



MEMORANDUM

TO: Southwest Washington Regional Transportation Council Board of Directors
FROM: Dean Lookingbill, Transportation Director
DATE: January 29, 2013
SUBJECT: **I-205 Access and Operational Study: Need/Purpose Statement and Scope of Work**

AT A GLANCE – DISCUSSION

The purpose of this memorandum is to provide the RTC Board with an overview of the I-205 Access and Operational Study and to receive feedback and comment from the Board on the Purpose and Need statement as well as the overall study approach.

BACKGROUND

The I-205 Corridor Study recommendations, adopted by the RTC Board on November 6, 2012, identified a core set of capacity projects that address mainline corridor improvements to address future growth with limited transportation revenue. The core capital projects (see attached map) are considered the top tier capital improvements for funding in the I-205 corridor.

The study recommendations included moving forward with an I-205 Access and Operations Study for a detailed examination of low-cost operational strategies that included traffic operations, transit, and transportation demand management. The goal is to maximize the efficiency and performance of the I-205 corridor without building new mainline capacity beyond currently funded projects and the core capital projects illustrated on the attached map. The Study will look at short-term traffic operations needs, further refine any operational needs associated with the 2035 core projects, and examine long-term operational strategies that could possibly replace certain 2035+ capacity expansion needs identified in the Metropolitan Transportation Plan beyond the list of core projects.

RTC staff in partnership with the Regional Transportation Advisory Committee (RTAC) has completed a draft purpose and need and scope of work for the I-205 Access and Operations Study. The draft scope of work is attached and will be presented the February RTC Board meeting for review and discussion.

STUDY NEED AND PURPOSE

The need and purpose of the I-205 Access and Operations Study provides the starting point and foundation for the overall study process and its evaluation of short and long term improvements. The need and purpose are described below.

Need

Current traffic volumes on I-205 exceed the carrying capacity of the corridor. These deficiencies result in mobility/safety limitations and congested/unreliable traffic flow. This trend continues and worsens into the future due to the growth planned in east County per the adopted Clark County Growth Management Plan. These deficiencies impact travel reliability for transit and commerce.

In addition, it can be anticipated that today's revenue forecasts will likely reduce the previously planned level of capital investment in the corridor. Without new revenues, agencies will have to dedicate most of their funding to preservation and maintenance. This scenario of limited revenues makes it essential to first deploy operational improvements in the corridor before major capital investments are made.

Purpose

The purpose of the I-205 Access and Operations Study is to develop both short term and long term operational improvement recommendations including transit and TDM that address the future growth in travel demand in the I-205 corridor before building new mainline roadway capacity projects other than the currently funded I-205 projects and the core capital facility projects identified in the recently adopted I-205 Corridor Study.

STUDY OVERVIEW

The I-205 access and operational analysis will further investigate the implications of reducing the level of capital project investment in the corridor as well as how different sets of operational improvements may both address short term problems and limit the need for the longer term capital improvements beyond the set of core projects already identified. The study consists of three elements: short term analysis, core capital projects, and long term analysis.

The study process will be iterative, starting with a near term operations analysis that only includes the new 18th Street interchange. This work element will result in a set of low cost, short term alternative improvements for the I-205 corridor. Second, the study will move to the core capital project recommendations. The operational and access issues of this set of improvements will be addressed to determine feasibility and constructability and evaluate impacts to adjacent arterials. Third, the study will conduct a long term operations analysis that would apply low capital improvements to improve corridor performance by using a wide array of operational and alternative strategies. Study outcomes could include refinements to the core capital projects and a set of short and long term operational and other improvements in the I-205 corridor.

RTC would continue the agency coordination process established during the I-205 Corridor Study. The I-205 Access and Operations Study (AOS) TAC will provide technical support for the analysis approach and results as well as recommendations for the Access and Operations Study. RTAC members and the RTC Board will also receive periodic updates for information and comment as the study progresses.

NEXT STEPS

The I-205 AOS TAC is meeting in February to review and finalize the purpose/need and scope of work. In addition, planning for a transportation management and operations workshop is underway. The purpose of the workshop is to inform the TAC on the range of potential operational strategies, their general effectiveness, and conditions that support them.

Attachments

Attachment 1

I-205 Corridor Study

Recommended Core Projects

 Project Areas

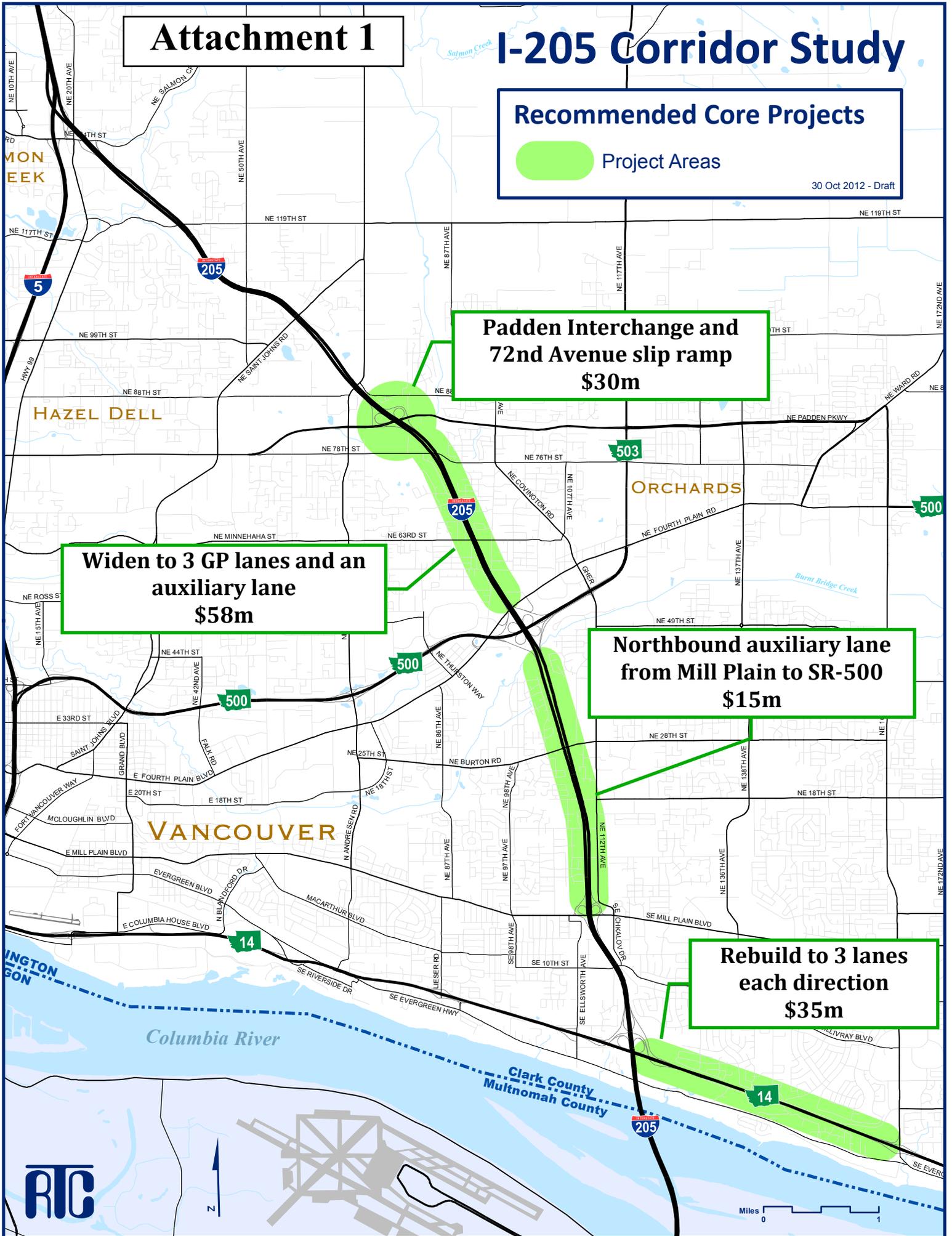
30 Oct 2012 - Draft

**Padden Interchange and
72nd Avenue slip ramp
\$30m**

**Widen to 3 GP lanes and an
auxiliary lane
\$58m**

**Northbound auxiliary lane
from Mill Plain to SR-500
\$15m**

**Rebuild to 3 lanes
each direction
\$35m**



I-205 Access and Operational Study Scope of Work

INTRODUCTION AND HISTORICAL CONTEXT

The I-205 corridor is one of the most important travel corridors in Clark County. It serves as the key East County corridor for intra county and bi-state travel as well as for the connection and access to east-west arterials. Today's travel volumes exceed the roadway's capacity in several mainline segments and at several interchange locations along the corridor. Traffic volumes in the corridor have increased more than 16 percent in the last 10 years.

Since 1990, there have been a series of planning studies for the corridor that have addressed transportation mobility needs in response to growth and future land use in particular for East County as well as for the entire county. The most significant highway and transit studies are summarized below.

Metropolitan Transportation Plan History for East Clark County and the I-205 Corridor

Over the last twenty years, Regional Metropolitan Transportation Plans (MTP) have identified I-205 as an important high growth corridor.

The 1993 Interim Regional Transportation Plan was the first to identify the need for new access in the I-205 corridor. It analyzed current and future transportation conditions and included the assumption of a new interchange at 18th Street and I-205. *Adopted by RTC Board Resolution 09-93-26.*

The 1994 MTP also recognized the need to address I-205 mobility and capacity improvements. The MTP called for more detailed study of transportation improvement needs in the I-205 corridor between the Glenn Jackson Bridge and 83rd Street and included an interchange in the vicinity of 18th Street. *Adopted by RTC Board Resolution 12-94-30.*

The policy regarding the need for I-205 corridor improvements was continued with the 1996 MTP update which also incorporated the recommendations of the I-205 and East/West Arterials Study described in the next section. *Adopted by RTC Board Resolution 12-96-22.*

The last major analysis and planning initiative in the I-205 corridor was completed in 2002 with the publication of the I-205 Access Decision Report (ADR) in 2002. Specific recommendations regarding interchange and ramp modifications, new access in the I-205 corridor, and arterial capacity improvements were included into the 2002 MTP update. *Adopted by RTC Board Resolution 12-02-24.*

All subsequent MTPs since 2002 have included the I-205 recommendations. In addition, two of the I-205 projects from the MTP have been completed or are programmed for construction. The 112th Connector was funded by the Nickel package and was completed in 2010 and 18th Street Interchange project is programmed for construction in 2014 and funded by the Transportation Partnership account. There is no funding currently available for funding additional planned projects in the corridor.

Highway Related Planning Studies

- I-205 and East/West Arterials Study (1996): This was the first study to recommend a split diamond interchange at 18th Street and 28th Street, as well as arterial improvements on 18th and Burton/28th

to relieve SR-500 and Mill Plain interchanges and to support improved traffic circulation in the area. *Endorsed by the RTC Board on August 8, 1996.*

- I-205 Access Decision Report (2002): I-205 Strategic Corridor Pre-Design Study in 2001 conducted operational analysis in the I-205 corridor and detailed the highway capital investment in the corridor needed to address mobility, improve safety, and reduce weaving and led directly to the I-205 Access Decision Report (ADR) which was conducted in order to seek federal approval for a new access point on I-205. The ADR described the transportation problem, analyzed options and solutions. It supported a break in access and recommended a phasing plan and an extensive set of improvements including interchange and ramp modifications, new access in the I-205 corridor, and arterial capacity improvements. The ADR was developed at a time of rapid growth and land use changes in the corridor. *Adopted by RTC Board Resolution 10-01-18.*

Transit Planning Studies

- Clark County High Capacity Transit Study (1991): Study findings concluded that only bus related HCT options should be evaluated in the I-205 corridor.
- South/North I-5/I-205 HCT Pre-AA Study (1994): The study revisited this issue and confirmed the policy decision that bus transit in exclusive lanes was the most appropriate level of HCT investment in the I-205 corridor. *Adopted by RTC Board Resolution 12-94-31.*
- Clark County High Capacity Transit Study (2008): The HCT study did not recommend full bus rapid transit in the I-205 corridor, but did recommend several capital elements to improve transit travel times and reliability including limited stops, new park and ride facilities, and bus on shoulder operation. *Adopted by RTC Board Resolution 12-08-18.*
- C-TRAN 2030 (2010): C-TRAN's 20-year plan, was adopted by the C-TRAN Board in June 2010, is a comprehensive strategy for enhancing public transportation for Clark County residents over the next 20 years. It is designed to respond to growing transportation needs and the need to provide expanded, reliable, and safe service. The 20-year plan incorporates the recommendations of the Clark County HCT Transit Study.

Current I-205 Planning (2010 to Present)

The I-205 Corridor Study began with the Metropolitan Transportation Plan list of highway and transit service improvements that have been previously identified across a series of planning studies and assessed how different sets of improvements addressed today's needs and 2035 travel demand. The study focused on the MTP's adopted list of highway and transit service improvements in the I-205 corridor which are tied to the growth assumptions in the 20-year GMA land use plan and its associated transportation impacts.

The study focused on identifying a set of critical capacity improvement projects in order to both address the high level of growth forecast, as well as the new reality of very limited revenue. The resulting recommendations for core capacity projects address I-205 corridor mainline improvements and identify the most critical set of projects for funding that ensure a reasonable long-term level of operation of the corridor.

The study addressed I-205 mainline mobility needs in the corridor and did not assess operational issues. It called for further operational, transit, and transportation demand management analysis to look at both immediate and future problems areas in the corridor with a focus on freeway operations as well as the associated performance of the freeway ramps and the immediate I-205 arterial feeder system.

The core capital project recommendations were adopted by the RTC Board on November 6, 2012. The recommendations included moving forward with an I-205 Access and Operations Study for a detailed examination of low-cost operational strategies, transit, and transportation demand management to maximize the efficiency and performance of the I-205 corridor.

The purpose/need and tasks for the I-205 Access and Operations Study are described in the following sections of the document.

STUDY NEED AND PURPOSE

Defining the need and purpose of the I-205 Access and Operations Study provides the starting point and foundation for the study's development and its evaluation of short and long term project strategies. The need and purpose along with important policy issues are described below.

Need

Current traffic volumes on I-205 exceed the carrying capacity of the corridor. These capacity deficiencies result in mobility/safety limitations and congested/unreliable traffic flow. This trend continues and worsens into the future due to the growth forecast for east County per the adopted Clark County Growth Management Plan. These deficiencies also impact travel reliability for transit and commerce. In addition, revenue forecasts will likely reduce the previously anticipated level of capital investment in the corridor. Today's economic climate points to very limited future revenue picture. Without new revenues, agencies will have to dedicate most of their funding to preservation and maintenance. This scenario of limited revenues makes it essential to first deploy operational improvements in the corridor before major capital investments are made.

Purpose

The purpose of the I-205 Access and Operations Study is to develop both short term and long term operational improvement recommendations that address rising travel demand in the I-205 corridor before building new mainline roadway capacity projects other than the currently funded I-205 projects and the core capital facility projects identified in the recently adopted I-205 Corridor Study.

Policy Issues

The currently adopted MTP identifies \$540 million in capital improvements for I-205. The newly adopted I-205 core capital project recommendations reduced this to \$138 million in capital improvements. Given the current economic climate, it is questionable if funds will be available over the next 20 years to even reach the core level of project needs. Hence, the overarching policy issue for this study is to identify the range of lower-cost operational improvements that do not add freeway lanes yet address safety needs and provide a reasonable level of travel time reliability and travel mobility in the corridor.

The WSDOT "Moving Washington" principles will provide the guideline for this approach. The Moving Washington principles include the following: 1) operate efficiently by implementing traffic management improvements; 2) manage demand by implementing proven demand management strategies and by implementing additional transit services; 3) only add new capacity to address bottlenecks and traffic hotspots.

The I-205 corridor provides for both intra Clark County access to connecting arterials and for bi-state commuters and commerce that travels across the Columbia River. The study recommendations will need to achieve a balance between addressing intra-county access needs and bi-state mainline needs.

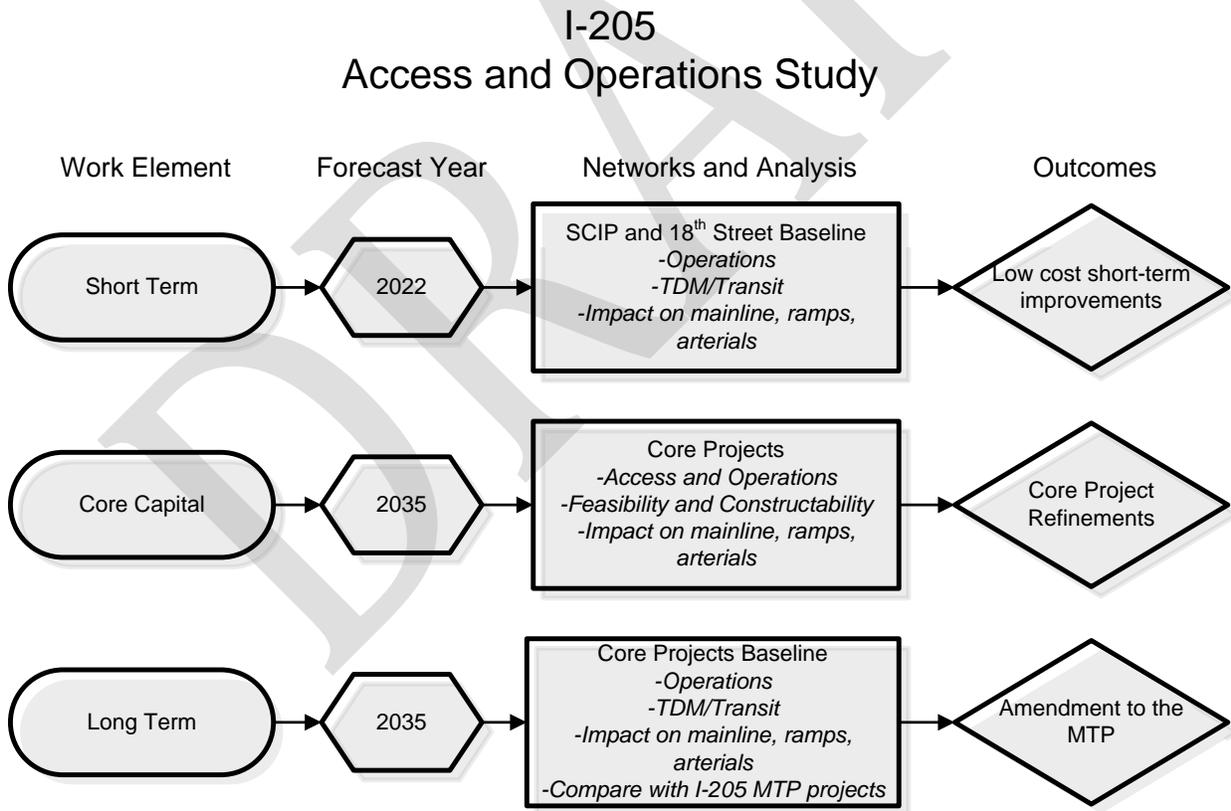
Study recommendations will inform the 2014 update of the region’s MTP while supporting the MTP goals for efficiency, safety, and performance of the region’s multimodal transportation system. The recommendations resulting from the I-205 Access and Operations Study may ultimately result in amendments to the freeway and transit project recommendations in the MTP.

STUDY TASKS

The I-205 access and operational analysis will further examine the implications of reducing the level of capital project investment in the corridor as well as how different sets of operational improvement recommendations may both address short term problems and limit the need for the longer term capital improvements beyond the set of core projects already identified.

The framework consists of three elements: short term analysis, core capital projects, and long term analysis. Each study element has a distinct set of characteristics regarding project assumptions, analysis and outcomes which are summarized in the diagram below. The following section provides a detailed description of the specific issues and outcomes to be addressed for each of the three study elements.

Analysis methodologies, scope and tools are described below in the “Data Collection” section. The “Strategies” section delineates the range of potential strategies, analysis areas and locations.



Short Term

This task will incorporate a 2022 travel forecast and assume that the 18th Street Interchange, programmed for construction in 2014, is in place with no other improvements in the corridor.

In addition, the planned flyover ramp from 134th Street to I-205 south will be analyzed in this phase of the study. One of the justifications for the flyover project was to support the build out of the Washington State University-Vancouver campus. High levels of retail and commercial growth are forecast in the vicinity of the improvement. These together could affect circulation and congestion in the Salmon Creek, 134th, Hwy 99 area. This task will also review the reason and need for the original project through discussion with County staff and with WSU-Vancouver personnel.

A new park and ride facility in the vicinity of I-205 and 18th Street is recommended as a core capital project; however, preliminary analysis for it will occur in the short term analysis task. RTC will coordinate with C-TRAN and the City of Vancouver to determine the prospects for a new transit facility in the area. Detailed analysis will be conducted during the core capital task.

Core Capital

This task will fully examine the core projects using a 2035 travel forecast. It will assess operational and access issues, determine feasibility and constructability, and evaluate impacts to adjacent arterials.

In addition, further evaluation of the core capital projects will include but are not limited to the following:

- I-205 from SR-500 to Padden Parkway improvement will be initially evaluated with an additional travel lane in each direction with the ability for future expansion. Analysis will include trade-offs of this segment at three versus four lanes, overall need, and balancing corridor capacity.
- SR-14 widening from I-205 to 164th will be evaluated for traffic operations issues at the endpoints for access to and from I-205 and 164th Avenue. Impacts to the I-205 mainline will also be assessed.
- Northbound I-205 auxiliary lane from Mill Plan to SR-500. Auxiliary lane concepts will be developed to determine feasibility and refine costs as well as to identify how the auxiliary lane would affect the design and cost of the future construction of the 28th Street Interchange.
- 72nd Avenue slip ramp. The new ramp will be evaluated to identify feasibility, access and roadway impacts, as well as assessing traffic operations on the Padden Parkway interchange, Andresen Road, Padden Parkway, and 72nd Avenue. A range of improvement concepts for a new connection from I-205 off-ramp to 72nd northbound will be developed. Associated issues will be identified and order of magnitude cost estimates developed. RTC and the I-205 TAC will work collaboratively to identify land use and access issues. In addition, future land use and access changes that may be triggered by different improvement concepts will be described, including impacts and issues associated with 88th Street. RTC will coordinate with WSDOT staff and the TAC to investigate FHWA concerns regarding changes to freeway access in the corridor. One issue may be concepts where the ramp modification combines on-ramp and off-ramp functions.
- I-205 and 18th Street Park and Ride. Size and location of new park and ride facility will be based on work completed in the short term operations work task. Analysis will evaluate access and traffic circulation to and from the park and ride facility for commuters and transit vehicles and will also examine impacts on freeway ramps due to additional traffic resulting from the new park and ride facility.

Long Term

This task will incorporate the same types of strategies examined as the short term operations task, but will incorporate the 2035 travel demand forecast. The core projects from the previous task will be the network baseline for the long term analysis. The purpose of the long term operations task is to apply low capital improvements to improve corridor performance by using a wide array of operational and alternative strategies consistent with the Moving Washington principles and the Clark County Traffic System Management and Operations strategies.

The effectiveness of low cost alternate strategies will be compared to performance with the remaining I-205 corridor MTP capital projects in place. The final step of this task is to identify opportunities for strategically adding capacity that can provide performance benefits in the corridor instead of the full I-205 MTP project list.

Agency Roles and Decision Process

RTC will be the project lead for the overall study and the management of work tasks. The I-205 Technical Advisory Committee (TAC) comprised of representatives from the City of Vancouver, Clark County, C-TRAN, and the Washington State Department of Transportation will provide a key role during the Study. The TAC will provide support regarding analysis approach and results, development strategies for an analysis, technical expertise and consistency of study activities with transportation goals and policies of their respective agencies. A process will be established for periodic meetings with transportation agencies in Oregon, consisting of Oregon State Department of Transportation and Metro, to coordinate the Study with relevant activities in the Portland region.

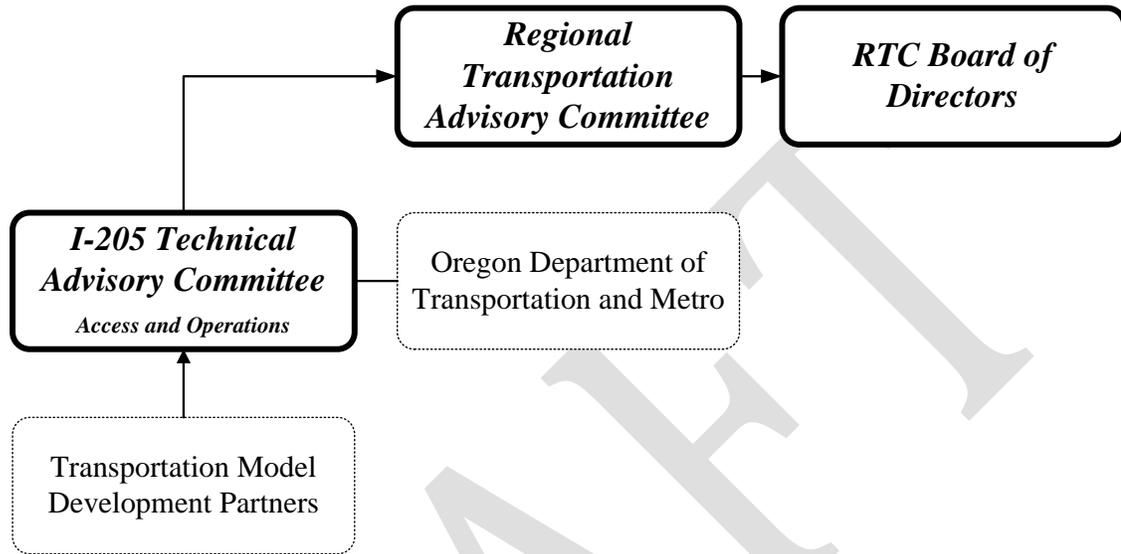
In addition, agency participation and technical assistance will be provided for specific study tasks during the course of the study.

Findings and recommendations of the TAC will be forwarded to the Regional Transportation Advisory Committee for their comment and review prior to consideration by the RTC Board.

Recommendations coming out of the I-205 Access and Operational Study could result in amending the Metropolitan Transportation Plan to modify or delete roadway projects and transit improvements in the adopted MTP and will also include a set of recommended management and operational strategies for the I-205 corridor.

Study recommendations adopted by the RTC Board may also require follow up action regarding plan or policies of partner agencies. Therefore, recommendations will also be forwarded to the individual agencies as needed for their discussion and consideration.

Access and Operations Decision-making Process



Short Term, Core Capital, Long Term: Data Collection, Information Development, and Methodologies

Compile Information on Previous Studies in the I-205 Corridor and Identify Key Conclusions

This task will include identifying studies related to the corridor and summarizing findings and conclusion as they relate to the Access and Operations Study. Possible studies include: the I-205 and East/West Arterials Study; the I-205 Access Decision Report; and the Clark County High Capacity Transit Study, C-TRAN's Transit Development Plan, the WSDOT System Plan, the Regional TSMO Plan and the Growth Management Plan.

Conduct Information Scan and Develop Findings on Operational, TDM and Transit Strategies

Research and (current best practice, etc.) review literature on the full range of potential strategies for consideration during the Study. RTC will also request assistance from other agencies and jurisdictions on their knowledge of research and experience of their respective agencies regarding various strategies. Findings for this task will include identification of characteristics that are conducive to the effectiveness of alternative strategies.

Analysis Tools and Travel Forecasting Needs

Identify appropriate analysis tools needed for the Study and develop methodology for analysis. Tools will include use of the regional travel model and microsimulation analysis. This task will also determine if additional analysis techniques are needed. Possible additional analysis options include the use of Syncho, HCM Software, and other application tools. The outcome of this task will be to identify the best

set of applications for the type of analysis needed for the study. Analysis must also be able to assess in detail:

- Merge/weave and conflicts for traffic entering and exiting the freeway
- Vehicle queuing and delay on the mainline and connecting ramps
- Operational impacts on the adjacent arterial system
- Arterial volumes and turn movements
- Impacts on arterials parallel to the freeway
- Impacts of bus on shoulder operation to the freeway mainline
- The impact of park and ride facilities on local streets and access to I-205
- The impact of new access to or from I-205 on local streets

RTC, in coordination with the partner agencies, will also develop an approach to evaluate Transportation Demand Management strategies such as vanpool and carpooling.

Transportation Model Development and Review Team

RTC will work with the TAC representatives to assemble a transportation modeling team to provide expertise and assistance on the application of the travel model and transportation analysis software. The team will be comprised of representatives RTC, WSDOT, Clark County and the City of Vancouver. The team will collaborate on model development, technical assumptions, review and oversight as well as techniques and procedures for transportation analysis.

Short Term, Core Capital, Long Term: Develop and Evaluate Strategies

Prior to the initiation of this task, RTC will host a workshop made up of TAC and modeling staff. The workshop will have two goals. It will coordinate with agencies to identify and invite knowledgeable staff from outside the region who can provide expertise and share their experience on the feasibility and effectiveness on the range of freeway operations strategies for consideration on I-205. Second, modeling staff will discuss and provide their input on the most effectiveness analysis tools to examine the impacts of the wide range of strategies on the roadway facilities in the study area.

Identify, Screen and Select Strategies for Analysis

RTC will coordinate with TAC member agencies to determine the range of strategies to consider for the Study. The general list of potential strategies is listed below and will be the starting point for developing the menu of strategies. The screening and selection process will result in specific strategies and locations where they should be considered.

Roadway strategies include:

- Ramp metering and/or bus bypass
- Auxiliary lanes additions/extensions
- Static lane assignment
- Advanced informational signage
- Variable lane speeds
- Incident management
- Associated roadway improvements not on the mainline that may benefit I-205 operations

Transit/TDM Strategies include:

- Improved transit operations and reliability
- Bus on shoulder operation
- New transit service

- New park and ride
- Vanpool, carpool, and telecommuting

General Analysis Scope

In addition to the freeway mainline, the scope of analysis will include the I-205 connecting roadways and associated arterials made up of:

- Mill Plain from 104th Avenue to Chkalov Drive
- 18th Street from 103th Avenue to 112th Avenue
- SR-500 from Thurston Way to 112th Avenue
- Padden Parkway from Andresen Road to I-205 and east to SR-503
- Andresen Road/72nd Avenue north to 119th Street and south to 78th Street
- 134th Street from Hwy 99 to NE 23rd Avenue
- Parallel facilities including SR-503 and 112th Avenue