



ENVIRONMENTAL ASSESSMENT

Appendix F: Visual Impact Assessment Discipline Report

I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project (MP 21.79 to 27.06)









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TABLE OF CONTENTS

Section	n 1 Introduction	1-1
Section	n 2 Project Description	2-1
2.1	Proposed Project Elements	2-1
2.2	Express Toll Lanes Overview	
2.3	Project Construction Overview	2-8
Section	n 3 Methodology	3-1
3.1	Regulatory Context	3-2
3.2	Visual Quality Guidance	3-2
Section	n 4 Affected Environment	4-1
4.1	Area of Visual Effect	4-1
4.2	Affected Population	4-1
4.3	Existing Conditions	4-2
Section	n 5 Impact Analysis	5-1
5.1	No Build Alternative	5-1
5.2	Build Alternative	5-1
5.3	Operational Effects	5-1
5.4	Construction Effects	5-12
Section	n 6 Mitigation	6-1
6.1	Operational Mitigation	6-1
6.2	Construction Mitigation	6-2
Section	n 7 References	7-1

EXHIBITS

Exhibit 2-1. Improvements Proposed with the I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project
Exhibit 2-2. I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project, Sheet 1 of 52-3
Exhibit 2-2. I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project, Sheet 2 of 52-4
Exhibit 2-2. I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project, Sheet 3 of 52-5
Exhibit 2-2. I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project, Sheet 4 of 52-6
Exhibit 2-2. I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project, Sheet 5 of 52-7
Exhibit 4-1. I-405/SR 522 Interchange Viewed from Eastbound SR 5224-3
Exhibit 4-2. I-405/SR 522 Interchange Viewed from Northbound I-4054-3
Exhibit 4-3. I-405/SR 522 Interchange Viewed from Westbound Sammamish River Trail. 4-4
Exhibit 4-4. Sammamish River Trail under I-405/SR 522 Interchange
Exhibit 4-5. I-405/SR 522 interchange Viewed from UW Bothell Campus Path4-5
Exhibit 4-6. Northbound I-405 South of Beardslee Boulevard/NE 195th Street 4-6
Exhibit 4-7. Northbound I-405 North of Beardslee Boulevard/NE 195th Street4-7
Exhibit 4-8. Northbound I-405 Approaching SR 5274-8
Exhibit 4-9. Northbound I-405 Ramp to SR 527 and Pedestrian Bridge at Canyon Park Park and Ride
Exhibit 4-10. Canyon Park Park and Ride Looking South from Pedestrian Bridge4-9
Exhibit 4-11. Canyon Park Commercial Development Character
Exhibit 4-12. Residential Character South of Canyon Park Park and Ride 4-10
Exhibit 4-13. Westbound 228th Street SE at 20th Avenue SE Approaching I-405 4-11
Exhibit 5-1. Aerial View of Existing Conditions at I-405/SR 522 Interchange5-2
Exhibit 5-2. Visualization of Proposed I-405/SR 522 Interchange Improvements 5-2
Exhibit 5-3. Existing Conditions on Sammamish River Trail East of I-405/SR 522 Interchange5-3
Exhibit 5-4. Visualization of Proposed I-405/SR 522 Interchange Improvements Viewed from Sammamish River Trail
Exhibit 5-5. Existing Conditions North Creek Trail Underpass at SR 5225-4
Exhibit 5-6. Visualization of Proposed North Creek Trail Underpass Improvements at SR 522

I-405, SR 522 VICINITY TO SR 527 EXPRESS TOLL LANES IMPROVEMENT PROJECT VISUAL IMPACT ASSESSMENT

Exhibit 5-7. Existing Conditions Approaching I-405/SR 522 Interchange Viewed from Eastbound SR 522	5-5
Exhibit 5-8. Visualization of Proposed I-405/SR 522 Interchange Improvements Viewed from Eastbound SR 522	
Exhibit 5-9. Aerial View of Existing Conditions near I-405/SR 527 Interchange	5-7
Exhibit 5-10. Visualization of Proposed Improvements near I-405/SR 527 Interchange	5-8
Exhibit 5-11. Existing View from Adjacent Neighborhood to Canyon Park Park and Ride	.5-9
Exhibit 5-12. Visualization of New Direct Access Ramp near SR 527 from Adjacent Neighborhood	5-9
Exhibit 5-13. Existing Conditions on 17th Avenue SE, Facing South5	5-10
Exhibit 5-14. Visualization of Proposed 17th Avenue SE Improvements, Facing South 5	5-11

SECTION 1 INTRODUCTION

The *Visual Impact Assessment* was prepared in support of the I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project (Project) Environmental Assessment (EA). This report evaluates the environmental effects of proposed improvements on Interstate 405 (I-405) from milepost (MP) 21.79 to MP 27.06 in support of the EA.

Visual quality is an important component of environmental quality on which transportation projects can have an effect. Perceived visual effects often strongly influence community acceptance of any transportation project. Because of the public nature and visual importance of transportation projects to both travelers and neighbors of the facility, changes to the visual environment must be understood and addressed during project development.

This analysis assesses visual quality in the study area and addresses how the Project would affect visual quality.

The Project will mitigate for visual quality impacts by adhering to the aesthetic treatments described in the *I-405 Urban Design Criteria*, which were developed with extensive community and stakeholder input (WSDOT 2016).

The Project is also being planned, developed, and designed in accordance with context sensitive solutions (CSS) guidelines. These guidelines incorporate community values to improve compatibility of the transportation facility with the community and neighborhood through which it passes. CSS also meets local, regional, and national requirements for the safe, efficient, effective movement of people and goods. CSS considers the elements of mobility, safety, environment, and attractiveness throughout the Project. Adhering to these guidelines, the Project is being developed to fit its physical surroundings and to preserve scenic, visual, historic, and environmental resources.

SECTION 2 PROJECT DESCRIPTION

2.1 Proposed Project Elements

The Project begins on I-405 south of the I-405/SR 522 interchange at milepost (MP) 21.79 and continues to just north of the I-405/SR 527 interchange to MP 27.06. Exhibit 2-1 lists improvements proposed with the Project. Exhibit 2-2, Sheets 1 through 5, show the locations of the proposed improvements.

Exhibit 2-1. Improvements Proposed with the I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project

Project Element	I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project
I-405 lanes and shoulders from SR 522	 Create a dual ETL system from MP 21.79 (south of the I-405/SR 522 interchange) to MP 27.06 (just north of the I-405/SR 527 interchange).
to SR 527	 From MP 21.79 to MP 22.30: Restripe existing lanes to create a dual ETL system. From MP 22.30 to MP 26.30: Resurface and widen I-405 to add one ETL in each direction.
	 From MP 26.30 to MP 27.06: Widen I-405 to construct direct access ramps and connect to the existing single ETL starting near MP 26.30.
I-405 tolling from SR 522 to SR 527	Construct new tolling gantries to collect tolls for the ETLs and direct access ramps.
I-405/SR 522 interchange area	 Construct new direct access ramps and two inline transit stations in the I-405 median (one in each direction). Transit stations would include station platforms, signage, artwork, lighting, fare machines, and site furnishing such as shelters, lean rails, benches, bollards, bicycle parking, and trash receptacles.
	 Construct a bus station and turnaround loop, pick-up and drop-off facilities, and new nonmotorized connection to the North Creek Trail near the SR 522 interchange. Funding and construction timeline to be coordinated with local transit agencies.
	Construct new northbound bridge through the SR 522 interchange.
	 Reconfigure the northbound I-405 to eastbound SR 522 ramp from one lane to two lanes.
	Reconfigure I-405 on- and off-ramps.
	Realign the southbound I-405 to westbound SR 522 ramp.
	 Realign the eastbound and westbound SR 522 ramps to northbound I-405.
SR 522 roadway	 Add three signalized intersections, which would change where the freeway portion of SR 522 begins and ends. Signals would be added at the following locations:
	 The northbound I-405 to westbound SR 522 off-ramp and the eastbound SR 522 to northbound I-405 on-ramp.
	The southbound I-405 to eastbound SR 522 ramp.
	Between the above two locations where the new I-405 ETL direct access ramps connect with SR 522.
228th Street SE	Widen the northbound I-405 bridge over 228th Street SE.

Exhibit 2-1. Improvements Proposed with the I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project

Project Element	I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project
SR 527 interchange area	 Construct new direct access ramps to the north, south and east just south of SR 527 at 17th Avenue SE.
	 Construct two inline transit stations (one in each direction) in the I-405 median. Transit stations would include station platforms, signage, artwork, lighting, fare machines, and site furnishing such as shelters, lean rails, benches, bollards, bicycle parking, and trash receptacles.
	 Reconstruct the pedestrian bridge over I-405.
17th Avenue SE, 220th Street SE, SR 527	 Reconfigure 17th Avenue SE and portions of 220th Street SE and SR 527 to include a roundabout at the Canyon Park Park and Ride, bicycle and pedestrian improvements, and improvements at the SR 527 and 17th Avenue SE intersections with 220th Street SE.
Fish barrier corrections	 Replace five fish barriers with restored stream connections at the following streams: Par Creek (WDFWID 993083)
	 Stream 25.0L (WDFWID 993104)
	 North Fork of Perry Creek (WDFW ID 08.0070 A0.25)
	Two fish barriers at Queensborough Creek (WDFWID 993084 and 993109)
Sammamish River bridges	 Remove the existing northbound I-405 to eastbound SR 522 bridge over the Sammamish River, including two bridge piers within the OHWM.
	 Remove the existing northbound I-405 to westbound SR 522 bridge over the Sammamish River, including two bridge piers within the OHWM.
	 Build a new bridge for northbound I-405 traffic over the Sammamish River.
	 Build a new bridge over the Sammamish River for the new direct access ramp at SR 522.
	 Build a new bridge over the Sammamish River for the northbound I-405 to SR 522 ramp.
Noise and retaining walls	 Construct 3 new noise walls near NE 160th Street and SR 527. See Exhibit 2-2, Sheets 1, 4 and 5.
	 Construct several new retaining walls. See Exhibit 2-2, Sheets 1 through 5.
Stormwater	 Provide enhanced treatment for 100 percent of new PGIS (approximately 24 acres).
management	 Retrofit about 23 acres of existing untreated PGIS and continue to treat stormwater from the approximately 44 acres of PGIS that currently receives treatment.
	 Construct three new stormwater outfalls, one on the Sammamish River and two on the North Fork of Perry Creek.
Construction duration	Construction is expected to last three to four years, beginning in 2021.

 $ETL = express\ toll\ lane;\ ID = identification\ number;\ MP = milepost;\ OHWM = ordinary\ high\ water\ mark;\ PGIS = pollution-generating\ impervious\ surfaces;\ WDFW = Washington\ Department\ of\ Fish\ and\ Wildlife$

Exhibit 2-2. I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project, Sheet 1 of 5

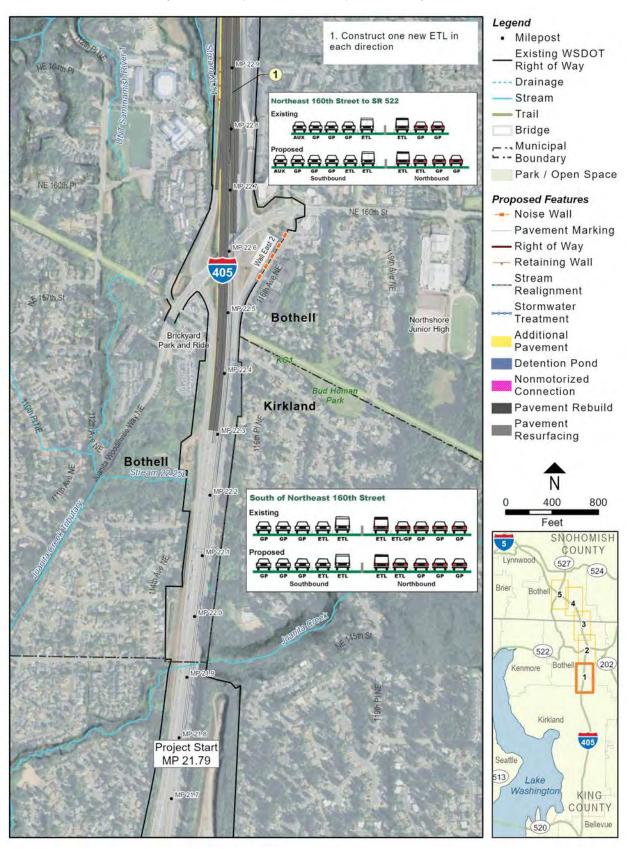


Exhibit 2-2. I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project, Sheet 2 of 5

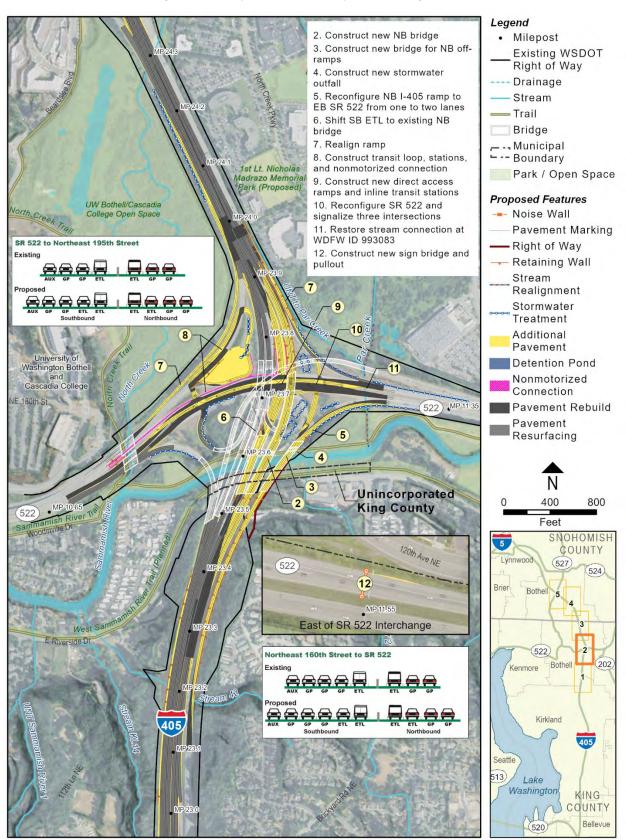


Exhibit 2-2. I-405, SR 522 Vicinity to SR 527 Express TollLanes Improvement Project, Sheet 3 of 5

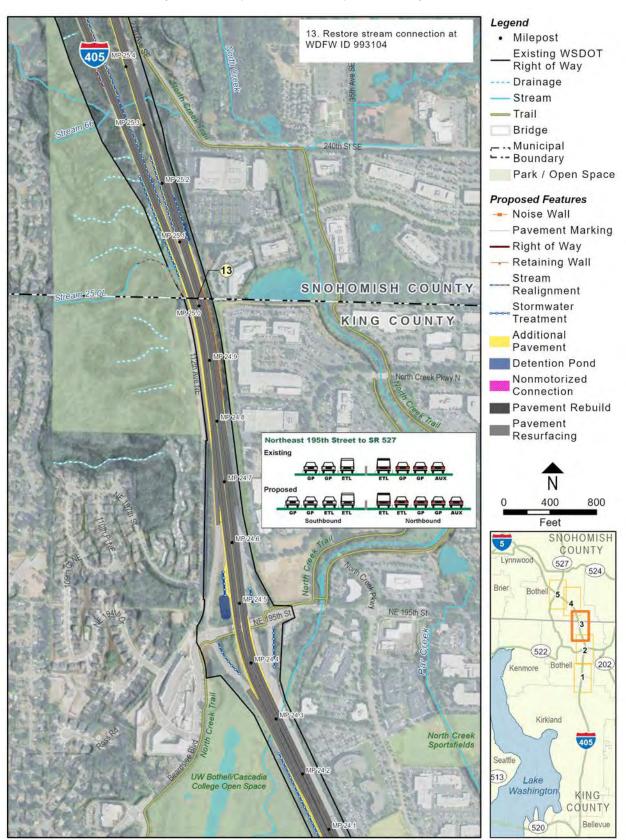
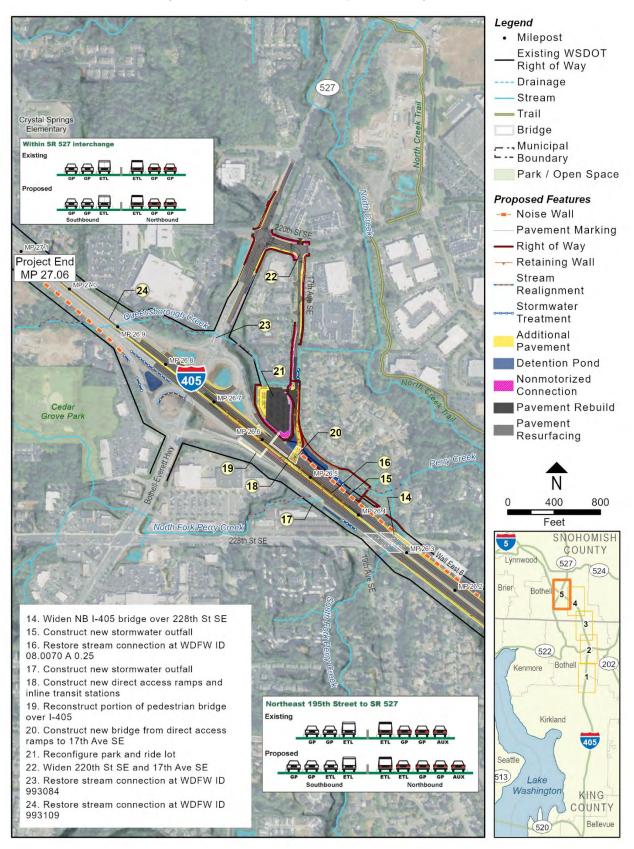


Exhibit 2-2. I-405, SR 522 Vicinity to SR 527 Express TollLanes Improvement Project, Sheet 4 of 5



Exhibit 2-2. I-405, SR 522 Vicinity to SR 527 Express Toll Lanes Improvement Project, Sheet 5 of 5



2.2 Express Toll Lanes Overview

Currently, there is one ETL in each direction of I 405 between SR 522 and SR 527. WSDOT expects that the new ETL in this section would operate in the same way as the existing ETL, from 5 a.m. to 7 p.m. on weekdays. At all other times and on

How do I get more information about ETLs on I-405?

https://wsdot.wa.gov/Tolling/405/

major holidays, the ETLs would be free and open to all without a *Good To Go!* pass. During operating hours:

- **Single-occupancy vehicles** would pay a toll to use the ETLs with or without a *Good To Go!* pass.
- Transit, High-Occupancy Vehicles (HOV) 3+, and motorcycles would travel for free with a Good To Go! flex or motorcycle pass.
- HOV 2+ would travel for free from 9 a.m. to 3 p.m. with a *Good To Go!* flex pass. From 5 a.m. to 9 a.m. and 3 p.m. to 7 p.m. HOV 2+ would pay a toll to use the ETLs with or without a *Good To Go!* flex pass.
- Large vehicles over 10,000 pounds gross vehicle weight would not be able to use the ETLs at any time.

2.3 Project Construction Overview

WSDOT expects to construct the Project using a design-build delivery method, in which WSDOT executes a single contract with one entity for design and construction services. With design-build projects, contractors have the flexibility to offer innovative and cost-effective alternatives to deliver the project, improve project performance, and reduce project effects. If the contractor proposes design modifications not covered by this Environmental Assessment, additional environmental review would be conducted as needed.

Construction would generally occur between 2021 and 2025, but construction activities in some areas would be complete prior to 2025. Once a contractor is selected for the Project, they could use multiple work crews in multiple locations to reduce the overall construction period. Work would include removing existing asphalt and concrete surfaces, clearing and grading adjacent areas, laying the aggregate roadway foundation, placing new asphalt and concrete surfaces, replacing culverts, and building and demolishing bridges. Removing bridge piers from the Sammamish River could require the construction of temporary work bridges and would require in-water work, which may include temporary use of cofferdams and a work barge, depending on the contractors' chosen means and methods. Realigning the I-405 mainline would require approximately 170,000 cubic yards of excavation and 166,000 cubic yards of fill.

Construction equipment would include backhoes, excavators, front-end loaders, pavement grinders, jack hammers, trucks, vactor trucks, cranes, drilling rigs and augers, concrete pumping equipment, and slurry processing equipment. Specific haul routes and the number of construction vehicles would not be known until a construction contract is signed. When possible, the work sites would be accessed from I-405 and SR 522. Construction staging areas for employee parking, large equipment storage, and material stockpiles would be located within WSDOT and Bothell right of way to the extent possible. The contractor may also find other locations for construction staging.

SECTION 3 METHODOLOGY

WSDOT uses the Federal Highway Administration's (FHWA) methodology to conduct visual assessment. These methods are described in their publication *Guidelines for the Visual Impact Assessment of Highway Projects* (FHWA 2015).

The visual impact analysis process consists of four phases: Establishment, Inventory, Analysis, and Mitigation. In each of the four phases, WSDOT considered the relationship between the affected environment (visual resources) and the affected population (viewers). This type of analysis is based on the idea of transactional perception in which perception (visual quality) is the result of the interaction between viewers and the environment, rather than the intrinsic characteristics of each taken in isolation.

- 1. **Establishment:** The area of visual effect (AVE) was defined by evaluating the landform, land cover, and the physiological limitations of human sight that constrain the visual environment of the Project.
- 2. **Inventory:** The landscape unit and viewer types were characterized. From there, representative viewpoints were identified, and existing visual quality was described for each viewpoint based on natural harmony, cultural order, and project coherence, as defined later in this section.
- 3. **Analysis:** The Project effects were evaluated from each viewpoint by analyzing changes to natural harmony, cultural order, and project coherence as a result of the proposed improvements.
- 4. **Mitigation:** Ways to avoid, minimize, or mitigate for adverse impacts were identified and beneficial changes were described that might reduce or eliminate any undesirable visual effects from the Project.

The FHWA visual impact assessment (VIA) guidelines recognize three types of visual perception, corresponding to each of the three types of visual resources.

- **Natural Environment:** Viewers inherently evaluate the natural harmony of the existing scene and will determine if the composition is harmonious or inharmonious.
- **Cultural Environment:** Viewers evaluate the scene's cultural order and determine if the composition is orderly or disorderly.
- Project Environment: Viewers evaluate the coherence of the project components and determine if the project's composition is coherent or incoherent.

To evaluate visual impacts, WSDOT reviewed project scoping documents and preliminary plans to understand the changes proposed by the Project. WSDOT also reviewed local planning documents, such as *Canyon Park Vision* (Bothell 2018), *Imagine Bothell Comprehensive Plan* (Bothell 2015b), *Canyon Park Subarea Plan* (Bothell 2015a), and *Campus Master Plan*, *UW Bothell and Cascadia College* (University of Washington 2017), to understand the desires and goals of local residents and stakeholders related to visual quality. WSDOT determined key locations using Google Earth and conducted site visits to take photographs from these locations for use in our

assessment. Lastly, WSDOT studied preliminary engineering plans and conceptual visualizations to understand the potential impacts of the proposed improvements on visual quality based on the community values articulated in local planning documents.

3.1 Regulatory Context

The following federal regulatory requirements address visual quality and visual quality assessments:

- National Environmental Policy Act of 1970
- National Trail System Act of 1968
- Wild and Scenic Rivers Acts of 1968
- National Historic Preservation Act of 1966
- U.S. Department of Transportation Act of 1966, Section 4(f)
- Highway Beautification Act of 1965

State regulatory requirements and guidance affecting visual quality and assessment include:

- State Environmental Policy Act
- Highway Beautification Act
- Open Space, Agricultural, Timberlands Current Use Conservation Futures (Revised Code of Washington 84.34.020)

3.2 Visual Quality Guidance

The following documents provide guidance affecting the assessment of visual quality for this Project:

- Guidelines for the Visual Impact Assessment of Highway Projects (FHWA 2015)
- Environmental Manual (WSDOT 2019)
- Interstate 405 Urban Design Criteria (WSDOT 2016)
- Roadside Policy Manual (WSDOT 2015)

Interstate 405, *Context Sensitive Solutions Master Plan* (WSDOT 2006)

SECTION 4 AFFECTED ENVIRONMENT

This section of the report describes the area of visual effect (AVE) for the Project, the affected population, and existing conditions and features related to visual quality.

4.1 Area of Visual Effect

The study area of a visual impact assessment is known as the AVE. The AVE includes areas that have views to or from the Project based on landform, land cover, and the physiological limits of human sight. The AVE for this analysis encompasses areas that can be seen from I-405 and areas from which I-405 can be seen.

The AVE for the Project extends from just south of the I-405/NE 160th Street interchange in south Bothell to the neighborhoods just north of the existing pedestrian bridge over I-405 near Canyon Park and the SR 527 interchange. The portion of I-405 that would be changed by the Project runs along the west side of a shallow, flat valley that is framed by forested slopes on either side.

4.2 Affected Population

Viewer groups for this assessment include travelers on I-405, travelers on city streets within the AVE, and neighbors on properties adjacent to the highway and interchanges. Viewers with higher sensitivity due to long durations of exposure to the Project include cyclists and pedestrians on multiuse trails, including the North Creek Trail and the Sammamish River Trail; institutional neighbors at the University of Washington (UW) Bothell/Cascadia College campus; and residents in single- and multifamily homes in neighborhoods adjacent to the AVE. Commuters and park and ride users would be moderately sensitive to visual quality in the study area because they are regularly traveling and spending more time in the study area during peak traffic flow. Employees and visitors at commercial and retail businesses and religious institutions would have a lower sensitivity to visual changes in the study area because their focus is on activities internal to their site.

The *Imagine Bothell Comprehensive Plan* (Bothell 2015b) goals encourage development that "celebrates and respects its [Bothell's] picturesque setting by achieving harmony between the built and natural environments...maintains strong residential neighborhoods... and conveys an overall single-family residential character." This emphasis on natural harmony and pedestrian-friendly, small-town development patterns also extends to the UW Bothell/Cascadia College campus at the south end of the AVE and the Canyon Park regional growth center at the north end of the AVE (Bothell 2015b).

The Campus Master Plan, UW Bothell and Cascadia College (University of Washington 2017) cites the importance of the North Creek wetland complex between the campus and I-405 in creating the natural scenic landscape that gives the campus a strong sense of place. Campus buildings and trails take advantage of views of the natural area, and the university continues to protect and enhance the vegetation through a managed restoration plan. This wetland area buffers the

campus from I-405 and helps to create a natural gateway to Bothell's downtown core just west of the campus.

In the *Canyon Park Vision* (Bothell 2018), local stakeholders and residents view Canyon Park as a regional economic hub supporting bio-technology and biomedical device companies. Predominant land uses include research and development, manufacturing, and office uses interspersed with retail just west of the I-405/SR 527 interchange, and multifamily and single-family uses on the east side of I-405 just south of the existing Canyon Park Park and Ride (Bothell 2018). North Creek and its associated wetlands are also predominant features of the subarea, and residents and stakeholders expressed a desire to preserve and enhance these natural features, preserve trees and greenery, and expand the North Creek trail network. Stakeholders also expressed a desire to preserve small-town character by providing tree-lined streets with attractive sidewalks and bike lanes or trails adjacent to new development, similar to those seen at Beardslee Crossing south of Canyon Creek, that include first-floor retail, sidewalk cafes, or other features that engage and enliven the pedestrian environment (Bothell 2018).

As recorded in the various planning documents, viewer groups and stakeholders in the AVE express a strong preference for natural landscapes, especially the wetlands and native greenery in the North Creek wetland complex. They also express a preference for small-town development typologies that include active sidewalks, street trees, bike trails, residential neighborhoods, and mixed-use commercial developments, such as shops or cafes, at street level.

4.3 Existing Conditions

This section describes existing conditions in the AVE, going from south to north.

4.3.1 I-405/SR 522 Interchange Area

At the south end of the AVE, I-405 north of the NE 160th Street interchange descends to the Sammamish River. I-405 and SR 522 intersect in a series of curved, elevated ramps above the valley. For travelers on SR 522 approaching the interchange with I-405, these "spaghetti" ramps dominate the view (Exhibit 4-1), while the ramps appear less dominant to travelers on I-405 due to its higher elevation (Exhibit 4-2).

In this section of the study area, viewers experience wide views of the sky, but built highway elements prevail. Scattered clusters of vegetation provide modest natural harmony while partially buffering views of the elevated ramps. Cultural order is poorly integrated with the existing vegetation, and there is no emphasis on project coherence.

Exhibit 4-1. I-405/SR 522 Interchange Viewed from Eastbound SR 522



Exhibit 4-2. I-405/SR 522 Interchange Viewed from Northbound I-405



Under I-405 and just south of SR 522, the Sammamish River Trail hugs the north side of the river. Pedestrians and cyclists on the trail have views of the Sammamish River; however, the columns and ramps of the highway above dominate the view (Exhibit 4-3). The area directly under the ramps is separated from the trail with galvanized chain-link fencing. This area has patches of ground cover visible from the trail and is currently used as a WSDOT maintenance area (Exhibit 4-4). Currently, trail users experience low levels of natural harmony in the vicinity

of the I-405/SR 522 interchange because of existing highway columns and bridges. Sparse vegetation punctuates the visual environment in an inconsistent manner that detracts from the overall natural harmony.

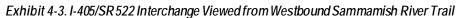




Exhibit 4-4. Sammamish River Trail under I-405/SR 522 Interchange



Neighbors on the eastern slope of the UW Bothell/Cascadia College campus have partial views of the I-405/SR 522 interchange, which is largely screened from view by native trees planted along the edge of a restored natural area east of the developed campus (Exhibit 4-5). These viewers experience high natural harmony due to the forested character of the slopes east of the campus. The deciduous trees on campus create a distinctive natural visual element during the growing season but allow glimpses of adjacent land uses, particularly in the winter.





4.3.2 I-405 between SR 522 Interchange and NE 195th Street Interchange

North of the I-405/SR 522 interchange, the highway rises in elevation and runs in a broad terrace cut into the slope above the North Creek valley. Northbound travelers have filtered views of the valley below through a narrow row of trees (Exhibit 4-6). The highway begins to feel somewhat enclosed in this area and to shift to a more natural character for the stretch of I-405 between SR 522 and NE 195th Street, creating a moderate level of natural harmony. The trees in the foreground on both sides of the freeway increase the natural harmony for neighbors and travelers. The foreground vegetation dominates the views because the topography along the roadway is flat and the highway geometric form is straight. The buffer of vegetation between the highway and built environment maintains a consistent suburban landscape composition with views to vegetation throughout most of this section. Visual distractions increase in this section with highway elements including signs, barriers, overhead lights, and other transportation structures that reduce visual quality and lower the coherence and order of the visual environment.



Exhibit 4-6. Northbound I-405 South of Beardslee Boulevard/NE 195th Street

4.3.3 I-405 between NE 195th Street Interchange and SR 527 Interchange

North of the Beardslee Boulevard/NE 195th Street overpass, the highway rises in elevation and separates into southbound and northbound roadways terraced into a gentle slope on the west side of the valley. The median and the slopes on either side of the highway are covered with conifers and other vegetation, giving this stretch of roadway a distinctively forested character, thus creating high natural harmony (Exhibit 4-7).



Exhibit 4-7. Northbound I-405 North of Beardslee Boulevard/NE 195th Street

As travelers approach SR 527, the forest character dissolves and the visual character transitions to a suburban highway. Vegetation in the median changes to mowed grass and then disappears as the northbound and southbound lanes again run alongside each other, divided by a concrete barrier. At this location, the expanse of pavement becomes more visually dominant. The forest recedes into the background behind a noise wall to the east, and the character of the vegetation shifts from conifer forest to more deciduous trees. The increased presence of noise walls, signs, and sign bridges announce the transition to suburban development even before the trees along the highway thin to allow views of residential and commercial neighborhoods on either side of I-405 (Exhibit 4-8).

Exhibit 4-8. Northbound I-405 Approaching SR 527



4.3.4 I-405/SR 527 Interchange Area

At the northern end of the AVE, a pedestrian bridge spans I-405 ending at the Canyon Park Park and Ride just south of SR 527 (Exhibit 4-9). The dark green and gray colors of the bridge, as well as the curvilinear railings, flared column design, and arcing roof on the elevator tower, increase the attractiveness and vividness of the structure, making it a memorable landmark for travelers on I-405 and pedestrians crossing the highway.

The park and ride has a suburban character with sidewalks, transit shelters, and views of an office park to the east and a residential neighborhood beyond a screening wall to the south (Exhibit 4-10). Park and ride users currently experience low to moderate levels of cultural order and project coherence in this section of the study area due to views of suburban development structures and elements, and are not likely to see this section of the study area as highly vivid or memorable.

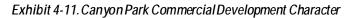
Exhibit 4-9. Northbound I-405 Ramp to SR 527 and Pedestrian Bridge at Canyon Park Park and Ride



Exhibit 4-10. Canyon Park Park and Ride Looking South from Pedestrian Bridge



Visually, the Canyon Park area has a suburban business park character with one- to three-story office parks and low-rise commercial buildings surrounded by surface parking with deciduous trees (Exhibit 4-11).





Just south of the park and ride, a screening wall and a buffer of natural vegetation separate a single-family residential neighborhood from the parking lot and bus facilities. The neighborhood has curving streets and sidewalks, and residential landscaping including a mix of grass, trees, and shrubs on individual properties (Exhibit 4-12).

Exhibit 4-12. Residential Character South of Canyon Park Park and Ride



4.3.5 228th Street SE

For travelers going westbound on 228th Street SE just before approaching I-405, the neighborhood is suburban in character, with undefined intersections, incomplete pedestrian facilities, minimal signs, utility poles, and a mix of trees and low shrubs screening views of I-405 and narrowing the view of the overpass (Exhibit 4-13). Both cultural order and project coherence are low at this location. Although I-405 dominates the foreground view, vegetation flanking the freeway softens views of the facility and provides a moderate degree of natural harmony.





East of I-405, the adjacent land use is dominated by single- and multi-family housing with open space, a commercial building, and an office park farther east of the freeway. For homes adjacent to I-405, vegetation blocks views of the freeway for most residents.

SECTION 5 IMPACT ANALYSIS

This section analyzes the impacts of the Project on visual quality in light of the viewer preferences described in Section 4. WSDOT considered both long-term impacts related to the Project improvements after construction is complete and temporary impacts during construction.

5.1 No Build Alternative

Under the No Build Alternative, the Project would not be constructed, and viewer experiences would remain the same.

5.2 Build Alternative

Overall, the Project would create varying impacts on visual quality by reducing the natural character of the corridor and shifting it to a more urban condition. For viewpoints where the visual effects of the Project are greater, simulations of the views after construction were developed. The Project is being constructed using a design-build approach in which contractors have the flexibility to propose alternatives that may result in changes to the visual effects described in this report. The simulations in the viewpoint analysis section below are based on current designs, which may change after the design-build contract is awarded. If the contractor proposes modifications not covered by this report, additional review of visual impacts would be conducted as needed.

Section 5.3 describes operational effects of the Build Alternative, and Section 5.4 describes construction effects of the Build Alternative.

5.3 Operational Effects

The Project would result in long-term visual impacts with varying levels of impact, based on the sensitivity of different viewer groups. The most noticeable long-term visual impacts would be in the vicinities of the I-405/SR 522 interchange and the Canyon Park Park and Ride near SR 527.

5.3.1 I-405/SR 522 Interchange Area

Exhibit 5-1 is an aerial view of the existing conditions, and Exhibit 5-2 is a visualization of the Project improvements at the I-405/SR 522 interchange.





Exhibit 5-2. Visualization of Proposed I-405/SR 522 Interchange Improvements



Views for Sammamish River Trail Users

The most sensitive viewers in the vicinity of the I-405/SR 522 interchange would be cyclists and pedestrians on the Sammamish River Trail. Because these viewers would be moving at a slower pace than motorized vehicles, they would be more likely to notice changes to the visual environment (Exhibit 5-3). The Project would remove two existing elevated ramps over the Sammamish River Trail and replace them with direct access ramps to signalized intersections

on SR 522. The Project would also construct a new bridge over the Sammamish River to carry northbound I-405 traffic. For the ramps that would be replaced, one of the ramps would be three feet lower than the existing structures, and the other two bridges would be at a similar elevation.

Today, natural harmony experienced by Sammamish River Trail users in the vicinity of I-405 and SR 522 is low because of existing highway columns and bridges. The area underneath I-405 and the ramps would be buffered by vegetation and would maintain the existing low levels of natural harmony (Exhibit 5-4).

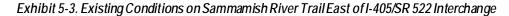




Exhibit 5-4. Visualization of Proposed I-405/SR 522 Interchange Improvements Viewed from Sammamish River Trail



The wider bridge carrying northbound I-405 and new direct access ramps would increase the shadowing and massiveness of the structure over the trail below. Altogether, the Project would increase the expansiveness of the built structures from roughly 144 feet wide to 290 feet wide, thus increasing shading on the trail and the dominance of the highway character. The new bridge would include the aesthetic treatments provided in the *I-405 Urban Design Criteria*. Consistent with other new bridges in the corridor, the bridge barriers would have a shiplap pattern, and the bridge girders would be painted Cascade Green. The bridge barriers and retaining walls would be painted with Mount St. Helens gray pigmented sealer. These changes would have a beneficial impact on project coherence for trail users that would offset the adverse impacts of increased shading due to the new ramps and bridge widening. Overall, the impacts are expected to be neutral for trail users at this viewpoint.

Views for North Creek Trail Users

At this viewpoint where the North Creek Trail travels under SR 522, the SR 522 overpass is the major component of the foreground view (Exhibit 5-5). The highway facility consists of bridge columns, decking, and abutment slopes with chain-link fencing separating the trail from the riverbank. Although trees and shrubs are visible on the riverbanks, the foreground view consists of sparse vegetation on the embankment, giving this viewpoint a low level of natural harmony. The existing trail is poorly lit, providing little mitigation for the shadowing and massiveness of the structures over the trail. Viewers at this viewpoint are inferior to (looking up at) SR 522.



Exhibit 5-5. Existing Conditions North Creek Trail Underpass at SR 522

Exhibit 5-6 simulates the changes to the visual environment as a result of the Project. The Project would build a nonmotorized connection between the North Creek Trail and the new transit facilities at the I-405/SR 522 interchange. At the North Creek Trail underpass, new aesthetic treatments to the existing abutment walls would include mortar-set cobblestones. The trail would be illuminated at night with additional underdeck lighting that would be designed to

optimize nighttime visibility for trail users. These changes would increase the level of cultural order and project coherence, resulting in an overall beneficial impact on visual quality.





Views of I-405 for SR 522 Travelers

For travelers on SR 522, the I-405/SR 522 interchange is the major component of the foreground and middleground views (Exhibit 5-7). In the foreground, the grass strip between the eastbound and westbound lanes helps to break up the gray color of the pavement. The trees surrounding the facility and open views of the sky punctuated with freeway ramps combine to create a low to moderate degree of natural harmony for the middleground and background views. Both project coherence and cultural order are low at this viewpoint.

Exhibit 5-7. Existing Conditions Approaching I-405/SR 522 Interchange Viewed from Eastbound SR 522



Along SR 522, the Project would construct a bus station and turnaround loop, pick-up and drop-off facilities, and a nonmotorized connection in the northwest quadrant of the interchange and would remove the elevated westbound SR 522 on-ramp (Exhibit 5-8). In addition, three new signalized intersections for the new on- and off-ramps to and from I-405 would be built. These features would be at the same elevation as SR 522, making them largely invisible from the UW Bothell/Cascadia College campus, but noticeable for travelers on SR 522.



Exhibit 5-8. Visualization of Proposed I-405/SR 522 Interchange Improvements Viewed from Eastbound SR 522

SR 522 users would experience increased complexity due to increased development and encroachment—such as more pavement, traffic lanes, signals, signs, walls, and other transportation-related structures—thereby decreasing natural harmony.

Retaining walls needed to support the new direct access ramps would be terraced with wall textures, and light poles on SR 522 adjacent to the I-405 interchange and in the SR 522 transit loop area would be painted dark green in accordance with the *I-405 Urban Design Criteria* (WSDOT 2016). As a result of these changes, the neglected highway character that exists today would shift to match the more suburban character of the intersection of SR 522 and Campus Parkway just west of the AVE. These changes would have a beneficial effect on cultural order and project coherence and result in an overall neutral impact on visual quality.

Views for Travelers on I-405

From I-405, visual changes would include new retaining walls and wider areas of pavement because of the new northbound I-405 bridge. Viewers would also experience increased visual complexity due to the reconfiguration of two curving ramps into two straighter direct access ramps that connect with SR 522 at two new signalized intersections. Inline stations at the new direct access ramps to SR 522 would increase visual complexity for travelers on I-405. Because

the overall dominance of the highway character would remain about the same, the Project would result in neutral impacts on visual quality for these viewers.

5.3.2 I-405/SR 527 Interchange Area

In the vicinity of the Canyon Park Park and Ride, the Project would demolish a portion of the existing pedestrian bridge and relocate the elevator tower from the northwest corner of the lot to the southwest corner. The Project would also construct a new direct access ramp in the median of I-405 that connects to 17th Avenue SE, the street that currently leads to the park and ride. The direct access ramp would include an inline transit station, which would be constructed by Sound Transit. The Project would construct new pedestrian bridges to the inline transit station from the park and ride on the east side of I-405 and from the portion of the existing pedestrian bridge that would remain on the west side of I-405. The Project would also shift the park and ride to the north and construct a roundabout at the parking lot entrance.

Views for I-405 Travelers

Exhibit 5-9 is an aerial photo of existing conditions, and Exhibit 5-10 provides a visualization of the Project improvements specific to the inline transit station and Canyon Park Park and Ride.



Exhibit 5-9. Aerial View of Existing Conditions near I-405/SR 527 Interchange



Exhibit 5-10. Visualization of Proposed Improvements near I-405/SR 527 Interchange

These changes would introduce new visual complexity for travelers on I-405. Widening the freeway to add one ETL in each direction and constructing the direct access ramps in the grassed median would increase the visual dominance of pavement and lower the natural harmony at the interchange. The inline transit station would include lights, transit shelters, signage, and retaining walls. These structures, as well as the new pedestrian bridges, would be most visible to travelers on mainline I-405 and users of the park and ride. The pedestrian bridges, walls, lighting, and roundabout would match the *I-405 Urban Design Criteria* (WSDOT 2016). The architecture and site elements of the transit shelters are anticipated to be consistent throughout the corridor, which will provide uniformity for all the BRT stations, and thus the visual impact of these changes would be neutral.

Views for Park and Ride Users

The Project would shift the Canyon Park Park and Ride to the north. The park and ride lot would comply with requirements in the Bothell Municipal Code, Section 12.18.090, which requires a minimum 5-foot-wide landscape strip around the outside of the parking lot and a minimum of 7 percent interior landscaping (minimum 5 feet wide) with one tree for every 10 parking stalls to be distributed throughout the parking lot. These changes would ensure that the visual character of the parking remains unchanged; therefore, the expansion would have a neutral impact on visual quality for park and ride users.

Residential Viewers

For the residential neighborhood adjacent to I-405 and the park and ride, the existing screening wall and vegetation serve to visually separate it from these transportation facilities (Exhibit 5-11).

Exhibit 5-11. Existing View from Adjacent Neighborhood to Canyon Park Park and Ride



These residential neighbors east of the new direct access ramp to 17th Avenue SE would have unobstructed views of the retaining wall on the south side of the new ramp (Exhibit 5-12).

Exhibit 5-12. Visualization of New Direct Access Ramp near SR 527 from Adjacent Neighborhood

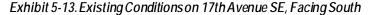


The trees that are currently located between the park and ride and an existing screening wall buffering the adjacent homes would be cleared for construction. These trees would not be

replanted due to a lack of space between the new direct access ramp and the existing right of way boundary. The new retaining wall supporting the direct access ramp would include an Ashlar wall texture to match the *I-405 Urban Design Criteria* (WSDOT 2016). Boston ivy would be planted at the base of the wall to soften its appearance over time. These changes would help integrate the new ramp with the suburban character of the neighborhood. However, the new retaining wall would dominate the backyard views for neighbors, which would lower the natural harmony, resulting in adverse impacts on visual quality for these sensitive viewers.

Views on 17th Avenue SE

Currently, 17th Avenue SE is a two-lane suburban road that dead ends at the existing Canyon Park Park and Ride lot (Exhibit 5-13). The street is lined by one- to two-story office buildings and an extended-stay hotel. The narrow sidewalks are buffered from the road by grass strips with trees and grassy berms and hedges between the parking lots. This vegetation provides a moderate level of natural harmony at this viewpoint. In the foreground, the view of the road is relatively uncluttered, and the grass strips and trees help to soften the view.





The Project proposes to reconstruct the existing 17th Avenue SE by widening the road by one lane, with a dedicated turn lane and a combination of new sidewalks, protected bike lanes, and on-street bike lanes (Exhibit 5-14). WSDOT would clear existing mature trees adjacent to the road to make room for these improvements but would install a planting strip with grass and trees before the Project is complete. The newly planted trees would be smaller than the existing trees until they reach maturity. In addition, the Project will reconfigure a portion of 220th Street SE and SR 527 to include a direct access ramp and roundabout at the Canyon Park Park and Ride that will join with 17th Avenue SE.



Exhibit 5-14. Visualization of Proposed 17th Avenue SE Improvements, Facing South

While the use of the aesthetic treatments described in the *I-405 Urban Design Criteria* would have a beneficial impact on project coherence, the proposed changes would shift the character from suburban to a more urban visual character. With direct access from I-405 and an additional lane, 17th Avenue SE will see an increase in traffic volume. For these reasons, the Project would have an adverse impact on visual quality at this viewpoint.

5.3.3 228th Street SE

The Project would rebuild the northbound I-405 bridge and lengthen the span by about 26 feet to the east to make room for the new direct access ramp south of SR 527 in the vicinity of 17th Avenue SE and a wider shoulder. Northbound I-405 users would notice a modest increase in the expansiveness of the built structure. The wider bridge would require some vegetation clearing and increase shading on 228th Street SE, but these changes would not create a significant change to the visual quality at this location due to its moderate level of natural harmony and cultural order. The rebuilt bridge would include the aesthetic treatments in the *I-405 Urban Design Criteria*. These changes would increase the level of project coherence for the corridor, resulting in an overall neutral impact on visual quality at this location.

5.3.4 Other Viewpoints in the Study Area

Throughout the rest of the study area, the Project would add narrow bands of pavement and restripe the existing pavement, so impacts on visual quality would be minimal. In two locations where fish barriers would be replaced with restored stream crossings, the Project would clear existing vegetation, including mature trees, which would result in a noticeable lowering of natural harmony in a section of roadway that has an attractive forested character. Although this new construction would adversely affect visual quality, the Project would restore the

streambanks with native vegetation that, over time, would blend with the existing forested character.

In addition, three noise walls would be built as part of the Project. The first wall, Wall East 2 would be built next to an existing noise wall (wall NW16) located on the east side of I-405 along the northbound I-405 off-ramp to NE 160th Street. This new wall would be approximately 528 feet long and 18 feet high and would further limit visibility, as well as light and glare, for residential neighbors adjacent to the freeway. The second wall, Wall East 6, would be built to extend the existing noise wall (wall NW1) on the east side of I-405 in the vicinity of 228th Street SE. This wall would be approximately 1,800 feet long and 15 to 18 feet high, with an 8-foot noise wall on the bridge structure. This new wall would visually screen and mitigate noise from the freeway for the single and multifamily residences located in this area.

The third wall, Wall West 7, would be located on the west side of southbound I-405 north of SR 527 near 9th Avenue SE. This new wall would be about 1,200 feet long and 12 feet high, and would visually screen and mitigate noise from the freeway for new single-family homes in the Cedar Park North development.

For travelers in these three locations within the study area, natural harmony is already low to moderate due to the existing suburban character of the freeway. Vegetation clearing and grubbing for construction would reduce the foreground and mid-ground views to the buffer of trees, further eroding natural harmony. This shift in visual character from suburban to more urban would have an adverse impact on natural harmony and cultural order. The proposed noise walls will tie-in to existing noise walls and will use the aesthetic treatments called for in the *I-405 Urban Design Criteria*, which will strengthen project coherence of this corridor. Where feasible, WSDOT would restore areas cleared for the walls with native vegetation to minimize impacts on natural harmony and cultural order over time.

5.4 Construction Effects

Construction would temporarily reduce visual quality throughout the AVE due to the presence of construction equipment and workers, stockpiled materials, debris, construction signage, lighting, and fencing and staging areas. Detours and lane shifts during construction would demand greater traveler attention, and construction activities could distract travelers from typical views seen in the corridor. Vegetation clearing would reduce natural harmony, especially those areas cleared in the forested median between MP 25.2 and MP 25.7 north of the I-405/NE 195th Street interchange for roadway widening. However, the impact would be temporary because the Project would restore most of the affected areas with native vegetation..

Travelers on SR 522 and southbound I-405 near the SR 522 interchange would observe construction of new transit facilities and three new signalized intersections on SR 522. Pedestrians and cyclists on the Sammamish River Trail and travelers on SR 522 and I-405 approaching the interchange would also observe visual impacts associated with construction activities. Two elevated ramps would be demolished, and new ramps would be constructed to provide direct access from I-405 to SR 522 with an inline transit station (constructed by Sound Transit) along the ramps. Pedestrians and cyclists would have close-up views of construction

equipment and activities under this interchange, since construction materials would likely be stored in this area during construction.

There would be noticeable visual impacts just south of SR 527, where the Canyon Park Park and Ride and associated pedestrian bridge would be demolished and reconfigured. Construction activities on 17th Avenue SE and 220th Street SE would also be noticeable for park and ride users, patrons of local retail businesses, and employees and visitors in nearby office parks. Residents in the neighborhood south of the park and ride would notice temporary visual impacts due to vegetation clearing and increased views of construction activities as the existing screening wall is demolished and the direct access ramp to I-405 from 17th Avenue SE is constructed.

SECTION 6 MITIGATION

The Project will minimize and mitigate for adverse impacts during and after construction using the strategies described in this section.

6.1 Operational Mitigation

- Plan, develop, and design the Project in accordance with context sensitive solutions (CSS) guidelines described in the *I-405 Urban Design Criteria* (WSDOT 2016). Generally, the application of CSS guidelines precludes the need to further mitigate visual impacts. These guidelines cover aesthetic treatments for elements such as vegetation, structural elements, lighting, and signage and are designed to offset the increase in humanmade highway and related transportation elements. However, this section describes mitigation measures for some Project-specific items that may not be covered by the CSS guidelines.
- Minimize impacts to existing vegetation to the greatest extent feasible in accordance with WSDOT policy. In areas where vegetation is cleared for construction, the Project will replace trees and vegetation in accordance with the WSDOT Roadside Policy Manual (WSDOT 2015).
- Work with Sound Transit to meet the intent of the *I-405 Urban Design Criteria* for joint Project elements, including the transit facilities at the SR 522 interchange and the inline transit stations at the SR 522 and SR 527 interchanges. Lighting at the transit stations will use fixtures with hoods to minimize light pollution.
- Minimize visual impacts of proposed noise walls with a green-over-gray strategy, applying a varied planting structure to include a combination of trees, shrubs and vines. Where there is no longer room for vegetation, context-appropriate walls will be used to blend the adjacent natural character with the built environment.
- Mitigate for adverse visual impacts along the Sammamish River Trail by restoring areas where existing ramps are removed with native vegetation. Trees will be planted in this area to blend with existing native vegetation and help to screen the new ramps, inline station and signalized intersections from view. Where the Project removes existing galvanized chain-link fencing adjacent to the trail, WSDOT will install black-coated chain link fencing in its place to blend with newer sections of fencing on the east side of I-405.
- Install mortar-set cobblestones over the existing sloped abutment walls for the North Creek Trail underpass at SR 522. The existing underdeck light fixtures mounted on the box girder will be replaced with new rectangular box-style fixtures shown in the *I-405 Urban Design Criteria*.
- Install Boston ivy on the retaining walls that support the new direct access ramp near the Canyon Park Park and Ride. These walls will also have an Ashlar texture and pigmented sealer to help blend with I-405 corridor design elements and the surrounding suburban context.

• Design the two new pedestrian bridges at the Canyon Park Park and Ride to match the style of the existing pedestrian bridge, a portion of which will remain west of I-405. This approach will help to increase project coherence.

6.2 Construction Mitigation

- Locate material and equipment storage/staging in less prominent areas, where possible.
- Shield freeway lighting and use downcast lighting so light sources (such as light bulbs) are not directly visible from residential areas and local streets, when possible.
- Restore areas as work in each area is completed when feasible.
- Use common signs and public notices with clear directions.

SECTION 7 REFERENCES

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