



UNFUNDED CAPITAL NEEDS WORKING GROUP

March 16, 2016
10:30 - 11:45 P.M.
Walter A. Scheiber Board Room
(Please note meeting room change)

Tim Lovain, TPB Chair
Jonathan Way, Working Group Vice Chair

*If you would like to participate by conference call, please call: 888-702-9706;
Conference Room Number: 2650; Participant PIN: 6227*

AGENDA

- 10:30 A.M. 1. INTRODUCTIONS**
Chairman Lovain
- 10:35 A.M. 2. PRESENTATION AND DISCUSSION ON “NO-BUILD” SCENARIO DRAFT RESULTS**
Dusan Vuksan, TPB Transportation Engineer
- To provide context for priority setting, the TPB will release a report in the summer of 2016 that will look at two extreme “bookend” scenarios: 1) a “No-Build” scenario that will analyze the effects of not building new transportation capacity over the next 25 – not even the projects in the CLRP; and 2) an “All-Build” scenario that will include most of the major unfunded transportation projects that are part of the approved plans of our member jurisdictions (in addition to the CLRP). At the meeting on March 16, staff will provide a status report on analysis related to the first of the scenarios, the “No Build.”
- 11:15 A.M. 3. UPDATE ON THE “ALL-BUILD” SCENARIO**
Dusan Vuksan, TPB Transportation Engineer
- Staff will report on efforts underway to develop and analyze an “All-Build” network. This briefing will include a description of default assumptions that will be used to define projects that have been submitted with insufficient information.
- 11:20 A.M. 4. DISCUSSION OF OUTREACH TO MEMBER JURISDICTIONS TO PROMOTE REGIONAL PRIORITIES**
John Swanson, TPB Transportation Planner
- At the TPB work session on January 20, participants agreed that the TPB should document the project selection processes of its member jurisdictions and seek to promote the consideration of regional priorities in those

processes. The working group will discuss a staff proposal to implement those recommendations.

11:40 A.M. 5. WRAP-UP AND NEXT STEPS
Chairman Lovain

The group will discuss its next steps, including the identification of key CLRP deficiencies that provide the basis for selecting a limited set of unfunded regional priority projects.

11:45 A.M. 5. ADJOURN

The next meeting of the Working Group is scheduled for April 20, 2016 at 10:30 A.M.

The TPB is staffed by the Department of Transportation Planning
of the Metropolitan Washington Council of Governments.

Reasonable accommodations are provided upon request, including alternative formats of meeting materials.
For more information, visit: www.mwcog.org/accommodations or call (202) 962-3300 or (202) 962-3213 (TDD)

UNFUNDED CAPITAL NEEDS: 2040 “NO BUILD” ANALYSIS

Preliminary Summaries

Dusan Vuksan, Feng Xie

Unfunded Capital Needs Working Group
March 16, 2016



Unfunded Capital Needs (UCN) Study Background

Objective:

To improve the performance outcomes of the regional long range plan (LRP)

Identify a limited set of currently unfunded multi-modal projects with the greatest potential to improve regional system performance that the TPB can champion for inclusion into the Constrained Long Range Plan (CLRP)



UCN Study: Background

Approach: Three phases over three years

I: Develop a Baseline Report (FY 2016)

II: Develop a list of Unfunded Regional Priority Projects (FY 2017)

III: Incorporate Unfunded Priority Projects into the LRP (FY 2018)



Phase I: Develop a Baseline Report

Analysis of different 2040 futures

- 2040 “No Build” – scenario assumes projected growth in demand (population and employment) but no future capital improvements ✓
- 2040 “Planned Build” – scenario assumes growth in demand and includes capital improvements assumed in the current (2015) CLRP ✓
- 2040 “All Build” – scenario assumes growth in demand and capital improvements in the current (2015) CLRP, plus all of the currently unfunded capital improvements inventoried by the TPB staff



Baseline: No Build Scenario

- 2040 Population and Employment (Round 8.4 Cooperative Forecasts)
- 2015 Transit and Highway Networks (no capital improvements)
 - Includes:
 - Metro Silver Line Phase 1 (VA)
 - VRE Spotsylvania Station (VA)
 - H St. / Benning Road Streetcar (DC)
 - Roadway lane repurposing for bicycle use (DC)
 - ICC (I-270 to Route 1 in MD)
 - Capital Beltway HOT lanes (Springfield to North of Tysons in VA)
 - I-95 HOT lanes (Edsall Road to VA 610 in VA)



Baseline: Planned Build Scenario

- 2040 Population and Employment (Round 8.4 Cooperative Forecasts)
- 2040 Highway and Transit Networks
- 7% more lane miles of roadway, and 14% more miles of rail / streetcar transit
- \$27 billion dedicated to highway expansion and \$15 billion to transit expansion
- Project details, including maps:
https://www.mwcog.org/clrp/resources/KeyDocs_2015.asp



Technical Analysis:

Unlike the CLRP performance analysis

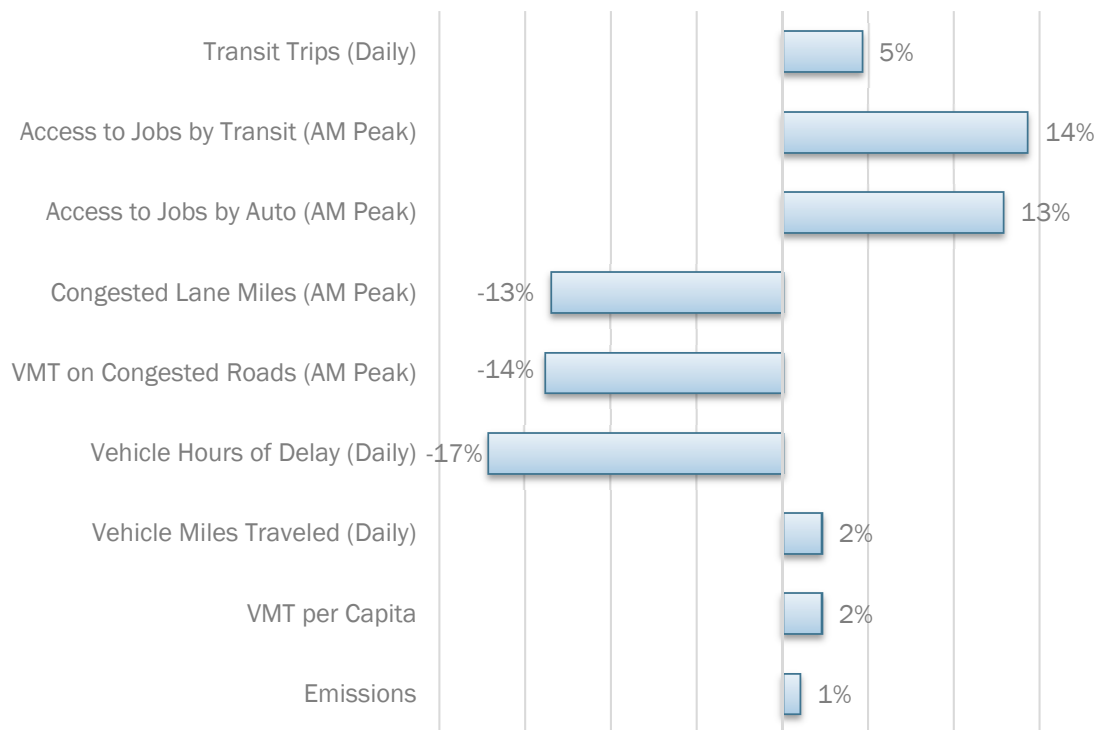
- CLRP Performance Analysis focuses on current and future scenarios:
 - Base: 2015 (CLRP)
 - Build: 2040 (CLRP)
- The UCN Analysis focuses on two future scenarios:
 - Base: 2040 No Build
 - Build: 2040 (CLRP)
- UCN Analysis evaluates impacts of transportation system improvements in CLRP while holding land use constant



CLRP vs No Build: Key Findings

What Does the CLRP Do?

Performance Analysis: 2040 CLRP versus 2040 NB

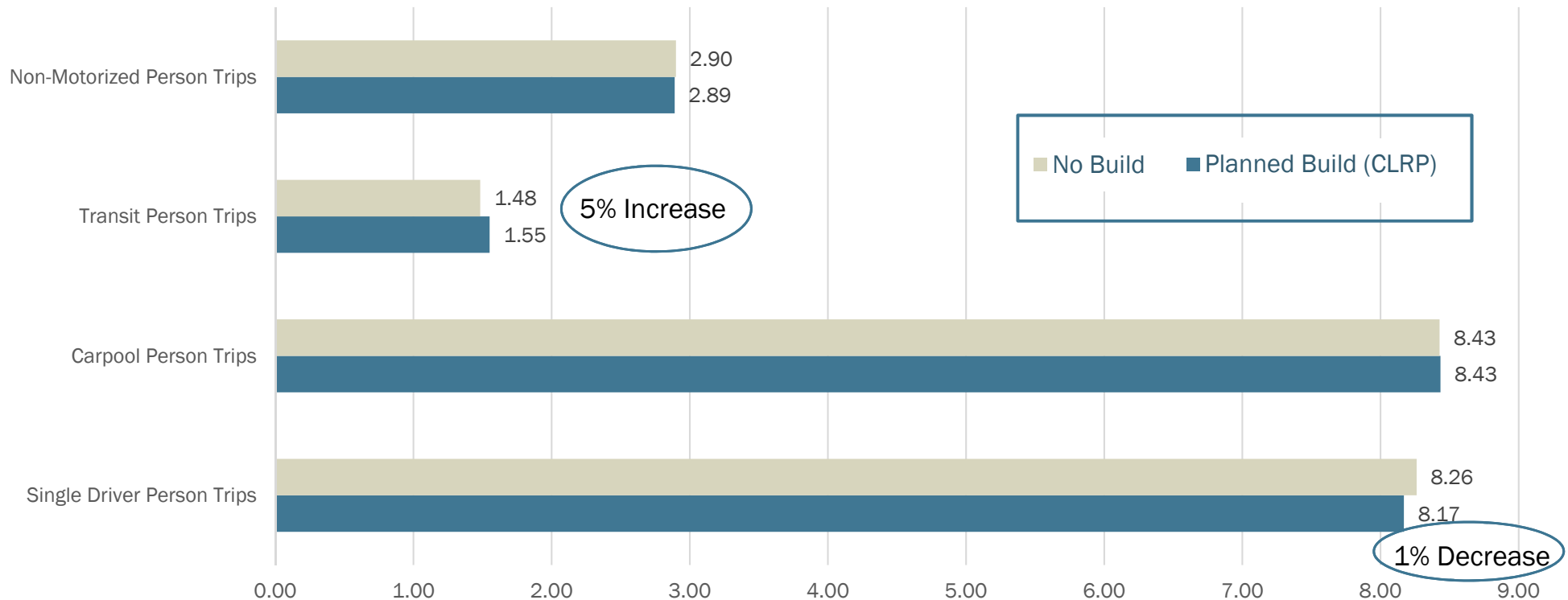


- Transit usage increases
- Access to jobs by transit and auto improves
- Congestion and vehicle hours of delay decrease
- Vehicle miles traveled per capita increase slightly
- Emissions do not change significantly



CLRP vs No Build: Transit Usage

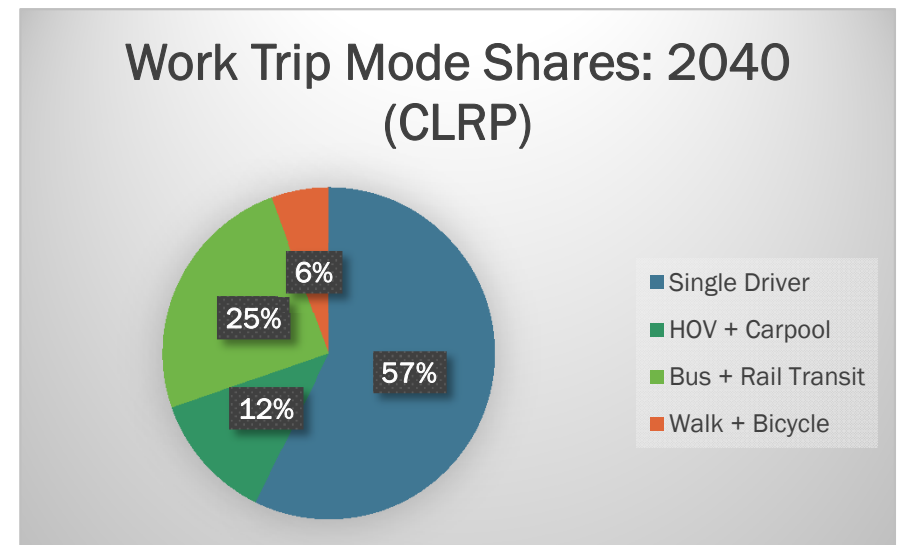
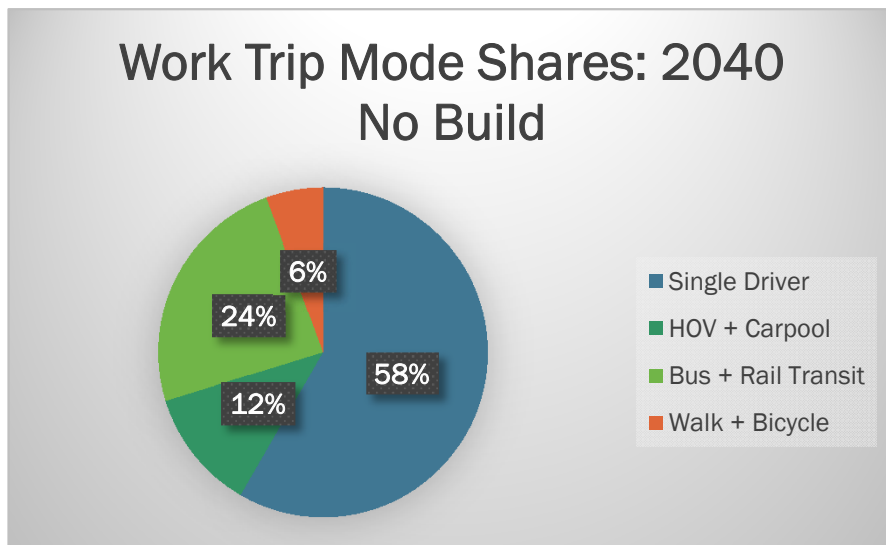
2040 Daily Person Trips for All Purposes (in Millions)



- Daily transit person trips increase; single driver person trips decrease



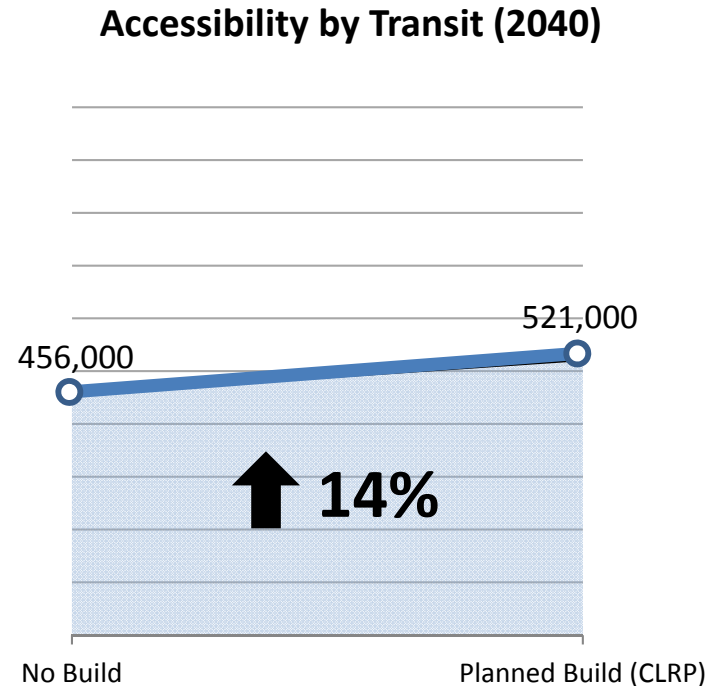
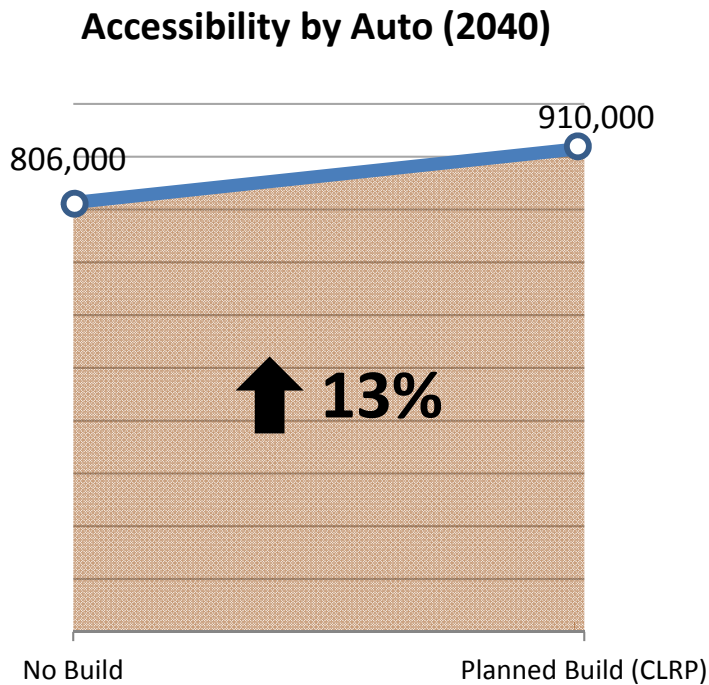
CLRP vs No Build: Transit Usage



- Share of transit work trips increases; share of single driver work trips decreases
- Share of transit trips for all trip purposes remains unchanged

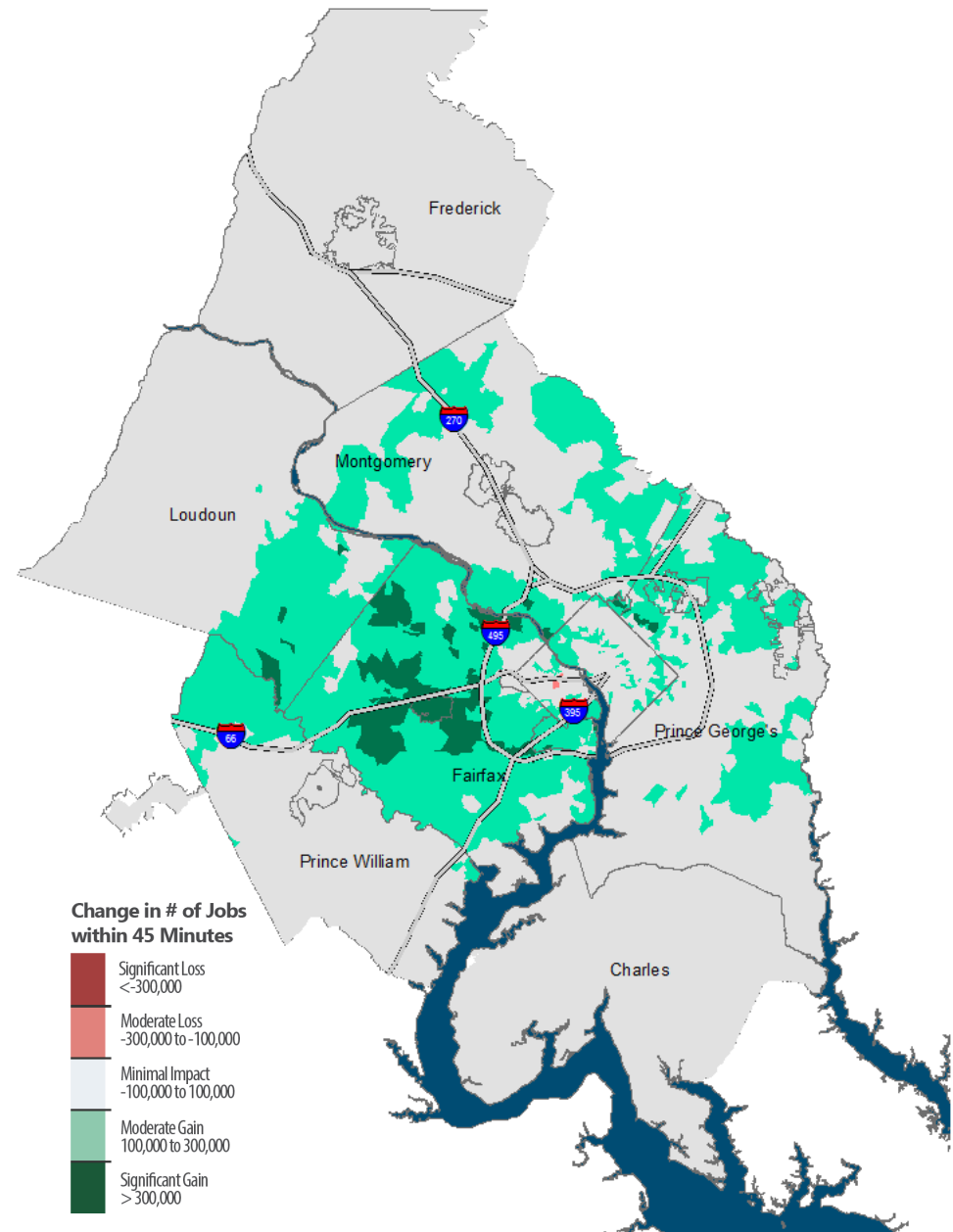
CLRP vs No Build: Jobs Accessibility

- CLRP increases the number of jobs accessible within 45 minutes by automobile and transit



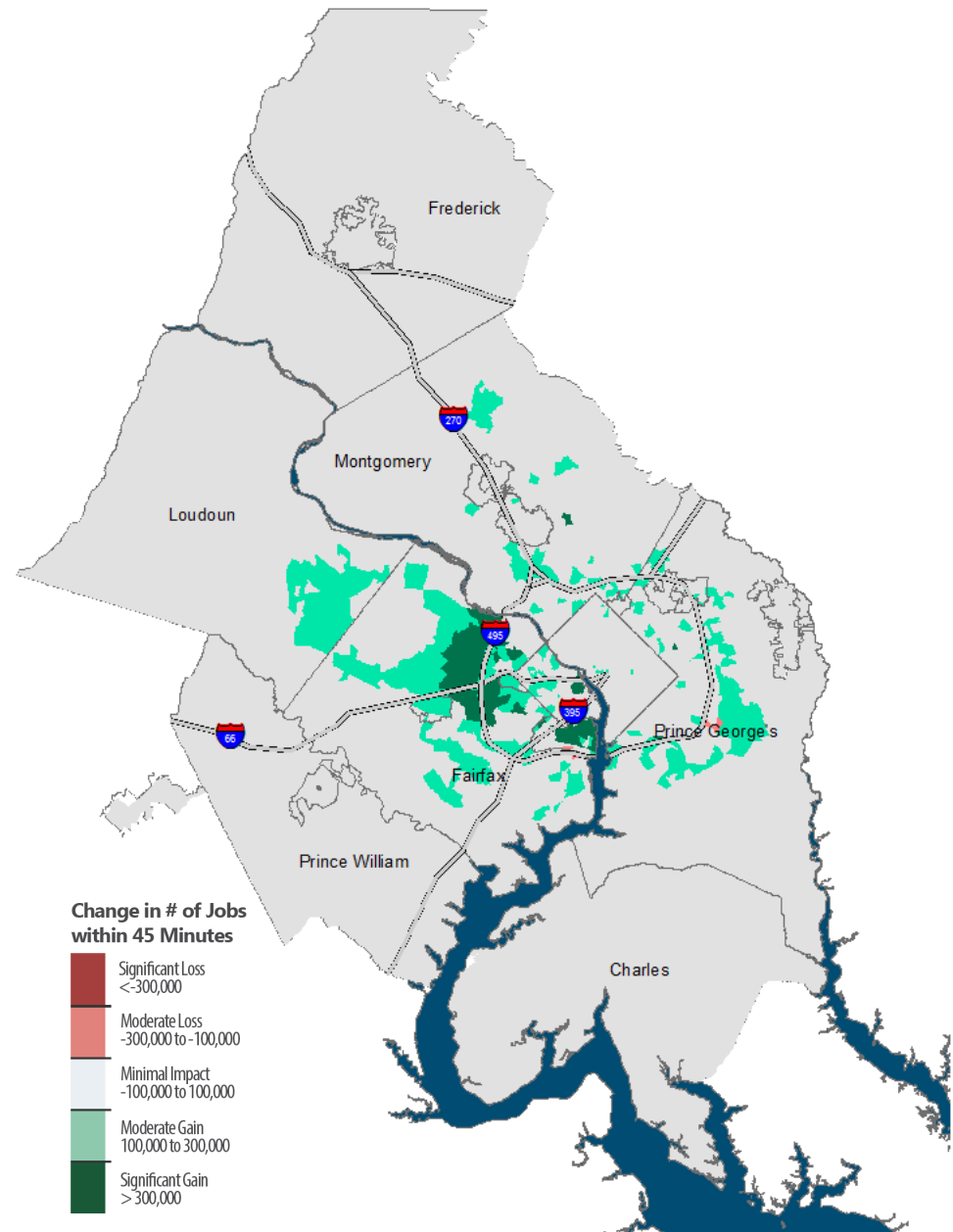
CLRP vs No Build: Change in Auto Access to Jobs

- CLRP increases access to jobs by auto throughout the region, with largest increases in accessibility taking place in the I-66 Corridor Outside of the Beltway



CLRP vs No Build: Change in Transit Access to Jobs

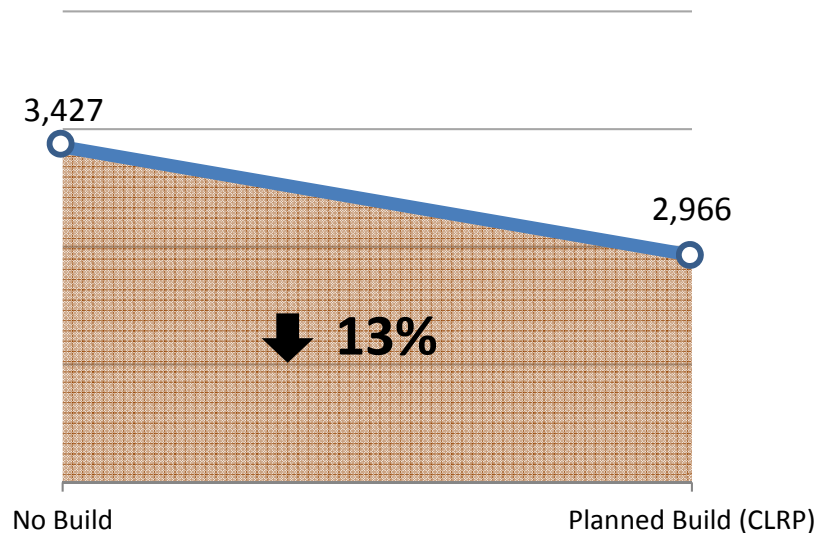
- CLRP increases access to jobs by transit throughout the region
- Increase in the I-66 Corridor Outside of the Beltway with addition of new express bus services
- Increase in Blue / Yellow line corridor in Virginia with addition of Potomac Yards Station



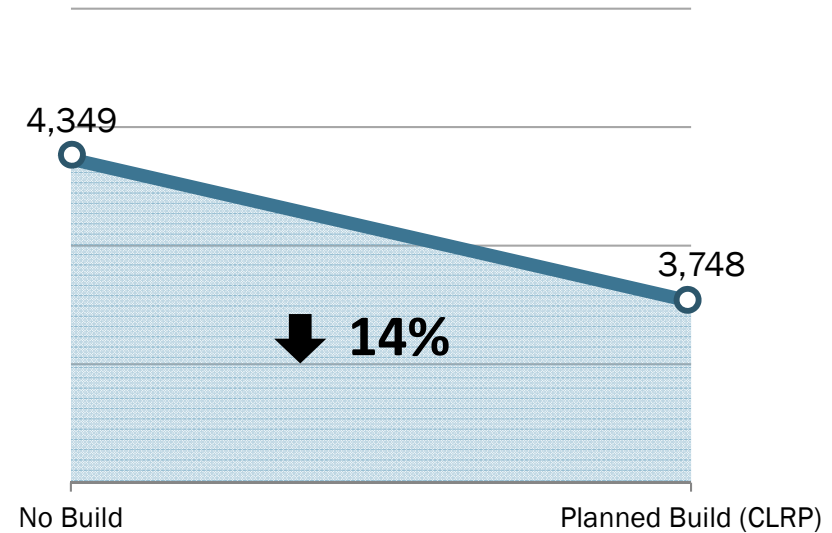
CLRP vs No Build: Roadway Congestion

- Peak hour congested lane miles and VMT on congested roadways decrease

Congested Lane Miles
2040 AM Peak



VMT on Congested Roadways (in 1000s)
2040 AM Peak

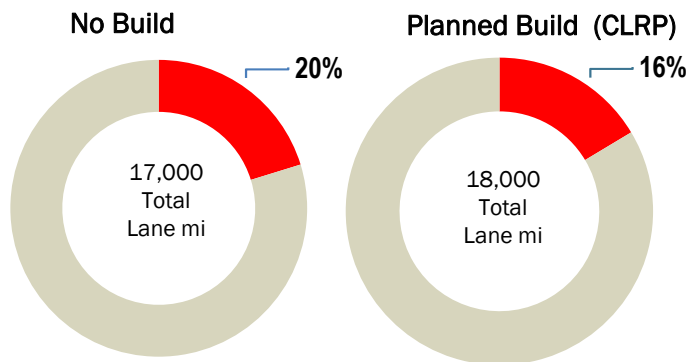


CLRP vs No Build: Roadway Congestion

- Share of total congested lane miles and share of VMT on congested roadways decrease

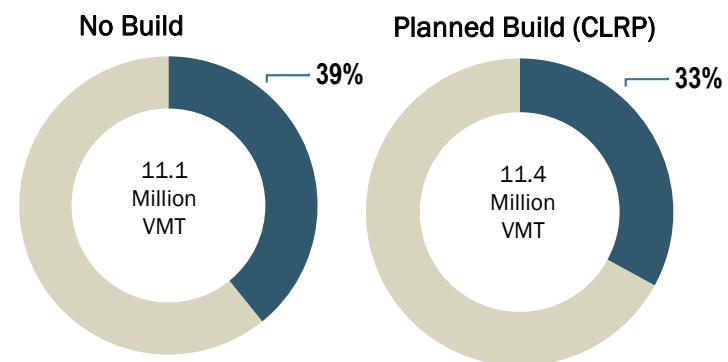
Share of Congested Lane Miles

2040 AM Peak



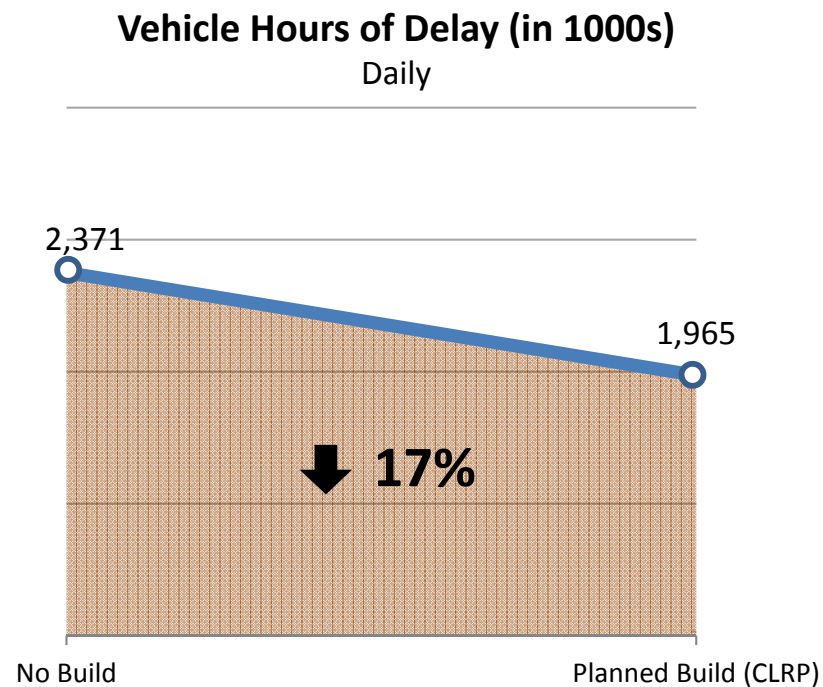
Share of VMT on Congested Roadways

2040 AM Peak



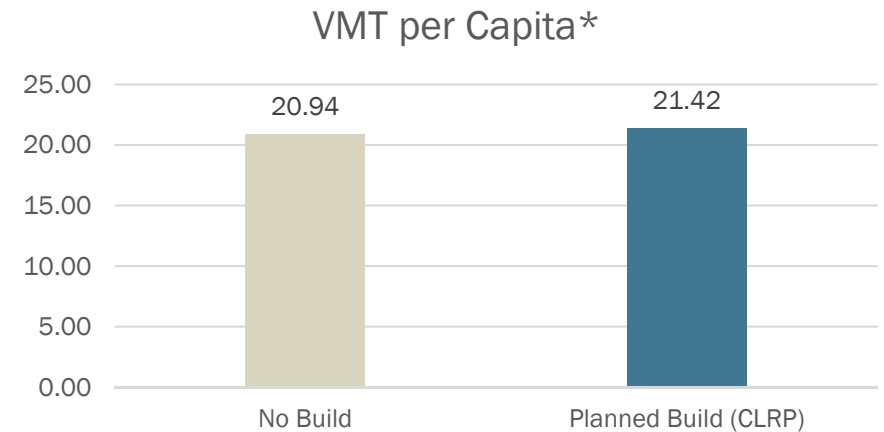
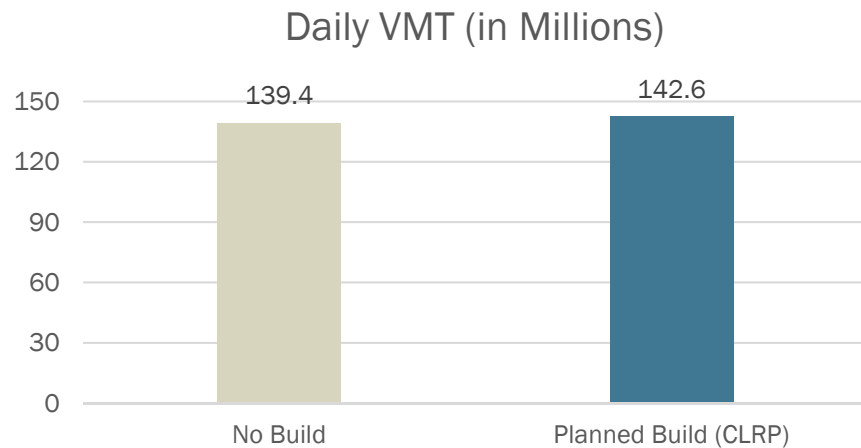
CLRP vs No Build: Vehicle Hours of Delay

- Vehicle hours of delay are reduced



CLRP vs No Build: Vehicle Miles Traveled per Capita

- Daily VMT and VMT per capita increase by 2% in CLRP relative to No Build
- Increased congestion with No Build results in shorter trip lengths and reduced VMT



* 2040 VMT per Capita in NB and CLRP is lower than today



CLRP vs No Build: Mobile Source Emissions

- Very small change in emission levels (within 1%)

UCN Emission Comparisons: Planned Build (CLRP) Vs. No Build

Pollutant*	No Build	Planned Build (CLRP)	Δ	% Δ
Direct PM2.5	724.8	720.1	-4.6	-0.6%
PM 2.5 Precursor NOx	8,036.1	8,111.3	75.2	0.9%
Ozone Season VOC	19.1	19.1	0.0	0.0%
Ozone Season NOx	20.2	20.4	0.2	1.0%
Winter CO	121.3	121.9	0.6	0.5%
CO2e	17.5	17.7	0	0.9%

* Direct PM2.5 and PM2.5 Precursor NOx in tons/year

* Ozone season VOC and NOx, and Winter CO in seasonal tons/day

* CO2e in millions of metric tons/year



Key Findings: What Does the CLRP Do?

- Increases daily transit person trips (5%) and share of transit work trips (1%)
- Decreases daily single person auto trips (1%) and share of single person auto work trips (1%)
- Reduces roadway congestion - vehicle hours of delay (17%), VMT on congested roadways (14%), share of congested VMT (6%) and share of congested lane miles (4%)
- Increases accessibility to jobs by auto (13%) and transit (14%) within 45 minutes during morning commute
- Increases total VMT and VMT per capita by 2%
- Emission estimates in CLRP change very slightly and are within 1% of No Build estimates



What Does This Mean?

- Investments in highway and transit capacity in the CLRP lead to:
 - Significant reductions in congestion relative to No Build
 - Increased transit usage
- System-wide expansion of highway and transit infrastructure leads to sizeable increases in accessibility to jobs
- Reduced congestion due to improvements in system performance results in a slight increase in VMT
- Changes in travel patterns, modes and conditions yield little change in emissions of criteria pollutants and greenhouse gas (CO₂e) emissions



Next Steps

- Staff will further evaluate No Build results by geographic subarea
- Staff will continue with input preparations for All-Build scenario



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National Capital Region
Transportation Planning Board



National Capital Region
Transportation Planning Board

MEMORANDUM

TO: Unfunded Capital Needs Working Group Technical Staff
FROM: Dusan Vuksan, Principal Transportation Engineer
SUBJECT: All Build Scenario Project Specification Needs
DATE: February 22, 2016

This technical memorandum highlights the information needed for completion of network development process for All-Build Scenario in conjunction with the Unfunded Capital Needs Working Group.

PROJECT BACKGROUND

As stated in the January 14, 2016 Memorandum by Kanti Srikanth and John Swanson to the Transportation Planning Board, Phase I of Unfunded Capital Needs Working Group, which aims to develop a baseline report, will consist of evaluating three scenarios:

- 1) No Build - system performance with growth in demand (Population and Employment) but without any of the capital improvements in the current (2015) CLRP;
- 2) Planned Build - system performance with growth in demand and capital improvements in the current (2015) CLRP; and
- 3) All Build - system performance with growth in demand and capital improvements in the current 2015 CLRP plus all of the currently unfunded capital improvements inventoried by the TPB Network development

ALL BUILD GENERAL NETWORK DEVELOPMENT APPROACH

Input assumptions for analyzing No Build (Scenario 1) and Planned Build (Scenario 2) have been established, but TPB staff will need additional information for the submitted transit and highway projects to complete the All Build analysis. Member DOT / jurisdiction / transit provider staff and TPB staff have put in a significant amount of effort to identify, submit and summarize the projects for the All Build scenario. However, in order to specify the projects in the travel demand networks, additional information may be needed for most of the new project entries. Given the large number of projects (over 500), TPB staff understands that it may take a significant amount of time to obtain this level of information from the members. In order to adhere to the proposed project schedule, TPB staff is proposing to create travel demand model inputs using the following two steps:

1. Members / project sponsors will be asked to provide the missing information as indicated in Tables 1 and 2 (attached) by March 7, 2016. TPB staff will use this information as an input to the travel demand modeling process; examples of information that is being requested include:
 - a.) Number of lanes
 - b.) Roadway facility type
 - c.) Transit service characteristics (e.g., headway, run time, etc.)
2. If members do not provide the information requested, TPB staff will use “default criteria and rules” to develop the missing project specifications (e.g., number of lanes, transit route headways and run times, etc.).

The default criteria and rules (number 2 above) that staff will use are described below. These assumptions are provided separately for transit and highway projects. It is important to keep in mind that these rules would pertain only to missing data.

ALL BUILD HIGHWAY DEFAULT ASSUMPTIONS FOR PROJECTS WITH MISSING DATA

If project information is missing, TPB staff will assume the following:

1. For any facility widening / lane removal, or what is referred to as reconstruction for the project submittals from Maryland, if the number of additional / removed lanes is not specified, staff will assume that one lane is added / removed in each direction.
2. Unless otherwise specified, staff will not assume that any roadway capacity is being removed in conjunction with the implementation of bicycle and pedestrian projects.
3. For facility upgrade, staff will assume a “one level upgrade” – for example, a minor arterial will become a major arterial (not an expressway or a freeway).
4. If staff is able to locate any missing information on the project website or by using other official resources, a determination / judgement call will be made as to whether this information will be considered.
5. Given the regional nature of the roadway and transit networks in the travel demand model, improvements to certain small scale projects will not be included in the analysis.

ALL BUILD TRANSIT DEFAULT ASSUMPTIONS FOR PROJECTS WITH MISSING DATA

If project information is missing, TPB staff will assume the following:

1. If transit route stop information is not specified, staff will assume that the service stops at every intersection represented in TPB’s networks; buses will not make any stops on the freeways, and professional judgment will be used in regards to limited stops service.
2. If transit route speed or run time is not specified, staff will use average speed assumptions for the appropriate mode derived from the model for similar service; different average speeds will be developed for local bus, express bus, BRT, streetcar, heavy rail, commuter rail and light rail.

3. If headway information is not specified, staff will assume:
 - a.) 10 minute peak and 15 minute off-peak headways for new local bus service
 - b.) 6 minute peak and 10 minute off-peak headways for new BRT, Streetcar, LRT and Metrorail service
 - c.) 15 minute peak and 60 minute off-peak headways for new Commuter Rail and long-haul express bus service
4. If staff is able to locate any missing information on the project website or by using other official resources, a determination will be made as to whether this information will be considered

It is important to note that, while the above rules will apply to many projects, professional judgement will likely need to be used by TPB staff throughout the network development process. Therefore, depending on the level of information that has been provided by the members, some of the projects with missing information may differ in some ways from what the project sponsors have envisioned. Projects with insufficient information may end up not being included in the networks.

NEXT STEPS

TPB staff is asking that stakeholders review the highway and transit project specifications in the attached tables, correct the existing and add the missing information, where applicable, and provide the revisions to TPB staff by March 7, 2016. TPB staff also welcomes any additional information as attachments, such as reports, summaries or maps of transit stops. If TPB staff does not receive the missing information by the specified deadline, default criteria and rules will be applied in the network development process. A final project listing, including complete technical specifications, will be issued to the working group for their review prior to travel demand modeling.



MEMORANDUM

TO: Unfunded Capital Needs Working Group
FROM: John Swanson, Plan Development and Support Manager
SUBJECT: Promoting regional priorities in the project selection processes of the TPB's member jurisdictions
DATE: March 10, 2016

This memo describes a proposal to develop a system that the TPB can use to promote the consideration of regional priorities in project selection processes at the local, subregional, and state levels.

BACKGROUND

Last fall, during the finalization of the 2015 CLRP Amendment, TPB members expressed a general sentiment that regional priorities and goals did not appear to be adequately reflected in CLRP projects and in the plan as a whole. Members expressed general dissatisfaction with the forecast performance of the future transportation system in relation to regional goals. Some members suggested that in the future, the TPB should establish a process to score or rank CLRP project submissions in relation to regional goals and priorities as identified in the Regional Transportation Priorities Plan.

The TPB convened a special work session on January 20 to discuss ways in which the board can promote regional priorities at many levels of project development. At that meeting, participants agreed to the following recommendations offered by Tim Lovain, TPB chairman, and Kanti Srikanth, TPB staff director:

1. Recognize and leverage the work of the already established Unfunded Capital Needs Working Group.
2. Redefine the TPB's long-range plan to include funded (constrained) and unfunded projects.
3. Keep abreast of project development processes at all levels.
4. Seek to influence project development at all levels.
5. Encourage project evaluation and development processes to incorporate regional considerations.

The first two of these recommendations entail changes in the TPB's long-range planning process. These recommendations are consistent with the scope of work approved by the Unfunded Capital Needs Working Group last November, which will lead to the identification of a set of unfunded regional priority projects reflecting regional goals. The selection of such unfunded projects will provide the TPB with opportunities for enhanced input at the state and local levels during earlier stages in the project development process well before new projects are submitted for the "constrained" element of the long-range plan.

In contrast, recommendations 3-5 will not change the regional planning process, but will call upon the TPB to be more cognizant and active in project development and selection activities at the local,

subregional and state levels. The remainder of this memo provides recommendations for implementing recommendations 3-5.

PROPOSAL

This proposal is premised upon a fundamental fact underlying the TPB's current long-range planning process: By the time a project is submitted for the CLRP, it is already well advanced in the project development process. Typically, projects submitted for the CLRP have already undergone extensive planning activities and have been through a process of prioritization and funding identification at the state and/or local levels. If the TPB wishes these projects to reflect and promote regional goals and priorities, it must find ways to influence project development and selection well before submissions reach the CLRP.

Staff proposes to use the following means to document local, subregional, and state project selection processes and seek to ensure that regional policies and priorities are considered in those processes:

1. *Research and document project selection processes*

Staff will gather information through written questionnaires and telephone interviews on the project selection processes used by local, state, regional transportation agencies. This research will likely address the following questions:

- What are the goals, priorities, or outcomes that the projects are intended to advance?
- How are the projects evaluated against these goals, priorities, or outcomes – qualitatively, quantitatively or a combination?
- How does the quantitative evaluation process, if used, work? What role does qualitative evaluation play in selecting projects?
- How is consensus reached on a package of selected projects?
- Does project selection currently include any explicit consideration of regional policies or priorities?

The gathered information will be condensed in narrative descriptions that will be featured on the TPB's Hub website (www.transportationplanninghub.org). In addition, the information will be synthesized in tables or on spreadsheets.

2. *Develop a set of regional priorities for project selection at all levels*

Consistent with the TPB Vision and using its Regional Transportation Priorities Plan document, the TPB will identify a specific set of regional outcomes that the TPB considers to be regional priorities for projects to address. These outcomes would serve as the project evaluation metrics that would be considered by the TPB member jurisdictions and agencies as they select projects for development and funding considerations.

One of the ways of identifying the above set of regional project priority metrics would be to use the results of the performance outcome of its latest CLRP (2015) and identify specific performance outcomes that the board finds to be deficient. These "CLRP performance deficiencies" are what the TPB would promote for use as part of the project selection process by

the member jurisdictions and transportation agencies.

The above work will also serve to implement the second recommendation (above) agreed upon during the January 20, 2016 TPB work session (“Redefine the TPB’s long-range plan to include funded [constrained] and unfunded projects”), which will require the development of a set of unfunded projects for inclusion in the region’s long-range transportation plan. Again, the development of this plan of unfunded priority projects was part of the scope of work approved by the Unfunded Capital Needs Working Group last November.

3. *Develop a systematized process for providing regional input to local and state project selection*

Working with the staffs of TPB member jurisdictions and agencies, TPB staff will develop a process for the TPB and its staff to use in conducting outreach to local, subregional and state agencies. This process will use a variety of outreach methods to pro-actively foster communication with TPB members across the region. But recognizing the TPB’s limited resources, the process will also be strategic and targeted.

Based upon the steps described above, the TPB will identify a plan for how the board wishes to convey its priorities to member jurisdictions. This plan may include the following components:

- *Provide written information to all members.* On a regular basis, the TPB may convey information in writing about regional priorities to all local, subregional and state boards that are involved in transportation project selection.
- *Develop a calendar of activities.* On an annual basis, TPB staff will develop a calendar of major planning activities that are underway throughout the region, which the TPB may seek to inform.
- *Make presentations to decision-making bodies.* On a regular basis, TPB staff will identify a list of decision-making bodies that could/should be contacted to receive presentations on regional priorities.
- *Seek to inform regular programming activities and events.* Selected annual activities that occur on an annual basis are particularly appropriate venues in which to share information about regional priorities. These include MDOT’s Annual Tour, VDOT’s SYIP development process, NVTAs’s programming, and others.
- *Seek to include regional priorities in scoring and ranking systems.* The TPB may seek to integrate regional priorities and needs with the project evaluation criteria used in local, sub-regional and state level project prioritization processes (qualitative and or quantitative).

NEXT STEPS

The working group will discuss this proposal at their meeting on March 16. TPB staff welcomes all comments and suggestions regarding its implementation.