National Capital Region Transportation Planning Board

777 North Capitol Street, N.E., Suite 300, Washington, D.C. 20002-4290 (202) 962-3310 Fax: (202) 962-3202 TDD: (202) 962-3213

Item #5

MEMORANDUM

July 12, 2012

TO: Transportation Planning Board

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

RE: Letters Sent/Received Since the June 20th TPB Meeting

The attached letters were sent/received since the June 20th TPB meeting. The letters will be reviewed under Agenda #5 of the July 18th TPB agenda.

Attachments

National Capital Region Transportation Planning Board

777 North Capitol Street, N.E., Suite 300, Washington, D.C. 20002-4290 (202) 962-3310 Fax: (202) 962-3202

July 12, 2012

Honorable Phil Mendelson
Chairman
Metropolitan Washington
Air Quality Committee (MWAQC)
777 North Capitol Street, NE, #300
Washington, DC 20002

Dear Chairman Mendelson:

At the June 20, 2012 meeting of the National Capital Region Transportation Planning Board (TPB), TPB staff presented emissions forecasts associated with the draft air quality conformity analysis for the 2012 Constrained Long Range Plan (CLRP) and the FY 2013-2018 Transportation Improvement Program (TIP). Following the presentation of these forecasts, you asked how they compared with the forecasts transmitted to the Metropolitan Washington Air Quality Committee (MWAQC) by the TPB on March 21, 2012 for use by MWAQC in the development of a PM2.5 redesignation request and maintenance plan. The key points of comparison between the two sets of forecasts are as follows:

(1) The conformity forecasts are based on the COG Round 8.1 Cooperative Forecasts and the 2012 CLRP, whereas the PM2.5 maintenance plan forecasts were based on the COG Round 8.0a Cooperative Forecasts and the 2011 CLRP.

(2) The conformity forecasts were developed for milestone years of 2017, 2020, 2030, and 2040, whereas the PM2.5 maintenance plan forecasts were developed for milestone years of 2017 and 2025, as well as for 2040.

(3) Both sets of forecasts used the 2011 Vehicle Identification Number (VIN) data for the vehicle fleet.

(4) The conformity forecasts used EPA's Mobile 6.2 emissions model, whereas the PM2.5 maintenance plan forecasts used EPA's new MOVES 2010a emissions model.

As noted at the June 20 TPB meeting, the use of different emissions forecasting models, different CLRP and land activity inputs, and somewhat different milestone years makes it difficult to compare the results of the two sets of forecasts. However, the recent completion of the conformity analysis for the 2012 CLRP and FY2013-2018 TIP provided an opportunity for TPB staff to conduct some additional sensitivity analyses to further illuminate the issue of concern to the TPB described in the letters to you of March 21 and June 1, 2012:

> "Future emissions estimates that the TPB will be required to develop to demonstrate conformity for these out-years could be impacted significantly by changes in the composition and age of the region's vehicle fleet, as well as by revisions to EPA's emissions estimation model (currently "MOVES 2010a"), both of which are external inputs to the planning process administered by the TPB."

The additional sensitivity tests conducted by TPB staff involved developing emissions forecasts for VOC, NOx, Precursor NOx, and Direct PM2.5 for the milestone years 2020 and 2040 using 2012 CLRP results with EPA's new MOVES 2010a emissions model. The results of these tests were presented to the TPB Technical Committee on July 6, and are shown in the attached PowerPoint slides. The first of the two charts shows emissions calculations using MOVES 2010a with two sets of VIN data, those collected in 2008 and those collected in 2011. Increases in emissions due solely to changes in the composition and age of the vehicle fleet from 2008 to 2011 range from 11.1 percent to 13.7 percent in 2020 and from 5.0 to 8.1 percent in 2040. The second of the two charts shows emissions calculations using 2011 VIN data with two different EPA emissions models, Mobile 6.2 and MOVES 2010a. Increases in emissions due solely to the change from the Mobile 6.2 model to MOVES 2010a range from 16.4 percent to 106.7 percent in 2020, and from 14.1 percent to 108.5 percent in 2040.

These additional sensitivity tests provide further support for the TPB's March 21 recommendation for the incorporation of safety margins of 20 percent and 30 percent into out-year mobile emissions budgets for 2017 and 2025 respectively in the PM2.5 maintenance plan under development by MWAQC. These safety margins would reflect the uncertainties associated with the future vehicle fleet mix and possible further revisions to EPA's emissions estimation model.

The very substantial increases in emissions estimates resulting from the change from the Mobile 6.2 model to MOVES 2010a underscore a key point made in the TPB's March 21 letter:

> "The TPB's analysis of the impact on emissions estimates of the recent update of EPA's emissions estimation model from Mobile 6.2 to MOVES suggests that such impacts may be significantly greater than can be anticipated through the use of safety margins. The TPB therefore recommends that if EPA mandates changes to its emissions estimation model in the future which result in significant changes in emissions inventories, MWAQC should undertake a formal update to the region's approved air quality plans and motor vehicle emissions budgets."

While safety margins can accommodate modest revisions and updates to EPA's emissions estimation model, such as those anticipated shortly in MOVES 2010b and MOVES 2013, a change as significant as that from Mobile 6.2 to MOVES 2010a calls for a formal update to the mobile emissions budgets in regional air quality plans.

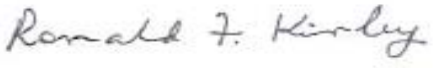
The conformity issues associated with changes in the vehicle fleet mix and emissions estimation model were recognized in March of this year by the Association of Metropolitan Planning Organizations (AMPO), which called for the following procedural reform to the conformity process:

> "Require that before a new emissions factor model or newly available fleet mix data are mandated for use in a conformity determination, the model and vehicle fleet mix data should be used in the establishment of updated mobile emissions budgets in a new or revised State Implementation Plan (SIP)"

Absent such a procedural reform to the conformity process, significant safety margins need to be incorporated into out-year mobile emissions budgets, as recommended by the TPB for the PM2.5 maintenance plan.

Thank you for your consideration of these TPB staff sensitivity analyses, and the recommendations of the TPB with regard to the establishment of out-year mobile emissions budgets in the PM2.5 maintenance plan.

Sincerely,



Ronald F. Kirby
Director, Department of
Transportation Planning

POTENTIAL IMPACTS OF VIN & EMISSIONS MODEL CHANGES ON THE 2012 CLRP AIR QUALITY CONFORMITY DETERMINATION – A SENSITIVITY TEST

TPB Technical Committee Meeting
July 6, 2012

THE POTENTIAL IMPACT OF VIN CHANGES

2012 Constrained Long Range Plan

Year 2020

MOVES 2010a	Pollutants	Emissions Comparisons			
		2011 VIN Basis	2008 VIN Basis	Differences	Ratios
	VOC 8-hr (t/d)	47.25	42.43	4.82	1.114
	NOX 8-hr (t/d)	90.75	79.81	10.94	1.137
	Precursor NOX (t/y)*	32,777.29	29,007.95	3,769.34	1.130
	Direct PM2.5 (t/y)*	1,475.27	1,327.40	147.87	1.111

Year 2040

MOVES 2010a	Pollutants	Emissions Comparisons			
		2011 VIN Basis	2008 VIN Basis	Differences	Ratios
	VOC 8-hr (t/d)	46.76	43.26	3.50	1.081
	NOX 8-hr (t/d)	72.24	67.93	4.31	1.063
	Precursor NOX (t/y)*	26,546.14	25,094.21	1,451.93	1.058
	Direct PM2.5 (t/y)*	1,339.81	1,276.37	63.44	1.050

THE POTENTIAL IMPACT OF EMISSION MODEL CHANGES

2012 Constrained Long Range Plan (2011 VIN Basis)

Year 2020

Pollutants	Emissions Inventories		Differences	Ratios
	Mobile6.2	MOVES2010a		
VOC 8-hr (t/d)	40.60	47.25	6.65	1.164
NOX 8-hr (t/d)	50.82	90.75	39.93	1.786
Precursor NOX (t/y)*	17,891.10	32,777.29	14,886.19	1.832
Direct PM2.5 (t/y)*	713.73	1,475.27	761.54	2.067

Year 2040

Pollutants	Emissions Inventories		Differences	Ratios
	Mobile6.2	MOVES2010a		
VOC 8-hr (t/d)	40.99	46.76	5.77	1.141
NOX 8-hr (t/d)	35.05	72.24	37.19	2.061
Precursor NOX (t/y)*	12,732.28	26,546.14	13,813.86	2.085
Direct PM2.5 (t/y)*	764.21	1,339.81	575.60	1.753

National Capital Region Transportation Planning Board

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M E M O R A N D U M

TO: Transportation Planning Board

FROM: Robert Werth
Chair, TPB Private Providers Task Force
President, Diamond Transportation Services, Inc.

SUBJECT: TPB Annual Transit Forum Overview

DATE: July 12, 2012

The 23rd Annual Transit Forum was held on June 26, 2012. The purpose of the annual transit forum is to bring together representatives from the private transportation sector and local jurisdictions to discuss mutual regional transportation interests. Over 40 persons attended, including representatives from local jurisdictions, public bus operators, and thirteen private transportation providers or manufacturers. The agenda featured two keynote addresses, followed by a roundtable discussion among the attendees.

This first keynote address was given by Ms. Pierce Coffee, Director of Marketing for Transurban's 495 Express Lanes project. She presented an overview of the history and planned operation of the project. Previously known as the Capital Beltway HOT Lanes (Virginia), the 495 Express Lanes are scheduled to open by the end of 2012. Vehicles with 3 or more persons, as well as buses – both private and public – and motorcycles, will be able to use the toll lanes free of charge with the proper tolling transponder. Attendees had many questions on the operation of the toll system, including purchase, use, and fees for the EX-Pass Flex transponder, the eligibility of other transportation providers for free travel, and on travel information and the pricing and enforcement of the toll system. Ms. Coffee provided answers and references for the audience. However, some details are still awaiting decision by Virginia DOT.

The second keynote address was given by Mr. Arthur Guzzetti, Vice President of Policy for the American Public Transportation Association (APTA). He opened his remarks by stating that he was one of 36 million boardings on public transportation across the United States for the day, emphasizing that public transportation is a vital part of the national transportation system. He described an effective transportation system as a four-legged stool, in which the federal government, states, local governments, and private partners all play their part. Public agencies need the private sector as an investment partner as well as an operations partner. APTA has both private and public members, and it has been a breakthrough year for the private sector. The $2.3 billion Denver Eagle P3 project is a leading example of private financing to balance risk and revenue in a way that benefits both private and public partners while providing critical new public transportation investment. This Design, Build, Finance, Operation and Maintenance (DBFOM) project will lead to two new commuter rail lines and a new rail maintenance facility for the Denver area, funded by a combination of local bonds and federal

grants and loans, and carried out by a private consortium in partnership with the regional transit district.

Mr. Guzzetti then addressed some of the specific elements of the current bill in Congress for surface transportation reauthorization, including interstate operator licensing and the allocation of funds between bus grants and New Starts funding. APTA supports expanded TIFIA grants and federal guarantees for low-cost capital through Private Activity Bonds; the Dulles rail is a terrific example of such. However, he emphasized that financing is not a replacement for funding, and that all attendees should promote increased awareness of the need for greater investment in the nation's transportation system.

The forum concluded with the roundtable discussion of transit plans and prospects. Each jurisdiction and transit operator in turn highlighted recent events and upcoming plans and projects for public transportation. In particular, potential business opportunities for the private sector were discussed.

The meeting highlights and a list of attendees are available on the Task Force website:
http://www.mwcog.org/transportation/committee/committee/documents.asp?COMMITTEE_ID=101

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July 6, 2012

Eulois Cleckley
Manager of Statewide and Region Planning/
Freight Programs
Transportation Policy and Planning Administration
District Department of Transportation
55 M St. SE, 5th Floor
Washington, D.C. 20003

Dear Mr. Cleckley,

On behalf of the National Capital Region Transportation Planning Board (TPB), I am pleased to take this opportunity to express support for your Federal Highway Administration "Off-Hours Freight Delivery Project Pilot Program" grant application.

The TPB recognizes the need to address congestion in the District of Columbia, particularly along heavily congested corridors during peak hours. An "Off-Hours Freight Delivery Project Pilot Program" has tremendous potential to improve peak traffic flows, maximize the efficiency of the roadway network, and reduce emissions.

We look forward to working with the District of Columbia Department of Transportation as this initiative advances.

Sincerely,

Todd M. Turner
At-Large Councilmember-City of Bowie
Chair, National Capital Region
Transportation Planning Board

GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

d. **Policy, Planning and Sustainability Administration**

July 6, 2012

The Honorable Todd M. Turner, Chair
Chair, Transportation Planning Board
777 North Capitol Street, NE
Washington DC, 20001

Dear Chairman Turner,

In the Spring of 2010, DDOT began the implementation of our Downtown Bike Lane Pilot Project and provided the TPB with a description of the evaluation approach. We recently completed our comprehensive evaluation and hereby submit it for your review.

The evaluation includes two completed projects from the 2010 proposal: Pennsylvania Avenue, NW (3rd Street to 14th Street) and 15th Street NW (Pennsylvania Avenue to W Street). It also includes innovative treatments at the intersection 16th and U Street, NW. As described the 2010 letter (attached), the performance measures DDOT monitored were: the number of bicyclists, the number of bicycle crashes, the number and nature of reported crashes involving pedestrians, and the traffic impact.

The Number of Bicyclists

The number of bicyclists increased dramatically on both Pennsylvania Avenue and 15th Street. On Pennsylvania Avenue, between 6th and 7th Street, there was a 221 percent increase in the a.m. peak hour volumes after the bicycle facilities were installed and a 237 percent increase in the p.m. peak hour volumes. Between 14th and 15th Street, there was a 315 percent increase in the a.m. peak hour volumes after the bicycle facilities were installed and a 241 percent increase in the p.m. peak hour volumes.

On 15th Street NW, there was a 205 percent increase in the number of riders during the p.m. peak hours from before the installation of bicycle facilities to after the installation of the two-way cycle track. However, there is no data available on the number of bicyclists before the installation of the cycle track during the a.m. peak hours, so no definitive conclusions can be

drawn on the percentage change.

The Number of Bicycle Crashes

The number of bicycle crashes on both roadways increased following the installation of the bike lanes, due mainly to the increase in bicyclists.

On Pennsylvania Avenue, there were 16 bicycle crashes in the corridor in the first 14 months after implementation compared with 9 in the previous four years. On 15th street, there were 13 crashes in the first 14 months compared with 20 over the previous 4 years. However, in one section, E Street to New York Avenue, bicycle crashes actually decreased.

While the 15th street crash number track closely with the increase in cyclists, the increases in crashes on Pennsylvania Avenue exceeds the increase in cyclists. This may be partly due to the fact the Pennsylvania avenue facility is not physically separated to the same degree as the 15th Street lane.

The Number and Nature of Crashes Reported Involving Pedestrians

On Pennsylvania Avenue, the number of bicycle crashes involving pedestrians, from before the installation of the bicycle facilities to after the installation of the bicycle facilities, decreased from 5.8 to 4.3 crashes per year between 6th and 10th Street and increased from 1.5 to 4.3 crashes per year between 11th and 15th Street.

On 15th Street, the number of bicycle crashes involving pedestrians increased between H Street to Massachusetts Avenue from 2.5 to 4.8 crashes per year, and on N Street to U Street from 1.5 to 2.4 crashes per year. DDOT is still analyzing individual police reports to determine the nature of pedestrian crashes. Also, the period of analysis is too short, and the sample size too small, to draw any definitive conclusions yet.

Traffic Impact

With the installation of bicycle facilities on Pennsylvania Avenue, the a.m. and p.m. peak speed of traffic and Level of Service (LOS) along Pennsylvania Avenue remained relatively constant for motor vehicles. As expected, bicycle LOS improved with the construction of the cycle track. The data indicate that the volume of traffic decreased after the installation of the cycle track.

On 15th Street, NW, motor vehicle speeds and levels of service also remained relatively similar for motor vehicles. The bicycle LOS varies based on the direction of travel within an intersection. The volume of traffic increased along 15th Street between E Street to New York Avenue and from H Street to Massachusetts Avenue, but decreased from Rhode Island Avenue

to U Street.

Conclusion

Attached to this letter is a copy of the Executive Summary of DDOT's Innovative Bicycle Facility Evaluation. It explains the above performance measures in greater detail as well as additional findings and recommendations. DDOT will use this information to improve these facilities and to inform the design and implementation of future projects, such as the remaining pilot projects on L and M Streets, NW. DDOT considers the Pennsylvania Avenue and 15th Street projects to be an initial success, and we hope our experience will assist other jurisdictions in the Washington area as they implement similar projects.

Please let me know if you have any questions. We would be happy to provide a copy of the full report and/or brief the Board on this project.

Sincerely,

Sam Zimbabwe
Associate Director

GOVERNMENT OF THE DISTRICT OF COLUMBIA
DISTRICT DEPARTMENT OF TRANSPORTATION

POLICY, PLANNING, and SUSTAINABILITY ADMINISTRATION

The Honorable David Snyder, Chairman
National Capital Region Transportation Planning Board
777 North Capitol Street, NE, Suite 300
Washington, DC 20002

May 13, 2010

Dear Mr. Snyder,

As requested at the April TPB meeting, DDOT is providing a description of our evaluation approach for the downtown bike lane pilot project. Below is a project description and our proposed performance measures, as well as some preliminary analysis.

Project Description

The purpose of the project is to improve bicycle safety and access in the downtown area while maintaining the transportation function of downtown Washington. This is particularly important as we expand to a larger, regional, bike sharing system of over 1100 bikes by the end of the year. These bike lanes are also included the 2005 Bicycle Master Plan. Bike lanes are an important part of our goal of expanding transportation choices in the District and the region.

We are planning separated bicycle facilities in the following corridors: Pennsylvania Avenue (3rd to 14th); M Street (15th to 29th) and L Street (25th to 12th); 15th Street (U to Massachusetts); and 9th Street (Massachusetts to Constitution). Experience in other cities shows that separated lanes increase bicycling while decreasing crashes involving bicyclists.

DDOT has determined these corridors have some excess capacity and is proposing to remove motor vehicle lanes to provide additional space for bike lanes. To minimize impacts on traffic, turn lanes are maintained at most intersections, requiring bikes to share the lane with cars. The pilot also includes enhanced enforcement in order to discourage commercial vehicle parking in the travel lanes. (Currently, delivery and tour bus parking is a significant hindrance to traffic flow). There are currently no adjustments to the bus schedule or stops planned for any of these projects.

These lanes are pilot projects. DDOT will monitor the impact to bicyclists, motorists, pedestrians, and make changes as necessary. If these projects prove successful, DDOT may make more improvements such as permanent barriers and/or traffic signal changes.

Performance Measures

DDOT will measure success of the project in the following ways:

- Number of bicyclists – DDOT will count the number of bicyclists on the pilot project streets before and after the installation of the lanes.
- Number of bicycle crashes – DDOT will monitor the number and nature of reported crashes involving cyclists before and after the installation of the lanes.

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- Pedestrian Crashes – DDOT will monitor the number and nature of reported crashes involving pedestrians.
- Traffic Analysis - DDOT will complete a quantitative assessment of traffic impact through 'before' and 'after' evaluations of:
    - Vehicular speed - DDOT will measure the speed of vehicles before and after the installation of the lanes.
    - Volume of traffic – DDOT will measure the volume of traffic on the pilot streets before and after the installation of the bicycle lanes.
    - Motor Vehicle Level of Service – DDOT will perform Level of Service Analysis for key intersections on the pilot streets before and after the installation of the bicycle lanes.
    - Bicycle Level of Service – DDOT will conduct Bicycle Level of Service (BLOS) Analysis before and after the installation of the lanes.
    - Qualitative Analysis of Traffic Flow – in addition to conducting modeling, DDOT will observe key intersections for signs of congestion and gridlock.

Tentatively, the pilot period is set for one year, at which point we believe we will have enough data to complete our analysis.

Preliminary Analysis

As part of the planning process, DDOT has conducted a Motor Vehicle Level of Service analysis for key intersections impacted by the some of these projects. Some of the results are attached.

For Pennsylvania Avenue, the analysis shows minimal degradation in the Level of Service. We had similar results for L Street. I Street showed more degradation, but we have replaced that with M Street. The rest of the corridors are still under analysis.

Thank you for your interest in our innovative downtown bike lane pilot project. We look forward to sharing the results of our analysis with the region.

Sincerely,

Karina Ricks
Associate Director

EXECUTIVE SUMMARY

Introduction and Background

In recent years, Washington, D.C. has emerged as one of the foremost cities for bicycling in the United States. Bicycling in the District has grown considerably as the District Department of Transportation (DDOT) has actively pursued construction of bicycle facilities on its roadways. One reason for this success is DDOT's willingness to try new and innovative bicycle treatments, particularly in high-visibility locations with engineering challenges.

Innovative bicycle facilities were installed at three locations in Northwest D.C., designed to provide increased safety, comfort, and convenience for cyclists. Facilities include dedicated road space, signal control, and signs and pavement markings. The treatments at the three locations consist of:

- **New Hampshire Avenue NW/U Street NW/16th Street NW intersection treatments**— bicycle boxes, bicycle signals, and contra-flow bicycle lanes were installed at this six-leg intersection to facilitate cyclist travel on New Hampshire Avenue.
- **Pennsylvania Avenue NW center median bicycle lanes (3rd Street to 15th Street)** — buffered bicycle lanes were installed in the center median of Pennsylvania Avenue, with flexible bollards placed near intersections.
- **15th Street NW two-way cycle track (E Street to V Street)** —a two-way cycle track was installed between the sidewalk and parked vehicles on 15th Street.

Section 2 – Study Facilities provides more detailed descriptions and illustrations of these facilities.

After these treatments were installed, DDOT sought to understand how well they work for cyclists, motorists, and pedestrians in terms of safety, level of service, behavior, and attitude. This report provides a comprehensive multimodal evaluation of these facilities for the purposes of (1) identifying recommended modifications to the constructed installations, and (2) providing guidance for the design and operation of future bicycle facilities within the District.

In general, the following areas were evaluated for conditions before and after the installation of the bicycle facilities:

- **Facility Use** — analysis of bicyclist and motor vehicle volumes.

- **Efficient Operations** — analysis of the level of service experienced by bicyclists, pedestrians, and drivers.
- **Convenience** — analysis of the corridor travel times experienced by bicycles and motor vehicles.
- **Comfort** — analysis of user intercept and surrounding neighborhood surveys concerning attitudes towards the new facilities.
- **Safety** — analysis of bicyclist, pedestrian, and driver compliance with traffic laws; interactions between modes; and crash history before and after facility installation.

The analysis employed a wide range of methods to understand the impact of these facilities on cyclists, motorists, and pedestrians. Table 1 summarizes the methods used and the data collected for each facility. Further explanation of these methods is provided in **Section 3 – Study Methodology**.

Table 1 Facility Evaluation Summary

Type of Analysis	16th / U/ New Hampshire	Pennsylvania Avenue	15th Street	Data Collected for Analysis
BICYCLE FACILITIES				
Volume Analysis	√	√	√	• Bicycle counts
Highway Capacity Manual 2010 Multi-Modal Level of Service		√	√	• Motor vehicle counts • Lane geometry and cross section • Speed data • Pavement condition
Danish Bicycle Level of Service		√	√	• Motor vehicle counts • Lane geometry and cross section • Speed data • Pavement condition • Land use information
Bicycle Environmental Quality Index		√	√	• Motor vehicle counts • Lane geometry and cross section • Speed data • Land use information
Bicycle Corridor Travel Time		√	√	• Signal timing data
Crash Analysis	√	√	√	• Crash data
Survey Analysis	√	√	√	• User intercept surveys • Surrounding neighborhood surveys
Video Analysis	√	√	√	• Study area video

Type of Analysis	16th / U/ New Hampshire	Pennsylvania Avenue	15th Street	Data Collected for Analysis
MOTOR VEHICLE FACILITIES				
Volume Analysis	√	√	√	• Motor vehicle counts
Highway Capacity Manual 2000 Arterial Level of Service	√	√	√	• Motor vehicle counts • Pedestrian counts • Lane geometry and cross section • Speed data • Signal timing and phasing
Travel Time Analysis			√	• Drive time data
Survey Analysis	√	√	√	• Surrounding neighborhood surveys
Video Analysis	√	√	√	• Study area video
PEDESTRIAN FACILITIES				
Highway Capacity Manual 2010 Multi-Modal Level of Service		√	√	• Motor vehicle counts • Pedestrian counts • Lane geometry and cross section • Speed data
Survey Analysis	√	√	√	• User intercept surveys • Surrounding neighborhood surveys
Video Analysis	√	√	√	• Study area video

Findings and Recommendations

Overall, the analysis found that the bicycle treatments improved conditions for cycling without negatively impacting other modes in the vicinity of the investment. Due to the unique and independent conditions at each facility, key findings are provided separately for each facility.

16TH STREET NW/U STREET NW/NEW HAMPSHIRE AVENUE NW

New Hampshire Avenue is a low-volume diagonal street that cuts through the D.C. grid network and is a DDOT priority route for bicycle travel. The approach legs to its intersection with 16th Street and U Street are one-way for vehicles traveling away from the intersection (on both sides). Contra-flow bicycle lanes were installed to permit bicycle movements toward the intersection and encourage the use of New Hampshire Avenue as a through corridor for cycling. However, because vehicles are not permitted to drive across the intersection on New Hampshire Avenue, provisions were needed to allow bicyclists to negotiate the intersection. DDOT installed bicycle signals and bicycle boxes to permit cyclists to travel across the intersection in two stages.

A complete summary of the intersection analysis is provided in **Section 4 – Evaluation of the Intersection of 16th Street NW/U Street NW/New Hampshire Avenue NW.** The analysis yielded the following findings:

- **Bicycle volumes increased after installation of the bicycle facilities.** Between April 2010 (before the bicycle facilities were installed) and April 2012 (after the bicycle facilities were installed), there was a 133 percent increase in the number of bicyclists traveling on New Hampshire Avenue during the a.m. peak hour and a 185 percent increase during the p.m. peak hour.
- **Motor vehicle volumes remained approximately constant after installation of the bicycle facilities.** There was a one percent decrease between May 2009 (before the bicycle facilities were installed) and April 2012 (after the bicycle facilities were installed).
- **Motor vehicle intersection level of service (LOS) remained the same before and after the bicycle facilities were installed.** Reduced green time for the motor vehicle signal phases increased delay and the volume-to-capacity (v/c) ratio only slightly during the p.m. period, but resulted in somewhat larger impacts during the a.m. peak.
- **Few cyclists are using the bike box and bike signal as intended to cross the intersection.** The video revealed that fewer than 20 percent of bicyclists use the bicycle signal to cross the intersection. This percentage is consistent for southbound and northbound travel. Over 40 percent of bicyclists cross the intersection via crosswalks (usually first crossing U Street, then 16th Street) rather than using the bicycle facility. The cyclist intercept survey confirmed these findings. More than three-quarters of surveyed cyclists indicated that it was not worth the time to wait for the signal with the present signal timing.
- **Few cyclists are using the bike box as intended, although it may still achieve its purpose.** The video revealed that 82 percent of bicyclists stopped in the crosswalk, rather than waiting in the box. However, video evidence showed that fewer than 15 percent of cyclists using the bike box encountered motor vehicle stopped in the box, suggesting that the bike box may be effective at providing separation between bicyclists and motorists and providing cyclists with space to maneuver.
- **Cyclists using the bike signal often encounter motor vehicles, but are able to navigate through.** Four of the 32 southbound bicyclists (13 percent) observed using the signal experienced interactions with late motorist eastbound left-turns from U Street (who turned left on red). Despite this, most bicyclists that do use the bike signal (42 out of 48) were able to cross the intersection without stopping, either by crossing diagonally or proceeding during the 16th

Street green. Note that a small percentage of bicyclists (19 out of 298) used the bike signal to cross the intersection diagonally (without first traveling to the box).

- **More bicycle crashes per year were observed at the intersection after installation of the bicycle facilities.** There were 5 bicycle crashes at the intersection during the first 13 months after implementation, compared to a total of 4 bicycle crashes during the previous 4 years. The low number of total crashes and limited length of time observed for the after period (13 months) is too short to draw definitive conclusions. The number of crashes per year (adjusted for the increase in bicyclist volumes) remained approximately the same before and after installation of the bicycle facilities. Crash patterns should continue to be monitored, particularly as operational changes are made to the intersection to improve bicyclist compliance.
- **Perceptions of the facility are generally positive from both cyclists and motorists.** Cyclists reported enthusiastic agreement that the contra-flow bike lanes make cycling safer and easier on New Hampshire. The bicycle signal and bike box elicited generally positive responses regarding safety and ease, although significantly lower than the response to the contra-flow lanes. Motorists did not indicate that the new bicycle facilities caused any problems in terms of added congestion, delay, or parking challenges.
- **Residents responding to the survey support more investments in bicycle facilities.** Many area residents do not believe bicycling in Washington, D.C. is safe, but a strong majority support investments in encouraging bicycling for transportation and improving the safety of bicycling.

Based on these findings, the team makes the following preliminary recommendations:

- Restrict trucks making eastbound right turns onto New Hampshire Avenue from U Street due to the new reduced turning radius.
- Increase the street cross-section width at the southwest New Hampshire intersection entrance to make room for the future bike lane. Supplement the increased width with a permanent barrier between motorists and bicyclists.
- Paint the bike boxes and dashed bike lanes leading to the bike boxes green. The green may increase the share of cyclists stopping in the box, rather than in the crosswalk, where conflicts with pedestrians can occur.
- The stop bars on 16th Street are not recommended for modification. They are currently located approximately 10 feet back from the crosswalks, providing an angled bicycle box area between the stop bar and crosswalks. They are recommended to remain in approximately the same position under any reconstruction plan to allow unimpeded bicycle access to the bike boxes.

- The dashed bike lanes crossing 16th Street should be located as close as possible to the crosswalk to increase visibility of cyclists to turning motorists (subject to other geometric design constraints.
- Consider adding medians (with bike openings) on both 16th Street approaches to increase pedestrian safety by providing a refuge from turning vehicles.
- Add a push-button for cyclists and/or improved bicyclist detection, or alter the signal timing to provide a green bike phase every cycle (see signal phasing modifications below).
- Near-side bicycle signal heads should be mounted lower for improved visibility. Consider installing smaller lenses (e.g., 4-inch) for the near-side bicycle signal heads. Small, low-mounted near-side bike signal heads are used successfully in northern Europe in similar situations.
- Modify signal phasing to reduce delay for all users and more closely reflect the way that cyclists currently use the intersection:
    - Provide a green bike signal that operates concurrently with green time on U Street. For consistency with the MUTCD meaning of a green ball for autos (i.e., allows through movement and turns except as modified by signing/striping/etc.), signing (e.g., "BIKES CROSS 16TH ST ON GREEN 🚲") should be installed to make it clearer that the bike signal doesn't allow protected movement all the way through the intersection. Green painted bike lanes and boxes would also reinforce this message.
    - Provide a three second solid yellow bike signal before the all-red bike signal.
    - Eliminate the exclusive bike phase; bicycles would receive the same amount of green time that U Street currently receives, which would reduce cyclist delay considerably. Furthermore, the time currently used by the exclusive bicycle phase would be returned to 16th and U Streets, which should improve motorized vehicle operations to close to "before" conditions.
    - Install a flashing yellow right-turn arrow for eastbound and westbound right turning vehicles.
    - Implement a flashing yellow arrow indication for the westbound left-turning movement during its permissive phase, and install a "TURNING VEHICLES YIELD TO BIKES" sign.
    - Prohibit eastbound left-turns to minimize conflicts with bicyclists.
    - Consider adding a short leading pedestrian/bicycle interval in advance of the U Street green indication. The length of any leading pedestrian/bicycle interval should be limited to avoid encouraging aggressive cyclists to cross the full intersection diagonally during the lead phase. Note that a leading pedestrian/bicycle interval would require eliminating the leading westbound left-turn phase (as there is no dedicated left-turn lane).

  - Temporarily use NEW TRAFFIC PATTERN AHEAD signs on the New Hampshire Avenue intersection approaches to inform bicyclists about the changed bicycle signal phasing.
- An alternative to the recommended signal timing modifications would be to implement an exclusive bicycle and pedestrian phase to allow cyclists to cross the intersection diagonally during the bicycle green phase. The length of the exclusive phase should be based on the needed pedestrian clearance interval for perpendicular crossing (using a walking speed of 3.5 feet/second). Pedestrians will also be allowed to cross during the U Street and 16th Street green phases (similar to the exclusive pedestrian phase at 7th Street/H Street in Chinatown).

  This alternative has the benefit of eliminating conflicts between cyclists and motor vehicles, but will likely require a longer cycle length with longer delays for both motorists and cyclists compared to the preferred alternative.

PENNSYLVANIA AVENUE NW FROM 3RD STREET NW TO 15TH STREET NW

Bicycle lanes were installed in the center median of the Pennsylvania Avenue NW roadway (with no grade or barrier separation) between 3rd Street and 15th Street. Pennsylvania Avenue is a high-volume street that connects the White House to the Capitol Building, and it is also an important bicycle corridor. The eight-lane street has high vehicle speeds and volumes, including many buses and trucks and a lack of dedicated bike facilities, which created uncomfortable conditions for bicycling.

The bicycle lanes are five feet wide with three-foot buffers on each side. At intersections, the approaching bicycle lane splits to provide a turn lane and a through lane. Turning bicyclists wait in the middle (between the through bicycle lanes) while through cyclists follow the traffic signal for through motorists. To complete turning movements, cyclists wait for the pedestrian signal and cross in the crosswalk.

A complete summary of the analysis of the center median bicycle lanes is provided in **Section 5 – Evaluation of Pennsylvania Avenue NW from 3rd Street NW to 15th Street NW.** This analysis yielded the following findings:

- **Bicycle volumes increased by approximately 200 percent after the bicycle facilities were installed.** Bicycle counts were taken between 6th Street and 7th Street and between 14th Street and 15th Street during the a.m. and p.m. peak hours in April 2010 and June 2011. All locations and time periods experienced significant bicycle volume growth after installation of the bicycle facilities.
- **Arterial LOS was similar for motor vehicles on Pennsylvania Avenue before and after the bicycle facilities were installed.** The study segments remained at LOS E or better during both

the a.m. and p.m. peak hours, even after left turns were restricted and through movement green time was reduced on Pennsylvania Avenue at several intersections. The minimal change partially reflects the extensive work done prior to installation to adjust corridor signal timing.

- **The corridor experienced decreased motorized vehicle volumes after the bicycle facilities were installed.** Between October 2009 and June 2011, there was a 21.3 percent decrease in volumes between 6th Street and 10th Street during the p.m. peak hour, and a 14.7 percent decrease in volumes between 10th Street and 15th Street during the p.m. peak hour. The reason for the decrease is not entirely clear, but may have resulted from the different times of year that the counts were taken, and/or driver route choice changes due to the turn restrictions.
- **Danish Bicycle LOS and Bicycle Environmental Quality Index (BEQI) analyses all show significantly improved operations for cyclists with the median bike facilities.** The Danish Bicycle LOS improved from LOS E before the bicycle facilities were installed to LOS C after installation. The BEQI index indicated that the bicycling environment went from being "Average" before facility installation to "High Quality" after installation. The BEQI scores (out of 100) improved from approximately 45 (out of 100) before installation to 70 after installation.
- **Signal timing for bicycles generally works well between 10th Street and 15th Street, but results in large delays to cyclists between 3rd Street and 9th Street.** The speed-based LOS experienced by bicycles, based on existing signal timing and cyclist travel speeds of 10–15 mph is LOS E or F between 3rd Street and 9th Street, LOS A to D between 10th Street and 15th Street.
- **The frequency of bicycle crashes experienced along Pennsylvania Avenue increased after the bicycle facilities were installed.** There were 16 bicycle crashes on the corridor during the first 14 months after implementation, compared to a total of 9 bicycle crashes during the previous 4 years. This represents an increase in crash frequency, even when taking into account the observed tripling of cyclist volume on the corridor. The low number of total crashes and limited length of time observed for the after period (14 months) is too short to draw definitive conclusions; however, DDOT should continue to monitor crash patterns to identify potential safety improvements along the corridor.
- **No collisions were directly observed in the video data and relatively few were self-reported in the cyclist surveys.** Video observations revealed occasional instances of cyclists and pedestrians navigating around one another at intersection crosswalk medians, and more than half of cyclists reported experiencing "near-collisions" with pedestrians. About half of cyclists reported experiencing "near-collisions" with turning motor vehicles, although there were none observed in the six hours of video analyzed.

- **Cyclists understand how they are supposed to behave at the intersections, but frequently do not comply.** All surveyed cyclists understood that they should follow the through-traffic motor vehicle signal. However, the video data revealed a high violation rate. In the observed data, an average of 42 percent of cyclists arriving on a red signal violated the signal (though this varied substantially by intersection and by cross street volume). Compared to the data in the few published studies available on cyclist compliance with bicycle-specific traffic signals, this is a high violation rate, and is very high compared with motorist compliance.
- **Most cyclists stopping at red lights stop in the crosswalk or median area, rather than behind the white stop bar.** This pattern could result in potential collisions with left-turning vehicles and blocking pedestrians trying to use the crosswalk.
- **Cyclists overwhelmingly indicated that they felt riding a bicycle on Pennsylvania Avenue with the center bike lanes is safer and easier**, and that the center bike lanes provide a useful connection for getting around Washington, D.C. on a bicycle.
- **Nearly three in four residents indicated that they "support" the center bike lanes and believe them to be a valuable asset to the neighborhood.** They also support investment in encouraging cycling and improving the safety of cycling, although there was a greater amount of differing opinions for this facility than for the other facilities evaluated.
- **Motorists support the separation between bikes and cars provided by the center bike lanes, but have some concerns.** About half the respondents indicated that restrictions on U-turns are a major inconvenience along the route (note that U-turns were always prohibited, but several missing signs were replaced when the bicycle facility was installed). Nearly half of respondents indicated that signals, signs, and street markings do not make it clear who has the right-of-way at intersections.
- **Pedestrians find there are fewer cyclists riding on sidewalks now**. While pedestrian responses indicate that there may now be some competition for space at medians along Pennsylvania Avenue, only one respondent reported being involved in a collision with a cyclist in the center bike lanes.

Based on these findings, the team makes the following preliminary recommendations:

- Improve legibility of signals, signs, and markings. Only 56 percent of drivers indicated it was clear who has the right-of-way at intersections. Bicycle signals clarifying the separation of bicycle movements from left-turns could help improve legibility.
- Add bicycle signals to create independent vehicle and bicycle through phases. Since the bicycle lane is positioned to the left of the vehicle left-turn lane, the lanes must operate with different signal phases. Through motorists, who drive to the right of the left-turn lane, do not conflict

with turning vehicles, but currently must wait since they share a signal head with bicyclists. Adding a bicycle signal and bicycle through phase would permit independent operation of the through bicycle and vehicle phases and increase green time for through vehicles, and would make it easier to adjust signal timing to accommodate both cyclist and motor vehicle progression.

- Resize and reposition bicycle signs. The bicycle signs create a sight distance obstruction and could be made smaller. In the longer term, taller signal poles would allow the signs to be placed higher to increase visibility.
- Consider additional pavement markings to reduce pedestrian/bicyclist conflicts. For instance, "WAIT HERE" or "STOP HERE" pavement markings prior to the stop bar in the cycle track (between the stop bar and the bike symbol) could be used to encourage cyclists to stop at the proper location. Similarly, bike stencils in the crosswalk where the cycle track crosses the crosswalk (similar to those used at driveways along 15th Street) could help to indicate the presence of the cycle track to pedestrians.
- Include cyclist progression analysis as an explicit performance measure in future signal re-timing along Pennsylvania Avenue. In particular, eastbound bicyclists experience poor progression in the a.m. peak period and westbound cyclists experience poor progression in both peak periods.
- DDOT should consider a cyclist education and enforcement campaign to encourage compliance with traffic signals.

15TH STREET NW FROM E STREET NW/PENNSYLVANIA AVENUE NW TO V STREET NW

DDOT installed a two-way cycle track on 15th Street NW between E Street/Pennsylvania Avenue and V Street (except in the section between New York Avenue and H Street). The cycle track is located on the west side of the street between the sidewalk and parked vehicles. 15th Street is one-way northbound for motor vehicles north of Massachusetts Avenue, and is a two-way street south of Massachusetts Avenue. Before installation of the cycle track, bicyclists shared the roadway with vehicle traffic and there were no accommodations for southbound cyclists north of Massachusetts Avenue (15th Street is one-way northbound for motor vehicles).

The cycle track is eight feet wide with a three-foot buffer between it and vehicle traffic or parked cars. White, flexible channelizing posts were installed in the buffer to further delineate the dedicated cyclist space to motorists. At intersections on the one-way section of 15th Street, the approaching cycle track is diverted away from the sidewalk, creating a seven-foot buffer between the two directions of bicycle traffic and increasing cyclist visibility to left-turning motorists.

A complete summary of the analysis of the two-way cycle track is provided in **Section 6 – Evaluation of 15th Street NW from E Street NW/Pennsylvania Avenue NW to V Street NW**. This analysis yielded the following findings:

- **The data indicate that more bicyclists began using 15th Street after the one-way cycle track was installed and, in general, even more began traveling along the corridor after the two-way cycle track was installed.** After the two-way cycle track was installed, there was a 205 percent increase in bicycle volumes (from before conditions) between P Street and Church Street during the p.m. peak hour, and there was a 272 percent increase in bicyclist volumes (from before conditions) between T Street and Swann Street during the p.m. peak hour.
- **Motor vehicle counts show that volumes have remained relatively constant on 15th Street before and after the bicycle facilities were installed.** Between September 2007 (before the bicycle facilities were installed) and July 2011 (after the two-way cycle track installation), there was a 4.0 percent increase in motor vehicle volumes between E Street and New York Avenue, a 10.1 percent increase in motor vehicle volumes between H Street and Massachusetts Avenue, and a 1.2 percent decrease in motor vehicle volumes between Rhode Island Avenue and U Street.
- **Motor vehicle operations show only minor changes before and after the bicycle facilities were installed.** Most segments remained at LOS D or E, based on the *Highway Capacity Manual 2000*'s urban streets method.
- **Overall, the bicycle facilities did not significantly change motor vehicle travel speeds along 15th Street**. Analysis of travel time runs done both before and after installation of the cycle tracks showed no significant difference in corridor travel time for motor vehicles.
- **The Danish Bicycle LOS analysis indicates that bicyclists experienced a better LOS after the new facilities were installed.** Before installation, 15th Street was rated as having Bicycle LOS D and E on the three study segments; after installation, 15th Street was rated as providing Bicycle LOS A and B. The model predicts that nearly all bicyclists will indicate being at least "a little satisfied" with the facilities on 15th Street after installation.
- **The BEQI index analysis ranked 15th Street as having "average" quality bicycle facilities before the cycle track installation and "high" to "highest" quality bicycle facilities after installation.** Before installation, 15th Street received scores of approximately 45 out of 100. After installation, 15th Street received scores of approximately 75 out of 100.
- **Bicyclists experience less delay on 15th Street between Lower E Street and I Street than between I Street and U Street.** Bicyclists riding at 15 mph between Lower E Street and I Street

can achieve LOS D or better based on average travel speed, but bicyclists traveling between I Street and U Street generally experience significant signal delay.

- **The number of crashes involving bicyclists remained similar after the bicycle facilities were installed**, after accounting for the substantial increase in bicyclist volume. Thirteen crashes involving cyclists occurred in the first 14 months after installation of the two-way cycle track, compared to 20 crashes over the 4 years prior to cycle track implementation. As cyclist volumes approximately doubled over this same time period, this represents no significant change in crashes per cyclist. One year of data after installation does not provide conclusive information for the crash patterns occurring along the corridor. However, it appears that crashes involving bicyclists remain a relatively rare event along 15th Street. It is recommended that crash reports continue to be evaluated in future years.
- **There are potential issues with the existing design, which uses the pedestrian signal to control cyclist movements.** According to the survey responses, many cyclists (approximately 20–30 percent) watch the through motor vehicle green, which could result in conflicts with left-turning vehicles during the protected left-turn phase. In addition to comprehension, violations of the pedestrian signal by cyclists are high, especially by southbound cyclists.
- **Red-light running by cyclists is high, with over 40 percent of cyclists observed disobeying signals.** Compared to the data in the few published studies available on cyclist compliance with bicycle-specific traffic signals, this is a high violation rate, and is very high compared with motorist compliance. Violation rates differed considerably by intersection, and are highest at intersections with (1) low volumes of conflicting traffic and/or (2) high levels of signal delay.
- **Cyclists encounter many pedestrians and, during congested periods, it is not uncommon for cross traffic to block the intersection.** Generally, cyclists navigate around pedestrians and stopped traffic without needing to resort to emergency actions to avoid collisions. This appears to be a convenience, rather than safety issue, due in part to very low turning vehicle speeds.
- **Cyclists overwhelmingly feel that riding on 15th Street with the cycle track is much safer and easier now**, that it is a useful connection, and that they would go out of their way to ride on the cycle track as opposed to other streets.
- **Residents support investments that encourage people to bicycle for transportation and improve the safety of bicycling.** Over 80 percent of residents support the cycle track and view it as a valuable asset to the neighborhood.
- **Motorist attitudes are generally favorable toward the cycle track.** The like that it provides separate spaces for cars and bicycles, and most don't find that traffic congestion has gotten worse. However, just under half of motorists find waiting for a green arrow to make a left turn

to be a major inconvenience, and about two-thirds find turning off 15th Street into alleys to be difficult with the cycle track.

- **Pedestrians indicated that they are encountering fewer cyclists on sidewalks**, although some do not feel cyclists are yielding to pedestrians in the crosswalks.

Based on these findings, the team makes the following preliminary recommendations:

- Add bicycle signal heads to control bicycle traffic for both northbound and southbound movements, rather than using pedestrian signals. Many cyclists do not understand that they should use the pedestrian signals as their traffic control. Installing bicycle signals at these intersections, which will require additional or modified FHWA experimentation requests, will improve signal control clarity and potentially reduce crash risks.
- Consider installing a flashing yellow left turn signal for motorists. A flashing yellow arrow for left-turning motorists may help convey through bicycle priority and reduce risk of crashes. Implementing this as an experimental treatment at one or more intersections would allow a review of its effectiveness before full corridor implementation.
- Consider using green colored pavement at unsignalized conflict areas (e.g., driveway crossings), in addition to the existing stencils, to alert motorists of the presence of the bicycle facility.
- Green pavement might also be appropriate through intersections to provide a visual cue to motorists to watch for potential conflicts and not block the intersection while waiting to turn.
- Improve pavement conditions for southbound cyclists through repaving, widening, and/or removing the gutter.
- Improve signal progression for southbound cyclists north of Massachusetts Avenue to the extent possible. Traffic signals on the one-way portion of 15th Street are timed for one-way northbound traffic, which results in frequent stops for southbound cyclists. Signals should be retimed to accommodate bicycle traffic in both directions, although this must be balanced with the need to maintain northbound progression for motor vehicles, and potentially cross-street progression.
- Add pedestrian islands to crossings north of Massachusetts Avenue. Providing storage for crossing pedestrians will reduce conflicts between cyclists and pedestrians standing in the cycle track.
- Consider using a green bike box at the intersection of Pennsylvania Avenue/15th Street for eastbound cyclists to provide cyclists with a clearly marked location to wait.
- DDOT should consider a cyclist education and enforcement campaign to encourage compliance with traffic signals.

National Capital Region Transportation Planning Board

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July 5, 2012

Mr. Randy E. Mosier
Chief, Regulations Division Development
Maryland Department of the Environment
1800 Washington Boulevard
Suite 730
Baltimore, Maryland 21230

Re: Proposed Revisions to the Maryland Chapter 26 Conformity Regulation

Dear Mr. Mosier:

On Friday July 20, 2012, the Maryland Department of the Environment (MDE) is planning to hold a meeting to obtain comments from stakeholder groups on additional requirements that MDE is proposing to incorporate into Chapter 26 Conformity of the Code of Maryland (COMAR). This letter provides comments and questions on this proposal which have been prepared by the staff of the National Capital Region Transportation Planning Board (TPB), the metropolitan planning organization (MPO) for the Metropolitan Washington Region.

The purpose of Chapter 26 Conformity of the COMAR is described in Section .01 Purpose and Scope as:

> "to implement Section 176c of the Clean Air Act (CAA), as amended (42 U.S.C. Section 7401 et seq.), and the related requirements of 23 U.S.C. Section 109(j), with respect to the conformity of transportation plans, programs, and projects which are developed, funded, or approved by the United States Department of Transportation (DOT) and by metropolitan planning organizations (MPOs) or other recipients of funds under Title 23 U.S.C. or the Federal Transit Laws (49 U.S.C. Chapter 53)."

The TPB is responsible for making conformity determinations on transportation plans and programs for the Washington region in accordance with the conformity regulations promulgated by the Environmental Protection Agency (EPA). The TPB devotes significant staff resources each year to carrying out these determinations. Mobile emissions budgets are set for the Washington region in State Implementation Plans for pollutants regulated under the National Ambient Air Quality Standards (NAAQS), with extensive technical review and public comment. Following formal adequacy findings by EPA, these mobile emissions budgets are used by the TPB in making conformity determinations, also with extensive technical review and public comment.

The TPB has made numerous conformity determinations over the past two decades, typically once every year and sometimes more frequently. Without exception, these determinations have received approval by the US Department of Transportation (USDOT), in consultation with the EPA, with respect to both procedural and technical requirements. Chapter 26 Conformity of the COMAR has been an important part of this process, as described in Section .01 Purpose and Scope: "This Chapter sets forth policy, criteria, and procedures for demonstrating and assuring conformity of these activities to an applicable implementation plan developed pursuant to Section 110 and part D of the CAA."

The additional reporting requirements that MDE is proposing to incorporate into Chapter 26 Conformity, which would require the commitment of additional staff resources by MPOs like the TPB, raise a number of significant procedural and substantive questions which need to be addressed, as detailed below.

Carbon Dioxide: Given that the purpose of Chapter 26 Conformity concerns "demonstrating and assuring conformity of these activities to an applicable implementation plan," what is the basis for including carbon dioxide emissions in the additional reporting requirements when these emissions are not subject to CAAA conformity requirements, and consequently are not included in any "applicable implementation plan"? More specifically, how can MDE propose that "the long-term planning targets shall be 10 percent lower than the emissions estimates for the last and second to last horizon years from the SIP analysis" when no emissions estimates for carbon dioxide are provided in any existing or proposed SIP analysis?

MDE's proposed additional reporting requirements include absolute numbers described as "carbon dioxide budgets" for the Washington region of 12.3 million metric tons per year for 2030 and 7.3 million metric tons per year in 2040. Are these numbers intended to be the long-range planning targets, and, if so, shouldn't they be labeled as such, rather than as "budgets"? These numbers are clearly not based on any SIP analysis, since as noted above no estimates for carbon dioxide are provided in any existing or proposed SIPs. The numbers appear to be based on estimates developed in the TPB's "What Would It Take?" scenario analysis, which used land activity and transportation networks from the 2009 Constrained Long Range Plan (CLRP) and the Mobile 6.2 emissions model. These estimates are currently being updated using the 2012 CLRP and the MOVES model. Why does MDE propose including absolute numbers in a state regulation using emissions analyses that will soon be out-of-date?

Nitrogen Oxide: Nitrogen oxide budgets for on-road mobile sources are developed in accordance with EPA's conformity regulations and incorporated into state implementation plans for both ozone and fine particle pollution, with different geographic areas and seasonal factors for each case. The proposed MDE additional reporting requirements state that long-term planning targets would be established using emissions analyses from the "last ozone SIP submitted to EPA". For the Washington metropolitan region, the last ozone SIP submitted to EPA was dated May 2007. This SIP has not been acted on by EPA, except for an adequacy finding for the reasonable further progress budgets which the TPB is currently using for conformity analyses. The emissions analysis for this SIP was based on fleet mix data and a travel demand model that have since been updated, and the analysis used the EPA Mobile 6.2 emissions model which is now being phased out in favor of EPA's new MOVES model. The last horizon year in this SIP analysis was 2030. Why does MDE propose setting long-term planning

targets using emissions analyses in the last ozone SIP submitted to EPA, when these analyses are now out-of-date with regard to fleet mix assumptions, the models used, and the horizon year?

MDE's proposed additional reporting requirements include absolute numbers described as "nitrogen oxide budgets" for the Washington region of 28.71 tons per day in 2030 and 29.19 tons per day in 2040. Are these numbers intended to be the long term planning targets, and, if so, shouldn't they be labeled as such, rather than as "budgets"? Rather than using "the emissions analyses that form the basis for mobile source emissions budgets in the last ozone SIP submitted to EPA", as stated in the preamble, MDE appears to have based these numbers on out-year forecasts from the TPB's conformity report for the 2011 CLRP, dated November 16, 2011. This 2011 report will shortly be superseded by a new conformity report for the 2012 CLRP, scheduled to be adopted by the TPB on July 18, 2012. Why does MDE propose including absolute numbers in a state regulation using emissions analyses that are subject to regular updates? Shouldn't the content of this regulation be limited to "policy, criteria, and procedures", as described in .01 Purpose and Scope in Chapter 26?

An alternative approach: The TPB is continuing to study various strategies for reducing carbon dioxide emissions using the goals in the 2008 COG Climate Change Report, which are based on scientific evidence on global warming from the Intergovernmental Panel on Climate Change (IPCC). The TPB is also studying the cost-effectiveness of numerous transportation emission reduction measures for achieving additional reductions in nitrogen oxide emissions. As an alternative to trying to incorporate additional requirements into Chapter 26 Conformity of the COMAR using soon-to-be-superseded analyses, TPB staff suggests that MDE participate in ongoing TPB studies. These studies provide the opportunity to analyze potential additional reductions in carbon dioxide and nitrogen oxide emissions with the latest data and technical methods, and with the participation and support of all of the interested stakeholders.

Thank you for considering the comments of TPB staff on this matter.

Sincerely,

Ronald F. Kirby
Director, Department of
Transportation Planning

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Area Businesses Honored for Promoting Sustainable, Healthy, and Convenient Commute Options

Reduced traffic congestion, air pollution, and stress are benefits of alternatives to drive-alone commuting

Washington, D.C. – Three companies in metropolitan Washington – the CoStar Group, Wells Fargo Home Mortgage, and Booz Allen Hamilton – were honored today at the National Press Club by Commuter Connections for providing outstanding commuting options and alternatives for employees.

Commuter Connections, a program of the National Capital Region Transportation Planning Board (TPB) focuses on making alternatives to drive-alone commuting practical and attractive.

Each of the companies voluntarily implemented strategies to support alternatives to driving to work alone, such as carpooling/vanpooling, teleworking, walking, bicycling and taking public transit. Such alternatives help reduce gasoline consumption, ease traffic congestion and the stress that long commutes place on employees, and provide for cleaner air through reduced auto emissions.

“The employers we are honoring today demonstrate a concern about the quality of life for their employees and the region. We hope that through their example, other employers will embrace similar practices,” said Todd Turner, TPB Chair and Bowie City Councilmember. “On behalf of the Transportation Planning Board, I congratulate the winners of the 2012 Commuter Connections Employer Recognition Awards and thank them for their continued commitment to excellence by helping to reduce traffic congestion and improve the air we breathe.”

The CoStar Group, which is based in the Washington, DC, was awarded the Incentives Award for the development of its 10-point commuter assistance program that was launched alongside the company’s move from Bethesda, MD to its new, Gold LEED-certified building on L Street in the District.

Wells Fargo Home Mortgage, which is based in Frederick, MD, won the Marketing Award for developing a creative twist on the traditional transportation fair. The campaign, “More Parks, Less

Parking", delivered the message that fewer parking spots can help increase green space and beautify the workplace.

Booz Allen Hamilton, which is based in McLean VA, was awarded the Telework Award for its "Way We Work" (WWW) program designed to improve employee commutes, reduce traffic congestion, and lower the company's overall carbon footprint through a program that allows area employees to work at office centers closest to their homes.

More detailed explanations of the winning organizations are provided below.

Commuter Connections works closely with local businesses to educate and promote alternatives to drive alone commuting practices of employees. With free assistance from Commuter Connections, employers can offer a wide array of commuting options from transit subsidies or pre-tax benefits to telework and ridesharing programs. Commuter Connections also manages the Guaranteed Ride Home program, which provides peace of mind for commuters using alternatives to driving alone by providing a free ride home in the event of an emergency. In addition they offer the 'Pool Rewards incentive program which provides up to $130 in cash to drive alone commuters who start or join new carpools.

2012 Commuter Connections Employer Recognition Award winners*:

- **The CoStar Group (Incentives Award)**: CoStar's relocation from Bethesda, MD to its new, Gold LEED-certified building on L Street in D.C., was the catalyst for the development of its 10-point commuter assistance program. Initiated in October 2010, CoStar's commuter assistance program has remained in place to improve employees' commutes, reduce staff reliance on driving alone and reduce CoStar's carbon footprint. Commuter assistance incentives include: a subsidy to cover the cost of each eligible employee's commute via public transportation equal to the maximum amount allowable by the IRS;; free parking for carpoolers; free employee shuttle service to and from Metro Center; guard-monitored bike racks; shower facilities, lockers and fresh towels; a fleet of loaner bicycles, and Segways and a Segway safety training class, all at no cost to employees.

  CoStar also offered a company-wide relocation benefit for employees moving to the DC office. The $14,000 relocation package required that employees become DC residents. For employees who were not able to relocate and who were incurring a longer commute, CoStar gave away Apple iPads to distance commuters who enrolled in the transit benefit. During its relocation, the company provided $792,000 in relocation assistance to 59 employees who moved to DC. Staff response to the ongoing commuter assistance program has been outstanding and as a result, 85% of CoStar's workforce uses public transportation (up from 49% in 2010). The company estimates employees receive an average of $1,800 per year in commuter assistance benefits. Of its more than 557 employees, approximately 500 take advantage of the commuter assistance incentives, traveling 4.8 million fewer vehicle miles and saving 242,000 gallons of gasoline per year.

- **Wells Fargo Home Mortgage (Marketing Award):** Wells Fargo Home Mortgage promoted employee carpooling and vanpooling with a company-developed marketing campaign that offered a highly creative twist on the traditional transportation fair. The campaign, "More Parks, Less Parking", delivered the message that fewer parking spots can help increase green space and beautify the workplace. Centerpiece to a company-wide special event was a parking space turned into a park for a day. Fresh grass and a park bench were installed within the painted boundaries of a parking space, with a "More Parks-Less Parking" sign to attract attention. Transportation alternative service providers attended to explain their services and calculate the benefits to employees, including vRide, who showcased a commuter van to build interest in vanpooling. Employees learned how to join or start a vanpool from TransIT's Vanpool Incentive Program, and received information on bus service, carpooling, Commuter Connections' 'Pool Rewards program and WageWorks' transportation subsidies. Flyers and emails encouraged employees to visit the "park" at lunch, play a game of horseshoes and enjoy free snacks. The "More Parks, Less Parking" event drew nearly 200 employees who were encouraged to sign a pledge to try alternatives to driving alone at least once per week for the next month.

  In addition, the campaign encouraged participation in a voluntary survey to identify the transportation options employees used, and help determine future approaches to outreach. Approximately 40% of Wells Fargo's 1,600 employees responded to the survey with 21% of respondents reporting they use greener ways of getting to and from work instead of driving alone to its suburban office. The survey provided Wells Fargo with the information it needs to build future marketing strategies to make transportation alternatives a viable option for employees and add to its estimated savings of 518,400 vehicle miles traveled and 26,181 gallons of gasoline per year.

- **Booz Allen Hamilton (Telework Award):** Booz Allen Hamilton implemented its "Way We Work" (WWW) program to improve employee commutes, reduce traffic congestion, and lower the company's overall carbon footprint through an initiative that realigns Washington area employees to "hoteling" offices closest to their homes. It provides Booz Allen employees the flexibility to work where they need to, when they need to. Hotelers use an online system to reserve office space equipped with phone lines, a keyboard, monitor, network cables and other essential office supplies. Employees also have access to collaborative meeting space, a centralized Managed Print System, and full suite of technology tools to stay connected to each other, such as company-owned laptop computers and a telephone system that can be accessed from home, cell or office phones.

  Since WWW's inception, Booz Allen's headquarters at the Tysons McLean campus has been reduced from five buildings to three as employees have been realigned to offices closest to where they live. Hoteling resources such as training programs aimed at managers and staff who work in a dispersed environment are regularly available to employees. Booz Allen employees are also eligible for flexible work schedules, compressed work weeks, and job sharing. An internal website showcases commuter options offered through Commuter Connections and the WageWorks monthly pre-tax commuter benefit transit subsidy program. A free daily shuttle to and from the West Falls Church Metro station and between two work locations further reduces the need for vehicles. Employees are encouraged to bike to work, with bike racks, storage lockers and showers available in most locations. Onsite fitness centers are available at many local offices, allowing employees to exercise before or after work and avoid peak commuting hours. With 14,500 employees at 22 worksites throughout the Washington Metropolitan region, approximately 80 percent of Booz Allen's employees telework. Booz Allen estimates that 1,155 fewer employees travel to McLean each day; saving 5,303,760 employee vehicle miles traveled and 267,866 gallons of gasoline per year.

  **Photos available upon request.*

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Commuter Connections is a program of the National Capital Region Transportation Planning Board at the Metropolitan Washington Council of Governments and is funded by the District of Columbia, Maryland and Virginia Departments of Transportation as well as the U.S. Department of Transportation. Commuter Connections promotes alternatives to drive-alone commuting, and provides ridematching for carpools and vanpools and offers the free Guaranteed Ride Home program.

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