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

June 12, 2008

TO: Transportation Planning Board

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

RE: Letters Sent/Received Since the May 21st TPB Meeting

The attached letters were sent/received since the May 21st TPB meeting. The letters will be reviewed under Agenda #5 of the June 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 TDD: (202) 962-3213

May 21, 2008

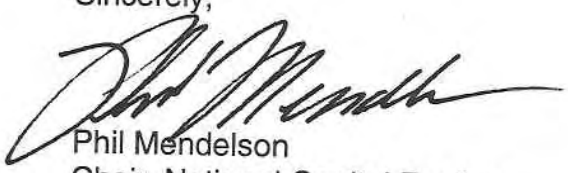
Charles M. Badger,
Deputy Director
Virginia Department of Rail
and Public Transportation
1313 East Main Street
Richmond, Virginia 23219

Dear Mr. Badger:

Thank you for your letter of May 13, 2008, on the Virginia Department of Rail and Public Transportation (DRPT) project application to the Federal Railroad Administration (FRA) for federal financial assistance under FRA's new Capital Assistance to States Intercity Passenger Rail Service Program. As described in your letter, this project will construct a 5.9-mile third mainline track between AF Interlocking in Alexandria and the Franconia-Springfield Amtrak/VRE Train Station. This new track capacity would provide for an immediate reduction in current train service delays by providing operational flexibility for current intercity passenger, commuter and freight rail traffic.

The National Capital Region Transportation Planning Board (TPB) has reviewed this project and believes that it will benefit the Washington regional rail network. The TPB is pleased to endorse this DRPT project for consideration by the FRA, and in accordance with TPB procedures, anticipates the inclusion of this project in the regional FY 2009-2014 TIP which is scheduled to be adopted on July 16.

Sincerely,



Phil Mendelson
Chair, National Capital Region
Transportation Planning Board

Post-it® Fax Note 7671	Date 6/10	# of pages ▶ 1
To JERRY MILLER	From BOB MED	
Co./Dept.	Co.	
Phone #	Phone #	
Fax # 202-962-3202	Fax #	

COMMONWEALTH of VIRGINIA

DAVID S. EKERN, P.E.
COMMISSIONER

DEPARTMENT OF TRANSPORTATION
14685 Avion Parkway
Chantilly, VA 20151
(703) 383-VDOT (8368)

National Capital Region
Transportation Improvement Program Amendment

The Honorable Phil Mendelson
Chairman, National Capital Region
Transportation Planning Board
Metropolitan Washington Council of Governments
777 North Capitol Street, N.E.; Suite 300
Washington, DC 20002-4201

Dear Chairman Mendelson:

Neither of Virginia Department of Transportation's (VDOT) regular participants at the Transportation Planning Board will be able to attend the meeting of June 18, 2008. Please accept Mr. Robert McDonald as the VDOT representative for the June 18th meeting.

Sincerely,

J. Bruce Grimsley
Asst. Dist. Admin.
for

Morteza Salehi
District Administrator
VDOT – Northern Virginia District

ASSOCIATION OF
METROPOLITAN
PLANNING
ORGANIZATIONS

April 15, 2008

Ronald Kirby
Director of Transportation Planning
National Capital Region Transportation Planning Board
Metropolitan Washington Council of Governments
777 North Capitol Street, NE, Suite 300
Washington, DC 20002

Dear Ron:

The Transportation Research Board released *Special Report 288, Metropolitan Travel Forecasting: Current Practice and Future Direction* (SR 288) in June 2007. Since that time, AMPO has discussed our approach to the findings and recommendations contained in the report.

AMPO is undertaking an effort to begin a research initiative supported through pooled funding from interested MPOs to address one recommendation in SR 288:

> *"MPOs experimenting with or fully implementing advanced modeling practices should document their experiences, including costs, advantages, drawbacks, and any transferable data or model components."*

AMPO is inviting up to ten interested MPOs and AASHTO to participate in this pooled funding research project that will address the first part of this recommendation – to document advanced modeling practices used in metropolitan areas across the country. The result of this effort will be an up-to-date assessment of how well advanced travel models have performed in actual practice in metropolitan areas.

Scope

The project will identify the specific MPO activities and experiences with advanced travel modeling techniques that would be worth documenting and analyzing in greater depth. AMPO will prepare and issue a request for proposals (RFP) for a consultant that would undertake this documentation and analysis, staff the consultant selection process, and administer the consultant contract.

A steering committee to oversee the research effort will be formed, with membership from the participating agencies that are providing funding contributions. The steering committee will be responsible for reviewing and approving the RFP for consultant services, for evaluating the consultant proposals, and for reviewing the consultant work products at key milestones throughout the study.

Upon completion of this step the consultant will undertake a design study for a second phase of this research that would address the second part of this recommendation – to determine the costs and benefits of advanced models and transferable data or model

1029 Vermont Avenue, NW, Suite 710 Washington, DC 20005
Phone: 202.296.7051 | Fax: 202.296.7054
Web: www.ampo.org | Email: staff@ampo.org

ASSOCIATION OF
METROPOLITAN
PLANNING
ORGANIZATIONS

components. The steering committee will identify options for undertaking the second phase study, including the pursuit of federal funding or additional pooled funding from MPOs.

Five MPOs have agreed to contribute to and participate in this project. Based on discussions to date, we expect about ten to twelve MPOs to contribute a combined $100,000 to undertake this first phase of research.

Study Benefits

MPOs, state DOTs, and the USDOT are looking at the conclusions and recommendations contained in SR 288 and examining policy options that will influence the travel forecasting practices of our members. Congress is also expected to weigh in on travel forecasting with the next transportation authorization bill. AMPO believes we should take a proactive role in researching the use of advanced modeling practices and developing policy recommendations to move forward.

Furthermore, several MPOs and state DOTs with advanced modeling practices are interested in learning how others are implementing similar practices, and others are considering the use of moving from traditional to advanced modeling. A pooled funding initiative among practitioners is an efficient way to address the questions posed by advanced techniques, rather than individual MPOs each bearing the full cost of conducting this research.

Please call Rich Denbow, AMPO Director of Technical Programs, with any questions. Rich may be reached at (202) 296-7051, ext. 5 and rdenbow@ampo.org. We very much look forward to your active participation in this endeavor. Please see the attached sheet. A reply of interest or commitment is requested by May 14.

Sincerely,

Honorable John Rowell, AMPO President
Fargo-Moorhead Metro COG, Fargo, ND

DeLania Hardy, AMPO Executive Director
Washington, DC

1029 Vermont Avenue, NW, Suite 710 Washington, DC 20005
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Web: www.ampo.org | Email: staff@ampo.org

AMPO Invoice

Association of Metropolitan Planning Organizations
1029 Vermont Ave., NW Suite 710
Washington, DC 20005

Phone: (202) 296-7051
Fax: (202) 296-7054
www.ampo.org

Invoice # 2008-PFI TPB

To:

Ronald Kirby
Director of Transportation Planning
National Capital Region Transportation Planning Board
Metropolitan Washington Council of Governments
777 North Capitol Street, NE, Suite 300
Washington, DC 20002

Invoice Date	Description	Amount Due
June 9, 2008	Participation in the AMPO Pooled Funding Research Initiative for Advanced Modeling Research	
	Total Due by July 11, 2008	$15,000.00

Detach and return section below with payment. Retain top portion for your records.

AMPO Pooled Funding Research Initiative

Invoice # 2008-PFI TPB

National Capital Region Transportation Planning Board

Amount due by July 11, 2008 $15,000.00

Amount Enclosed $_____

Remit Payment with bottom portion of invoice to:

Rich Denbow
Association of Metropolitan Planning Organizations
1029 Vermont Ave., NW Suite 710
Washington, DC 20005

Thank you for your continued support of AMPO!

Martin O'Malley, *Governor*
Anthony G. Brown, *Lt. Governor*

SHA State Highway Administration

John D. Porcari, *Secretary*
Neil J. Pedersen, *Administrator*

Maryland Department of Transportation

June 11, 2008

The Honorable Charles A. Jenkins
Board of County Commissioners
12 East Church Street
Frederick MD 21701

Dear Commissioner Jenkins:

Thank you for your interest in the I-270/US 15 Multi-Modal Corridor Study. This letter is in response to your request for an update on the status of this study at the May 2008 National Capital Region Transportation Planning Board (TPB) meeting. The Maryland State Highway Administration (SHA) and the Maryland Transit Administration (MTA) are jointly moving this multi-modal project forward.

A public meeting is being scheduled for the fall of 2008. As with all planning studies, the planning team must conduct preliminary studies—to meet federal and state law requirements—to analyze a project's potential impacts on the natural and social environment before we can proceed to final design, right-of-way acquisition, and construction. Since some solutions may have unacceptable environmental consequences, the team must develop and assess a full range of reasonable alternatives. The analysis of the impacts will provide the basis needed to make an informed decision as to which alternative best meets the needs the project is intended to address.

Through the I-270/US 15 Multi-Modal Corridor Study, SHA has been able to advance several related or "breakout" I-270/US 15 projects through project planning, final design, and construction. The following provides a brief history of the project, a description of the alternatives under consideration, funding status, projects advanced during study, and a schedule of the remaining planning-related activities.

Project Background:
The I-270/US 15 Multi-Modal Corridor Study is a joint project between SHA and MTA. The project extends from the Shady Grove Metro Station in Montgomery County north to the US 15/Biggs Ford Road intersection area in Frederick County (approximately 30 miles). The transit component, known as the Corridor Cities Transitway (CCT), extends 14 miles from the Shady Grove Metro Station in Rockville through Gaithersburg and Germantown where it terminates at the COMSAT facility just south of Clarksburg.

The I-270/US 15 Study Team completed the draft environmental impact statement (DEIS) and Public Hearing phase of the NEPA/Project Development Process in June 2002 and conducted Public Informational Open Houses in both Montgomery and Frederick counties. In June 2004, additional open house meetings were held to update the public and introduce the Express Toll Lane (ETL) option. The Study Team is currently assembling an Alternatives Analysis (AA)/Environmental Assessment (EA), per the direction of the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), on the project changes since the 2002 public hearings. The AA/EA will include detailed environmental technical analyses of any resources affected by the proposed ETLs. It will also provide the ETL effects on CCT ridership, I-270 mainline traffic operations, traffic/environmental effects south of the study area (I-270 to the Capital Beltway), and will also include results of the public input process.

Also, an extensive transit modeling effort was completed involving the Metropolitan Washington Council of Governments (MWCOG), the Maryland Department of Transportation (MDOT), the Washington Metropolitan Area Transit Authority (WMATA), and local jurisdictions to determine CCT mode choice and potential combinations with the ETL option. This process requires significant transit model refinements necessary to evaluate the transit alternates using SUMMIT, the model required by FTA.

Alternatives Under Consideration:
Several DEIS alternatives were presented during the June 2002 Public Hearing. In addition to alternatives presented in the DEIS, the AA/EA will present four other alternatives that include Express Toll Lanes. In brief format, these alternatives include:

Alt. 1	**No-Build**
Alt. 2	**Transportation System Management (TSM)/Transportation Demand Management (TDM)**
Alt. 3A/B	**Master Plan High Occupancy Vehicle (HOV)/Light Rail Transit (LRT) or Bus Rapid Transit (BRT) with one additional lane added in each direction**
Alt. 4A/B	**Master Plan General Purpose/LRT or BRT with one additional lane added in each direction**
Alt. 5A/B/C	**Enhanced Master Plan HOV/General Purpose/LRT, BRT or Premium Bus (Two additional Lanes added each direction)**
Alt. 6A/B (2+1)	**2 ETL in Montgomery County and 1 ETL in Frederick County**
Alt. 7A/B	**2 ETL in Montgomery County and 2 ETL in Frederick County (2+2)**

*Note: **A**=LRT along CCT; **B**=BRT along CCT; **C**=Premium (or Express) Bus along I-270*

Highway Improvements
Existing interchanges would be upgraded or reconstructed and four new interchanges would be installed along I-270 and US 15. If HOV lanes or ETLs are chosen, direct access ramps would be implemented at up to five interchanges between I-370 and MD 121. Direct access ramps would also be considered for areas better served by transit pending the alternative selected and the transit mode choice.

Corridor Cities Transitway
In most areas, the transitway is fully separated from vehicular traffic, either in the median, along one side of an existing roadway, or along new alignment. At-grade or overpass/underpass options exist for major roadway crossings. As proposed, the CCT includes 18 stations and provides direct transfers to the MARC Brunswick line at Metropolitan Grove and the Metrorail Red Line at Shady Grove.

Funding:

- Programmed funding in MDOT's Consolidated Transportation Program is for Planning only, through FY 2010.
- Local jurisdictions are reserving CCT right-of-way along the corridor as property owners seek to develop parcels on or adjacent to the transitway. The value of this property acquisition would likely serve as a portion of the local match. The MTA and SHA are currently assessing this estimated value.

Corridor Projects Advanced During Study:
As the I-270/US 15 Multi-Modal Corridor Study has progressed, several related or "breakout" projects have been able to be constructed or have advanced in different stages of planning and design. The following is a brief review of these projects:

Projects Constructed:

- US 15/MD 26 – eastbound MD 26 to northbound US 15 access ramp
- I-270/US 15 auxiliary lanes –
  - Southbound from I-70 to MD 85
  - Southbound from 7th Street to US 40

Projects in Planning or Design:

- US 15/Monocacy Boulevard – grade-separated interchange connect to existing Monocacy Boulevard and future Christopher's Crossing – currently in project planning phase
- I-270/ MD 121 – interchange improvements and realignment of MD 121 (Clarksburg Road) – currently in design phase
- I-270/Watkins Mills Road Extended – construction of a partial interchange at I-270 and Watkins Mills Road Extended – currently in design phase
- I-270/MD 85 Interchange – reconstruction of interchange at MD 85 and I-270, along with roadway improvements to MD 85 between Spectrum Drive and Crestwood Boulevard – currently in design phase

Bridge Rehabilitation Projects:

- Motter Avenue over US 15
- I-270 over Dr. Perry Road
- I-270 over Bennett Creek
- I-270 over MD 80
- I-270 over MD 109

Remaining Project Planning Schedule:

EA/AA Availability	**Late Summer 2008**
Public Workshop	**Fall 2008**
*** Assumes that FHWA/FTA do not require a supplemental DEIS after completion of the EA**	
Locally Preferred Alternate Decision by MDOT	**Spring 2009**
Complete FEIS: SHA	**Fall 2008/Fall 2009**
Complete FEIS: MTA	**Fall 2008/Fall 2009**
Location/Design Approval: SHA	**Fall 2009 – Winter 09/10**

Thank you again for your inquiry. The SHA will be glad to make a formal presentation to the TPB or to you and your constituents, upon your request. If you have any further questions or concerns regarding the I-270/US 15 Multi-Modal Corridor Study, please do not hesitate to contact Mr. Raja Veeramachaneni, Director of Planning and Preliminary Engineering, SHA, at 410-545-0412, toll-free at 888-204-4828, or via e-mail at rveeramachaneni@sha.state.md.us. The SHA will be pleased to assist you. Of course, you should never hesitate to contact me directly.

Sincerely,

for R. Veeramachaneni

Neil J. Pedersen
Administrator

cc: Mr. Raja Veeramachaneni, Director of Planning and Preliminary Engineering, SHA

April 29, 2008

The workshop, sponsored by WMATA, COG, MDOT, VDOT, DDOT and AAA, was attended by approximately 200 individuals, including elected officials and pedestrian safety experts from a variety of fields: transportation, law enforcement, engineering, public education, transit, disability services, planning, health, engineering, schools, public affairs, insurance, military, business, community organizing, and media.

Defining the Problem

- For many area residents, walking is an important transportation choice for carrying out daily activities like commuting to work, shopping, recreation, and school. The walkability of area communities is tied to the economic future of this region.
- Many pedestrian safety decisions are based on current facts, even if the facts are not particularly useful or are incomplete.
- Crosswalks don't mean very much to drivers and therefore have lost much of their meaning for pedestrians.
- The safe pedestrian route needs to be convenient or the convenient pedestrian route needs to be safe.
- Nearly every other developed industrial society has addressed the pedestrian safety issue successfully.
- Because governments have subsidized auto travel and parking to a greater extent than transit, cycling or walking, it is no surprise that people choose to drive.

State and Regional Policies and Philosophies

- There is nothing more fundamental to transportation safety than pedestrian safety.
- Increasing the reach and duration of the Street Smart Campaign will help keep this message in the media and continue to boost awareness.
- Develop walkable communities for the future that reflect past successes. And if the region is going to keep a pedestrian and bike environment in shape, officials must focus on maintaining the system, including services reachable by walking.
- Work on the "3 Es", but also remember the "Big R:" Regionalism.
- Address the issue together through sustaining and expanding Street Smart, law enforcement, completing sidewalks, setting regional guidelines for bus stop locations, and addressing pedestrian signals, illegal parking, and accessibility.

Best Practices to Continue or Expand and New Solutions

1. **Establish regional bus stop siting guidance** based on data about safe placement and need

2. **Develop land use review with transportation (especially pedestrian) in mind**, including accessible destinations, pedestrian friendly design scale; compact communities designed to encourage bicycling and walking for short trips by providing destinations close to home and work, and by providing sidewalks and a pleasant environment for walking and biking; identify dangerous intersections, public streetscape design near major new buildings; reverse angle parking instead of parallel; pedestrian lighting; creating new street connections; safe routes for students to walk or bike to school; traffic calming; accept more motor vehicle congestion/higher priority for pedestrian safety and access versus motor vehicle level of service include accessibility features.

3. **Improve crosswalk design**, including mark crosswalks better for visually impaired; align curb cuts with the crosswalks to avoid directing the visually impaired into the middle of the intersection; audible pedestrian signals; crosswalks warning lights; more pedestrian signals, shorten crossing distances.

4. **Collect adequate data**, including improved crash reporting information; better statistics on speed of vehicles involved in pedestrian crashes; identify specific problem locations; set performance measures for multimodal transportation measures; information about pedestrians by age, language spoken, and immigration; set crash reduction goals.

5. **Establish consistent laws across the region**, such as a commitment to 30 mph speed limit and parking restrictions. Enforce the laws with adequate resources of manpower, training, photo enforcement, dedicated traffic units and community policing.

6. **Improve education for drivers and pedestrians**. Focus media and public education, using aggressive targeted messages to children and seniors, language and cultural minorities, groups of different physical ability levels. Use a traffic hotline and signs "telling" drivers what to do. Messages should include high visibility clothing, Safe Routes to Schools, safety patrols, driver's education, and "Smooth Operator." Increasing the reach and duration of the Street Smart Campaign will help keep pedestrian safety in the media and continue to boost awareness.

Stakeholders

It is important to include major stakeholder groups in planning and in the implementation, especially for education campaigns. These groups should include law enforcement, schools, PTA, principals, businesses, judiciary, persons with disabilities, churches, community groups, transit agencies, departments of transportation and public works, medical, families, and churches.

Recurring themes:

- Improve data collection and use, including performance measures
- Expand "Street Smart"; start education early and provide it often
- Have consistent laws across the region
- Develop regional bus stop planning guidance

Report Out to

COG Board of Directors

June 11, 2008

Background

- A workshop on pedestrian safety was held on April 29, 2008 at the National Press Club
- Sponsored by WMATA, MWCOG, AAA
- Over 200 regional leaders and subject matter experts discussed problems
- Breakout sessions produced recommendations for specific actions
  - Education, Engineering, Enforcement

DESTRIAN SAFETY

It's time fo

Defining the Problem

- Pedestrians account for one fifth of all traffic fatalities in the Washington region, more than 80 deaths per year, and 2300 injuries.
- Crosswalks have lost much of their meaning
  - Motorists don't stop for pedestrians
  - So pedestrians have little incentive to use crosswalks
  - "The safe pedestrian route needs to be made convenient or the convenient route needs to be made safe"
- Walkability, encompassing both safety and access, is important for economic development
  - But free parking and subsidized roads encourage driving and low density development

State and Regional Policies and Philosophies

- Pedestrian safety is fundamental to transportation safety
  - Every trip begins or ends with a pedestrian trip
  - Walking is increasing with transit ridership
  - More walking means better health, more social interaction, less pollution
- Increase the reach and duration of the Street Smart Campaign
- Develop walkable communities for the future that reflect past successes.

Best Practices

- Establish regional bus stop siting guidance
- Use multimodal performance measures for land use and transportation projects
- Improve crosswalk design
- Consistently adhere to ADA guidelines
- Enhance traffic enforcement
  - Dedicated traffic units

Best Practices (cont'd)

- Collect better data
- Establish Pedestrian-Safe Speed Limits
- Establish consistent laws across the region
- Improve education for drivers and pedestrians

Recurring Themes

- Improve data collection and use, including performance measures
- Expand “Street Smart”; start education early and provide it often
- Have consistent laws consistently enforced across the region
- Develop regional bus stop design guidance

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Pedestrian Program Coordinator
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Anyesha Mookherjee
Traffic Engineer
Maryland State Highway Administration
District 3 (Montgomery and Prince George's Counties)
301-513-7359
amookherjee@sha.state.md.us

Resolution R32-08
ADOPTED June 11, 2008

Metropolitan Washington Council of Governments
777 North Capitol Street, NE
Washington, DC 20002

RESOLUTION ENDORSING RECOMMENDATIONS FOR IMPROVED PEDESTRIAN SAFETY

WHEREAS, the Metropolitan Washington Council of Governments (COG) and the National Capital Region Transportation Planning Board have a long history of supporting region-wide policies to improve traffic safety; and

WHEREAS, despite the extensive work being done in the region to address vehicular and pedestrian safety in the area, there still exists the problem of pedestrian injuries and fatalities; with more than 80 pedestrians killed and over 2,300 injured every year, accounting for one fifth of all persons killed on the roads in the Washington region; and

WHEREAS, a workshop on pedestrian safety was held on April 29, 2008 involving regional leaders and subject matter experts to discuss planning problems and recommend solutions; and

WHEREAS, workshop participants identified walkability, encompassing both safety and access, as important to the economic future of our region, recommended that a higher priority be placed on pedestrian access and safety, and identified a need for the use of pedestrian safety performance measures in transportation and land use projects; and

WHEREAS, workshop participants concluded that compliance with laws requiring motorists to yield to or stop for pedestrians in crosswalks, and requiring pedestrians to use the crosswalks, needs to be improved; and

WHEREAS, workshop participants identified the concern that differences in laws across the region regarding motorists stopping or yielding to pedestrians make it difficult to educate the driving and walking community in the region; and

WHEREAS, local subject matter experts expressed the need for more complete crash data, including the speed at which pedestrians are hit; and

WHEREAS, workshop participants determined that best practices according to the Americans with Disabilities Act are not being consistently followed; and

WHEREAS, workshop participants supported the continuation of the regional Street Smart pedestrian safety public outreach campaign, which has had success at changing driver and pedestrian behavior for the better.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS THAT:

1. The region supports the continuation and enhancement of transportation safety education efforts, including the Street Smart program, the Safe Routes to School program, and effective driver education (including licensure), with increased targeting of high risk populations; and

2. The region urges sustained efforts by the jurisdictions of the Washington region to enforce pedestrian safety laws, including the deployment of dedicated traffic enforcement units by jurisdictional police agencies, as well as the enhanced compilation and analysis of pedestrian safety data; and

3. The region advocates efforts by the jurisdictions of the Washington region to make their communities more walkable, including pedestrian-safe traffic speeds, ample pedestrian facilities, well-designed bus stops, best engineering practices for accommodating the disabled, and full incorporation of pedestrian needs into transportation performance measurement, engineering, and construction; and

4. In order to accomplish these goals for enhanced pedestrian safety, the region urges the Transportation Planning Board to significantly increase available funding for its successful TLC program.

5. The region urges the Commonwealth of Virginia to amend its transportation safety laws to require motorists to stop for pedestrians, rather than only to yield to pedestrians as the current law states and provide local jurisdictions with discretion to lower speed limits and provide additional traffic calming measures; and

6. Copies of this resolution shall be transmitted to the Governors, the Mayor, the Maryland and Virginia General Assemblies, the Transportation Planning Board and the Board of Directors of the Washington Metropolitan Area Transportation Authority.

Copy Teste

Nicole Hange
Board Clerk

You are invited to participate in

"A FORUM ON REGIONAL TRANSPORTATION FUNDING"

Sponsored by

DISTRICT DEPARTMENT OF TRANSPORTATION
GREATER WASHINGTON BOARD OF TRADE
METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS
OUR NATION'S CAPITAL

THURSDAY, JUNE 5, 2008

7:15 AM – 8:00 AM Breakfast
8:00 AM – 11:00 AM Program

GREATER WASHINGTON BOARD OF TRADE
1725 I Street, NW
Washington, DC 20006

GUEST SPEAKERS

MAJORITY LEADER STENY HOYER (D - MD)
REPRESENTATIVE TOM DAVIS (R - VA)

PANELISTS:

JOHN B. CATOE, JR. *General Manager & CEO, Washington Metropolitan Area Transit Authority*
PIERCE R. HOMER, *Secretary of Transportation, Commonwealth of Virginia*
EMEKA C. MONEME, *Director, District Department of Transportation*
JOHN D. PORCARI *Secretary of Transportation, State of Maryland*

>> CLICK HERE TO RSVP TODAY <<

(Invitation Only – Seating Limited)
Deadline: May 30, 2008

FOR MORE INFORMATION CONTACT:

BOT – Robert Grow 202.857.5935 or **bobgrow@bot.org**
COG – Ron Kirby **rkirby@mwcog.org**
DDOT – Karyn LeBlanc 202.671.3490 or **karyn.leblanc@dc.gov**
ONC – Richard Suisman 202.462.7576 or **rsuisman@aol.com**

For Immediate Release
Thursday, June 5, 2008
Media Contact: Karyn G. Le Blanc, 202-671-3490

Federal Government and Regional Transportation Leaders Discuss the Need for Future Federal Funding at Regional Transportation Forum

(Washington, D.C.) On Thursday, June 5th the District Department of Transportation (DDOT), Metropolitan Council of Governments (MCOG), Our Nation's Capital (ONC) and the Greater Washington Board of Trade (BOT) hosted a meeting with Senator Benjamin Cardin (MD), Majority Leader Steny Hoyer (MD) and Congressman Tom Davis (VA) along with Maryland Transportation Secretary John D. Porcari and Virginia Transportation Secretary Pierce R. Homer, DDOT Director Emeka C. Moneme and Metro General Manager, John B. Catoe, to discuss transit and infrastructure concerns throughout the region as well as immediate and future federal funding needs.

The three federal representatives presented impassioned speeches focusing on regional transportation priorities including infrastructure, dedicated funding needs for Metro and the Lieberman-Warner Climate Security Act (S. 3036) co-sponsored by Senator Cardin.

"I am especially proud of a section of the bill I authored that will direct about $171B, over the life of the bill, to states and localities for public transportation nationwide. About two-thirds of this money will go to support existing systems like Washington Metro, MARC and MTA, while about 30 percent will help develop new lines that will take more and more cars off our roads, cut dangerous emissions, ease congestion, and reduce our dependence on foreign energy sources like OPEC. Public transit systems are especially vital to the economic and environmental health of the National Capital Region and the state of Maryland."

Majority Leader Hoyer cited recent successes on the Woodrow Wilson and Frederick Douglass Memorial Bridges stating, "We must redouble our efforts to reduce congestion, bolster public transit and ensure that our transportation infrastructure is safe, reliable and effective. If we do not take steps to mitigate the current gridlock, we risk stunting our region's economic growth and prosperity."

Much discussion was held regarding the recent hold on the Davis Metro Bill (H.R. 3496) and the obvious need for dedicated Metro funding for the region. "The needs for repair and infrastructure maintenance on Metro are obvious and we must continue to work towards the means by which to make this important funding a reality" stated Congressman Davis. Metro currently has no dedicated funding stream. The bill would provide a $1.5 billion federal match for Metro improvements over the next decade.

The regions leaders agreed to continue to work together to address and identify funding for the various infrastructure and transportation needs throughout the region.

Karyn G. Le Blanc | Director of Communications | Office of the Director | District Department of Transportation | desk 202-671-3490 | fax 202-671-0650 | cell 202-497-4572 | www.ddot.dc.gov
Serving with Integrity and Excellence

d.

GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

OFFICE OF THE DIRECTOR

MAY 23 2008

The Honorable Phil Mendelson
Chairman, National Capital Region
Transportation Planning Board
777 North Capitol Street, NE., Suite 300
Washington, DC 20002-4239

Dear Chairman Mendelson:

This letter requests Transportation Planning Board (TPB) staff assistance on work related to an Environmental Impact Statement (EIS) for the 14th Street Bridge Corridor.

The Eastern Federal Lands Highway Division (EFLHD) of the Federal Highway Administration (FHWA) is the lead federal agency for preparation of this EIS. The District Department of Transportation (DDOT) along with the National Park Service (NPS), Arlington County, the Department of Defense (Pentagon) and the Virginia Department of Transportation (VDOT) are cooperatively working on this study. DDOT and the other agencies are members of the study's steering committee. The current study limits are confined to land located in Arlington County and the District of Columbia. The purpose of this study is to investigate and recommend ways to reduce congestion, improve traffic operations and enhance safety in the corridor.

A wide range of options and ideas potentially meeting the project purpose have been solicited from partners, stakeholders and the public. This list of options and ideas will be analyzed, modeled and screened in the near future. Based on a TPB finding that a high proportion of New York Avenue traffic has neither an origin nor a destination within the District, DDOT has requested that EFLHD include an option to close a section of Interstate 395 (I-395) between its current northern terminus at New York Avenue and its interchange with Massachusetts Avenue, NW.

DDOT has discussed this option with EFLHD and Transportation Planning Board (TPB) staff. Based on discussions between Jack Van Dop of EFLHD and Ron Kirby of TPB, the impacts of this option are more wide-ranging and more regional than for most of the other options that will be modeled. Therefore, it has been proposed that the TPB staff undertake a regional sensitivity analysis through modifications to the inputs to the current approved regional transportation model for the 14th Street Bridge Corridor. A similar exercise was undertaken by TPB staff when analyzing alternatives for the Woodrow Wilson Bridge EIS.

Therefore DDOT hereby requests that a regional sensitivity analysis be performed by the TPB staff for the proposed closing of I-395 between New York Avenue and Massachusetts Avenue, NW. DDOT requests that this regional sensitivity analysis provide the following information.

Regional Sensitivity Analysis

Evaluate the traffic impacts of removing the link of I-395 from Massachusetts Avenue to New York Avenue from the system, thereby terminating I-395 at Massachusetts Avenue, as a possible measure to reduce traffic and congestion in the 14th Street Bridge Corridor. The regional sensitivity analysis should utilize the current approved Version 2.2 TPB Regional Travel Forecasting Model to evaluate the traffic impacts on the 14th Street Bridge Corridor and shifts in traffic to other corridors in the regional network resulting from this network change.

DDOT requests that TPB staff run the regional model for two conditions: 1) the 2007 CLRP network adopted by TPB in January of 2008, with the I-395 link from Mass Ave to New York Ave in the network, and 2) the 2007 CLRP network with the I-395 link from Mass Ave to New York Ave, deleted. No additional detailing or refinement of the regional network will be conducted for this analysis. The staff should compile assigned traffic volumes across a series of river crossings and screenlines for each model run as a means of comparing shifts in traffic resulting from the network change.

The following screenlines should be evaluated:

1. Potomac River Crossings – for individual bridges, as well as groupings of central vs. beltway bridges
2. Anacostia River Crossings: South Capitol Street, Eleventh Street, Pennsylvania Avenue, East Capitol, Benning Road and US 50 bridges
3. Screenline across the Route 295 corridor south of US 50
4. Screenline across the I-395 corridor, south of Massachusetts Avenue

By comparing traffic volumes across this range of screenlines, the staff should be able to identify the shifts in traffic at key locations throughout the region, determine if the network change results in a significant decrease in 14th Street Corridor traffic, and identify locations where significant traffic increases can be expected to occur as a result of traffic shifts due to closing the New York Avenue to Massachusetts Avenue segment of I-395.

As mentioned above, a similar modeling effort was undertaken by TPB staff for the Woodrow Wilson Bridge EIS. In that instance, costs incurred by TPB staff were reimbursed from the Woodrow Wilson Bridge EIS budget. In this case, we wish to follow the same precedent. Jack Van Dop from EFLHD has funds available in the 14th Street Bridge EIS budget that can be used for this purpose. However, if a detailed TPB cost estimate exceeds funds available in the EIS budget, then DDOT would be willing to cover that deficit with unprogrammed funds from DDOT's TPB technical assistance account.

Thank you for considering this request. If you have any questions or wish to discuss this request, please contact Rick Rybeck at 202-671-2325 or by email at rick.rybeck@dc.gov.

Sincerely,

Emeka Moneme
Director

cc:

Mr. Mark Kehrli, Division Administrator, FHWA-DC, Washington, DC
Ms. Jo Anne Sorenson, Assistant District Engineer, Planning & Development, NOVA, VDOT, Chantilly, VA
Ms. Lyn Erickson, Assistant Director, Office of Planning, MDOT
Mr. Ron Kirby, Director of Transportation Planning, MWCOG, Washington, DC
Mr. Jack Van Dop, EFLHD, FHWA, Sterling, VA
Ms. Melisa Ridenour, Division Engineer, EFLHD, FHWA, Sterling, VA
Ms. Karina Ricks, Associate Director, TPPA - DDOT

U.S. Department
of Transportation

Federal Transit Administration
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1760 Market Street, Suite 500
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215-656-7100
215-656-7260 (fax)

Federal Highway Administration
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1990 K Street, N.W., Suite 510
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202-219-3536
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MAY 2 7 2008

The Honorable Mr. Phil Mendelson, Chairman
National Capital Region Transportation Planning Board
c/o Mr. Ronald Kirby, Director of Transportation Planning
Metropolitan Washington Council of Governments
777 North Capital Street, NW, Suite 300
Washington, D.C. 20002-4201

Dear Chairman Mendelson:

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed a joint review of FY 2009 Unified Planning Work Program (UPWP) for the Washington, D.C. urbanized area, which includes the administration of Metropolitan Planning Program and State Planning and Research Program activities.

We have determined that the FY 2009 UPWP is consistent with the Statewide Transportation Planning; Metropolitan Transportation Planning; Final Rule of February 14, 2007(effective 3/16/07). We find that all appropriate work program activities are eligible under 23 U.S.C. 134, 135, 505 or 49 U.S.C. 5303-5305,5313(b) and the provision of 23 CFR 420 and 23 CFR 450.

As a result, we approve the FY 2009 UPWP effective July 1, 2008 and offer the following comments. FHWA and FTA would like to encourage the Transportation Planning Board (TPB) to:

- Continue on going maintenance of the Transportation Improvement Program (TIP) and its database processing of various TIP actions including amendments.
- Focus on the project selection process and specific funding for projects not on the annual submissions for the project solicitation requests.
- Continue to look for ways to raise the bar on the Congestion Management Process with increased funding levels in related components of this effort.
- Consider developing a regional clearinghouse for planned work zone activities;

Our authorization is subject to the availability of Federal funds for transportation planning activities in the urbanized area. The Transportation Planning Board may request funding for the program in accordance with established procedures. Any questions concerning this approval action should be directed to Sandra Jackson, FHWA District of Columbia Division, 202-219-3521, or Gail McFadden-Roberts, of the FTA Region III Office, at (215) 656-7121.

Sincerely,

Letitia A. Thompson
Regional Administrator Region III
Federal Transit Administration

Mark R. Kehrli
Division Administrator
Federal Highway Administration

cc: Kwame Arhin, FHWA, MD w/ attachment
Unwanna Dabney, FHWA, VA w/attachment
Michele Destra, FTA
Joanne Sorenson, VDOT
Lyn Erickson, MDOT
Mark Rawlings, DDOT
Jason Harrington, WMATA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Mr. Mark R. Kehrli
Division Administrator
Federal Highway Administration,
District of Columbia Division
1900 K Street, NW, Suite 510
Washington, D.C. 20006-1103

JUN - 6 2008

Dear Mr. Kehrli:

The United States Environmental Protection Agency (EPA) Region III has reviewed the 8-Hour Ozone, Carbon Monoxide and PM2.5 Conformity Determination for the 2007 Constrained Long-Range Plan and the FY 2008-2013 Metropolitan Washington Transportation Improvement Program (TIP) as adopted by the National Capital Region Transportation Planning Board (TPB) and submitted to us by the Federal Highway Administration (FHWA) on April 30, 2008. EPA has reviewed the Conformity Determination in accordance with the procedures and criteria of the Transportation Conformity Rule contained in 40 CFR part 93.

Our review of the conformity determinations for the Washington, D.C. Metropolitan Area indicates that the determinations meet the requirements of the Clean Air Act and the applicable regulations promulgated thereunder at 40 CFR Part 93. Enclosed, please find EPA's detailed evaluation titled "Technical Support Document for Review of the 8-Hour Ozone, Carbon Monoxide and PM2.5 Conformity Determination of the 2007 Constrained Long-Range Plan and the FY 2008-2013 Metropolitan Washington Transportation Improvement Program."

Please feel free to call Ms. Carol Febbo, Chief, Energy, Radiation and Indoor Environment Branch at (215) 814-2076 or Mr. Martin T. Kotsch, at (215) 814-3335 to discuss this review.

Sincerely,

Judith M. Katz, Director
Air Protection Division

Enclosure

cc: Sandra Jackson (FHWA, DC)
Ed Sundra (FHWA, VA)
Howard Simons (MDOT)
Diane Franks (MDE)
Joan Rohlfs (MWAQC)
Tony Tarone (FTA)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103

May 29 , 2007

SUBJECT: Technical Support Document for Review of the 8-Hour Ozone, Carbon Monoxide and PM2.5 Conformity Determinations of the 2007 Constrained Long Range Plan and the FY 2008-2013 Metropolitan Washington Transportation Improvement Program

FROM: Martin T. Kotsch, (3AP23)

TO: Administrative Record of EPA's Review of the 8-Hour Ozone, Carbon Monoxide and PM2.5 Conformity Determinations of the 2007 Constrained Long Range Plan and the FY 2008-2013 Metropolitan Washington Transportation Improvement Program

THRU: Carol Febbo, Chief
Energy, Radiation and Indoor Environment Branch (3AP23)

The purpose of this document is to review the December 2007 air quality 8-Hour Ozone, Carbon Monoxide and PM2.5 conformity determinations of the 2007 Constrained Long Range Plan (CLRP) and the FY 2008-2013 Metropolitan Washington Transportation Improvement Program (TIP) prepared by the Metropolitan Washington Council of Governments, National Capital Region Transportation Planning Board (TPB). The TIP and CLRP conformity determinations were submitted to the Environmental Protection Agency (EPA) on April 30, 2008 by the District of Columbia Division of the United States Federal Highway Administration (FHWA).

The Metropolitan Washington D.C. Area is a moderate 8-hour non-attainment area for ozone. For the 8-hour conformity analysis, the 2005 Attainment SIP budgets for the 1-hour standard are applicable for use in the 8-hour conformity analysis per 93.109(e) of the conformity rule since there are no current adequate or approved 8-hour mobile budgets. As a small piece of the previous geographical 1-hour non-attainment area (Stafford County, VA) is now in another non-

attainment area (Fredericksburg, VA), the previous 1-hour budget for 2005 could have been reduced to reflect the new smaller 8-hour non-attainment area. However TPB chose to continue to include Stafford County in its travel demand analysis and emissions analysis, which is permissible under the conformity rule until such time that new SIPs for the smaller 8-hour non-attainment area with new mobile budgets are submitted and either found adequate or approved by EPA. The area is also a CO maintenance area with an emissions budget which requires a conformity determination.

The Metropolitan Washington D.C. Area is a non-attainment area for PM2.5 annual standard, with smaller geographical boundaries than its previous 1-hour ozone non-attainment area. Therefore the TPB developed a new transportation model which reflected the smaller non-attainment area to develop the necessary VMT and related emission factors to complete the conformity analysis and determination.

The conformity determination was reviewed in accordance with the procedures and criteria of the Transportation Conformity Rule, 40 CFR Part 93, Sections 93.102(b)(1), 93.102 (b)(2)(iv), 93.102(b)(2)(v), 93.102(b)(3), 93.106, 93.108, 93.110, 93.111, 93.112, 93.113(b), 93.113(c), 93.118 and 93.119.

Evaluation of the 2007 Constrained Long Range Plan and the FY2008-2013 Metropolitan Washington Transportation Improvement Program			
GENERAL CRITERIA APPLICABLE TO THE TIP AND CLRP			
SECTION of 40 CFR Part 93	**CRITERIA**	**Y/N**	**COMMENTS**
93.110	Is the conformity determination based upon the latest planning assumptions? (a) Is the conformity determination, with respect to all other applicable criteria in §§93.111 - 93.118, based upon the most recent planning assumptions in force at the time of the conformity determination? (b) Are the assumptions derived from the estimates of current and future population, employment, travel, and congestion most recently developed by the MPO or other designated agency? Is the conformity determination based upon the latest assumptions about current and future background concentrations?	Y	(a) & (b) The conformity determination is based upon latest planning assumptions in force and approved by the TPB at the time of the determination. The assumptions include: **1) Travel Demand Modeling Assumptions:** - Use of newer Version 2.2 travel demand model process -New travel forecasts incorporated. **2) Emissions Model Assumptions:** MOBILE6.2 modeled emissions factors were developed for years; 2010, 2020, 2030 for all pollutants. **3)Emissions Factor Assumptions** -Enhanced I/M was assumed in DC, MD, VA -Low emission vehicle program was modeled -No oxygenated fuels were assumed for wintertime -Tier 2 / low sulfur vehicle controls were modeled **4) Vehicle Registration Data:** 2005 data for Maryland, DC and Virginia

			approved by the TPB for use in the conformity determination. As a result, household data as well as employment data have been updated. New growth figures between 2002 and 2030 used in this determination are shown below: -Household: 44% increase -Employment: 45% increase
	(c) Are any changes in the transit operating policies (including fares and service levels) and assumed transit ridership discussed in the determination?	Y	(c) Transit policies such as frequency and hours of operation were updated from the last conformity determination
	(d) The conformity determination must include reasonable assumptions about transit service and increases in transit fares and road and bridge tolls over time.	Y	(d) Transit ridership and services were adjusted to reflect increased fares from several providers within the affected region. No changes in bridge tolls are anticipated at this time
	(e) Does the conformity determination use the latest existing information regarding the effectiveness of the TCMs and other implementation plan measures which have already been implemented?	Y	(e) All of the TCMs listed in the Phase II Attainment Plan for the Metropolitan Washington D.C. area were timely implemented. The latest information regarding TCMs and other implementation plan measures effectiveness have been used.
	(f) Are key assumptions specified and included in the draft documents and supporting materials used for the interagency and public consultation required by §93.105?	Y	(f) Appendix A of the conformity determination provides key assumptions for this conformity determination. This document and its earlier drafts were developed through the interagency and public consultation process detailed in the chart on page A-8 of Appendix A.

Evaluation of the 2007 Constrained Long Range Plan and the FY2008-2013 Metropolitan Washington Transportation Improvement Program			
GENERAL CRITERIA APPLICABLE TO THE TIP AND CLRP			
93.111	Is the conformity determination based upon the latest emissions model?	Y	This conformity determination used the mobile emissions model: MOBILE6.2, the latest EPA emissions model available to do the emissions analysis
93.112	Did the MPO make the conformity determination according to the consultation procedures of the conformity rule or the state's conformity SIP?	Y	Consultation procedures were followed in accordance to the TPB consultation procedures. These procedures are based on the procedures of the Federal Conformity Rule. **Interagency Consultation** The TPB has consulted with all appropriate agencies. This includes the District of Columbia Environmental Regulation Administration, Maryland Department of the Environment, Maryland Department of Transportation, Maryland Office of Planning, Virginia Department of Environmental Quality, Virginia Department of Transportation, Federal Highway Administration, EPA, and county representatives of the counties of the Metropolitan Washington D.C. area. **Public Consultation** The TPB has provided opportunities for public comment on the Conformity Determination. On December 14, 2007 the TPB released for public comment, the draft air conformity analysis for the TIP and CLRP for thirty days. There were no comments relevant to air quality on the Conformity Determination.

Evaluation of the 2007 Constrained Long Range Plan and the FY2008-2013 Metropolitan Washington Transportation Improvement Program			
GENERAL CRITERIA APPLICABLE TO THE TIP AND CLRP			
93.106(a) (1)	Are the horizon years correct?	Y	The horizon years chosen, 2010, 2020 and 2030 represent appropriate horizon years for the 8-Hour Ozone, CO and PM2.5 conformity determination. 2010 is within the first 5 years of the transportation plan.

Evaluation of the 2007 Constrained Long Range Plan and the FY2008-2013 Metropolitan Washington Transportation Improvement Program			
CRITERIA APPLICABLE ONLY TO THE CLRP			
93.102(b)(2)(iv)	Has the EPA and the State made a finding that NOx is an insignificant contributor to the direct mobile PM emissions or does any applicable implementation plan (or implementation plan submission) fail to establish an approved (or adequate) NOx budget as part of a PM 2.5 reasonable further progress, attainment or maintenance strategy?	N	NOx is included in the PM emission analysis
93.102(b)(2)(v)	Has the EPA or State made a finding that VOCs, SOx or NH(3) as precursors to be a significant contributor to the mobile PM emissions or has an applicable implementation plan (or implementation plan submission) establish an approved (or adequate) budget for VOCs, SOx or NH(3) as part of a PM 2.5 reasonable further progress, attainment or maintenance strategy?	N	VOCs, SOx and NH(3) as precursors are not included in the emissions analysis

93.102(b)(3)	Has the EPA or the State made a finding that re-entrained road dust is a significant contributor to the PM mobile emissions or has an applicable implementation plan (or implementation plan submission) establish an approved (or adequate) budget that includes re-entrained road dust as part of a PM 2.5 reasonable further progress, attainment or maintenance strategy?	N	Re-entrained road dust is not included in the emissions analysis
93.106(a) (2)(i)	Does the plan quantify and document the demographic and employment factors influencing transportation demand?	Y	Pages 20-21 of the conformity determination summarizes; population, employment, and households for the Metropolitan Washington D.C. area. These forecasts were based upon the Round 7.1 forecast.
93.106(a) (2)(ii)	Is the highway and transit system adequately described in terms of the regionally significant additions or modifications to the existing transportation network which the transportation plan envisions to be operational in the horizon years?	Y	Appendix B of the conformity determination lists the projects and provides a description of the projects anticipated to be completed during the evaluation period of the conformity analysis
93.108	Is the transportation plan fiscally constrained?		EPA is deferring to TPB and the States of Maryland and Virginia and the District of Columbia's transportation agencies who have determined that the plan is fiscally constrained
93.113(b)	Are TCM's being implemented in a timely manner?	Y	All the TCMs listed in the Phase II Attainment Plan for the Metropolitan Washington D.C. area were timely implemented. The latest information regarding TCMs and other implementation plan measures effectiveness have been used.

Evaluation of the 2007 Constrained Long Range Plan and the FY2007-2013 Metropolitan Washington Transportation Improvement Program			
CRITERIA APPLICABLE ONLY TO THE CLRP			
93.118	For areas with SIP Budgets: is the Transportation Plan, TIP or Project consistent with the motor vehicle emissions budget(s) in the applicable SIP?	Y	On April 4, 2005 (70 FR 16958) EPA approved the new CO maintenance Plan for the Washington, D.C. metropolitan area. The mobile budgets contained therein are applicable to this conformity determination. On May 13, 2005, (70 FR 25688) EPA approved the 2005 Attainment Plans for both Virginia and the District of Columbia. On November 16, 2005 (70 FR 69440) EPA approved the 2005 Attainment Plan for Maryland, therefore those mobile budgets are the applicable budgets to be used in this conformity determination. . All three of these attainment mobile budgets are identical. 2005 Mobile Budget: 2010 Analysis 97.4. T/D (VOC) 64.0 T/D (VOC) 234.7 T/D (NOx) 133.4 T/D (NOx) 1671.5 T/ D (CO) 695.5 T/D (CO) 2005 Mobile Budget 2020 Analysis 97.4. T/D (VOC) 39.4 T/D(VOC) 234.7 T/D (NOx) 47.2 T/D (NOx) 1671.5 T/ D (CO) 579.1 T/D (CO) 2005 Mobile Budget 2030 Analysis 97.4. T/D (VOC) 37.4 T/D(VOC) 234.7 T/D (NOx) 34.7 T/D (NOx) 1671.5 T/ D (CO) 587.2 T/D (CO)

93.119	For areas without emission budgets: Does the Transportation Plan, TIP or Project demonstrate contribution to emission reductions?	Y	There are no PM2.5 SIP budgets for the area, therefore an interim test of using the less than base year (2002) test analysis was conducted and the results are showed below. Under 93.109 (e), this interim test is permissible as the area had choice of either the less than base year test or build/no greater than build analysis for the area. The base year emissions are based on emissions modeling done by the TPB and agreed upon by the air agencies in the three jurisdictions and are shown as tons per year below. The analysis shows that the PM2.5 non-attainment area passes the interim emissions test. 2002 BaseYear 1724.3 tpy (Direct PM) 97576.3 tpy (NOx) 2010 Analysis 1033.6 tpy (Direct PM) 45951.5 tpy (NOx) 2002 Base Year 1724.3 tpy (Direct PM) 97576.3 tpy (NOx) 2020 Analysis 730.0 tpy (Direct PM) 16195.4 tpy (NOx) 2002 Base Year 1727.3 tpy (Direct PM) 97576.3 tpy (NOx) 2030 Analysis 726.4 tpy (Direct PM) 11938.6 tpy (NOx)

Evaluation of the 2007 Constrained Long Range Plan and the FY2008-2013 Metropolitan Washington Transportation Improvement Program			
CRITERIA APPLICABLE ONLY TO THE TIP			
93.102(b)(2)(iv)	Has the EPA and the State made a finding that NOx is an insignificant contributor to the direct mobile PM emissions or does any applicable implementation plan (or implementation plan submission) fail to establish an approved (or adequate) NOx budget as part of a PM 2.5 reasonable further progress, attainment or maintenance strategy?	N	NOx is included in the PM emission analysis
93.102(b)(2)(v)	Has the EPA or State made a finding that VOCs, SOx or NH(3) as precursors to be a significant contributor to the mobile PM emissions or has an applicable implementation plan (or implementation plan submission) establish an approved (or adequate) budget for VOCs, SOx or NH(3) as part of a PM 2.5 reasonable further progress, attainment or maintenance strategy?	N	VOCs, SOx and NH(3) as precursors are not included in the emissions analysis
93.102(b)(3)	Has the EPA or the State made a finding that re-entrained road dust is a significant contributor to the PM mobile emissions or has an applicable implementation plan (or implementation plan submission) establish an approved (or adequate) budget that includes re-rentrained road dust as part of a PM 2.5 reasonable further progress, attainment or maintenance strategy?	N	Re-entrained road dust is not included in the emissions analysis

93.113(b)	Are TCM's being implemented in a timely manner?	Y	All the TCMs listed in the Phase II Attainment Plan for the Metropolitan Washington D.C. area were timely implemented. The latest information regarding TCMs and other implementation plan measures effectiveness have been used.
93.118	For areas with SIP Budgets: is the Transportation Plan, TIP or Project consistent with the motor vehicle emissions budget(s) in the applicable SIP?	Y	On April 4, 2005 (70 FR 16958) EPA approved the new CO maintenance Plan for the Washington, D.C. metropolitan area. The mobile budgets contained therein are applicable to this conformity determination. On May 13, 2005, (70 FR 25688) EPA approved the 2005 Attainment Plans for both Virginia and the District of Columbia. On November 16, 2005 (70 FR 69440) EPA approved the 2005 Attainment Plan for Maryland, therefore those mobile budgets are the applicable budgets to be used in this conformity determination. All three of these attainment mobile budgets are identical. 2005 Mobile Budget: 2010 Analysis 97.4. T/D (VOC) 64.0 T/D (VOC) 234.7 T/D (NOx) 133.4 T/D (NOx) 1671.5 T/ D (CO) 695.5 T/D (CO) 2005 Mobile Budget 2020 Analysis 97.4. T/D (VOC) 39.4 T/D(VOC) 234.7 T/D (NOx) 47.2 T/D (NOx) 1671.5 T/ D (CO) 579.1 T/D (CO) 2005 Mobile Budget 2030 Analysis 97.4. T/D (VOC) 37.4 T/D(VOC) 234.7 T/D (NOx) 34.7 T/D (NOx) 1671.5 T/ D (CO) 587.2 T/D (CO)

93.119	For areas without emission budgets: Does the Transportation Plan, TIP or Project demonstrate contribution to emission reductions?	Y	There are no PM2.5 SIP budgets for the area, therefore an interim test of using the less than base year (2002) test analysis was conducted and the results are showed below. Under 93.109 (e), this interim test is permissible as the area had choice of either the less than base year test or build/no greater than build analysis for the area. The base year emissions are based on emissions modeling done by the TPB and agreed upon by the air agencies in the three jurisdictions and are shown as tons per year below. The analysis shows that the PM2.5 non-attainment area passes the interim emissions test. 2002 BaseYear 2010 Analysis 1724.3 tpy (Direct PM) 1033.6 tpy (Direct PM) 97576.3 tpy (NOx) 45951.5 tpy (NOx) 2002 Base Year 2020 Analysis 1724.3 tpy (Direct PM) 730.0 tpy (Direct PM) 97576.3 tpy (NOx) 16195.4 tpy (NOx) 2002 Base Year 2030 Analysis 1727.3 tpy (Direct PM) 726.4 tpy (Direct PM) 97576.3 tpy (NOx) 11938.6 tpy (NOx)

CONCLUSION

Pursuant to FHWA's April 30, 2008 request, we have reviewed the 8-Hour Ozone, Carbon Monoxide and PM2.5 conformity determinations for the 2007 Constrained Long Range Plan and the FY2008-2013 Metropolitan Washington Transportation Improvement Program prepared by the Metropolitan Washington Council of Governments, National Capital Region Transportation Planning Board. We have determined that the 2007 Constrained Long Range Plan and the FY2008-2013 Metropolitan Washington Transportation Improvement Program meet the requirements of the federal conformity rule.

Dr. Jonathan Morstein
3500 King Arthur Road
Annandale, VA 22003
jmorstein@cox.net
O: 703-613-1408
H: 703-208-9996

May 12, 2008

Honorable Tim Kaine, Governor of Virginia
Honorable Chap Petersen, VA Senator 34th District
Honorable David Bulova, VA Delegate 37th District
Honorable Gerry Connolly, Chairman Fairfax County Board of Supervisors
Honorable Penny Gross, Mason District Supervisor
Honorable Pierce Homer, Secretary VA Department of Transportation
Honorable Morteza Salehi, Northern Virginia District Administrator
Honorable Chris Zimmerman, Chairman Northern Virginia Transportation Authority
Honorable Martin Nohe, Vice Chairman Northern Virginia Transportation Authority
Honorable Michael Knapp, Chairman Metropolitan Washington Council of Governments
Honorable Phil Mendelson, Chairman Transportation Planning Board COG
Honorable Catherine Hudgins, Second Vice Chair Transportation Planning Board COG
Dr. Steven Fuller, Director Center for Regional Analysis
Dr. Jonathan Gifford, Director, Transportation Policy, Operations & Logistics, Masters Program
Honorable James W. Dyke, Jr., Chairman NorthernVirginia Business Roundtable

All:

I have lived in Northern Virginia for over 20 years and, like everyone else in this area, I have watched traffic grow thicker and slower every year. For me, what used to be a relatively painless reverse commute from Annandale to Herndon has now become a daily slog through layers of heavy traffic. Yet my commute is still relatively tame compared to many of the travel horror stories we have all heard from others.

I am interested in the current discussions over what can be done to ease traffic congestion in Northern Virginia and elsewhere in the DC metro area. Like many others in Northern Virginia, I am disappointed at the lack of funding available to address the incredible backlog of road projects we face. Even last year's budget deal on transportation (before its funding provisions were voided) was not anywhere near enough to work down the list of critical projects. For example, one project in my neighborhood – the rebuild of the intersection at Lee Highway and Gallows Road – isn't slated to even begin work until 2011 and that's *with* the new money. And it seems that too much of the limited resources we have are being absorbed on a small number of big ticket items like HOT lanes on the Beltway, widening I-66, and extending Metrorail to Dulles airport. While these major projects, like the new Wilson Bridge and the Mixing Bowl rebuild, are important for the specific corridors they serve, they will be limited in their impact on overall flow of traffic in the region.

As an Operations Researcher (for Northrop Grumman), I have been pondering other options that offer a broader approach to traffic improvements across the metro area. While I am most familiar with the specific needs of Northern Virginia, I believe that the three options I outline below would offer similar returns in just about any metro area plagued by heavy traffic.

The options I discuss are designed to ease the type of impediments that add a few minutes here and a few minutes there to peoples' commutes and errands. While saving a few minutes may not sound like much, the cumulative impact of such improvements can be enormous when aggregated across hundreds of thousands of drivers every day of the year. The options I offer would probably work best if implemented together since they are somewhat symbiotic, but one of their advantages is that the can rolled out independently and incrementally as resources allow.

I conservatively estimate that if fully implemented my options could provide a region-wide savings of 10% or more in commuting time for virtually all drivers and do this at very reasonable cost. This would lead to enormous savings, not just in valuable time, but also in the commensurate use of gasoline and the creation of pollution that goes with time wasted in pitifully slow commutes. We should appreciate that while studies have shown the DC-area traffic is the third worst in the country in terms of time of commute behind LA and San Francisco, those drivers travel many more miles in their commutes which means that their average speed is much higher. Northern Virginia drivers truly just crawl along and there are many ways to speed up traffic flow, not all of which require massive construction projects.

We all know that there are key behavioral elements to sluggish traffic, such as the pervasive (and to me unexplainable) rubber-necking at accidents and the difficulty I frequently see in getting traffic to merge sensibly. We have to be realistic that there is, unfortunately, very little that government can do to change these behaviors. So government must design strategies that work around these behaviors and attempt to minimize them as part of the strategy for improving traffic flow.

I will explain each of my proposals in detail below, but briefly they are the following:

1) Deployment of "Incident Response Teams" on all major commuter arteries to rapidly clear accidents and disabled vehicles completely from the roadway.
2) Dynamic intersection signal controls along with wide ranging intersection improvements to speed traffic flow on surface streets.
3) Specialized improvements to highways to improve traffic flow moving through key bottlenecks.

It is possible that ideas of this type have been proposed before or are being considered now. It is clear to me, though, that these methods are not currently being widely utilized in Northern Virginia. It is also clear to me that these can be highly cost effective methods to provide significant region-wide travel savings at modest cost. I offer these as both observations on what are some of the problems we all face in driving in Northern Virginia, and what I believe to be potentially workable, affordable solutions for those problems. I would be happy to discuss my ideas further and encourage you to disseminate them to whoever you think might be interested in them.

Incident Response Teams

Every major commuter corridor in Northern Virginia – the Beltway, I-66, I-95, the Dulles Tollroad, Rtes 28, 29, 50, etc. – operates these days at or above capacity. The congestion lowers average speeds which reduces the amount of traffic that can pass any point in a given amount of time. One-way commutes of one hour or more are not uncommon. And this is on good days. Add in inclement weather, even just bright sunshine at sunrise or sunset, and things slow down even more. Now, throw in an accident or a disabled vehicle and a tedious commute becomes a nightmare. It is not uncommon for traffic to backup for 4 or 5 miles in a matter of minutes once a lane or two is closed even briefly.

As an avid listener to WTOP, I find that it is almost impossible to have a day when numerous incidents do not further slow already difficult commutes. This suggests that there can be a large pay-off in time, gas and pollution savings if we can find better ways to deal more efficiently with the daily tally of accidents and incidents. An accident that clogs a highway can affect thousands of motorists, both those on the road involved and those traveling on neighboring routes due to bailout traffic. A single accident can easily cost the community at large thousands of hours if several thousand commuters are all delayed, say, 20 minutes beyond their normal commutes.

What if we had a better process for responding to accidents and incidents? Currently, a typical minor accident (let's say without fatalities or serious injuries requiring medivac) requires police and fire/rescue response to be called in from some distance, through the same heavy traffic that commuters are negotiating. Once on scene, the first responders go to work assessing the situation and may even move the vehicles out of the key travel lanes pretty quickly. But the police may take 30 minutes or more to process their paperwork and tow trucks will need to be summoned and travel through increasingly heavy traffic to get on-scene before they can even begin to go to work. Rubber-necking prevents traffic from easing until all of this is resolved with the vehicles *completely removed* and the last police car gone. The whole response process can easily take an hour or more and during this time traffic flow is severely constrained. It can take hours more for traffic to fully clear. Often the road does not return to normal until well beyond the end of the normal rush hour period no matter how early in the rush hour the accident occurred.

The process works this way because the individual elements – policy, fire/rescue, tow trucks, motorist assistance vehicles – are largely independent and act according to their own timetables and procedures. The reality is that minimizing disruption and keeping traffic flowing smoothly is simple not a priority for most of those involved.

I can remember years ago (back in the 1980s I think) when a tow truck would be stationed at the Woodrow Wilson Bridge every day at rush hour to be able to quickly remove any broken down car as fast as possible. Many days no car would break down, but when one did it was removed as about as fast as one could expect. I believe that the program was successful in what it was trying to accomplish but was ended because of cost issues even though paying for a single tow truck was not particularly much at all. But this is a clue as to the direction that we need to go.

What we need is a better paradigm for responding to accidents and incidents. In my mind, the model for this can be found at NASCAR and other auto race venues. I'm not talking about the well-orchestrated operation of pit crews, but the way in which the track crews respond to accidents. If an accident occurs which leaves vehicles that cannot be driven, a phalanx of track

vehicles converge on the scene in moments. Any fire is immediately doused and any injured/trapped driver is freed within a matter of minutes (except in the most extreme cases). The damaged cars are then quickly towed off of the raceway. Most accidents are thereby resolved in 10-15 minutes and the race is resumed. NASCAR has worked out this system because time is money for racing and no one wants races to run too many laps under yellow caution flags.

I see no fundamental reason why this approach cannot be put to work on area roads. What I propose is the creation of numerous Incident Response Teams (IRTs) that are staged at strategic locations along major traffic arteries during rush hours and perhaps during all daylight hours, including weekends when traffic often rivals rush hour levels. The IRTs would consist of numerous response vehicles and specialized crew members (cross trained for maximum efficiency) and would take the place of the all other first responders for typical accidents/incidents. Only in the most severe cases would additional police or fire/rescue assistance be required and even then the IRTs would be the true first responders. Although I do not have accident severity data at my fingertips, I would tend to believe that the vast majority of daily accidents are relatively minor and could be handled completely by the IRTs.

As I envision it, an IRT response to a typical Beltway accident would involve maybe a dozen people and 5 or 6 vehicles. The goal of the operation would be to get to the scene quickly, evaluate the situation, treat injured people, and move the vehicles completely from the scene, either back to the IRT staging area or off to parking lots or other locations well off of the highway and completely out of view of motorists. Because of rubber-necking it is absolutely critical to get the vehicles completely off the road and shoulder. At that processing location all of the paperwork could be handled and private tow trucks could be summoned to take the vehicles to repair shops. I think that this could be done in many cases within 15 minutes to minimize the impact of the accident on traffic flow. And in a case in a severe incident where a more lengthy resolution is required, the team could help direct motorists and could even deploy fabric barriers that would help to limit rubber-necking.

The IRT would be much more than the safety/service vehicles that now cruise the major highways. I see an IRT equipped with at least two tow trucks, a documentation/sign vehicle, a police car, one or two rescue/treatment/cleanup vehicles, and possibly an ambulance. Although specially trained and deputized traffic adjudicators could be used to write tickets and fill out reports, it might make sense to use state troopers (perhaps working overtime from their regular assignments) to minimize legal challenges and provide gravitas to the whole operation.

When arriving on scene, I see the team immediately documenting the situation with digital video recorders at the same time that they check each motorist and passenger for injuries and begin any treatment. As soon as possible other crew members would begin hooking the vehicles up to tow trucks to get things moving. Well trained crews could operate simultaneously on several tasks and the cars could be moving in minutes. The crews would specialize in accident resolution (unlike police and fire/rescue personnel) and I would expect them to get very proficient very quickly. This "tow and go" approach is designed to clear all lanes of the road, *including the shoulder*, as quickly as possible to mitigate the impact of rubber-necking and merging.

To make this work effectively, there would need to be enough IRTs to be able to reach any section of area highway within 10 minutes or so. I see the IRTs changing their staging locations during the day depending on congestion and to be able to respond to incidents in the areas of

most likely need. In any event, I would think that it would take at least 7 IRTs to be deployed for each rush hour on the major Northern Virginia highways (2 for I-95/395, 2 for the Beltway, 2 for I-66, and 1 for the Dulles Tollroad) and maybe more for key secondary routes like the GW Parkway, Fairfax County Parkway, and Routes 1, 50 and 29, and so forth. The teams would need stations built at key locations to server as staging facilities and support their operations.

Wherever or whenever IRT coverage did not exist, the current process of first responders would be relied upon to deal with accidents, but even then I would encourage changes to the existing procedures. Knowing that even vehicles pulled off to the shoulder still provoke rubber-necking, I can't see any reason why police can't have drivable vehicles that were involved in minor accidents move in convoy to the nearest exit for paperwork resolution.

IRTs would obviously cost money. Building stations, buying vehicles, and hiring personnel have costs. Whether these teams are government employees or contractors doesn't really matter. But any traffic congestion solution is going to cost something. How much would this run? I would tend to think that the "loaded" rate (including benefits) for IRT members would be similar to that for fire/rescue personnel – maybe $200,000 per person per year. Operating two shifts per day to cover 5 am to 9 pm would generate personnel costs of $5-6 million per year per IRT (assuming about a dozen members per IRT). Vehicle depreciation and maintenance as well as facility cost might double this expenditure. To provide 7 such teams therefore would run around $50 million per year. Now, this is back of the envelope costing and costs might be more or less than this.

But to me it would be well worth it even knowing that a given IRT might only have one or two runs per shift because the savings in time (let alone gas and pollution) from reducing accident resolution time would be staggering. Nobody faces an accident-lengthened commute every day and sometimes the net impact may only be a few minutes for a given event. But if the average commuter faces 45 minutes of extra delays from accidents and incidents every month, this costs him 540 lost minutes (more than 8 hours) per year – that's more than a full work day of lost time. Multiply that by, say, 300,000 drivers from Fairfax County and that's 2.4 million hours of lost time each year. At $20 per hour equivalency (and many high-paid Fairfax workers make far more than that) the lost time in dollars pays for the cost of the IRT program, plus we get the reduction in gasoline consumption, reduced pollution, less frustration/stress/road rage, and more time to spend off the roads and with our families. It's clearly a winning strategy in my book.

And the IRTs could even be put to other uses, like cleaning up trash and road debris, making minor pothole repairs, helping with snow removal and salting, etc. These teams would basically take ownership of their section of road and do whatever they could to help ensure the smoothest possible traffic flow at all times.

Obviously, the details of this program will need to be worked out. But the IRT concept is something that can be applied incrementally and can be started relatively quickly. It doesn't require (necessarily) any interstate coordination and its effects could be noticed and measured relatively easily. And it could well become a model for other areas of the country.

Dynamic Signaling and Intersection Improvements

Because the region's highway system is under-built and painfully congested, many commuters spend more of their time traveling on surface streets than they do on highways to get to work. These roads are often clogged and face the added impediment of poorly designed intersections and traffic signals that do not operate in a way to maximize traffic flow throughout the day. I believe that there is ample opportunity to reduce commuting time, along with save gasoline and reduce pollution, by finding innovative ways to improve traffic flow through intersections. Remember, a minute lost to waiting at a red light is the same impact as a minute lost in a highway traffic jam.

How many times have you faced one of the following situations?

1) You come to an intersection with a long line of traffic and find that you cannot get through the intersection during the first green light or even the second or maybe third light cycle.
2) You find that you want to turn left but cannot get into the left turn lane because traffic is backed up beyond the point where the left turn lane begins. You get into the turn lane during the green signal but have to wait for the next light cycle to get a green arrow to turn.
3) You find that one direction of traffic has significantly longer lines of cars at the light than the cross traffic does.
4) Cross traffic has a green light far longer than necessary for the traffic to clear the intersection and you are left waiting for the light to change while little or no traffic is going through the intersection.
5) You want to turn right on red but can't because there is no dedicated right turn lane and you are stuck behind someone in the right lane who is going straight.
6) You clear one intersection only to come to the next light a short distance later and have it turn red as you approach. (I find that Route 236 is one of the worst for this. I cannot traverse the roughly one mile segment of Little River Turnpike between the beltway and John Marr Drive in Annandale at any time of the day without hitting at least 3 or 4 lights. In can sometimes take 10 minutes to cover the distance.)
7) You find yourself waiting at a lengthy red light at a relatively minor intersection late at night even though there is almost no traffic coming from any direction.
8) You find that traffic moves more slowly on key arteries during the weekend than it does during rush hour.
9) You find that traffic is completely gridlocked in the neighborhood surrounding any major facility when large numbers of people leave at the same time.
10) You find that traffic becomes heavily congested whenever people try to bailout from their normal routes and use other roads to get around accidents, construction, or blockages.
11) A major road with significant traffic is forced to stop and waits almost immediately after single car trips the sensor at the cross street.

In my mind, all of these are symptoms of the same general problem and all contribute to thousands of lost hours of travel time every day all across Northern Virginia. Each red light costs, on average, about a minute of lost time. Inefficient sequencing of lights can easily cost 5 minutes per trip (commuting or otherwise) for tens of thousands of drivers each day. In a well-run traffic system *none* of the problems above should occur regularly. The fact that they do, all over the region, is an opportunity for vast improvements in efficiency.

Recently in the *Washington Post* there was an article describing the workings of a little-known facility that attempts to monitor and set the timing of lights at numerous intersections in the region. I have to admit that I was unaware of this operation until that article, and while I don't seek to insult anyone, there are still great inefficiencies throughout Northern Virginia which need a more systemic solution.

I believe that there is a better way to handle this problem that can be implemented efficiently and incrementally and does not require any sophisticated new technology or massive computer system. It would also not require any effort to monitor and control traffic region-wide in some centralized facility that can't possibly watch, coordinate and sequence the actions of hundreds of intersections simultaneously. To understand how to do this, we have to look at how traffic signals tend to currently work.

The traffic signal control system is a relatively crude operation. Most intersections have magnetic loops embedded in the roadway right near where traffic stops at the line. The loops provide only one tiny piece of information in a very binary manner: they tell the traffic control system that at least one car is waiting to go. That's it. When traffic is very light, this simple piece of data is useful to help trigger the light to change. When traffic picks up even slightly, this is no longer particularly useful because there will always be cars waiting at the red light. During those times (most of the day) the lights change according to programmed patterns for how long to leave the light green in each direction. These patterns change according to day and time (morning rush, evening rush, weekend, middle of the day, etc.) but the number of the timing patterns is small and, by my experience, they are rarely changed and even more rarely efficient.

This system frequently fails because it simply does not have enough information or enough flexibility to change as conditions change *all day long*. And when the timing pattern is off, traffic flow can suffer dramatically. One example of this is at the intersection of the Fairfax County Parkway and Fair Lakes Boulevard. Every evening without fail traffic heading south on the Parkway backs up all the way from Fair Lakes Blvd to Route 50 and often beyond – a distance of more than half a mile. Getting through that section often requires two or more light cycles. Meanwhile traffic on Fair Lakes Blvd or heading north on the Parkway is not backed up nearly as much. This asymmetric delay is symptomatic of poor timing in the traffic signals. Ironically, changing the timing pattern by only a few seconds per cycle could balance out the traffic flow and alleviate a daily tedious patch of congestion but this specific problem has persisted for several years.

Let's do a little quick math. If traffic is backed up a half mile it means that there are about 150 cars or so in each lane waiting to get through the intersection. This backup grows over the space of many light cycles – probably 30 or more 2-3 minute cycles in late afternoon. That means that we really only need enough green time to allow 5 more cars through each cycle which translates to probably just about 8 or 10 seconds or more green light time per cycle for the southbound traffic. Of course, that would mean 8 to 10 seconds more red light time for the east/west traffic and their delay would grow commensurately – perhaps to lead to long lines for their traffic. So maybe we only would want to add 4 seconds more of green light time to balance things out.

But we don't have to solve the math for this intersection or any other intersection, and even if we did, the math probably won't be the same in six months time as traffic patterns are always evolving, nor would they necessarily work in different circumstances likes a rainy day. No, what

we really need is a more dynamic system that responds to the ebbs and flows of traffic locally and continually. But to do this we need more information about the traffic flow and some better computer software to interpret it and act on it.

Here is how I see it working. Instead of relying on just one little embedded magnetic loop, we need to go embed these loops literally all over the place. Ideally they would be placed as far back from the intersection as is reasonable to give the computer the most lead time in knowing what is coming. Loops at one intersection could also feed data to the next intersection down the line. Each time the loops are tripped, the information would be sent to the computer which would count the number of vehicles headed into the intersection from all directions and how long vehicles have been waiting. The computer would constantly run and re-run its program to calculate the signal timing needed to minimize total wait time for all cars coming from all directions (with some other minor business rules to follow). That could mean, if necessary, that every light cycle would be timed differently as traffic flow changed during the day.

How would this work? Let's look at one thought experiment. Let's say that there is a major traffic artery with four lanes of traffic (two each way) and it is relatively well-traveled. As a car traveling northbound approaches the intersection, it trips a magnetic loop ¼ of a mile before the light. This vehicle gets registered into the system and the computer has a roughly 20-second lead time to decide what to do. If the light is green and stays green for northbound traffic, then this car can clear the intersection without having to stop. Similarly, if the light changes to green prior to the time that this car will have to begin to slow down, the car also has no delay. On the other hand, slowing down to stop and accelerating after the change in light costs time as does any time spent waiting at a red light.

The best solution, of course, depends on traffic in all directions. It probably takes a minimum of 13 seconds to run through a light cycle for one direction – yellow light for cross traffic for 5 seconds, followed by green light for 3 seconds just for one car to move through, followed by yellow light for 5 seconds again. (In theory, yellow light time could be shortened if more information is available that no cars are coming down the road.) So changing the light to let our northbound car through becomes desirable if we are sure that doing so will not delay cumulative cross traffic by more time. If cross traffic has one car passing through every 3 seconds, than 13 seconds to change the light means that up to five cross traffic cars get delayed from 3 to 15 seconds or so apiece. The cumulative cost (if the cars are nicely spaced) would be the sum of 3, 6, 9, 12 and 15 seconds or 45 total seconds. So the cost to cross traffic to let this one northbound car through is 45 seconds. Clearly, it is not cost effective to do so immediately. So the light should stay red for northbound traffic. However, there comes a point in time when the northbound car has waited so long, it is now advantageous (in terms of an overall wait time minimization goal) to let that car through. How long is this? Why, 45 seconds of course. The northbound driver should wait the same amount of time that he will impact the flow of cross traffic to change the light cycle.

Now, if we add another northbound vehicle, the equalizing time to wait gets cut in half as two cars waiting 22.5 seconds each equals the same 45-second impact on cross traffic (assuming that both northbound cars will clear the intersection in the same 3 seconds). Working the math for all of this is not trivial when there are dozens of cars coming, left turn considerations, and so on, but it is not impossible either. With good information on approaching traffic and the basic rule that

every second a car waits is equally burdensome, then the computer can calculate the best solution for the next minute or two to reduce overall wait time.

The computer could also track the entire flow of traffic day in and day out and use it to help anticipate what the traffic flow is likely to be every few minutes. Each intersection would generally behave independently, and while ones that are physically close to each other could be linked to ensure the smoothest traffic flow, there would not need to be a central "nerve center" that attempted to monitor/control all traffic region-wide. The computer would be the equivalent of the proverbial traffic cop that can "read" the traffic and adjust his timing continuously. Without any human intervention, it could respond to new, local conditions as they develop and prevent the kind on intersection backups that plague our travel and do it 24 hours a day, every day. So if traffic suddenly got heavy due to bailout from an accident an another artery, the computer would automatically adjust the signal timing to allow additional time for this new traffic flow.

Although dynamic signaling has the potential for significantly reducing red light wait time at relatively modest cost (develop and deploy the software and place many more magnetic or other sensors), it is not the only solution to intersection management. Frequently the problem at intersections is structural and modest re-design of intersections is also critical to improving traffic flow. No matter how good the signal timing solution is, poorly designed intersections can simply leave too many cars in line waiting to get through. I would suggest that dynamic signaling be implemented hand-in-hand with a program to analyze and improve every major intersection along every major commuter artery in the region. Here are some common problems I see at intersections and the often modestly-priced improvements to fix them:

1) Many intersections get congested because of the long amount of time needed for left turns. While one lane turns left, two or more lanes are left waiting to go straight, not to mention the waiting cross traffic. If that is the case, the answer may well be to add a second left turn lane (or even a third!). Doubling the number of lanes instantly doubles capacity and saves everyone time by reducing the amount of left turn time required at the intersection and the likelihood that drivers will have to sit through two or more light cycles to make a turn.
2) Lack of right turn lanes frequently prevents traffic that wants to go right on red from making the turn because it only takes one car wanting to go straight to prevent all turns. Wherever there is significant right turn traffic, there should be right turn lanes.
3) Turn lanes that are too short force drivers who want to turn to back up into the main lanes of traffic. They also make it difficult for drivers to enter the lane during a red light because traffic in the main lanes often backs up beyond the start of the turn lane. I frequently see drivers going over curbs and on shoulders to get around this. These lanes should be extended as far as possible.
4) Because road real estate is often limited, it may not be possible to extend turn lanes and add additional turn lanes. I find nothing so frustrating as being blocked from getting into a turn lane until the light turns green and traffic begins to move and then find myself waiting an entire extra light cycle to now make the turn. In those cases, it may make sense to change the left turn sequence to have turns occur at the end of the green cycle as opposed to before. It could also be necessary to have left turn at the beginning *and* the end of the cycles to handle the volume of traffic.
5) During low volume times, especially late at night, it makes sense to set lights at all but the most major intersections to flashing yellow and red. This is done in some areas, but the practice is not nearly widespread enough. Similarly, too many intersections use left turn on

arrow only signals and force drivers to wait through the entire cycle for the next arrow even when there is little or no other traffic. From my point of view, left turn on green arrow only rarely makes any sense whatsoever. Allowing drivers to turn on green or to enter the intersection on green and turn on yellow can allow two or more cars to turn each light cycle. This alone can cut down on backups, though I find unfortunately that many drivers are too passive to actually take advantage of this when it is available.

These are all common sense approaches that are used sometimes in our area, but they are not applied nearly as wide-ranging as they need to be. The goal here is to try to make the major surface arteries act as much like freeways as they can to facilitate travel. There are many permutations to doing this with dynamic signaling as the cornerstone and the other solutions applied based on the specific needs of the intersection. And a lot of these improvements require only minor fixes – moving a curb slightly, paving some more shoulder, re-striping the road, etc. – that could be readily accomplished.

One recent example of intersection improvement near my home that has worked was the effort to re-do the intersection at Annandale/Hummer and Gallows Road. This intersection was habitually backed up with lengthy rush hour delays the forced cars to wait through multiple light cycles. The key issue was that the intersection was set-up to allow only one direction of traffic to pass through at a time, something that is rarely seen. The re-design widened the intersection to create dedicated left turn lanes and allowed north/south traffic to move through simultaneously. Strangely, though, east/west traffic is still moves sequentially. But there is now rarely any traffic backups at this intersection. We need to do more of this across the system.

None of this is free, but none of it is terribly expensive either. I believe that major intersections could be dynamically wired and re-worked at around $1 million apiece and minor ones for less. With a $100 million investment each year for several years, most of Fairfax County's major commuter arteries could be turned into dynamic, travel-efficient pathways that would rival the highways for their ability to move people during rush hour, instead of the frustrating and wasteful stop-and-go nightmares that most of them currently are.

Specialized Traffic Flow Improvements

Recently, traffic flow was improved at the main toll plaza on the westbound lanes of the Dulles Tollroad. Where previously traffic backed up every morning as drivers using SmartTag queued up in a single lane, traffic now flows much more smoothly and efficiently in two lanes. Thousands of commuters have been saved two or three minutes every day from this improvement, which required only a slight re-painting of lines on the roadway to accomplish. It is remarkable how a significant traffic flow improvement on such a major artery could be had for so little effort and cost. What is sad about this, though, is that the improvement did not occur until a motorist wrote a letter to the *Washington Post's* Dr. Gridlock column which then prompted VDOT to make the fix. It appears that this improvement might never had occurred without this letter even though VDOT officials acknowledged that it had been incorrectly painted in the first place. It is my experience that there are numerous other opportunities for improving traffic flow that do not require massive reconstruction efforts, but there seems to be little or no focus on these kinds of things. I believe that aggressive efforts to find and implement these small improvements throughout the traffic system could have significant positive improvements at surprisingly low cost. Below are some examples of this type of approach.

Also regarding the Tollroad is the curiously inefficient way in which the toll plazas are organized. Tollroad officials have said that upwards of 70% of the traffic on the Tollroad uses SmartTag (or equivalent) to speed their way through the toll plazas. Yet, except for the main toll plazas near the beltway and the Rt 28 plazas, no other toll plaza have SmartTag-only lanes. Most of the exit ramps have only two lanes through the plaza and one is exact change and one is full service. Both accept SmartTag, of course. Yet, those folks using SmartTag are forced to queue up and wait while those paying cash monopolize both lanes. I have frequently seen traffic queued up at Reston Parkway and Centreville Road all the way back to the main lanes of traffic because of this. Now I know that adding another lane to each exit ramp is expensive so I am not suggesting that. What I am suggesting is converting one of the two existing lanes to SmartTag only and leaving the other lane as full service. While there might be a short period of confusion while people adjust, it is well worth it to speed up transit through the plazas. Something like this was recently done at the eastbound plaza at Rt 28 where an Exact Change lane was converted to a second SmartTag only lane. This has sped up traffic through the plaza significantly and should be expanded throughout the system.

Another case involves the special "green arrow" lane of traffic on I-66 that is used in rush hour (inbound/eastward in the morning and outbound/westward in the afternoon), which I think began about 6 or 7 years ago. This extra lane consumes the shoulder but increases road capacity 33% by adding a fourth lane. VDOT then uses the far left lane as an HOV lane to encourage carpooling. VDOT was initially concerned that using the shoulder in this would reduce safety on the road by making it more difficult for disabled cars to pull over and making it harder for emergency vehicles to get through, but nonetheless implemented it because of the pressing need for more lanes and the huge costs of permanently widening I-66 from the Beltway to Fair Lakes.

My experience is that the green arrow lanes have been successful even though with them traffic is still often congested at rush hour. My complaint, though, is that the usage of the green arrow lanes is too limited and is not connected to road conditions. Trade-offs at rush hour between the need for road capacity and the concerns of using the shoulder for travel exist at other times as well. I-66 has become increasingly congested in *both directions* on weekend afternoons and at

rush hour. It is clear that there are traffic efficiencies to be had in using these extra lanes dynamically – that is, whenever traffic density exceeds a threshold condition. It would take almost no cost to implement this; perhaps just someone monitoring traffic conditions via traffic cameras or simply by using data collected from traffic sensors.

In fact, I have frequently witnessed a breakdown in traffic behavior heading eastbound at afternoon rush hour. The eastbound lanes frequently get backed up as traffic enters I-66 at Route 50. Almost without exception, on any evening, numerous vehicles can be found driving the shoulder even though the overhead traffic controls are clearly red X's. Neither the Virginia State Police nor Fairfax County has ever attempted to seriously enforce the red X restrictions (maybe twice a year they are out there doing so) so the controls are flaunted repeatedly. In my mind, people driving at high speed on shoulders where others aren't expecting them to be is a far more serious threat to safety than turning on the green arrows and permitting that travel. Frankly, the folks running the red X's understand what VDOT officials appear indifferent too: the shoulders ought to be used at any period of heavy traffic. Opening them up could easily save tens of thousands of hours of commuter delays every year at virtually no cost.

And this logic also applies to the reversible HOV lanes of I-395/I-95. Virginia officials have a set schedule for switching the lanes over which, particularly on weekends, often bears no resemblance to the actual travel needs. I have seen many times traffic crawling in one direction while the HOV lanes are set the other way with little traffic using them. Switching them over on a more dynamic basis would again be a nearly no-cost option for improving traffic flow.

Using shoulders to increase capacity could work well in other areas of constant congestion. Take, for example, the outer loop of the Beltway between I-66 and Little River Turnpike. Like clockwork, there is a significant slow-moving back up there every night as traffic merges onto the Beltway from I-66, Rt 50 and Gallows Road in short order to join heavy traffic coming down from Tysons. All of that merging simply chokes the road. But traffic speed picks up remarkably at Little River Turnpike for two reasons. One, more cars exit the road than enter it, lessening overall demand and, more importantly, the Little River Turnpike entrance ramp creates a fifth lane of traffic down to the Braddock Road exit, which obviates the need for more merging. I see a great opportunity here to improve traffic flow by using the shoulder between Gallows Road and Little River Turnpike as another fifth lane to also ease the merge problem. If that extra lane were connected to the short strip of lane running from the Rt 50 entrance to Gallows Road, it relieve much of the crush of traffic where so much merging occurs all at once. This would not require much construction work as there is already plenty of pavement in place; just some re-painting of lanes to make it all work.

The same thing could work for the stretch on the outer loop from Rt. 7 to the I-66 where two lanes of traffic coming onto the Beltway from Rt. 7 must first merge to one lane and that lane of traffic must merge onto the Beltway itself. The four lanes then run for a mile or so until they approach I-66 where a fifth lane is created to aid exiting. A fifth lane was not run from Rt. 7 all the way to I-66, it appears, because two tight overpasses do not cede enough right of way for five lanes and the usual shoulder. But there is enough paved roadway for five lanes. This, to me, is another case where the interests of traffic efficiency must take precedence over the desire to have robust shoulders at all points of the road. The same thing goes for the inner loop from I-66 to Rt. 7 where morning backups on both the Beltway and I-66 are legendary. Use of the shoulder would provide a lane for traffic coming onto the Beltway from I-66 without necessitating

merging and this would ease everyone's trip considerably. And all of that for the price of a few gallons of paint!

Freeway planners in Los Angeles routinely provide less than 2 feet of shoulder between the high speed lanes and the jersey walls and their slow lane shoulders are barely a car width of space. They also squeeze the width of the lanes themselves to produce extra travel lanes where roadway real estate is tight. We should do this too, even on the Beltway ahead of the HOT lane construction. Any savings of time, gas and pollution is valuable. When the investment to make significant improvements is so modest, there is little reason to not do so, and there are many stretches of road where this type of thinking could be applied with dramatic dividends.

Another way to take advantage of shoulders is to lengthen the exit ramps at key bottlenecks. VDOT recently re-built the exit ramp on the outer loop of the Beltway to get onto the Dulles Tollroad. Their solution, while an improvement, still does not work as well as it could. Traffic still frequently backs up onto the far right lane of the Beltway for a half mile or more approaching the ramp. One reason for this is that although there are two lanes on the ramp itself, they both must be accessed from the far right lane. This does not help as well as it should. I suggest, again, using the shoulder in one of two methods. One way would be to simply route all exiting traffic onto the shoulder a full half mile before the exit and make this the dedicated exit lane. That way, slowing traffic would not clog the four through lanes. Alternatively, the shoulder could be used in conjunction with the right lane with each lane painted to direct travelers to one of the two lanes on the exit ramp. Either would bring more relief to the outer loop than we currently have, again at little or no cost.

In fact, anywhere there is a tendency for exiting traffic to back up into the main lanes of travel on any freeway, the shoulder ought to be used as the exit ramp for up to a mile before the exit. Motorists sometimes make this occur on their own, but its application is haphazard and would work much better if officially sanctioned.

On a related vein, there needs to be better segregation of traffic whenever there are frequent backups for exits. Take, for example, traffic leaving the eastbound Tollroad to get onto the Beltway. Again, VDOT recently improved the traffic flow but only partially succeeded. In this case, they created three lanes for exiting traffic with one heading north and one heading south and the middle lane allowing drivers to go either way. Drivers heading to Rt 123 or I-66 are supposed to stay to the left and flow past any traffic waiting to get onto the Beltway. But this doesn't work real well. Often, traffic is backed up trying to go to north on the Beltway (into Maryland) but traffic cannot use the exit lanes to head south either. This is because vehicles use the far right lane to go around slow moving traffic and then try to cut in to the northbound lanes at the last moment. Same thing with traffic in the left lanes. They go around the backups in the lanes heading to I-66 and then try to cut back in at the last moment as well. The result is a giant mess that frequently takes 15 minutes to crawl a mile. What I would do is better segregate traffic to prevent these types of cutting in. Since there are six lanes of traffic, I would direct two to go south, two to go north, and two to head to I-66. There would be no "middle" lane going both ways. Then, I would erect barriers that physically separated these lanes well before the actual split (about a half mile back) to ensure that there was no last minute cutting in (instead of overly intimidating jersey walls, I would suggest rows of the narrow plastic tubing). This would not do much for the backed up northbound traffic (unless, of course, the shoulder of the Beltway was

also re-striped as a fifth lane!), but it would make it easier for traffic going south or to I-66 to get by this area.

Finally, there is construction management. What is truly distressing to me is that even once projects to widen or improve roads are approved, the construction process is still painfully, ridiculously slow. Slow construction not only delays the implementation of benefits but the existence of the construction zone is often itself a further impediment on traffic flow even when the travel lanes are only minimally affected. I frankly cannot understand the logic behind the unusually slow pace of virtually every road construction project I have ever witnessed in Northern Virginia.

This issue came up recently in another one's of the *Post's* Dr. Gridlock columns when someone who had seen a documentary on TV wrote in about the amazing job done on the AlCan highway in WWII and wondered why the Springfield Interchange was taking so long in comparison. Dr. Gridlock passed the question to VDOT, and their spokesman Steve Titunik was disingenuous at best when he claimed that it was really hard to rebuild a major highway while keeping traffic flowing. Let's be serious here. Yes, the Mixing Bowl was a hard highway project, no doubt, but it really doesn't stack up against some of the great American construction projects which were completed in much less time. For example, the Pentagon -- the world's largest office building -- was built in 18 months. The Empire State Building -- which was the tallest building in the world for more than 40 years -- was completed in 14 months. The Transcontinental Railroad -- cut through the imposing Sierra Nevada mountains in the days before mechanization, let alone computers -- was completed in four years. And how about Hoover Dam? The location of Hoover Dam was so desolate, they had to build a town from scratch as part of the effort just to house all of the workers. The workers had to contend with one of America's great un-tamed rivers and the final product was a marvel of modern construction. It was completed in five years -- less time than our lovely Springfield Interchange. Now, why is it that the Hoover Dam and the other projects could be finished more quickly than the Mixing Bowl? Simple: people. At its peak, more than 5,000 people were working on the Hoover Dam project. By comparison, on a good day, there were about 150 people working on the Springfield Interchange.

There is no fundamental technical reason why more people couldn't have been working on the Mixing Bowl each day and thereby shortened its completion time. Triple the numbers of workers and you can cut the calendar time it takes to complete by two-thirds. You expend the same number of total labor hours (and spend the same amount of money), but just do it faster. It can't be that there is a shortage of skilled labor or of raw materials. And I doubt that it is an issue where the various pieces of the puzzle can't be synchronized and managed on a faster pace. For example, the new Washington National stadium in DC is a $600 million dollar project that was completed in just two years because they have a work crew of about 350 people, which is 2-3 times as much as the Mixing Bowl crew. If they can figure out how to schedule that work for a crew of that size, I'm sure the engineers could so the same on a compressed schedule for all roadwork.

Faster paced work can be done, when there is the political will to do so. Back in the early 1980s when the Key Bridge needed to re-decked, construction went on around the clock non-stop and the job was finished in 3 months. A couple of years ago a local radio station had a promotion and built a single family house from foundation to finishing in 3 days -- a job that normally takes about 9 months. They simply brought in all of the labor at once and scheduled as many steps to

be running concurrently as was possible. There is no real reason why the Mixing Bowl project or the Wilson Bridge for that matter or any other road project couldn't do the same.

Money is always an issue for road projects, but I see no reason to not proceed rapidly once funding is secured. When the intersection at Annandale/Hummer and Gallows Road was rebuilt in 2006, it took several months to finish a small $1M project. Why? Because most days no one was there doing anything. I bet that the totality of all the work done on that project could have been squeezed into about 3 weeks time, maybe less. So why don't we do it that way? I would insist that contractors produce tight timelines for all road projects and staff them with sufficient folks to get them done quickly. It doesn't have to be as fast as the Key Bridge re-decking with literally round the clock work, but it ought to be done with much more urgency than we see on our glacially-paced projects.

Summary

In my mind, a minute saved during driving is a minute saved regardless of whether is it on the Wilson Bridge or at a long traffic light. Every minute saved is valuable. It equates to gasoline saved, pollution and greenhouse gases reduced, stress reduced, money saved, and increased quality of life. And the minutes add up fast in a major metro area with more than a million licensed drivers and average commutes that approach an hour each way.

All of the above proposals are designed to squeeze more capacity out of same base road network, though this is not a substitute for more lanes/roads or mass transit in critical corridors. This is designed to be a supplement to major road projects, in an affordable way that could likely increase road capacity by 10% or more. And the whole package could probably be implemented in an area like Fairfax Country for the price of one mega-project. But the real key here is that this needs to be more than just a few intersection improvements here, a road widened there, and other limited initiatives sprinkled about. For this to work there needs to be a real push to develop these options and deploy them widely and quickly.

How do I know that system-wide traffic could be improved by 10% or more? I don't know it for certain, but I can see enough obvious places for improvement all throughout the area that it seems incomprehensible that these modest gains cannot be realized. The studies showing the length of Washington commutes clearly indicate that drivers regularly face numerous bottlenecks that slow them well below posted speeds. Alleviating even some of these through IRTs, dynamic signaling, and roadway flow improvements could easily shave several minutes off an average commute, and that's all it takes to get a 10% or more savings.

And I also wouldn't want to ignore the impact that improved traffic flow can have on air pollution. One recent study by the Texas Transportation Institute found that commuters in Baltimore waste more than 40 million gallons of fuel each year due to traffic congestion. And that wasted fuel produces 400,000 tons of carbon dioxide, and additional pollutants as well. Any efforts which increase traffic flow, raise fuel efficiency, and reduces pollution.

But I don't expect you to just take my word for it. Clearly we need some way to truly measure the impact of these improvements, both to justify them and to use as the means to determine their dollar worth. All of this can be calibrated and monitored very effectively to ensure we get our money's worth. There are a couple of ways to do this. One would be to conduct periodic road surveys where paid drivers or volunteers drive specified routes at specific times (rush hours, weekends, off peak) and carefully record the time it takes. This would provide a baseline of actual drive times to use in tracking regional traffic trends, including whether the improvements described above had the desired impact on key corridors. Given counts of traffic using those corridors, before and after measurements could provide the total scope of time savings and the commensurate other benefits.

Another way to capture data would be to equip cars with GPS receivers and data recorders so that every trip taken could be recorded and uploaded to a database. If hundreds of cars randomly distributed across the region were so wired, this would provide a huge set of data to show true average speeds and commute times, where traffic bottlenecks truly were and, again, how much traffic flow improved following implementation of the above proposals.

Data collection like this could readily be used to justify expenditures on traffic improvements. Policy-makers would be able to literally decide how much traffic improvement they wished to purchase and where to apply the money with an unprecedented understanding of how traffic would be improved.

It is very frustrating to watch the incredibly slow movement of road projects through the political and bureaucratic processes. Even when critical needs are clear to all, getting agreement to make fixes and getting the projects underway are incredibly tedious and difficult processes. I don't claim to have an answer for this, unfortunately, other than to find some way to work these issues locally instead of through the state or federal governments. I do know that we won't get anywhere if we have to petition Richmond for every little improvement, conduct lengthy studies to justify even the smallest project, and then queue every project up in a multi-year plan. There has to be a better way to just go out and make things happen. The best approach I can think of is to hire private firms to implement these proposals and pay them based on how much time savings – as captured by the metrics above – they produce. That would create the best incentives for quickly concluding projects and focusing on the biggest bang for the bucks. For example, how much are we willing to pay to save 1,000 hours of drive time each year? Name the price and put out offers and see who can come up with options. I believe that the options I outlined, if there was the authority and flexibility to implement them aggressively, could easily pass any cost/benefit test. What I don't know is if there could ever be an opportunity to work this way. That's for you all to decide.