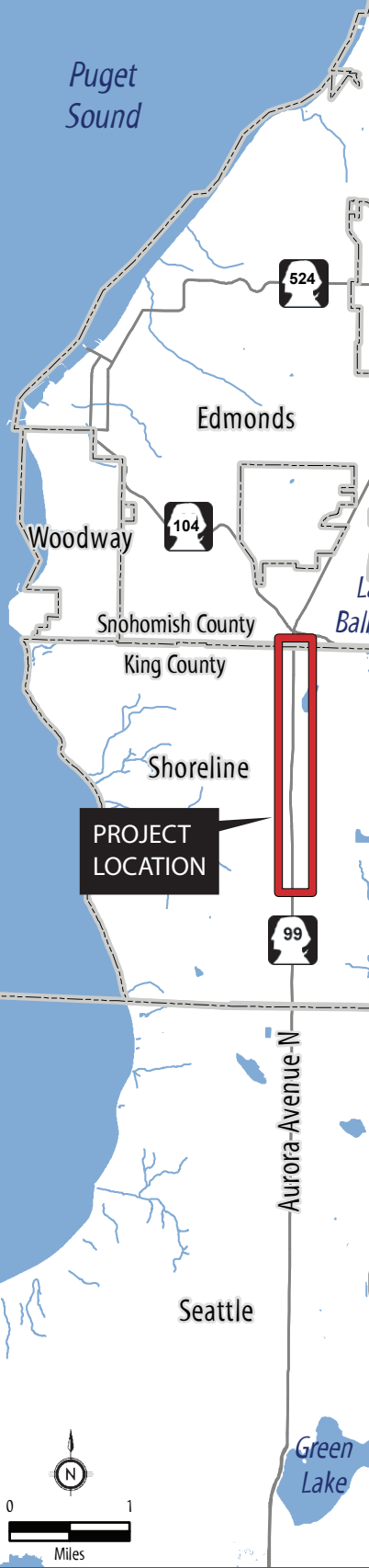




# Visual Quality Discipline Report

Aurora Corridor Improvement Project  
N 165th Street to N 205th Street





# Visual Quality Discipline Report

## Aurora Corridor Improvement Project: N 165th Street – N 205th Street

Prepared for:



City of Shoreline  
17544 Midvale Avenue N.  
Shoreline, WA 98133  
Contact: Kris Overleese, P.E.  
206/546-0791

Prepared by:



**Jones & Stokes**

11820 Northup Way, Suite E300  
Bellevue, WA 98005  
Contact: Bryan Fiedor  
425/822-1077

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Appendix A. Visual Quality Matrix

# Glossary

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<b>Intactness</b>	The visual integrity of the natural and human-built landscape and its freedom from encroaching elements. High intactness means that the landscape is free of eyesores and is not broken up by features that are out of place.
<b>Landscape Unit</b>	Places or districts with clear landform or landcover boundaries that form an outdoor area with similar visual character and visual continuity. For example, a landscape unit can be a single neighborhood, or several neighborhoods combined.
<b>Unity</b>	The visual coherence and compositional harmony of the landscape when considered as a whole. High unity frequently reflects the careful design of individual human components and their relationship in the landscape.
<b>View</b>	That which can be seen either from or toward the transportation facility.
<b>Viewers</b>	People who have views of the project or resource. Viewers are usually discussed in terms of general categories of activities, such as resident, boater, jogger, or motorist. These general categories are also known as viewer groups.
<b>Viewer Exposure</b>	How many people see something from a particular viewpoint and over what duration they see it. View duration considers how often viewers observe the view, the frequency of views, and whether the viewers or the objects are stationary or moving.
<b>Viewer Sensitivity</b>	The degree to which people respond to what they see. A viewer with high sensitivity to a particular view will respond strongly to any change in the view. Viewer sensitivity does not imply support for or opposition to a proposed change in the view.
<b>Viewpoint</b>	The position or location of the viewer.
<b>Viewshed</b>	The area that can be seen from a given viewpoint or group of viewpoints; it is also that area from which that viewpoint or group of viewpoints can be seen.
<b>Visual Character</b>	The visual patterns formed by everything that can be seen and how those patterns fit together in the visible landscape. The description of character considers dominance, scale, diversity, and continuity to further define the visible landscape.
<b>Visual Quality</b>	A subjective measure of the character of the visual resource. The many factors that contribute to a landscape's visual quality are grouped under intactness, unity, and vividness.
<b>Vividness</b>	Describes how the landscape elements combine to form a colorful, striking, or otherwise memorable composition.

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# Acronyms and Abbreviations

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<b>ADT</b>	Average Daily Traffic
<b>BAT</b>	Business Access and Transit
<b>CAA</b>	Clean Air Act
<b>CEQ</b>	Council on Environmental Quality
<b>CFR</b>	Code of Federal Regulations
<b>City</b>	City of Shoreline
<b>CTR</b>	Commute Trip Reduction
<b>FGTS</b>	Freight and Goods Transportation System
<b>FHWA</b>	Federal Highway Administration
<b>GMA</b>	Growth Management Act
<b>HAC</b>	High-Accident Corridor
<b>HAL</b>	High Accident Location
<b>I</b>	Interstate
<b>LOS</b>	level of service
<b>N</b>	North
<b>NCHRP</b>	National Cooperative Highway Research Program
<b>NEPA</b>	National Environmental Policy Act
<b>NHS</b>	National Highway System
<b>PAL</b>	Pedestrian Accident Location
<b>Project</b>	Aurora Corridor Improvement Project
<b>PSRC</b>	Puget Sound Regional Council
<b>RCW</b>	Revised Code of Washington
<b>RTP</b>	Regional Transportation Plan

<b>SAFTEA</b>	Safe, Accountable, Flexible, and Efficient Transportation Act of 2003
<b>SEPA</b>	Washington State Environmental Policy Act
<b>SMC</b>	Shoreline Municipal Code
<b>SR</b>	State Route
<b>TEA-21</b>	Transportation Equity Act for the 21st Century
<b>USC</b>	United States Code
<b>V/C</b>	volume to capacity
<b>WAC</b>	Washington Administrative Code
<b>WSDOT</b>	Washington State Department of Transportation (WSDOT)

# Chapter 1. Introduction

This chapter introduces the proposed project, explains why visual quality is analyzed in the environmental process, and summarizes key findings presented in this report.

## What is the purpose of this report?

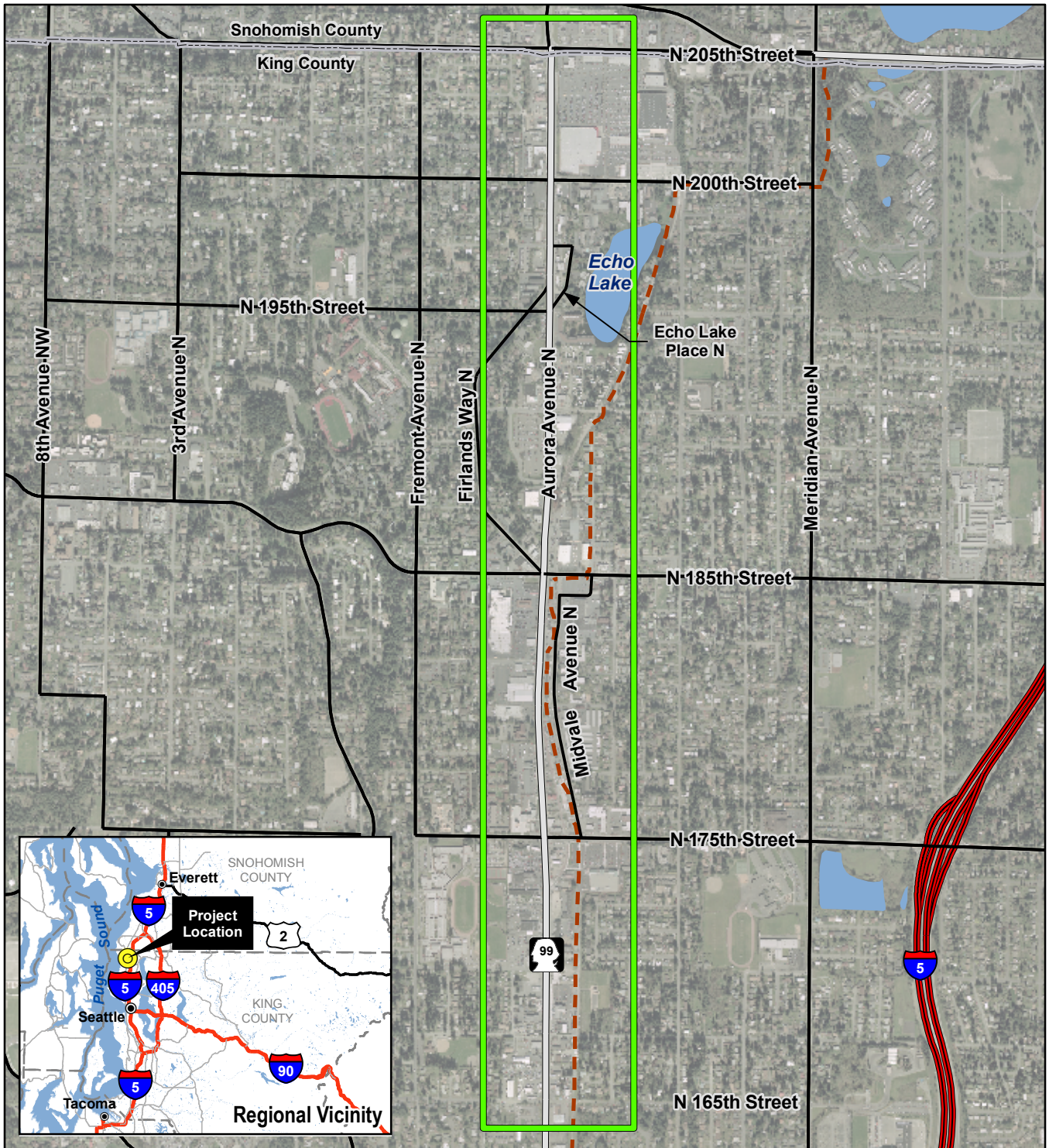
The City of Shoreline (City) proposes to construct the Aurora Corridor Improvement Project, N 165th Street to N 205th Street (Project), which will improve a 2-mile-long segment of State Route (SR) 99, named Aurora Avenue North (N) within the City. This Project must be developed in compliance with the National Environmental Policy Act (NEPA) and the Washington State Environmental Policy Act (SEPA).

This visual quality discipline report was prepared in general accordance with Section 460 of the Washington State Department of Transportation (WSDOT) Environmental Procedures Manual (WSDOT 2006). This report describes the affected visual environment, discusses how visual quality is evaluated, addresses potential effects due to Project activities, and proposes measures to minimize Project effects.







## Where is the Project located?

The Project is located within the city limits of the City of Shoreline on Aurora Avenue N between N 165th Street and N 205th Street (See Figure 1, *Project Vicinity*).





Sources: City of Shoreline (2006); Jones & Stokes (2007)

-  City Boundary
-  Project Area
-  Interstate
-  State Route
-  Arterial
-  Interurban Trail

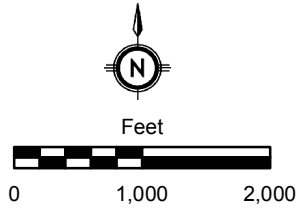


Figure 1. Project Vicinity  
Aurora Corridor Improvement Project  
September 2007

## What are the existing characteristics of the Aurora Avenue corridor?

Aurora Avenue N is a major north/south urban highway that serves both local and regional traffic within the City of Shoreline (see Figure 1, *Project Vicinity*). It is a key regional vehicular, transit, and truck corridor within the greater area of Puget Sound and serves as the City's primary arterial roadway, running approximately parallel to Interstate (I)-5 with connections at N 145th Street, N 175th Street, and N 205th Street. Development along the corridor is predominantly commercial, mixed with some multi-family housing. Echo Lake is located approximately 200 feet to the east of the roadway, north of N 195th Street. The Interurban Trail runs roughly parallel to Aurora Avenue N, to the east in the Project corridor. Aurora Avenue N has a 5-lane cross section, with shoulder and sidewalk of varying width located sporadically along the corridor, no curb or gutter, and little landscaping.

Under existing conditions, Average Daily Traffic (ADT) on the roadway is 33,000 to 39,000 vehicle trips. A steady level of pedestrian and bicycle travel occurs along and across the roadway, but the corridor is heavily oriented to vehicle travel and is generally not conducive to non-motorized travel. WSDOT has designated several areas of Aurora Avenue N between N 165th Street and N 205th Street with adverse safety ratings, which are described in Chapter 2. The corridor is served heavily by public transit provided by King County Metro, with additional service at the north end of the corridor provided by Community Transit.

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### Average Daily Traffic (ADT)

ADT represents the average number of vehicles that travel on a roadway on typical day. Under existing conditions, ADT on Aurora Avenue N is 33,000 to 39,000 vehicle trips.

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## Why improve Aurora Avenue North?

The purpose of the Aurora Corridor Improvement Project, N 165th Street to N 205th Street, is to improve safety, circulation, and operations for vehicular and non-motorized users of the roadway corridor, to support multi-modal transportation within the corridor, and to support economic stability along the corridor. The Purpose and Need identified for this project is described further in Chapter 2.

## What are the major characteristics of the proposed project?

The Aurora Corridor Improvement Project, N 165th Street to N 205th Street, would include the following elements:

- Business Access and Transit (BAT) lane in each direction;
- two general-purpose lanes in each direction;
- continuous sidewalk, curb, and gutter on each side of the roadway;
- landscaped center median with left-turn and u-turn pockets;
- improvements to intersections, including proposed new traffic signals at the intersections of Aurora Avenue N with Firlands Way N and N 182nd Street;
- additional pedestrian crossings at signalized intersections;
- improvements to Midvale Avenue N, between N 175th Street and N 182nd Street;
- improvements to Echo Lake Place, north of N 195th Street;
- new street and sidewalk lighting;
- undergrounding of utilities; and
- stormwater facilities.

In addition to a No Build Alternative, three Build Alternatives, called Alternative A, B and C, respectively, are under consideration. In general, they vary in centerline location, width of median, and presence or absence of an amenity zone between the curb and sidewalk. The three Build Alternatives are described in detail in Chapter 3 of this report.

## Why is visual quality considered for this project?

The construction or modification of public highways can have a considerable effect on the quality and character of the landscape.

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### **Business Access and Transit (BAT) Lane**

Right-side lane that serves exclusively for bus travel, and for right-turn access in and out of driveways located along the corridor.

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Visual quality along a highway is particularly important; research has shown that the view from the road is the basis for much of what people know about the everyday environment and helps to shape their mental image of the landscape (Federal Highway Administration 1988).

Due to the public nature and visual importance of highway projects, both negative and positive visual effects must be adequately assessed and considered during project development. NEPA requires that all actions sponsored, funded, permitted, or approved by federal agencies undergo planning to ensure that environmental considerations such as effects related to aesthetics and visual quality are given due weight in project decision-making. SEPA mandates a similar procedure for state and local actions. Such assessment is also useful in identifying how project elements may be designed to harmonize with the surrounding landscape.

This assessment of visual quality reviews and analyzes the visual or aesthetic effects of the Project. Visual effects are analyzed from two viewpoints: the view from the road and the view toward the road. The analysis describes both the character of the visual experience along Aurora Avenue N and the effect of the proposed action on the viewer.

Visual quality is inherently subjective. Everyone sees the world through the eyes of an individual and what is “seen” is influenced to a large degree by personal values, expectations, and interests.

The Federal Highway Administration (FHWA) has developed an analytical method for assessing visual quality effects that removes this subjectivity, thus allowing a more objective assessment. This method, described in detail in the handbook *Visual Impact Assessment for Highway Projects* (FHWA 1988) was used to conduct the visual quality assessment for the Project.

## What are the key points of this report?

Any of the three Build Alternatives introduced in Chapter 3 of this report may reasonably be expected to permanently change the visual environment for both users and neighbors of Aurora Avenue N. Visual changes as a whole will not be significant, as the majority of the work will occur within the existing right-of-way. Visual quality will be improved for project views as a result of the Project. Due to the wider median and presence of a planted pedestrian amenity zone, Alternatives B and C will result in greater aesthetic benefit than

Alternative A. The potential effects from the proposed project on structures, vegetation, and views will likely include:

- increased roadway pavement width due to the creation of new BAT lanes;
- addition of curb, gutter, and sidewalk along both sides of the corridor;
- addition of a vegetated amenity zone located between the curb and sidewalk, including relocated utility and light poles (only in Alternatives B and C);
- replacement of continuous paved center turn lane with a vegetated center median with left-turn and u-turn pockets;
- improvement in visual quality for views, particularly for those from the Project or towards the Project from adjacent properties due to increased vegetation, sidewalks, and pedestrian amenities;
- changes to lighting, glare, and shading of low to moderate extent, although widening of the built surface and relocation of street lights will produce some alterations; and
- changes of a temporary nature to the visual environment because of construction-related activities, such as views of construction equipment, workings, staging areas, cut-and-fill activities, and nighttime lighting.

Roadway designers incorporated into the overall design of the Project an approach known as “context sensitive solutions” to minimize any negative visual effects. As part of the process, such elements as new landscaping and plantings have been used to screen, soften, or enhance the visual features of the Build Alternatives.

Table 1 summarizes the potential visual effects and mitigation that are identified in this report.

**Table 1. Summary of Potential Visual Quality Effects and Mitigation**

<b>Potential Effects and Mitigation</b>	<b>Alternatives</b>			
	<b>No Build</b>	<b>A</b>	<b>B</b>	<b>C</b>
<b>Potential Operational Effect</b>				
Minimal addition of light and/or glare due to addition of lane in each direction		X	X	X
<b>Project element that addresses potential effect: Plant vegetation within median</b>		X	X	X
<b>Project element that addresses potential effect: Plant vegetation within amenity zone</b>			X	X
<b>Best management practice that addresses potential effect: Shield/screen light fixtures to minimize glare</b>		X	X	X
<b>Best management practice that addresses potential effect: Use low-sheen and non-reflective materials</b>		X	X	X
<b>Potential Construction Effect</b>				
Visual prominence of traffic cones and barriers along roadway, used for construction-related traffic control and channelization		X	X	X
<b>No mitigation recommended</b>		X	X	X
Temporary lighting, detours, and construction-related clutter		X	X	X
<b>Mitigation: Locate/screen storage and staging areas in areas that minimize visual prominence</b>		X	X	X
<b>Mitigation: Shield/screen light fixtures to minimize glare</b>		X	X	X





## Chapter 2. Purpose and Need

This chapter describes the overall purpose of the proposed project and identifies the specific needs that the Project would address.

### **What is the purpose of the Aurora Corridor Improvement Project?**

The purpose of the Aurora Corridor Improvement Project, N 165th Street to N 205th Street, is to improve safety, circulation, and operations for vehicular and non-motorized users of the roadway corridor, to support multi-modal transportation within the corridor, and to support economic stability along the corridor.

### **How were the needs of the Aurora Avenue corridor identified?**

The needs of the Aurora Avenue corridor that would be addressed by the Project were identified through:

- Regional Metropolitan Transportation Plan,
- City Comprehensive Plan, and
- City Multimodal Pre-Design Study.

## Regional Metropolitan Transportation Plan

Improvement to Aurora Avenue N between N 165th Street and N 205th Street is identified in *Destination 2030*, which is the regional Metropolitan Transportation Plan that addresses long-range transportation needs of a growing population (PSRC 2001). The plan includes a detailed set of projects and programs that recognize the link between transportation and growth planning. It identifies more than 2,000 specific projects that will improve roads, transit and ferry service, bicycle and pedestrian systems, freight mobility, and traffic management and operations. *Destination 2030* calls for the development of new state and regional funding mechanisms to provide sustained and flexible revenues that support plan strategies, and it outlines a monitoring and review process for ensuring that plans are current and that implementation stays on course.

## City Comprehensive Plan

Improving Aurora has been a community goal since the City of Shoreline incorporated in 1995. However, regional and local governments recognized the need for improvements along Aurora Avenue N even before the City's incorporation. Before the City was incorporated, King County initiated a project to provide transit enhancements along Aurora Avenue N. After incorporation, the City requested that the project be postponed until the City could complete its comprehensive planning process to define improvements in the Aurora Avenue N corridor.

The City of Shoreline Comprehensive Plan was first adopted in November 1998 and most recently updated in June 2005. The Plan establishes the City's vision, and establishes Framework Goals intended to guide the City to meet that vision. The City's goals for Aurora Avenue N, as stated in its Comprehensive Plan, are to improve safety for all users on the roadway, to support economic stability along the corridor, and to improve mobility by supporting multimodal transportation services (City of Shoreline 2005). Assessment of the City's goals and policies, as established in the Comprehensive Plan, is provided in the Land Use, Plans, and Policies report prepared as part of the environmental analysis for this Project.

## Multimodal Pre-Design Study

In 1998, the City of Shoreline began the 1-year Aurora Corridor Multimodal Pre-design Study. The study included an extensive Community and Agency Involvement Program involving a variety of public and private stakeholders in the plan development. Multiple opportunities for community input were provided, and emphasis was placed on clearly articulating the technical elements of the plan. The Community and Agency Involvement Program included both the community and agencies because both are necessary for consensus building. A key component of the Community and Agency Involvement Program was the participation of a Citizen's Advisory Task Force, made up of representatives from the business and residential communities and transit users. An Interagency Technical Advisory Committee also included public sector stakeholders. These advisory committees recommended a preferred design concept, described in the following section.

Community and Agency Involvement Program elements included:

- ongoing participation of the Citizen's Advisory Task Force, Interagency Advisory Committee, and Policy Advisory Committee;
- project briefings with City Council and Planning Commission;
- three public open houses;
- open house announcements mailed to 3,000 addresses each time an event was held;
- canvassing by the Citizen's Advisory Task Force;
- meetings with property owners within the study area;
- meetings with community interest groups;
- newsletters distributed to landowners, business owners, and other interested parties; and
- press releases distributed to neighborhood associations, community groups, and local media.

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### Multimodal Transportation

Multimodal transportation refers to multiple choices for travel, including driving alone, carpooling, walking, biking, or riding transit.

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## Community Outreach

The City conducted a total of 23 meetings with the Citizen’s Advisory Task Force, Interagency Technical Advisory Committee, and the general public. The City also conducted eight City Council briefings and two planning commission presentations. Three open houses were held during the course of the Pre-Design Study. Each meeting was designed to encourage interactive involvement through small group design workshops, informal ballots, prioritization exercises, and comment sheets.

## 32 Points

The corridor project design concept and the 32 Points (see exhibit on following page) were approved unanimously by the Citizen Advisory Task Force on July 8, 1999, and were adopted unanimously by the City Council as part of Resolution 156 on August 23, 1999. The 32 Points are to be used as guides during implementation and design of Aurora Avenue improvement projects, to ensure that concerns of the community and the vision of the City Council are fully addressed.

The main features of the adopted design concept include the addition of BAT lanes in each direction on the roadway; curbs, gutters, a landscaping/street furnishing strip and sidewalks on both sides; and a landscaped center median safety lane with left and u-turn pockets. The 32 Points also included recommendation of four new signalized intersections and four new pedestrian-activated signalized crossings along the 3-mile length of Aurora Avenue N within the city limits.

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The main features of the adopted design concept include:

- the addition of BAT lanes in each direction on the roadway;
  - curbs, gutters, landscaping/street furnishing strip, and sidewalks on both sides; and
  - the creation of a landscaped center median safety lane with left and u-turn pockets.
-

## Exhibit. The "32 Points"

1. The maximum number of lanes on an intersection leg shall not exceed eight lanes including turning lanes. Seven lanes is the desired width.
2. Provide ability at intersections for all pedestrians to safely cross (and include median refuge at intersections with pedestrian pushbuttons). New mid-block pedestrian crossings should include pedestrian activated signals. Bus stops and pedestrian crossings will complement each other.
3. Twelve foot sidewalks will be provided on both sides of Aurora the entire length. Consider reducing the initial sidewalk width to mitigate land impacts/acquisitions on existing businesses. Note: a minimum of four feet of a landscaping/street furnishing zone is included in the twelve foot width total above.
4. Utilize more landscaping or colored pavement in sidewalk areas to soften the look. The four foot landscaping/street furnishing strip behind the curb should utilize trees in tree grates/pits (consider a combination tree protector/bike rack), low growing ground cover/shrubs, and could utilize some special paving (or brick) between curb and sidewalk to strengthen the identity of an area.
5. Strive to design the project so that new sidewalks can link to existing recently constructed sidewalks (such as Seattle Restaurant Supply, Drift-on-Inn, Schucks, Hollywood Video, and Easley Cadillac).
6. Re-align the street where possible to avoid property takes.
7. As the final design is developed, work with WSDOT to obtain design approvals for lane width reductions, and look for opportunities to reduce (but not eliminate) the median width both to enable reduction of pavement widths, construction costs, and land impacts/acquisition on existing businesses.
8. Develop median breaks or intersections for business access and U-turns at least every 800-to-1000 feet (these details will be worked out during future design phases and will be based in part on the amount of traffic entering and exiting businesses).
9. Use low growing drought resistant ground-cover and space trees in the median to allow visibility across it.
10. Unify the corridor by adding art, special light fixtures, pavement patterns (and coloring at crosswalks), street furniture, banners, unique bus shelters, etc. to dramatically enhance image and uniqueness of the streetscape and develop it differently than the standard design that has been constructed for most streets.
11. Unify the entire corridor by the use of street trees, lighting, special paving, bus zone design, and other elements to visually connect the corridor along its length.
12. Provide elements in the Interurban/Aurora Junction area, between 175th and 185th that create a safe, pedestrian oriented streetscape. Elements can include special treatments of crossings, linkages to the Interurban Trail, etc.
13. Develop signature gateway designs at 145th and 205th with special interest landscaping, lighting, paving and public art to provide a visual cue to drivers that they have entered a special place.
14. Develop themes that reflect the character and uses of different sections of the street (such as the 150th to 160th area which has a concentration of international businesses, recall the historic significance of the Interurban or other historic elements, and Echo Lake).
15. Utilize the Arts Council and neighborhoods to solicit and select art along the corridor.
16. Strengthen connections to the Interurban Trail through signing and other urban design techniques.
17. Develop a design for closure of Westminster Road between 158th and 155th by developing a southbound right turn lane at 155th Street and converting the existing road section to a driveway entrance to Aurora Square. Also, develop an elevated Interurban trail crossing through "the Triangle" that is integrated with future development of the Triangle (reserve the option to build above Westminster should we not be successful in closing the roadway).
18. Pursue modifying the access to Firlands at 185th, closing Firlands north of 195th, and developing a new signal at 195th.
19. The preferred design shall include:
  - Stormwater management improvements to accompany the project that follow the city's policies;
  - Traffic signal control and coordination technology (including coordination with Seattle and Edmonds SR 99 signal systems);
  - Traffic signal technology to enable transit priority operations;
  - Continuous illumination for traffic safety and pedestrian scale lighting;
  - Undergrounding of overhead utility distribution lines.
20. Traffic signals will include audible elements for the sight-impaired, and wheelchair detection loops for wheelchair users.
21. The City should establish a right-of-way policy to retain or relocate existing businesses along the corridor, including those that do not own the land on which they are located. Consideration should be given to providing financial incentives to those businesses.
22. Work with property and business owners during the preliminary engineering phase to consolidate driveways, share driveways, and potentially to share parking and inter business access across parcel lines. Be creative and sensitive to the parking needs of businesses, including consideration for some potential clustered/shared parking lots (especially if remnant parcels are available).
23. Provide improvements that will not generate an increase in neighborhood spillover traffic.
24. Work with transit agencies to provide increased service and seek capital investments from them to support this project.
25. Develop partnerships with WSDOT and King County/Metro to jointly fund the project.
26. Provide curb bulbs where practical on side streets to reduce pedestrian crossing width and to discourage cut-through traffic.
27. Strengthen and preserve the heritage of the red brick road. If the design impacts the red brick road in its current configuration/location north of 175th, preserve its heritage by relocating it elsewhere.
28. Consider new signalized intersections at 152nd, 165th, 182nd, and 195th.
29. Consider new pedestrian only signalized crossings in the vicinity of 149th, 170th, 180th and 202nd.
30. Sign Ronald Place south of 175th as the route to I-5.
31. Pursue reducing the speed limit to 35 mph where appropriate recognizing the potential impacts of spillover traffic with a lower posted speed.
32. Seek funding to develop a program to assist and encourage businesses to improve their facades.

# What are the needs addressed by the Project?

## System Linkage

The proposed project would improve regional system linkage by providing additional lane capacity, improved intersection capacity, and improved signal coordination. It would also continue the improvements underway between N 145th Street and N 165th Street, creating a consistent continuous corridor throughout the City.

Aurora Avenue N is a major north/south arterial link that serves both local and regional traffic within the City of Shoreline. It is part of the National Highway System (NHS). The portion of Aurora Avenue N within the City connects SR 104 and SR 523. In addition to serving intra-city traffic, the route serves as a regional link between cities in the Puget Sound region, connecting to the City of Seattle to the south and Snohomish County to the north. It is the significant alternative to I-5 in providing north/south regional linkage. The portion of SR 99 located within the City has also been identified as a Highway of Statewide Significance (Washington State Transportation Commission 1998). Highways of Statewide Significance, identified under the Revised Code of Washington (RCW) 47.06.140, are those facilities deemed to provide and support transportation functions that promote and maintain significant statewide travel and economic linkages. The legislation emphasizes that these significant facilities should be planned from a statewide perspective (WSDOT 2002).

The timely delivery of goods is extremely important to business operations and economic vitality. Aurora Avenue N is identified by WSDOT as a truck freight route in the statewide Freight and Goods Transportation System (FGTS). It carries more than 5 million tons of freight annually, so is classified as a T-2 tonnage class roadway (WSDOT 2005). It has also been identified as part of the King County Regional Arterial Network, and the Puget Sound Regional Council (PSRC) Metropolitan Transportation and Freight and Goods Systems. Aurora Avenue N also provides a connection between other routes on the FGTS, including Westminster Way/Greenwood Avenue (class T-2), SR 523 (class T-3), N 185th Street (class T-2), and SR 104 (class T-3) (WSDOT 2005).

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### National Highway System

Federally identified highways that are most important to interstate travel and national defense, connect other modes of transportation, and are essential for international commerce.

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### Highway of Statewide Significance

Highways identified by the Washington State Transportation Commission that provide significant statewide travel and economic linkages.

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### WSDOT Freight and Goods Transportation System (FGTS) Classifications

Roadways are classified according to the average volume of freight they carry each year:

- T-1 > 10 million tons per year
  - T-2 4 million – 10 million tons per year
  - T-3 300,000 – 4 million tons per year
  - T-4 100,000 – 300,000 tons per year
  - T-5 At least 20,000 tons in 60 days
-

Aurora Avenue N provides a linkage for commuters and transit to two regional Park-and-Ride facilities located at N 192nd Street and Aurora Avenue N; and on N 200th Street, two blocks east of Aurora Avenue N.

The City is currently completing improvements to Aurora Avenue N between N 145th Street and N 165th Street, which include similar elements to those proposed for this Project. Improvements include BAT lanes; curbs, gutters, landscaping/utility strip, and sidewalks on both sides; a landscaped center median with left and u-turn pockets, new signalized intersections, pedestrian-activated signalized crossings, undergrounding of utilities, and stormwater facilities.

## Capacity

The proposed project would address capacity needs through improvements to intersection geometry and capacity, channelization, signal improvements, and additional lane capacity for business access and transit. By reducing the number of access points according to WSDOT criteria, capacity in the corridor would be improved through the reduction of conflicts and traffic friction.

The capacity of the current facility is inadequate to accommodate projected traffic volumes. The corridor currently supports 33,000 to 39,000 daily vehicle trips. Traffic analysis completed for the Aurora Avenue N corridor assessed level of service (LOS) from now through the future planning year of 2030, under conditions both with and without the proposed project. Over the next 20 years, volumes along the corridor are expected to increase by 1.1% annually.

LOS is the primary measurement used to determine the operating quality of a roadway segment or intersection. LOS is generally measured by the ratio of traffic volume to capacity (V/C) or by the average delay experienced by vehicles on the facility. The quality of traffic operation is graded into one of six LOS designations: A, B, C, D, E, or F. LOS A represents the best range of operating conditions and LOS F represents the worst. LOS on transportation facilities is analyzed and measured according to procedures provided in the Highway Capacity Manual (HCM) (Transportation Research Board 2000). In an urban corridor such as Aurora Avenue N, LOS at intersections controls the overall LOS of the roadway. LOS for signalized intersections is determined by the average amount of delay experienced by vehicles at the intersection. LOS standards are used to evaluate the transportation impacts of long-term growth. The Washington State Growth

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### Level of Service (LOS) - Characteristics of Traffic Flow

LOS A	Free flow, little or no restriction on speed or maneuverability caused by the presence of other vehicles.
LOS B	Stable flow, operating speed is beginning to be restricted by other traffic.
LOS C	Stable flow, volume and density levels are beginning to restrict drivers in their maneuverability.
LOS D	Stable flow, speeds and maneuverability closely controlled due to higher volumes.
LOS E	Unstable flow, low speeds, considerable delay, volume at or near capacity, freedom to maneuver is difficult.
LOS F	Forced traffic flow, very low speeds, traffic volumes exceed capacity, long delays with stop and go traffic.

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Management Act (GMA) (RCW 36.70A, 1990) requires that jurisdictions adopt standards by which the minimum acceptable roadway operating conditions are determined and deficiencies may be identified. The City has adopted a standard of LOS E for intersections within the City (City of Shoreline 2005).

Detailed traffic analysis of Aurora Avenue N is presented in the Transportation Discipline Report prepared for this project. The analysis shows that without improvements, average delay at key signalized intersections along Aurora Avenue N will fall to LOS F. These conditions are considered unacceptable by most drivers and exceed the City's adopted standard of LOS E. A lack of adequate capacity along Aurora Avenue N could cause increased traffic volumes along parallel neighborhood routes.

## Regional Transportation Demand

The proposed project would provide additional automobile and transit capacity to help meet the demand that is anticipated to occur in the Aurora Corridor over the next 20 years. The City's design concept for the Aurora Corridor Improvement Project satisfies the following regional policies discussed below:

- Optimize and manage the use of transportation facilities and services.
- Manage travel demand by addressing traffic congestion and environmental objectives.
- Focus transportation investments by supporting transit-and pedestrian-oriented land use patterns.
- Expand transportation capacity by offering greater mobility options.

The PSRC has adopted a Regional Transportation Plan (RTP), the Transportation Element of *Destination 2030* (PSRC 2001). The RTP provides the long-range strategy for future investments in the central Puget Sound region's transportation system. It responds to federal legislative mandates such as the federal Transportation Equity Act for the 21st Century (TEA-21) and the Clean Air Act (CAA); and state mandates such as the Commute Trip Reduction (CTR) Law (RCW 70.94.521-551) and the Growth Management Act (GMA) (RCW 36.70A). It also is intended to respond to regional concerns of

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### Regional Transportation Plan (RTP)

The RTP provides the long-range strategy for future investments in the central Puget Sound region's transportation system.

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pressing transportation problems. The basic building blocks for the RTP are state, city, county, and transit agency plans and policies.

Improvements to Aurora Avenue N through Shoreline are included in the list of capital projects identified by the RTP as critical, and as part of the Metropolitan Transportation System required to satisfy regional needs through 2030.

## Modal Interrelationships

The proposed project would enhance mobility and safety for pedestrians by providing continuous sidewalk, curb, and gutter along both sides of the roadway. Additional crosswalks will provide more safe crossings for pedestrians. Pedestrian links would also be provided to the adjacent Interurban Trail.

Bicyclists traveling along Aurora Avenue N would be allowed to travel on the sidewalks or in the BAT lanes, and would also benefit from connections provided to the Interurban Trail.

The Project would also improve transit operations and reliability through the addition of the BAT lanes, providing a lane for bus operation outside the general-purpose traffic flow.

The portion of Aurora Avenue N within the City is heavily automobile-oriented, and lacking in pedestrian or bicycle facilities. Driveway access along the corridor is largely undefined and sidewalk facilities are discontinuous and substandard. The only areas where sidewalks meet City standards are areas along developments that have been built within the last 10 years.

Buses on Aurora Avenue N travel in the general-purpose lanes. When traffic is congested, the buses are likely to be delayed. When buses stop to pick up and drop off passengers, they block traffic in one of the two general-purpose lanes that currently exist in each direction. Bus stops lack safe access, especially for persons with disabilities. The absence of safe, continuous pedestrian facilities can dissuade potential transit patrons from using the bus system. Bicyclists currently have to travel either on shoulders, where they exist, or in the general-purpose traffic lanes.

The Interurban Trail is a pedestrian and bicycle facility that runs roughly parallel to Aurora Avenue N, providing regional connection from Everett through Seattle. Construction within the City is currently

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### The Interurban Trail

The Interurban Trail is a regional pedestrian and bicycle facility that runs roughly parallel to Aurora Avenue N. Construction is currently underway, with completion planned for July 2007. After construction is complete, the Interurban Trail will run throughout the entire City length, between N 145th Street and N 205th Street.

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underway, with completion planned for July 2007. After construction is complete, the Interurban Trail will run throughout the entire City length, between N 145th Street and N 205th Street. In the Project area, the trail is located approximately one block east of Aurora Avenue N between N 165th Street and N 200th Street; runs east-west along N 200th Street to Meridian Avenue; and then runs north-south on the east side of Meridian Avenue through Ballinger Commons (City of Shoreline 2007). Existing sidewalks are inadequate to provide pedestrian connectivity along Aurora Avenue N and to the Interurban Trail.

## Safety

Project elements would improve channelization, separate pedestrians from vehicular traffic, and reduce potential conflicts between vehicles, pedestrians, and bicyclists. The City is working with businesses and property owners to develop appropriate solutions that address access and parking issues, while still maintaining project goals.

WSDOT collects and compiles historical collision data for state highways, including Aurora Avenue N. Several areas of Aurora Avenue N, between N 165th Street and N 205th Street, have been given adverse safety designations by WSDOT. WSDOT has identified one High Accident Corridor (HAC), three High Accident Locations (HALs), and two Pedestrian Accident Locations (PALs) on Aurora Avenue N, between N 165th Street and N 205th Street, for the 2007–2009 biennium. Between 2003 and 2005, the average annual collision rate for the entire Aurora Avenue N corridor within Shoreline was calculated to be 5.5 accidents per million vehicle miles traveled. This greatly exceeds the 2003 statewide average for urban principal arterials of 2.6 accidents per million vehicle miles. There is strong public concern for general traffic safety and pedestrian safety along the corridor. Collision history and WSDOT safety designations are discussed in further detail in the Transportation Discipline Report prepared as part of the environmental analysis for this Project.

Aurora Avenue N currently lacks adequate access management. Land use along Aurora Avenue N is predominantly commercial/retail. Most of the businesses are freestanding, with defined and undefined individual driveways, or continuous shoulder access. Numerous driveways, limited curbs and sidewalks, and erratic parking all contribute to a general lack of safe passage for pedestrians, bicyclists, and vehicles. This type of development has resulted in a very high

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### High Accident Corridor (HAC)

A highway corridor one mile or greater in length where a 5-year analysis of collision history indicates that the section has higher than average collision and severity factors.

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### Pedestrian Accident Location (HAL)

A highway section typically less than 0.25 mile in length where a 2-year analysis of collision history indicates that the section has a significantly higher than average collision and severity rate.

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### Pedestrian Accident Location (PAL)

A highway section typically less than 0.25 mile in length where a 6-year analysis of collision history indicates that the section has had four pedestrian accidents in a 0.1 mile segment.

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number of individual access points that increase conflict and impact safety along the corridor. In total, there are 154 access points along the 2-mile length within the Project corridor. National Cooperative Highway Research Program (NCHRP) Report 420 indicates that the ideal number of access points is fewer than 30 per mile (Gluck et al. 1999).

Much of the existing business parking along the corridor is directly adjacent to the roadway shoulders and is angled or perpendicular to the street. Parking within the Aurora Avenue N roadway right-of-way occurs primarily near retail and commercial land uses within the project area. Several businesses along the roadway between N 165th Street and N 205th Street use the shoulder for parking in areas where there is no curb, effectively blocking pedestrians and people in wheelchairs.

Project elements that would improve safety conditions along Aurora Avenue N include:

- addition of curbs and gutters and focused driveway locations;
- application of driveway width and spacing standards;
- proposed traffic signals and pedestrian crosswalks;
- conversion of the existing two-way left-turn-lane into a median with channelized left-turn and u-turns;
- restriction of driveways to right-turn-in and right-turn-out only; and
- provision of the BAT lanes that would allow traffic to safely enter and exit the roadway with fewer conflicting movements and lower risk of crashes.

## Social Demands/Economic Development

The Project would address the need to continue to enhance the movement of people and goods within the SR 99 commercial corridor, as identified in the Comprehensive Plan, by improving person and freight mobility; pedestrian, bicycle, and transit linkages; and overall safety for vehicular and non-vehicular travelers.

The City Comprehensive Plan provides forecasts of job growth within the Aurora Avenue N corridor. This growth depends on a revitalized roadway corridor along all of Aurora Avenue N, including the area between N 165th Street and N 205th Street.

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The City Comprehensive Plan provides forecasts of job growth within the Aurora Avenue N corridor. This growth depends on a revitalized roadway corridor along all of Aurora Avenue N, including the area between N 165th Street and N 205th Street.

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The Comprehensive Plan sets forth a vision that concentrated activity centers will develop at several locations along the corridor. These are located between N 175th Street and N 185th Street, and between N 200th Street and N 205th Street (Aurora Village). To support the economic development goals of the Comprehensive Plan, improvements are needed for pedestrian and transit access to and between these locations. The City's objective for Aurora Avenue N is to install improvements that would lead people to the community and its businesses (City of Shoreline 2005).

## What is the legislative context for the Project?

There are three articles of legislation that provide specific direction for the Project. City Resolution 156, City Ordinance 326, and RCW 47.50 are discussed below.

### Legislation: Resolution 156

Resolution 156 was adopted unanimously by the Shoreline City Council on August 23, 1999, at an open meeting that included opportunities for public testimony. This resolution accepted the recommendation of the Citizen's Advisory Task Force for the 3-mile Aurora Avenue N corridor within the city limits; found the recommendation to be in conformance with the City Comprehensive Plan (2005); initiated an amendment to the Capital Improvement Program; and directed staff to pursue environmental analysis for the corridor improvement. Resolution 156 included the 32 Points directive described earlier in this chapter.

### City Ordinance 326

Ordinance 326, which consists of revisions to the City's Comprehensive Plan, was passed 5 to 1 by the Shoreline City Council on July 14, 2003. This ordinance amended the text of Land Use Policy LU48 and added a new Transportation Policy 5.1 for the purpose of identifying future right-of-way needs of Aurora Avenue N, between N 172nd Street and N 192nd Street. The ordinance also added a right-of-way map for this area to the Transportation Element. In general, this ordinance identifies any widening that occurs along this segment of the roadway, and resulting right-of-way acquisition needed, as occurring to the east of the existing roadway. SEPA review was completed for

Ordinance 326, prior to adoption. The ordinance was not subject to NEPA. However, for the purposes of the NEPA and SEPA evaluation of the Project, the separate Build Alternatives were defined to reflect widening to both the east and the west, so that the potential impacts under the full possible range of build options would be evaluated. If the Recommended Alternative that is ultimately selected requires right-of-way outside of the boundaries defined in the ordinance, Policy T5.1 in the Comprehensive Plan, which specifically defines the boundaries, would need to be amended.

## Access Management RCW 47.50

To preserve the safety and operational characteristics of state highways, RCW 47.50 was enacted in 1991, designating all highways in Washington as controlled-access facilities. Aurora Avenue N, part of SR 99, is a class 4 facility according to the WSDOT access control classification system and standards. Within this class, access management measures are identified, such as minimum driveway spacing of 250 feet and installation of medians to mitigate turning, weaving, and crossing conflicts that affect safe travel. Based on the urban environment served by Aurora Avenue N and the high traffic volumes it carries, the street's design is deficient in terms of access management for the preservation of safety and traffic operations. Any improvement to Aurora Avenue N would have to comply with access management standards defined under this law.





## Chapter 3. Alternatives

This chapter describes the alternatives that are being evaluated for the proposed project.

### **What alternatives are considered in this discipline report?**

This report evaluates the potential effects of a No Build Alternative and three Build Alternatives, described in the following sections.

#### **No Build Alternative**

Under the No Build Alternative, Aurora Avenue N would remain exactly as it is today. The roadway has two general-purpose lanes in each direction with a center two-way left-turn lane. Shoulder and sidewalk of varying widths are located sporadically along the corridor with no curb or gutter and little landscaping. The corridor is served heavily by public transit provided by King County Metro, with additional service at the north end of the corridor provided by Community Transit. Buses on Aurora Avenue N would continue to travel and stop in the general-purpose lanes.

#### **Build Alternatives**

The City has proposed three Build Alternatives: Alternative A, Alternative B, and Alternative C. Table 2 provides an overview of Project features unique in an individual Build Alternative and features common among them.

**Table 2. Common and Unique Features of the Aurora Corridor Improvement Project Build Alternatives**

Features Common among Build Alternatives A, B, and C	
<b>General-purposes lanes</b>	Project design includes two general-purpose lanes in each direction.
<b>BAT lane</b>	Each Build Alternative would include one Business Access and Transit (BAT) lane in each direction.
<b>Sidewalk</b>	7-foot sidewalks would be constructed along both sides of the corridor.
<b>Curb and Gutter</b>	Curb and gutter would be constructed along both sides of the corridor. Curb ramps would be constructed at all intersections in accordance with ADA requirements.
<b>Underground utilities</b>	Utilities would be placed underground for each of the three Build Alternatives.
<b>Vegetation</b>	Each of the alternatives includes vegetative plantings. Extent and location vary as described below.
<b>Center median</b>	A center median would be added, with left-turn and u-turn pockets (width of the center median varies by alternative, as described below).
<b>Traffic signals</b>	New traffic signals proposed at Aurora Avenue N/N 182nd Street and Aurora Avenue N/Firlands Way N (north of N 195th Street). Signalized intersections will be widened to improve east-west capacity and traffic flow.
<b>Road improvements</b>	Improvements would be made to: <ul style="list-style-type: none"> <li>- Echo Lake Place (north of N 195th Street), including realignment and a connection to Aurora Avenue N at Firlands Way N; and</li> <li>- Midvale Ave N (N 175th Street – N 183rd Street), including realignment, addition of a center turn lane, curb and gutter, and sidewalk on the east side of the roadway. The new Interurban Trail will serve as the walking path on the west side of the roadway.</li> </ul>
Features that vary among Alternatives A, B, and C	
	<b>Alternative A</b>
<b>Cross Section</b>	Typically 98 feet from back-of-sidewalk to back-of-sidewalk. The cross section will be wider where utility vaults, light/signal poles, and bump outs are located, as described below. This dimension is 12 feet narrower than the cross sections proposed under Alternatives B and C, due to a narrower median (12 feet instead of 16 feet) and the absence of the 4-foot amenity zone on each side of the roadway. The City would also acquire a continuous 3-foot-wide easement behind the sidewalk on each side of the roadway for placement of utilities.
<b>Median Width</b>	Center median would be 12 feet wide.
<b>Amenity Zone</b>	No amenity zone provided. Utility vaults and light/signal poles would be located behind the sidewalks in the 3-foot easement area.
<b>Bump Outs</b>	Bump outs approximately 4 feet in additional width would be needed at u-turn and left-turn locations to achieve the turning radii needed to accommodate u-turns.
<b>Placement of Alignment</b>	Required widening would be shifted to the east of the existing right-of-way in the vicinity of N 175th Street, N 185th Street, and N 200th Street.
<b>Vegetation</b>	Limited vegetation would be provided in the median.
	<b>Alternative B</b>
	110 feet from back-of-sidewalk to back-of-sidewalk.
<b>Median Width</b>	Center median would be 16 feet wide.
<b>Amenity Zone</b>	A 4-foot amenity zone would be located between the curb and sidewalk on each side of the street. Utility vaults, light/signal poles, bus stop signs, hydrants, and other pedestrian amenities would be located in this area.
<b>Bump Outs</b>	None needed. U-turns would be sufficiently accommodated within the standard roadway width.
<b>Placement of Alignment</b>	Required widening would be shifted to the east of the existing right-of-way in the vicinity of N 175th Street, N 185th Street, and N 200th Street.
<b>Vegetation</b>	More vegetation accommodated by wider median. Vegetation could also be planted in areas within the amenity zone.
	<b>Alternative C</b>

Figures 2, 3, and 4 present plan views of the three Build Alternatives, respectively. Figure 5 presents more detailed schematic drawings of the proposed roadway configurations under each of the three alternatives. The drawing shows one direction of travel of the proposed roadway alternatives, which is typical of both directions.

## **When will the Recommended Alternative be selected?**

The Recommended Alternative will be selected after all of the environmental analysis has been completed for the No Build Alternative and three Build Alternatives. The discipline reports that summarize the environmental analysis will be available for public review after they are finalized, and prior to the City's selection of the Recommended Alternative.

The boundaries of the three Build Alternatives encompass the maximum possible footprint of the Project. The Recommended Alternative ultimately selected for the Project may combine different elements from the different Build Alternatives. However, no part of the Project will occur outside of the study area analyzed in this report.



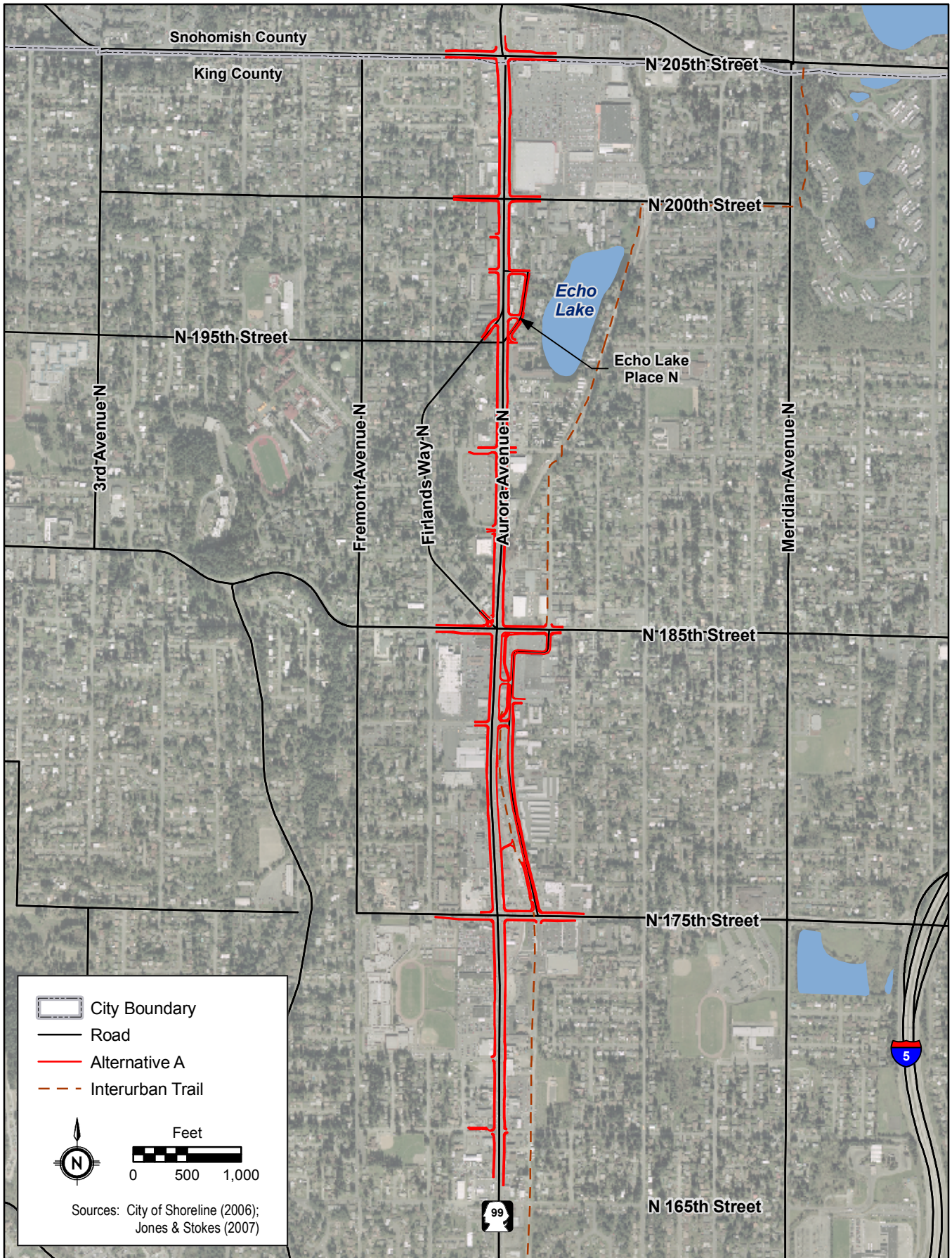


Figure 2. Alternative A  
Aurora Corridor Improvement Project  
September 2007



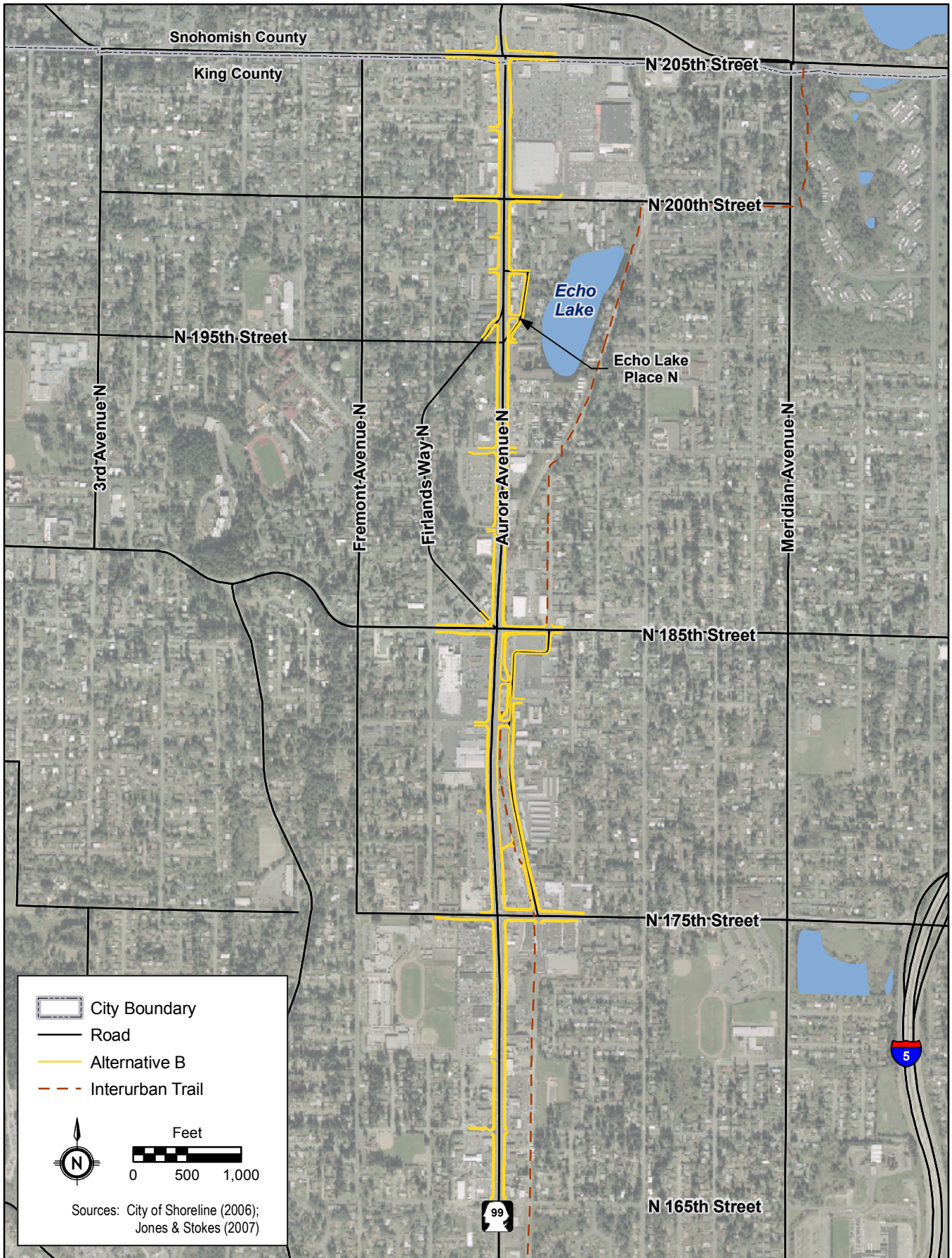


Figure 3. Alternative B  
Aurora Corridor Improvement Project  
September 2007



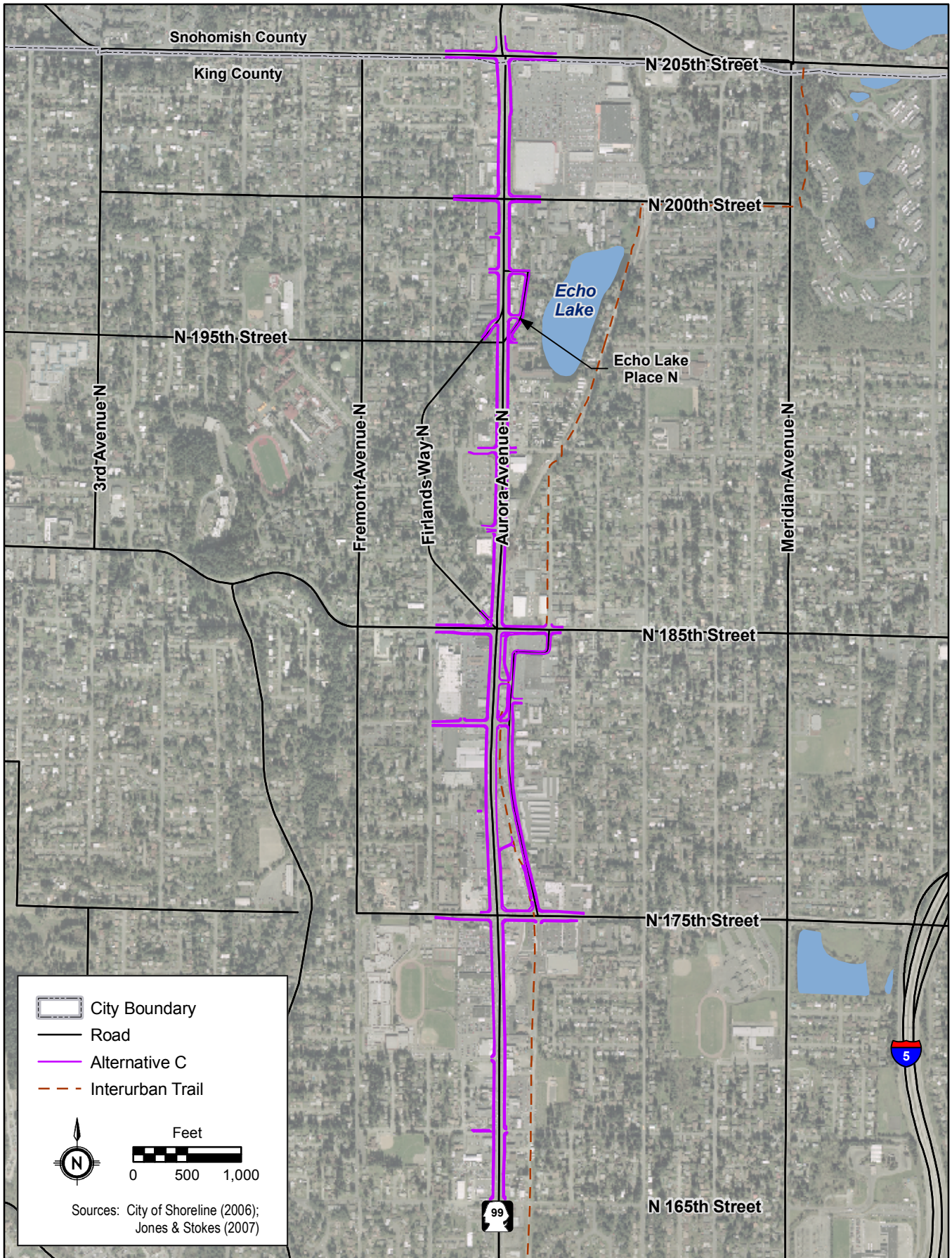
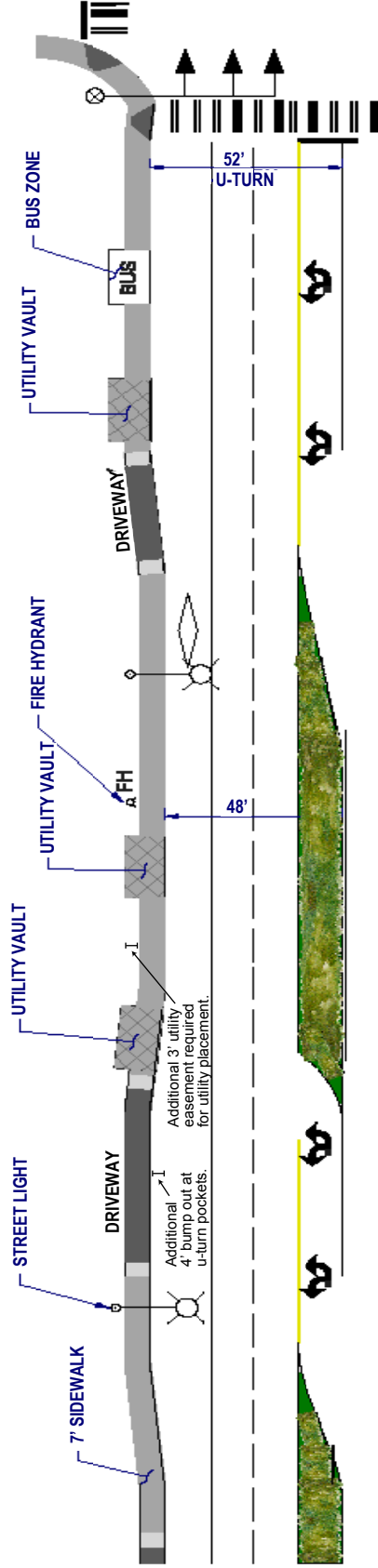
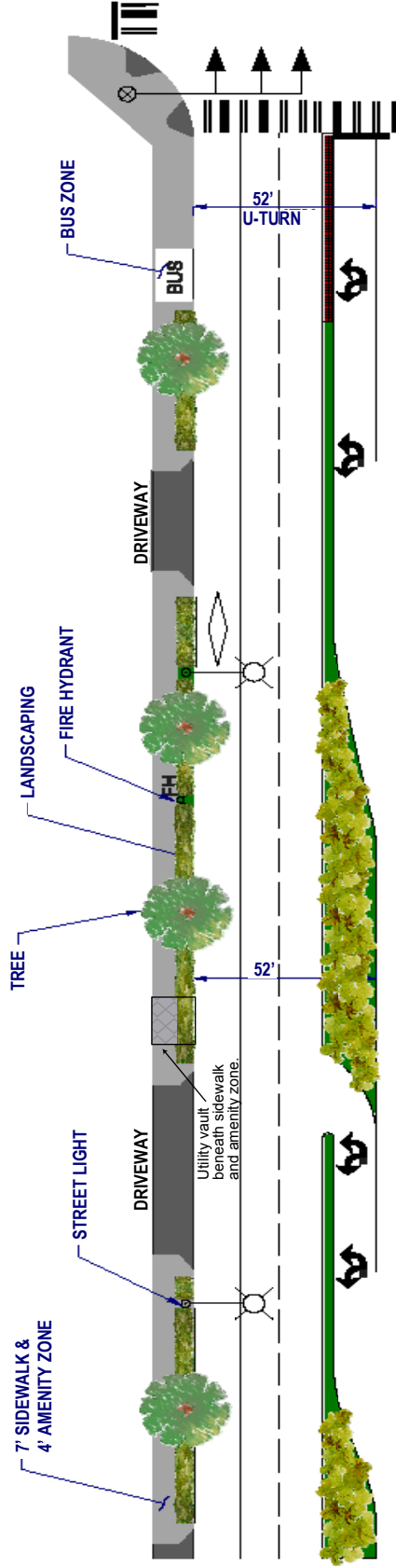


Figure 4. Alternative C  
 Aurora Corridor Improvement Project  
 September 2007

# Alternative A



# Alternatives B and C



Note: Drawing shows one direction of travel of the proposed roadway alternatives, which is typical of both directions

Figure 5. Proposed Plan Detail for Build Alternatives  
Aurora Corridor Improvement Project  
September 2007





## Chapter 4. Affected Environment

This chapter describes existing regulations and conditions of the environment as they relate to visual quality.

### How was visual quality of the affected environment evaluated?

Existing conditions were analyzed by visiting the project vicinity and the surrounding area multiple times. During these site visits, existing conditions were documented and visual resources at selected viewpoints were documented and photographed. After the site visits, additional background materials such as maps, aerial photographs, and City planning and policy documents were reviewed, as were public comments gathered during the scoping phase. Considerations included community concerns regarding key views and light, shadow, and glare. Relevant information was also examined from other technical memorandums such as Geology and Soils, and other discipline reports, such as Land Use, Plans, and Policies.

A preliminary viewshed analysis was conducted for potential views along Aurora Avenue N using computer modeling and digital elevation data derived from 10-foot-interval contour lines. In this preliminary analysis only the existing topography or landform was considered. Other potential obstructions (e.g., buildings, vegetation, electric towers) or grading/filling needed to construct road segments were not taken into account. The Project viewshed is defined as the area that viewers can see from the Project and the area with views toward the Project, as if the land were bare. Typically, if viewers can see an area or a feature

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#### Viewshed

The area that can be seen from a given viewpoint or group of viewpoints; it is also that area from which that viewpoint or group of viewpoints can be seen.

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from the Project, a viewer located in that area or near the feature can also see the Project. However, land cover such as vegetation and built or natural features influence what is visible within the viewshed; therefore, these features were considered later during analysis of individual views.

## Criteria for Visual Assessment

Assessment of the visual quality in the study area and potential visual effects of the Aurora Corridor Improvement Project includes consideration of viewing distance, visual character, and visual quality.

### Viewing Distance

The following terms were used to inventory and analyze visual quality and potential effects related to the Aurora corridor.

- foreground: viewing distance of 0.125 mile or less;
- middle ground: viewing distance between 0.125 mile and 0.375 mile; and
- background: viewing distance greater than 0.375 mile.

### Visual Character

Visual character describes both natural and built landscape features and the relationships between them that make up the character of an area or view. The perception of visual character can vary significantly between seasons and even between hours as weather, light, shadow, and the elements that compose the viewshed change. The basic components used to describe visual character for most visual assessments are the form, line, color, and texture of the landscape features. To further define visual character, the appearance of the landscape is described in terms of its dominant features, scale, diversity, and continuity. Resources and features used to define visual character include the following:

- landforms: types, gradients, and scale;
- vegetation: types, size, maturity, and continuity;
- land uses: size, scale, and character of associated buildings;

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#### Form, Line, Color, and Texture

The basic components used to describe visual character for most visual assessments are the form, line, color, and texture of the landscape features.

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- transportation facilities: types, sizes, scale, and orientation;
- overhead utility structures and lighting: types, sizes, and scale;
- open space: type (e.g., parks, reserves, greenbelts, and undeveloped land), extent, and continuity;
- viewpoints and views to visual resources;
- water bodies, historic structures, and downtown skylines;
- apparent “grain” or texture, such as the size and distribution of structures and open spaces of the landscape;
- apparent upkeep and maintenance of natural and built landscape features.

## Visual Quality

Visual quality is an assessment of the visual character, which identifies the character-defining features for selected views. This assessment asks: Is this particular view common or dramatic? Is it a pleasing composition (with a mix of elements that seem to belong together) or not (with a mix of elements that either do not belong together or are eyesores and contrast with the other elements in the surroundings)? Visual quality is evaluated based on the relative degree of vividness, intactness, and unity.

**Vividness:** Describes how memorable a visual composition is as the elements of landform, water, vegetation, and human development combine to form striking and distinctive visual patterns (FHWA 1988).

Vividness is ranked on a scale of 1 to 7. A very high vividness rating (rating = 7) indicates that the landscape patterns are distinctive, and form a dominant visual effect in the landscape (e.g., high mountain peaks or city views with striking urban form and a strong sense of place). Average vividness (rating = 4) indicates that landscape elements are noticeable and moderately pleasing, but do not dominate the landscape. A very low vividness rating (rating = 1) indicates that landscape patterns offer little visual diversity (e.g., monotonous vegetative patterns) or are unsightly (e.g., unscreened junkyard).

**Intactness:** Measures the visual integrity of the natural and built landscape and its freedom from encroaching elements (FHWA 1988).

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### Vividness, Intactness, and Unity

**Vividness** describes how the landscape elements combine to form a colorful, striking, or otherwise memorable composition.

**Intactness** addresses the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. High intactness means that the landscape is free of eyesores and is not broken up by features that are out of place.

**Unity** speaks to the visual coherence and compositional harmony of the landscape when considered as a whole. High unity frequently reflects the careful design of individual human components and their relationship in the landscape.

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Intactness is subdivided in two categories: the level of human development and the degree of visual encroachment.

Intactness is also ranked on a scale of 1 to 7. Since the project area is characterized as urban, intactness is measured by the degree to which the human-built features integrate within the overall landscape and how human-built eyesores (such as power lines, billboards, etc.) encroach on the urban landscape. A very high intactness rating (rating = 7) indicates that the integrity of visual order in the viewshed is intact and free from encroaching features. An average intactness rating (rating = 4) indicates that the urban landscape is moderately impacted by encroaching human-built eyesores. A very low intactness rating (rating = 1) indicates that the view is highly altered by human-built features that result in a preponderance of eyesores.

**Unity:** Measures the compositional harmony of the landscape or the degree of visual coherence when considered as a whole. Unity frequently attests to the careful design of individual components and their relationship in the landscape (FHWA 1988).

Unity is ranked on a scale of 1 to 7. In an urban setting, a very high unity rating (rating = 7) indicates that human-built features blend harmoniously with the natural environment. Colors and materials are selected to give a natural feel to human-built structures. An average unity rating (rating = 4) indicates that human-built elements use colors and textures that allow them to blend moderately into the natural environment. A very low unity rating (rating = 1) indicates that human-built or modified elements contrast markedly and have no visual relation to the natural environment.

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity, as modified by viewer sensitivity (discussed below). High-quality views are highly vivid, relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity. The following equation is used to evaluate visual quality (FHWA 1988).

$$\text{Visual Quality} = \frac{\text{Vividness} + \text{Intactness} + \text{Unity}}{3}$$

## Viewer Sensitivity

Viewer sensitivity is defined by a combination of viewer type, view exposure (number of viewers and view frequency), view orientation,

view duration, and viewer awareness and sensitivity to visual changes. The receptivity of different viewer groups to the visual environment is strongly related to visual preference, and must take into account the degree to which observers are interested in their surroundings.

The following criteria define viewer sensitivity.

**Viewer activity:** The activity a person is engaged in while seeing a visual resource.

**Viewer awareness:** The degree to which a viewer's receptivity is heightened by the immediate experience of visual resource characteristics.

**Viewer exposures:** The physical location of the viewer in relation to the visual resource, the number of people observing the resource, and the duration of their view. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer.

Levels of viewer sensitivity were assessed using the following general criteria.

Visual sensitivity is generally higher for views seen by people who are driving for pleasure; people engaging in recreational activities such as hiking, biking or camping; and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work (U.S. Forest Service 1974, FHWA 1988, U.S. Soil Conservation Service 1978).

Commuters and non-recreational travelers have generally fleeting views and tend to focus on traffic and not on surrounding scenery; they are therefore generally considered to have low visual sensitivity.

Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; they are therefore considered to have high visual sensitivity. Viewers using recreation trails and areas, scenic highways, and scenic overlooks are usually assessed as having high visual sensitivity.

Judgments of visual quality and viewer response must be based on a regional frame of reference (U.S. Soil Conservation Service 1978). The same landform or visual resource appearing in different geographic areas could have a different degree of visual quality and sensitivity in each setting. For example, a small hill may be a significant visual

element on a flat landscape but have very little significance in mountainous terrain.

## What is the project study area for visual resources?

The study area is defined as the viewshed that exists within the Project foreground or middle ground. This represents the area that viewers can see from the Project and the area with views toward the Project that are within 0.375 mile of the Project as shown in Figure 6.

## What regulations apply to the views and visual characteristics within the study area?

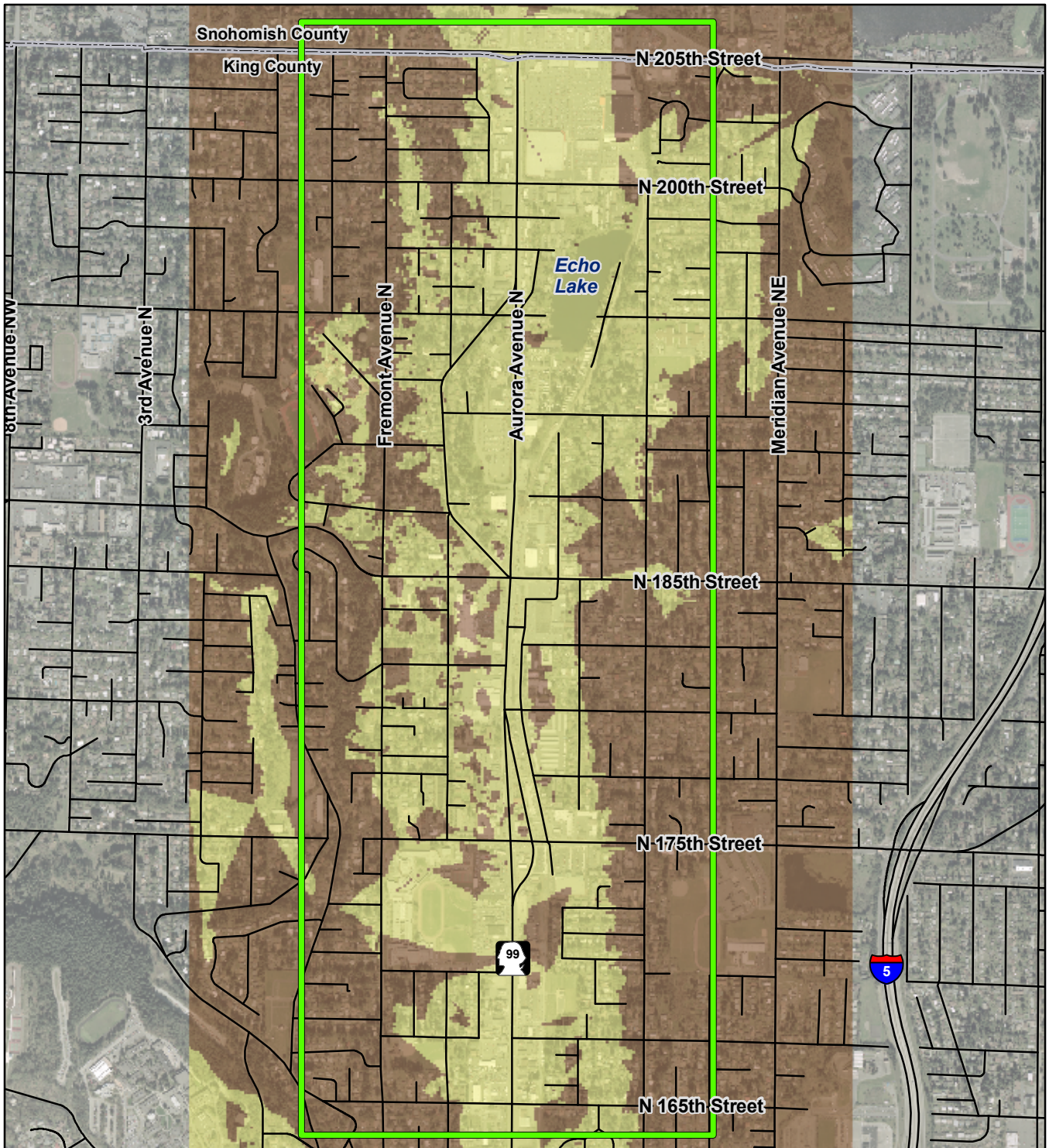
A number of federal and state regulations ensure that the effects of transportation projects on visual resources are adequately considered. NEPA Section 101(b)(2) states that it is the “continuous responsibility” of the federal government to “use all practicable means” to “assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.”

### Federal Regulations






Federal regulations that address visual quality include the following:

- NEPA, 42 United States Code (USC) Section 4321-4335; Section 101(b)(2)
- FHWA-23 Code of Federal Regulations (CFR) 771-Environmental Impact and Related Procedures
- Transportation Equity Act for the 21st Century (TEA-21)
- Safe, Accountable, Flexible, and Efficient Transportation Act of 2003 (SAFETEA)
- Council on Environmental Quality (CEQ); 40 CFR 1500-1508
- Section 4(f) of the Department of Transportation Act, 49 USC 303(b)-303(c)





Sources: City of Shoreline (2006); Jones & Stokes (2007)

-  City Boundary
-  Road
-  Study Area Extent (0.375-mile from Project Corridor)
- Project Viewshed**
-  Area not Visible to/from Project
-  Area with Potential Views to/from Project

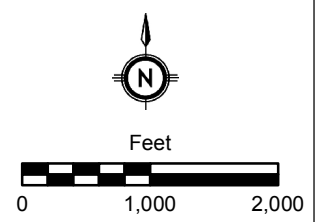


Figure 6. Viewshed and Study Area  
Aurora Corridor Improvement Project  
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## State Regulations

In addition to federal regulations, several state regulations address visual quality and aesthetics, including those listed below:

- SEPA (Chapter 197-11 Washington Administrative Code (WAC), Chapter 43.21C RCW)
- Transportation Commission and Transportation Department SEPA Rules (Chapter 468-12 WAC)
- Highway Beautification Act (Chapter 47.40.010 RCW)
- Open Space Land Preservation Act (Chapter 84.34 RCW)

## Policy Guidance

FHWA and WSDOT also provide policy and standards guidance related to visual quality such as in the following:

- FHWA Visual Impact Assessment for Highway Projects, Publication FHWA-HI-88-054, 1988
- FHWA Technical Advisory T6640.8A (October 1987)
- WSDOT Environmental Procedures Manual M 31-11, September 2004
- WSDOT Roadside Classification Plan (M 25-31)
- WSDOT Roadside Manual (M 25-30, Section 500)

## Local Regulations

Guidance from the City of Shoreline regarding views and visual quality, as defined in the Comprehensive Plan (City of Shoreline 2005) and the Shoreline Municipal Code (SMC) is summarized as follows:

- Goal CD I. Promote community development and redevelopment that is carefully considered, aesthetically pleasing, functional, and consistent with the City's vision.
- Policy CD9. Buffer the visual impact of commercial, office, industrial, and institutional development on residential areas by



requiring appropriate building and site design, landscaping, and shielded lighting to be used.

- Policy CD43. Enhance the Aurora corridor to include gateway improvements, pedestrian amenities, landscaping, cohesive frontage improvements, and a boulevard streetscape design.
- SMC 20.50.115 Lighting-Standards. Any lighting should be nonglare and shielded to minimize direct illumination of abutting properties and adjacent streets.
- SMC 20.50.290 D. Promote the preservation and enhancement of trees and vegetation that contribute to the visual quality and economic value of development in the City and provide continuity and screening between developments.

## What is the current visual character of the study area?

Visual character is a description of the existing visible environment: land and water forms, vegetation, built features, and transportation and utility facilities. This is not a description from a particular view, but rather an overview of the visual character within the study area.

### Visual Character of the Region

The regional landscape establishes a frame of reference for comparing the visual effects of Project alternatives and determining the significance of these effects (U.S. Soil Conservation Service 1978). The same landform or visual resource appearing in different geographic areas could have a different degree of visual quality and sensitivity in each setting. A small hill may be a significant visual element on a flat landscape while having very little significance in mountainous terrain.

The Project region is highly urbanized, with growth extending between downtown cores of the Cities of Seattle and Everett. Although highly urban, the Puget Sound area is also characterized by a large system of lush parks, green space corridors, and vegetated roadsides that soften the urban feel. A mix of developed and natural landscapes characterizes the Project region. The landscape pattern is influenced by development sprawling from the metropolitan core of the region; smaller, growing cities; and major roadways in the region. Although the region is highly

developed, views of Puget Sound, Lake Washington, the Olympic Mountains, Mount Rainier, and the forested Cascade Range create an outstanding visual backdrop. Overall, the visual quality of the Project region is high in vividness, intactness, and unity.

## Visual Character of the Study Area

A north-south trending ridge-valley system generally accounts for the rolling terrain of the Aurora Corridor project area, which generally slopes toward the Puget Sound to the west and toward Lake Ballinger and Lake Washington to the east. The north- and southbound travel lanes within the study area generally parallel the topography. South of N 185th Street, the project corridor is relatively flat and generally slopes down towards N 165th Street. North of N 185th Street, the Project corridor is more undulating, with a small crest at N 200th Street and small depressions at N 192nd Street and N 205th Street. Also north of N 185th Street, an elevated ridgeline parallels the west edge of the corridor, and to the east of the corridor, the terrain slopes downward towards Echo Lake and Lake Ballinger.

Before the existence of the Interstate Highway System, SR 99 (Aurora Avenue N) served as the primary north-south transportation corridor for the region. The corridor attracted considerable commercial development, much of which catered to travel and automobile use, including motels, motor courts, restaurants, and drive-ins. Aurora Avenue N generally reflects the commercial nature that characterized its development. In addition, several newer shopping centers featuring large retail chains or grocery stores are also located along Aurora Avenue N. The lack of sidewalks along Aurora has created a challenging pedestrian and bicycle environment; therefore, most travel within the corridor tends to be automobile-oriented.

Beyond the commercial zone, four quiet, mature residential neighborhoods abut the businesses along Aurora Avenue N. Multi-family development is found along or in close proximity to the corridor, providing a transition to the single-family, duplex, and townhouse development that characterizes these neighborhoods.

Due to its highly developed and urbanized nature, within the context of the overall visual character of the region, the visual character of the study area is relatively low.

## Study Area Roadside Classification

Within the study area, the Aurora Corridor runs in a north-south direction between N 165th Street and N 205th Street. The WSDOT Roadside Classification Plan designates roadside character classifications for state roadways and is the policy for management of the roadside. According to the Roadside Classification Plan (WSDOT 1996), the study area section of Aurora Avenue N is classified as urban.

A roadside classified as urban is predominantly a built environment. Buildings and artificial features dominate an urban roadside classification. Vegetation is often non-native, used ornamentally, or arranged in formal patterns.

## Viewer Groups

Viewers who utilize the Aurora Avenue N corridor can be grouped according to their primary relationship with the roadway. These groups are described in the following sections.

### Aurora Avenue N Users

Aurora Avenue N users are considered to have moderate visual sensitivity to their surroundings. The passing landscape becomes familiar to these viewers, and their attention is typically not focused on the passing views. At standard roadway speeds, views are of short duration and roadway users are fleetingly aware of surrounding traffic, road signs, their immediate surroundings within the automobile, and other visual features.

### Retail and Commercial Commuters

The Project corridor is a frequent destination point due to the quantity of retail business and services located along Aurora Avenue N. Commuters and retail customers are considered moderately sensitive because they are exposed to the study area for the duration of their trips, but are typically preoccupied with driving or locating their destinations.

### Retail, Service, and Office Workers

Numerous retail businesses, services, and offices are located along the Aurora corridor. Some of the workers in these businesses would be outside and focused on repair or other service tasks, while others work

indoors and would be focused on indoor tasks. Indoor workers and students would likely experience periodic, brief views of the Aurora corridor during events such as breaks or gym class. Retail, service, and office workers would have approximately the same sensitivity as retail and commercial commuters: low to moderate sensitivity.

## Residents

Residential viewers typically experience extended viewing periods and are concerned about changes in the views from their homes. Residential viewers are therefore considered to have high visual sensitivity in this analysis. For the proposed project, however, views from homes, condominiums, and apartments within the study area are less likely to be affected by the proposed project than adjacent businesses, since topography, vegetation, and the built environment tend to screen many residences from the project corridor. Additionally, some residences are oriented away from Aurora Avenue N and toward residential streets, while others directly face the roadway. Residents within close proximity of the Project and with direct views of Aurora Avenue N are likely accustomed to the traffic and the existing roadway elements.

## Pedestrians and Bicyclists

Pedestrians and bicyclists who will view the proposed project are likely to notice changes to the visual landscape. Since these viewers travel at a slower rate of speed than automobiles, they tend to be more observant of their surrounding environment. As most pedestrian and bicycle traffic will occur within or adjacent to the project corridor, these viewers are considered to have moderate to high visual sensitivity.

## Bus Riders

As bus riders wait outdoors at bus stops or at the Park & Ride lot for their bus, they are likely to experience their visual surroundings for short durations; thus, they are considered to have moderate visual sensitivity.

## Recreational Users

Users of the sports fields at Shorewood High School and fans attending baseball games, soccer games, tennis matches, or other events would have fleeting views between existing buildings of new roadway features. Exposure to the route would occur for hours at a time (i.e., the

length of a sporting event or recreational outing), but would probably not occur on a daily basis. Recreational users would also primarily be focused on playing or watching the activities occurring at the sports venues and would therefore probably have only moderate visual sensitivity.

## How were visual effects of the project compared?

The Visual Quality Criteria Rating Scale and Visual Analysis Matrix were used to evaluate the existing conditions and the potential effects and benefits of the Build Alternative. This matrix format was provided by WSDOT and aligns with the FHWA methodology for conducting visual quality assessments. It includes a numeric ranking system to measure visual quality. In addition, the analysis:

- evaluates the response of viewers looking at the project and from the project (viewer response);
- determines and evaluates views of and from the project before and after the project; and
- describes the potential visible changes to the study area and its surroundings that will result from the project.

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### Visual Quality Evaluation Scale

7	Very High
6	High
5	Moderately High
4	Average
3	Moderately Low
2	Low
1	Very Low

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Based on the evaluation of potential effects on visual quality and aesthetics, mitigation measures were identified, as necessary, to reduce project effects. In addition, this visual quality report evaluates light, shadow, and glare for the Build and No Build alternatives.

## What are landscape units?

Landscape units are subunits of a study area. They are a tool or means of breaking down the visual analysis into descriptive units used to characterize the visual experience within the study area. Landscape units are defined by visual character and continuity; clear landform or land cover characteristics usually delineate or enclose them. Typically, visual awareness heightens where the change between landscape units occurs, and this greater awareness will increase the vividness of the scene at that point.

## What are viewpoints?

Viewpoint is a term used to describe the assumed location and position of a viewer in the visual quality analysis. A representative number of viewpoints within a study area is necessary to identify and compare the visual effects of the Build Alternatives with the No Build Alternative. Viewpoints are selected where the existing roadway is readily visible and where the Build Alternatives may be expected to create the greatest change. Four primary criteria are used for selecting the viewpoints:

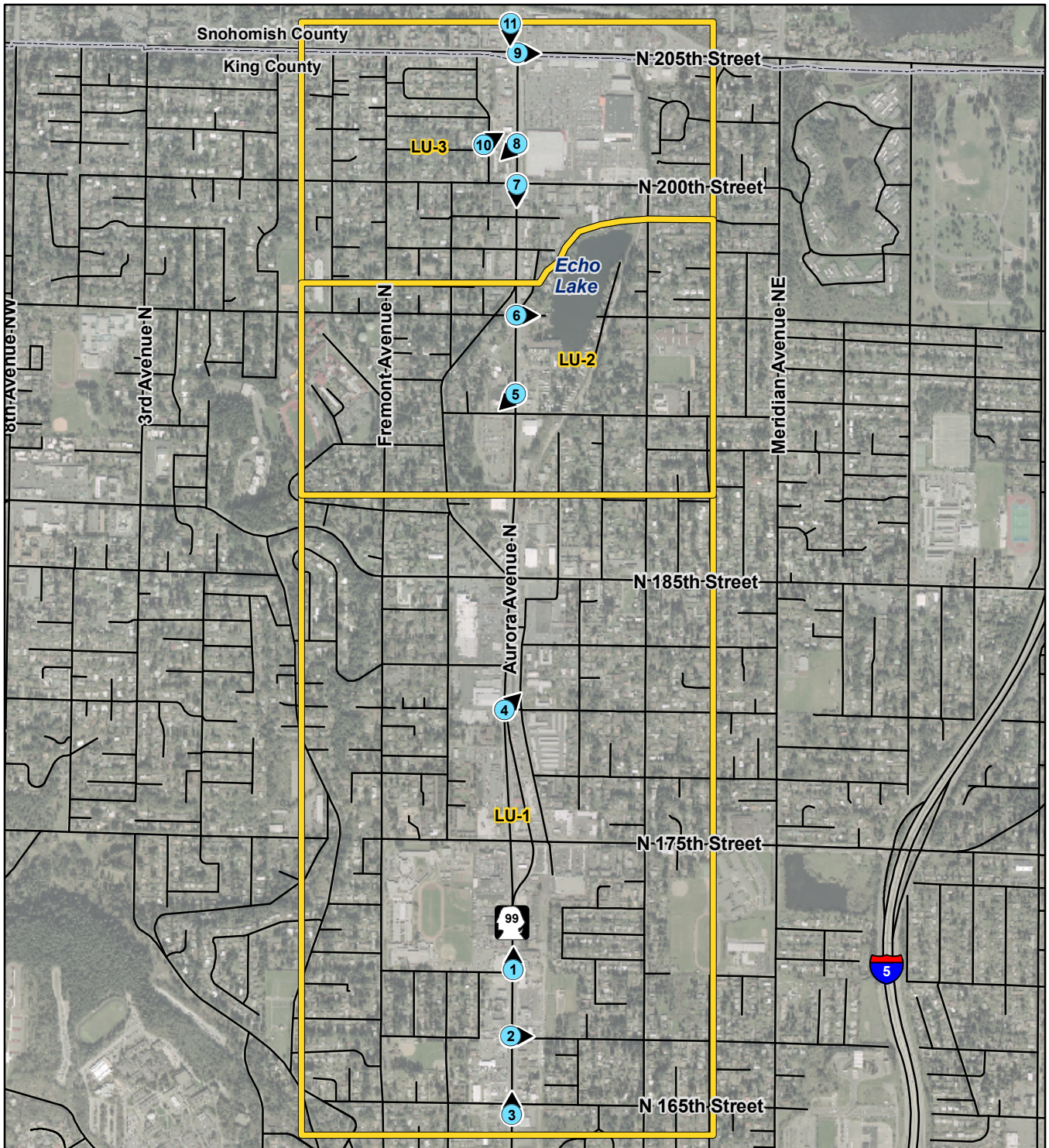
- The view is typical of other similar landscape profiles and is a public location that has a number of sensitive viewers nearby.
- The view represents moderate to high changes to visual quality or character of scenic views, historic buildings, designated viewpoints, or view corridors and is a location where there are sensitive viewers.
- The view is what a person walking, driving, or riding will see.
- A substantial portion of a roadway study area is visible from the viewpoint. This criterion does not include partial views of roadway elements unless that partial view is visually dominant to the viewer.

## What is the existing visual quality of the study area?





There are a total of three landscape units within the study area, as depicted in Figure 7. Landscape units were defined on the basis of similar visual features and homogeneous character. Text below describes in narrative form the landscape units within the study area from the southern to the northern project limits.

Eleven viewpoints were selected, also shown in Figure 7, that create a set of representative viewpoints of all three landscape units. Seven of the viewpoints depict views from the Project and four viewpoints depict views towards the Project.





Sources: City of Shoreline (2006); Jones & Stokes (2007)

-  City Boundary
-  Road
-  Key Viewpoint  
(arrow points in direction of view)
-  Landscape Unit

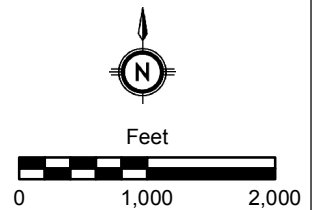


Figure 7. Landscape Units and Key Viewpoints  
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Limited views are available toward Aurora Avenue N, as vegetation, topography, and structures screen many of the views.

The visual quality assessment evaluates how the Aurora Corridor Improvement Project will affect views looking from the Project corridor and towards the Project corridor. The overall visual quality rating for each viewpoint is based on individual ratings of vividness, intactness, and unity as described previously in this chapter. The visual quality rating matrix is included as Appendix A, which shows the visual quality ratings within the study area for existing conditions.

## Landscape Unit 1: Aurora Avenue N, N 165th Street to N 188th Street

Landscape Unit 1 runs along the Aurora Corridor, from the southern terminus of the project at N 165th Street to the intersection of N 188th Street. This unit also includes Midvale Avenue N between N 175th Street and N 185th Street. This unit is comprised of a commercial strip that parallels Aurora Avenue N approximately one block in depth on both sides. The commercial strip contains a diverse mix of commercial land uses, including: restaurants, grocery stores, auto dealers, auto parts stores, rental services, gas stations, adult entertainment, and casinos. Flanking the commercial strip are residential zones to the east and west of Aurora Avenue N that are comprised predominantly of low-density residences and are intermixed with associated uses such as schools, churches, parks, and recreational facilities. Street lighting, traffic signals and signage, billboards, and utility poles and lines are a dominant component of the visual landscape.

Vegetation within this unit is sporadic; some individual businesses or malls contain grass-covered open space or coniferous trees, while others have very little or no vegetation. Vegetation is much denser in adjoining residential zones, and coniferous trees are prevalent along the residential streets.

Viewers in this unit are travelers on Aurora Avenue N and intersecting side streets, and pedestrians, bicyclists, residents, commuters, workers, and recreationists located within nearby areas along both sides of the roadway. Views tend to be limited to the foreground and middleground for these viewers, as topography, the built environment, and stands of tall coniferous trees in the viewshed obstruct views to the background.



### **Viewpoint 1: View North from Project**

This view looks north along Aurora Avenue N near N 170th Street (Figure 8a). Roadway elements and businesses aligning both sides of the street are the dominant foreground features. The middleground view is comprised of the extended commercial corridor as well as vegetation in the form of coniferous trees from residences in adjacent residential areas. Vegetation and the built environment mostly obstruct background views.

The primary viewers are motorists traveling on Aurora Avenue N northbound. This view has low vividness and moderately low intactness and unity. Overall visual quality ranks 2.5, or moderately low.

### **Viewpoint 2: View East from Project**

This view looks towards the residential area east of the Project from Aurora Avenue N east along N 167th Street (Figure 8a). The foreground is made up of the roadway corridor, flanking businesses, and vegetation. Middleground and background views are confined to a narrow corridor due to the density of conifers aligning the roadway, and often the residences are not visible from the Project corridor.

This viewpoint represents a typical view by motorists, pedestrians, or bicyclists traveling east from Aurora Avenue N along a side street south of N 185th Street. This view has moderately low vividness and unity and average intactness. Overall visual quality ranks 3.4, or moderately low.

### **Viewpoint 3: View North towards Project**

This view represents the view facing north and entering the Project corridor from the south (Figure 8b) near N 165th Street. Roadway elements and businesses lining both sides of the street are the dominant foreground features. The middleground view is comprised of the extended commercial corridor as well as vegetation in the form of conifer trees from residential areas located east and west of the commercial strip. Vegetation and the built environment mostly obstruct background views.

The primary viewers are motorists traveling on Aurora Avenue N northbound. This view has low vividness, and moderately low intactness and unity. Overall visual quality ranks 2.5, or moderately low.



Viewpoint 1: View North from Project. Northbound lanes of Aurora Avenue N near N 170th Street within Landscape Unit 1.



Viewpoint 2: View East from Project. Adjacent residential area facing east along N 167th Street from Aurora Avenue N within Landscape Unit 1.





Viewpoint 3: View North towards Project. Facing north towards entrance of project corridor near N 165th Street within Landscape Unit 1.



Viewpoint 4: View Northeast towards Project. Facing northeast across Aurora Avenue North near N 180th Street. within Landscape Unit 1.

#### **Viewpoint 4: View Northeast towards Project**

This view faces northeast across Aurora Avenue N from the auto parts store located just near N 180th Street (Figure 8b). This viewpoint represents a typical view towards Aurora Avenue N and Midvale Avenue N from an adjacent business. The roadway corridor and businesses across the street are the dominant foreground features. The middleground view is comprised primarily of vegetation in the form of conifer trees from residential areas to the east of the commercial strip. The extended roadway corridor is more of a peripheral middleground from this view. Vegetation and the built environment obstruct most background views.

The primary viewers are businesses located along Aurora Avenue N. Since the businesses tend to face east or west towards the Aurora corridor, the extended roadway corridor is a lesser part of the view. This view has moderately low vividness, intactness, and unity. Overall visual quality ranks 2.6, or moderately low.

#### **Landscape Unit 2: Aurora Avenue N, N 188th Street to Firlands Way N**

Landscape Unit 2 consists of Echo Lake, the Park & Ride at N 192nd Street with surrounding natural area, and adjoining residences and businesses.

This area is a natural depression along Aurora Avenue N and represents a distinctive visual break from neighboring commercial streetscapes. Development here is less intense and vegetation is predominant (particularly conifer trees as a middleground backdrop). Street signage, traffic signals, utility poles, and lighting are still prevalent, but there are few large commercial signs or billboards in this area.

Viewers in this unit include travelers along Aurora Avenue N and side streets, and pedestrians, bicyclists, residents, commuters, workers, and Park & Ride users located in nearby areas along both sides of the street. Views tend to be limited to the foreground and middleground for these viewer groups, as topography, the built environment, and stands of tall coniferous trees in the viewshed obstruct views to the background.

#### **Viewpoint 5: View Southwest from Project**

This view looks southwest towards the Park & Ride lot and surrounding natural open space from Aurora Avenue N near N 192nd Street

(Figure 8c). The foreground is made up of the roadway elements, a few businesses, and vegetation. However, the conifer trees of the middleground tend to be the most dominant visual element since there are fewer built structures and signage in this extent of the Project corridor. Background views are blocked by the vegetation and topography.

Primary viewers are motorists traveling along Aurora Avenue N in both directions, Park & Ride lot users, and several businesses and residences. This view has average vividness and moderately high intactness and unity. Overall visual quality ranks 4.4, or average.

### **Viewpoint 6: View East from Project**

This view looks east towards Echo Lake from Aurora Avenue N along N 195th Street (Figure 8c). The foreground is made up of the roadway elements, several residences, and vegetation. The middleground is comprised of water (Echo Lake) ringed by residences, boat docks, and vegetation. Vegetation, topography, and the built environment obstruct most background views.

Primary viewers are motorists traveling in either direction along Aurora Avenue N and eastbound along N 195th Street, as well as several businesses and residences. This view has average vividness, intactness, and unity. Overall visual quality ranks 3.8, or average.

### **Landscape Unit 3: Aurora Avenue N, Firlands Way N to N 205th Street**

Landscape Unit 3 is similar to Landscape Unit 1 in that it is mainly comprised of commercial land uses surrounded by adjacent residential areas. The commercial strip in this unit extends along the Aurora corridor, from Firlands Way N to the northern project limit at N 205th Street and generally extends a block west and two blocks east of Aurora Avenue N. This unit contains Aurora Village, which is a regional mall anchored by Costco and Home Depot, and is located on the southeast corner of N 205th Street and Aurora Avenue N. Within this unit, commercial uses are mixed and include: restaurants; auto dealers; gas stations; and home improvement, discount, sporting goods, and pet supply national chain stores. Street lighting, traffic signals and signage, billboards, and utility poles and lines are a dominant component of the visual landscape.





Viewpoint 5: View Southwest from Project. Facing southwest from Aurora Avenue N near N 192nd Street towards Park & Ride lot within Landscape Unit 2.



Viewpoint 6: View East from Project. Facing east from Aurora Avenue N along N 195th Street towards Echo Lake within Landscape Unit 2.

Vegetation within this unit is sporadic; some individual businesses or malls contain grass-covered open space or coniferous trees, while others have very little or no vegetation. Vegetation is much denser in adjoining residential zones, and conifer trees are prevalent along the residential streets.

Viewers in this unit are travelers on Aurora Avenue N and intersecting side streets and pedestrians, bicyclists, residents, commuters, and workers located in nearby areas on both sides of the roadway. Views tend to be limited to the foreground and middleground for these viewers, as topography, the built environment, and stands of tall coniferous trees in the viewshed obstruct views to the background. However, topography within the adjacent residential areas is more variable within this unit. Typically, residences to the west are higher than the Project corridor and in effect overlook Aurora Avenue N. Conversely, residential areas to the east are generally lower in elevation than the Project corridor, and the terrain slopes down towards Echo Lake and Lake Ballinger. Therefore, views to the east often exhibit a stronger background element that is not visible within most of the study area.

#### **Viewpoint 7: View South from Project**

This view looks south along Aurora Avenue N near N 200th Street (Figure 8d). Roadway elements and businesses aligning both sides of the street are the dominant foreground features.

The middleground view is comprised of the extended commercial corridor as well as vegetation in the form of conifer trees from residences to the east and west of the commercial strip. Vegetation and the built environment mostly obstruct background views.

The primary viewers are motorists traveling on Aurora Avenue N southbound. This view has low vividness, and moderately low intactness and unity. Overall visual quality ranks 2.5, or moderately low.





Viewpoint 7: View South from Project. Facing south along Aurora Avenue near N 200th Street within Landscape Unit 3.



Viewpoint 8: View Southwest from Project. Facing southwest from Aurora Avenue N just north of N 200th Street towards adjacent residences within Landscape Unit 3.



### **Viewpoint 8: View Southwest from Project**

This view looks southwest towards nearby residences from Aurora Avenue N just north of N 200th Street (Figure 8d). The roadway corridor and adjacent commercial strip dominate the visual foreground. However, due to the higher topography west of the Project corridor, residences are visible from the Project corridor and provide a middleground element. The dense conifer stands in the residential area west of Aurora Avenue N contribute to the middleground view. The higher topography to the west also obstructs background views.

This viewpoint represents a typical view of the residences overlooking Aurora Avenue N north of N 185th Street. Primary viewers are motorists traveling along Aurora Avenue N. This view has moderately low vividness, intactness, and unity. Overall visual quality ranks 3.0, or moderately low.

### **Viewpoint 9: View East from Project**

This view looks towards the residential area to the east from Aurora Avenue N east along N 205th Street (Figure 8e). The foreground is made up of the roadway corridor, commercial development, and minimal vegetation. Due to the downward sloping of the terrain to the east, the denser vegetation from the residential zone fills the middleground space and the Cascade Mountain Range provides a visual backdrop when skies are clear.

This viewpoint represents a typical view by motorists, pedestrians, or bicyclists traveling east from Aurora Avenue N along a side street north of N 185th Street. This view has moderately low vividness, and average intactness and unity. Overall visual quality ranks 3.7, or average.

### **Viewpoint 10: View Northeast towards Project**

This view faces northeast overlooking Aurora Avenue N from residences located near N 200th Street (Figure 8e). Roadway features and businesses along both sides of the street are the dominant foreground elements. The middleground view is comprised of extended commercial development as well as residences and vegetation in the form of conifer trees from residences east of the commercial strip. Background views are comprised of conifer foliage and the Cascade Mountain Range when skies are clear.



Viewpoint 9: View East from Project. Facing east from Aurora Avenue N along N 205th Street towards Cascade Range backdrop within Landscape Unit 3.



Viewpoint 10: View Northeast towards Project. Facing northeast from residences located near N 200th Street within Landscape Unit 3.

The primary viewers are residents located along the edge of the high ground west of Aurora Avenue N. This view has moderately low vividness and average intactness and unity. Overall visual quality ranks 3.6, or average.

### **Viewpoint 11: View South towards Project**

This view represents the view facing south and entering the Project corridor from the north near the SR 104 interchange near N 205th Street (Figure 8f). Roadway elements and businesses aligning both sides of the street are the dominant foreground features. Since the topography slopes down towards N 205th Street an extensive middleground view is prevalent. This middleground is comprised of the extended commercial corridor as well as vegetation in the form of conifer trees from adjacent residential areas to the east and west. Topography, vegetation, and the built environment obstruct background views.

The primary viewers are motorists traveling on Aurora Avenue N southbound. This view has moderately low vividness, intactness and unity. Overall visual quality ranks 2.8, or moderately low.



Viewpoint 11: View South towards Project. Facing south and entering the project corridor near N 205th Street within Landscape Unit 3.

## Chapter 5. Potential Effects

This chapter describes potential effects of the Project on visual quality under the No Build and three Build Alternatives.

### What are the potential effects on structures, vegetation, and views due to the Project?

The Aurora Corridor Improvement Project will change the visual character of Aurora Avenue N. The incorporation of context sensitive solutions into Project design (as described in Chapter 6) will create an improvement over the existing visual quality in the study area, and thus no adverse visual effects are expected to result from completion of the Project.

#### Project Features

Visual quality is likely to be affected by Project features associated with the Build Alternatives as listed below:

##### Alternative A

- Roadway would be widened due to the creation of new BAT lanes (common with Alternatives B and C).

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#### Context Sensitive Solutions

*Context sensitive solutions* is a term used to describe a collaborative, interdisciplinary approach whereby a transportation facility is designed with extensive input from the public to fit its physical setting and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility.

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- Curb, gutter, and sidewalk would be added along both sides of the corridor, and utility vaults and light poles would be located behind the new sidewalk.
- Center median would be added with left-turn and u-turn pockets. Limited vegetation would be added.

## Alternatives B and C

- Roadway would be widened due to the creation of new BAT lanes (common with Alternative A).
- Curb, gutter, and sidewalk would be added along both sides of the corridor.
- Vegetated amenity zone would be located between the curb and sidewalk. Utility vaults, light poles, and pedestrian amenities would be located in this area.
- Wider center median would be added with left-turn and u-turn pockets and more vegetation.

## Potential Effects on Views and Visual Quality

For the viewpoints analyzed, either minimal visual effect or beneficial effects are expected due to activities associated with the Build Alternatives. The visual quality rating matrix, Appendix A, shows the change in the visual quality ratings from current conditions (as described in Chapter 4, *Affected Environment*) to the changes associated with the Build Alternative. The changes to views and visual quality are summarized below.

## Overall Changes to Views due to the Project

### Overall changes due to Alternative A

The vividness associated with each view will experience a slight increase, due to the addition of some vegetation in the center median. Intactness will also increase due to the construction of the median and sidewalk along the roadside curb, as well as the undergrounding of utilities, which will provide more continuity to views from the roadway. Vegetation may also tend to screen some of the visually obtrusive features of the built environment. Similarly, unity will also increase as

the sidewalk, median, and vegetation will tend to frame views and provide a more interesting visual composition.

### **Overall changes due to Alternative B/C**

Vividness associated with each view will experience a modest increase, due to the addition of vegetation in the center median and within the roadside amenity zone. Intactness will also increase due to the construction of the median and sidewalk along the roadside curb, and the undergrounding of utilities. The addition of vegetation in the median and amenity zone will provide more continuity to views from the roadway, and the vegetation may tend to screen some of the visually obtrusive features of the built environment. Similarly, unity will also increase, as the sidewalk, median, and vegetation will tend to frame views and provide a more interesting visual composition. Since Alternatives B and C contain more vegetation than Alternative A, the effects to intactness and unity will increase proportionately because such plantings increase the visual cohesiveness of the Project corridor.

Additionally, the visual quality rating was recalculated for each view to incorporate changes due to project features. The results are described below within each landscape unit.

## **Landscape Unit 1: Aurora Avenue N, N 165th Street to N 188th Street**

### **Viewpoint 1: View North from Project**

Current visual quality for this view ranks 2.5, or moderately low. As described previously, changes to the view due to the Project for Alternative A will increase the visual quality slightly to 2.9. Classification will remain as moderately low. Changes to the view due to the Project for Alternatives B/C will experience a greater increase, improving the visual quality to 3.6, or average.

### **Viewpoint 2: View East from Project**

Current visual quality for this view ranks 3.4, or moderately low. The change to the view due to the Project for Alternative A is a minimal increase in some categories, but the overall visual quality remains 3.4. Changes to the view due to the Project for Alternatives B/C will increase visual quality to 3.8, or average.

### **Viewpoint 3: View North towards Project**

Current visual quality for this view ranks 2.5, or moderately low. Changes to the view due to the Project for Alternative A will increase the visual quality slightly to 2.9, though retaining the moderately low classification. Changes to the view due to the Project for Alternatives B/C will experience a greater increase, improving the visual quality to 3.6, or average.

### **Viewpoint 4: View Northeast towards Project**

Current visual quality for this view ranks 2.6, or moderately low. Changes to the view due to the Project for Alternative A will increase the visual quality slightly to 3.1, though retaining the moderately low classification. Changes to the view due to the Project for Alternatives B/C will create a greater increase, improving the visual quality to 3.7, or average.

## **Landscape Unit 2: Aurora Avenue N, N 188th Street to Firlands Way N**

### **Viewpoint 5: View Southwest from Project**

Current visual quality for this view ranks 4.4, or average. The change to the view due to the Project for Alternative A will improve the visual quality to 4.7, or moderately high. Changes to the view due to the Project for Alternatives B/C will increase visual quality to 4.9, also moderately high.

### **Viewpoint 6: View East from Project**

Current visual quality for this view ranks 3.8, or average. Changes to the view due to the Project for Alternative A will increase the visual quality slightly to 4.1. Classification as average will remain. Changes to the view due to the Project for Alternatives B/C will result in a greater increase, improving the visual quality to 4.6, or moderately high.

## **Landscape Unit 3: Aurora Avenue N, Firlands Way N to N 205th Street**

### **Viewpoint 7: View South from Project**

Current visual quality for this view ranks 2.5, or moderately low. Changes to the view due to the Project for Alternative A will increase

the visual quality slightly to 2.9, though the moderately low classification will remain. Changes to the view due to the Project for Alternatives B/C will experience a greater increase, improving the visual quality to 3.6, or average.

#### **Viewpoint 8: View Southwest from Project**

Current visual quality for this view ranks 3.0, or moderately low. Changes to the view due to the Project for Alternative A will increase the visual quality slightly to 3.3, though retaining the moderately low classification. Changes to the view due to the Project for Alternatives B/C will result in a greater increase, improving the visual quality to 3.9, or average.

#### **Viewpoint 9: View East from Project**

Current visual quality for this view ranks 3.7, or average. Changes to the view due to the Project for Alternative A will increase the visual quality slightly to 3.9. Classification as average will remain. Changes to the view due to the Project for Alternatives B/C will result in a greater increase, improving the visual quality to 4.4, which will retain the classification as average.

#### **Viewpoint 10: View Northeast towards Project**

Current visual quality for this view ranks 3.6, or average. Changes to the view due to the Project for Alternative A will increase the visual quality slightly to 3.8, although classification will remain as average. Changes to the view due to the Project for Alternatives B/C will result in a greater increase, improving the visual quality to 4.3, which will retain the classification as average.

#### **Viewpoint 11: View South towards Project**

Current visual quality for this view ranks 2.8, or moderately low. Changes to the view due to the Project for Alternative A will increase the visual quality slightly to 3.1, although classification will remain as moderately low. Changes to the view due to the Project for Alternatives B/C will result in a greater increase, improving the visual quality to 3.8, or average.

## Will the project create new sources of shadow, glare, or light?

Generally, light and glare effects will remain about the same for most of the roadway as the design includes no new sources of light, glare, or shadow in the study area. The addition of some light and glare is likely to occur due to additional lanes of travel. Potential light and glare effects would include:

- additional light and glare visible to roadway users due to increased lanes of on-coming traffic; and
- additional light and glare visible to pedestrians, residents, and workers located in nearby residential and commercial areas.

Addition of vegetation within the center median in all three Build Alternatives will soften some effects from light and glare for roadway users. Addition of vegetation within the amenity zone in Alternatives B and C will soften light and glare effects for viewers in nearby residential and commercial areas.

## How will Project construction temporarily affect visual quality?

Construction-related activities include the presence of construction equipment and workers, materials, debris, signage, and staging areas. Construction-related activities will temporarily affect Aurora Avenue N users and neighbors during construction. It is expected that traffic cones and barriers located along the roadway, used for construction-related traffic control and channelization, will be visually prominent throughout project construction. Detours, traffic control devices, or lane shifts will require greater driver attention and might distract motorists from views outside the construction areas.

Other potential temporary effects would include:

- temporary lighting used for possible nighttime construction and the associated light and glare from this lighting; and
- temporary clutter that may appear in some views because of the presence of construction activities, equipment, stored materials, and



general disruption of landscaping with fencing, equipment, vehicles, and lighting.

## How will the No Build Alternative affect visual quality?

Under the No-Build Alternative, the roadway environment will remain basically the same as under existing conditions. Infill development along the corridor may add new features such as sidewalks or vegetation and landscaping over time.

### Overall Changes to Views

Under the No Build Alternative, the roadway environment will not be improved to include new curbs, medians, vegetation or undergrounding of utilities. Some new visual elements may be included as part of infill development, but these elements are likely to appear similar to existing newer development and will still lack the continuity of an integrated roadway corridor design. The existing vividness, intactness, and unity of each view will remain unchanged. Therefore the visual quality rating associated with each view will remain the same due to the No Build Alternative as under existing conditions.

### Sources of Shadow, Glare, or Light

Additional lanes of travel will not be added; thus no increase of light or glare is expected. The center median and roadway vegetation will not be added, so the benefit they provide of softening light and glare will not be present. Therefore, light and glare effects are expected to remain the same as existing conditions due to the No Build Alternative.

### Temporary Construction Effects

Since the Project will not be constructed, construction-related activities will not be present. Therefore, there are no temporary construction effects due to the No-Build Alternative.



## Chapter 6. Measures Taken to Avoid or Minimize Project Effects

This chapter identifies mitigation measures intended to avoid or minimize the potential effects described in Chapter 5.

### **What mitigation measures are proposed to avoid and/or minimize overall effects of the Project?**

Mitigation for project effects has been made an inherent part of Project design from its inception through the use of context sensitive solutions. Using this approach, development and implementation of a roadway project begin with outreach to the public and stakeholders and incorporate the communities' values into the overall design of the improvements. The objective is a finished design sensitive to the surrounding context that creates a safe, efficient, and effective roadway system for the movement of people and goods.

For the Aurora Corridor Improvement Project, public involvement started early with the process of defining the Project purpose and need and continued as the Build Alternatives were developed. The corridor design concept, as defined in the 32 Points adopted by the City Council (described in Chapter 2 of this report) was the culmination of this extensive public process. The input of all users and stakeholders was

considered consistently and on many levels including aesthetic, social, economic and environmental values, needs, and constraints.

This process molded the development of Build Alternatives that minimize any negative visual effects of the Project. As part of the context sensitive solutions process, elements and treatments such as new landscaping and plantings will be used to screen, soften, or enhance the visual features of the Build Alternatives.

Other examples of treatments that will be employed to avoid or minimize negative operational effects include the following recommended Best Management Practices:

- Hydro-seed all locations with exposed soil and steep slopes with Washington native grasses, to prevent soil erosion, reduce water pollution, and help preserve the existing landscape character.
- Design for aesthetic treatment (materials, pattern, texture, concrete stain color) on any retaining walls, noise barriers, barriers, and construction elements.
- Design for gradual grade transitions (slope rounding) at hinge and catch points of earthwork slopes, as well as flatter slopes (1:4 slope ratios) where applicable, so as to preserve the existing grade around the base of trees that are to remain, so their roots are not impacted by cut or fill earthwork.
- Shield light fixtures to minimize glare and uplighting. Lights will be screened and directed away from residences to the highest degree possible. The number of nighttime lights installed will be minimized to the greatest degree possible. Light fixtures and poles will be painted; no reflective surfaces are proposed that will contribute towards reflective daytime glare.
- Use low-sheen and non-reflective surface materials to reduce potential for glare; the finish should be matte and roughened.

During Project construction the following measures will be taken to minimize temporary visual impacts:

- Locate/screen storage and staging areas in areas that minimize visual prominence to the greatest extent possible in order to reduce the temporary visual effects during construction.

- Light and glare effects associated with possible nighttime construction activities should be addressed by using downcast lighting sources and shielding roadway lighting.

## **Are there any unavoidable effects to visual quality?**

There are no anticipated unavoidable adverse effects to visual quality due to the Build Alternatives.





## Chapter 7. References

City of Shoreline. 2005. Comprehensive Plan. Adopted by Ordinance 388. June 13. Shoreline, WA.

———. 2007. Interurban Trail Map. Available: <[http://cosweb.ci.shoreline.wa.us/uploads/attachments/pwk/2006\\_GEN.pdf](http://cosweb.ci.shoreline.wa.us/uploads/attachments/pwk/2006_GEN.pdf)>. Accessed: March 30, 2007.

FHWA (Federal Highway Administration). 1988. Visual Impact Assessment for Highway Projects (FHWA-HI-88-054). USDOT (US Department of Transportation), 1988.

Gluck, Jerome, Herbert S. Levinson, and Vergil Stover. 1999. Impacts of Access Management Techniques. National Cooperative Highway Research Program (NCHRP) Report 420. Prepared for the Transportation Research Board. National Research Council. Washington, D.C.

PSRC (Puget Sound Regional Council). 2001. Destination 2030: Metropolitan Transportation Plan for the Central Puget Sound Region.

Shoreline Municipal Code (SMC). 2007. Title 20 – Development Code, Chapter 20.50 – General Development Standards. Shoreline, WA. Available: <[http://www.mrsc.org/nxt/gateway.dll/shlnmc?f=templates&fn=shlnpage.htm\\$vid=municodes:Shoreline](http://www.mrsc.org/nxt/gateway.dll/shlnmc?f=templates&fn=shlnpage.htm$vid=municodes:Shoreline)>.

- Transportation Research Board. 2000. Highway Capacity Manual. Special Report 209. National Research Council. Washington, D.C.
- U.S. Forest Service. 1974. National forest landscape management Volume 2. Chapter 1: The visual management system (Agriculture Handbook Number 462). Washington, D.C.
- U.S. Soil Conservation Service. 1978. Procedure to establish priorities in landscape architecture (Technical Release No. 65). Washington, D.C.
- Washington State Transportation Commission. 1998. Transportation Commission List of Highways of Statewide Significance. Passed by Resolution 584. Available: <<http://www.wsdot.wa.gov/ppsc/hsp/HSSLIST.pdf>>.
- WSDOT (Washington State Department of Transportation). 1996. Roadside Classification Plan, 1996.
- . 2000. Roadside Manual, 2000.
- . 2004. Environmental Procedures Manual M31-11; Section 459 Visual Impacts, Light and Glare. September 2004.
- . 2005. Freight and Goods Transportation System 2005 Update. Prepared by the Office of Freight Strategy and Policy.
- . 2006. Environmental Procedures Manual. Publication M31-11. Prepared by the Environmental Services Office. March. Available: <<http://www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/EPM/EPM.htm>>.

## Appendix A

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Visual Quality Matrix





**VISUAL QUALITY ASSESMENT**

**VIEWS FROM THE ROAD**

Aurora Corridor Improvement Project  
18-May-07

			VIEW UNIT NUMBER	1	1	1	2	2	2	5	5	5	6	
			( E=existing, A=proposed Alt A, B/C=proposed Alt	E	A	B/C	E	A	B/C	E	A	B/C	E	
<b>LEVEL 1</b>			GENERAL VISUAL QUALITY											
			SPECIAL FEATURES											
<b>L E V E L 2</b>	<b>VIVIDNESS</b>	<b>I FOREGROUND</b>	LAND	3.0	3.0	3.0	4.0	4.0	4.0	5.0	5.0	5.0	4.0	
			WATER	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	5.0
			VEGETATION	2.0	3.0	5.0	3.0	4.0	5.0	6.0	6.0	6.0	6.0	4.0
			MAN-MADE	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	3.0
		<b>AVERAGE I</b>			<b>2.3</b>	<b>2.5</b>	<b>3.0</b>	<b>2.8</b>	<b>3.0</b>	<b>3.3</b>	<b>4.0</b>	<b>4.0</b>	<b>4.0</b>	<b>4.0</b>
		<b>II MIDDLEGROUND</b>	LAND	3.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0
			WATER	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	5.0
			VEGETATION	3.0	4.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	5.0
			MAN-MADE	3.0	3.0	3.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	4.0
		<b>AVERAGE II</b>			<b>2.5</b>	<b>2.8</b>	<b>3.0</b>	<b>3.8</b>	<b>3.8</b>	<b>3.8</b>	<b>4.3</b>	<b>4.3</b>	<b>4.3</b>	<b>4.5</b>
		<b>III BACKGROUND</b>	LAND	N/A	N/A	N/A	5.0	5.0	5.0	N/A	N/A	N/A	N/A	N/A
			WATER	N/A	N/A	N/A	1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
	VEGETATION		N/A	N/A	N/A	5.0	5.0	5.0	N/A	N/A	N/A	N/A	N/A	
	MAN-MADE		N/A	N/A	N/A	4.0	4.0	4.0	N/A	N/A	N/A	N/A	N/A	
	<b>AVERAGE III</b>			<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>3.8</b>	<b>3.8</b>	<b>3.8</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	
	<b>UNITY</b>	<b>I</b>	MAN MADE	2.0	2.0	2.0	2.0	2.0	2.0	4.0	5.0	6.0	3.0	
			NATURAL ENVIRONMENT	2.0	3.0	5.0	4.0	4.0	5.0	5.0	5.0	5.0	3.0	
			<b>AVERAGE I</b>	<b>2.0</b>	<b>2.5</b>	<b>3.5</b>	<b>3.0</b>	<b>3.0</b>	<b>3.5</b>	<b>4.5</b>	<b>5.0</b>	<b>5.5</b>	<b>3.0</b>	
		<b>II</b>	MAN MADE	3.0	3.0	3.0	3.0	3.0	3.0	4.0	5.0	6.0	4.0	
			NATURAL ENVIRONMENT	3.0	4.0	5.0	4.0	4.0	5.0	5.0	5.0	5.0	4.0	
			<b>AVERAGE II</b>	<b>3.0</b>	<b>3.5</b>	<b>4.0</b>	<b>3.5</b>	<b>3.5</b>	<b>4.0</b>	<b>4.5</b>	<b>5.0</b>	<b>5.5</b>	<b>4.0</b>	
	<b>III</b>	MAN MADE	N/A	N/A	N/A	4.0	4.0	4.0	N/A	N/A	N/A	N/A		
		NATURAL ENVIRONMENT	N/A	N/A	N/A	4.0	4.0	4.0	N/A	N/A	N/A	N/A		
		<b>AVERAGE III</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>4.0</b>	<b>4.0</b>	<b>4.0</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>		
<b>INTACTNESS</b>	<b>I</b>	MAN-MADE	2.0	3.0	4.0	2.0	3.0	4.0	4.0	5.0	5.0	3.0		
		OVERALL	3.0	3.0	4.0	3.0	3.0	4.0	5.0	5.0	5.0	4.0		
		<b>AVERAGE I</b>	<b>2.5</b>	<b>3.0</b>	<b>4.0</b>	<b>2.5</b>	<b>3.0</b>	<b>4.0</b>	<b>4.5</b>	<b>5.0</b>	<b>5.0</b>	<b>3.5</b>		
	<b>II</b>	MAN-MADE	3.0	3.0	4.0	3.0	3.0	4.0	4.0	5.0	5.0	4.0		
		OVERALL	3.0	3.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	4.0		
		<b>AVERAGE II</b>	<b>3.0</b>	<b>3.0</b>	<b>4.0</b>	<b>3.5</b>	<b>3.5</b>	<b>4.0</b>	<b>4.5</b>	<b>5.0</b>	<b>5.0</b>	<b>4.0</b>		
	<b>III</b>	MAN-MADE	N/A	N/A	N/A	3.0	3.0	4.0	N/A	N/A	N/A	N/A		
		OVERALL	N/A	N/A	N/A	4.0	4.0	4.0	N/A	N/A	N/A	N/A		
		<b>AVERAGE III</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>3.5</b>	<b>3.5</b>	<b>4.0</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>		
<b>AVERAGES</b>	<b>I</b>	WITHIN R/W	2.3	2.7	3.5	2.8	3.0	3.6	4.3	4.7	4.8	3.5		
	<b>II</b>	OUTSIDE R/W to NATURAL BREAK	2.8	3.1	3.7	3.6	3.6	3.9	4.4	4.8	4.9	4.2		
	<b>III</b>	NATURAL BREAK to INFINITY	N/A	N/A	N/A	3.8	3.8	3.9	N/A	N/A	N/A	N/A		
<b>FACTOR</b>	<b>I</b>	LEVEL OF IMPORTANCE												
	<b>II</b>	"												
	<b>III</b>	"												
<b>SUB-TOTAL</b>	<b>I</b>	WITHIN R/W	2.3	2.7	3.5	2.8	3.0	3.6	4.3	4.7	4.8	3.5		
	<b>II</b>	OUTSIDE R/W to NATURAL BREAK	2.8	3.1	3.7	3.6	3.6	3.9	4.4	4.8	4.9	4.2		
	<b>III</b>	NATURAL BREAK to INFINITY	N/A	N/A	N/A	3.8	3.8	3.9	N/A	N/A	N/A	N/A		
<b>TOTAL VISUAL QUALITY</b>			<b>2.5</b>	<b>2.9</b>	<b>3.6</b>	<b>3.4</b>	<b>3.4</b>	<b>3.8</b>	<b>4.4</b>	<b>4.7</b>	<b>4.9</b>	<b>3.8</b>		



VISUAL QUALITY ASSESSMENT

VIEW TO THE ROAD

Aurora Corridor Improvement Project  
18-May-07

			VIEW UNIT NUMBER	3	3	3	4	4	4	10	10	10	11	11	11											
			( E=existing, A=proposed Alt A, B/C=proposed Alt B/C)	E	A	B/C	E	A	B/C	E	A	B/C	E	A	B/C											
<b>LEVEL 1</b>			GENERAL VISUAL QUALITY																							
			SPECIAL FEATURES																							
<b>L E V E L 2</b>	<b>VIVIDNESS</b>	<b>I FOREGROUND</b>	LAND	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0											
			WATER	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0										
			VEGETATION	2.0	3.0	5.0	2.0	3.0	5.0	3.0	4.0	5.0	2.0	3.0	5.0											
			MAN-MADE	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0										
	<b>AVERAGE I</b>				2.3	2.5	3.0	2.3	2.5	3.0	2.8	3.0	3.3	2.5	2.8	3.3										
	<b>II MIDDLEGROUND</b>	LAND	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	5.0	5.0	5.0											
		WATER	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0											
		VEGETATION	3.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0	5.0	3.0	4.0	5.0												
		MAN-MADE	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0												
	<b>AVERAGE II</b>				2.5	2.8	3.0	3.0	3.0	3.3	3.3	3.3	3.5	3.0	3.3	3.5										
	<b>III BACKGROUND</b>	LAND	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0	5.0	5.0	N/A	N/A	N/A											
		WATER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.0	1.0	1.0	N/A	N/A	N/A											
VEGETATION		N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.0	5.0	6.0	N/A	N/A	N/A												
MAN-MADE		N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.0	4.0	4.0	N/A	N/A	N/A												
<b>AVERAGE III</b>				N/A	N/A	N/A	N/A	N/A	N/A	3.8	3.8	4.0	N/A	N/A	N/A											
<b>INTACTNESS</b>	<b>I</b>	MAN MADE	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0											
		NATURAL ENVIRONMENT	2.0	3.0	5.0	2.0	3.0	5.0	3.0	4.0	5.0	2.0	3.0	5.0												
		<b>AVERAGE I</b>	2.0	2.5	3.5	2.0	2.5	3.5	2.5	3.0	3.5	2.0	2.5	3.5												
	<b>II</b>	MAN MADE	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	3.0	3.0	3.0												
		NATURAL ENVIRONMENT	3.0	4.0	5.0	3.0	4.0	5.0	3.0	4.0	5.0	3.0	4.0	5.0												
		<b>AVERAGE II</b>	3.0	3.5	4.0	3.0	3.5	4.0	3.5	4.0	4.5	3.0	3.5	4.0												
<b>III</b>	MAN MADE	N/A	N/A	N/A	N/A	N/A	N/A	5.0	5.0	5.0	N/A	N/A	N/A													
	NATURAL ENVIRONMENT	N/A	N/A	N/A	N/A	N/A	N/A	5.0	5.0	6.0	N/A	N/A	N/A													
	<b>AVERAGE III</b>	N/A	N/A	N/A	N/A	N/A	N/A	5.0	5.0	5.5	N/A	N/A	N/A													
<b>UNITY</b>	<b>I</b>	MAN-MADE	2.0	3.0	4.0	2.0	3.0	4.0	2.0	3.0	4.0	2.0	3.0	4.0												
		OVERALL	3.0	3.0	4.0	3.0	3.0	5.0	3.0	3.0	4.0	3.0	3.0	4.0												
		<b>AVERAGE I</b>	2.5	3.0	4.0	2.5	3.0	4.5	2.5	3.0	4.0	2.5	3.0	4.0												
	<b>II</b>	MAN-MADE	3.0	3.0	4.0	3.0	4.0	4.0	4.0	4.0	5.0	3.0	3.0	4.0												
		OVERALL	3.0	3.0	4.0	3.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0												
		<b>AVERAGE II</b>	3.0	3.0	4.0	3.0	4.0	4.0	4.0	4.0	5.0	3.5	3.5	4.5												
<b>III</b>	MAN-MADE	N/A	N/A	N/A	N/A	N/A	N/A	5.0	5.0	5.0	N/A	N/A	N/A													
	OVERALL	N/A	N/A	N/A	N/A	N/A	N/A	5.0	5.0	5.0	N/A	N/A	N/A													
	<b>AVERAGE III</b>	N/A	N/A	N/A	N/A	N/A	N/A	5.0	5.0	5.0	N/A	N/A	N/A													
<b>AVERAGES</b>	<b>I</b>	WITHIN R/W	2.3	2.7	3.5	2.3	2.7	3.7	2.6	3.0	3.6	2.3	2.8	3.6												
	<b>II</b>	OUTSIDE R/W to NATURAL BREAK	2.8	3.1	3.7	3.0	3.5	3.8	3.6	3.8	4.3	3.2	3.4	4.0												
	<b>III</b>	NATURAL BREAK to INFINITY	N/A	N/A	N/A	N/A	N/A	N/A	4.6	4.6	4.8	N/A	N/A	N/A												
<b>FACTOR</b>	<b>I</b>	LEVEL OF IMPORTANCE																								
	<b>II</b>	"																								
	<b>III</b>	"																								
<b>SUB-TOTAL</b>	<b>I</b>	WITHIN R/W	2.3	2.7	3.5	2.3	2.7	3.7	2.6	3.0	3.6	2.3	2.8	3.6												
	<b>II</b>	OUTSIDE R/W to NATURAL BREAK	2.8	3.1	3.7	3.0	3.5	3.8	3.6	3.8	4.3	3.2	3.4	4.0												
	<b>III</b>	NATURAL BREAK to INFINITY	N/A	N/A	N/A	N/A	N/A	N/A	4.6	4.6	4.8	N/A	N/A	N/A												
<b>TOTAL VISUAL QUALITY</b>				2.5	2.9	3.6	2.6	3.1	3.7	3.6	3.8	4.3	2.8	3.1	3.8											
			VIEW UNIT NUMBER	3	3	3	4	4	4	10	10	10	11	11	11											
			( E=existing, A=proposed Alt A, B/C=proposed Alt B/C)	E	A	B/C	E	A	B/C	E	A	B/C	E	A	B/C											

<b>Evaluation Scale</b>	<b>VIVIDNESS</b>	<b>INTACTNESS</b>	<b>UNITY</b>
	7 = VERY HIGH 6 = HIGH 5 = MODERATELY HIGH 4 = AVERAGE 3 = MODERATELY LOW 2 = LOW 1 = VERY LOW TO NON-EXISTENT	(MAN-MADE) 7 = NO DEVELOPMENT TO NON-E 6 = LITTLE DEVELOPMENT 5 = SOME DEVELOPMENT 4 = AVERAGE LEVEL OF DEVELOP 3 = MODERATELY HIGH DEVELOP 2 = HIGH LEVEL OF DEVELOPME 1 = VERY HIGH LEVEL OF DEVEL	(NATURAL ENVIRONMENT) 7 VERY HIGH 6 HIGH 5 MODERATELY HIGH 4 AVERAGE 3 MODERATELY LOW 2 LOW 1 VERY LOW TO NON-EXISTEN

