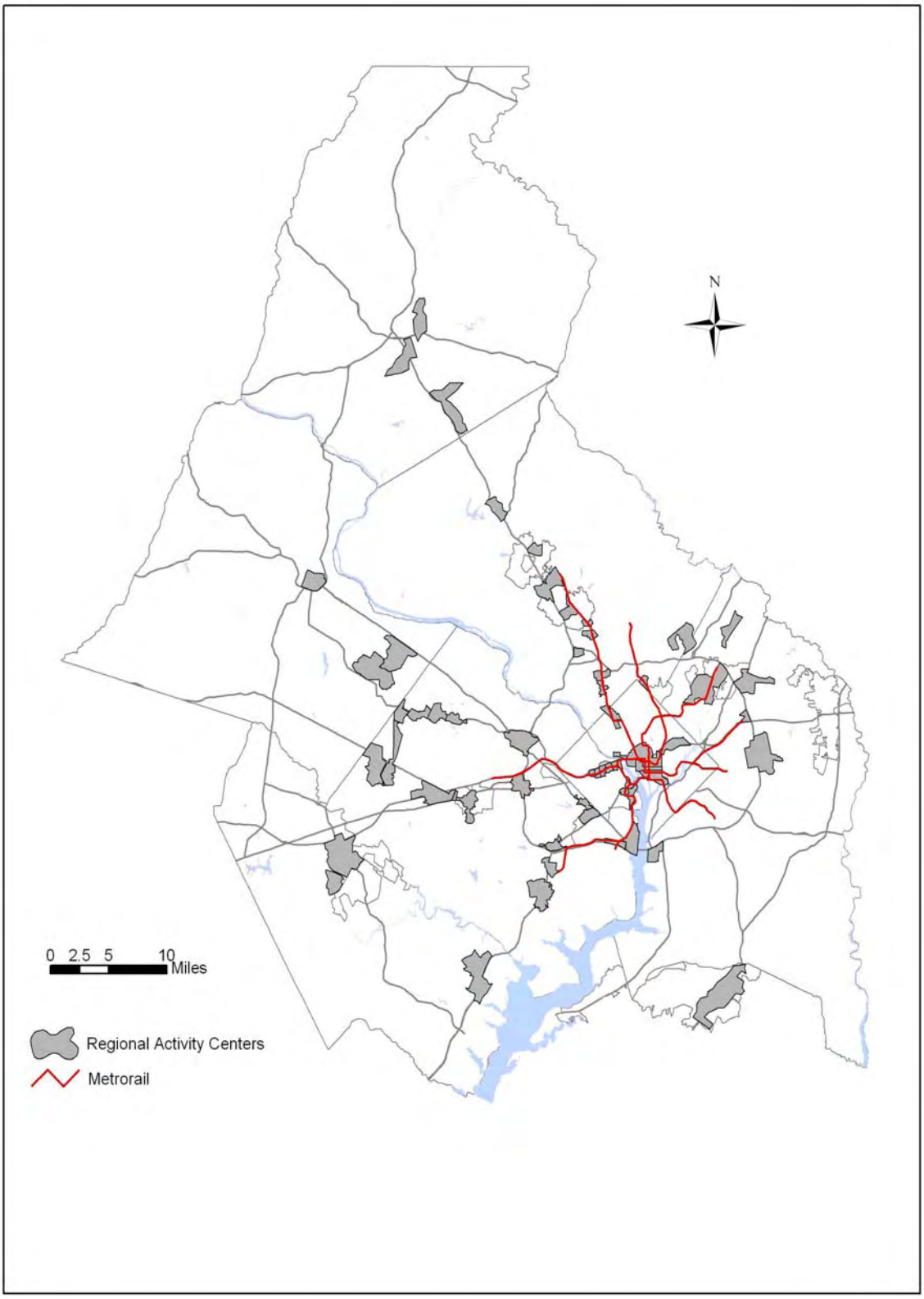


Figure 4: Regional Activity *Clusters*

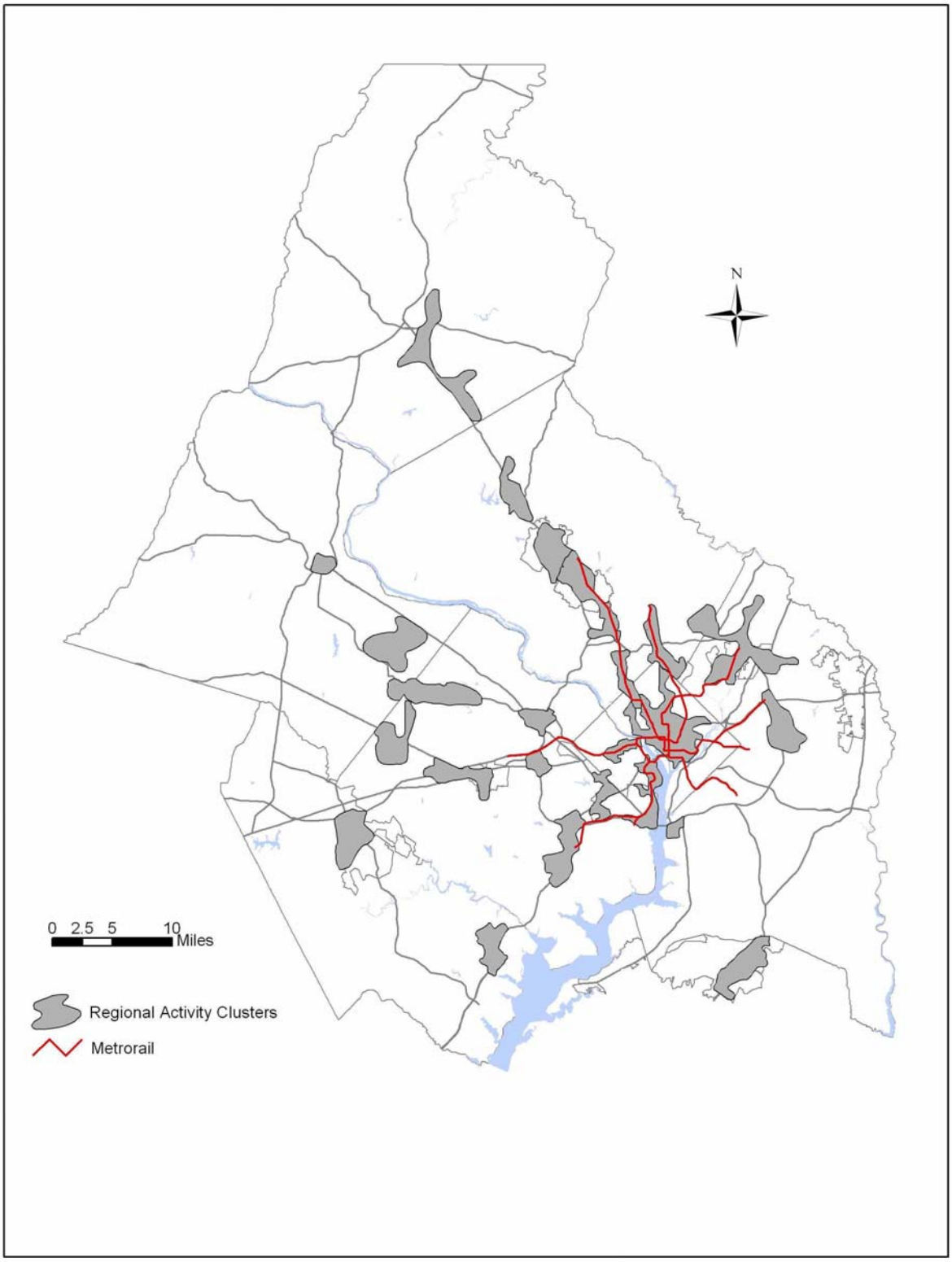
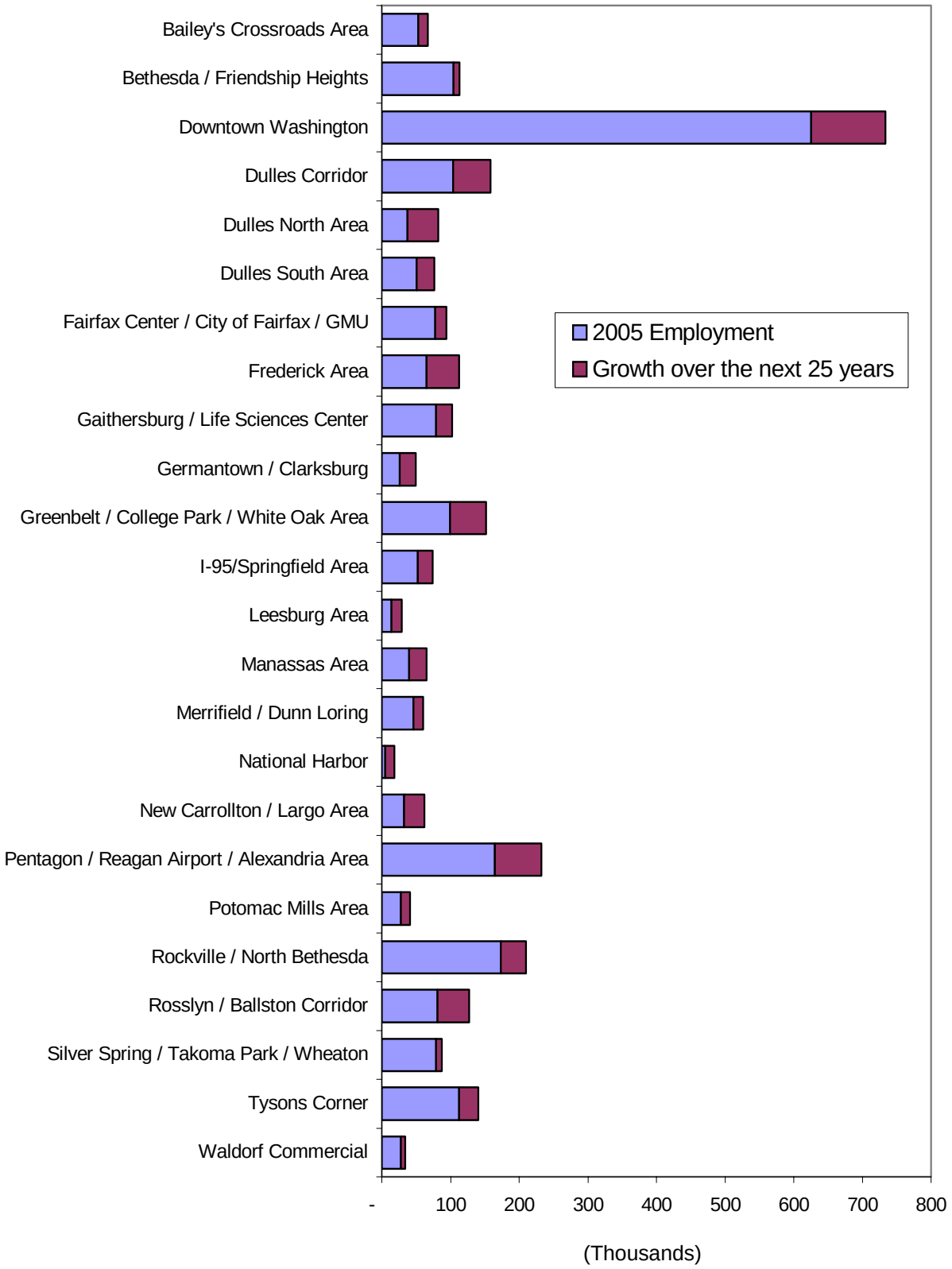


Figure 5: Employment in the Regional Activity Clusters, 2005 and 2030



THE PERFORMANCE OF THE CLRP AND THE TPB VISION

This section presents a brief overview of how the 2004 plan performs based on all the projects submitted to the CLRP and TIP, and relates the performance to TPB Vision goals. A similar, more extensive assessment of the last major three-year update to the plan, the 2003 CLRP, can be found in Chapter 5 of the 2003 CLRP document which can be found on the TPB website (www.mwcog.org).

Table 1: A Summary of the 2004 Plan Performance and Related TPB Vision Goal

Performance of the 2004 CLRP (Forecasts for 2005 to 2030[3])	Related TPB Vision Goal
-The highway system's capacity, measured in roadway lane-miles, will expand about 13 percent, while use of the highway system, measured in vehicle miles traveled (VMT),will increase 30 percent. -Transit trips for both work and non-work purposes will increase by approximately 30 percent, and Metrorail miles will expand by 24 percent. -The percentage of forecast jobs and households captured by the Regional Activity Clusters (71 percent and 40 percent, respectively) will remain constant[4].	*Policy Goal 2- Interconnected Transportation System and Dynamic Regional Activity Centers with a mix of jobs, housing and services in a walkable environment*

[3]Forecasts are for the Washington, DC-MD-VA Metropolitan Statistical Area (MSA) which includes the District of Columbia; the counties of Arlington, Fairfax, Loudoun, Prince William, and Stafford and the cities of Fairfax, Falls Church and Alexandria in Virginia; and the counties Montgomery, Prince George's, Frederick, Calvert and Charles in Maryland.

[4]The COG Planning Department updated the growth figures for the Regional Activity Clusters for the 2004 CLRP, but not the Centers. The Regional Activity Centers were first developed with Round 6.2 forecasts and based on these forecasts the Centers capture 55% of the employment and 11% of households in 2025. The Clusters are a more conceptual, stylized depiction of development than the centers and tend to be groupings of Center. Therefore, the percentage of growth captured by the Centers will be less than that captured by the Clusters. The Center boundaries were created by the local jurisdictions and do not match up with the transportation analysis zones as closely as the Cluster boundaries. The Regional Activity Centers and Clusters will be reviewed and amended following the adoption of the Round 7.0 cooperative forecasts anticipated in the fall of 2005.

(Table 1 Continued)

Performance of the 2004 CLRP (Forecasts for 2005 to 2030)	Related TPB Vision Goal
-In its "Time to Act" brochure, the TPB identified short-term critical funding needs for rehabilitation, maintenance, and preservation of buses, rail, and bridges[5]. -WMATA and the state and local governments reached agreement on commitments for "Metro Matters" consisting of $3.3 billion in local, state, and federal funding for WMATA's near-term rehabilitation, preservation, and access and capacity needs through 2010.	*Policy Goal 3-Priority to Management, Performance, Maintenance and Safety*
-Vehicle miles traveled (VMT) per capita will increase from 23 in 2005 to 25 in 2030. -The share of commuting trips by single-occupancy vehicles is forecast to remain unchanged between 2005 and 2030. -Transit mode share for work trips will increase from 16% in 2005 to 17% in 2030. -Average auto occupancy will remain steady. -Vehicle ownership will increase at a faster rate than population, employment, and vehicle miles of travel (VMT).	*Policy Goal 5 -Enhance and Protect the Region's Natural Environmental Quality, Cultural and Historic Resources and Communities*
-The TPB has undertaken several activities to inform local, state, and federal representatives and the general public about the region's short and longer term transportation funding needs but to date funding for transportation has not been significantly increased. -The COG Board, along with the Greater Washington Board of Trade and the Federal City Council, appointed 13 experts to serve on the "Metro Funding Panel". The Panel released a final report detailing recommendations for alternative sources of funding for WMATA, including a dedicated sales tax, on January 6, 2005.	*Policy Goal 7-Achieve an Enhanced Funding Mechanism(s) for Regional and Local Priorities*

[5]The"Time to Act" brochure is at www.mwcog.org under transportation publications and then planning documents.

Funding Limitations

As part of the 2003 CLRP financial analysis, WMATA identified a need for a substantial ramp-up in preservation funding of $1.5 billion beginning in 2006.To address short-term critical funding needs that involve cash flow and ramp-up issues, in fall of 2003 the TPB conducted a six-month study to quantify highway and transit funding needs and recommend specific sources of revenue over the period from 2004 to 2010. The study found that the region must double its anticipated transportation revenues in the next six years in order to fund key transportation priorities. This analysis was compiled in a brochure called "Time to Act." Released by the TPB in February 2004, this brochure was covered by major newspapers and the media and informed federal, state and local funding partners on critical regional transportation needs[6].

In 2001, the TPB identified a long-term funding gap of $43 billion over 25 years based on the projected revenues available for the 2000 CLRP. This gap was publicized in a brochure “A System in Crisis," which described regional unfunded transit and highway needs and identified a $1.74 billion per year revenue gap. Also in 2001, the TPB passed a resolution that declared "unmet preservation, rehabilitation, and capacity expansion for the existing Metrorail system to be a regional priority" and urged that reliable sources of funding be identified by the federal, state, and local governments at the earliest possible time to address the unmet needs.

Resolutions adopted by the TPB on funding limitations related to regional priorities and emergency coordination and communication are summarized in Table 2 below. These resolutions were adopted by the TPB between October 2000 and November 2004.

[6]To view the TPB brochure, go to http://www.mwcog.org/publications/departmental.asp?CLASSIFICATION_ID=3, and then “Planning Documents”

Table 2: TPB Resolutions Related to Funding Limitations

Resolution	Summary of Resolve Clause (Therefore be it resolved that:)	Date of TPB Adoption
Funding Challenges in Meeting the Goals of the TPB Vision with the 2000 Update to the Financially Constrained Long-range Transportation Plan	The TPB commits to an in-depth dialogue and discussion on regional transportation needs, an outreach program to education and build consensus and to ensuring theat air quality conformity requirements are met.	October 18, 2000
Recognizing the Tremendous Success of Metrorail on its 25th Anniversary, and Declaring Preservation, Rehabilitation, and Capacity Expansion for the Existing Metrorail System to Be a Regional Priority	The TPB urges that reliable sources of funding be identited by the federal, state, and local governments at the earliest possible time to address unmet needs.	April 18, 2001
Declaring Proposed Actions to Strengthen Transportation Emergency Response Policies and Procedures to Be Regional Transportation Priorities	The TPB adopts the concept and actions for improving emergency coordination and communication; and urges that reliable sources of funding be identified by federal, state, and local governments to address vital actions.	November 21, 2001
Declaring Funding must be Identified to Meet Preservation, Rehabilitation, and Capacity Expansion Needs of the Metrorail and Metrobus System	The TPB supports the efforts of the new panel to address dedicated funding sources for WMATA, and urges that dedicated and reliable sources of funding be identified by the federal, state, and local governments at the earliest possible time to address the unmet needs.	October 20, 2004
Declaring Funding must Be Identified to Meet Preservation, Rehabilitation, and Capacity Expansion Needs of the Region's Highways, Local Transit, and Commuter Rail System	Declares that funding must be identified to meet $11 billion in unfunded preservation, rehabilitation, safety, security, and capacity expansion near-term needs of the region's transportation system and urges that dedicated and reliable sources of funding be committed by the federal, state, and local governments at the earliest possible time to address the unmet needs.	November 17, 2004

2005 PRIORITY AREAS FOR PROJECT SUBMISSIONS

At the December 15, 2004 TPB meeting the incoming chair of the TPB, Phil Mendelson, asked that the Solicitation Document highlight three specific priority areas related to the TPB Vision for consideration by the implementing agencies when submitting projects, proposals and strategies to be included in the 2005 CLRP and FY 2006-2011 TIP:

1. **Implement traffic signal optimization** as stated as part of Goal 3, Strategy 3 in the TPB Vision: *"Support the implementation of effective safety measures, including red light camera enforcement, skid-resistant pavements, elimination of roadside hazards, and better intersection controls"*, and Goal 4, Strategy 1: *"Deploy technologically advanced systems to monitor and manage traffic, and to control and coordinate traffic control devices, such as traffic signals, including providing priority to transit vehicles where appropriate"*.

   In 2002, the TPB adopted the traffic signal "optimization" program as a Transportation Emissions Reduction Measure (TERM) as well as a goal of optimizing 856 signals by 2005. Nearly 600 traffic signals had been re-timed and coordinated by 2003 as part of this regional program. In addition to cutting emissions, signal optimization has been recommended as a cost-effective way to reduce congestion.

2. **Further improve interagency coordination for incident management**, as stated in Goal 4, Objective 3:"*Improved management of weather emergencies and major incidences*" and Goal 4, Strategy 2: *"Improve incident management capabilities in the region through enhanced detection technologies and improved incident response"*.

   On November 17, 2004, the TPB endorsed a concept for strengthening regional transportation coordination during incidents. The concept would build upon the existing partnership for the Capital Wireless Integrated Network (CapWIN). Although individual agencies would continue to be the responders to incidents, the "enhanced CapWIN" would keep transportation, police and other agencies across the region in the information loop so that they could make quick decisions to manage sudden transportation system surges or other effects from major incidences.

3. **Identify how projects or proposals support the regional core and regional activity centers,** as stated in Goal 2, Strategy 4 of the Vision: *"Give high priority to regional planning and funding for transportation facilities that serve the regional core and regional activity centers, including expanded rail service and transit centers where passengers can switch easily from one transportation mode to another"*.

   In 2002, the TPB accepted the maps and data depicting the regional activity centers as a tool for linking land use and transportation planning. Maps of the regional activity centers and clusters are shown on pages 1-10 and 1-11. The resolution adopted by the TPB in 2002 stated that the maps and data "have been developed for use by local jurisdictions, the TPB and other regional bodies to encourage mixed-use development and to significantly increase the percentage of jobs and households that are found in regional activity centers".

DEVELOPMENT OF CIRCULATION SYSTEMS AND GREEN SPACE

The TPB was awarded a Transportation and Community and Systems Preservation (TCSP) grant in May 1999 to assist in the implementation of two key components of the adopted Vision for transportation in the Washington region:

- circulation systems within the regional core and regional activity centers;
- and integration of green space into a regional greenways system.

TCSP funding provided the resources and level of attention needed to advance these program areas, including involvement of key agencies, officials and stakeholders and the identification of financial resources for project implementation. The TCSP funding was used to design comprehensive regional programs for each of these two components, to identify priority projects which need to be implemented within each of the programs, and to encourage the inclusion of these priority projects into the Constrained Long Range Plan (CLRP) and Transportation Improvement Program (TIP).

The TPB appointed representatives from government, non-profit, and business groups to serve on the Circulation Systems and Green Space/Greenways Advisory Committees to guide the implementation of the TCSP grant in September 1999. The committees completed their work in September 2000. The TPB was briefed on their comprehensive reports and recommended priority projects on December 20, 2000. On February 21, 2001, the TPB adopted resolutions receiving the reports and encouraging their use in future planning. The two reports, “Priorities 2000: Metropolitan Washington Greenways” and “Priorities 2000: Metropolitan Washington Circulation Systems” can be found at www.mwcog.org under “Transportation” and “Featured Publications”.

REGIONAL BICYCLE AND PEDESTRIAN PRIORITIES

The TPB endorsed nine unfunded pedestrian and bicycle projects as regional priorities in December 2002 which were developed by the Bicycle and Pedestrian Technical Subcommittee and reflect the growing regional emphasis on pedestrian safety. The TPB will be presented an updated list of unfunded projects developed by the Subcommittee at the January 19, 2005 meeting. This updated list is provided below and reflects only minor changes from the 2002 priority list.

The nine projects range from new trail construction to safety improvements. In addition to pedestrian safety, key criteria in selecting the projects included transit access and bicycle network connectivity. The projects can all be completed by 2011 and are considered priorities by the jurisdictions where they are located. Some of the projects included on the list have appeared in previous TIPs as being funded for only partial amounts, usually for study only or for initial phases of a multi-phase project. The Subcommittee sees this short list as a very modest investment in bicycle and pedestrian facilities in the Washington region. In trying to reach the adopted goals of the TPB vision and the regional bicycle plan, the Subcommittee supports the funding of bicycle and pedestrian projects over and above this list. In addition, the Subcommittee encourages the inclusion of bicycle and pedestrian facilities in all transportation projects as recommended in policy guidance by the U.S. DOT and VDOT.

Metropolitan Branch Trail (District of Columbia)
This 7.7 mile multi-use path will run from Union Station to Silver Spring, parallel to the Red Line of the Metro. It will link to the planned Prince Georges Connector Trail at Fort Totten. On the Montgomery County side, the trail will eventually connect to the Georgetown Branch Trail.

Silver Spring Green Trail (Montgomery County)
A 4,500 L.F. urban trail with separated pedestrian and bike facilities and a green treed buffer. The trail provides safe pedestrian and bicycle access from the proposed Silver Spring Transit Station and proposed Metropolitan Branch/Capital Crescent Trails (Silver Spring Metro Station) to the Sligo Creek Park Trail.

Henson Creek Trail (Prince George's County)
This project includes the extension of the existing stream valley trail to both the north and south. In the north, the trail will be extended from Temple Hills Road to the Branch Avenue Metro. To the south, this trail will be extended from Oxon Hill Road into the Broad Creek Historic District on the Potomac.

Holmes Run Stream Crossing (City of Alexandria)
The Holmes Run Park Trail is a multi-use trail which extends from the City's western border at Holmes Run Parkway and Chambliss Street south along the Holmes Run and Cameron Run stream valleys for approximately 2 miles to Eisenhower Ave. Locally, this multi-use stream crossing will connect the north and south ends of Chambliss Street at the Holmes Run Trail. Regionally, the trail crossing will connect to Fairfax County's Stream Valley Trail system.

Pentagon Area Bicycle Access Improvements Study (Arlington County)
Study trails needing construction or improvement in the vicinity of the Pentagon, including the East Wall of Arlington Cemetery, which provides access to the Route 110 Trail, the Washington Boulevard Trail, the Mount Vernon Trail and Boundary Drive.

Route 1 Pedestrian and Bicycle Safety Improvements (Fairfax County)
Route 1 in Fairfax County has experienced a high rate of pedestrian fatalities and injuries. Several studies have identified and proposed sidewalk, pedestrian crossing, and other pedestrian and bicycle safety improvements which would be constructed on this road.

Centreville Road Underpass at Dulles Airport Access Road (Town of Herndon)
Build a multi-use path through the underpass. Although a sign indicates that pedestrians are prohibited, bicyclists and pedestrians do use the striped area to traverse the underpass. An improved underpass would connect the existing sidewalk networks in Fairfax County and the Town of Herndon.

Loudoun County Parkway (Loudoun County)
Build a 4.4 mile multi-use path parallel to Loudoun County Parkway from Route 7 to Waxpool Road.

Dumfries Road (Prince William County)
Provide a separated 1.2 mile, 10' wide asphalt multi-purpose trail along Dumfries Road from Lake Jackson Drive intersection to Prince William Parkway West intersection.

SECTION 2:
FEDERAL REGULATIONS

AIR QUALITY CONFORMITY REQUIREMENTS

The Clean Air Act Amendments (CAAA) of 1990 require that the transportation actions and projects in the CLRP and TIP support the attainment of the federal health standard for ozone, which was violated two times last year for the 1-hour standard, and seven times last year for the newly designated 8-hour standard. The CLRP and the TIP have to meet air quality conformity requirements as specified in the amended Environmental Protection Agency (EPA) regulations issued in August 1997 and in supplemental guidance issued periodically thereafter.

Background

Since EPA designated the Washington area as nonattainment for the 1-hour ozone standard in the 1990 CAAA, the Metropolitan Washington Air Quality Committee (MWAQC) and the state air management agencies have developed state air quality implementation plans (SIP)s to achieve EPA's emissions reduction requirements. These work efforts included the development and submittal to EPA of a 'severe' area ozone attainment SIP in 2003, which, following EPA's 'adequacy determination' for conformity, established mobile source emissions budgets for volatile organic compounds (VOC) and nitrogen oxides (NOx). The current CLRP and TIP adhere to those emissions budget levels.

Current Status

On April 15, 2004 the Environmental Protection Agency (EPA) designated the Washington, DC-MD-VA area, 'moderate' nonattainment for the 8-hour ozone standard. The 8-hour ozone standard, 0.08 parts per million (ppm), averaged over eight hours, replaces the 1-hour standard of 0.12 ppm, measured in hourly increments, that has been in place since 1979. On July 1, 2004 the EPA published the final rule for transportation conformity under the new 8-hour ozone standard. For the Washington, DC-MD-VA region, the 8-hour non-attainment boundary is smaller than the 1-hour boundary, as Stafford County has been removed. Since new emissions budgets under the 8-hour standards will not be available for some time, in the interim EPA’s conformity rule provides for conducting a conformity analysis by using the existing 1-hour budgets. (Stafford County is retained in both the budgets and mobile emissions estimates to enable a consistent analysis.)

As part of the conformity assessment, projected emissions for the actions and projects expected to be completed in the 2010, 2020 and 2030 analysis years need to be estimated. If the analysis of mobile source emissions for any of these years shows an increase in NOx or VOC above what is allowed in the budget, it will be necessary for the TPB to define and program transportation emission reduction measures (TERMs) to mitigate the 'excess' emissions, as has been done in the past. The TPB Technical Committee's Travel Management Subcommittee is developing a schedule for submittal and analysis of TERMs for potential inclusion in the 2005 CLRP and FY 2006-11 TIP for the purpose of NOx or VOC mitigation. Should emissions analysis for any forecast year estimate excess emissions which cannot be mitigated, TPB's programming actions would become limited to those projects which are exempt from conformity.

Air Quality Standards For Fine Particulate Matter (PM2.5)

In the near future EPA is expected to designate the Washington area as nonattainment for fine particulate matter (particles less than 2.5 microns in diameter). At this time it is not known what the exact boundaries of the nonattainment area will be, or what the air quality conformity requirements will be. EPA has indicated that new conformity requirements will be imposed, therefore, the TPB's conformity activities will be affected as these new standards become effective. However, it is still too early to tell just how the region will be affected and whether such additional actions will apply to the 2005 CLRP / FY2006-11 TIP, or subsequent conformity assessments. Staff will provide such information as soon as it becomes available.

FINANCIAL REQUIREMENTS

Amending the CLRP

The following financial requirements for the CLRP are provided in the federal planning regulations.

> The CLRP "must include a financial plan that demonstrates the consistency of proposed transportation investments with already available and projected sources of revenues. The plan shall compare the estimated revenue from existing and proposed funding sources that can reasonably be expected to be available for transportation use, and the estimated costs of constructing, maintaining and operating the total (existing plus planned) transportation system over the period of the plan.
>
> The estimated revenue by existing revenue source (local, State, and Federal and private) available for transportation projects shall be determined and any shortfalls shall be identified. Proposed new revenue and/or revenue sources to cover shortfalls shall be identified, including strategies for ensuring their availability for proposed investments. Existing and proposed revenues shall cover all forecasted capital, operating, and maintenance costs."

The 2003 CLRP update was developed to meet these requirements. Agencies should review the timing, costs and funding for the actions and projects in the CLRP, ensuring that they are consistent with the "already available and projected sources of revenues." Significant changes to the projects or actions in the current plan should be identified. New projects and strategies, specifically addressing regional air quality conformity needs also should be identified. If new funding sources are to be utilized for a project or action, agencies should describe the strategies for ensuring that the funding will be available.

TEA-21 has a provision allowing “illustrative” projects in the CLRP above and beyond those projects for which funds can reasonably be expected to be available. Illustrative projects may be included in the CLRP for analysis or vision planning purposes. A change in project status from illustrative to full status would require a CLRP amendment.

If new funding sources are to be utilized for a project or action, agencies should describe the strategies for ensuring that the funding will be available. Finally, other projects or actions above and beyond those for which funds are available or committed may be submitted to the CLRP under illustrative status. Illustrative projects will not be assumed in the air quality conformity determination of the CLRP.

Developing Inputs for the FY 2006-2011 TIP

The following financial requirements for the TIP are provided in the federal planning regulations.

> "The TIP shall be financially constrained by year and include a financial plan that demonstrates which projects can be implemented using current revenue sources and which projects are to be implemented using proposed revenue sources (while the existing transportation system is being adequately operated and maintained).
>
> The financial plan shall be developed by the MPO in cooperation with the State and the transit operator. The State and transit operator must provide MPOs with estimates of available Federal and State funds which the MPOs shall utilize in developing financial plans. It is

expected that the State would develop this information as part of the STIP development process and that the estimates would be refined through this process.

Only projects for which construction and operating funds can reasonably be expected to be available may be included under full status in the CLRP. In the case of new funding sources, strategies for ensuring their availability shall be identified. In developing the financial analysis, the MPO shall take into account all projects and strategies funded under Title 23, USC and the Federal Transit Act, other Federal funds, local sources, state assistance, and private participation.

In non-attainment areas, projects included for the first two years of the current TIP shall be limited to those for which funds are available or committed."

To develop a financially constrained TIP, agencies should begin with the projects and actions committed in the previous TIP After reviewing the estimates of available state and federal funds for the period, agencies can identify the actions and projects as inputs for the TIP, ensuring that projects for the first two years are "limited to those for which funds are available or committed."

TITLE VI AND ENVIRONMENTAL JUSTICE REQUIREMENTS

Background

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations, dated February 11, 1994, requires Federal agencies to identify and address disproportionately high and adverse human health and environmental effects, including interrelated social and economic effects of their programs, policies, and activities on minority and low-income populations.

In December of 1998 the US Department of Transportation/Federal Highway Administration released Order 6640.23 "FHWA Actions to Address Environmental Justice In Minority and Low-Income Populations." Order 6640.23 "establishes policies and procedures for the Federal Highway Administration (FHWA) to use in complying with Executive Order 12898". The document states that Executive Order 12898 is "primarily a reaffirmation of the principles of Title VI of the Civil Rights Act of 1964 (Title VI) and related statutes, the National Environmental Policy Act (NEPA), 23 U.S.C. 109(h), and other Federal environmental laws, emphasizing the incorporation of those provisions with the environmental and transportation decision-making processes."

Furthermore, "these requirements will be administered to identify the risk of discrimination, early in the development of FHWA's programs, policies, and activities so that positive corrective action can be taken. In implementing these requirements, the following information should be obtained where relevant, appropriate, and practical:

> (1) population served and/or affected by race, or national origin, and income level;
> (2) proposed steps to guard against disproportionately high and adverse effects on persons on the basis of race, or national origin; and,
> (3) present and proposed membership by race, or national origin, in any planning or advisory body that is part of the program."

Activities Related to the CLRP

The TPB's Unified Planning Work Program for FY 2003 described several activities to address the social, economic, and environmental impacts of candidate projects and actions on minority and low-income populations for the 2003 update of the CLRP.

For the first time, the TPB undertook a special study in 1999 to assess how the long-range plan impacted low-income and minority populations. The study, titled "A Regional Accessibility Analysis of the 1999 Constrained Long-Range Plan (CLRP) and Impacts on Low-Income and Minority Populations", measured the number of jobs in the year 2020 that will be accessible within 45 minutes by auto and transit. Accessibility for low-income and minority citizens was compared with accessibility for the population at large. The study found that high levels of congestion on the major interstates and arterials are expected to contribute to a significant loss in accessibility to jobs by auto for the regional population at large. Accessibility to jobs by transit will generally increase. In general, these trends were roughly the same for low-income and minority groups as for the entire regional population. The results of this study were used as an input to the development of the 2003 CLRP.
To ensure on-going participation from low-income and minority communities and persons with disabilities in 2001 the TPB created the Access for All Advisory (AF) Committee to advise the Board on transportation issues, programs, policies, and services that are important to these communities and individuals. The

committee is chaired by a TPB member, currently Mayor Kathy Porter from Takoma Park, MD. The mission of this committee is to identify concerns of low-income and minority populations and persons with disabilities, and to determine whether and how these issues might be addressed within the TPB process. The committee membership is composed of TPB-appointed community leaders from around the region. The committee also includes ex-officio representation from five key transportation agencies that are active in the TPB process- the District Department of Transportation, the Maryland Department of Transportation, the Virginia Department of Transportation, the Washington Metropolitan Area Transit Authority, the Federal Transit Administration, and the Federal Highway Administration.

A review of the 2003 CLRP projects and the spatial distribution of low-income and minority communities was conducted in the fall of 2003 (and a review of the 2004 CLRP was conducted, and the AFA comments are below). The review did not attempt to quantify or identify disproportionate or adverse impacts; this type of analysis occurs at the project planning level and during the environmental assessment process. Maps of the CLRP projects and Census data showing concentrations of Asian, African-American, and Hispanic/Latino as well as the population below the poverty line were reviewed by the AFA committee. These maps are included in the 2003 CLRP document, in Appendix A which can be found on the website at http://www.mwcog.org/transportation.

In 2003, the committee detailed its recommendations in a report to the TPB. The four main categories of recommendations included 1) develop more effective communication of regional transit information; 2) prioritize regional and local transportation services for low-income populations; 3) improve transit services for people with disabilities; and 4) promote more development around transit stations, but take care of the community that is already there. The AFA committee report can be found on the committee's web page at http://www.mwcog.org/transportation/committee.

Committee Perspective

The following comments are based on the AFA committee's review of maps of the draft 2004 CLRP major improvements with 2000 Census demographic data. These comments were presented to the TPB at its October 20, 2004 meeting by Chair Kathy Porter and are pertinent to remind implementing agencies to be thoughtful of as project inputs are developed.

Continued Concern that More Transportation Improvements in the CLRP are on the Western Side of the Region

In reviewing the maps of major improvements in the plan, committee members observed that there are more transportation improvements on the western side of the region than on the eastern side. The committee is concerned about the transportation burdens faced by residents of the eastern side of the region, particularly commuters who must grapple with long commutes to job-rich western jurisdictions. The committee believes these impacts deserve additional attention, discussion and analysis.

More Transit is Needed For Transit-Dependent Communities

Committee members observed that transit improvements in the 2004 CLRP do not adequately target low-income communities, which tend to be transit dependent. Although transit-dependent communities are dispersed throughout the area, they are more likely to be concentrated in inner parts of the region.

Concerns continue to be raised about the lack of planned transit improvements or studies in Prince George's County. Committee members are disappointed that the Bi-County Transitway (the Purple Line) between Silver Spring and New Carrollton is included in the CLRP only as a study, which means that anticipated funding has not yet been identified. Further, the committee believes the Bi-County Transitway study should extend beyond New Carrollton further south into Prince George's County, including new rail service across the Woodrow Wilson Bridge.

Current Transit Services Need to be Maintained and Improved in the Short-Term

Although the expansion of the Metrorail system is very important, low-income communities and persons with disabilities rely upon the services provided by MetroAccess, Metrobus, and local, community-based bus services.

Reverse Commute. Many low-income workers hold more than one job and have jobs that do not follow traditional nine-to-five work hours. The region needs more transit service in the reverse commute direction and expanded levels of transit service to allow these workers access to employment opportunities.

Non-English Transit Information. Transit information for people who have limited English proficiency (LEP) needs to be improved and widely available for a significant part of the population dependent on transit.

Transit Services for People with Disabilities. The 2003 AFA Report to the TPB identified recommendations for improving transit services for people with disabilities, including:

- Improve the dependability of the bus and rail systems to attract and retain riders with disabilities;
- Coordinate efforts to encourage more people with disabilities to use bus and rail with regional and local transit providers; and
- Conduct a comprehensive study of the curb-to-curb service for the most cost-effective ways to serve the greatest number of people.

Promote More Development Around Transit Stations, But Take Care Of The Community That's Already There

The AFA committee would like to see more development around transit stations, especially on the eastern side of the region. However, states and localities should make provisions to mitigate potentially negative impacts from such development, in the short- and long-term, such as increased housing costs and displacement.

CONGESTION MANAGEMENT DOCUMENTATION

A Congestion Management System (CMS) is an integral part of the transportation planning process of the Washington metropolitan area, and is a component of the metropolitan area's Constrained Long Range Plan (CLRP). The CMS component of the CLRP provides information on transportation system performance, usage, and efficiency, and provides information on the potential impact of proposed strategies to alleviate congestion. The CMS component of the CLRP will document that serious consideration has been given to strategies that provide the most efficient and effective use of existing and future transportation facilities, including alternatives to highway capacity increases for single-occupant-vehicles (SOVs).

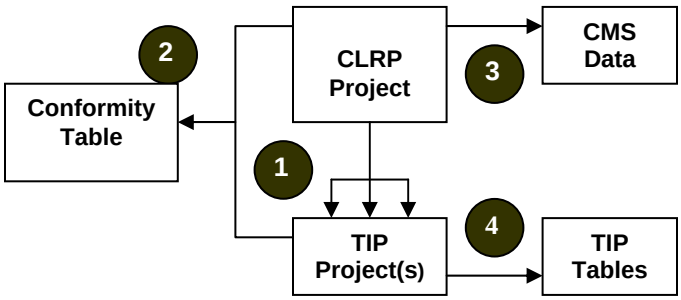
CMS requirements are addressed in both ISTEA and TEA-21; federal regulations published in the *Federal Register* on December 19, 1996 are in effect. Federal regulations require consideration of congestion management strategies in cases where single-occupant-vehicle capacity is proposed. Thus the congestion management documentation form needs to be filled out for any project to be included in the CLRP or Transportation Improvement Program (TIP) that significantly increases the single occupant vehicle carrying capacity of a highway. Non-highway projects do not need a form. Certain highway projects may also be exempt from needing a form. It is recommended to complete a form in association with all submitted, non-exempt projects to ensure compliance with federal regulations and with regional goals.

SECTION 3:
PROJECT SUBMISSION INSTRUCTIONS

INTRODUCTION

This section describes the process to be used by the transportation implementing agencies in preparing the inputs for updating the region's Constrained Long Range Transportation Plan (CLRP) for the year 2030 and the Transportation Improvement Program (TIP). The CLRP, TIP, and Congestion Management System (CMS) Project Description Forms are designed to elicit information to enable policy makers, citizens and other interested parties and segments of the community affected by transportation plans, programs and projects to understand and review them. Description Forms must be completed for all projects to be included in the CLRP and the TIP. All regionally significant projects, *regardless of funding source*, must be included in the CLRP for Air Quality Conformity information purposes. A Congestion Management Documentation Form must be completed for all projects meeting the requirements described on page 3-3 of the instructions. The relationship between the CLRP, TIP, CMS, and Conformity information is shown in Figure 4. The end products of this process will remain the same as in past years; CLRP and TIP Project Description Forms with CMS Documentation Forms, TIP Funding Tables, and Air Quality Conformity Tables. Examples of CLRP and TIP Description Forms are shown on pages 3-4 and 3-5. The TERM analysis and reporting are not addressed here; see Section 4 for those instructions.

Figure 6: Relationship Between CLRP, TIP, CMS, and Conformity Information



1. CLRP projects are at the "parent" level. Each CLRP record may have one or more "child" projects in the TIP
2. CLRP and TIP information are combined to create the project listings for the Air Quality Conformity Table
3. Some CLRP projects may require a CMS description form (see page 3-3)
4. Financial data from the TIP description forms is used to produce the TIP Tables

Agencies can access an updated version of the **ETIP** database application to update and submit project information from the COG website. [1] **ETIP** allows users to enter all data for the CLRP, TIP, Air Quality Conformity Analysis, and CMS Documentation in one integrated platform, rather than an array of word processing and spreadsheet formats. The intent is to eliminate the need for entering redundant information, save time for the user, and reduce errors and inconsistencies within the data. The database will contain all project information submitted in the previous year's returns along with any updates received prior to approval by the TPB in October of the current year.

The user manual and form instructions previously included in this section will be provided to application agency staff in an electronic format along with the application. The remainder of this section will cover the purpose of the forms, changes in the new version, means of distribution and some sample output reports.

[1] For assistance with electronic project submissions, please contact Andrew Austin at (202) 962-3353 or aaustin@mwcog.org.

PURPOSE OF PROJECT DESCRIPTION FORMS

CLRP Description Form

Each submission should describe the project in sufficient detail to facilitate review by the TPB and the public. Specific information is needed on the project location and physical characteristics, purpose, projected completion date, total estimated costs, proposed sources of revenues, and other characteristics. Submissions for studies (formerly major investment studies) should indicate those cases where the design concept and scope (mode and alignment) have not been fully determined and will require further analysis. TERM projects or actions should be identified. CLRP Project Description Forms should be used to describe the full scope of a facility's improvements. Each phase of the project (even if there is only one) should be described under the "Project Phasing". The Air Quality Conformity Analysis is based on the information in these listings, so all CLRP and sub-projects thereof need to be included. A project phase, whether completed for Conformity Analysis or inclusion in the TIP, is based on the same record (i.e., one Conformity Phase = one TIP Phase).

TIP Description Form

A TIP Project Description Form should be completed for each project intended for programming in the current TIP. Every TIP project record must have a “parent” CLRP record. Any projects that do not have funding associated with them between last fiscal year’s annual element and the out year of the TIP will not be listed in the published TIP Tables. Projects that are noted as having funding included under another project listing are exempt from this.

CMS Documentation Form

A Congestion Management Documentation Form should be completed for each project or action intended for the CLRP or the current TIP that involves a significant increase in single-occupant vehicle (SOV) carrying capacity of a highway. Below are the criteria to determine whether a project needs a form. Congestion Management Documentation Forms are also included in the electronic database format (see appendix for additional instructions).

The following categories of projects **REQUIRE** a congestion management form (mark "YES" on Item 7 of the CLRP Project Description Form), except if they fall under one or more of the exemption criteria listed subsequently.

- New limited access or other principal arterial roadways on new rights-of-way
- Additional through lanes on existing limited access or other principal arterial roadways
- Construction of grade-separated interchanges on limited access highways where previously there had not been an interchange.

Exemption criteria for the above categories (mark "NO" for item 7 on the CLRP Project Description Form, and note the reason(s) the project is exempt - these criteria are also provided electronically by clicking on the "criteria" hyperlink under item 7):

- The number of lane-miles added to the highway system by the project totals less than one lane-mile
- The project is an intersection reconstruction or other traffic engineering improvements, including replacement of an at-grade intersection with an interchange
- The project will not allow motor vehicles, such as bicycle or pedestrian facilities
- The project consists of preliminary studies or engineering only, and is not funded for construction
- Any project that received NEPA approval on or before April 6, 1992
- Any project that was already under construction on or before September 30, 1997, or for which construction funds were committed in the FY98-03 TIP. Note that funds being committed in the FY99-04 TIP does not exempt a project.
- Any project whose construction cost is less than $5 million.

Brief and complete answers to all questions are recommended. A reference to an external document or an attachment without further explanation on the form itself is not recommended; findings of studies, Major Investment Studies, for example, should be summarized on the form itself. References to other documents can be made if desired *in addition to* the answer provided on the form.

As a rule of thumb, the scale and detail in the responses to the questions should be in proportion to the scale of the project. For example, a relatively minor project needs less information than a major, multi-lane-mile roadway construction project.

The form can summarize the results of EISs or other studies completed in association with the project, and can also summarize the impact or regional studies or programs. It allows the submitting agency to explain the context of the project in the region's already-adopted and implemented programs, such as the Commuter Connections program, and to go on to explain what new and additional strategies were considered for the project or corridor in question.

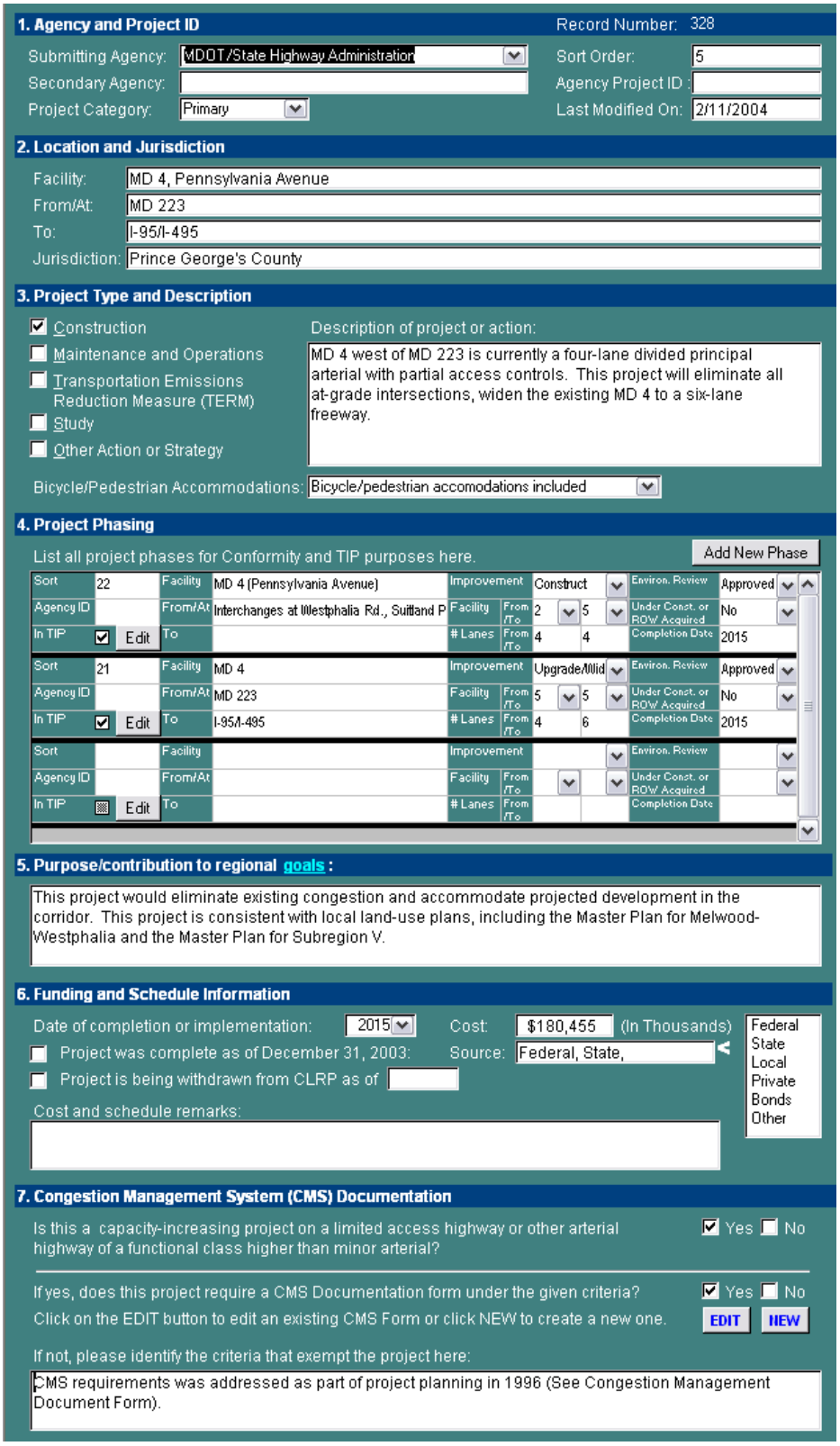
DISTRIBUTION OF ETIP APPLICATION

The eTIP will be available to download from the COG website at http://www.mwcog.org/transportation/activities/clrp/online/etip.asp. For assistance or more information, please contact Andrew Austin at (202) 962-3353 or aaustin@mwcog.org.

SAMPLE FORMS

The following pages are samples for the CLRP and TIP Project Description Forms. These samples were printed using data from previous project submissions and are provided for illustrative purposes only.

Figure 7: CLRP Description Form



1. Agency and Project ID — Record Number: 328

Submitting Agency: MDOT/State Highway Administration
Secondary Agency:
Project Category: Primary
Sort Order: 5
Agency Project ID:
Last Modified On: 2/11/2004

2. Location and Jurisdiction

Facility: MD 4, Pennsylvania Avenue
From/At: MD 223
To: I-95/I-495
Jurisdiction: Prince George's County

3. Project Type and Description

- [x] Construction
- [ ] Maintenance and Operations
- [ ] Transportation Emissions Reduction Measure (TERM)
- [ ] Study
- [ ] Other Action or Strategy

Description of project or action:
MD 4 west of MD 223 is currently a four-lane divided principal arterial with partial access controls. This project will eliminate all at-grade intersections, widen the existing MD 4 to a six-lane freeway.

Bicycle/Pedestrian Accommodations: Bicycle/pedestrian accomodations included

4. Project Phasing

List all project phases for Conformity and TIP purposes here. Add New Phase

Sort	22	Facility	MD 4 (Pennsylvania Avenue)	Improvement	Construct	Environ. Review	Approved		
Agency ID		From/At	Interchanges at Westphalia Rd., Suitland P	Facility From/To	2 / 5	Under Const. or ROW Acquired	No		
In TIP ☑	Edit	To		# Lanes From/To	4 / 4	Completion Date	2015		
Sort	21	Facility	MD 4	Improvement	Upgrade/Mid	Environ. Review	Approved		
Agency ID		From/At	MD 223	Facility From/To	5 / 5	Under Const. or ROW Acquired	No		
In TIP ☑	Edit	To	I-95/I-495	# Lanes From/To	4 / 6	Completion Date	2015		
Sort		Facility		Improvement		Environ. Review			
Agency ID		From/At		Facility From/To	/	Under Const. or ROW Acquired			
In TIP ☐	Edit	To		# Lanes From/To	/	Completion Date			

5. Purpose/contribution to regional goals:

This project would eliminate existing congestion and accommodate projected development in the corridor. This project is consistent with local land-use plans, including the Master Plan for Melwood-Westphalia and the Master Plan for Subregion V.

6. Funding and Schedule Information

Date of completion or implementation: 2015
Cost: $180,455 (In Thousands)
Source: Federal, State,
- [ ] Project was complete as of December 31, 2003:
- [ ] Project is being withdrawn from CLRP as of

Federal
State
Local
Private
Bonds
Other

Cost and schedule remarks:

7. Congestion Management System (CMS) Documentation

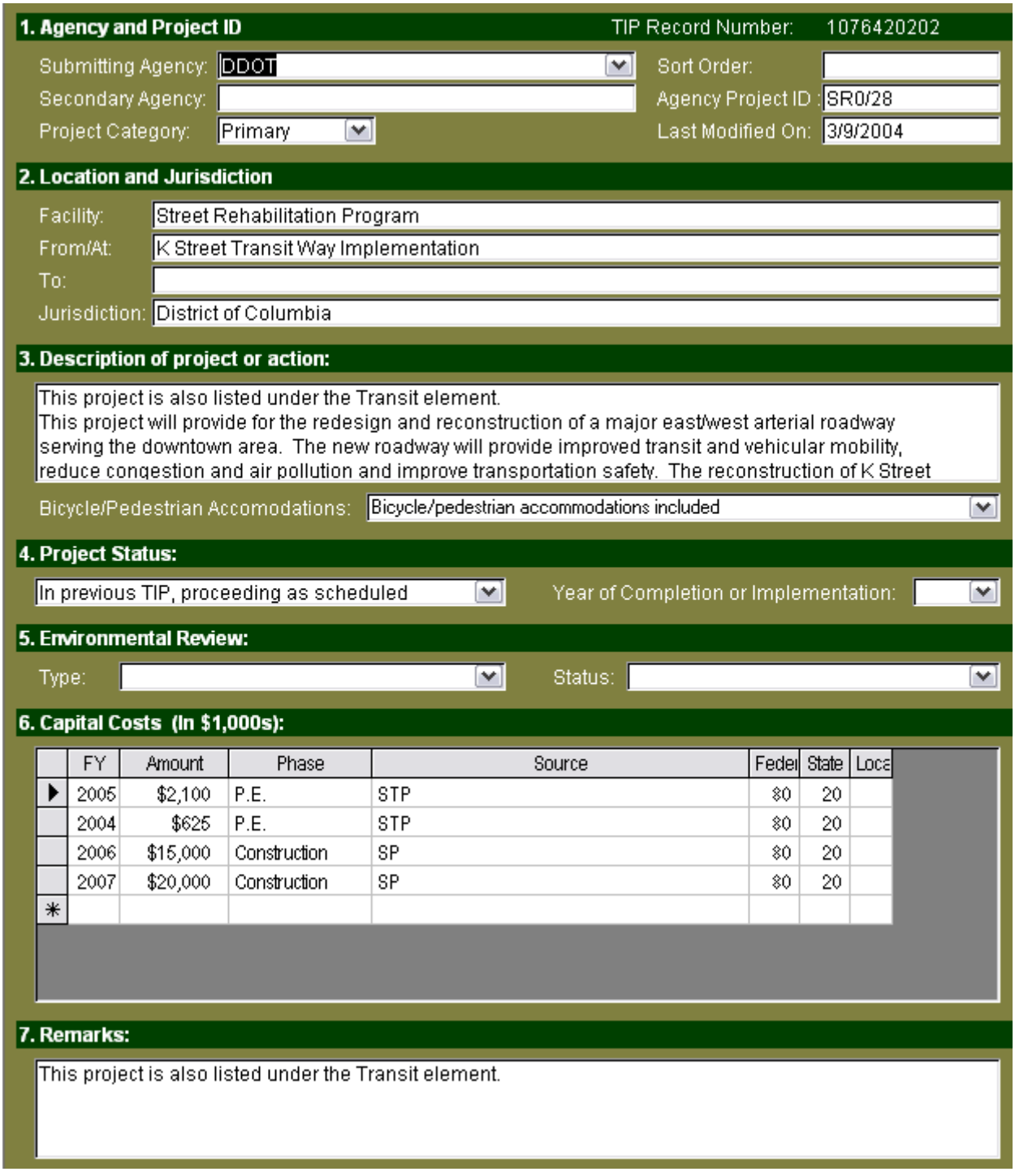
Is this a capacity-increasing project on a limited access highway or other arterial highway of a functional class higher than minor arterial? ☑ Yes ☐ No

If yes, does this project require a CMS Documentation form under the given criteria? ☑ Yes ☐ No

Click on the EDIT button to edit an existing CMS Form or click NEW to create a new one. EDIT NEW

If not, please identify the criteria that exempt the project here:
CMS requirements was addressed as part of project planning in 1996 (See Congestion Management Document Form).

Figure 8: TIP Description Form



1. Agency and Project ID — TIP Record Number: 1076420202

Submitting Agency: DDOT
Sort Order:
Secondary Agency:
Agency Project ID: SR0/28
Project Category: Primary
Last Modified On: 3/9/2004

2. Location and Jurisdiction

Facility: Street Rehabilitation Program
From/At: K Street Transit Way Implementation
To:
Jurisdiction: District of Columbia

3. Description of project or action:

This project is also listed under the Transit element.
This project will provide for the redesign and reconstruction of a major east/west arterial roadway serving the downtown area. The new roadway will provide improved transit and vehicular mobility, reduce congestion and air pollution and improve transportation safety. The reconstruction of K Street

Bicycle/Pedestrian Accomodations: Bicycle/pedestrian accommodations included

4. Project Status:

In previous TIP, proceeding as scheduled
Year of Completion or Implementation:

5. Environmental Review:

Type:
Status:

6. Capital Costs (In $1,000s):

	FY	Amount	Phase	Source	Feder	State	Loca
▶	2005	$2,100	P.E.	STP	$0	20	
	2004	$625	P.E.	STP	$0	20	
	2006	$15,000	Construction	SP	$0	20	
	2007	$20,000	Construction	SP	$0	20	
*							

7. Remarks:

This project is also listed under the Transit element.

APPENDIX A: TRANSPORTATION EMISSION REDUCTION MEASURE (TERM) ANALYSIS INSTRUCTIONS

TERM EMISSIONS REDUCTION CALCULATIONS

This section of the solicitation document contains instructions for analyzing transportation emissions reduction measure (TERM) projects. Table 1 provides an overview of the three emissions components, namely Start-up (Cold Start), Running, and Hot Soak. The methodology that will be used to analyze TERMs for the 2005 CLRP and FY 2006 - 2011 TIP utilizes the latest travel demand results from the Version 2.1D model and emissions data from the Mobile 6.2 emissions model.

The introduction of the Mobile 6 emissions model offered the potential for a more disaggregate emissions reduction analysis of TERMs. Instead of the 8 different vehicle classes used in the Mobile 5b model, the Mobile 6 model utilizes 28 vehicle classes. Four categories of TERMs have been developed utilizing the disaggregate nature of the vehicle classes. The four categories are:

- TERMs impacting the traffic stream (all vehicle types), such as the Signal Optimization TERM, will continue to be analyzed using a regional composite vehicle emissions factor. Tables 2, 3 and 4 display emissions factors for analysis years 2010, 2020 and 2030.

- TERMs impacting commuting vehicle trips, such as the Employer Outreach and Telework Resources Center TERM (item # 75 and # 90 on the TERM tracking sheet, page 1-2), will be analyzed using an average light duty vehicle emissions factor composed of emissions factors for several classes of light duty vehicles and for motorcycles. Tables 5, 6, and 7 display emissions factors for commuting vehicle trips for analysis years 2010, 2020 and 2030.

- TERMs impacting all types of heavy duty diesel vehicles, such as a Diesel Fuel Additive TERM, are the next category.

- TERMs impacting an individual heavy duty vehicle type of a specific weight class, are categorized as a specific vehicle type, such as school buses, transit buses, tractor trailers. Emissions rates for 2010 heavy duty diesel transit, and school buses are shown in Table 8; rates for other specific weight classes can be generated as needed.

TERMs impacting vehicle idling such as roundabouts in place of traffic signals can be analyzed using the individual vehicle type 2005 idling emissions factors or the traffic stream 2005 idling emissions factors shown in Table 9.

Table 2 through 7 shows Cold Start, Running, Hot Soak emissions factors for VOC and NOx for the analysis years 2010, 2020 and 2030 to be used for analyzing “Traffic Stream” and Commute Vehicle” TERMs. Table 8 shows 2010 emissions factors for school and transit buses (heavy duty diesel vehicles). Table 9 shows the 2005 idling emissions factors for the different vehicle types. Table 10 shows the 2005 regional average speeds generated by the post-processor which is used to compute hourly speeds for emissions calculations; use specific speeds for each

application, where available. Table 11 provides the Mobile 6 vehicle classifications.

The cost effectiveness calculation methodology is explained following the emissions factors tables and is a primary criteria used to select TERMs. The final section provides an example of a commuting vehicle TERM analysis using the emissions factors included in the tables.

For purpose of determining emissions reductions, the start-up, running, and hot soak portions of each trip must be considered. Table 1 shows the procedure to use in the analysis.

Table 1: Mobile Source Emissions Overview

EMISSIONS=TRAVEL X EMISSIONS RATE

Start-up=Trip Origins X Grams/Trip

Running=VMT X Grams/Mile

Hot Soak=Trip Destins X Grams/Trip

Emissions factors were obtained from the Mobile 6 model and are contained herein. NOx emissions do not occur in the hot soak portion of the trip, therefore only VOC factors are shown for this category.

It may be noted that the running factors and cold start/hot soak factors shown in the attached tables were generated using the Mobile 6.2 emissions model with the latest VMT and vehicle registration data as input to the model. These are the factors that will be used in the conformity analysis of the 2005 CLRP and FY 2006-2011 TIP. Running emissions factors for speed range 1 to 65 mph are shown in the emissions factor tables. If the actual speed for a TERM is known, use the appropriate emissions factors, otherwise use emissions factors for average travel speed.

Table 2: 2010 Running, Cold Start, and Hot Soak Average Emissions Factors for "Traffic Stream" TERMs
(Mobile 6.2)

Emission Type	Speed (mph)	Average 2010 Running Emission Factor (g/mi)					
		Arterial	Freeway	Weighted Factor VOC	Arterial	Freeway	Weighted Factor NOx
		VOC		Arterial - 60%, Freeway- 40%	NOx		Arterial - 60%, Freeway- 40%
Running (g/mi)	1	3.0024	3.0023	3.0024	1.4188	1.4514	1.4318
Running (g/mi)	2	3.0024	3.0023	3.0024	1.4188	1.4514	1.4318
Running (g/mi)	3	2.3501	2.3500	2.3501	1.3597	1.3922	1.3727
Running (g/mi)	4	1.5345	1.5345	1.5345	1.2855	1.3180	1.2985
Running (g/mi)	5	1.0454	1.0454	1.0454	1.2410	1.2738	1.2541
Running (g/mi)	6	0.8658	0.8573	0.8624	1.1620	1.1644	1.1630
Running (g/mi)	7	0.7378	0.7229	0.7318	1.1056	1.0868	1.0981
Running (g/mi)	8	0.6415	0.6220	0.6337	1.0632	1.0283	1.0492
Running (g/mi)	9	0.5667	0.5438	0.5575	1.0302	0.9828	1.0112
Running (g/mi)	10	0.5071	0.4811	0.4967	1.0039	0.9463	0.9809
Running (g/mi)	11	0.4671	0.4395	0.4561	0.9628	0.8997	0.9376
Running (g/mi)	12	0.4339	0.4053	0.4225	0.9284	0.8605	0.9012
Running (g/mi)	13	0.4059	0.3761	0.3940	0.8996	0.8276	0.8708
Running (g/mi)	14	0.3817	0.3512	0.3695	0.8748	0.7992	0.8446
Running (g/mi)	15	0.3610	0.3296	0.3484	0.8533	0.7748	0.8219
Running (g/mi)	16	0.3404	0.3131	0.3295	0.8319	0.7667	0.8058
Running (g/mi)	17	0.3224	0.2984	0.3128	0.8133	0.7593	0.7917
Running (g/mi)	18	0.3060	0.2855	0.2978	0.7966	0.7529	0.7791
Running (g/mi)	19	0.2918	0.2741	0.2847	0.7814	0.7471	0.7677
Running (g/mi)	20	0.2788	0.2635	0.2727	0.7682	0.7419	0.7577
Running (g/mi)	21	0.2680	0.2552	0.2629	0.7558	0.7369	0.7482
Running (g/mi)	22	0.2583	0.2476	0.2540	0.7446	0.7326	0.7398
Running (g/mi)	23	0.2493	0.2406	0.2458	0.7342	0.7284	0.7319
Running (g/mi)	24	0.2415	0.2344	0.2387	0.7246	0.7247	0.7246
Running (g/mi)	25	0.2337	0.2284	0.2316	0.7161	0.7211	0.7181
Running (g/mi)	26	0.2269	0.2224	0.2251	0.7089	0.7187	0.7128
Running (g/mi)	27	0.2207	0.2171	0.2193	0.7023	0.7162	0.7079
Running (g/mi)	28	0.2150	0.2125	0.2140	0.6963	0.7142	0.7035
Running (g/mi)	29	0.2096	0.2076	0.2088	0.6905	0.7123	0.6992
Running (g/mi)	30	0.2048	0.2034	0.2042	0.6853	0.7105	0.6954
Running (g/mi)	31	0.1999	0.1990	0.1995	0.6827	0.7097	0.6935
Running (g/mi)	32	0.1952	0.1946	0.1950	0.6806	0.7088	0.6919
Running (g/mi)	33	0.1911	0.1906	0.1909	0.6785	0.7084	0.6905
Running (g/mi)	34	0.1869	0.1868	0.1869	0.6764	0.7076	0.6889
Running (g/mi)	35	0.1832	0.1832	0.1832	0.6746	0.7071	0.6876
Running (g/mi)	36	0.1802	0.1802	0.1802	0.6777	0.7106	0.6909
Running (g/mi)	37	0.1776	0.1776	0.1776	0.6808	0.7136	0.6939
Running (g/mi)	38	0.1750	0.1750	0.1750	0.6838	0.7163	0.6968
Running (g/mi)	39	0.1723	0.1723	0.1723	0.6867	0.7193	0.6997
Running (g/mi)	40	0.1704	0.1704	0.1704	0.6892	0.7219	0.7023
Running (g/mi)	41	0.1679	0.1679	0.1679	0.6953	0.7280	0.7084
Running (g/mi)	42	0.1658	0.1658	0.1658	0.7012	0.7338	0.7142
Running (g/mi)	43	0.1637	0.1637	0.1637	0.7068	0.7393	0.7198
Running (g/mi)	44	0.1617	0.1617	0.1617	0.7121	0.7449	0.7252
Running (g/mi)	45	0.1598	0.1598	0.1598	0.7171	0.7497	0.7301
Running (g/mi)	46	0.1577	0.1577	0.1577	0.7262	0.7587	0.7392
Running (g/mi)	47	0.1557	0.1557	0.1557	0.7347	0.7671	0.7477
Running (g/mi)	48	0.1540	0.1540	0.1540	0.7428	0.7753	0.7558
Running (g/mi)	49	0.1524	0.1524	0.1524	0.7506	0.7831	0.7636
Running (g/mi)	50	0.1508	0.1508	0.1508	0.7582	0.7908	0.7712
Running (g/mi)	51	0.1492	0.1492	0.1492	0.7706	0.8033	0.7837
Running (g/mi)	52	0.1479	0.1479	0.1479	0.7827	0.8152	0.7957
Running (g/mi)	53	0.1464	0.1464	0.1464	0.7942	0.8268	0.8072
Running (g/mi)	54	0.1452	0.1452	0.1452	0.8054	0.8378	0.8184
Running (g/mi)	55	0.1437	0.1437	0.1437	0.8160	0.8486	0.8290
Running (g/mi)	56	0.1429	0.1429	0.1429	0.8333	0.8660	0.8464
Running (g/mi)	57	0.1422	0.1422	0.1422	0.8498	0.8828	0.8630
Running (g/mi)	58	0.1415	0.1415	0.1415	0.8663	0.8986	0.8792
Running (g/mi)	59	0.1411	0.1411	0.1411	0.8817	0.9141	0.8947
Running (g/mi)	60	0.1403	0.1403	0.1403	0.8966	0.9292	0.9096
Running (g/mi)	61	0.1398	0.1398	0.1398	0.9206	0.9533	0.9337
Running (g/mi)	62	0.1394	0.1394	0.1394	0.9439	0.9763	0.9569
Running (g/mi)	63	0.1388	0.1388	0.1388	0.9663	0.9988	0.9793
Running (g/mi)	64	0.1387	0.1387	0.1387	0.9882	1.0208	1.0012
Running (g/mi)	65	0.1383	0.1383	0.1383	1.0091	1.0418	1.0222

Emission Type	VOC	NOx
Cold Start (g/trip start, Total)	0.8802	0.5334
Hot Soak Loss (g/trip end)	0.5741	0

Table 3: 2020 Running, Cold Start, and Hot Soak Average Emissions Factors for "Traffic Stream" TERMs
(Mobile 6.2)

	Average 2020 Network Running Emission Factor (g/mi)						
Emission Type	Speed (mph)	Arterial	Freeway	Weighted Factor VOC	Arterial	Freeway	Weighted Factor NOx
		VOC		Arterial - 60%, Freeway- 40%	NOx		Arterial - 60%, Freeway- 40%
Running (g/mi)	1	2.0083	2.0083	2.0083	0.7321	0.7437	0.7367
Running (g/mi)	2	2.0083	2.0083	2.0083	0.7321	0.7437	0.7367
Running (g/mi)	3	1.5804	1.5804	1.5804	0.7004	0.7119	0.7050
Running (g/mi)	4	1.0450	1.0450	1.0450	0.6606	0.6721	0.6652
Running (g/mi)	5	0.7241	0.7241	0.7241	0.6367	0.6483	0.6413
Running (g/mi)	6	0.6031	0.5969	0.6006	0.5946	0.5880	0.5920
Running (g/mi)	7	0.5166	0.5060	0.5123	0.5645	0.5453	0.5569
Running (g/mi)	8	0.4518	0.4378	0.4462	0.5419	0.5130	0.5304
Running (g/mi)	9	0.4014	0.3849	0.3948	0.5243	0.4881	0.5098
Running (g/mi)	10	0.3610	0.3425	0.3536	0.5103	0.4680	0.4934
Running (g/mi)	11	0.3331	0.3134	0.3252	0.4885	0.4429	0.4703
Running (g/mi)	12	0.3099	0.2894	0.3017	0.4705	0.4220	0.4511
Running (g/mi)	13	0.2902	0.2688	0.2816	0.4552	0.4042	0.4348
Running (g/mi)	14	0.2734	0.2515	0.2646	0.4421	0.3891	0.4209
Running (g/mi)	15	0.2587	0.2361	0.2497	0.4306	0.3759	0.4087
Running (g/mi)	16	0.2439	0.2242	0.2361	0.4196	0.3728	0.4008
Running (g/mi)	17	0.2310	0.2137	0.2241	0.4100	0.3699	0.3939
Running (g/mi)	18	0.2193	0.2043	0.2133	0.4013	0.3674	0.3877
Running (g/mi)	19	0.2088	0.1959	0.2036	0.3935	0.3651	0.3821
Running (g/mi)	20	0.1994	0.1882	0.1949	0.3866	0.3630	0.3772
Running (g/mi)	21	0.1919	0.1824	0.1881	0.3803	0.3610	0.3726
Running (g/mi)	22	0.1852	0.1771	0.1820	0.3744	0.3593	0.3683
Running (g/mi)	23	0.1789	0.1723	0.1762	0.3691	0.3577	0.3645
Running (g/mi)	24	0.1734	0.1677	0.1711	0.3642	0.3561	0.3610
Running (g/mi)	25	0.1678	0.1637	0.1662	0.3598	0.3547	0.3577
Running (g/mi)	26	0.1630	0.1595	0.1616	0.3560	0.3538	0.3551
Running (g/mi)	27	0.1586	0.1557	0.1574	0.3524	0.3527	0.3526
Running (g/mi)	28	0.1545	0.1523	0.1536	0.3492	0.3519	0.3503
Running (g/mi)	29	0.1505	0.1489	0.1499	0.3462	0.3511	0.3481
Running (g/mi)	30	0.1469	0.1458	0.1465	0.3435	0.3504	0.3463
Running (g/mi)	31	0.1435	0.1426	0.1431	0.3421	0.3500	0.3453
Running (g/mi)	32	0.1402	0.1397	0.1400	0.3407	0.3495	0.3442
Running (g/mi)	33	0.1372	0.1369	0.1371	0.3394	0.3491	0.3433
Running (g/mi)	34	0.1343	0.1341	0.1342	0.3381	0.3488	0.3424
Running (g/mi)	35	0.1315	0.1315	0.1315	0.3371	0.3486	0.3417
Running (g/mi)	36	0.1295	0.1295	0.1295	0.3386	0.3503	0.3432
Running (g/mi)	37	0.1278	0.1278	0.1278	0.3402	0.3518	0.3448
Running (g/mi)	38	0.1259	0.1259	0.1259	0.3417	0.3532	0.3463
Running (g/mi)	39	0.1240	0.1240	0.1240	0.3432	0.3546	0.3478
Running (g/mi)	40	0.1225	0.1225	0.1225	0.3445	0.3559	0.3490
Running (g/mi)	41	0.1208	0.1208	0.1208	0.3472	0.3589	0.3519
Running (g/mi)	42	0.1193	0.1193	0.1193	0.3503	0.3617	0.3548
Running (g/mi)	43	0.1178	0.1178	0.1178	0.3529	0.3642	0.3574
Running (g/mi)	44	0.1164	0.1164	0.1164	0.3553	0.3668	0.3599
Running (g/mi)	45	0.1151	0.1151	0.1151	0.3577	0.3692	0.3623
Running (g/mi)	46	0.1138	0.1138	0.1138	0.3619	0.3733	0.3665
Running (g/mi)	47	0.1125	0.1125	0.1125	0.3658	0.3772	0.3704
Running (g/mi)	48	0.1113	0.1113	0.1113	0.3695	0.3810	0.3741
Running (g/mi)	49	0.1101	0.1101	0.1101	0.3731	0.3846	0.3777
Running (g/mi)	50	0.1091	0.1091	0.1091	0.3767	0.3882	0.3813
Running (g/mi)	51	0.1081	0.1081	0.1081	0.3823	0.3938	0.3869
Running (g/mi)	52	0.1073	0.1073	0.1073	0.3877	0.3993	0.3923
Running (g/mi)	53	0.1064	0.1064	0.1064	0.3929	0.4045	0.3975
Running (g/mi)	54	0.1057	0.1057	0.1057	0.3980	0.4095	0.4026
Running (g/mi)	55	0.1049	0.1049	0.1049	0.4029	0.4143	0.4075
Running (g/mi)	56	0.1046	0.1046	0.1046	0.4106	0.4221	0.4152
Running (g/mi)	57	0.1044	0.1044	0.1044	0.4179	0.4295	0.4225
Running (g/mi)	58	0.1041	0.1041	0.1041	0.4251	0.4367	0.4298
Running (g/mi)	59	0.1038	0.1038	0.1038	0.4321	0.4434	0.4366
Running (g/mi)	60	0.1036	0.1036	0.1036	0.4387	0.4501	0.4433
Running (g/mi)	61	0.1035	0.1035	0.1035	0.4492	0.4606	0.4538
Running (g/mi)	62	0.1035	0.1035	0.1035	0.4593	0.4708	0.4639
Running (g/mi)	63	0.1034	0.1034	0.1034	0.4693	0.4805	0.4738
Running (g/mi)	64	0.1034	0.1034	0.1034	0.4787	0.4902	0.4833
Running (g/mi)	65	0.1033	0.1033	0.1033	0.4879	0.4995	0.4925

Emission Type	VOC	NOx
Cold Start (g/trip)	0.5901	0.2946
Hot Soak Loss (g/tri	0.3254	0.0000

Note: 2020 factors derived from interpolation of 2025 Mobile 6 factors and 2010 Mobile 6.2 factors

Table 4: 2030 Running, Cold Start, and Hot Soak Average Emissons Factors for "Traffic Stream" TERMs
(Mobile 6.2)

Average 2030 Emission Factors (gm/mi)							
Emission Type	Speed (mph)	Arterial	Freeway	Weighted Factor VOC	Arterial	Freeway	Weighted Factor NOx
		VOC		Arterial - 60% Freeway 40%	NOx		Arterial - 60% Freeway 40%
Running (g/mi)	1	1.4958	1.4958	1.4958	0.3599	0.3599	0.3599
Running (g/mi)	2	1.4958	1.4958	1.4958	0.3599	0.3599	0.3599
Running (g/mi)	3	1.1832	1.1832	1.1832	0.3430	0.3430	0.3430
Running (g/mi)	4	0.7914	0.7914	0.7914	0.3218	0.3218	0.3218
Running (g/mi)	5	0.5568	0.5567	0.5568	0.3090	0.3090	0.3090
Running (g/mi)	6	0.4662	0.4614	0.4643	0.2868	0.2756	0.2823
Running (g/mi)	7	0.4015	0.3930	0.3981	0.2710	0.2515	0.2632
Running (g/mi)	8	0.3527	0.3421	0.3485	0.2590	0.2337	0.2489
Running (g/mi)	9	0.3150	0.3020	0.3098	0.2499	0.2197	0.2378
Running (g/mi)	10	0.2847	0.2701	0.2789	0.2424	0.2084	0.2288
Running (g/mi)	11	0.2632	0.2479	0.2571	0.2312	0.1949	0.2167
Running (g/mi)	12	0.2452	0.2288	0.2386	0.2217	0.1837	0.2065
Running (g/mi)	13	0.2298	0.2130	0.2231	0.2139	0.1743	0.1981
Running (g/mi)	14	0.2168	0.1994	0.2098	0.2072	0.1662	0.1908
Running (g/mi)	15	0.2052	0.1875	0.1981	0.2011	0.1591	0.1843
Running (g/mi)	16	0.1937	0.1781	0.1875	0.1956	0.1588	0.1809
Running (g/mi)	17	0.1831	0.1696	0.1777	0.1908	0.1581	0.1777
Running (g/mi)	18	0.1738	0.1620	0.1691	0.1864	0.1578	0.1750
Running (g/mi)	19	0.1656	0.1553	0.1615	0.1827	0.1575	0.1726
Running (g/mi)	20	0.1580	0.1493	0.1545	0.1791	0.1571	0.1703
Running (g/mi)	21	0.1522	0.1444	0.1491	0.1760	0.1568	0.1683
Running (g/mi)	22	0.1468	0.1404	0.1442	0.1732	0.1563	0.1664
Running (g/mi)	23	0.1419	0.1365	0.1397	0.1706	0.1560	0.1648
Running (g/mi)	24	0.1374	0.1332	0.1357	0.1681	0.1558	0.1632
Running (g/mi)	25	0.1334	0.1298	0.1320	0.1659	0.1555	0.1617
Running (g/mi)	26	0.1294	0.1265	0.1282	0.1639	0.1552	0.1604
Running (g/mi)	27	0.1260	0.1236	0.1250	0.1622	0.1549	0.1593
Running (g/mi)	28	0.1227	0.1208	0.1219	0.1606	0.1548	0.1583
Running (g/mi)	29	0.1195	0.1181	0.1189	0.1588	0.1546	0.1571
Running (g/mi)	30	0.1166	0.1156	0.1162	0.1575	0.1545	0.1563
Running (g/mi)	31	0.1139	0.1131	0.1136	0.1565	0.1543	0.1556
Running (g/mi)	32	0.1114	0.1109	0.1112	0.1556	0.1539	0.1549
Running (g/mi)	33	0.1090	0.1087	0.1089	0.1549	0.1538	0.1545
Running (g/mi)	34	0.1066	0.1065	0.1066	0.1540	0.1535	0.1538
Running (g/mi)	35	0.1046	0.1046	0.1046	0.1535	0.1535	0.1535
Running (g/mi)	36	0.1028	0.1028	0.1028	0.1541	0.1541	0.1541
Running (g/mi)	37	0.1014	0.1014	0.1014	0.1549	0.1549	0.1549
Running (g/mi)	38	0.1000	0.1000	0.1000	0.1555	0.1555	0.1555
Running (g/mi)	39	0.0986	0.0986	0.0986	0.1561	0.1561	0.1561
Running (g/mi)	40	0.0973	0.0973	0.0973	0.1568	0.1568	0.1568
Running (g/mi)	41	0.0960	0.0960	0.0960	0.1579	0.1579	0.1579
Running (g/mi)	42	0.0947	0.0947	0.0947	0.1591	0.1591	0.1591
Running (g/mi)	43	0.0937	0.0937	0.0937	0.1601	0.1601	0.1601
Running (g/mi)	44	0.0924	0.0924	0.0924	0.1611	0.1611	0.1611
Running (g/mi)	45	0.0912	0.0912	0.0912	0.1621	0.1621	0.1621
Running (g/mi)	46	0.0903	0.0903	0.0903	0.1637	0.1637	0.1637
Running (g/mi)	47	0.0896	0.0896	0.0896	0.1650	0.1650	0.1650
Running (g/mi)	48	0.0886	0.0886	0.0886	0.1665	0.1665	0.1665
Running (g/mi)	49	0.0877	0.0877	0.0877	0.1679	0.1679	0.1679
Running (g/mi)	50	0.0870	0.0870	0.0870	0.1690	0.1690	0.1690
Running (g/mi)	51	0.0863	0.0863	0.0863	0.1710	0.1710	0.1710
Running (g/mi)	52	0.0858	0.0858	0.0858	0.1730	0.1730	0.1730
Running (g/mi)	53	0.0853	0.0853	0.0853	0.1749	0.1749	0.1749
Running (g/mi)	54	0.0848	0.0848	0.0848	0.1766	0.1766	0.1766
Running (g/mi)	55	0.0842	0.0842	0.0842	0.1781	0.1781	0.1781
Running (g/mi)	56	0.0841	0.0841	0.0841	0.1807	0.1807	0.1807
Running (g/mi)	57	0.0842	0.0842	0.0842	0.1831	0.1831	0.1831
Running (g/mi)	58	0.0841	0.0841	0.0841	0.1854	0.1854	0.1854
Running (g/mi)	59	0.0840	0.0840	0.0840	0.1877	0.1877	0.1877
Running (g/mi)	60	0.0839	0.0839	0.0839	0.1898	0.1898	0.1898
Running (g/mi)	61	0.0842	0.0842	0.0842	0.1930	0.1930	0.1930
Running (g/mi)	62	0.0841	0.0841	0.0841	0.1961	0.1961	0.1961
Running (g/mi)	63	0.0845	0.0845	0.0845	0.1991	0.1991	0.1991
Running (g/mi)	64	0.0843	0.0843	0.0843	0.2020	0.2020	0.2020
Running (g/mi)	65	0.0845	0.0845	0.0845	0.2048	0.2048	0.2048

Emission Type	VOC	NOx
Cold Start (g/trip)	0.4272	0.1552
Hot Soak (g/trip end)	0.202	0

Exhibit - 1
VOC MOBILE6 RUNNING EMISSION RATES
TRAFFIC STREAM
FOR 2010, 2020 AND 2030
WEIGHTED AVEARGE of ARTERIAL & FREEWAY

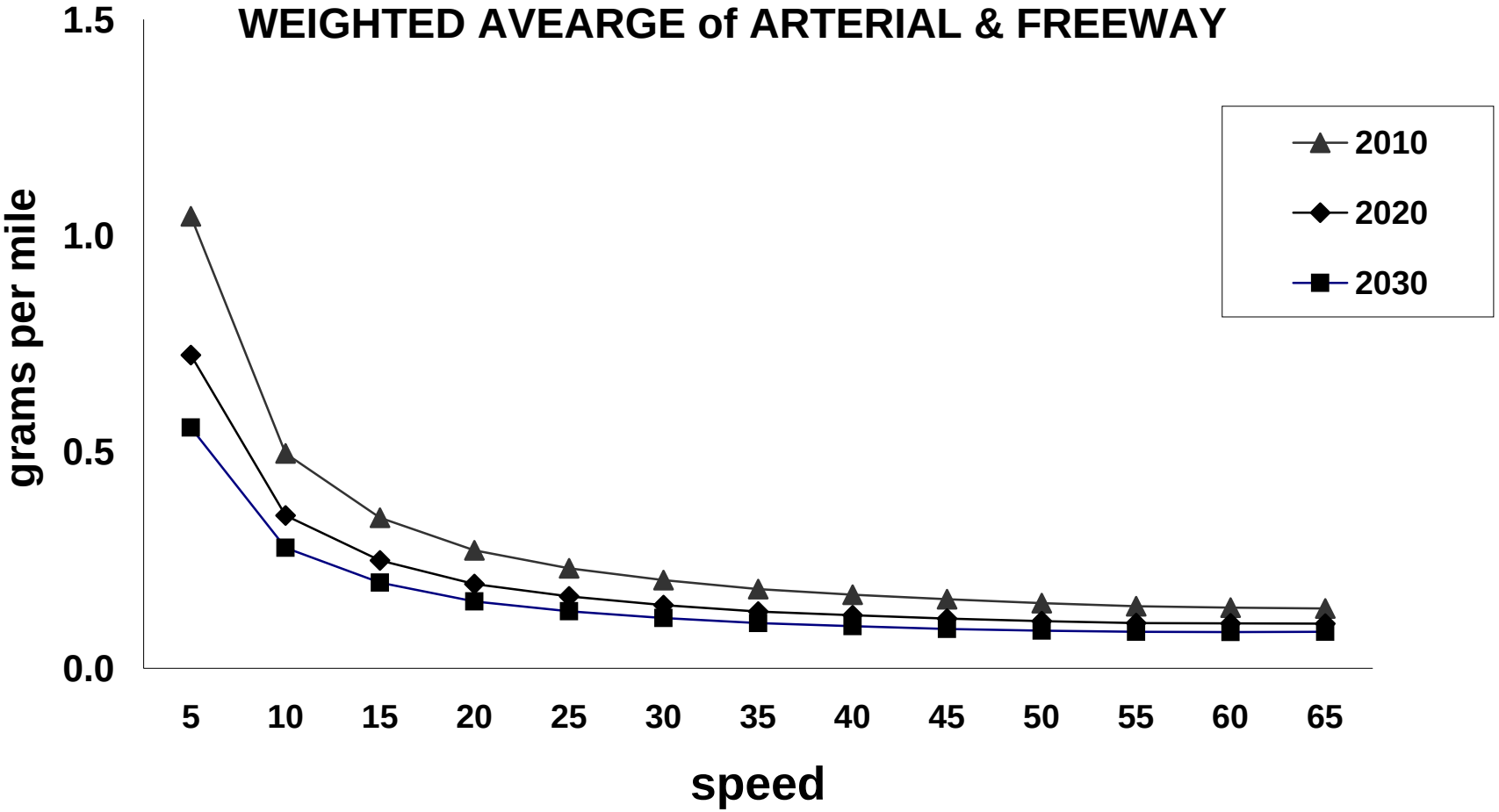


Exhibit - 2
NOx MOBILE6 RUNNING EMISSION RATES
TRAFFIC STREAM
FOR 2010, 2020 AND 2030
WEIGHTED AVEARGE of ARTERIAL & FREEWAY

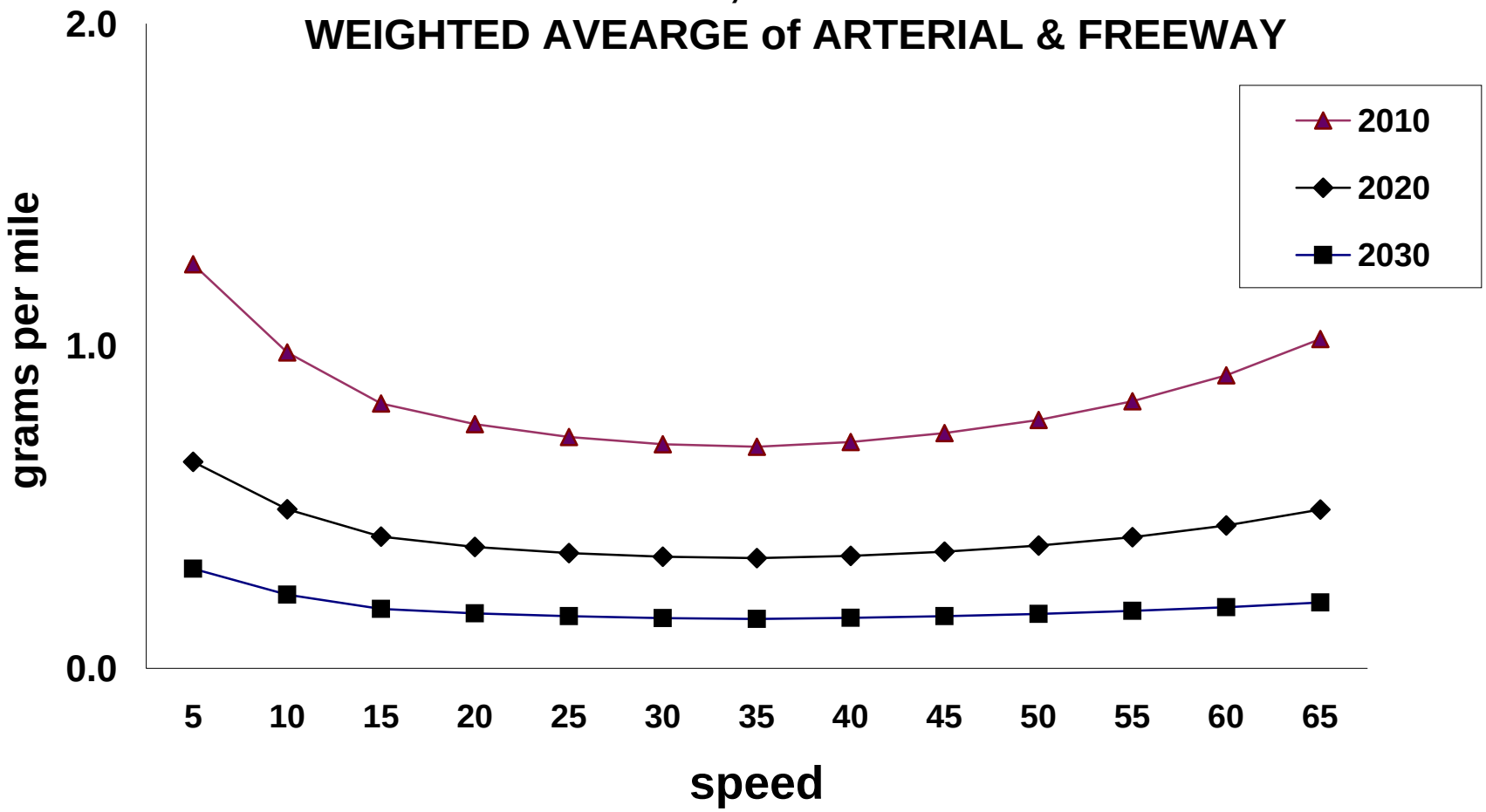


Table 5: 2010 Running, Cold Start, and Hot Soak Average Emissions Factors for "Commuter Vehicle" TERMs
(Mobile 6.2)

	Average 2010 Running Emission Factor (g/mi)						
Emission Type	Speed (mph)	Arterial	Freeway	Weighted Factor VOC	Arterial	Freeway	Weighted Factor NOx
		VOC		Arterial - 60%, Freeway- 40%	NOx		Arterial - 60%, Freeway- 40%
Running (g/mi)	1	3.0842	3.0842	3.0842	0.9005	0.9003	0.9004
Running (g/mi)	2	3.0842	3.0842	3.0842	0.9005	0.9003	0.9004
Running (g/mi)	3	2.3988	2.3988	2.3988	0.8557	0.8556	0.8557
Running (g/mi)	4	1.5423	1.5422	1.5423	0.7997	0.7997	0.7997
Running (g/mi)	5	1.0281	1.0281	1.0281	0.7660	0.7660	0.7660
Running (g/mi)	6	0.8446	0.8351	0.8408	0.7098	0.6769	0.6966
Running (g/mi)	7	0.7136	0.6976	0.7072	0.6693	0.6133	0.6469
Running (g/mi)	8	0.6151	0.5939	0.6066	0.6393	0.5655	0.6098
Running (g/mi)	9	0.5385	0.5136	0.5285	0.6158	0.5284	0.5808
Running (g/mi)	10	0.4773	0.4494	0.4661	0.5969	0.4988	0.5577
Running (g/mi)	11	0.4390	0.4091	0.4270	0.5686	0.4643	0.5269
Running (g/mi)	12	0.4068	0.3757	0.3944	0.5450	0.4355	0.5012
Running (g/mi)	13	0.3797	0.3473	0.3667	0.5252	0.4113	0.4796
Running (g/mi)	14	0.3565	0.3230	0.3431	0.5080	0.3902	0.4609
Running (g/mi)	15	0.3364	0.3020	0.3226	0.4931	0.3720	0.4447
Running (g/mi)	16	0.3169	0.2873	0.3051	0.4800	0.3730	0.4372
Running (g/mi)	17	0.2998	0.2739	0.2894	0.4682	0.3739	0.4305
Running (g/mi)	18	0.2846	0.2622	0.2756	0.4580	0.3749	0.4248
Running (g/mi)	19	0.2709	0.2518	0.2633	0.4487	0.3757	0.4195
Running (g/mi)	20	0.2587	0.2423	0.2521	0.4402	0.3764	0.4147
Running (g/mi)	21	0.2490	0.2352	0.2435	0.4325	0.3768	0.4102
Running (g/mi)	22	0.2402	0.2285	0.2355	0.4257	0.3768	0.4061
Running (g/mi)	23	0.2320	0.2225	0.2282	0.4191	0.3773	0.4024
Running (g/mi)	24	0.2248	0.2171	0.2217	0.4132	0.3776	0.3990
Running (g/mi)	25	0.2180	0.2120	0.2156	0.4080	0.3778	0.3959
Running (g/mi)	26	0.2118	0.2069	0.2098	0.4029	0.3778	0.3929
Running (g/mi)	27	0.2063	0.2024	0.2047	0.3982	0.3778	0.3900
Running (g/mi)	28	0.2013	0.1984	0.2001	0.3938	0.3778	0.3874
Running (g/mi)	29	0.1962	0.1942	0.1954	0.3899	0.3778	0.3851
Running (g/mi)	30	0.1923	0.1908	0.1917	0.3860	0.3778	0.3827
Running (g/mi)	31	0.1876	0.1866	0.1872	0.3835	0.3773	0.3810
Running (g/mi)	32	0.1837	0.1828	0.1833	0.3812	0.3766	0.3794
Running (g/mi)	33	0.1800	0.1793	0.1797	0.3790	0.3762	0.3779
Running (g/mi)	34	0.1762	0.1762	0.1762	0.3771	0.3755	0.3765
Running (g/mi)	35	0.1727	0.1727	0.1727	0.3752	0.3752	0.3752
Running (g/mi)	36	0.1703	0.1703	0.1703	0.3763	0.3763	0.3763
Running (g/mi)	37	0.1681	0.1681	0.1681	0.3777	0.3777	0.3777
Running (g/mi)	38	0.1657	0.1657	0.1657	0.3790	0.3790	0.3790
Running (g/mi)	39	0.1636	0.1636	0.1636	0.3801	0.3801	0.3801
Running (g/mi)	40	0.1617	0.1617	0.1617	0.3811	0.3811	0.3811
Running (g/mi)	41	0.1597	0.1597	0.1597	0.3830	0.3830	0.3830
Running (g/mi)	42	0.1579	0.1579	0.1579	0.3848	0.3848	0.3848
Running (g/mi)	43	0.1561	0.1561	0.1561	0.3867	0.3867	0.3867
Running (g/mi)	44	0.1544	0.1544	0.1544	0.3885	0.3885	0.3885
Running (g/mi)	45	0.1526	0.1526	0.1526	0.3901	0.3901	0.3901
Running (g/mi)	46	0.1508	0.1508	0.1508	0.3922	0.3922	0.3922
Running (g/mi)	47	0.1490	0.1490	0.1490	0.3942	0.3942	0.3942
Running (g/mi)	48	0.1474	0.1474	0.1474	0.3959	0.3959	0.3959
Running (g/mi)	49	0.1459	0.1459	0.1459	0.3977	0.3977	0.3977
Running (g/mi)	50	0.1447	0.1447	0.1447	0.3994	0.3994	0.3994
Running (g/mi)	51	0.1431	0.1431	0.1431	0.4014	0.4014	0.4014
Running (g/mi)	52	0.1418	0.1418	0.1418	0.4038	0.4038	0.4038
Running (g/mi)	53	0.1404	0.1404	0.1404	0.4058	0.4058	0.4058
Running (g/mi)	54	0.1391	0.1391	0.1391	0.4078	0.4078	0.4078
Running (g/mi)	55	0.1377	0.1377	0.1377	0.4097	0.4097	0.4097
Running (g/mi)	56	0.1372	0.1372	0.1372	0.4118	0.4118	0.4118
Running (g/mi)	57	0.1363	0.1363	0.1363	0.4140	0.4140	0.4140
Running (g/mi)	58	0.1358	0.1358	0.1358	0.4162	0.4162	0.4162
Running (g/mi)	59	0.1350	0.1350	0.1350	0.4182	0.4182	0.4182
Running (g/mi)	60	0.1347	0.1347	0.1347	0.4203	0.4203	0.4203
Running (g/mi)	61	0.1339	0.1339	0.1339	0.4225	0.4225	0.4225
Running (g/mi)	62	0.1338	0.1338	0.1338	0.4248	0.4248	0.4248
Running (g/mi)	63	0.1331	0.1331	0.1331	0.4269	0.4269	0.4269
Running (g/mi)	64	0.1330	0.1330	0.1330	0.4291	0.4291	0.4291
Running (g/mi)	65	0.1323	0.1323	0.1323	0.4313	0.4313	0.4313

Emission Type	VOC	NOx
Cold Start (g/trip start, Total)	0.9599	0.5811
Hot Soak Loss (g/trip end)	0.5661	0

Table 6: 2020 Running, Cold Start, and Hot Soak Average Emissions Factors for "Commuter Vehicle" TERMs
(Mobile 6.2)

	Average 2020 Running Emission Factor (g/mi)						
Emission Type	Speed (mph)	Arterial	Freeway	Weighted Factor VOC	Arterial	Freeway	Weighted Factor NOx
		VOC		Arterial - 60%, Freeway- 40%	NOx		Arterial - 60%, Freeway- 40%
Running (g/mi)	1	2.0623	2.0623	2.0623	0.5288	0.5287	0.5287
Running (g/mi)	2	2.0623	2.0623	2.0623	0.5288	0.5287	0.5287
Running (g/mi)	3	1.6113	1.6113	1.6113	0.5024	0.5023	0.5024
Running (g/mi)	4	1.0473	1.0473	1.0473	0.4692	0.4692	0.4692
Running (g/mi)	5	0.7088	0.7088	0.7088	0.4493	0.4493	0.4493
Running (g/mi)	6	0.5851	0.5784	0.5824	0.4159	0.3962	0.4080
Running (g/mi)	7	0.4968	0.4850	0.4921	0.3918	0.3582	0.3784
Running (g/mi)	8	0.4304	0.4150	0.4243	0.3740	0.3297	0.3563
Running (g/mi)	9	0.3788	0.3605	0.3715	0.3600	0.3077	0.3391
Running (g/mi)	10	0.3374	0.3171	0.3292	0.3486	0.2899	0.3251
Running (g/mi)	11	0.3106	0.2892	0.3021	0.3319	0.2694	0.3069
Running (g/mi)	12	0.2881	0.2656	0.2791	0.3179	0.2522	0.2916
Running (g/mi)	13	0.2692	0.2457	0.2598	0.3062	0.2378	0.2788
Running (g/mi)	14	0.2530	0.2287	0.2433	0.2959	0.2253	0.2676
Running (g/mi)	15	0.2387	0.2139	0.2288	0.2870	0.2145	0.2580
Running (g/mi)	16	0.2249	0.2033	0.2163	0.2793	0.2152	0.2537
Running (g/mi)	17	0.2127	0.1937	0.2051	0.2722	0.2158	0.2497
Running (g/mi)	18	0.2017	0.1853	0.1951	0.2661	0.2165	0.2463
Running (g/mi)	19	0.1917	0.1777	0.1861	0.2607	0.2170	0.2432
Running (g/mi)	20	0.1831	0.1708	0.1782	0.2557	0.2174	0.2404
Running (g/mi)	21	0.1762	0.1659	0.1721	0.2512	0.2178	0.2378
Running (g/mi)	22	0.1702	0.1614	0.1667	0.2470	0.2178	0.2353
Running (g/mi)	23	0.1644	0.1572	0.1615	0.2432	0.2182	0.2332
Running (g/mi)	24	0.1594	0.1535	0.1570	0.2397	0.2183	0.2311
Running (g/mi)	25	0.1547	0.1499	0.1528	0.2366	0.2185	0.2293
Running (g/mi)	26	0.1503	0.1465	0.1488	0.2336	0.2185	0.2276
Running (g/mi)	27	0.1465	0.1432	0.1452	0.2309	0.2185	0.2259
Running (g/mi)	28	0.1428	0.1405	0.1419	0.2283	0.2187	0.2244
Running (g/mi)	29	0.1393	0.1375	0.1385	0.2259	0.2188	0.2231
Running (g/mi)	30	0.1363	0.1351	0.1358	0.2237	0.2188	0.2218
Running (g/mi)	31	0.1331	0.1322	0.1328	0.2222	0.2183	0.2207
Running (g/mi)	32	0.1304	0.1296	0.1301	0.2208	0.2179	0.2197
Running (g/mi)	33	0.1277	0.1272	0.1275	0.2194	0.2177	0.2187
Running (g/mi)	34	0.1251	0.1250	0.1250	0.2182	0.2174	0.2179
Running (g/mi)	35	0.1228	0.1228	0.1228	0.2171	0.2171	0.2171
Running (g/mi)	36	0.1210	0.1210	0.1210	0.2178	0.2178	0.2178
Running (g/mi)	37	0.1196	0.1196	0.1196	0.2188	0.2188	0.2188
Running (g/mi)	38	0.1178	0.1178	0.1178	0.2194	0.2194	0.2194
Running (g/mi)	39	0.1165	0.1165	0.1165	0.2202	0.2202	0.2202
Running (g/mi)	40	0.1150	0.1150	0.1150	0.2209	0.2209	0.2209
Running (g/mi)	41	0.1137	0.1137	0.1137	0.2221	0.2221	0.2221
Running (g/mi)	42	0.1124	0.1124	0.1124	0.2231	0.2231	0.2231
Running (g/mi)	43	0.1112	0.1112	0.1112	0.2243	0.2243	0.2243
Running (g/mi)	44	0.1099	0.1099	0.1099	0.2254	0.2254	0.2254
Running (g/mi)	45	0.1087	0.1087	0.1087	0.2264	0.2264	0.2264
Running (g/mi)	46	0.1075	0.1075	0.1075	0.2276	0.2276	0.2276
Running (g/mi)	47	0.1065	0.1065	0.1065	0.2288	0.2288	0.2288
Running (g/mi)	48	0.1055	0.1055	0.1055	0.2298	0.2298	0.2298
Running (g/mi)	49	0.1044	0.1044	0.1044	0.2311	0.2311	0.2311
Running (g/mi)	50	0.1036	0.1036	0.1036	0.2321	0.2321	0.2321
Running (g/mi)	51	0.1026	0.1026	0.1026	0.2333	0.2333	0.2333
Running (g/mi)	52	0.1020	0.1020	0.1020	0.2348	0.2348	0.2348
Running (g/mi)	53	0.1011	0.1011	0.1011	0.2360	0.2360	0.2360
Running (g/mi)	54	0.1005	0.1005	0.1005	0.2372	0.2372	0.2372
Running (g/mi)	55	0.0996	0.0996	0.0996	0.2384	0.2384	0.2384
Running (g/mi)	56	0.0995	0.0995	0.0995	0.2398	0.2398	0.2398
Running (g/mi)	57	0.0991	0.0991	0.0991	0.2411	0.2411	0.2411
Running (g/mi)	58	0.0991	0.0991	0.0991	0.2424	0.2424	0.2424
Running (g/mi)	59	0.0989	0.0989	0.0989	0.2436	0.2436	0.2436
Running (g/mi)	60	0.0988	0.0988	0.0988	0.2449	0.2449	0.2449
Running (g/mi)	61	0.0986	0.0986	0.0986	0.2463	0.2463	0.2463
Running (g/mi)	62	0.0986	0.0986	0.0986	0.2477	0.2477	0.2477
Running (g/mi)	63	0.0986	0.0986	0.0986	0.2490	0.2490	0.2490
Running (g/mi)	64	0.0985	0.0985	0.0985	0.2502	0.2502	0.2502
Running (g/mi)	65	0.0984	0.0984	0.0984	0.2516	0.2516	0.2516

Emission Type	VOC	NOx
Cold Start (g/trip)	0.6468	0.3223
Hot Soak Loss (g/trip end)	0.3208	0.0000

Note: 2020 factors derived from interpolation of 2025 Mobile 6 factors and 2010 Mobile 6.2 factors

Table 7: 2030 Running, Cold Start, and Hot Soak Average Emissons Factors for "Commuter Vehicle" TERMs (Mobile 6.2)

Average 2030 Emission Factors (gm/mi)							
Emission Type	Speed (mph)	Arterial	Freeway	Weighted Factor VOC	Arterial	Freeway	Weighted Factor NOx
		VOC		Arterial - 60% Freeway 40%	NOx		Arterial - 60% Freeway 40%
Running (g/mi)	1	1.5376	1.5376	1.5376	0.3283	0.3283	0.3283
Running (g/mi)	2	1.5376	1.5376	1.5376	0.3283	0.3283	0.3283
Running (g/mi)	3	1.2062	1.2062	1.2062	0.3117	0.3117	0.3117
Running (g/mi)	4	0.7917	0.7917	0.7917	0.2910	0.2910	0.2910
Running (g/mi)	5	0.5431	0.5431	0.5431	0.2788	0.2788	0.2788
Running (g/mi)	6	0.4501	0.4448	0.4480	0.2573	0.2448	0.2523
Running (g/mi)	7	0.3836	0.3745	0.3800	0.2420	0.2206	0.2334
Running (g/mi)	8	0.3338	0.3219	0.3290	0.2306	0.2025	0.2194
Running (g/mi)	9	0.2950	0.2810	0.2894	0.2219	0.1883	0.2085
Running (g/mi)	10	0.2641	0.2480	0.2577	0.2146	0.1772	0.1996
Running (g/mi)	11	0.2435	0.2265	0.2367	0.2041	0.1642	0.1881
Running (g/mi)	12	0.2260	0.2081	0.2188	0.1952	0.1534	0.1785
Running (g/mi)	13	0.2113	0.1929	0.2039	0.1878	0.1441	0.1703
Running (g/mi)	14	0.1988	0.1796	0.1911	0.1813	0.1363	0.1633
Running (g/mi)	15	0.1877	0.1681	0.1799	0.1757	0.1295	0.1572
Running (g/mi)	16	0.1768	0.1594	0.1698	0.1707	0.1298	0.1543
Running (g/mi)	17	0.1671	0.1520	0.1611	0.1665	0.1305	0.1521
Running (g/mi)	18	0.1579	0.1451	0.1528	0.1625	0.1308	0.1498
Running (g/mi)	19	0.1504	0.1390	0.1458	0.1590	0.1311	0.1478
Running (g/mi)	20	0.1432	0.1336	0.1394	0.1559	0.1316	0.1462
Running (g/mi)	21	0.1382	0.1296	0.1348	0.1530	0.1318	0.1445
Running (g/mi)	22	0.1334	0.1262	0.1305	0.1503	0.1318	0.1429
Running (g/mi)	23	0.1290	0.1229	0.1266	0.1481	0.1319	0.1416
Running (g/mi)	24	0.1251	0.1202	0.1231	0.1461	0.1321	0.1405
Running (g/mi)	25	0.1213	0.1174	0.1197	0.1441	0.1324	0.1394
Running (g/mi)	26	0.1181	0.1149	0.1168	0.1422	0.1324	0.1383
Running (g/mi)	27	0.1150	0.1123	0.1139	0.1403	0.1324	0.1371
Running (g/mi)	28	0.1122	0.1100	0.1113	0.1388	0.1325	0.1363
Running (g/mi)	29	0.1094	0.1076	0.1087	0.1372	0.1325	0.1353
Running (g/mi)	30	0.1069	0.1059	0.1065	0.1358	0.1327	0.1346
Running (g/mi)	31	0.1044	0.1037	0.1041	0.1348	0.1324	0.1338
Running (g/mi)	32	0.1023	0.1016	0.1020	0.1339	0.1321	0.1332
Running (g/mi)	33	0.1001	0.0998	0.1000	0.1331	0.1318	0.1326
Running (g/mi)	34	0.0982	0.0979	0.0981	0.1323	0.1318	0.1321
Running (g/mi)	35	0.0963	0.0963	0.0963	0.1314	0.1314	0.1314
Running (g/mi)	36	0.0950	0.0950	0.0950	0.1321	0.1321	0.1321
Running (g/mi)	37	0.0938	0.0938	0.0938	0.1328	0.1328	0.1328
Running (g/mi)	38	0.0926	0.0926	0.0926	0.1333	0.1333	0.1333
Running (g/mi)	39	0.0915	0.0915	0.0915	0.1338	0.1338	0.1338
Running (g/mi)	40	0.0905	0.0905	0.0905	0.1343	0.1343	0.1343
Running (g/mi)	41	0.0893	0.0893	0.0893	0.1349	0.1349	0.1349
Running (g/mi)	42	0.0882	0.0882	0.0882	0.1358	0.1358	0.1358
Running (g/mi)	43	0.0873	0.0873	0.0873	0.1364	0.1364	0.1364
Running (g/mi)	44	0.0864	0.0864	0.0864	0.1371	0.1371	0.1371
Running (g/mi)	45	0.0853	0.0853	0.0853	0.1378	0.1378	0.1378
Running (g/mi)	46	0.0846	0.0846	0.0846	0.1387	0.1387	0.1387
Running (g/mi)	47	0.0838	0.0838	0.0838	0.1394	0.1394	0.1394
Running (g/mi)	48	0.0832	0.0832	0.0832	0.1403	0.1403	0.1403
Running (g/mi)	49	0.0823	0.0823	0.0823	0.1408	0.1408	0.1408
Running (g/mi)	50	0.0817	0.0817	0.0817	0.1417	0.1417	0.1417
Running (g/mi)	51	0.0811	0.0811	0.0811	0.1427	0.1427	0.1427
Running (g/mi)	52	0.0807	0.0807	0.0807	0.1436	0.1436	0.1436
Running (g/mi)	53	0.0803	0.0803	0.0803	0.1443	0.1443	0.1443
Running (g/mi)	54	0.0798	0.0798	0.0798	0.1451	0.1451	0.1451
Running (g/mi)	55	0.0793	0.0793	0.0793	0.1458	0.1458	0.1458
Running (g/mi)	56	0.0794	0.0794	0.0794	0.1468	0.1468	0.1468
Running (g/mi)	57	0.0793	0.0793	0.0793	0.1478	0.1478	0.1478
Running (g/mi)	58	0.0795	0.0795	0.0795	0.1486	0.1486	0.1486
Running (g/mi)	59	0.0794	0.0794	0.0794	0.1494	0.1494	0.1494
Running (g/mi)	60	0.0795	0.0795	0.0795	0.1503	0.1503	0.1503
Running (g/mi)	61	0.0797	0.0797	0.0797	0.1512	0.1512	0.1512
Running (g/mi)	62	0.0797	0.0797	0.0797	0.1522	0.1522	0.1522
Running (g/mi)	63	0.0800	0.0800	0.0800	0.1530	0.1530	0.1530
Running (g/mi)	64	0.0800	0.0800	0.0800	0.1538	0.1538	0.1538
Running (g/mi)	65	0.0801	0.0801	0.0801	0.1547	0.1547	0.1547

Emission Type	VOC	NOx
Cold Start (g/trip)	0.4718	0.1714
Hot Soak Loss (g/trip end)	0.1992	0

Exhibit - 3
VOC MOBILE6 RUNNING EMISSION RATES
COMMUTE STREAM
FOR 2010, 2020 AND 2030
WEIGHTED AVEARGE of ARTERIAL & FREEWAY

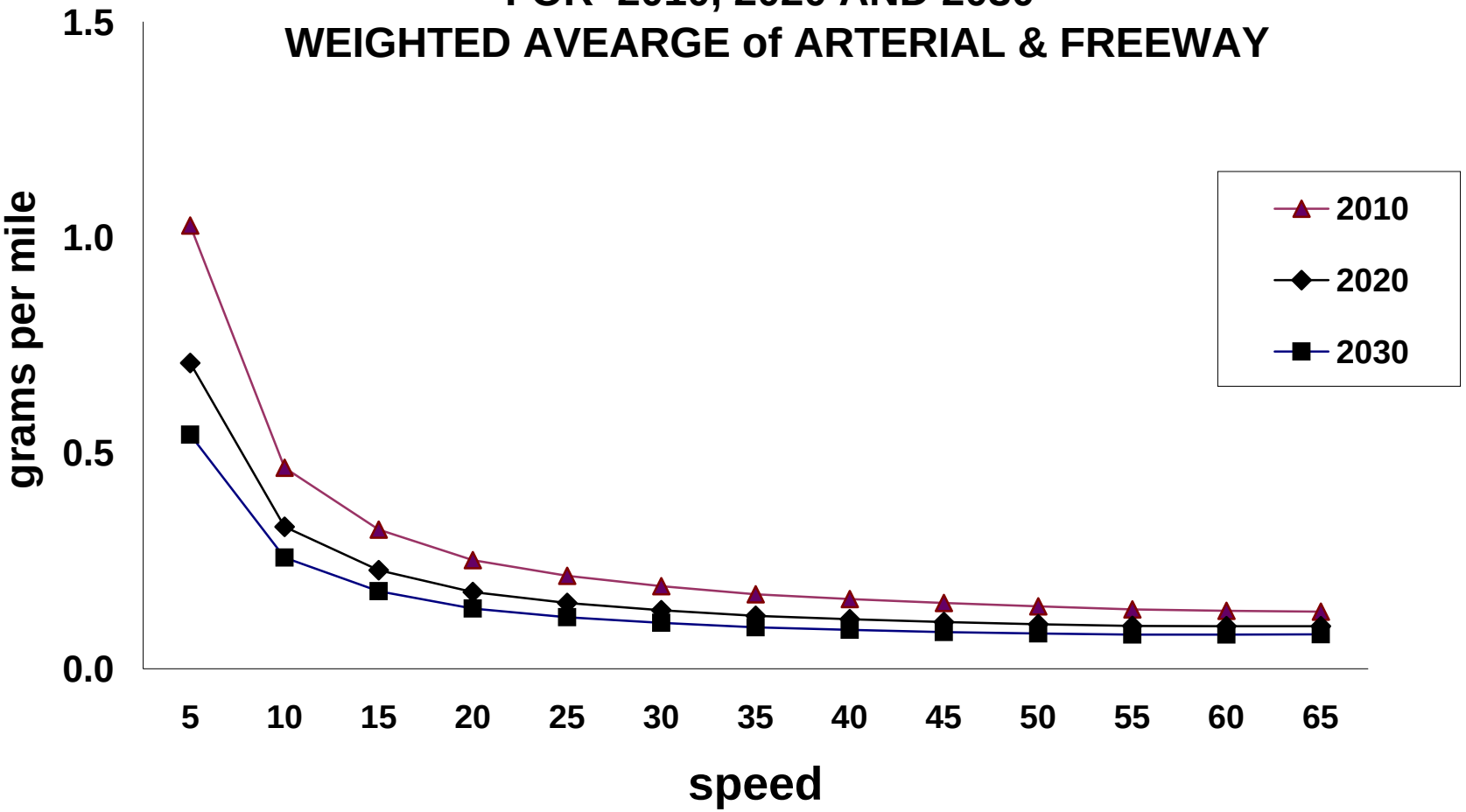


Exhibit - 4
NOx MOBILE6 RUNNING EMISSION RATES
COMMUTE STREAM
FOR 2010, 2020 AND 2030
WEIGHTED AVEARGE of ARTERIAL & FREEWAY

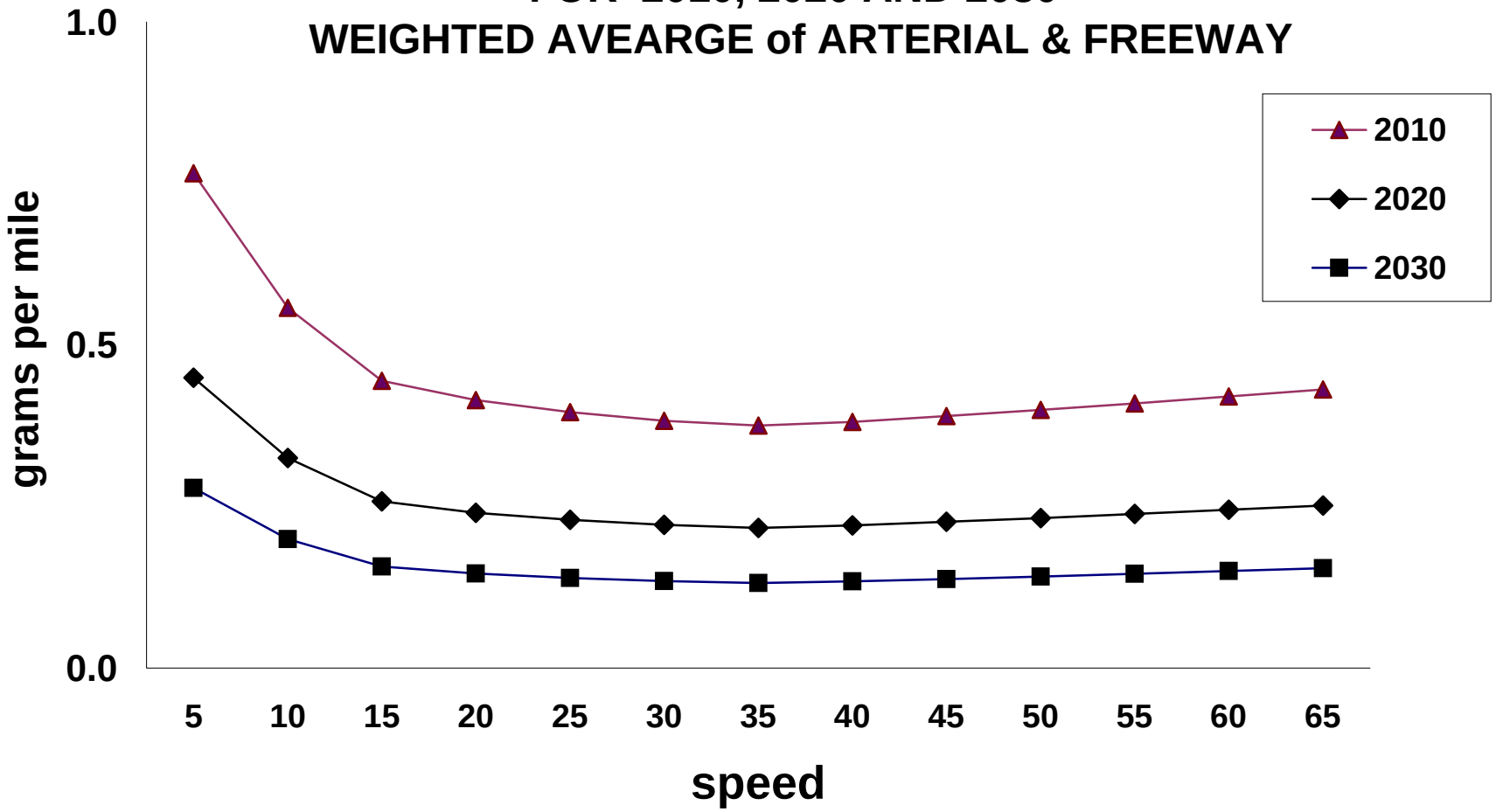


Table 8: Regional Diesel Bus Emission Factors (2010)

		Diesel Bus Emission Factors (grams/mile)			
	Speed	School Bus		Transit Bus	
Road Type	(mph)	VOC	NOx	VOC	NOx
Arterial/Freeway	1	1.4820	13.2320	0.7460	19.7040
Arterial/Freeway	2	1.4820	13.2320	0.7460	19.7040
Arterial/Freeway	3	1.4220	12.7790	0.7160	19.0290
Arterial/Freeway	4	1.3470	12.2120	0.6780	18.1860
Arterial/Freeway	5	1.3020	11.8720	0.6560	17.6800
Arterial/Freeway	6	1.2090	11.1860	0.6090	16.6600
Arterial/Freeway	7	1.1420	10.6970	0.5750	15.9310
Arterial/Freeway	8	1.0920	10.3290	0.5500	15.3840
Arterial/Freeway	9	1.0530	10.0440	0.5300	14.9590
Arterial/Freeway	10	1.0220	9.8150	0.5150	14.6190
Arterial/Freeway	11	0.9670	9.4310	0.4870	14.0480
Arterial/Freeway	12	0.9210	9.1120	0.4640	13.5720
Arterial/Freeway	13	0.8820	8.8410	0.4440	13.1700
Arterial/Freeway	14	0.8490	8.6090	0.4280	12.8240
Arterial/Freeway	15	0.8200	8.4090	0.4130	12.5250
Arterial/Freeway	16	0.7840	8.1730	0.3950	12.1750
Arterial/Freeway	17	0.7510	7.9660	0.3780	11.8660
Arterial/Freeway	18	0.7220	7.7810	0.3640	11.5910
Arterial/Freeway	19	0.6960	7.6160	0.3510	11.3460
Arterial/Freeway	20	0.6730	7.4670	0.3390	11.1240
Arterial/Freeway	21	0.6470	7.3260	0.3260	10.9150
Arterial/Freeway	22	0.6240	7.1980	0.3140	10.7240
Arterial/Freeway	23	0.6020	7.0810	0.3030	10.5500
Arterial/Freeway	24	0.5820	6.9740	0.2930	10.3910
Arterial/Freeway	25	0.5640	6.8760	0.2840	10.2440
Arterial/Freeway	26	0.5460	6.8040	0.2750	10.1380
Arterial/Freeway	27	0.5290	6.7380	0.2660	10.0390
Arterial/Freeway	28	0.5130	6.6760	0.2580	9.9480
Arterial/Freeway	29	0.4980	6.6190	0.2510	9.8620
Arterial/Freeway	30	0.4840	6.5660	0.2440	9.7830
Arterial/Freeway	31	0.4700	6.5520	0.2370	9.7620
Arterial/Freeway	32	0.4580	6.5380	0.2300	9.7420
Arterial/Freeway	33	0.4460	6.5260	0.2240	9.7240
Arterial/Freeway	34	0.4350	6.5140	0.2190	9.7060
Arterial/Freeway	35	0.4240	6.5030	0.2140	9.6900
Arterial/Freeway	36	0.4140	6.5430	0.2090	9.7490
Arterial/Freeway	37	0.4050	6.5810	0.2040	9.8050
Arterial/Freeway	38	0.3960	6.6160	0.1990	9.8580
Arterial/Freeway	39	0.3880	6.6500	0.1950	9.9080
Arterial/Freeway	40	0.3800	6.6820	0.1910	9.9560
Arterial/Freeway	41	0.3730	6.7780	0.1880	10.0990
Arterial/Freeway	42	0.3660	6.8700	0.1840	10.2350
Arterial/Freeway	43	0.3600	6.9570	0.1810	10.3650
Arterial/Freeway	44	0.3540	7.0410	0.1780	10.4900
Arterial/Freeway	45	0.3480	7.1200	0.1750	10.6080
Arterial/Freeway	46	0.3430	7.2830	0.1730	10.8500
Arterial/Freeway	47	0.3380	7.4390	0.1700	11.0820
Arterial/Freeway	48	0.3340	7.5880	0.1680	11.3040
Arterial/Freeway	49	0.3300	7.7310	0.1660	11.5170
Arterial/Freeway	50	0.3260	7.8690	0.1640	11.7220
Arterial/Freeway	51	0.3230	8.1160	0.1620	12.0900
Arterial/Freeway	52	0.3200	8.3530	0.1610	12.4430
Arterial/Freeway	53	0.3170	8.5820	0.1600	12.7840
Arterial/Freeway	54	0.3140	8.8020	0.1580	13.1120
Arterial/Freeway	55	0.3120	9.0150	0.1570	13.4270
Arterial/Freeway	56	0.3100	9.3770	0.1560	13.9660
Arterial/Freeway	57	0.3090	9.7260	0.1550	14.4860
Arterial/Freeway	58	0.3070	10.0630	0.1550	14.9880
Arterial/Freeway	59	0.3060	10.3890	0.1540	15.4730
Arterial/Freeway	60	0.3050	10.7040	0.1540	15.9410
Arterial/Freeway	61	0.3050	11.2290	0.1540	16.7230
Arterial/Freeway	62	0.3050	11.7380	0.1540	17.4800
Arterial/Freeway	63	0.3050	12.2300	0.1540	18.2130
Arterial/Freeway	64	0.3050	12.7070	0.1540	18.9220
Arterial/Freeway	65	0.3050	13.1690	0.1540	19.6100
Ramp	34.6	0.428	6.704	0.216	9.977
Local	12.9	0.897	8.934	0.452	13.307

Table - 9 2005 Idling emissions Factors

Vehicle Type	VOC	CO	NOx
	g/hr	g/hr	g/hr
LDGV	1.0544	28.6808	2.1500
LDGT12	0.9947	19.1190	1.6118
LDGT34	0.6311	9.3070	0.7173
HDGV	0.1429	2.2557	0.1789
LDDV	0.0016	0.0056	0.0034
LDDT	0.0067	0.0147	0.0100
HDDV	0.2243	1.6404	2.5930
MC	0.1088	1.4214	0.0082
All Veh	**3.1644**	**62.4447**	**7.2725**

Also for use in the emissions reduction calculations are average weighted speed by time period for 2005, shown in Table 10 below. The 24 hour average weighted speed for 2005 is 41 miles per hour and would be used for TERMs affecting the entire traffic stream, where site-specific speed data are not available. For commute vehicle TERMs, 40 mph peak period average speed will be used. Please express reductions of VOC and NOX for all years in both kilograms per day and tons per day using a conversion factor of .0011 (# of kg reduced X .0011 = # of tons reduced).

Table 10 : 2005 Average Weighted Speed by Time Period

Time	2005
12-1	48
1-2	49
2-3	49
3-4	49
4-5	48
5-6	45
6-7	41
7-8	38
8-9	39
9-10	41
10-11	43
11-12	42
12-1 PM	40
1-2 PM	42
2-3 PM	42
3-4 PM	41
4-5 PM	40
5-6 PM	39
6-7 PM	40
7-8 PM	42
8-9 PM	43
9-10 PM	44
10-11 PM	45
11-12 MID	45
24 Hour Avg	41

Table 11: Mobile 6 Vehicle Classifications

Number	*Abbreviation*	*Description*
1	LDGV	Light-Duty Gasoline Vehicles (Passenger Cars)
2	LDGT1	Light-Duty Gasoline Trucks 1 (0-6,000 lbs. GVWR, 0-3,750 lbs. LVW)
3	LDGT2	Light-Duty Gasoline Trucks 2 (0-6,000 lbs. GVWR, 3,751-5,750 lbs. LVW)
4	LDGT3	Light-Duty Gasoline Trucks 3 (6,001-8,500 lbs. GVWR, 0-5,750 lbs. ALVW)
5	LDGT4	Light-Duty Gasoline Trucks 4 (6,001-8,500 lbs. GVWR, 5,751 lbs. and greater ALVW)
6	HDGV2b	Class 2b Heavy-Duty Gasoline Vehicles (8,501-10,000 lbs. GVWR)
7	HDGV3	Class 3 Heavy-Duty Gasoline Vehicles (10,001-14,000 lbs. GVWR)
8	HDGV4	Class 4 Heavy-Duty Gasoline Vehicles (14,001-16,000 lbs. GVWR)
9	HDGV5	Class 5 Heavy-Duty Gasoline Vehicles (16,001-19,500 lbs. GVWR)
10	HDGV6	Class 6 Heavy-Duty Gasoline Vehicles (19,501-26,000 lbs. GVWR)
11	HDGV7	Class 7 Heavy-Duty Gasoline Vehicles (26,001-33,000 lbs. GVWR)
12	HDGV8a	Class 8a Heavy-Duty Gasoline Vehicles (33,001-60,000 lbs. GVWR)
13	HDGV8b	Class 8b Heavy-Duty Gasoline Vehicles (>60,000 lbs. GVWR)
14	LDDV	Light-Duty Diesel Vehicles (Passenger Cars)
15	LDDT12	Light-Duty Diesel Trucks 1and 2 (0-6,000 lbs. GVWR)
16	HDDV2b	Class 2b Heavy-Duty Diesel Vehicles (8,501-10,000 lbs. GVWR)
17	HDDV3	Class 3 Heavy-Duty Diesel Vehicles (10,001-14,000 lbs. GVWR)
18	HDDV4	Class 4 Heavy-Duty Diesel Vehicles (14,001-16,000 lbs. GVWR)
19	HDDV5	Class 5 Heavy-Duty Diesel Vehicles (16,001-19,500 lbs. GVWR)
20	HDDV6	Class 6 Heavy-Duty Diesel Vehicles (19,501-26,000 lbs. GVWR)
21	HDDV7	Class 7 Heavy-Duty Diesel Vehicles (26,001-33,000 lbs. GVWR)
22	HDDV8a	Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs. GVWR)
23	HDDV8b	Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs. GVWR)
24	MC	Motorcycles (Gasoline)
25	HDGB	Gasoline Buses (School, Transit and Urban)
26	HDDBT	Diesel Transit and Urban Buses
27	HDDBS	Diesel School Buses
28	LDDT34	Light-Duty Diesel Trucks 3 and 4 (6,001-8,500 lbs. GVWR)

COST EFFECTIVENESS ESTIMATION PROCEDURES

Consistency between programming agencies in assumptions and methodology for effectiveness estimations is critical for meaningful comparison of different projects around the region. Therefore, please use the following guidelines when calculating the cost effectiveness of your TERM projects. When determining the cost effectiveness, capital costs, operating costs, and revenues should be considered. Projects should be expressed in dollars per ton of reduction for both VOC and NOX. Please use the following series of formulas to compute cost effectiveness:

A. Total Project Cost = Capital Costs + Operating Costs - (Revenues + Resale Value) (if relevant/significant)

B. Cost Per Day = $\frac{\text{Total Project Cost}}{\text{Benefit Days Per Year X Lifespan}}$

C. Cost Per Ton = Cost Per Day / Tons VOC or NOX Reduced Per Day

Where:

Benefit Days Per Year = 250 for projects mostly related to work travel (i.e., commuter lots, ridesharing)

365 for projects relating to all travel (e.g. roadway signal systems)

Lifespan[1] =
30 years for park and ride lot (construction)
100years for park and ride lot land (right-of-way)
20 years for roadways
30 years for bridges
12 years for roadway signal systems
20 years for rail signalization
35 years for structures (i.e., garages)
12 years for buses
35 years for railcars
30 years for locomotives
10 years for sidewalks

[1] These lifespan values were provided by various transit and highway agencies and consultants. If lifespan values necessary for the cost/benefit calculation of any TERM projects are not provided, please contact Daivamani Sivasailam at (202) 962-3226.

Construction of 1300 additional Parking Spaces at a Metro Station

(example of "Commuting Vehicle Trips" TERM analysis)

Description: 1,300 parking spaces will be constructed at Grosvenor Metro station. The garages at Metrorail stations are currently experiencing full utilization of all existing parking capacity on a daily basis.

Analysis Tool: Sketch Planning

Assumptions:

- Montgomery County will build 1,300 additional parking spaces at Grosvenor Metro station to increase capacity at the station. Funding is estimated at $2.117 million dollars.
- New trips generated due to additional parking spaces will be 2/3 of new spaces.
- Average one-way trip length reduced will be 15.5 miles.
- No cold start benefit, as autos will drive to station.
- NOx & VOC estimation using Mobile 6 Emissions factors.

Summary Impacts for 4 Parking Garages at Metrorail Stations (2005):

Daily VT Reduction:	-	VT
Daily VMT Reduction:	26,846	VMT
Daily NOx Reductions:	0.0207	tons/day
Daily VOC Reductions:	0.0080	tons/day

Emission Impacts for (2005):

1,300 additional spaces

Trip length: 15.5 mile x 2 = 31 mi round trip

2/3 new trips = 866 trips

866 x 31 miles = 26,846 VMT

Daily NOx & VOC emission reductions (2005):

$$\text{Cold Start}\quad 0 \times \frac{0.9905 \text{ grs}}{1 \text{ mi}} \times \frac{1 \text{ ton}}{907{,}185 \text{ grs}} = 0.00000 \text{ tons}$$

$$\text{Running}\quad 26{,}846 \times \frac{0.6995 \text{ grs}}{} \times \frac{1 \text{ ton}}{} = 0.0207 \text{ tons}$$

			1 mi		907,185			
					Total		0.0207	tons
VOC								
Cold Start	0	x	2.3454 grs / 1 mi	x	1 ton / 907,185 grs	=	0.00000	tons
Running	26,846	x	0.2717 grs / 1 mi	x	1 ton / 907,185	=	0.0080	tons
					Total		0.0080	tons

Cost for garages $2.177 million

Lifespan: 30 years

Cost Effectiveness (2005):

$$NOx = \frac{\$2.177 \text{ million}}{250 \text{ days} \times 30 \text{ yr} \times 0.0207 \text{ t/d}} = \$14{,}022/\text{ ton}$$

$$VOC = \frac{\$2.177 \text{ million}}{250 \text{ days} \times 30 \text{ yr} \times 0.008 \text{ t/d}} = \$36{,}283/\text{ ton}$$

APPENDIX B: TRANSPORTATION EMISSION REDUCTION MEASURE (TERM) REPORTING

TERM REPORTING

Federal regulations require the timely implementation of TERMs (CMAQ funded, non-CMAQ funded and NOx mitigation measures). If the implementation of programmed TERMs falls behind schedule, the regulations state "that all State and local agencies with influence over approvals of funding for TERMs [should give] maximum priority to approval or funding of TERMs over other projects within their control". To address these requirements, please provide a brief statement describing the status of each TERM programmed in previous TIPs. This applies to those projects not yet fully implemented and reported as such in the TERM tracking sheet developed as part of the CLRP and TIP. Include any changes in the scheduling or implementation of these TERMs. Your submissions will be used to update the “TERM Tracking Sheet” for analysis years 2010, 2020 and 2030. For information purposes, last year’s “TERM Tracking Sheet” is attached.

TERM TRACKING SHEET - CURRENT MEASURES
IMPLEMENTATAION: YEAR 2000 AND LATER
Credits are taken in Air Quality Conformity Analysis FY 2005-10

***** Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP- Specific Vehicle Type, TCM - Transportation Control Measures

* NOs	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL COMPLETION DATE	ACTUAL COMPLETION DATE	TONS/DAY REDUCTION CREDITED										Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM			2005		2010		2015		2025		2030		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
9	X	1994-99	MDOT	Park & Ride Lot - MD 210/ MD 373	X				2000	2003	0.001	0.003	0.0006	0.0014	0.0005	0.0013	0.0004	0.0006	0.0004	0.0006	C
19		1994-99	PRTC	VRE Woodbridge Parking Expansion (add 500 spaces)	X					2002-2003	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-
20	X	1994-99	ALEX	King St. Metrorail access improvements			X			2002, '04, '05	0.0018	0.0026	0.0011	0.0014	0.0009	0.0013	0.0008	0.0009	0.0008	0.0009	C
38	X	1995-00	MDOT	Signal Systems - MD 85 Executive Way to MD 355	X				1996	Pre 2000			0.0000	0.0000					0.0000	0.0000	TR
39	X	1995-00	MDOT	Signal Systems - MD 355 ,I-70 ramps to Grove Rd.	X				1996	n/a			0.0000	0.0000					0.0000	0.0000	TR
44		1995-00	MDOT	Signal Systems - MD 410, 62nd Ave. to Riverdale Rd.			X		1996	2002			0.0000	0.0000					0.0000	0.0000	TR
48	X	1995-00	MDOT	MARC Replacement Coaches	X				1999	2004	0.001	0.003	0.0006	0.0014	0.0009	0.0027	0.0012	0.0019	0.0012	0.0018	C (TCM)
49	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.008	0.024	0.0051	0.0132	0.0074	0.0242	0.0055	0.0153	0.0054	0.0145	C (TCM)
51	X	1995-00	VDOT	Alexandria Telecommuting Pilot Program	X					2000 & 2001			0.0000	0.0000							C
52	X	1995-00	VDOT	Fairfax County Bus Shelter (Fairfax Co. TDM program)			X		2000	2001			0.0000	0.0000							C
54	X	1995-00	VDOT	City of Fairfax Bus Shelters			X		1999	2004	0.0000	0.0009	0.0000	0.0005	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	C (TCM)
56	X	1995-00	VDOT	Cherry Hill VRE Access			X			2007	0.0065	0.0206	0.0040	0.0113	0.0033	0.0090	0.0024	0.0050	0.0023	0.0047	C (TCM)
58	X	1995-00	WMATA	Bus Replacement (172 buses)	X				1998	1998	0.0690	0.2520	0.0690	0.2520	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP (TCM)
59	X	1995-00	MCG	Shady Grove West Park and Ride			X		2010		0.0000	0.0000	0.0000	0.0000	0.0000	0.0045	0.0000	0.0031	0.0000	0.0030	C
60	X	1995-00	MCG	White Oak Park and Ride			X		2010		0.0000	0.0000	0.0000	0.0000	0.0000	0.0090	0.0000	0.0062	0.0000	0.0059	C
61	X	1995-00	MCG	Bicycle Facilities			X		FY99		0.0028	0.0017	0.0017	0.0009	0.0014	0.0009	0.0012	0.0006	0.0012	0.0006	C
62	X	1995-00	MCG	Pedestrian Facilities to Metrorail			X				0.0046	0.0069	0.0028	0.0038	0.0019	0.0031	0.0016	0.0022	0.0015	0.0021	C
63	X	1995-00	MDOT	MARC Replacement Coaches	X				1999	2004	0.0037	0.0103	0.0023	0.0057	0.0033	0.0099	0.0031	0.0062	0.0031	0.0059	C
64	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.0296	0.0894	0.0182	0.0490	0.0284	0.0636	0.0287	0.0508	0.0283	0.0482	C (TCM)
66	X	1995-00	VDOT	Commuter Lots - District Wide			X		varies	1995, 2000	0.0102	0.0284	0.0062	0.0156	0.0065	0.0193	0.0063	0.0165	0.0062	0.0157	C
67	X	1995-00	VDOT	I-66 and Stringfellow Rd. Park and Ride	X				2000	2000 end	0.0092	0.0172	0.0057	0.0094	0.0047	0.0090	0.0039	0.0062	0.0039	0.0059	C
68	X	1995-00	VDOT	Lake Ridge Park and Ride (now called Tacketts Mill lot)	X					1999/2000	0.0000	0.0086	0.0000	0.0047	0.0000	0.0045	0.0000	0.0031	0.0000	0.0030	C
69	X	1995-00	VDOT	Bicycle Trails and Facilities			X		varies	varies	0.0018	0.0146	0.0011	0.0080	0.0093	0.0076	0.0075	0.0056	0.0074	0.0053	C
70	X	1995-00	VDOT	Improved Acceess to Metrorail Stations			X		varies	2000-2010	0.0005	0.0009	0.0003	0.0005	0.0005	0.0009	0.0004	0.0006	0.0004	0.0006	C
71	X	1995-00	VDOT	I-66 HOV access at Monument Dr.	X					1997	0.0092	0.0172	0.0057	0.0094	0.0047	0.0090	0.0004	0.0062	0.0004	0.0059	C
72		1995-00	DC	Bicycle Facilities		X					0.0222	0.0172	0.0136	0.0094	0.0116	0.0094	0.0094	0.0069	0.0093	0.0065	C
73	X	1995-00	REGION	COG Regional Ridesharing Support	X					on-going	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C
74	X	1995-00	REGION	M-47 Integrated Ridesharing	X					on-going	0.0431	0.0897	0.0265	0.0492	0.0180	0.0295	0.0141	0.0180	0.0139	0.0172	C
75	X	1995-00	REGION	M-92 Telecommuting Support	X					on-going	0.2886	0.6135	0.1775	0.3364	0.1794	0.3002	0.1788	0.2327	0.1889	0.2374	C

TERM TRACKING SHEET - CURRENT MEASURES
IMPLEMENTATAION: YEAR 2000 AND LATER
Credits are taken in Air Quality Conformity Analysis FY 2005-10

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					FULL	SCALED-BACK	UNDER-WAY	REM			2005		2010		2015		2025		2030		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
77		1996-01	VDOT	Duke Street Pedestrian Bridge					2005	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-
79	X	1996-01	VDOT	Fairfax County Bus Shelters (30 shelters with project #85)			X		1999	Summer 2001	0.0018	0.0026	0.0011	0.0014	0.0009	0.0013	0.0008	0.0009	0.0008	0.0009	C
81	X	1996-01	VDOT	Arlington County Metrocheck Program	X				1997	1997 Onwards	0.0018	0.0026	0.0011	0.0014	0.0010	0.0030	0.0010	0.0030	0.0004	0.0009	C
82	X	1996-01	VDOT	Old Dominion Drive Bike Trail			X		2000	2004	0.0009	0.0009	0.0006	0.0005	0.0005	0.0004	0.0004	0.0003	0.0004	0.0003	C
83	X	1996-01	WMATA	Bus Replacement (see line 58, above)	X					1998	Credit taken in line 58, above										SP
85	X	1996-01	VDOT	Fairfax County Bus Shelters (30 shelters with project #79)			X		1999	2001	0.0009	0.0009	0.0006	0.0005	0.0005	0.0013	0.0004	0.0009	0.0004	0.0009	C
90	X	1996-01	REGION	M-47c Employer Outreach / Guaranteed Ride Home	X					on-going	0.5595	1.0434	0.3440	0.5721	0.2347	0.3449	0.1807	0.2095	0.1777	0.1989	C
91	X	1996-01	REGION	M-70a Bicycle Parking			X		1999		0.0065	0.0060	0.0040	0.0033	0.0047	0.0045	0.0039	0.0031	0.0039	0.0030	C
92	X			M-92 Telecommuting Support	Combined with item #75																C
95	X	1997-02	MCG	Germantown Transit Center			X		2004		0.0046	0.0163	0.0028	0.0090	0.0023	0.0085	0.0020	0.0056	0.0019	0.0053	C (TCM)
102	X	1997-02	PG	Prince George's County Bus Replacement	X				1998	1998	0.0030	0.0090	0.0030	0.0090	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP (TCM)
106	X	1997-02	VDOT	PRTC Employer Commuting Outreach Program	X					1977 on-going	0.0018	0.0004	0.0011	0.0002	0.0009	0.0000	0.0008	0.0000	0.0008	0.0000	C
107	X	1997-02	VDOT	PRTC Multimodal Strategic Marketing Implementation Plan	X					1977 on-going	0.0000	0.0004	0.0000	0.0002	0.0000	0.0004	0.0000	0.0003	0.0000	0.0003	C
108	X	1997-02	MDOT	M-103 Taxicab Replacement in Maryland			X		1999	on-going	0.0797	0.2675	0.0797	0.2675	0.1453	0.2155	0.1228	0.1498	0.3120	0.4810	SP
109	X	1997-02	REGION	M-70b Employer Outreach for Bicycles	X				1998	on going	0.0011	0.0013	0.0007	0.0007	0.0005	0.0004	0.0003	0.0003	0.0003	0.0002	C
110	X	1997-02	VDOT	M-77b Vanpool Incentive Programs in Virginia			X		1999	delayed	n/a	n/a			n/a	n/a	n/a	n/a	n/a	n/a	C
111	X	1998-03	WMATA	Bus Replacement (108 buses)	X				1999	1999	0.0450	0.1617	0.0450	0.1617	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP
112	X	1998-03	MCG	Montgomery County Bus Replacement	X						0.0080	0.0270	0.0080	0.0270	0.0020	0.0070	0.0000	0.0000	0.0000	0.0000	SP
113	X	1998-03	PG	Prince George's County Bus Replacement	X				1998	1998	0.0010	0.0020	0.0010	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP
114	X	1998-03	FDC	Frederick County Bus Replacement	X						0.0010	0.0000	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP
117	X	1998-03	VDOT	Arlington County Four Mile Run Bike Trail			X		1999	delayed	0.0009	0.0009	0.0006	0.0005	0.0005	0.0004	0.0004	0.0003	0.0004	0.0003	C
118	X	1998-03	VDOT	Northern Virginia Turn Bays	X				2000	1998	0.0009	0.0015	0.0006	0.0008	0.0009	0.0007	0.0008	0.0004	0.0008	0.0003	TR
119	X	1998-03	VDOT	Fairfax City Bus Replacement			X		2001	2003	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	SP
121	X	1998-03	WMATA	WMATA Bus Replacement (252 buses)	X				2001	2001	0.1060	0.3860	0.1060	0.3860	0.0900	0.3420	0.0000	0.0000	0.0000	0.0000	SP
122	X	97 & 98 TIP	REGION	M-101a Mass Marketing Campagin (Consumer)			X			Underway	0.1191	0.2119	0.0732	0.1162	0.1015	0.1594	0.0980	0.1069	0.0752	0.0807	C
123	X	1999-04	MDOT	Various Park and Ride Lots(I-270/MD124, 450 & I-170/MD-75, 54 spaces)	X				2001/1999	2001	0.0074	0.0310	0.0045	0.0170	0.0047	0.0188	0.0039	0.0143	0.0039	0.0136	C
124	X	1999-04	MDOT	Signal Systems (197/MD-198, MD-382 TO US-301,US301)	X				2000	2002	0.0110	-0.0030	0.0070	-0.0017	0.0061	-0.0021	0.0080	-0.0015	0.0079	-0.0014	TR
125	X	1999-04	VDOT	Transit Center at 7 Corners	X				2002		0.0009	0.0017	0.0006	0.0009	0.0005	0.0009	0.0004	0.0006	0.0004	0.0006	C

TERM TRACKING SHEET - CURRENT MEASURES
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					FULL	SCALED-BACK	UNDER-WAY	REM			2005		2010		2015		2025		2030		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
126	X	1999-04	VDOT	Falls Church Clean Diesel Bus Service	X				2000	2003	0.0040	0.0050	0.0040	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP
127		1999-04	VDOT	VA 234 Bike Trail			X		2001	2007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C
128	X	1999-04	VDOT	PRTC Ridesharing	X				on-going	2000 ongoing	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C
130	X	1996-01	VDOT	M-14: I-66 Feeder Bus Fare Buy Down	X					1998 onward	0.0231	0.0473	0.0142	0.0259	0.0102	0.0206	0.0083	0.0131	0.0081	0.0124	C
131	X	2000-05	MDOT	Various park and Ride Lots	x				2002	2003	0.0064	0.0280	0.0039	0.0153	0.0043	0.0175	0.0038	0.0140	0.0038	0.0119	C
132	X	2000-05	MDOT	Signal Systems	X				Varies	on-going	0.0028	0.0000	0.0017	0.0000	0.0012	0.0000	0.0007	0.0000	0.0007	0.0000	TR
133	X	2000-05	VDOT	450 Spaces at Gambrill/Hooes Rds. Park and Ride			X		2002	2004	0.0065	0.0155	0.0040	0.0085	0.0028	0.0069	0.0022	0.0043	0.0021	0.0041	C
134	X	2000-05	VDOT	300 Spaces at Backlick Rd			X		2003	2006	0.0046	0.0112	0.0028	0.0061	0.0021	0.0049	0.0015	0.0031	0.0015	0.0030	C
135	X	2000-05	VDOT	Accotink-Gateway Connector Trail			X		2002	2005	0.0065	0.0086	0.0040	0.0047	0.0028	0.0038	0.0019	0.0021	0.0018	0.0020	C
136	X	2000-05	VDOT	Columbia Pike Trail			X		2000	2001, 2005	0.0055	0.0069	0.0034	0.0038	0.0023	0.0029	0.0015	0.0016	0.0014	0.0015	C
137	X	2000-05	VDOT	Lee Highway trail			X		2000	2005	0.0028	0.0034	0.0017	0.0019	0.0012	0.0016	0.0006	0.0008	0.0006	0.0008	C
138	X	2000-05	VDOT	Arlington Bus Shelter Improvements			X		2005	2005	0.0009	0.0009	0.0006	0.0005	0.0005	0.0004	0.0002	0.0002	0.0002	0.0002	C
139	X	2000-05	VDOT	Pentagon Metrostation Improvements	X					2003	0.0074	0.0146	0.0045	0.0080	0.0033	0.0063	0.0022	0.0035	0.0022	0.0033	C
140	X	2000-05	MDOT	East/West Intersection Improvements			x		2005	2006 Expect.	0.0379	0.0215	0.0233	0.0118	0.0640	0.0327	0.0874	0.0355	0.0859	0.0337	C
141	X	2001-06	Feds	Federal Transit/Ridesharing subsidy	X				on-going		0.0942	0.1642	0.0579	0.0901	0.0386	0.0555	0.0291	0.0330	0.0286	0.0313	C
142	X	2002-07	WMATA	100 CNG buses	X				2002		0.0000	0.1358	0.0000	0.1358	0.0000	0.1358					SP (TCM)
143	X	2002-07	WMATA	ULSD with CRT filters			X		on-going		0.2100	0.0000	0.2100	0.0000	0.4300	0.0000	0.4300	0.0000	0.4300	0.0000	H (TCM)
144	X	2003-08	DC	Replace ~~23~~ 12 Taxicabs with CNG cabs			x		2005	2006	0.0089	0.0157	0.0089	0.0157							H
145	X	2003-08	DC	D.C.Incident Response & TrafficManagement System	x				2005	2004	0.0254	0.0746	0.0161	0.0414	-	0.0341	-	0.0185	-	0.0168	TR
146	X	2003-08	DC	Bicycle Lane in D. C. (35 Mile) *			x		2005	2006	0.0154	0.0153	0.0094	0.0084	0.0065	0.0053	0.0047	0.0031	0.0046	0.0029	C (TCM)
147	X	2003-08	DC	Bicycle Racks in D. C. (500) *	x				2005	2004	0.0021	0.0017	0.0013	0.0009	0.0009	0.0006	0.0006	0.0003	0.0006	0.0003	C (TCM)
148	X	2003-08	DC	External Bicycle Racks on WMATA Buses in D. C. (600) *	x				2005	2003	0.0031	0.0056	0.0019	0.0031	0.0013	0.0019	0.0010	0.0011	0.0010	0.0011	C (TCM)
149	X	2003-08	DC	CNG Rental Cars (18) *				x	2005		0.0000	0.0002	0.0000	0.0002							SP
150	X	2003-08	DC	Sidewalks in D.C. ($ 5 million)	x				2005	2004	0.0578	0.1008	0.0355	0.0552	0.0243	0.0334	0.0185	0.0202	0.0182	0.0192	C
151	X	2003-08	DC	CNG Refuse Haulers (2) *	x				2005	2004	0.0001	0.0020	0.0001	0.0020	0.0001	0.0020					H (TCM)
152	X	2003-08	DC	Circulator /Feeder Bus Routes	x				2005	2003	0.0211	0.0363	0.0129	0.0199	0.0089	0.0121	0.0067	0.0073	0.0066	0.0069	C
153	X	2003-08	MDOT	Commuter Tax Credit			x		2005	n/a	0.1262	0.2219	0.0776	0.1217	0.0530	0.0736	0.0405	0.0445	0.0398	0.0422	C
155	X	2003-08	MDOT	Employer Vanpool Program (WWB)				x	2005		0.0030	0.0075	0.0018	0.0041							C

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					FULL	SCALED-BACK	UNDER-WAY	REM			2005		2010		2015		2025		2030		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
156	X	2003-08	MDOT	Green Line Link			x		2005	n/a	0.0041	0.0085	0.0025	0.0047	0.0017	0.0028	0.0013	0.0017	0.0013	0.0016	C
157	X	2003-08	MDOT	Park & Ride Lots - Southern Maryland *			x		2005	2003/2005	0.0080	0.0197	0.0049	0.0108	0.0033	0.0064	0.0027	0.0040	0.0026	0.0038	C
158	X	2003-08	MDOT	Prince George's County- Bus Exp			x		2005	n/a	0.0578	0.1191	0.0356	0.0653	0.0242	0.0392	0.0189	0.0239	0.0186	0.0228	C
159	X	2003-08	MDOT	MTA - Bus Service Expansion			x		2005	n/a	0.0131	0.0285	0.0080	0.0156	0.0055	0.0093	0.0043	0.0057	0.0042	0.0054	C
160	X	2003-08	MDOT	Ride- On - Super Discount			x		2005	n/a	0.0015	0.0026	0.0009	0.0014	0.0006	0.0009	0.0005	0.0005	0.0005	0.0005	C
161	X	2003-08	Regional	Regional Traveler Information Systems			X		2005		0.1596	0.9730	0.1012	0.5401	0.0816	0.4451	0.0697	0.2418	0.0686	0.2195	TR
162	X	2003-08	MDOT	Universal Transportation Access (MD + WMATA)			x		2005	n/a	0.0259	0.0452	0.0159	0.0248	0.0109	0.0150	0.0083	0.0091	0.0082	0.0086	C
163	X	2003-08	MCG	Construction of 1300 additional Parking Spaces at Grosvenor Metro Garage	x				2004		0.0074	0.0189	0.0045	0.0104	0.0030	0.0062	0.0025	0.0038	0.0025	0.0036	C (TCM)
164	X	2003-08	MCG	Bethesda Shuttle Bus Services	x				2004		0.0050	0.0087	0.0031	0.0047	0.0021	0.0029	0.0016	0.0017	0.0016	0.0016	C
165	X	2003-08	MCG	External Bicycle Racks on Ride-On Buses in Montgomery County	x				2004		0.0010	0.0017	0.0006	0.0010	0.0004	0.0006	0.0003	0.0004	0.0003	0.0003	C
166	X	2003-08	MCG	New CNG Powered Light Duty Vehicle fleet in the County	x				2004		0.0000	0.0001	0.0000	0.0001							SP
167	X	2003-08	MCG	Free Bus Service on Selected Routes on I-270	x				2004		0.0017	0.0030	0.0011	0.0016	0.0007	0.0010	0.0006	0.0006	0.0005	0.0006	C
168	X	2003-08	MCG	Annual Sidewalk Program	x				2004		0.0275	0.0480	0.0169	0.0263	0.0116	0.0159	0.0088	0.0096	0.0087	0.0091	C
169	X	2003-08	MDOT	Bethesda Breeze/International Express Metrobus			x		2005	n/a	0.0060	0.0097	0.0037	0.0053	0.0025	0.0032	0.0019	0.0019	0.0019	0.0018	C
170	X	2003-08	MDOT	Bethesda-8, Silver Spring Downtown Dasher and Prince Georges Co. Shuttles at 3 PNR lot			x		2005	n/a	0.0142	0.0189	0.0087	0.0104	0.0060	0.0064	0.0044	0.0038	0.0043	0.0036	C
171	X	2003-08	MDOT	Proposed Transportation Management District in Montgomery County (Rockville and Gaithersburg)				X	2005	n/a	0.0093	0.0142	0.0057	0.0078	0.0039	0.0047	0.0029	0.0028	0.0029	0.0027	C
172	X	2003-08	MDOT	Sidewalks (Bikes/Pedestrian) at / near Rail Stations	x				2005	2002	0.0150	0.0267	0.0092	0.0146	0.0063	0.0088	0.0048	0.0054	0.0047	0.0051	C
173	X	2003-08	MDOT	Neighborhood Sidewalks Improvements (Bike/Pedestrian)	X				2005	2004	0.0052	0.0030	0.0032	0.0016	0.0023	0.0011	0.0016	0.0006	0.0015	0.0005	C
174	X	2003-08	MDOT	Neighborhood Conservation Program - Neighborhood Sidewalks Improvements (Bikes/Pedestrian)		X			2005	n/a	0.0046	0.0026	0.0028	0.0014	0.0020	0.0010	0.0014	0.0005	0.0013	0.0005	C
175	X	2003-08	MDOT	Maryland bus Transit Service Expansion	X				2005	2004	0.0228	0.0586	0.0140	0.0321	0.0094	0.0191	0.0077	0.0118	0.0076	0.0112	C
176	X	2003-08	VDOT	Universal Transportation Access Program			X		2005	2005	0.0019	0.0034	0.0012	0.0019	0.0008	0.0011	0.0006	0.0007	0.0006	0.0006	C
177	X	2003-08	VDOT	Interactive Rideshare & Kiosk Initiative			X		2005		0.0006	0.0013	0.0004	0.0007	0.0003	0.0004	0.0002	0.0003	0.0002	0.0002	C
178	X	2003-08	VDOT	Mobile Commuter Stores			X		2005		0.0035	0.0071	0.0021	0.0039	0.0014	0.0023	0.0011	0.0014	0.0011	0.0014	C
179	X	2003-08	VDOT	Telework Incentive Program (Telework VA)				X	2005	2001	0.0012	0.0022	0.0007	0.0012	0.0005	0.0007	0.0004	0.0004	0.0004	0.0004	C
180	X	2003-08	VDOT	Commuter Choice			X		2005		0.0015	0.0025	0.0010	0.0014	0.0007	0.0008	0.0005	0.0005	0.0005	0.0005	C
181	X	2003-08	VDOT	Employer Shuttle Services			X		2005		0.0184	0.0301	0.0113	0.0165	0.0077	0.0100	0.0058	0.0060	0.0057	0.0057	C
184	X	2003-08	VDOT	Van Start / Van Save			X		2005	till 2006	0.0022	0.0047	0.0014	0.0026							C
185	X	2003-08	VDOT	Metro Shuttle Bus			X		2005	1999-2005	0.0019	0.0047	0.0012	0.0026	0.0008	0.0015	0.0006	0.0009	0.0006	0.0009	C

TERM TRACKING SHEET - CURRENT MEASURES
IMPLEMENTATAION: YEAR 2000 AND LATER
Credits are taken in Air Quality Conformity Analysis FY 2005-10

***** Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP- Specific Vehicle Type, TCM - Transportation Control Measures

* NOs	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL COMPLETION DATE	ACTUAL COMPLETION DATE	TONS/DAY REDUCTION CREDITED										Project Category *
					FULL	SCALED-BACK	UNDER-WAY	REM			2005		2010		2015		2025		2030		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
187	X	2003-08	VDOT	VRE Mid-Day Train Service	X				2005	2002	0.0025	0.0053	0.0016	0.0029	0.0011	0.0017	0.0008	0.0011	0.0008	0.0010	C
190	X	2003-08	VDOT	Employer Vanpool Program (Bridge deck)			X		2005	2004 - 2008	0.0015	0.0034	0.0009	0.0019							C
191	X	2003-08	VDOT	Town of Leesburg P&R Lot			X		2005	2004	0.0031	0.0071	0.0019	0.0039	0.0013	0.0023	0.0010	0.0014	0.0010	0.0014	C
192	X	2003-08	VDOT	District-wide P&R Lots	X		X		2005	2001-2005	0.0182	0.0406	0.0112	0.0222	0.0076	0.0133	0.0060	0.0082	0.0059	0.0078	C
193	X	2003-08	VDOT	Additional Parking at 4 Metro stations			X		2005	2001, 2005	0.0235	0.0604	0.0144	0.0331	0.0097	0.0197	0.0079	0.0122	0.0078	0.0116	C
196	X	2003-08	WMATA	64 CNG Buses (Purchased in 2001)	X				2005	2004	0.0021	0.0870	0.0021	0.0870	0.0021	0.0870					SP (TCM)
197	X	2003-08	WMATA	250 CNG Buses (175 buses by Dec. 2004; 75 buses by mid 2006)			X		2005	2004-2006	0.0083	0.3400	0.0083	0.3400	0.0083	0.3400					SP
198	X	2003-08	WMATA	60 Engine Replacement (MY 1992 & 1993 MY buses)	X				2004	2004	0.0138	0.0755	0.0138	0.0755	0.0138	0.0755					SP
199	X	2003-08	WMATA	Car Sharing Program	X				2005	2004	0.0013	0.0033	0.0008	0.0018	0.0005	0.0011	0.0004	0.0007	0.0004	0.0006	C
200	X	2003-08	WMATA	Bikes Racks on WMATA Buses in VA (372 Bike Racks)	X				2005	2004	0.0020	0.0035	0.0012	0.0019	0.0008	0.0012	0.0006	0.0007	0.0006	0.0007	C (TCM)
202		2003-08	MDOT	Fleet Replacement (state auto fleet, gas to hybrid, 250 vehicles)				x	2005		0.0055	0.013	0.0055	0.0133	0.0055	0.013					SP
203	X	2003-08	MDOT	Replace 55 Montgomery County 10 yr. old buses w/ new CNG buses			x		2005	n/a		0.2861	0.0000	0.2861		0.2861					SP
204		2003-08	MDOT	Neighborhood Bus Shuttle (5 circulator routes)				x	2005		0.0121	0.0221	0.0074	0.0121	0.0051	0.007	0.00	0.004	0.0038	0.0042	C
205	X	2003-08	MDOT	New Surface Parking at Transit Centers (500 spaces)			x		2005	n/a	0.0042	0.0108	0.0026	0.0059	0.0017	0.0035	0.0014	0.0022	0.0014	0.0021	C
206	X	2003-08	MDOT	Additional Bike Lockers at Metro-Stations				x	2005	n/a	0.0213	0.0379	0.0131	0.0208	0.0090	0.0125	0.0068	0.0076	0.0067	0.0072	C
207	X	2003-08	MDOT	Bike Facilities at PnR Lots or other similar location			x		2005	n/a	0.0150	0.0300	0.0092	0.0165	0.0063	0.0099	0.0049	0.0060	0.0048	0.0057	C
208	X	2003-08	MDOT	CNG Fueling Stations				x	2005	n/a	0.1270	0.1170	0.1270	0.1170							SP
209		2003-08	MDOT	Gas cap replacements (ROP Credit)				x	2005		N/A	N/A	N/A	N/A		-		-		-	SP
210		2003-08	MDOT	Gas can turnover (ROP Credit)				x	2005		N/A	N/A	N/A	N/A		-		-		-	SP
211	X	2003-08	MDOT	External Bicycle Racks on WMATA Buses (486 MD buses)	x				2005	2002	0.0023	0.0040	0.0014	0.0022	0.0009	0.0013	0.0007	0.0008	0.0007	0.0008	C (TCM)
212	X	2003-08	MDOT	Bike \ Pedestrian Trail - Anacostia River Walk			X		2005	n/a	0.0009	0.0008	0.0006	0.0005	0.0004	0.0003	0.0003	0.0002	0.0003	0.0002	C
213		2003-08	MDOT	Transit Prioritization - Queue Jumps				x	2005		0.0050	0.0068	0.0031	0.0037	0.0021	0.002	0.002	0.001	0.0015	0.0013	C
214	X	2003-08	MDOT	Commuter Choice Benefit/Tax Credit - Marketing Expansion			x		2005	n/a	0.0881	0.1559	0.0542	0.0855	0.0370	0.0517	0.0283	0.0313	0.0278	0.0297	C
215	X	2003-08	MDOT	Improvements to Pedestrian Access in TOD areas (4 locations)			x		2005	n/a	0.0096	0.0158	0.0059	0.0087	0.0040	0.0053	0.0031	0.0032	0.0030	0.0030	C
216	X	2003-08	MDOT	Telecommuting Expansion				X	2005	n/a	0.1041	0.2192	0.0640	0.1202	0.0435	0.0721	0.0341	0.0441	0.0336	0.0419	C
217	X	2003-08	MDOT	Replace older Diesel Engine in Public Sector vehicles				x	2005	n/a	0.0237	0.1300	0.0237	0.1300	0.0237	0.1300					H
218	X	2003-08	VDOT	MV-92 Telecommuting Program - Expanded[1]				X	2005	2003	0.1112	0.2341	0.0684	0.1283	0.0464	0.0769	0.0365	0.0471	0.0359	0.0447	C
219	X	2003-08	VDOT	MV-123 Employer Outreach for Public Sector Employees[1]				X	2005	2003	0.0247	0.0430	0.0152	0.0236	0.0104	0.0143	0.0079	0.0086	0.0078	0.0082	C
220	X	2003-08	REGION	Signal System Optimization			X		2005	2005	0.6737	0.2720	0.4272	0.1510	0.3447	0.1244	0.2945	0.0676	0.2896	0.0613	TR
									Available Emissions Credits		**3.670**	**7.680**	**2.489**	**5.147**	**2.164**	**3.704**	**1.832**	**1.562**	**1.991**	**1.800**	

TRANSPORTATION EMISSION REDUCTION MEASURES (CLRP Projects Only)

Credited in Air Quality Conformity Analyses (calendar years 1993-2004)
(TRACKING SHEET)

Project Category: TR - Traffic Stream, C - Commute, H - Engine Technology (Heavy Dudy Vehicles), SP- Specific Vehicle Type

	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				PROJECTED COMPLETION DATE	ACTUAL COMPLETION DATE	TONS/DAY REDUCTION CREDITED						Project Category
					FULL	SCALED-BACK	UNDER-WAY	REMOVED			2015		2025		2030		
											VOC	NOX	VOC	NOX	VOC	NOX	
221	X	1995-00 TIP	REGION	M-24 Speed Limit Adherence							0.1129	0.8376	0.1285	0.5905	0.0495	0.1828	TR
222		1996-01 TIP	MGC	Rock Spring Park Pedestrian Amenities				X			0.0010	0.0040	n/a	n/a	n/a	n/a	-
223	X	1996-01 TIP	MGC	Olney Transit Center Park and Ride							0.0009	0.0036	0.0008	0.0025	0.0003	0.0007	C
224	X	1996-01 TIP	MGC	Damascus Park and Ride							0.0005	0.0018	0.0004	0.0012	0.0001	0.0003	C
225	X	1996-01 TIP	DC	M-103 Taxicab Replacement									0.3490	0.6000	0.3490	0.6000	H
226	X	STADIUM ANALYSIS		Taxicab Replacement									0.1560	0.2400	0.1560	0.2400	H
227	X	1997-02 TIP	MDOT	Shady Grove West Transit Center Park and Ride							0.0000	0.0045	0.0000	0.0031	0.0000	0.0009	C
228	X	1997-02 TIP	MGC	Olney Transit Center Park and Ride									0.0008	0.0025	0.0003	0.0007	C
229	X	1997-02 TIP	MGC	White Oak Park and Ride							0.0000	0.0090	0.0000	0.0062	0.0000	0.0017	C
230	X	1997-02 TIP	MGC	Damascus Park and Ride									0.0004	0.0009	0.0001	0.0003	C
231	X	1997-02 TIP	MGC	Four Corners Transit Center							0.0000	0.0004	0.0000	0.0003	0.0000	0.0001	C
232		1997-02 TIP	MGC	Burtonsville Transit Center				X					n/a	n/a	n/a	n/a	-
233	X	1997-02 TIP	MGC	Silver Spring Transit Access										0.0006		0.0002	C
234	X	1997-02 TIP	MGC	Shady Grove Parking Construction							0.0023	0.0085	0.0020	0.0059	0.0007	0.0017	C
PLAN TOTAL											0.117	0.865	0.638	1.454	0.556	1.029	
GRAND TOTAL (Current Measures-past 2000 + plan)											2.281	4.569	2.470	3.016	2.547	2.829	

Note: 2010 Emissions benefit estimated using ratios between 2005 and 2010 emissions factors
DEFINITIONS:

CREDIT TAKEN (X means emissions reduction credits taken):
TIP - Emissions credits are taken for projects being implemented, according to the progress reporting schedules provided by the implementing agencies (contained in Appendix L). No credit has been taken for projects in which only some components of the measure have been implemented. (The status of these projects will be reassessed next year).
CLRP - Credit is taken for each of these elements of the CLRP, according to the schedule provided by the implementing agency.

IMPLEMENTATION STATUS:
FULL = project is completed as planned at the time of analysis.
SCALED BACK = project is completed, but at a different level than assumed at the time of analysis (i.e., purchased 50 buses instead of 100)
UNDERWAY = project is not complete, but is close enough that credit may be taken (i.e., under construction, NOT just out for bid)
REMOVED = project no longer expected to be implemented or constructed

COMPLETION DATE:
PROJECTED = project completion date originally expected (i.e., at time of emissions analysis)
ACTUAL = actual year project was open for use, or expected to be open for use if under construction

**** Reflects instances where emissions reductions previously credited are no longer appropriate to the indicated forecast year, due to schedule slippage.
Delayed - Project Delayed