



# NATIONAL CAPITAL REGION

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## TRANSPORTATION PLANNING BOARD

### MEMORANDUM

TO: TPB Technical Committee

FROM: Sarah Crawford  
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SUBJECT: Briefing on the Status of the Transportation Planning Board's TCSP Grant: High-Impact Complete Streets Access Improvements for Rail Station Areas in the Washington Region

DATE: March 7, 2014

In August of 2012, the Transportation Planning Board (TPB) received \$200,000 through the Federal Highway Administration's Transportation, Community and System Preservation (TCSP) Grant Program to identify strategic recommendations for bicycle and pedestrian access improvements that complement employment and housing development close to rail stations with underutilized capacity. The project seeks to moderate demand on the transportation system by identifying improvements around stations that will encourage rail ridership in reverse-commute directions or by selling the same seat twice. Intensive work on the project began midway through 2013.

The overall goal of this study is to identify projects that increase the ability of people to access jobs near stations that currently have available capacity to accommodate new riders. The final product of the project will identify a set of pedestrian and bicycle capital projects that could be quickly implemented in the vicinity of 25 rail stations with available ridership capacity that are anticipating employment growth in the near-term future and/or have significant transit-dependent populations living in close proximity.

This study is consistent with the priorities and strategies identified in the TPB's Regional Transportation Priorities Plan. The project addresses the near term strategies of improving access to transit stops and stations and expanding bicycle and pedestrian infrastructure. The project also contributes to the ongoing and long term strategies of capacity on the existing transit system, ensuring accessibility for persons with low incomes, and enhancing circulation within Activity Centers.

### Summary of Work

COG/TPB staff has completed the rail capacity analysis and the employment and demographic analysis for the TCSP Grant. The analysis completed thus far focuses on three factors:

- Metrorail and commuter rail station capacity and line capacity
- Existing employment and projected employment (through 2020)
- Low-income/transit-dependent populations

Based on this research and analysis, staff has identified 24 opportune stations for inclusion in the station area analysis outlined under task 4 in the attached work plan.

### *Rail Capacity*

Staff shifted the order of tasks 1 and 2 as proposed in the grant application and work plan for two reasons: 1) the primary emphasis of the study is on capitalizing on available rail capacity and 2) the

original budget underestimated the staff time/cost associated with a comprehensive employment and demographic analysis of 120 rail station areas. Task 2 was completed with data received from the Washington Metropolitan Area Transit Authority (WMATA), MARC, and VRE.

Staff from WMATA provided insight on the capacity issues within the Metrorail system. WMATA staff suggested removing all core stations from further consideration based on constrained line capacity through the core, and suggested using volume/capacity (v/c) ratios for determining station capacity throughout the system. The v/c ratio measures the vertical capacity within the stations, including movements on escalators, elevators, and faregates. The v/c ratio can be used to approximate congested conditions within a station. WMATA staff strongly encouraged removing all stations with a v/c ratio greater than 0.40, and suggested removing stations with a v/c over 0.30. TPB staff removed from consideration stations with a v/c ratio greater than 0.30 (with the exception of end-line stations).

On the MARC lines, stations without a reverse commute (all stations on the Brunswick line) were removed from further consideration. Since there is no established reverse commute service on VRE, all stations with less than 8,000 annual AM inbound alighting passengers were removed from further consideration. At the completion of task 2, 74 stations were identified for further analysis.

### *Employment/Demographics*

COG/TPB staff identified data sets and attributes for the employment and demographic analysis of the 74 station areas identified in task 2 and selected transportation analysis zones (TAZ) for each of the station areas. Staff used roughly a ½-mile radius for stations inside the beltway and a 1-mile radius for stations outside the Beltway. Data sets included COG's Cooperative Land-Use Forecasts (Round 8.2), the WMATA 2012 Rail Passenger Survey, the US Census (2010), and COG's subsidized housing database. Staff identified five stations to test the viability of data sets and attributes. Staff then compiled and analyzed the data for all 74 station areas.

- Employment attributes: current employment (2010), employment growth (through 2020), percent employment growth, percent riders by 2012 employment, and primary mode of access
- Attributes included in the low-income/transit-dependent index: 70% AMI, 33% AMI, subsidized housing units, car ownership, non-white population, and walk score

The stations identified for inclusion in the opportune station list are those that demonstrate regionally and/or locally significant measures on one or more of the attributes above. About one third of the stations ranked highly on both employment and transit dependency attributes. Because access to employment is a large component of this study, about half of the stations were included purely on employment factors. In order to address access to jobs for transit-dependent populations, staff included several stations that ranked high on the low-income/transit-dependent index, but do not have employment characteristics.

### *Jurisdiction Consultation*

The work plan had originally proposed conducting a stakeholder workshop to share the list of opportune station areas and brief jurisdictions and agencies on the results of tasks 1 and 2. Instead, TPB staff conducted sessions with staff in individual jurisdictions where opportune stations were proposed for inclusion in further analysis. The purpose of these meetings was to discuss the process used to identify the opportune stations, and gather feedback and qualitative information about the opportune stations in that jurisdiction.

## **Next Steps**

MWCOG/TPB has procured consultant services to conduct tasks 4 and 5. Toole Design Group was selected to perform this work. Task 4 includes reviewing existing local and regional plans and studies for the opportune station areas to understand gaps in infrastructure around these stations. Task 4 also includes compiling previously identified projects that address these gaps. The consultant will perform light fieldwork to confirm gaps still exist and identify any potential issues that were not previously addressed in studies. Under task 5, the consultant will develop a regional inventory of projects that can have the greatest impact on regional access to employment and mobility for transit-dependent populations, providing access to and from stations operating with available rail capacity.

TPB staff and staff from Toole Design Group will be contacting jurisdictions and agencies to gather information about station area plans, local plans, and other relevant planning documents. This work will be conducted through March and April. Fieldwork will take place in May and June. It is anticipated that the draft inventory of projects will be ready for review by September. Following consultation and briefings with jurisdictions and committee, it is anticipated that the work on this study will be completed by December.

## *Attachments*

The materials attached to this memorandum include:

- A summary of stations proposed for inclusion in project-level analysis
- Work plan for the project

# TCSP Opportune Station Map



TPB TCSP Grant - High-Impact Complete Streets Access Improvements for Rail Station Areas in the Washington Region

**Regional rail stations proposed for inclusion in opportune station list for for station-area analysis**

	Station	Jurisdiction	Service	Line	Existing Employment	Employment Growth	Low-Income/ Transit-Dependent Population Index
1	Anacostia	District of Columbia	Metro	Green	Low	High	High
2	Branch Ave	Prince George's County	Metro	Green	Low	Moderate	Moderate
3	Capitol Heights	District of Columbia	Metro	Blue	Low	Low	High
4	Congress Heights	District of Columbia	Metro	Green	Low	High	High
5	Dunn Loring-Merrifield	Fairfax County	Metro	Orange	Moderate	Moderate	Low
6	Eisenhower Avenue	City of Alexandria	Metro	Yellow	Moderate	High	Low
7	Franconia-Springfield	Fairfax County	Metro/VRE	Blue	Moderate	High	Low
8	Friendship Heights	District of Columbia	Metro	Red	Moderate	Low	Low
9	King Street	City of Alexandria	Metro/VRE	Blue/Yellow	High	Moderate	Low
10	Largo Town Center	Prince George's County	Metro	Blue	Moderate	Low	Moderate
11	McLean	Fairfax County	Metro	Silver	Moderate	High	Low
12	Minnesota Ave	District of Columbia	Metro	Orange	Low	High	High
13	Mt. Vernon Square 7th St-Conver	District of Columbia	Metro	Green/Yellow	Very High	High	High
14	New Carrollton	Prince George's County	Metro/MARC	Orange	Moderate	High	Low
15	Pentagon City	Arlington County	Metro	Blue/Yellow	Very High	High	Low
16	Prince George's Plaza	Prince George's County	Metro	Green	Moderate	Moderate	Low
17	Rhode Island Ave	District of Columbia	Metro	Red	Moderate	Low	High
18	Silver Spring	Montgomery County	Metro/MARC	Red	Very High	Low	Moderate
19	Twinbrook	Montgomery County	Metro	Red	High	Moderate	Low-Mod
20	Virginia Square	Arlington County	Metro	Orange	Very High	High	Low-Mod
21	Waterfront SEU	District of Columbia	Metro	Green	Moderate	Moderate	High
22	West Hyattsville	Prince George's County	Metro	Green	Low	Low	High
23	Wheaton	Montgomery County	Metro	Red	Moderate	Low	Low-Mod
24	White Flint	Montgomery County	Metro	Red	High	Low	Low
25	Woodbridge	Prince William County	VRE		Low	High	Low

District of Columbia	8
Prince George's County	5
Montgomery County	4
Fairfax County	3
Arlington County	2
City of Alexandria	2
Prince William County	1
<b>TOTAL</b>	<b>25</b>

## **WORK PLAN**

### **High-Impact Complete Streets Access Improvements for Rail Station Areas in the Washington Region**

National Capital Region Transportation Planning Board  
Funded by the Federal Highway Administration (FHWA)  
Transportation, Community, and System Preservation (TCSP) Grant Program

April 25, 2013

#### **Overview**

The TPB received TCSP funding to identify strategic recommendations for bicycle and pedestrian access improvements using a complete streets approach that will complement housing and employment development close to rail stations with underutilized ridership capacity. The Washington region has over 100 rail stations with varying levels of development, including inner core stations surrounded by high density mixed use development, suburban commuter rail stations with nearby housing, and underutilized station areas with significant potential for both housing and employment development. The project will seek to moderate demand pressures on the transportation system by identifying improvements around stations that will encourage rail ridership in reverse-commute directions on trains that are currently operating with plenty of available capacity, or by selling the same seat twice in peak commute directions (where one group of commuters alights at a mixed-use suburban location and another group boards). The final product of the TCSP project will be an inventory of up to 25 rail stations with high promise for housing and employment development, and an accompanying list of high-impact transportation capital projects to improve complete streets access to these stations that could be quickly implemented.

#### **Project Narrative**

The 126 rail station areas in the National Capital Region are critical regional assets. The TPB's scenario planning over the last decade has emphasized the value of promoting development closer to transit station areas, locating jobs and housing closer together, and improving multimodal transportation options. The TPB has also found that local, small-scale, actions are often necessary to make these principles truly come to life. The TPB's Transportation/Land-Use Connections (TLC) Program was established in 2006 to help jurisdictions plan small improvements – such as pedestrian facilities, safety and access improvements, or multimodal concepts for intersections or streets – to make activity centers function more effectively as vibrant, mixed-use places. Many of the planning efforts completed under the TLC Program have suggested capital improvements that would further the ability of all modes to support dense areas with both jobs and housing. However, the TLC Program has not had the resources to conduct a comprehensive study of all of the region's rail station areas to identify opportunities

for access improvements that could support additional development and best utilize the regional rail system.

The TPB received \$160,000 in TCSP funding (matched by \$40,000 in COG funds) to develop a list of small-scale, multimodal transportation projects, such as pedestrian/bicycle or other complete streets improvements, around rail stations with underutilized transit capacity. This inventory of improvements will provide local planners, local and state departments of transportation, and developers with a “go-to” list of small-scale, low-cost, high-impact transportation improvements that jurisdictions may reference when working with developers, preparing grant applications, or allocating local funding with the ultimate goal of increasing rail connectivity within the Washington region.

The TCSP project will build on previous planning efforts, particularly the “Metrorail Bicycle and Pedestrian Access Improvements Study,” which the Washington Metropolitan Area Transit Authority (WMATA) recently conducted. The study identified strategies to enhance pedestrian and bicycle access and connectivity in and around Metrorail stations. It also provides recommendations for a range of physical infrastructure improvements, as well as policies and programs to encourage multimodal trips.

The prioritized regional inventory developed through this project will promote the use of existing infrastructure to support and encourage a more balanced allocation of job and household growth that will benefit the entire region in numerous other ways – for example, by promoting robust economic development in all jurisdictions, inner and outer, east and west. The project will also emphasize the need to provide access for people of all income levels. The findings in a recent Brookings study “Missed Opportunity: Transit and Jobs in Metropolitan America,” which measured the effectiveness of transit in helping workers reach jobs within their regions, demonstrates that it is not sufficient to have significant regional transit coverage. In order for the transit system to be effective, the transit network must provide connections to jobs for a population with varying levels of job skills.

The project will serve a variety of regional goals that are grounded in the *TPB Vision*, the region’s transportation policy framework, and recently reaffirmed in MWCOG’s *Region Forward* comprehensive policy plan. These goals include reducing auto dependency, supporting multi-modal travel options, and promoting the development of employment centers and housing in locations already served by transit. In particular, the project will seek to relieve demand pressures on the transportation system by focusing capital recommendations around stations with additional ridership potential, encouraging rail ridership in reverse-commute directions on trains that are currently operating with plenty of available capacity, or by selling the same seat twice in peak commute directions.

## Tasks

### **Task 1: Employment and household analysis for rail station areas**

COG/TPB staff will conduct employment and household analyses for all rail station areas in the Washington region. Staff will select metrics that provide information on current and projected employment data, project development potential, and current household demographics. The analysis zone is a ¾ mile radius around station areas. Data will be collected on current conditions (or the most recent year for which data is available) and for ten years into the future. Data sets include the Cooperative Forecast, COG's Strategic Investment Plan, the Metro Rider Survey, the Household Travel Survey, and the US Census. The data will provide a breakdown of the varying skill levels of jobs within ¾ mile of each station and household income. The purpose of this particular analysis is to create linkages between employment of varying skill levels and those reliant on transit to reach employment sites. The outcome of this task will be to create a list of all stations that can be sorted on multiple attributes: household demographics, employment attributes, and land use potential.

Task 1 Deliverable:

- A list of all 126 regional rail stations that can be sorted by demographic metric.

### **Task 2: Identify rail capacity**

TPB staff will work with WMATA to identify existing and projected rail capacity in the Metrorail system. Staff will also coordinate with MARC and VRE staff to identify capacity on commuter rail. Staff will examine current ridership information at stations to identify stations that are currently drawing ridership that is lower than anticipated. Staff will review capacity information on the rail system and identify rail segments that are operating with excess capacity.

Task 2 Deliverable:

- A list of all stations that can be sorted by station capacity and proximal rail segment capacity.

### **Task 3: Identify up to 25 most opportune station areas**

COG/TPB staff will merge the deliverables from Tasks 1 and 2, and analyze the data to determine a short list of station areas that show opportunities to enhance or create connections between low income households and employment sites, as well as demonstrate the potential for capitalizing on excess rail capacity in the reverse commute direction. Staff will refine the list of station areas and identify up to 25 locations that would most benefit from complete streets improvements.

*Subtask 3.1: Meet with jurisdiction and agency stakeholders.* TPB staff will convene jurisdiction and agency stakeholders and present for discussion a list of 25 rail station areas that meet the criteria above. TPB staff will discuss the relative importance of various



metrics (Task 1), capacity levels on various rail lines (Task 2), and how the metrics and capacity interplay to yield information about station areas. The goal of the meeting will be for TPB staff to learn from stakeholders about factors not identified in the data.

Task 3 Deliverables:

- Summary and other documentation from stakeholder meeting.
- A list of up to 25 rail stations selected from the empirical data collected in Tasks 1 and 2. The list will take into account regional parity (DC-MD-VA), station area diversity (core, suburban, commuter), and station area characteristics (developed, not developed, redevelopment potential).

**Task 4: Identify high-impact complete streets access improvements**

COG/TPB will procure the services of a consultant to conduct Task 4, with guidance from TPB staff. The consultant will conduct a detailed analysis of challenges and barriers to access for each of the 25 station areas identified in Task 3. The result of this analysis will be a list of improvements that would greatly enhance access to the station areas.

*Subtask 4.1: Procure consultant assistance to identify and catalog access improvements.* Through a competitive process, the TPB will procure consultant assistance to conduct this task.

*Subtask 4.2: Review existing plans and studies.* The consultant will review local, regional, and state plans and studies to develop a list of access improvements already identified at these levels. Included in this list is the WMATA “Metrorail Bicycle and Pedestrian Access Improvement Study”.

*Subtask 4.3: Conduct field work.* The consultant will identify gaps in pedestrian and bicycle access to and from station areas for those stations have not recently been analyzed through other studies.

*Subtask 4.4: Create a list of barriers to access for each of the station areas.* This list will demonstrate the types and prevalence of barriers to access across the rail system.

*Subtask 4.5: Create a list of access improvements that address access challenges.* The consultant will create a sortable list of projects that address barriers to access at each of the 25 station areas. Project information should include, at the least: size (length), estimated cost, type (sidewalk, trail, apron), ADA, location.

Task 4 Deliverables:

- A list of barriers to access for the subset of station areas developed in Task 3.
- A comprehensive list of access improvements to the subset of station areas developed in Task 3.

## Task 5: Develop a regional inventory of projects

TPB staff will work with the consultant to prioritize the list of projects identified in Task 4 by the ability of the project to enhance access to station areas, as well as how access to certain stations will enhance mobility throughout the rail system. Staff and the consultant will merge station demographic information from Task 3 with the list of projects identified in Task 4 to determine which projects can have the greatest impact on mobility for selected demographics, regional access to employment sites (current and future), and provide access to stations and rail lines with excess capacity, such as those operating on the reverse commute. Ideally, this list will highlight projects that are critical to provide access to stations with excess rail capacity and enhance connections of vulnerable populations to employment.

*Subtask 5.1: Develop a regional inventory of prioritized projects.* TPB staff and the consultant will develop an empirically sorted list of projects that considers demographic and rail capacity data to highlight any critical projects that enhance regional mobility for vulnerable populations and/or complement excess rail capacity.

*Subtask 5.2: Meet with stakeholders.* TPB staff and the consultant will present the list of projects developed in Subtask 5.1 and solicit feedback on the projects and ranking.

### Task 5 Deliverables:

- Summary and other documentation from stakeholder meeting.
- A list of access improvements ranked by ability to serve vulnerable populations, enhance mobility to employment opportunities, and moderate demand pressure on the rail system, as well as on cost-effectiveness.

## Budget

Task 1: Identify opportune station areas	\$20,000
Task 2: Identify rail capacity	\$20,000
Task 3: Identify up to 25 most opportune station areas	\$30,000
Task 4: Identify high-impact complete streets access improvements	\$90,000
Task 5: Develop a regional inventory of projects	\$40,000
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Total	\$200,000