State Route 520 Multimodal Corridor Planning Study
Draft Scope of Work
I-405 to Avondale Road

Introduction:

The scope of work describes the work elements that will be performed by WSDOT Urban Planning Office (UPO) staff.

The purpose of this study is to conduct a multimodal corridor analysis of the SR 520 corridor between I-405 and Avondale Road. This section of SR 520 provides a major regional connection for the cities of Bellevue and Redmond and is a vital economic link to many companies, including Microsoft.

The full SR 520 corridor is approximately 13 miles in length. It begins at the interchange with I-5 in Seattle and proceeds in an easterly direction through the cities of Medina, Hunts Point, Clyde Hill, Kirkland, Bellevue, and Redmond. It also provides connections to Interstate 405. The route's eastern terminus is the SR 202 interchange in Redmond. In accordance with the legislative directive, this multimodal corridor planning study will examine approximately six miles of the SR 520 corridor, from I-405 to Avondale Road, near SR 202. Data and recommendations from a recent effort by the state will be utilized and expanded upon in this study.

The outcome of this study will be a system wide analysis of corridor traffic operations in current and future years. This analysis will be used to develop potential improvement recommendations for the study corridor. Proposed recommendations will adhere to the "Moving Washington" principles of: safety, preservation, maintenance, operate efficiently, and add capacity strategically.

Work Element 1: Project Management
Management and administration of all work element and task activities, development of deliverable products and coordination and support of the STAKEHOLDERS' group.

1.1 Project Schedule
A project schedule will be developed delineating key project milestones and deliverable due-dates. The project schedule will assume completion of a draft SR 520 corridor planning Study (CPS) with preliminary recommendations by mid February 2012 and completion of a final SR 520 CPS by June 2012. The project schedule will highlight important milestone dates for events and activities necessary to complete each project work element including deliverable dates, meetings and necessary input from WSDOT and the participating agencies, (hereby referred to as "stakeholders" (see Work

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Element 2.1) The project schedule shall be reviewed for adoption by the stakeholders. Upon adoption the project schedule shall become Attachment "A" to this Scope of Work.

1.2 Study Vision and Goals

A Vision and Goals Statement for the corridor will be developed by the WSDOT with review and endorsement by the stakeholders. The Vision and Goals Statement will be used to guide the direction of the study process and ensure that deliverables and final recommendations reflect the objectives iterated in *Moving Washington, Transportation 2040,* and the legislation that appropriated the funding for this study.

Work Element 2: Stakeholders and Public Involvement

A STAKEHOLDERS' group shall be formed to assist WSDOT in this study. This work element will also provide for briefings to STAKEHOLDERS' elected officials and/or boards on the results of the study.

2.1 Stakeholders Group

A stakeholders Group will be established as part of the SR 520 multimodal corridor planning study. The stakeholders will consist of representatives from the cities of Bellevue, Kirkland, Redmond, and Sammamish: Group Health, Microsoft, and Wright-Runstad; King County Metro, Puget Sound Regional Council, Sound Transit and WSDOT. The stakeholder's representatives will:

1) Assist and advise WSDOT in review and development of technical data and potential recommendations,
2) Serve as a liaison between their company, jurisdiction, or agency and WSDOT,
3) Help keep the public, their upper management, and elected officials within their respective jurisdictions informed of the study's progress and findings.
4) Participate in all meetings and document reviews

A Charter will be developed by the WSDOT project staff that will establish the operating procedures for the stakeholders group. The charter will be submitted to the stakeholders for their review and approval.

In accordance with the project budget there will be up to four (4) stakeholders meetings during the duration of the study. If the budget allows, more meetings can be called if needed. WSDOT staff will be responsible for arranging the meetings, developing meeting agendas and meeting materials. The stakeholders meetings will be hosted at a location or locations that are mutually agreeable among the stakeholders.

Deliverables

- Charter
- Meeting materials and meeting notes in electronic files and printed copies as required
- A stakeholders contact list, including a master email distribution list, in electronic files

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2.2 Public Involvement and Outreach

Public involvement and outreach will be primarily through the local jurisdictions and the web. The scope of work and budget will allow for WSDOT staff to attend local fairs or public events in which to disseminate information and engage the public about the study.

WSDOT staff will be responsible for developing and maintaining a project website that will be hosted on the WSDOT public website **(NOT SET UP YET)** http://www.wsdot.wa.gov/planning/Studies/SR520Corridor/ The SR 520 CPS project manager will be listed as the contact on the website and there will be opportunities for the public to contact WSDOT with questions and comments regarding the SR 520 CPS. The WSDOT Communications and Graphics section will assist the WSDOT project manager with the development of a project informational sheet that can be used for distribution to interested parties.

2.3 Agency Briefings

The WSDOT project staff will work with the stakeholders to identify briefings for the stakeholder's elected officials or management. The budget allows for up to two briefings per Stakeholder agency. WSDOT staff will work with the respective stakeholder representative to develop necessary materials for presentations to their respective management or elected officials.

Deliverables

- Agency briefings and presentation materials
- Project website
- Project informational sheet

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Work Element 3: Existing Environmental and Operating Conditions Summary

Analyze the current environmental and operational conditions of the corridor. The operational data is to be used for analyzing baseline conditions (Work Element 4.)

3.1 Data Collection

The WSDOT project staff will conduct the necessary research to accumulate data and information on the SR 520 corridor. This research effort will focus on collecting data related to geometric configuration of the corridor (highway cross-sections, number of lanes, interchange geometry, right-of-way information, etc.), safety (accident data, accident history, etc.), land use, environmental data, pavement and bridge conditions; traffic (travel patterns, traffic volumes and operating conditions for peak (AM and PM) periods); and multimodal applications (transit, HOV, freight use, sidewalks, and bike trails). The data collection effort will also assemble information available on existing and/or programmed WSDOT or local improvement projects on SR 520 or adjacent and

connecting major arterials, as well as utilizing recent study materials from the same area. It is anticipated that much of this information will be graphically displayed using GIS or diagrams. The research and data collection effort will also evaluate existing and future programmed and funded METRO and Sound Transit operations and improvements on or adjacent to the SR 520 corridor.

3.2 Environmental Overview & Maps

The SR 520 CPS will include an environmental overview. The purpose of this effort will be to provide an initial attempt to identify to the extent possible the key environmental features along the SR 520 corridor and to potentially identify environmental issues that might affect or result from various SR 520 corridor improvement options. The primary data source for identifying environmentally sensitive areas along the SR 520 will be the WSDOT GIS Environmental Workbench.

3.2.1 - GIS Database

WSDOT staff will utilize a GIS database for the SR 520 corridor study using GIS data layers from the WSDOT GIS Environmental Workbench. The GIS database will be developed to include, as needed, the following categories of environmental information:

- Geologic hazard areas
- Rivers, lakes and streams
- Fish and wildlife habitat conservation areas
- Threatened and endangered species distribution, if any
- Wetlands
- Aquifer recharge areas
- Frequently flooded areas
- Mineral resource areas
- Archaeological sites, historic buildings and historic districts
- Hazardous waste sites
- Public parks, trails and open space
- Prime agricultural land, including land protected by farmland trust agreements
- Noise sensitive locations (i.e., schools, cemeteries, places of worship)
- Existing and future land use
- Planned major private developments
- Planned major infrastructure projects such as power stations, wastewater treatment plants, and so forth
- Potential Environmental Justice Communities where there might be high concentrations of low income and/or minority populations.
- Major pipeline or utility facilities such as natural gas pipelines, electric transmission lines, water supply pipelines and so forth.
- Public institutions and services (Schools, libraries, places of worship, hospitals, fire stations, transit centers, tribal interest lands, etc.)

The GIS map will be developed in such a manner that it will be divided into discrete map segments as appropriate. The GIS mapping effort will extend 1,000 feet in both

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directions from the outside edge of the maximum width of the roadway in order to include potential noise sensitive locations.

If needed, a field reconnaissance of the SR 520 corridor will be conducted to validate the GIS mapping information and to note any major discrepancies.

3.2.2 – Assess Environmental Conditions
The WSDOT project staff for the SR 520 CPS will identify and assess potential environmental issues that could result from the implementation of corridor segment related improvement or from interchange improvement strategies. This assessment will be based upon the GIS mapping data that is produced in Tasks 3.1 and 3.2. The level of detail and accuracy for reporting potential environmental impacts will be commensurate with the preliminary, conceptual-level planning and design analysis to be conducted in the SR 520 CPS.

Deliverables

- GIS database information summary and multi-panel map

3.3 Draft and Final Memorandums
WSDOT project staff will prepare memorandums documenting the findings of the previous tasks for WE 3. The memorandums will be submitted to the stakeholders for review and will be incorporated into the draft and final reports.

Deliverables:

- Existing Environmental and Operating Conditions memorandum

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Work Element 4: Existing and Future Baseline Conditions
Analyze current and future operational conditions with adopted and programmed corridor improvements. This analysis will be reliant upon the operational data collected from Work Element 3. The analysis will be used as a basis to identify deficiencies based on performance measures as established in the state Highway System Plan.

4.1 Analyze and Document Existing Conditions
Utilizing available data gathered in Work Element 3, as well as information gathered from stakeholder's meetings and stakeholder's interviews, WSDOT will analyze existing traffic conditions and determine if operational deficiencies exist during the AM and PM peak periods along the corridor. This analysis will be conducted by roadway segments and at interchange ramp terminals using the methodology in the Highway Capacity Software. WSDOT will develop an Existing Conditions Memorandum documenting the analysis results for the stakeholder's review and input.

Deliverables

- Existing Conditions working paper in electronic files

4.2 Methods and Assumptions

WSDOT identifies the analysis years, the geographic limits of the study, forecasting and modeling methodologies, and traffic analysis methods. This memorandum will be presented to the stakeholders for review and adoption by the stakeholders.

Deliverables

A memorandum, to be reviewed and adopted by the stakeholders, describing the WSDOT approved methods and assumptions that will guide the traffic analysis throughout this study.

4.3 Future Baseline Traffic Forecasts

WSDOT will develop a future baseline traffic forecast using local land use and growth assumptions, reconciled with the PSRC 2040 regional model. Before applying the PSRC 2040 model, WSDOT will work with affected jurisdictions and PSRC modeling staff to:

- Agree on growth rates
- Verify land use and network inputs and assumptions.
- Update land use assumptions and forecasts using local comprehensive plans if deemed necessary.
- Review the base year model results for reasonableness and recalibrate the model to be within a reasonable range of observed traffic conditions on the freeway and connecting main arterials.

Deliverables

- Future baseline traffic forecasts for the year 2040 by freeway segments, on and off ramps, and turning movements at the ramp terminals.

4.4 Analyze and Document Potential Future Baseline Deficiencies

Based on the year 2040 future baseline traffic forecasts developed in Task 4.3 WSDOT, using Highway Capacity Software, will analyze, identify and document potential future corridor deficiencies based on WSDOT policies and relevant mobility and safety performance goals. These needs will relate to the mobility and safety of the following modes:

- General purpose traffic
- Transit
- HOV
- Freight
- Non-motorized

The following are examples of the types of measures that will be analyzed where data is available:

- Traffic volumes for peak (AM and PM) and off-peak periods
- 70% of posted speed

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- Volume-to-capacity (V/C) ratios for freeway operations for peak (AM and PM) and off-peak periods
- Freeway level-of-service (LOS) for peak hours (AM and PM) using HCS
- Merge/weave issues for general purpose and HOV traffic on SR 520 between 124th and 148th Avenues
- Travel times
- Vehicle Miles Travelled (VMT)
- Tolling scenarios (including I-90)

Deliverables

- Documentation in electronic files of identified corridor deficiencies, if any and a summary of the corridor's performance related to mobility.

WORK ELEMENT 5: Analysis of Potential Corridor Improvements

Using identified current and future transportation needs, analyze potential sustainability improvements, as well as the operational and cost effectiveness of the proposed improvements and investments.

5.1 Identify and Assess Potential Corridor Improvements

If deficiencies are identified in Task 4.4, WSDOT will develop potential corridor improvements, and assess their effectiveness in addressing identified deficiencies.

The results of this activity will be presented in a matrix format identifying which deficiency is being addressed by each improvement, any other considerations or issues associated with implementing the potential improvement, and a qualitative assessment of the effectiveness of the potential improvement.

This study will not include engineering design. The traffic analysis will consist of an operational analysis of mainline only from I-405 to Avondale Rd. Vehicle miles travelled and green house gasses will also be evaluated and considered in the identification and assessment of potential corridor improvements.

In addition to the six investment guidelines referred to in the opening paragraph of Work Element 4, *sustainability* principles should also be considered in the development of potential improvement recommendations. The *sustainability* principles bolster the policies of "Moving Washington" and have been put forth via Governor Executive Orders 05-01, 04-01 and -02-03; which directed the WSDOT to incorporate sustainable business practices.

The sustainable approach is to keep our assets (roads) in good shape (preservation and maintenance,) keep our assets safe (safety,) and then add capacity only when necessary. Additionally, potential corridor improvements should also be supportive of economic growth, environmental health, and quality of life.

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Deliverables

- Technical memo with a matrix table showing corridor performance issues and potential improvements.

Work Element 6: Alternatives Analysis

Develop planning level cost estimates to be used in performance measurement, cost/benefit analyses, and possible sequencing for identified potential improvements.

6.1 Planning Level Cost Estimates

The WSDOT project team will prepare a planning level cost estimate for each identified improvement strategy.

Deliverables

- Planning level cost estimates for identified improvements

6.2 Performance Measures and Benefit Cost Analysis

The WSDOT will prepare background data from the travel demand forecasting and traffic analysis work elements that will be needed to develop and apply a simplified approach for evaluating the cost-effectiveness of the screened improvement strategies from Work Element 5. The WSDOT project team will perform the cost-effectiveness analysis and prepare a short summary memorandum that highlights the analysis methodology (approach) and key results and findings.

Assumption

- The analysis methodology will be developed by the WSDOT project team with coordination and input from the stakeholders.

Deliverables

- Summary of background input data items collected and used to conduct the cost effectiveness analysis (one electronic file copy).
- Technical memorandum summarizing the results of the cost-effectiveness analysis (one electronic file copy).

6.3 Improvement Recommendations and Phasing

6.3.1 Ranking Criteria and Documentation

The WSDOT project team will compile the improvement strategies identified in Work Element 5 and Task 6.2 by highway corridor segment and refine them by assessing possible multimodal and non-motorized improvements.

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6.3.2 Improvement Recommendations

Using the criteria developed in Task 6.3.1 and working with the appropriate internal WSDOT partners, WSDOT will develop a list of multimodal improvement recommendations for stakeholder's review and input. WSDOT will analyze the recommendations in the context of statewide needs and funding constraints, and then, with the statewide needs in mind, use analysis results and professional judgment to sequence the recommendations into six year, twelve year, and twenty year timeframes that correspondingly address low, medium, and high cost options.

Deliverables

- List of low, medium and high screened improvement options to address performance issues (one electronic file copy)
- Map or appropriate graphic showing recommended improvements
- List of scoring criteria methodology (one electronic file copy)
- Technical memorandum describing strategies and screening (one electronic file copy).

WORK ELEMENT 7: Draft and Final Reports

Prepare a final document covering all previous work.

7.1 Develop Draft Report

The WSDOT project team will develop draft and final reports that will document the key findings for the SR 520 CPS. The technical memoranda and various summaries that are deliverables in individual study tasks will be key inputs into the draft and final reports. An outline of the draft and final reports will be generated and routed to the stakeholders and stakeholders for review and comment.

Deliverables

- Draft Report Outline (one electronic file copy).
- Draft-Final Report for Study Team and WSDOT internal review (one electronic file copy)

7.2 Review Period – Revise Draft Report

There will be a review period for the draft report to allow review and input of the initial draft report by the stakeholders. The WSDOT project team will revise the draft report based upon review comments and input provided by the stakeholders.

Assumptions

- The review period for the draft report will be three weeks.

7.3 Second Draft Report – Review and Revise

There will be a second draft report developed and released by the WSDOT project team based upon input comments and review provided the stakeholders in Task 7.2. This revised draft report will then be sent out to the stakeholders for a second review.

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Assumptions

- The review period for the second draft report will be two weeks.

Deliverable

- Second Draft Report for stakeholders / WSDOT Review (one electronic file copy).

7.4 Finalize Report

A final report will be developed and issued by the WSDOT project team. The final report will reflect and incorporate to the extent possible and appropriate all review comments and input from WSDOT and the stakeholders. There will be a “camera-ready” electronic copy made available for the final report along with a specific number of printed copies of the final report. There will also be CD electronic versions of the final report made available for WSDOT and the stakeholders. Exact quantities of the printed and electronic versions of the final report will be determined by the WSDOT project team and the stakeholders.

Deliverables

- Final Report (one “camera-ready” electronic file copy).
- CD of the final report

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