



## MEMORANDUM

**TO:** Bi-State Coordination Committee  
**FROM:** Bob Hart, Project Manager  
**DATE:** March 17, 2015  
**SUBJECT:** I-205 Access and Operations Study Recommendations

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### INTRODUCTION

The I-205 Corridor Study analyzed both short (2022) and long term (2035) performance in the corridor and began with the 2011 RTP which contained \$540m in capital projects in the I-205 corridor. The first phase of the study was initiated with the recognition that, although there was high growth forecast for the corridor, there was also more limited funding available for capital projects and led to the need to identify a set of optimal or most critical set of highway capital projects in the corridor.

Phase one culminated in a smaller set of core capital projects to address mobility in the corridor. The capital cost for the core projects was \$138m, reduced from the full \$540m list contained in the 2011 RTP. The I-205 core project list, adopted by the Board in November 2012 was followed by phase two, known as the Access and Operations Study.

It investigated approaches to improve the performance and efficiency of the I-205 corridor more cost effectively and used the Moving Washington principles established by Washington State Department of Transportation (WSDOT) to: operate efficiently, manage demand, and adding capacity strategically to address bottlenecks and system gaps. It also refined the 2035 core project list and confirmed their inclusion into the 2014 RTP update.

### ACCESS AND OPERATIONS STUDY RECOMMENDATIONS

The Access and Operations Study recommendations were adopted by the RTC Board November 2014 and have three primary components. The roadway recommendations are comprised of the 2035 core projects which were incorporated into the 2014 RTP update and a set of 2022 short term operational projects to be implemented by WSDOT. The operational policies describe how to consider operational improvements in freeway corridors. The transit improvement recommendations call for a feasibility study of the technical, policy engineering opportunities and constraints of bus on shoulder operations in the I-205 corridor. A summary of the study recommendations are listed below.

#### Roadway Improvements

- Add 2035 Core Projects into the 2014 RTP as capacity improvements for I-205
- WSDOT lead to implement short term operational improvements

### Operational Policies

- Policies for regional freeways
- Analysis factors for considering strategies
- Implementation policies for ramp metering

### Transit Operations

- Bus on Shoulder assessment found time savings, reliability, and improved commuter ridership potential
- Recommend feasibility study in 2015 to address viability, engineering, costs, and constraints

### **Roadway Improvements**

2035 Core projects: The phase one core projects were reviewed in preparation of the 2014 RTP and with minor refinements, confirmed for inclusion into the plan update and are made up of the following projects:

- I-205 Widening (SR-500 to Padden)
- SR-14 Widening (I-205 to 164<sup>th</sup> Avenue)
- I-205 auxiliary lanes between Mill Plain Boulevard and SR-500
- Padden Interchange improvements with 72<sup>nd</sup> Avenue slip ramp
- I-205 Park and Ride at 18<sup>th</sup> Street

2022 Operational Strategies: The 2022 analysis examined how the addition of low cost operational improvements can manage or improve vehicle flow on I-205. RTC worked closely with WSDOT staff and other local agencies to analyze a wide range of operational strategies and assumed that the Mill Plain to 18<sup>th</sup> Street project is in place with no other improvements in the corridor.

The following operational improvements have a benefit to travel performance in the corridor and are recommended for further analysis and development.

- Ramp meter from Mill Plain Boulevard to I-205 northbound
- Ramp meter from eastbound Padden Parkway to I-205 southbound
- I-205 mainline modification to two lanes under SR-500 to provide an add lane at SR-500 southbound on ramp
- Ramp meter from 18<sup>th</sup> Street to I-205 southbound
- Ramp meter from Mill Plain Boulevard to I-205 southbound

### **Operational Policies for Freeways**

The operational policies described below provide guidance for how to consider low cost improvements for operating freeways more efficiently and optimizing traffic flow. Provide for the management of limited access freeway corridors through the development of operational strategies that address recurring congestion, traffic bottlenecks, and incident management.

- Consider operational strategies in limited access freeway corridors where congestion levels are high and where there is potential for improved corridor flow and efficiency and expanded person throughput.

- Implementation of operational strategies should include incident management, intelligent transportation systems, ramp metering, expanded transit services, and other traffic management tools.
- Design considerations which complement operational strategies and which promote efficiency (such as ramp bypass) should also be considered to enhance person throughput and freight efficiency.

### **Transit Operations**

As part of the I-205 Corridor Study, RTC consulted with C-TRAN and WSDOT staff to conduct a screening assessment of bus on shoulder (BOS) operations in the I-205 corridor.

C-TRAN's 20-year plan calls for up to 25 buses during the peak period on the Glenn Jackson Bridge by 2035. In addition, the Clark County HCT System Plan recommendations in the I-205 corridor included all day and more frequent service along the corridor, freeway flyer stops, and bus on shoulder that would operate during times of heavy congestion.

The screening assessment focused only on one component of the HCT recommendation; whether conditions in the corridor would warrant further investigation on the viability and feasibility of BOS operations on I-205. The assessment looked at several factors based on criteria identified by the Transit Cooperative Research Program (TCRP Report 151: A Guide for Implementing Bus on Shoulder Systems). The criteria for the screening assessment are listed below:

- Are there at least 4 buses per hour?
- Is mainline speed less than 35 mph?
- Are entrance and exit ramps less than 1,000 vph?
- Will inside/outside shoulder support buses?
- Is inside/outside shoulder at least 10 feet (12 feet desired)?

The screening assessment for bus on shoulder operation in the I-205 corridor found that it offers the opportunity for: improved transit reliability, travel time savings, and expanded commuter ridership and should be studied further to determine its viability. A feasibility study is recommended that would:

- Conduct detailed travel time studies of the I-205 mainline between Mill Plain Boulevard and I-84 to determine freeway speeds by segment, time of day, and duration.
- Evaluate operational issues associated with outside bus on shoulder including the impacts of high freeway ramp volumes on feasibility and possible ramp or shoulder modifications.
- Evaluation should include inside shoulder feasibility and issues associated the ability to maneuver transit vehicles to and from the inside median to enter and exit at freeway ramps.
- Conduct an engineering analysis of physical improvements and shoulder reconstruction required for either outside or inside lane BOS operations and order of magnitude cost estimate for both options.

## **NEXT STEPS**

- Consult with WSDOT on the operational strategy recommendations and develop an approach for implementation.
- Discuss findings of the I-205 bus on shoulder assessment with WSDOT, C-TRAN and Oregon partners to gauge the interest in pursuing a feasibility study and a possible study proposal.