I-405, NE 8th Street to SR 520 Improvement Project

INTERSTATE 405 Corridor Program
Congestion Relief & Bus Rapid Transit Projects

ENVIRONMENTAL ASSESSMENT

May 2008

Washington State Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

I-405, NE 8TH STREET TO SR 520 IMPROVEMENT PROJECT

Bellevue, Washington

Environmental Assessment

Submitted pursuant to Section 42 U.S.C. 4332 (2)(c) and 23 C.F.R. Part 771

By the U.S. Department of Transportation, Federal Highway Administration, Washington Division, and the Washington State Department of Transportation

5/2/08
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In compliance with the National Environmental Policy Act (NEPA), this environmental assessment (EA) describes the environmental consequences of the I-405, NE 8th Street to SR 520 Improvement Project. The project is part of the overall I-405 Corridor Program designed to improve safety, reduce congestion, and add travel capacity. The project extends approximately 1.5 miles north along I-405 from south of NE 8th Street to the SR 520 interchange, and approximately 1.6 miles east along SR 520, from the I-405 interchange to east of 134th Avenue NE.

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A public hearing on this environmental assessment will be held on May 22nd, 2008, at Bellevue City Hall Room 1E-108, from 4 PM to 7 PM.

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Appendices

Included in this document:

Appendix A: Agency and Tribal Correspondence

Included in this document on CD only:

Appendix B: Air Quality Discipline Report
Appendix C: Cumulative Effects Analysis Technical Memorandum
Appendix D: Economics Discipline Report
Appendix E: Ecosystems Discipline Report
Appendix F: Geology and Soils Technical Memorandum
Appendix G: Hazardous Materials Technical Memorandum
Appendix H: Historic, Cultural, and Archaeological Resources Technical Memorandum

Appendix I: Land Use Patterns, Plans, and Policies Discipline Report

Appendix J: Noise and Vibration Discipline Report

Appendix K: Section 4(f) Resources Discipline Report

Appendix L: Social, Public Services, Utilities, and Environmental Justice Discipline Report

Appendix M: Transportation Discipline Report

Appendix N: Visual Quality Technical Memorandum

Appendix O: Water Resources Discipline Report

ACRONYMS AND ABBREVIATIONS

Acronym or Abbreviation	Meaning
APE	Area of Potential Effects
BMP	best management practice
CFR	Code of Federal Regulations
CO_2	carbon dioxide
CSS	context-sensitive solutions
CWA	Clean Water Act
DAHP	Washington State Department of Archaeology and Historic Preservation
dB	decibels
dBA	decibels in the A-weighted scale to show relative loudness of sound
DOT	U.S. Department of Transportation
EA	environmental assessment
Ecology	Washington State Department of Ecology
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
EPM	*Environmental Procedures Manual* (WSDOT, 2007e)
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FONSI	Finding of No Significant Impact
GHGs	greenhouse gases
GIS	geographic information system
HAL	high accident location
HOV	high-occupancy vehicle
HPA	hydraulic project approval
HRM	WSDOT *Highway Runoff Manual*
Leq	equivalent sound level
LEP	limited English proficiency
LOS	level of service

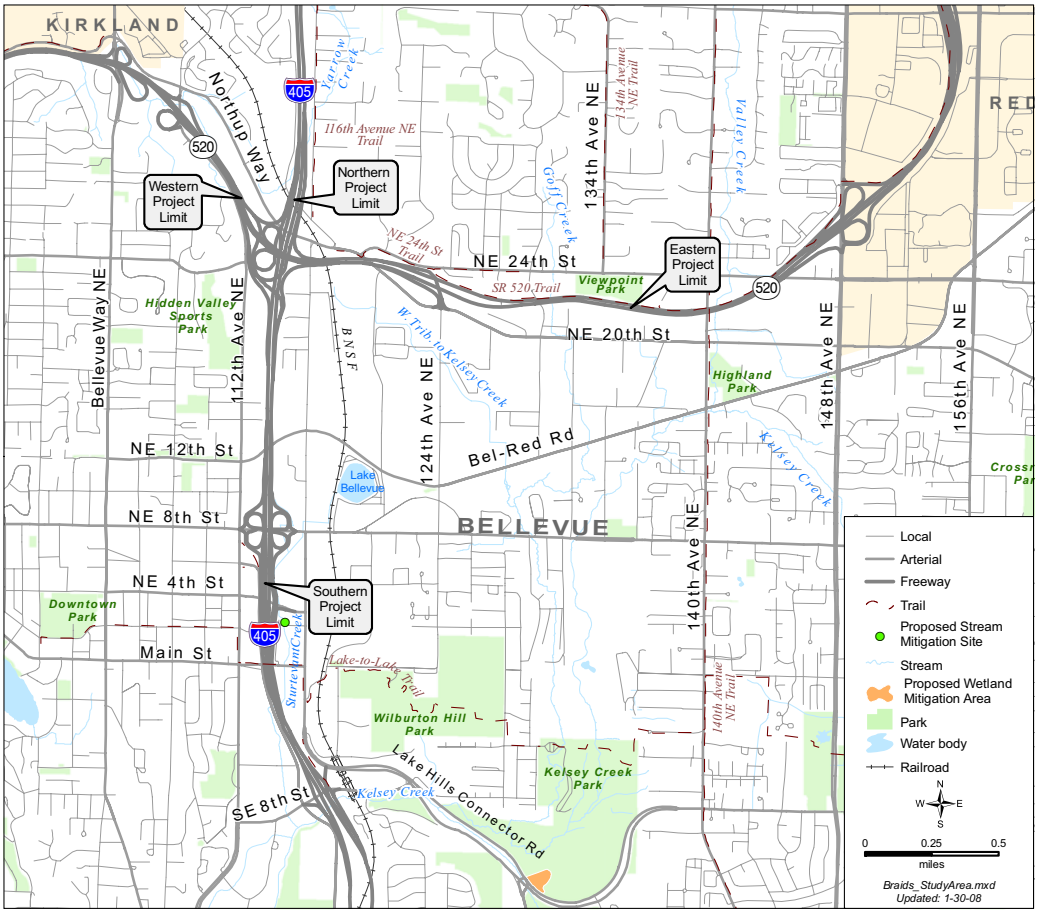
Acronym or Abbreviation	Meaning
LWD	large woody debris
Metro	King County Metro Transit
mph	miles per hour
NAC	noise abatement criteria
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
OHWM	ordinary high water mark
OSHA	Occupational Safety and Health Administration
PSRC	Puget Sound Regional Council
RCI	residential, commercial, and industrial (sectors)
ROD	Record of Decision
SEPA	State Environmental Policy Act
SPCC	spill prevention, control, and countermeasure (plan)
SR	State Route
TDM	transportation demand management
TESC	temporary erosion and sediment control (plan)
TNM	Traffic Noise Model
UDC	Urban Design Criteria
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
VdB	velocity decibels (vibration velocity level)
VMT	vehicle miles traveled
WAC	Washington Administrative Code
WDFW	Washington State Department of Fish and Wildlife
WDNR	Washington State Department of Natural Resources
WRHP	Washington Register of Historic Places
WRIA	Water Resource Inventory Area
WSDOT	Washington State Department of Transportation

CHAPTER 1 EXECUTIVE SUMMARY

Where is the I-405, NE 8th Street to SR 520 Improvement Project located?

The I-405, NE 8th Street to SR 520 Improvement Project is located on the eastern edge of Bellevue's central business district, in the Puget Sound region of Washington State. The project extends north along I-405 for approximately 1.5 miles (milepost 13.6 to milepost 15.1) from south of NE 8th Street to the SR 520 interchange, and east along SR 520 for approximately 1.6 miles (milepost 6.7 to milepost 8.3) from the I-405 interchange to east of 134th Avenue NE (see Exhibit 1-1).

Exhibit 1-1: Project Location and Vicinity



What is the I-405, NE 8th Street to SR 520 Improvement Project?

The project is one of several projects that are now being advanced as part of the phased implementation of Washington State Department of Transportation's (WSDOT's) I-405 Corridor Program. The I-405, NE 8th Street to SR 520 Improvement Project proposes a focused strategy to improve the section of the corridor beginning south of NE 8th Street and continuing north through the SR 520 interchange and then east along SR 520 to east of 134th Avenue NE. The project improvements have been defined through partnership with the City of Bellevue.

Major components of the project include:

- Construct grade-separated ramps (referred to as braids) on northbound I-405 to separate the I-405 traffic exiting to SR 520 from traffic entering I-405 at NE 8th Street in downtown Bellevue;
- Construct a new three-lane eastbound collector-distributor lane on SR 520 to separate the on- and off-ramp traffic between I-405 and 124th Avenue NE;
- Reconstruct the NE 12th Street bridge over I-405;
- Construct an on-ramp from the NE 10th Street bridge (built prior to this project) to SR 520; and
- Reconfigure the ramps from SR 520 to southbound I-405.

Why is WSDOT proposing to build this project?

WSDOT is proposing to construct the project (referred to as the Build Alternative in this environmental assessment) to reduce traffic congestion and improve freeway safety and reliability on I-405 and SR 520 where the two freeways meet. Congestion is prevalent in the study area because of the merging conflicts between the northbound I-405 traffic exiting to SR 520 and traffic entering the freeway from NE 8th Street. For much of the day, the northbound I-405 general-purpose lanes are congested in this area. Merging conflicts also occur on eastbound SR 520 between the traffic entering from I-405 and the traffic exiting to 124th Avenue NE.

These merging conflicts create safety problems. Historical data show that the accident rate on I-405 between NE 4th Street and SR 520 is higher than the average for the entire I-405 corridor. The proposed project would eliminate these merging conflicts.

When will construction begin and how long will it take?

Construction funding for all the proposed improvements described in this environmental assessment is not currently available. Consequently, the project may be constructed in stages. The funded first stage will include the northbound I-405 improvements, including the braided ramps, the NE 12th Street bridge reconstruction, and the northbound NE 10th Street on-ramp. Additionally, one of the three proposed collector-distributor lanes from northbound I-405 to eastbound SR 520 will be constructed. This collector-distributor lane will cross over the existing 124th Avenue NE on-ramp before merging with SR 520. Construction of these funded improvements is scheduled to begin in 2009 and will be completed in approximately 3 years.

The unfunded project improvements include the remaining two lanes of the three-lane collector-distributor system, improvements from southbound I-405 to the eastbound SR 520 collector-distributor, and the improvements from eastbound and westbound SR 520 to southbound I-405. Construction of these remaining improvements depends on when project funding becomes available.

How will the project affect the environment?

Built Environment

Bellevue is the largest city on the Eastside and the fifth largest city in Washington. Downtown Bellevue is a business and cultural center. Throughout much of the downtown area, land uses have been developed, or planned for redevelopment, with high densities of residential, retail, commercial, and office space.

Because the project is located in this highly urbanized area, some businesses and residences will be affected by construction, including property acquisitions, access changes, traffic delays, noise, and dust. Property acquisitions will occur in areas adjacent to I-405 and SR 520, and will result in the

relocation of approximately three households, 61 businesses, and one social service provider. In addition, parking space at some businesses will be reduced and several utilities will have to be relocated.

Areas adjacent to construction activities will also experience temporary access changes and/or construction-related traffic delays, noise, vibration, and dust. Due to their proximity to construction activities, the areas that may be affected most are on the east side of northbound I-405, including a residential neighborhood (referred to as the Dogwood Park neighborhood), Overlake Hospital Medical Center, Group Health Cooperative's Medical Center opening in 2008, and adjacent business complexes. These construction effects are temporary, however, and will end when the project is completed.

After the project is completed, noise levels for some residents are expected to increase by the year 2030. However, our noise model indicates that the noise increase will not be noticeable (at 1 or 2 decibels) for most residents.

Businesses and neighborhoods will benefit from reduced congestion and improved safety on freeways and local arterials in the study area. For businesses, this will improve access for customers and will shorten the commute time for employees within the study area and the city. For neighborhoods, this will improve the livability and cohesion by reducing cut-through traffic on local streets from drivers avoiding the congested freeway, making it a more desirable place to live.

Natural Environment

The conditions of wetlands, streams, and wildlife habitat in the study area are typical of urbanized areas in the Puget Sound region and are generally degraded. They have been highly altered from their natural states to accommodate residential, commercial, and industrial land uses. Most (95 percent) of the land cover within one-half mile of the project is impervious surface and maintained vegetation (mowed and landscaped) which provides little habitat value; 5 percent is forest and shrub.

In general, streams in the study area have been altered over time by bank hardening, straightening in culverts and pipes, and streamside vegetation removal. Within the project limits,

most of the stormwater runoff from I-405 and SR 520 that currently enters the area streams is not treated because treatment was not required when these highways were originally constructed.

Project effects on wetlands, streams, and wildlife habitat are summarized in Exhibit 1-2. Approximately 0.3 acres of one wetland will be permanently affected. It is a Category IV (low-quality) wetland surrounded by urban land uses, including roads and buildings. The project would result in the permanent loss of about 4.40 acres of vegetation, of which 99 percent is maintained vegetation. Where possible, the project design was altered to avoid native vegetation.

Exhibit 1-2: Summary of Ecosystem Effects

Ecosystem Element	Temporary Effects	Permanent Effects
Wetlands (acres)	0.05	0.30
Wetland buffers (acres)	0.07	0.47
Streams below ordinary high water mark (acres)	0	0.04
Stream buffers (acres)	0.05	0.15
Upland Vegetation (acres)	30.2	4.40

One stream, an unnamed tributary to Sturtevant Creek, will be permanently affected to allow for widening the on-ramp from NE 8th Street to northbound I-405. Approximately 200 linear feet of stream channel (totaling 0.04 acres in area) will be placed in a pipe and 0.15 acres of stream buffer will be permanently lost. No resident or anadromous fish are known to use this stream at this location. However, resident and anadromous fish are known to occur in reaches of other streams within the project limits. No federally-listed threatened or endangered species will be adversely affected by the project. See the concurrence letters from the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) in Appendix A.

The project will add approximately 11.4 acres of new impervious surface. The project stormwater management facilities will provide stormwater quality treatment from pavement that currently receives no treatment. These stormwater facilities will provide water quality treatment for approximately 28 acres of new and existing pavement, or

about 240 percent of the new impervious surfaces. No adverse effects on stream water quality or flow rates are expected. Because water quality treatment will be provided for runoff from existing pavement that currently receives no treatment, overall water quality is expected to improve.

What will be done to reduce any adverse effects?

What are best management practices?

Best management practices, commonly referred to as BMPs, are methods used to minimize or avoid environmental effects. The term 'BMP' is widely used to refer to a variety of common management techniques. These practices represent the most practical methods available and are continually being improved. BMPs are most commonly applied to minimize erosion during construction, such as by using silt fences, or to control and treat stormwater, such as by using wetponds and other facilities. BMPs also protect fish and streams during in-water work by limiting work periods to when the fewest fish, particularly salmonids, are expected to be present.

WSDOT is committed to providing mitigation for adverse effects that cannot be avoided. WSDOT will comply with all applicable local, regional, and federal standards and regulations to avoid or minimize adverse effects to local communities and the environment. We will conform to the requirements set forth in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, to ensure just compensation of all acquired properties and minimal effects on current owners and residents.

To minimize the effects of noise, WSDOT will replace one noise barrier near the Dogwood Park neighborhood. This barrier will replace an existing noise barrier located along northbound I-405, just south of the SR 520 interchange, that WSDOT will need to tear down to construct the project. The replacement barrier will reduce noise levels below the Federal Highway Administration (FHWA) Noise Abatement Criteria (NAC) at all 35 affected residences.

We will use best management practices (BMPs), WSDOT Standard Specifications, and design elements to avoid or minimize potential effects to the environment from the project. BMPs are generally accepted techniques that, when used alone or in combination, prevent or reduce adverse effects of a project. Examples include erosion-control measures to prevent erosion and sedimentation, and construction management to minimize traffic disruption. For specific details, please see Chapter 6, Measures to Avoid, Minimize, or Mitigate Project Effects, in this document.

To compensate for the permanent effects on wetlands, WSDOT will provide mitigation at a wetland mitigation site which is about one mile southeast of the southern project limit. Mitigation at this site was approved as part of the I-405, Bellevue Nickel Improvement Project and has been constructed. The mitigation site is upland area adjacent to a

large wetland complex that will be transformed to an emergent wetland. Its wildlife habitat will be enhanced by constructing habitat structures and replanting adjacent upland areas with forest-type vegetation.

Stream mitigation for permanent effects on the unnamed tributary to Sturtevant Creek will occur at Sturtevant Creek and will be designed to meet specific goals. Mitigation goals include:

- Increased hydrologic connectivity with two small riparian wetlands;
- Increased fish rearing habitat; and
- Improved riparian buffer conditions.

WSDOT will meet these goals by installing large woody debris (LWD) and other in-stream channel enhancements. The stream's buffer will be revegetated with plant species native to the area, and invasive vegetation will be removed.

What would happen if the I-405, NE 8th Street to SR 520 Crossing Project is not built?

If the project is not built (the No Build Alternative), the northbound I-405 weave between the NE 8th Street on-ramp and the off-ramp to SR 520 would continue to act as a bottleneck, constraining the number of vehicles able to travel through the. By 2014, periods of traffic congestion would increase and travel speeds would generally decrease compared to existing conditions. As traffic volumes increase, weaving and congestion-related accidents would also increase.

Without a new ramp to SR 520, congestion on NE 8th Street would continue to grow. The flow of traffic would become so constrained that many drivers would choose to bypass the highway and use local streets. As drivers seek alternate routes, neighborhoods could see increased cut-through traffic and a corresponding reduction in air quality, pedestrian/bicycle safety, and community cohesion.

What is the purpose of this environmental assessment?

This environmental assessment (EA) has been prepared as required by the National Environmental Policy Act (NEPA) and with the intent to also satisfy requirements of the State

Environmental Policy Act (SEPA). The purpose of this EA is to provide information to the public and decision-makers about the effects of the I-405, NE 8th Street to SR 520 Improvement Project on the built and natural environment, and measures that will be taken to avoid, minimize, and/or mitigate the effects. FHWA and WSDOT will use the information in this document to determine if the project will result in significant unavoidable adverse effects. Based on that finding, they will make a decision as to whether or not the project can proceed to construction or if additional environmental evaluation and review is needed.

WSDOT anticipates that the project will not have significant adverse effects on the environment.

How is this document organized?

This EA has been organized and written to focus on issues of most importance and to minimize use of technical terms. Because the study area is highly urbanized, we found that issues related to traffic and transportation, noise and vibration, communities, businesses, public services, and visual quality required the most detail. Additionally, we have provided more detail about the water resources and ecosystems in the study area to provide a full understanding of their functions. Summaries of our findings are provided for other elements of the environment. For all elements of the built and natural environment, more detailed information and technical analyses are included in Appendices B through O on a CD in the back of this document. These appendices are incorporated by reference throughout this document.

Chapters 2 and 3 explain why this project is needed and how it evolved as part of the I-405 Corridor Program.

Chapter 4 describes what this project will build and how it will change access to the freeway.

Chapter 5 describes the existing environment and how it will be affected by the project.

Chapter 6 describes proposed measures to avoid or minimize negative effects.

Appendix A includes copies of tribal and agency correspondence.

CHAPTER 2 NEED FOR THE PROJECT

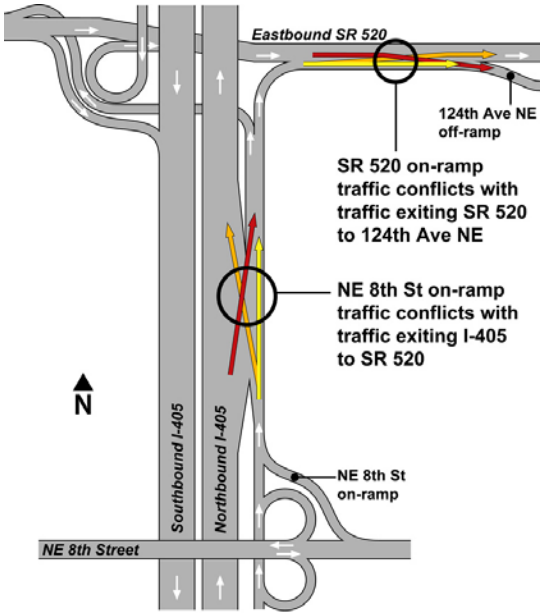
In 2002, the Washington State Department of Transportation (WSDOT) prepared an environmental impact statement (EIS) to provide a corridor-wide review of a range of transportation improvement alternatives along I-405.[1] *That process led to the selection of an alternative that became the I-405 Corridor Program. The I-405, NE 8th Street to SR 520 Improvement Project proposes a focused strategy to reduce traffic congestion, improve safety, and improve access and circulation to and from local streets along I-405 and SR 520 where the two freeways meet.*

Traffic congestion on northbound I-405 in Bellevue

Why do we need the I-405, NE 8th Street to SR 520 Improvement Project?

In the last 10 years, traffic volumes on I-405 and SR 520 have increased so much that the I-405/SR 520 interchange has become a choke point in the regional transportation system during the morning and afternoon rush hours. For much of the day, northbound I-405 is congested where the NE 8th Street on-ramp traffic conflicts with traffic trying to access the off-ramps to SR 520. Often, the northbound I-405 mainline flows well, but traffic slows down due to congestion in the right-hand lanes caused by merging traffic (see Exhibit 2-1). Traffic entering northbound I-405 from NE 8th Street must move across the same lane where many vehicles on I-405 are merging to exit northbound I-405 to get to eastbound SR 520. This lane-changing situation causes the right lanes to become heavily congested and traffic to back up onto the side streets in downtown Bellevue. Congestion is worst during the afternoon commute when the traffic volumes on northbound I-405 and the on-ramp from NE 8th Street are highest. The average travel speeds for this section of northbound I-405 were 20 to 35 miles per hour during the 2005 afternoon peak

Exhibit 2-1: Traffic Merging Conflicts on I-405 and SR 520



[1] *WSDOT, 2002a.*

hour.

Eastbound SR 520 generally operates well east of the I-405 interchange, but also experiences some speed reduction due to weaving traffic in the right lane between the on-ramps from I-405 and the off-ramp to 124th Avenue NE. Eastbound SR 520 has average travel speeds of 40 to 55 miles per hour during the morning and afternoon peak hours at this location.

The westbound SR 520 to southbound I-405 loop ramp has a design speed of only 20 miles per hour and many vehicles using this ramp have difficulty accelerating quickly enough to merge safely with southbound I-405 traffic. During peak hours the off-ramp traffic frequently backs up, and at times traffic is at a standstill on westbound SR 520. This congestion causes a general slowdown through the interchange area for all westbound drivers.

Safety is also a concern along these sections of I-405 and SR 520. The accident rate on I-405 between NE 4th Street and SR 520 is higher than the average for the whole corridor. Most crashes on the freeway are rear-end and sideswipe collisions related to stop-and-go traffic and weaving maneuvers. Nearly half of the crashes on the northbound I-405 mainline between NE 4th Street and SR 520 occurred in the merge area from the NE 8th Street on-ramp to the eastbound SR 520 off-ramp.

WSDOT has identified four high accident locations (HALs) in the study area:

- Southbound I-405 ramp to eastbound SR 520;
- Westbound SR 520 to northbound I-405;
- Northbound I-405 off-ramp to eastbound NE 8th Street; and
- Southbound I-405 off-ramp to westbound NE 8th Street.

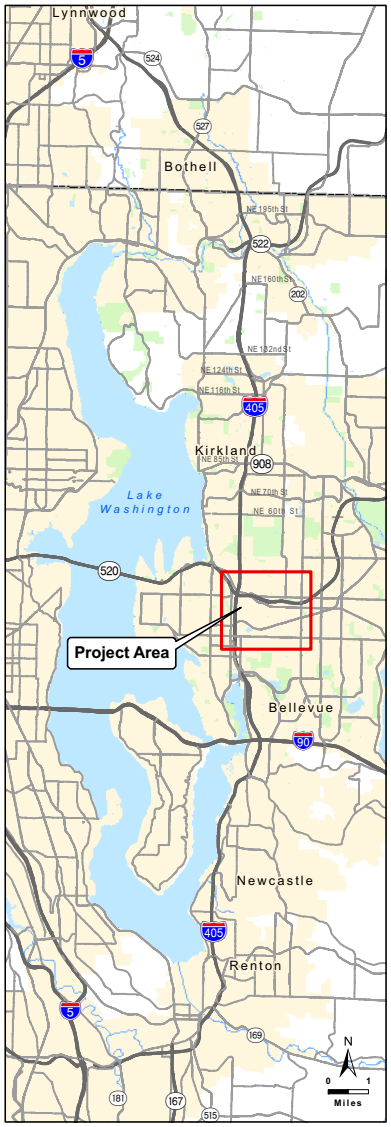
How is a high accident location determined?

Based on historical accident records, an HAL is an area where an above average number of accidents occur.

Safety will improve at the southbound I-405 ramp to eastbound SR 520 HAL by adding new pavement, new pavement markings, and signs. The other three HAL locations are not in the current project improvements because they would require substantial infrastructure investment which is not included in the current project funding. Although not identified as a HAL, safety will improve at the northbound I-405 ramp to eastbound SR 520.

Projected future regional population and employment growth will increase freeway demand compared to existing conditions. Periods of traffic congestion will increase and travel speeds will generally decrease compared to existing conditions. As traffic volumes increase, weaving and congestion-related accidents will also increase in the study area.

Exhibit 2-2: I-405 Corridor



How does the I-405, NE 8th Street to SR 520 Improvement Project relate to the I-405 Corridor Program?

In 2002, WSDOT completed an environmental impact statement (EIS) that reviewed a range of alternatives for improving I-405 on a corridor-wide basis. As a result, WSDOT selected an alternative that is known as the I-405 Corridor Program.

The I-405 Corridor Program was created as a comprehensive strategy to reduce congestion and improve mobility throughout the corridor, which begins at the I-5 interchange in Tukwila and extends northward 30 miles to the I-5 interchange in Lynnwood. Its overall purpose is to help to create an efficient, integrated, and multimodal system of transportation solutions. The I-405, NE 8th Street to SR 520 Improvement Project is one of several projects now being advanced as part of a phased implementation of the I-405 Corridor Program. Exhibit 2-2 shows the entire corridor including the area covered by this project.

What led WSDOT to propose the I-405, NE 8th Street to SR 520 Improvement Project?

Since approval of the 2002 I-405 Corridor Program, the funding strategy has been to incrementally address the worst congestion choke points first and to coordinate all transportation modes into a working system. With the 2003 and 2005 funded projects, nearly $1.5 billion will be invested in the corridor. Each project underway contributes to congestion relief and improved safety and mobility.

The 2005 Gas Tax Transportation Funding Package adopted by the Washington State Legislature includes $972 million for 11 improvement projects, including this one, on the I-405 corridor. Preliminary work on these I-405 improvement projects is underway. The Kirkland Nickel Stage 1 project to

the north was completed in October 2007. Projects to the south in Bellevue and Renton—to remove the "Wilburton Weave" and to untangle the choke point at the SR 167 interchange—both began construction in 2007. The I-405, NE 8th Street to SR 520 Improvement Project is the next logical step because it addresses one of the areas along the I-405 corridor with the worst congestion and will fill in the gap between the projects to the north and south that are complete or currently under construction.

What would happen if the I-405, NE 8th Street to SR 520 Improvement Project is not built?

In the future, traffic in the region is predicted to increase and the conditions on I-405 and SR 520 are expected to worsen. Without the project, periods of traffic congestion will lengthen and travel speeds will generally decrease compared to today. The northbound I-405 weave between the NE 8th Street on-ramp and the off-ramp to SR 520 will continue to act as a bottleneck, constraining the number of vehicles able to travel through the study area. Without the project, the morning and evening commutes will become slower for even longer periods of time, and the frequency of accidents will continue to be high. More drivers would likely resort to using local streets to bypass congestion.

In addition, other benefits of the project will not be realized if the project is not built. These benefits include improved stormwater treatment from the retrofit of existing pavement that currently receives no treatment.

What other improvements are being built on I-405 and connecting highways?

The I-405, NE 8th Street to SR 520 Improvement Project is one of several I-405 projects (see links to WSDOT's project-specific web pages at http://www.wsdot.wa.gov/projects/). Other projects along the I-405 corridor and connecting highways include:

- Renton Nickel Improvement Project, 1-5 to SR 169 (under construction)
- Renton to Bellevue Project, SR 169 to I-90 (proposed)
- South Bellevue Widening (112th Avenue SE to SE 8th Street) Project (under construction)

- NE 10th Street Bridge Crossing Project (under construction)
- SR 520 Bridge Replacement and HOV Project (proposed)
- SR 520 to I-5 Widening Project (proposed)

In addition to improvements along I-405 and SR 520, WSDOT has planned projects on SR 167, I-90, and SR 522 as recorded in WSDOT's *Highway System Plan*.[2] This plan forecasts transportation needs for the next 20 years. The Metropolitan Transportation Plan for the central Puget Sound region, *Destination 2030*, revised in 2003, defines the region's action plan for the next 30 years.

The I-405 Corridor Program EIS identified possibilities to better manage the corridor through tolling. WSDOT could achieve this through the use of express toll lanes that would be managed through a variable toll system to regulate their use and thereby maintain express travel speeds and reliability. The footprint of the project identified in this document would not preclude implementation of express toll lanes. The freeway system would, however, operate differently if express toll lanes are used. If express toll lanes are to be implemented in the future, additional operational analysis and any necessary environmental documentation would be prepared. Therefore, an operational change to express toll lanes would be a future decision.

What are express toll lanes?

An express toll lane is a limited-access freeway lane that is actively managed through a variable toll system to regulate its use and thereby maintain express travel speeds and reliability. Toll prices rise or fall in real time as the lane approaches capacity or becomes less used. This ensures that traffic in the express toll lane remains flowing at express travel speeds of 45 to 60 miles per hour. Toll prices may differ for carpools, transit, motorcycles, and single-occupant vehicles. Tolls are collected electronically using overhead scanners that read a transponder inside the vehicle and automatically debit the operator's account.

[2] *WSDOT, 2007d.*

CHAPTER 3 DEVELOPING THE ALTERNATIVES

The I-405 Corridor Program Environmental Impact Statement (EIS) analyzed a wide range of alternatives and travel modes for moving people and freight, reducing congestion in the corridor, as well as mitigation measures to avoid or reduce adverse effects. This environmental assessment (EA) is a focused, project-specific environmental review of two alternatives, the Build Alternative and the No Build Alternative, for the I-405, NE 8th Street to SR 520 Improvement Project.

What actions did WSDOT take prior to proposing the I-405, NE 8th Street to SR 520 Improvement Project?

WSDOT, together with residents, elected officials, business leaders, and federal, tribal, state, and local governments, developed the I-405 Corridor Program Draft EIS. It focused on broad corridor-wide issues related to mode choice, general location of improvements, and how combinations of improvements could function together as a system to solve corridor-wide transportation problems. Once WSDOT completed the Draft EIS, a Preferred Alternative was recommended for evaluation in the Final EIS.[3] The Final EIS documented 3 years of technical work and consensus-building, and produced one of the most comprehensive transportation analyses in the state's history. The I-405 Corridor Program, derived from the EIS, identifies more than 150 coordinated roadway, transit, and environmental improvement projects, including two new lanes in each direction along the length of I-405 and a bus rapid transit system. The I-405 Corridor Program environmental process, summarized at the right, shows the milestones that were achieved during this process.

It will take 20 years or more to fully implement the I-405 Corridor Program. WSDOT has examined and will continue

I-405 Corridor Program Environmental Process

Discipline Reports

A set of technical reports was written that documented the potential effects of the project on the area's natural and built environments, such as air quality.

NEPA/SEPA Environmental Impact Statement (EIS)

The EIS summarized the environmental effects of the alternatives proposed for the I-405 Corridor Program.

Preferred Alternative

A preferred alternative was selected from among the alternatives analyzed in the EIS.

Selected Alternative

An alternative was approved by FHWA and FTA and documented as the Selected Alternative in the Record of Decision.

Record of Decision (ROD)

The ROD is a concise document that identifies the decision (Selected Alternative) and mitigation measures adopted for the Selected Alternative.

Projects

The Selected Alternative is implemented through a series of projects on sections of the I-405 corridor.

[3] *WSDOT, 2002a.*

to examine individual projects that will prioritize areas with the worst congestion.

How did WSDOT identify the improvements included in the I-405, NE 8th Street to SR 520 Improvement Project?

The section of I-405 between downtown Bellevue and SR 520 and the I-405/SR 520 interchange have become choke points in the regional transportation system during the morning and afternoon rush hours. WSDOT identified the improvements included in the I-405, NE 8th Street to SR 520 Improvement Project based on an understanding of the weaving conflicts, safety issues, and regional and local needs on I-405 and SR 520. To better understand the problem and formulate solutions, we analyzed the existing and future traffic conditions along with highway design standards to identify where deficiencies occur. We then identified potential improvements that will mitigate or remove those deficiencies. We used software to model how traffic will react to improvements and identified the changes that will provide the greatest benefit.

Through this analysis, we determined that adding a series of collector-distributor ramps on SR 520 and constructing grade-separated ramps on I-405 will eliminate the I-405 to SR 520 weaving and reduce congestion. The combined effect of separating traffic movements and increasing distance between access points will also improve safety and traffic operations.

To ensure that local needs would be addressed by the project, we coordinated with the City of Bellevue to identify improvements in access to/from I-405 and downtown. Acknowledging the emerging needs that come from a developing and growing downtown helped shape the improvements at the NE 12th Street bridge as well as the NE 10th Street Bridge Crossing Project, which includes a new overpass over I-405.

Additionally, we designed the improvements within the context of the Corridor Program to ensure that the project would accommodate future work on I-405.

I-405, NE 8th Street to SR 520 Improvement Project Environmental Process

Discipline Reports and Technical Memoranda

Each of the 9 discipline reports and 5 technical memoranda describes the topic's affected environment, effects of the proposed action, and how effects will be avoided, minimized, or mitigated.

Environmental Assessment (EA)

The EA is a concise document prepared in compliance with NEPA that briefly discusses the purpose and need for an action and the alternatives to the action, and provides sufficient evidence and analysis of impacts to determine whether to prepare an EIS or a Finding of No Significant Impact.

Finding of No Significant Impact (F O N S I)

A FONSI presents the reasons why an action will not have a significant effect on the environment and, therefore, does not require the preparation of an EIS. Based on analyses and project feedback received to date, we anticipate preparing a FONSI for the I-405, NE 8th Street to SR 520 Improvement Project.

What alternatives are studied in this environmental assessment?

WSDOT evaluated two alternatives in this environmental assessment, a Build Alternative and a No Build Alternative. (A detailed description and exhibits showing the Build Alternative are in Chapter 4.) The Build Alternative will:

- Construct grade-separated ramps (referred to as braids) on northbound I-405 to separate the I-405 traffic exiting to SR 520 from traffic entering I-405 at NE 8th Street in downtown Bellevue;
- Rebuild the NE 12th Street bridge;
- Construct a new northbound on-ramp to SR 520 from the newly constructed NE 10th Street bridge;
- Construct a new eastbound collector-distributor lane on SR 520 to separate the on- and off-ramp traffic between I-405 and 124th Avenue NE;
- Reconstruct the 124th Avenue NE interchange off-ramp; and
- Reconfigure the ramps from SR 520 to southbound I-405 to improve traffic flow.

The No Build Alternative will not make the transportation improvements listed above. Under the No Build Alternative, only routine activities such as road maintenance, repair, and minor safety improvements necessary for continued operations of the existing I-405 and SR 520 facilities would take place over the next 20 years. This alternative does not include improvements that would reduce congestion or improve safety on I-405 or SR 520.

What environmental issues influenced project design?

In order for the project to be sensitive to the surrounding environment, WSDOT considered its context and physical location carefully during project planning and design. Information was gathered about the physical character of the area and the values of the community to help identify any physical constraints or opportunities early in the design process. Early engineering work included coordination with the City of Bellevue and local property owners, and initial

investigations of environmentally sensitive areas. Throughout the environmental review process and continued public coordination, WSDOT revised and refined the design to avoid or minimize effects on the built and natural environment, including environmentally sensitive areas.

Because the project is located in a highly urbanized area, it was important to minimize the project's footprint and, wherever possible, stay within the existing freeway right-of-way. It was also important to be compatible with other WSDOT projects, such as the NE 10th Street Bridge Project.

As the design progressed, refinements were made to avoid residential and business displacements, and minimize acquisitions of properties. Design modifications also were made to minimize parking space losses. WSDOT coordinated with utility providers to minimize the number of utility relocations and potential disruptions in service.

Noise issues also influenced the project design, and an existing noise barrier in the Dogwood Park neighborhood that must be demolished to construct the freeway improvements will be replaced to continue noise abatement for the remaining residents.

WSDOT also communicated with the Overlake Hospital and Medical Center and The Group Health Cooperative to identify sensitive issues. These issues included emergency vehicle access and construction-related noise and vibration. WSDOT will implement measures to minimize potential project-related effects on surgical and patient facilities.

During the design and environmental review process we identified project elements that would potentially affect streams, wetlands, and wildlife habitat. Where possible, the project design was altered to minimize or eliminate effects on these resources. By making adjustments to the design, the project team was able to avoid the main stem of Sturtevant Creek near NE 8th Street. Additionally, the proposed widening over Goff Creek near 130th Avenue NE was reduced. Where possible, stormwater ponds were relocated or re-designed if their original position was in close proximity to wetlands or streams.

Stormwater management facilities proposed for the project were designed to provide water quality treatment for stormwater from new impervious surfaces as well as some of

the existing impervious surfaces that currently discharge to streams without treatment. Once construction is completed, stormwater quality is expected to improve overall from what exists today. This will benefit fish and other aquatic species in streams that receive runoff from the freeway.

How has the public been involved?

WSDOT has involved the public in the I-405, NE 8th Street to SR 520 Improvement Project through a wide range of activities such as:

- Inviting citizens to participate in the project scoping and development process;
- Conducting public scoping meetings, producing newsletters with project information;
- Responding to individual correspondence by telephone, email, and in person;
- Holding an informal public meeting to share preliminary discipline report findings; and
- A public meeting and hearing on the EA that will be held in spring 2008.

The purpose of scoping is to:

- Inform the public and agencies of proposed actions and alternatives;
- Serve as a forum to gather comments to help identify potential environmental effects;
- Ensure that the environmental documents consider reasonable alternatives; and
- Help identify issues or concerns important to the local community and to agencies.

Project Scoping and Development

On September 14, 2006, WSDOT invited the Muckleshoot Tribe, the Confederated Tribes and Bands of the Yakama Nation, the Snoqualmie Tribe, the Duwamish Tribe, and federal, state, and local agencies that have jurisdiction in the study area to identify and incorporate their concerns and comments at an agency scoping meeting. Thirty-six citizens attended a public scoping meeting on September 20, 2006. All scoping meeting attendees were invited to submit written and verbal comments to WSDOT during a public comment period.

Public scoping meeting September 20, 2006

Following these meetings, WSDOT categorized and compiled the comments into the *I-405, NE 8th Street to SR 520 Improvement Project Scoping Report*.[4] The comments addressed topics such as property acquisitions, noise, and traffic and transportation (Exhibit 3-1). Throughout the environmental assessment process, WSDOT has actively communicated with

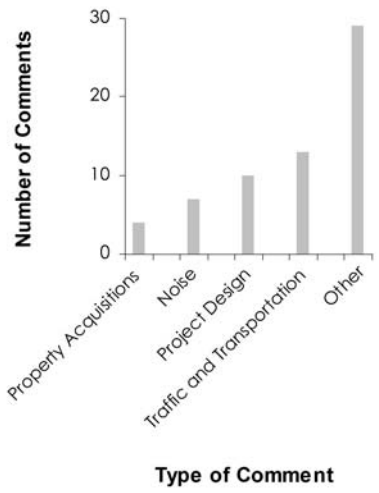
[4] *WSDOT, 2007a.*

citizens through letters, emails, in-person meetings, and phone conversations.

Public Outreach

Public outreach for the I-405, NE 8th Street to SR 520 Improvement Project has been ongoing since 1999, when scoping for the I-405 Corridor Program EIS began. The corridor public involvement program included a 40-member community advisory committee (I-405 Corridor Program Citizens Committee) representing a wide range of interests and backgrounds throughout the corridor, a media outreach program, public meetings, project newsletters, electronic newsletters, a project web site, and a speakers bureau to make presentations to the large number of community organizations in the corridor.

Exhibit 3-1: Public Scoping – Individual Comments



WSDOT developed a public involvement plan to support the I-405, NE 8th Street to SR 520 Improvement Project EA, with goals to:

- Support the successful delivery of the project;
- Communicate with the public about the mobility, economic, and environmental benefits of the project;
- Identify and address any disproportionately high and adverse impacts on minority, low-income, and non-English-speaking populations;
- Provide construction information;
- Reinforce positive relationships with other agencies, individuals, and groups; and
- Communicate the need, vision, and context for the project.

What special efforts did WSDOT make to reach minority, low-income, and non-English-speaking individuals?

By implementing a comprehensive outreach plan, the I-405 Team conducted extensive outreach efforts to minority, low-income, and non-English-speaking populations in the I-405, NE 8th Street to SR 520 Improvement Project vicinity. The team contacted civic agencies and private organizations to identify and locate these groups and learn about their needs. We attempted to reach as many low-income residents as possible by sending postcards to Section 8 housing in the

study area. In addition, we sent e-mail alerts to addresses on I-405 e-mail lists, major employers, and advocacy groups. We also placed advertisements in the following publications:

- *Bellevue Reporter*
- *Chinese Post*
- *El Mundo*
- *Kirkland Courier*
- *Phuong Dong Times*
- *Redmond Reporter*
- *Russian World*
- *The Skanner*

In addition, the I-405 Project Team interviewed 10 human service agencies that serve minority and low-income clients in Bellevue, to share information about the I-405 NE 8th Street to SR 520 Improvement Project, identify any concerns, and gather input on the project. The primary concern for these agencies is with regard to traffic congestion on I-405 and how it has increased the commute times for their staff and volunteers.

How WSDOT communicates with the public:

Speaker's Bureau – Formal presentations by WSDOT personnel to community organizations.

Environmental Outreach – Field studies put I-405 environmental team members in touch with neighbors. For example, WSDOT contacted agencies who provide services to low-income and minority populations to discuss the project and how it could affect their services.

Project Website – The I-405 Project Team Website, at www.wsdot.wa.gov/projects/I-405 is designed as a resource for the public, and has been updated regularly.

Newsletters/Project Updates – Newsletter mailings and email updates offer an ideal opportunity to inform the public on project progress.

Return Mail Postcard – Mailings included a return postcard offering an opportunity to comment on the project and to request a visit by I-405 Project Team members at organization meetings. Individual postcards were distributed to libraries, multi-family apartment/condominium associations, and special housing establishments.

How has WSDOT involved government agencies?

Government agencies have played major roles in the development of the I-405, NE 8th Street to SR 520 Improvement Project. WSDOT involves governmental agencies by conducting meetings to address issues on an as-needed basis. Examples of these meetings are:

- Congressional and legislative briefings were conducted in 2004 and 2005. Washington State legislators within the I-405 Corridor Program study area and U.S. Congress members from the Washington State delegation received project updates.
- Scoping meeting with agencies to discuss traffic, air, noise, endangered species, water, wetlands, and mitigation strategies.
- Regular meetings with City of Bellevue staff to coordinate project activities, and strategy meetings with department managers.

- Briefings and site visits with resource agencies to review existing site conditions. An interdisciplinary team performed several days of field observations as part of the environmental data collection for this project.
- Discussions with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service on issues related to the Endangered Species Act;
- Meetings with the Washington State Department of Archaeology and Historic Preservation to resolve questions and issues regarding cultural and historic resources.

How has WSDOT involved tribal governments?

Tribal governments help WSDOT to identify social, cultural, natural resources, and other issues of concern to tribal members. WSDOT commits itself to respectful, effective consultation and communication with tribal governments in recognition that project activities may affect their rights and interests. WSDOT Executive Order E1025.00 on Tribal Consultation (February 19, 2003) established this commitment to an effective working relationship with tribal governments.

WSDOT engaged in government-to-government consultation with four federally recognized tribes: The Muckleshoot Tribe, Snoqualmie Tribe, Tulalip Tribe, and the Confederated Tribes and Bands of the Yakama Nation. WSDOT also coordinated with the Duwamish Tribe (non-federally recognized) as an interested party. The consultation continues as part of the I-405, NE 8th Street to SR 520 Improvement Project as WSDOT involves tribal governments in each stage of the environmental analysis. Tribal representatives have been provided opportunities for input into the natural resource evaluations and the associated proposed mitigation as well as cultural resource considerations. The opportunities were provided through invitations to participate in meetings and reviews with the project team, such as attending scoping meetings at the beginning of the project, reviewing and commenting on the Area of Potential Effects (APE) for cultural resources, commenting on cultural and historical findings, and attending public meetings presenting the results of the project discipline reports and the Draft EA.

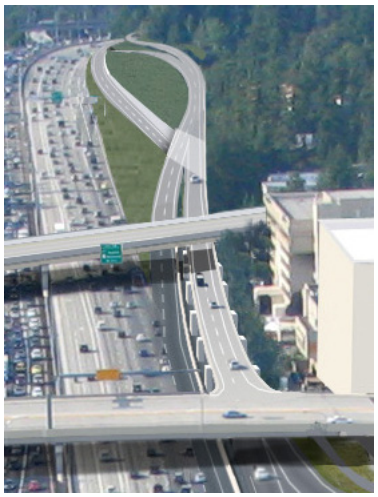
See Appendix A for correspondence with tribal governments.

What public outreach is planned for the I-405, NE 8th Street to SR 520 Improvement Project?

An Open House was held on January 10, 2008, to share early findings from the environmental discipline reports. A public meeting and hearing on the EA will be held in spring 2008.

CHAPTER 4 DESCRIPTION OF THE PROPOSED PROJECT

The I-405, NE 8th Street to SR 520 Improvement Project is part of the overall I-405 Corridor Program designed to improve safety, reduce congestion, and add capacity along the I-405 and SR 520 corridors within the City of Bellevue. This project description provides an overview of the project's principal features as well as other features that are necessary to support these improvements.



Simulation of the proposed braided ramps and new NE 10th Street on-ramp to northbound SR 520

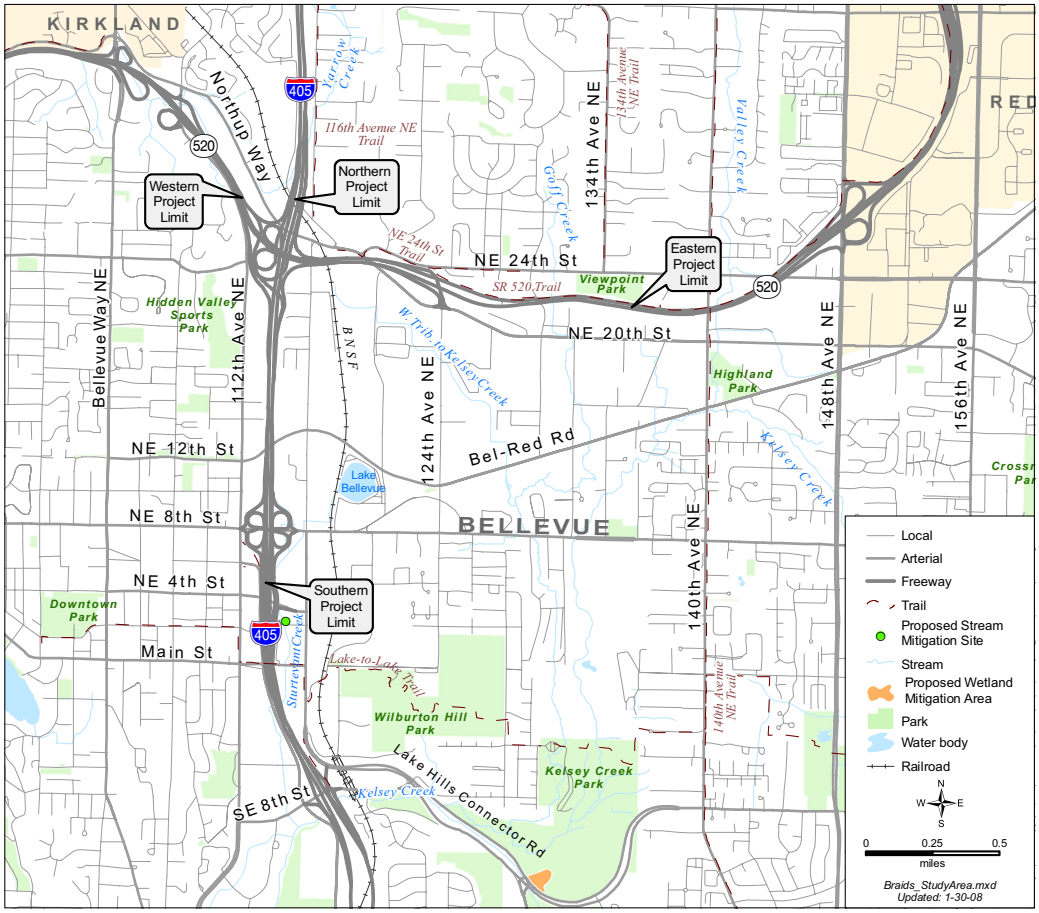
What is the intent of the I-405, NE 8th Street to SR 520 Improvement Project?

WSDOT is proposing to construct the I-405, NE 8th Street to SR 520 Improvement Project to improve safety and reduce congestion in the vicinity of the I-405 and SR 520 interchange within the city of Bellevue. The improvements will benefit the public by:

- Reducing congestion for the public and freight vehicles;
- Improving safety;
- Improving access and circulation to and from local streets; and
- Providing opportunities for environmental improvements.

The I-405, NE 8th Street to SR 520 Improvement Project extends approximately 1.5 miles north along I-405, from south of NE 8th Street to the SR 520 interchange, and approximately 1.6 miles east along SR 520, from the I-405 interchange to east of 134th Avenue NE (Exhibit 4-1). The proposed project will construct grade-separated ramps (also referred to as braids) on northbound I-405 to separate the I-405 traffic exiting to SR 520 from traffic entering I-405 at NE 8th Street in downtown Bellevue. On SR 520, a new eastbound collector-distributor lane will be constructed to separate the on- and off-ramp traffic between I-405 and 124th Avenue NE.

Exhibit 4-1: Project Location and Vicinity



What is an auxiliary lane?

An auxiliary lane is a lane added between interchanges—from one on-ramp to the next off-ramp. It is dedicated to traffic entering and leaving the freeway and provides motorists with more time and extra room to accelerate or decelerate and merge when getting on and off the freeway.

What are the details of the I-405, NE 8th Street to SR 520 Improvement Project?

Northbound I-405 to Eastbound SR 520 Improvements

- Reconfigure the existing northbound NE 4th Street on-ramp to become an auxiliary lane that exits to SR 520 and northbound I-405 as part of a two-lane exit ramp (Exhibit 4-2).
- Reconstruct portions of the NE 8th Street on- and off-ramps to northbound I-405. The on-ramp will be reconstructed at a lower grade than the I-405 mainline.

Exhibit 4-2: Project Features - Sheet 1 of 6

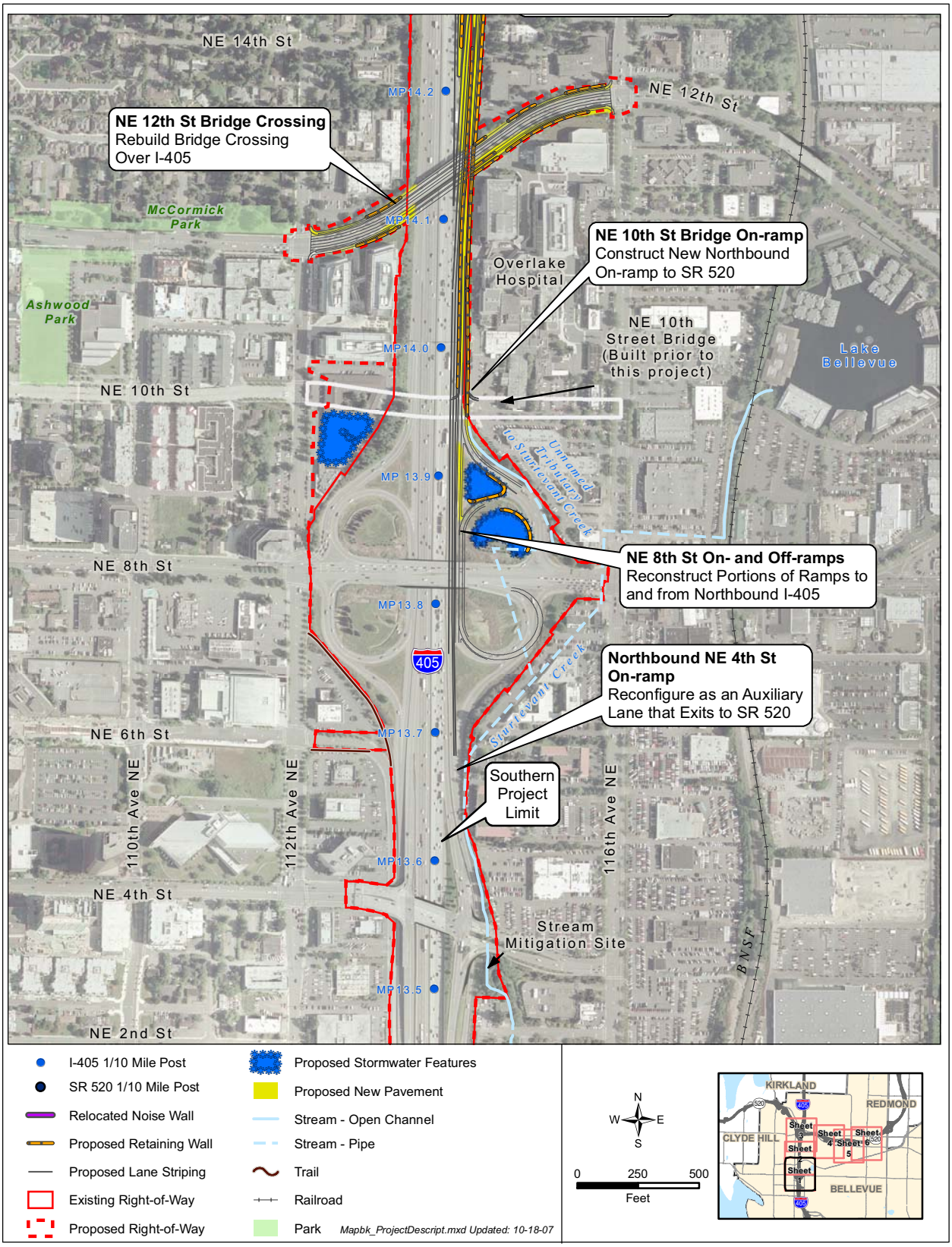


Exhibit 4-2: Project Features - Sheet 2 of 6

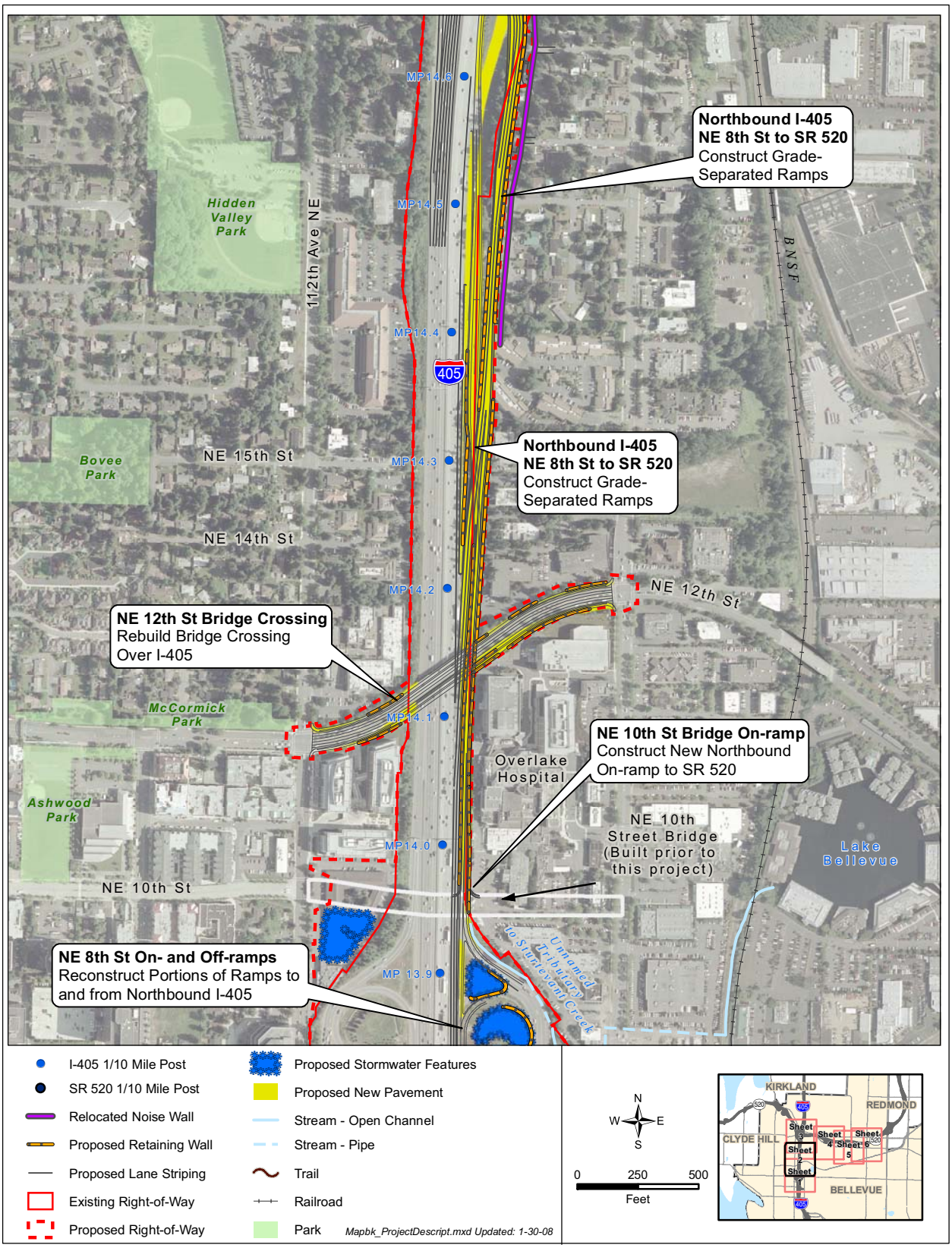


Exhibit 4-2: Project Features - Sheet 3 of 6

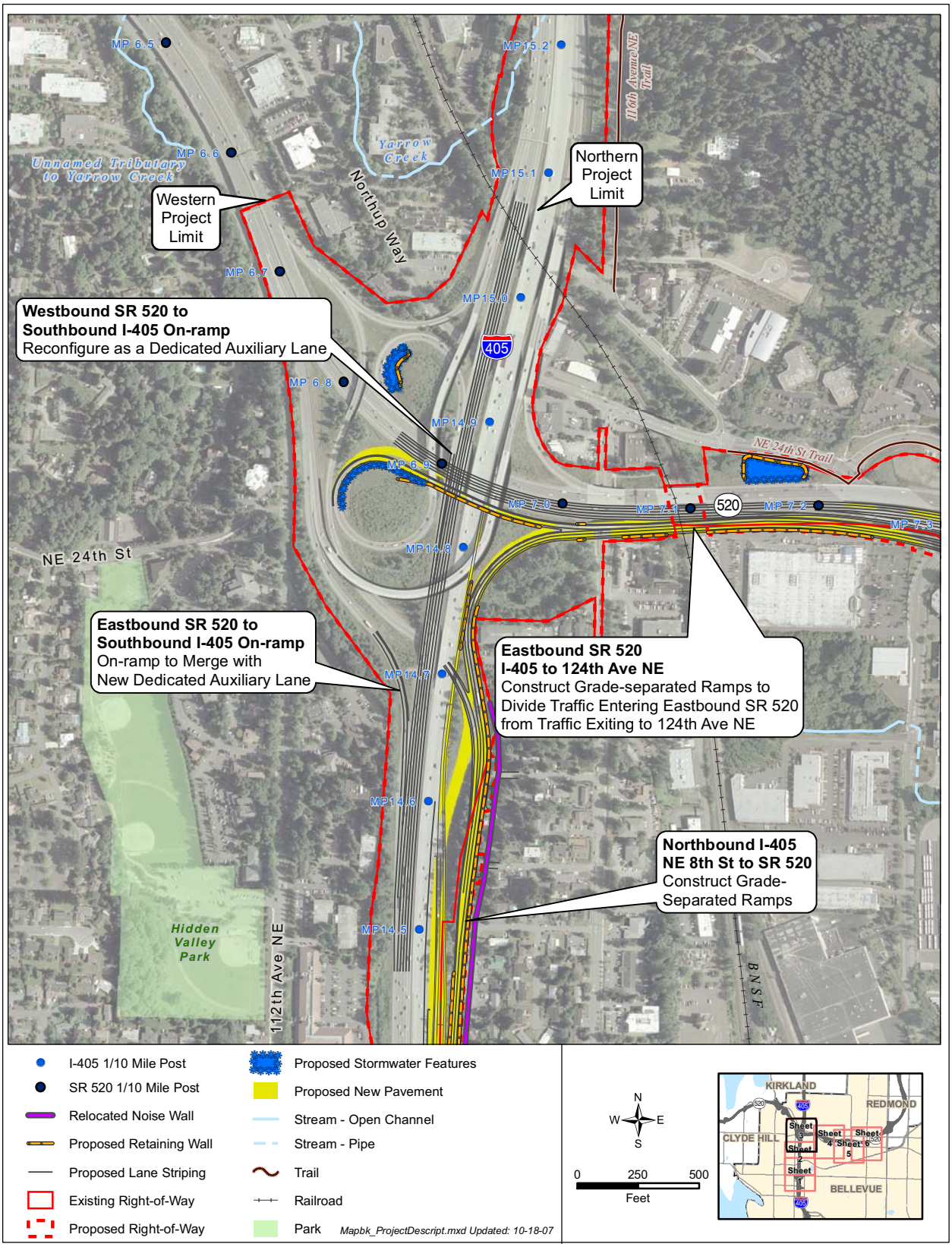


Exhibit 4-2: Project Features - Sheet 4 of 6

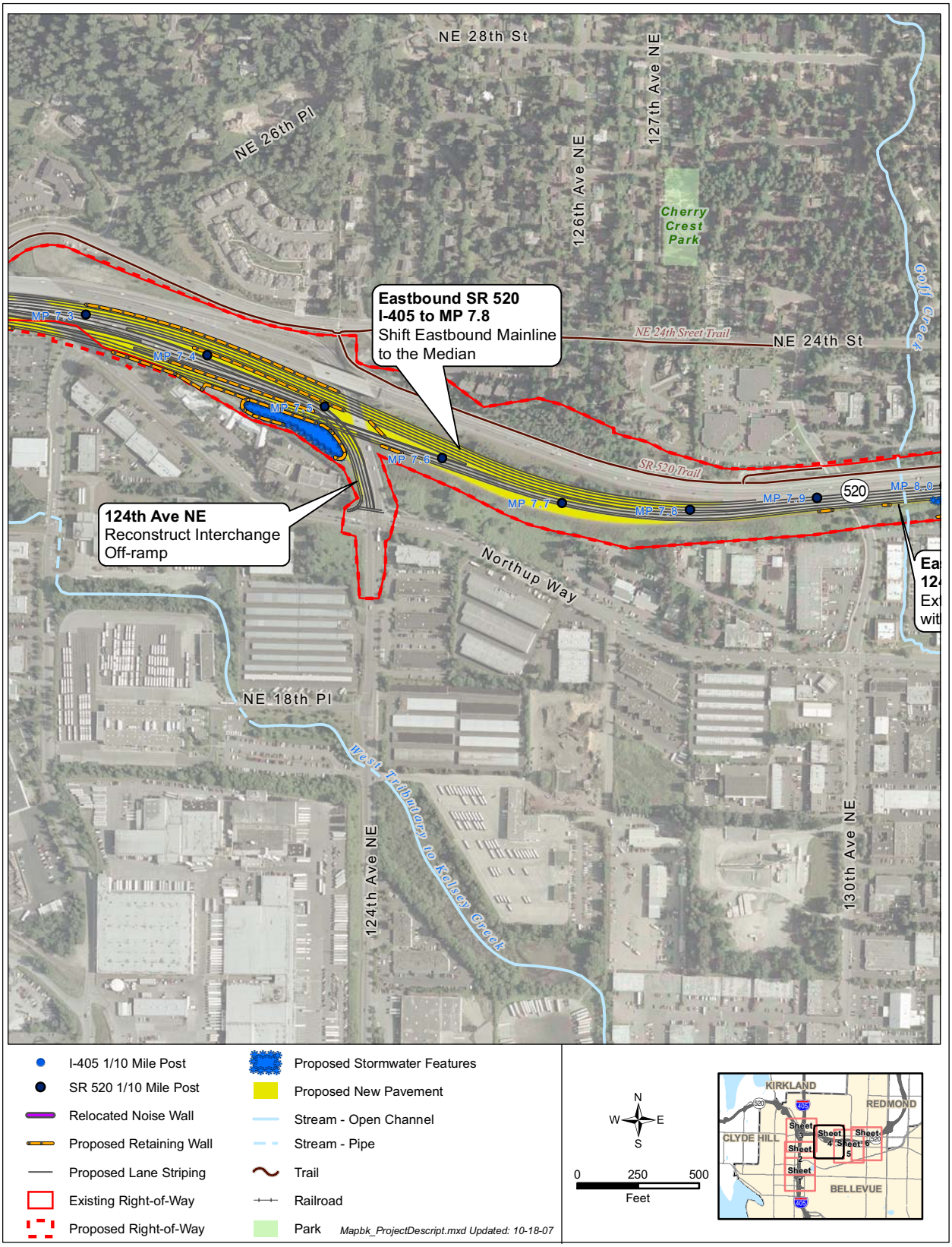


Exhibit 4-2: Project Features - Sheet 5 of 6

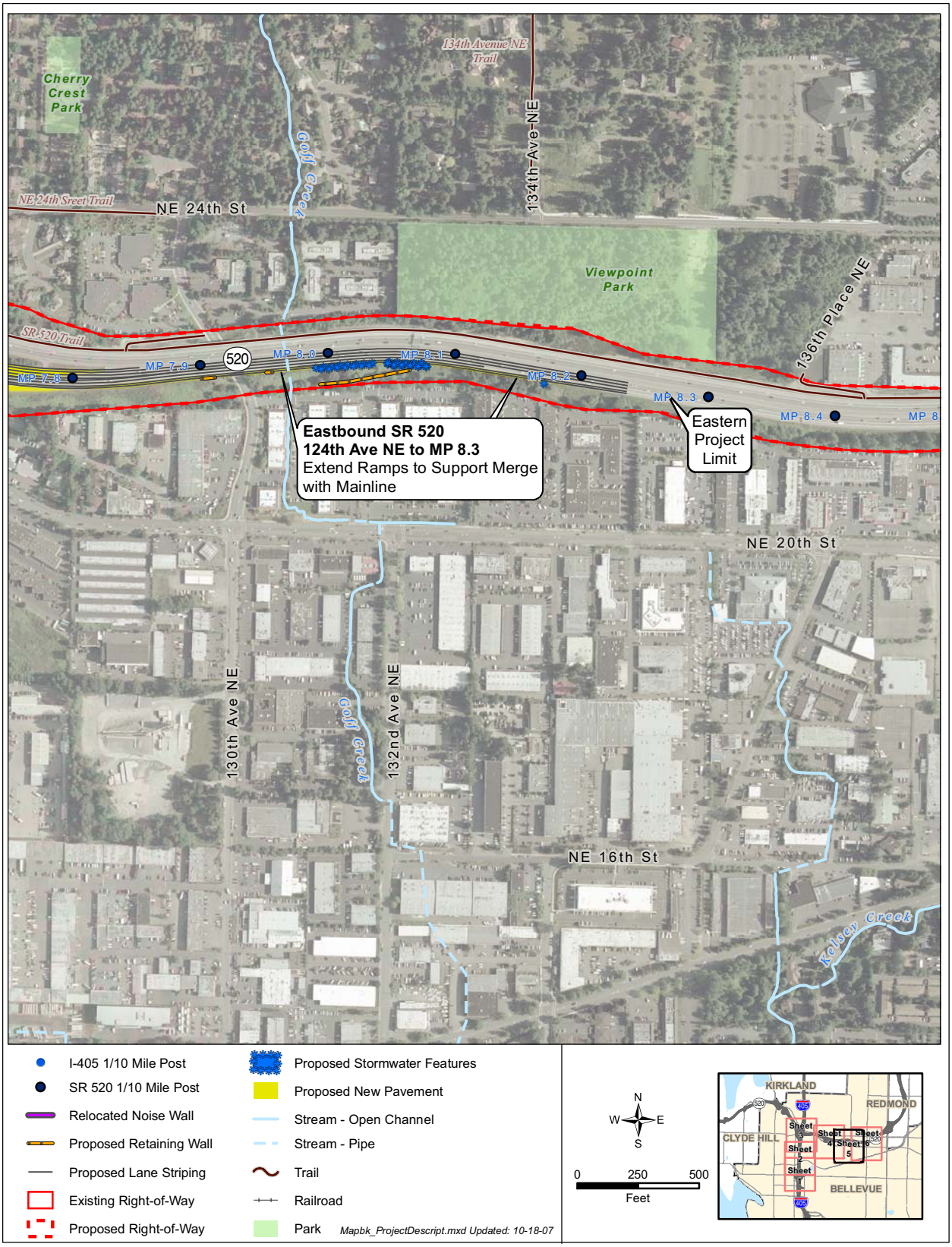
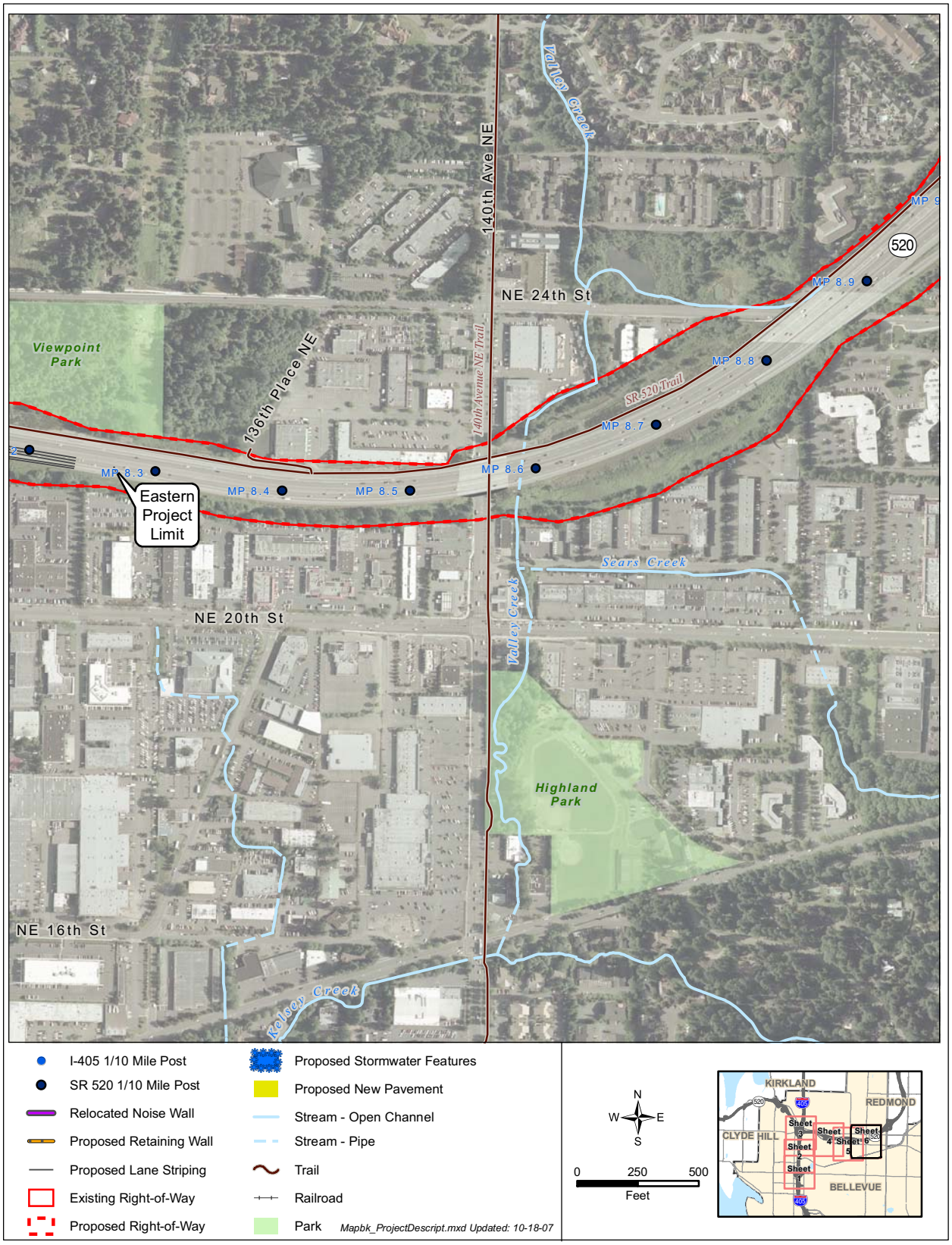


Exhibit 4-2: Project Features - Sheet 6 of 6



- Rebuild the NE 12th Street bridge crossing over I-405 to accommodate the new ramps.
- Construct a northbound on-ramp to SR 520 from a new NE 10th Street bridge crossing; the bridge crossing will be constructed as part of a separate project prior to constructing the on-ramp.
- Construct grade-separated ramps to divide traffic entering northbound I-405 from NE 8th Street and traffic exiting I-405 to SR 520.
- Construct grade-separated ramps to divide traffic entering eastbound SR 520 from northbound I-405 and traffic exiting eastbound SR 520 to 124th Avenue NE.
- Shift eastbound SR 520 mainline travel lanes toward the median.
- Extend the ramp from northbound I-405 to eastbound SR 520 on a collector-distributor system through the 124th Avenue NE interchange to merge with the existing eastbound SR 520 mainline just east of 134th Avenue NE.
- Reconstruct the 124th Avenue NE interchange off-ramp.
- Relocate an existing noise barrier. The new barrier will be approximately 1,585 feet long and 20 feet high.
- Construct several retaining walls needed to allow for the proposed widening of I-405.

What is a collector-distributor system?

Collector-distributor lanes are freeway lanes serving single or multiple interchanges that are physically separated from general freeway lanes. The purpose of collector-distributor lanes is to separate the traffic entering and exiting the freeway from the through traffic.

In the simplest form, all ramps that would normally touch the freeway are instead shifted outwards to the collector distributor lanes. There is still weaving, but it is no longer on the main lanes.

SR 520 to Southbound I-405 Improvements

- Reconfigure the ramps from SR 520 to southbound I-405 to improve traffic flow. The westbound SR 520 to southbound I-405 ramp will become a dedicated auxiliary lane, and on-ramp traffic will no longer be required to immediately merge with southbound I-405 mainline traffic. The eastbound SR 520 to southbound I-405 ramp will merge with the dedicated auxiliary lane.

Southbound I-405 to SR 520 Improvements

- Realign the southbound I-405 to eastbound SR 520 loop ramp.
- Realign eastbound SR 520 to match the proposed improvements.

What is the No Build Alternative?

The No Build Alternative assumes that only routine activities such as road maintenance, repair, and minor safety improvements would take place over the next 20 years. The No Build Alternative does not include improvements that would reduce congestion or improve safety on I-405 or SR 520. For these reasons, it does not satisfy the project's purpose—to reduce congestion created by weaving traffic on I-405 and SR 520. The No Build Alternative has been evaluated in this EA to establish a reference point for comparing the effects associated with the Build Alternative.

How will the project change freeway access?

The project will make some changes to how drivers access the freeway from downtown Bellevue. Currently, northbound I-405 and SR 520 are accessible from NE 4th Street and NE 8th Street. However, once the project is constructed motorists will use the NE 8th Street on-ramp for access to I-405 only and use the new NE 10th Street on-ramp for access to SR 520 only (Exhibit 4-3). Because the design team has "braided" the ramps, with the NE 10th Street traffic to SR 520 crossing above and the NE 8th Street traffic to I-405 crossing under, the current problems of weaving and slowing of traffic will no longer occur. These changes in freeway access are summarized in Exhibit 4-4.

Motorists will still use the NE 4th Street on-ramp to access both northbound I-405 and SR 520. Access will be improved, however, because the auxiliary lane will provide motorists with more time and extra room to accelerate or decelerate and merge when getting on and off the freeway.

What benefits will this project provide?

The I-405, NE 8th Street to SR 520 Improvement Project will provide many short- and long-term benefits. Some of these benefits are:

- Reducing congestion and increasing overall travel speed on I-405 and SR 520;
- Improving operations at the I-405/SR 520 interchange;
- Improving safety;

- Improving pedestrian and bicycle facilities on the reconstructed NE 12th Street bridge;
- Providing stormwater quality treatment for impervious surfaces that currently do not receive treatment; and
- Applying context-sensitive solutions (CSS) to incorporate visually pleasing and community-oriented features into the project design.

Exhibit 4-3: Proposed Lane Configurations on Northbound I-405 to Eastbound SR 520

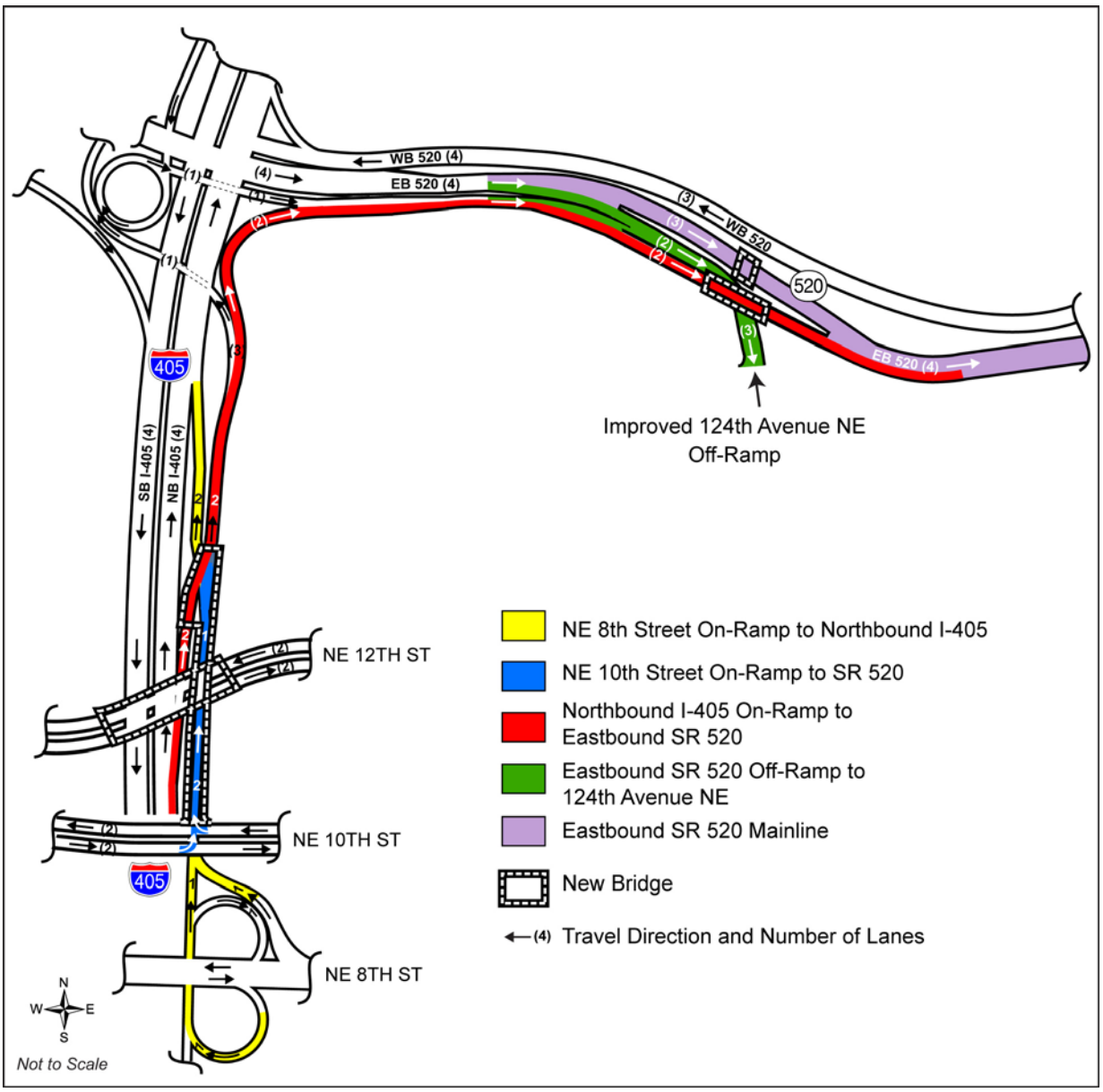


Exhibit 4-4: Changes in Freeway Access

On-ramp	Existing Destination	Proposed Destination
NE 4th Street	Northbound I-405 and SR 520	Northbound I-405 and SR 520
NE 8th Street	Northbound I-405 and SR 520	Northbound I-405
NE 10th Street	None	SR 520

Note: The existing NE 12th Street overpass has no ramps and the replacement overpass will also have none.

How will the project incorporate community design preferences?

WSDOT has worked with the affected cities within the I-405 corridor to develop visual guidelines that establish the communities' design preferences used to design the project features. These guidelines have been adopted into the Urban Design Criteria (UDC) for the I-405 corridor. The selected I-405 theme of "Culture, Nature, and Progress," with nature being the dominant theme, will be carried into corridor-wide and local I-405 designs, including the I-405, NE 8th Street to SR 520 Improvement Project.

The I-405 portion of the project is being planned, developed, and designed in accordance with these guidelines. The UDC are the primary guidelines followed to produce the intended form, function, and appearance of each I-405 feature and element. They integrate community values, urban design enhancements, and WSDOT design standards for the I-405 Corridor Program. The I-405 Team is using the UDC for preliminary engineering, landscaping, and aesthetic treatment of the highway corridor. These guidelines will be further developed into final engineering and project specific design criteria. In a similar manner, the SR 520 portion of the project will follow the design guidelines currently under development for the SR 520 corridor.

How will stormwater from the project be managed?

Stormwater for the I-405, NE 8th Street to SR 520 Improvement Project will be managed for both water quality and quantity using currently accepted best management practices (BMPs).

The I-405 Project Team is designing the stormwater management facilities to comply with the WSDOT *Highway Runoff Manual* (HRM),[5] M 31-16, and *Hydraulics Manual*,[6] M 23-03. The Department of Ecology has conditionally approved WSDOT's revised HRM for use as an equivalent approach to Ecology's *Stormwater Management Manual for Western Washington*.[7]

Runoff from existing paved surfaces on I-405 and SR 520 within the project limits is generally discharged to streams and ditches without treatment. The project will provide water quality treatment for all of the new impervious surfaces and a portion of the existing impervious surfaces.

The Build Alternative will add approximately 11.4 acres of new impervious surface. This increase represents approximately 13 percent more impervious surface than the existing conditions within the project limits. The existing impervious area is approximately 86 acres. Exhibit 4-5 provides a summary of existing and proposed stormwater treatment facilities for the project.

The stormwater management facilities will also manage peak flows and durations in accordance with the HRM. Generally, infiltration ponds are the preferred flow control measure, but soil conditions need to be suitable for proper infiltration. Within the project limits, WSDOT has not been able to identify areas with favorable infiltration conditions. Therefore, six new flow control facilities and one existing facility (constructed as part of NE 10th Street Bridge Project) will be used to provide a combined detention volume of approximately 6.6 acre-feet. The proposed locations of these facilities are shown in Exhibit 4-2.

What are peak flows?

The maximum instantaneous rate of stormwater flow during a storm, usually in reference to a specific design storm event.

Existing conveyance facilities will be modified as required to satisfy water quality treatment and flow control design standards noted above, while maintaining existing flow patterns to each of the receiving water bodies.

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[5] *WSDOT, 2006a.*

[6] *WSDOT, 2006b.*

[7] *Ecology, 2005.*

Exhibit 4-5: Summary of Existing and Proposed Stormwater Treatment Facilities

Stream Basin	Existing Stormwater Treatment Facilities	Build Alternative Stormwater Treatment Facilities
Sturtevant Creek	An existing pond in the northeast quadrant of the NE 8th Street interchange treats approximately 1.6 acres of roadway	• Retrofit of existing pond with larger stormwater treatment wetland that will treat about 10.7 acres of roadway • Stormwater treatment wetland constructed as part of the NE 10th Street Bridge Project will also be used to treat about 5.2 acres of I-405 improvements
Yarrow Creek	No existing treatment facilities	• New stormwater treatment wetland in the northwest quadrant of the I-405/SR 520 interchange that will treat about 1.6 acres of roadway • New ecology embankment along the southwest quadrant of the I-405/SR 520 interchange that will treat about 0.3 acres of roadway
West Tributary to Kelsey Creek	Existing buried vault on the south side of SR 520 near the 124th Avenue NE off-ramp that provides some treatment (the amount is unknown)	• Existing vault will be abandoned, and a new stormwater treatment wetland will be constructed near NE 24th Street that will treat about 4.7 acres of roadway • A new stormwater treatment wetland will be constructed near Northup Way that will treat about 5.8 acres of roadway
Goff Creek	No existing treatment facilities	• New ecology embankment just west of 130th Avenue NE that will treat about 0.3 acres of roadway.
Valley Creek	No existing treatment facilities	• New ecology embankment that will treat about 0.01 acres of roadway

How will the project be constructed and implemented?

Construction funding is currently available for only some of the proposed improvements in the Build Alternative. Consequently, the project will be constructed in stages. The funded first stage will include the northbound I-405 improvements, including the braided ramps, the NE 12th Street bridge reconstruction, and the northbound NE 10th Street on-ramp. Additionally, one of the three proposed collector-distributor lanes from northbound I-405 to eastbound SR 520 will be constructed. This collector-distributor lane will

cross over the existing NE 124th Street on-ramp before merging with SR 520.

The unfunded project improvements will include the remaining two lanes of the three-lane collector-distributor system and the improvements from eastbound and westbound SR 520 to southbound I-405.

What is the construction schedule?

Funded construction is scheduled to begin in 2009 and will take approximately 3 years. When additional project funding becomes available, the remaining improvements will be permitted and constructed.