Appendix M: Visual Quality Discipline Report

Point Defiance Bypass Project

Visual Quality Discipline Report

Washington State Department of Transportation

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Summary

What are visual resources, and why are they evaluated?

Visual resources include the views and scenery that might be affected by the Project. People care about the way places look, and potential changes to scenery are considered as part of the environmental review for transportation projects.

Visual effects analysis for a project considers several factors:

- How much would views change if the project is completed?
- Would changes to the scenery be compatible with the current conditions, or would they reduce the quality of a view?
- How sensitive would viewers be to the proposed changes?

The visual quality analysis evaluates the likely positive or negative effects of a project. Where there are negative effects, the analysis also identifies possibilities for minimization—ways to reduce or eliminate those effects.

What are the visual resources in the study area?

The landscape setting for the study area is visually diverse. The setting includes urban and industrial areas, suburban residential neighborhoods, parks and schools, undeveloped areas and the region's largest military base.

Roads, open space, and crossing signals are typical visual elements along the railroad corridor.

Some views in the study area are developed, including commercial buildings and other urban elements.

The study area itself is a narrow railroad corridor, located adjacent to major arterials through Tacoma, then adjacent to Interstate 5 (I-5) further south. The railroad corridor is typically cleared, and includes tracks supported by ties and a gravel base. In some locations the corridor is wider, and may include multiple sets of tracks, along with maintenance or storage areas. The edge of the railroad corridor is sometimes fenced with chain link fencing. Where the tracks cross roads there are typically warning lights, signs, and gates. Generally, the railroad corridor is a minor element in the broader landscape, and often would go unnoticed unless a train is passing by. When trains are present they are a conspicuous and compelling part of the view.

A second part of the study area is the current alignment of the Amtrak route, which generally follows the shoreline of Puget Sound from Commencement Bay to the Nisqually Delta. Comparison views from the current Amtrak route with the views from the Project route is a part of the visual effects analysis.

What are the Project's effects on visual resources?

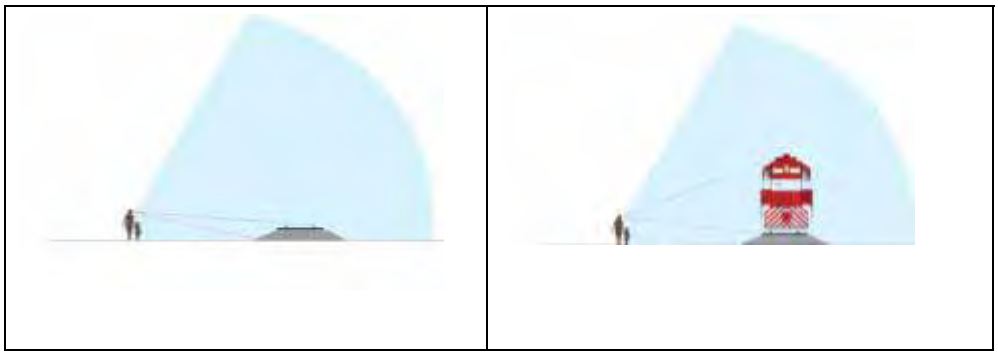
The Project would be viewed by occupants of nearby homes, businesses, schools, and similar facilities, as well as travelers along nearby roads. Train passengers would also be viewers of the Project, and the evaluation considers whether the Project would improve or detract from views from the train.

Typical visual elements that may be included in the Project are railroad tracks and trains. They become more prominent in the view the closer they are to viewers.

If the Project is constructed, many physical features of the rail corridor would look different than they do today. Some of those changes may be considered positive, and some may be considered negative.

The visual quality analysis considers three types of effects: construction effects; physical effects; and operational effects:

- **Construction effects** reflect the temporary effects of activities necessary to build a project. Construction effects for the Project would likely be minor, and would not affect any single location along the tracks for a long period of time.
- **Physical effects** include elements such as new railroad tracks, gates and signals at road crossings, and larger built elements such as maintenance areas or station improvements. Physical effects to scenery would be minor. Changes to the rails, crossings, and similar elements would be inconspicuous, and in most locations the view following completion of the Project would be nearly identical to the view today.
- **Operational effects** would include the effects of trains using the tracks along with activities such as periodic maintenance. Operational changes would likely have the most visual effect along the corridor. Although trains are present only for a short time, they are very prominent in the view. If the Project is completed there would be more trains on the line, they would move at higher speeds, and they would be passenger rather than freight trains. The additional trains would be visually prominent, and have a negative effect on privacy for occupants of buildings adjacent to the rail line.



Train tracks make up a fairly small part of the overall view, even when viewed from close up. Trains are quite large, and can be a prominent element in a view.

What are likely visual quality effects for train passengers?

The current route offers a scenic ride for passengers along the shoreline of Puget Sound. Views from the train if the Project is constructed would have a much different character, with more views of developed landscapes, I-5, and urban commercial neighborhoods. Overall, the visual quality of the traveler experience on the passenger railroad system would be of substantially lower quality through the study area.

Would the Project result in any significant effects to visual quality?

Although the Project would have some negative effects to visual quality, no significant effects are anticipated. The most substantial effects would be associated with additional train traffic. When trains pass by there would be effects to privacy and scenery for neighboring residents. Operational effects are not considered significant in this case because of their short duration, and the limited number of residential areas located near the tracks.

What are the recommended minimization measures?

Minimization includes actions that could be taken as part of the Project to reduce or eliminate visual effects. Overall, the effects to visual quality are expected to be minor, and do not require minimization. Minimization recommendations include:

- Maintain existing vegetation at the edge of the railroad right-of-way. In many locations, existing vegetation partially screens the rail line. Maintaining this vegetation would reduce the visibility of trains during the operation of the Project.
- Enhance vegetative buffers where the rail line is adjacent to residential and institutional properties. In a few locations, it may be possible to enhance screening by adding natural vegetation at the edge of the railroad corridor to screen trains from occupants of neighboring properties.

Chapter 1 – Project Description

Introduction

Under the High-Speed Intercity Passenger Rail (HSIPR) Program and pursuant to a programmatic Tier I Environmental Assessment (EA) the Federal Railroad Administration (FRA) has approved an application from the Washington State Department of Transportation (WSDOT) to improve the Pacific Northwest Rail Corridor (PNWRC), a federally designated high-speed rail corridor. One project included in the PNWRC application is the Point Defiance Bypass Project (the Project), which would respond to deficiencies in the existing rail operations around Point Defiance. This Discipline Report has been prepared in support of the project-specific EA for the Point Defiance Bypass project.

The Project is located in Pierce County along an existing approximately 20-mile rail corridor between Tacoma and Nisqually.1 The Project would provide for the re-routing of Amtrak passenger trains from the BNSF rail line that runs along the southern Puget Sound shoreline (Puget Sound route) to the Point Defiance Bypass route, an existing rail corridor that runs along the west side of I-5. The Project would consist of railroad track and support facility improvements, and relocation of the Tacoma Amtrak Station to Freighthouse Square in Tacoma.

Purpose and Need

As described above, the Point Defiance Bypass route is part of the larger PNWRC. Within Washington State, the vision for the PNWRC is to "…improve intercity passenger rail service by reducing travel times and achieving greater schedule reliability in order to accommodate growing intercity travel demand…"[2].

The purpose of the Project is to provide more frequent and reliable high-speed intercity passenger rail service along the PNWRC between Tacoma and Nisqually. In conformity with the decisions under the Tier 1 Programmatic EA, the PNWRC Improvement Program has reduced the overall environmental effects of providing improved passenger rail service with the use of an existing transportation corridor and associated infrastructure, rather than creating a new corridor.

[1] *The three owners of the project corridor are Sound Transit, Tacoma Rail, and BNSF.*
[2] *WSDOT 2009*

The Project is needed to address the deficiencies in the existing rail alignment around Point Defiance. The existing alignment (Puget Sound route), shared by freight and passenger rail traffic, is near capacity and is therefore unable to accommodate additional high-speed intercity passenger rail service without substantial improvements. In addition, the existing alignment has physical and operational constraints that adversely affect both passenger train scheduling and reliability.

Improving intercity passenger rail service in the project area and meeting the Project needs would be accomplished by:

- Enhanced Frequency: Increasing Amtrak Cascades round-trips from four to six by 2017 to meet projected service demands.
- Improved Reliability: Reducing scheduling conflicts with freight trains that often result in delays, and by minimizing or avoiding operational delays (e.g., drawbridge openings) and weather-related delays (e.g., mudslides), and improving on-time performance from 68 percent to 88 percent.
- Enhanced Efficiency: Enhancing the efficient movement of people by decreasing trip times by 10 minutes, and reducing the amount of time passenger trains spend yielding to freight movements.
- Improved Safety: Constructing at-grade crossings with upgraded safety features, including wayside horns, median barriers, advance warning signals, and traffic signal improvements.

What alternatives are being considered for the Point Defiance Bypass Project?

FRA and WSDOT conducted an evaluation of three build alternatives: the Point Defiance Bypass Alternative, the Shoreline Alternative, and the Greenfield Alternative. Two of the alternatives (the Shoreline Alternative, and the Greenfield Alternative) were eliminated from further study. Although both alternatives could meet the Project's purpose and need, they were determined to be impracticable and unfeasible due to technical constraints, high construction costs, and significant environmental effects. Grade separations were also evaluated for further consideration. FRA and WSDOT's preliminary analysis revealed that current and projected future traffic volumes do not warrant the construction of new grade-separated crossings.

What's happening in the bypass corridor today?

The rail line between TR Junction and East "D" Street in Tacoma hosts both freight and commuter trains, including freight operators Tacoma Rail and BNSF, and Sound Transit's *Sounder* commuter rail service. Freight

train traffic between TR Junction and East "D" Street averages under two trains per day, while Sound Transit currently operates 18 trains per day between Freighthouse Square and Seattle each weekday, and also offers occasional special event trains, usually on weekends, to serve sporting and other events in Seattle. *Sounder* service to Lakewood begins in late 2012.

What would happen if the Project were not built?

If the Project were not built (the No Build Alternative), Amtrak's Cascades and Coast Starlight passenger train service would continue to use the existing Puget Sound route. The No Build Alternative includes only the minor maintenance and repair activities necessary to keep the existing Puget Sound route operational. With the No Build Alternative, it would be expected that as freight traffic increases, congestion would adversely affect Amtrak service reliability, and the travel time for Amtrak trains between Seattle and Portland would increase.

Along the Point Defiance Bypass route, the Tacoma Rail and BNSF freight services would continue. The at-grade crossings at Clover Creek Drive Southwest, North Thorne Lane Southwest, Berkeley Street Southwest, 41st Division Drive, and Barksdale Avenue Southwest would not be upgraded.

Sound Transit's *Sounder* commuter passenger trains will become operational in late 2012 between the Tacoma Dome Station at Freighthouse Square in Tacoma and Sound Transit's Lakewood Station (on the Point Defiance Bypass route) with as many as 18 *Sounder* trains per day.

What are the proposed improvements and related activities of the Point Defiance Bypass Project?

The Project consists of railroad track and support facility improvements, and the relocation of Amtrak's Tacoma Station. Exhibit 1 shows the components of the Build Alternative. The following details specific components of the Build Alternative.

- **Construct New Track Adjacent to the Existing Main Line** – A new 3.5-mile track adjacent to the existing main line would be constructed from South 66th Street (Rail MP 6.9) in Tacoma to between Bridgeport Way SW (Rail MP 10.4) and Clover Creek Drive SW (Rail MP 10.9) in Lakewood.
- **Reconstruct and Rehabilitate the Existing Main Line** – Starting just southwest of Bridgeport Way Southwest (Rail MP 10.4) in Lakewood, the existing track would be reconstructed to a location southeast of the I-

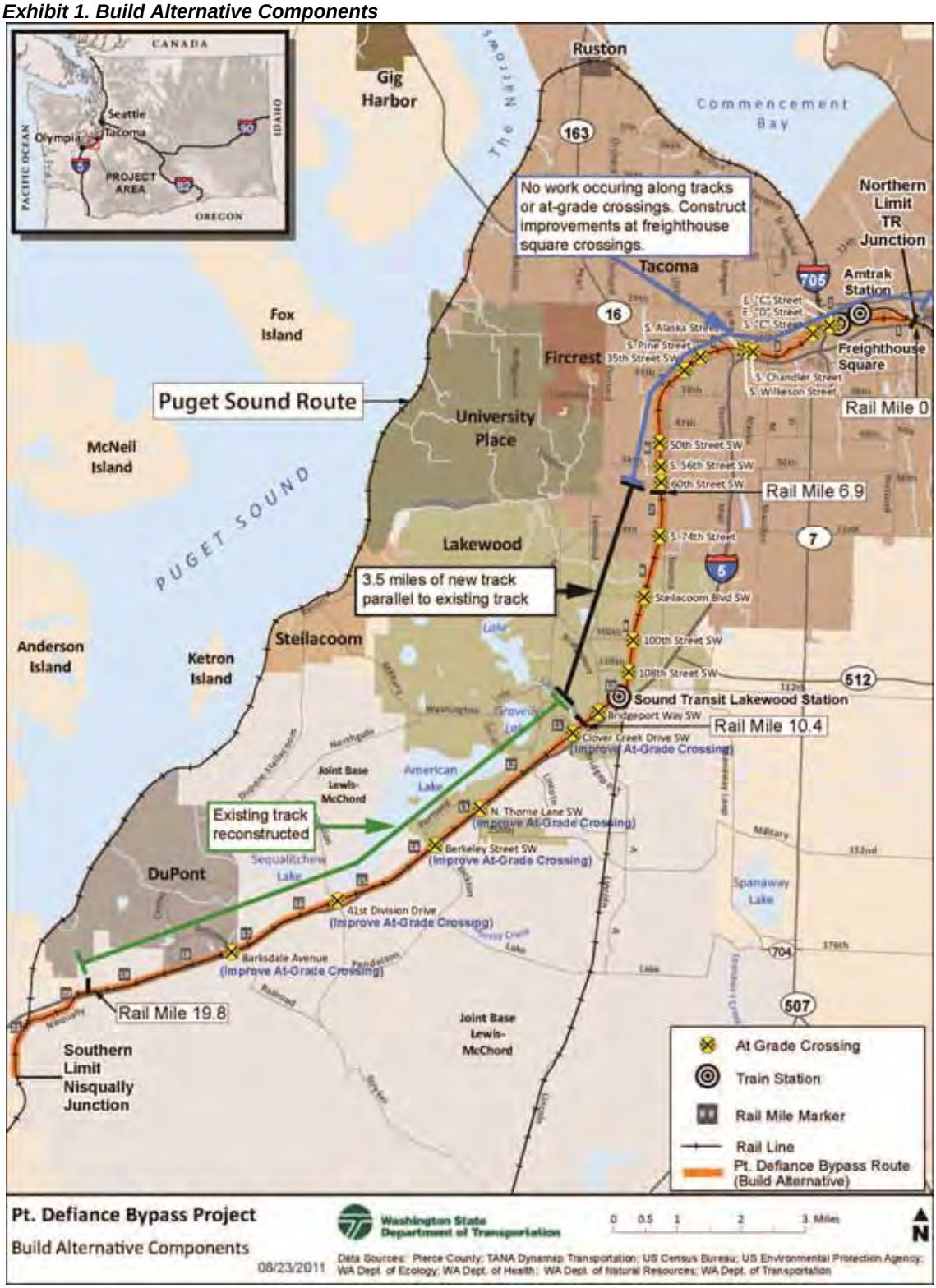
5/Mounts Road Southwest interchange (Rail MP 19.8) at Nisqually Junction.

- **Improvements at at-Grade Crossings** – Several grade crossings would be improved with wayside horns, gates, traffic signals and signage, sidewalks, median separators, and warning devices. These crossings include Clover Creek Drive Southwest, North Thorne Lane Southwest, Berkeley Street Southwest, 41st Division Drive and Barksdale Avenue.
- **Tacoma Amtrak Station Relocation** – The existing Tacoma Amtrak Station would be relocated from its Puyallup Avenue location to the Tacoma Dome Station at Freighthouse Square, at 430 E. 25th Street in Tacoma.

What are the proposed operational changes that would result from the Point Defiance Bypass Project?

Amtrak's existing Cascades and Coast Starlight passenger train service would be rerouted from the Puget Sound route along the Puget Sound shoreline to the Point Defiance Bypass route. The Project would also provide for additional Amtrak Cascades service by increasing the number of round trips provided from 4 to 6, or a total of 12 Cascades service train trips. Amtrak Coast Starlight would also travel on the Point Defiance Bypass route for a total of two Coast Starlight service train trips. The speed of these passenger trains would be up to 79 mph.

Exhibit 1. Build Alternative Components



Chapter 2 – Methodology

What is included in this report?

This report covers visual quality for the Project. This analysis compares how the landscape would be expected to look without the Project to how it would be expected to look if the Project is constructed. Based on the differences between the current and expected future visual character of the study area, this analysis evaluates the likely effects (either positive or negative) of the Project on visual quality, and identifies possibilities for minimization, or ways to reduce or eliminate possible negative effects.

How was the study area defined?

The Project is located on an existing rail corridor starting at TR Junction located near the Puyallup River and ending just north of the Nisqually River. The Project is located within Pierce County and traverses through JBLM and the cities of Tacoma, Lakewood, and DuPont.

The potential study area for a visual quality study generally includes the entire area that the project can be seen from, whether it is a few yards or a few miles away. For the Project, the potential changes to the scenery are relatively small, and the visual effect analysis considered the area within approximately one-half mile from the tracks. For viewpoints looking towards the tracks, the emphasis of the study was on viewpoints even closer than a half-mile, generally between 20 and 100 feet.

A second element of the visual resources analysis was to evaluate changes to views from passengers on the Amtrak trains, which would change routes if the Project moves forward. For this aspect of the analysis, the study area also included the viewshed from the current Amtrak route for comparison with the proposed route.

How was the information collected?

Using techniques including aerial photo review and site visits, the process for evaluating visual effects first identified the locations where viewers would likely experience the most visible change. Based on these locations, a range of individual viewpoints was selected that illustrates the typical types of changes that would accompany the Project if it was constructed. Photographs were taken from these viewpoints, and the likely changes to

the scene are described. While not every change in scenery along the Project is captured in a viewpoint, the viewpoints are intended to be representative of the types of changes that would be experienced throughout the study area, and the change in visual quality from a location not analyzed as a viewpoint can generally be understood by comparing it to a similar viewpoint.

As a secondary method of analysis, each viewpoint was given a numerical evaluation of visual quality based on a methodology from the *Federal Highway Administration Visual Impact Assessment for Highway Projects.*[2] This methodology is intended to reduce the subjectivity of visual analysis by providing numerical ratings to views that can be used when comparing current and anticipated future conditions. This methodology is described in detail in Attachment A.

How were visual effects of the Project evaluated?

The analysis of potential visual effects evaluates a few important factors that influence how viewers experience scenery. The first is the magnitude of change expected. It considers the question: *How different would the landscape look if the project were completed?* The second is the visibility or prominence of the changed scenery. This factor asks the question: *How clearly would people be able to see the changes in the scenery?* The third factor considers the likely viewers of the project. This evaluates questions like: *How sensitive are viewers likely to be to a change in the scenery?*

The first purpose of a visual quality analysis is to clearly describe likely changes to the scenery if a project is constructed. As much as possible this descriptive function is intended to allow reviewers to clearly understand the potential changes and make an informed judgment about the character and magnitude of the change. The second purpose of the analysis is to evaluate the severity of potential effects and draw a conclusion whether the likely effects are environmentally significant.

The analysis of potential visual effects is primarily qualitative. Visual effects are difficult to describe and evaluate numerically, so an accurate description is an important basis for evaluating the quality of current and expected future views. This is especially true for a project such as the Project, where the setting is already developed as a transportation facility and the changes proposed are relatively minor in most of the study area.

In addition to the qualitative evaluation of potential effects, a quantitative method of effect analysis was also used to maintain consistency with other transportation projects and validate the qualitative analysis. This method evaluates the quality of the existing view and the likely future view using

numerical rankings for the visual characteristics of vividness, intactness, and unity.

The visual character of the study area was assessed through site visits (June 2011) and a review of aerial photographs, design plan sheets prepared for the Project, and topographic maps.

In addition to a review of the entire project corridor, 12 key viewpoints were chosen to evaluate the existing conditions of the study area (see Exhibit 2). The viewpoints were selected because of their key location within the study area, or they represented an area of potential effects, and/or represented a land cover type (e.g. commercial or residential area).

Chapter 3 – Studies and Coordination

What regulations and guidance apply?

Visual quality is a required subject area of NEPA and SEPA as part of the potential effects to the human environment. Following are the federal and state regulations that address the effects of transportation projects on visual resources and aesthetics.

Federal Regulations

- NEPA, 42 USC Section 4231-4335; Section 101(b)(2)
- Council on Environmental Quality (CEQ); 40 CFR 1500-1508
- Section 4(f) of the Department of Transportation Act, 49 USC 303(b)-303(c)

State Regulations

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

- SEPA (Chapter 197-11 WAC, Chapter 43.21C RCW)
- Transportation Commission and Transportation Department State Environmental Policy Act Rules (Chapter 468-12 WAC)

Local Regulations

In addition to the federal and state regulations and guidance, local policies were also reviewed for relevance, including Pierce County's Comprehensive Plan.

Other Guidance

While not a regulation, WSDOT's *Environmental Procedures Manual*, Chapter 458, and associated website information provides guidance on the content and analysis that should be contained within a visual quality discipline report.

What studies and coordination were used in the visual quality analysis?

A previous study of the potential visual quality effects of the Project was completed in 2007. Since that time some elements of the Project have

changed, and the methodology for evaluating visual effects was modified to some extent to reflect the specific types and scale of effects that might be expected if the Project was constructed.

The previous study included an analysis of seven of the viewpoints that are also included in this report, and much of the previous analysis for those viewpoints is carried over here. The earlier report relied more heavily on the Federal Highway Administration's methodology for evaluating effects, so some additional analysis was completed for the earlier report to expand the narrative description of the possible effects at those viewpoints.

Chapter 4 – Affected Environment

What are typical views in the study area?

The Landscape Setting

The study area, from the north terminus in Tacoma and extending south almost to the Nisqually River Delta, is a diverse and complex landscape. It includes urban and industrial settings, suburban residential areas, parks and schools, undeveloped areas and the region's largest military base. Developed areas are interspersed with forested hillsides and occasional grassy fields. The topography is rolling and hilly, occasionally opening up into a wider valley bottom, and then narrowing again between forested hillsides.

At the northern end of the study area the landscape is mostly urban and commercial, with warehouses, businesses, and light manufacturing facilities being the most typical land uses. Further south, the landscape becomes more varied, with commercial areas interspersed with residential areas, golf courses, parks, and schools. JBLM includes open space, and a mixture of residential and working military areas.

The Project Corridor

The Project follows a narrow corridor through the broader landscape, adjacent to major arterials through Tacoma, and then I-5 further south. The area maintained and operated as part of the railroad is typically cleared of major vegetation, and includes tracks supported by railroad ties and a gravel bed. In some areas the railroad area is larger, with several sets of tracks and area for maintenance or storage activities. The railroad corridor is sometimes fenced with chain link fencing. Where the tracks cross roads there are structures including warning lights, signs, and gates.

In many areas the railroad corridor is inconspicuous when trains aren't present; it is simply a narrow clearing in the surrounding vegetation with tracks and ties. The railroad corridor is most conspicuous when trains are present, although train traffic is currently limited to a few trips per day.

The railroad tracks and associated facilities have been present in the regional landscape for over 100 years, and they are a familiar feature in the landscape. A typical cross section of the Project includes single or double railroad tracks, the supporting rock ballast and vegetated right-of-way; warning signals, such as warning lights, crossbucks, and/or gates, are located at roadway crossings along the rail corridor.

Views of the railroad tracks and associated facilities would primarily be from residents who live near the tracks or view the tracks when crossing the rail line, and drivers on I-5. Road (at-grade) crossings are the most apparent feature both when in use (with flashing signals and/or gates) and not in use. At-grade crossing improvements would include the related crossing gates, crossing signs and “signal houses” (small square structures that control switches and crossing guards).

What characteristic views are typical of the study area?

As part of the visual effects analysis, a series of specific viewpoints were selected (see Exhibit 2) for use as examples of the types of views that are typical today and that illustrate the changes that would likely occur if the Project is developed. The current conditions at these viewpoints are described in this chapter, and the anticipated changes to the views from these locations are described in Chapter 5. The viewpoints were chosen both because they represent a range of different conditions in the study area, and also because viewers at these locations are likely to experience the most substantial change from current conditions to future conditions if the Project is constructed. The viewpoints are described in two groups. The first set of viewpoints is from land uses with a view of the project corridor. The second set of viewpoints includes locations where drivers on roads in the study area would experience changes to the view at road crossings.

Exhibit 2. Key Viewpoints from Adjacent Properties in the Study Area

Views to the Railroad Tracks

These viewpoints describe the views to the railroad tracks at selected locations in the study area. These locations are often not visible from public places, but are visible from locations where viewers may be sensitive to railroad activities, such as homes and schools.

Key Viewpoint P1 – Freighthouse Square

Freighthouse Square is located in downtown Tacoma in a commercial and industrial neighborhood near the Tacoma Dome. The building itself is a historic railroad-related building that has been adapted as a retail marketplace. The building is quite large, with the appearance of a warehouse or industrial facility compatible with the surrounding neighborhood.

Exhibit 3. Key Viewpoint P1 – Freighthouse Square

Freighthouse Square

Key Viewpoint P2 – Southgate Elementary School

Southgate Elementary School is located between Rail MP 11.7 and Rail MP 11.9, and looks towards the railroad tracks which are located along the back of the school. The railroad tracks run parallel to the school's back fence, some classrooms, a soccer field, and a covered play area. The tracks are located approximately 50 feet from the school fence, with commercial buildings, equipment and lumber storage in the background. Views from the school are not screened. The railroad right-of-way is wide in this location, and the area appears to be used for storage and railroad-related work.

Exhibit 4. Key Viewpoint P2 – Southgate Elementary School

The railroad tracks are prominent through the play yard fence of Southgate Elementary School.

Key Viewpoint P3 – Nyanza Single-Family Residential Neighborhood

The Nyanza single-family residential neighborhood is located between Rail MP 9.6 and Rail MP 10.1 between Glenwood Avenue Southwest and Beverly Drive Southwest, just south of Clover Creek Drive Southwest and just north of Exit 25 off I-5. The railroad tracks are located approximately 40-50 feet from the homes' backyards and approximately 80-200 feet from the actual residences. Most homes in this neighborhood are well screened from the tracks by trees and vegetation although there are a few exceptions where the tracks are clearly visible from the residence. Views beyond the railroad are to the backs of commercial buildings facing Pacific Avenue Southwest.

Exhibit 5. Key Viewpoint P3 – Nyanza Single-Family Residential Neighborhood;
Key Viewpoint P4 – Gravelley Lake Townhomes;
Key Viewpoint P5 – Union Avenue Southwest Mixed Residential Neighborhood

Tracks are prominent from the rear yards of homes in Nyanza neighborhood. The buildings beyond are the backs of commercial buildings.

Key Viewpoint P4 – Gravelly Lake Townhomes

The Gravelly Lake Townhomes are located adjacent to the railroad tracks at Exit 124 off I-5, between Rail MP 9.3 and Rail MP 9.4 (see Exhibit 5). The complex includes six buildings; five have direct or partial views towards the railroad tracks. The closest buildings are approximately 40 feet away from the railroad line, separated by lawns and a six-foot high screening fence. The railroad lines themselves are about six feet below the elevation of the rear yards, and are not visible from the yards or from ground floor windows. The tracks are visible from second story windows. Because of the height of railroad cars, passing trains are very prominent from both first floor and upper floor units and from the complex grounds. Although a freeway ramp is located not far beyond the tracks, the freeway is well-screened by a buffer of mixed conifers and deciduous trees.

The railroad tracks are effectively screened by an existing fence in this view of the Gravelly Lake Townhomes.

Passing trains are partially visible in this ground-level view from the Gravelly Lake Townhomes. They would be more prominent in the views from second-story windows.

Key Viewpoint P5 – Union Avenue Southwest Mixed Residential Neighborhood

The Union Avenue Southwest mixed residential neighborhood is located along the west side of the railroad tracks between Rail MP 7.8 and Rail MP 8.1, with homes and backyards between 40 and 50 feet away from the tracks. There are approximately 20 residences, all of which are at the same level as the tracks, with back yards facing the tracks. The residential area is located along an arterial and transitions to commercial development to the south.

Railway tracks, passing trains, freeway views and vehicles on the freeway are all very prominent at this viewpoint. Views towards the tracks are mostly unobstructed unless homeowners have installed a screening fence or planted screening vegetation. There is some intermittent screening from the back yards of these homes by trees and tall grass between the homes and the tracks. Views toward the freeway, which is another 50 feet east of the tracks, are also mostly unobstructed, with intermittent screening provided by scattered trees between the railroad right-of-way and freeway traffic.

The railroad is prominent in views from rear yards of homes in the Union Avenue Southwest mixed residential neighborhood. I-5 is in the background.

Key Viewpoint P6 – DuPont Multi-Family Residential

The multi-family residential property, Wilmington Village Apartments, is located approximately 100 feet away from the railroad tracks at Rail MP 3.5. The complex is separated from the tracks by a street, fencing, mature deciduous shrubs, and some mature deciduous trees. In the background behind the tracks is a screen of coniferous trees with I-5 beyond.

The complex consists of four buildings, one directly facing the tracks and two with side views towards the tracks. The surrounding areas are pleasantly vegetated with deciduous trees and shrubs although in the winter most of this vegetation would be lost. Views towards the tracks from the first floor of the buildings are currently screened by vegetation. Views from the second floor are unobstructed from the decks and windows facing the railroad. Views of passing trains are visible from both levels of the buildings.

Exhibit 6. Key Viewpoint P6 – DuPont Multi-Family Residential

The view from the upper stories of the apartments in the DuPont multi-family residential looks to the railroad corridor over an adjacent public roadway. Views are partially screened by existing vegetation, although the view is much more open in winter.

Views from Road Crossings

Road crossings are where the Project would be visible to the most viewers—primarily drivers and passengers in vehicles on the adjacent roads. These viewpoints describe the visual character of the crossings themselves, and the views as they would be experienced by drivers, passengers, and pedestrians.

Key Viewpoint R1 – South 74th Street (City of Tacoma)

The South 74th Street at-grade crossing is part of a commercial strip. The area surrounding the crossing consists primarily of commercial and light industrial uses with some vacant land. The railroad right-of-way is somewhat wide in this location, allowing two tracks to cross the road. While there is some vegetation at the railroad crossing and along 74th Street to the west, the view is primarily developed and urbanized near the intersection, with a forested hillside in the background to the west. The commercial buildings near the crossing are not oriented to the tracks, so viewers here are mostly drivers on South 74th Street.

Exhibit 7. Key Viewpoint R1 – South 74th Street (City of Tacoma)

South 74th Street (City of Tacoma) facing west

Key Viewpoint R2 – 100th Street Southwest (City of Lakewood)

The area surrounding this location includes commercial and light industrial development adjacent to the west side of the track, with relatively open vacant areas in other parts of the view. While the landscape includes some vegetation and is open to longer views, the area is generally cluttered with urban visual elements including industrial equipment, billboards, utilities, and railroad crossing equipment. There are no residential or commercial buildings with views oriented in this direction, so views would mostly be from within vehicles on 100th Street Southwest.

Exhibit 8. Key Viewpoint R2 – 100th Street Southwest (City of Lakewood)
Key Viewpoint R3 – 108th Street Southwest (City of Lakewood)

100th Street Southwest (City of Lakewood)

Key Viewpoint R3 – 108th Street Southwest (City of Lakewood)

This crossing is located in a relatively open area with single-family and some multi-family residential development in the background beyond the tracks. The housing is relatively low-density, and scattered trees are prominent in the view along with one and two-story buildings. This is a location where the tracks have been relocated as part of a previous project to allow more distance between the railroad crossing and the intersection of 108th Street Southwest with Lakeview Avenue Southwest. The railroad right-of-way is quite wide here, with a large cleared area surrounding the tracks. The crossing includes typical controls for a double-track, with lights and gates supported by a metal framework on both sides and above the road. The view also includes light and utility poles, and an outdoor advertising billboard.

108th Street Southwest (City of Lakewood)

Key Viewpoint R4 – North Thorne Lane Southwest (City of Lakewood)

The area west of the railroad tracks is the entrance to the Tillicum neighborhood. The area is fairly vegetated with tall trees. Forested areas are primarily deciduous with scattered conifers. To the northeast, an unpaved service road for the Tacoma Country and Golf Club is adjacent to the railroad right-of-way, and combined maintenance use for the railroad and golf club appears to have resulted in a large cleared area that is also used for casual parking and storage. Although the golf club is just beyond the intersection, it is screened from view by mature trees and large shrubs. The railroad crossing controls are relatively old in this location, and include a simple crossbuck with lights on one side of the intersection and a larger crossbuck with overhead lights on the other. There are currently no gates at this location. Utilities and traffic signals are also visually prominent in this view. Farther back, the entry sign to the Tillicum neighborhood is set against a mature landscaped background, enhancing the view.

Exhibit 9. Key Viewpoint R4 – North Thorne Lane Southwest (City of Lakewood)

North Thorne Lane Southwest (City of Lakewood)

Key Viewpoint R5 – Berkeley Street Southwest (City of Lakewood)

The area at this crossing is currently surrounded by commercial, single-family and multi-family residential development; however the view is dominated by commercial buildings and their associated signs and parking areas. The Fort Lewis Military Base is located to the east and south of the crossing. This is a very visually complex location, with the utility poles, traffic signals, commercial signage, and traffic control striping on the street very prominent. The railroad signal in this location is older, and includes a simple crossbuck with lights on one side of the intersection and a crossbuck with overhead lights on the other. There are currently no control gates at the intersection. Scattered mature conifers add some variety to the view, and denser mixed forest forms the background along the horizon line.

Exhibit 10. Key Viewpoint R5 – Berkeley Street Southwest (City of Lakewood)

Berkeley Street Southwest (City of Lakewood)

Key Viewpoint R6 – Barksdale Avenue (aka DuPont-Steilacoom Road, City of DuPont)

This viewpoint, located toward the southern end of the study area, includes a wide roadway surrounded by relatively open landscape, vegetated with low grasses and shrubs with scattered larger trees. The roadway is curving as it crosses the railroad tracks, and, along with the relatively close intersection with I-5, the railway crossing requires an unusual location for its signals. The roadway, utility poles, traffic signals, and railroad crossing controls are the most prominent visual elements in the view, with the landscape providing a unified and consistent visual background to the developed elements.

Exhibit 11. Barksdale Avenue (aka DuPont-Steilacoom Road, City of DuPont)

Barksdale Avenue (aka DuPont-Steilacoom Road, City of DuPont)

Chapter 5 – Potential Project Effects

What are the effects from the No Build Alternative on visual quality?

Under the No Build Alternative, Amtrak service would remain on its existing route. Unrelated to the Project, Sound Transit service would be added to the railroad corridor through the study area, and some additional capital improvements to that corridor would likely be undertaken in support of ongoing Sound Transit operations. Viewers near the study area may experience visual quality and privacy effects from Sound Transit train operations; however these effects would not be related to the Project.

Views to the existing Amtrak route would remain the same, and there would be no new visual effects related to ongoing use of the line by Amtrak trains. Views from the Amtrak trains by passengers would also remain the same, providing a scenic journey along the Puget Sound shoreline between Point Defiance and the Nisqually River delta.

There would be no significant effects to visual quality under the No Build Alternative.

What are the effects from the Project on visual quality?

The Project is visible from homes, roads, businesses, and public areas along the rail corridor. If the Project is constructed, many physical features of the rail corridor would look different than they do today. Those changes in the visual character of the rail corridor, including both facilities (i.e., tracks and crossing signals) and the type and frequency of rail traffic, would change the experience of people viewing the railroad corridor. Some of those changes may be considered positive, and some may be considered negative.

This section includes a general discussion of the types of effects that might be associated with different aspects of the Project. These overview discussions are applicable throughout the study area and can be used to evaluate the scope of potential effects for locations in the study area that are not discussed in detail. A more detailed discussion of potential effects for the 12 key viewpoints is included in this section; the current conditions at each of these locations are described in Chapter 4, *Affected Environment*.

This section includes a discussion of likely effects for rail passengers who would be traveling along the line. Effects to passengers on the trains are not typically weighed as heavily as effects on viewers of the facility; however the changes to views from the train are considered as part of the overall Project evaluation.

Are visual quality effects always negative?

Many of the changes to the scenery that could be anticipated from the Project might be neutral or positive, depending on the specific aspect of the Project and the viewer's preferences. Many people enjoy trains and train facilities and see them as a positive part of the visual landscape. Similarly, many people prefer an area that looks newer or better-maintained to one that is older and unkempt. Higher standards for construction and maintenance can be expected to accompany redevelopment of the corridor for higher volume use, and the rail corridor is likely to be better-maintained. However, some aspects of the Project would have a negative effect on viewers, and the effect analysis focuses primarily on these potentially negative effects.

What are likely direct effects to visual quality for viewers near the Project?

Changes to the visual quality of the study area would affect nearby residents, staff or employees of businesses near the rail lines, visitors, and travelers on adjacent roadways. This section describes the potential effects to visual quality that would be expected for those viewers if the Project is constructed. Potential effects include construction impacts, physical impacts, and operational impacts:

- **Construction impacts** are temporary impacts that are resolved or mitigated by the end of construction activity.
- **Physical impacts** typically involve permanent changes to the landscape—those remaining long after construction ends.
- **Operational impacts** involve those incurred by changes in passenger railroad operations, not only the logistics of train travel but also the daily activities on, and maintenance of, railroad facilities.

What are the typical construction effects for the Project?

Construction effects are temporary, and unlikely to affect any given section of the line for very long. Work to reconstruct the rail line or add a second parallel rail line would typically not last more than a few days for any given location along the line. Improvements at road crossings may take more time; however they would be temporary and similar to familiar

roadwork projects. The longest construction period would likely be for the proposed new passenger facility at Freighthouse Square. Construction effects would be minor and temporary if the Project is constructed.

What are the typical physical effects for the Project?

The types of physical improvements proposed for the Project are described in detail in Chapter 1. This section briefly discusses the potential visual effects associated with the major types of improvements and how they may look in the landscape. Each different type of physical improvement that would be part of the Project is discussed in more detail below; however the overall visual effects due to physical improvements would be minor at any given location in the study area. The most prominent physical changes to the railroad corridor would be at road crossings. Even in these locations, however, the Project would only result in minor changes to the visual scale and character of elements related to the railroad corridor, and many of the crossing improvements necessary to accommodate use of the tracks by *Sounder* trains have been completed by Sound Transit as part of its existing project.

Rebuilt or Renovated Tracks and Associated Facilities

Tracks would be rebuilt or improved along the entire line, in most cases replacing existing wood ties with concrete, improving the ballast (gravel area supporting the tracks), and replacing the rails. Areas with improved tracks are likely to look very similar to current conditions. The general scale, location, and physical layout of the tracks would be very similar to what is present today. In many locations along the line, the tracks would seem more visually prominent with the use of newer materials and with the establishment of higher maintenance standards. For example, in many locations currently the ballast area is partially vegetated and the gravel and ballast area blends into the surrounding landscape. If the Project is constructed, ballast and clear areas for the railroad would likely be maintained more frequently, and would have more visual contrast with the surrounding landscape. There may also be some clearing of vegetation in the railroad right-of-way, and a larger area of the right-of-way would likely be cleared and maintained for rail use.

Double Tracking

In some areas of the line, a second track would be added parallel to the existing. In areas where a second set of tracks would be added, there would likely be some minor visual effects from the additional tracks, especially when viewed from very close by (for example, within 50 feet.) The area maintained as active rail lines would take up a larger proportion of the area in the right-of-way, which may cause a minor change in the visual character of the railroad corridor. When viewed from further away, the second set of tracks would not occupy a substantially larger part of the

view than a single set of tracks. In areas where privacy or other operational effects are an issue, double tracking could lead to trains being more prominent in the view because they are closer to the viewer.

Intersection Improvements and Traffic Control

Where the rail line crosses roads at-grade, there are several locations that would require improvements to the crossing signals. The types and locations of these improvements are described in Chapter 1, Exhibit 1. Typically, crossing improvements include replacement of tracks and the concrete skirts adjacent to the tracks, and replacement of warning lights, bells, and signs along with their metal supports. In each case the upgraded crossing controls are replacing existing signals, and the newer crossings would be somewhat more visually prominent than the old.

Many of the crossing improvements are either already complete or would be completed prior to the Project as part of Sound Transit's *Sounder* extension project, which has already completed environmental review.

Most of the crossings are located in urbanized areas, often heavily developed with commercial or industrial land uses. In these locations the railroad facilities are consistent with the other types of utilities and urban elements that surround them, such as power lines, commercial signs, outbuildings and similar structures. While the upgraded crossings would generally be larger and more prominent in the view than current crossings, they would not substantially change the character or quality of the view. Crossings of this type are consistent with the expectations of travelers on the roadway, and they are unlikely to notice any substantial contrast with surrounding visual elements or unexpected differences in scale or character.

Retaining Walls

As the rail line approaches the southern end of the study area, it traverses a cross-slope that would require retaining walls to stabilize the railbed area. These walls would contrast with the current vegetated slope, especially when they are new and have not had time to weather or for vegetation to regrow and partially screen them. The only potential viewers of the walls are drivers on I-5, who would have partial views of the walls, and who are typically driving by at high speed. Although the walls would contrast with the surrounding landscape, and would generally detract from the overall visual quality of the scenery, they are not a substantial visual effect.

What would be the effects from changes in rail operations?

In addition to physical changes in the railroad facilities, such as the tracks and crossing signals, there would also be operating changes that have a

visual effect. There would be more passenger trains on the Point Defiance Bypass route and the trains would move at higher speeds.

Currently, only a few freight trains use the rails each day. If the Project moves forward, Sound Transit's *Sounder* would be in service on the line prior to the beginning of Amtrak service. *Sounder* service would add approximately 12-18 passenger trains per day, depending on the location. If the Project is completed, an additional 14 Amtrak trains per day would use the rail line, approximately doubling the volume of trains passing through the corridor. The analysis of operational effects for the Project assumes that *Sounder* trains would be in operation on the tracks and that the Amtrak trains would be in addition to the *Sounder* trains.

Although trains would be present on the track for a relatively short time at any given location, they would be prominent visual elements. Overall, the increased presence of trains, and the changes in the character of trains as they pass by (including faster speed and the presence of passengers), would likely be a more substantial effect of the Project than the permanent construction. Trains are large, and a moving train draws attention. When viewed from close up, a moving train would be an important part of the view. Faster-moving trains are present in the view for a shorter time, but are also more visually prominent, as they draw attention more than slower-moving trains.

Moving trains are likely to have the most effect where there is greater contrast between the train traffic and typical activity in the view. For example, a moving train is less of an effect when it is adjacent to a busy arterial or when freeway traffic is also a typical part of the view. Moving trains are likely to be a more substantial effect when the setting is quieter and does not typically include visible traffic or pedestrian movement.

In addition to the presence of the train in the view, the addition of passenger trains would likely change the perception of privacy for viewers. Privacy is especially important for residential areas, where train passengers would have direct views from the train to yards and homes in several locations.

Overall, operational changes would have the most effect to visual quality along the corridor. Although trains are only present for a short time each time they pass, they are very prominent in the view, and, especially for residents, staff, and employees living and working adjacent to the line, they are likely to be perceived as a negative effect. However, because of the short time they are present, the fact that *Sounder* trains would already be part of the view, and the general character of the majority of the study area, operational effects from the Project would likely be only moderate, and not significant.

What are the potential visual quality direct effects for specific locations?

Effects or changes to representative viewpoints are described below, beginning with views from selected adjacent residential and institutional locations, followed by views to some of the crossing locations that would be improved. These typical effects that would be expected at these locations can be used as examples of how the view could be expected to change in other, similar locations in the study area. Because the Project would be expected to result in very minor changes to visual quality from any distant viewpoints, the selected viewpoints are all directly adjacent to the railroad corridor. Views from more distant viewpoints would be expected to experience less effect.

Views from Adjacent Residential and Institutional Properties

Key Viewpoint P1 – Freighthouse Square

Changes to the Freighthouse Square building and platform to accommodate use by Amtrak would likely be minor. The massing, detail, and character of the building would be nearly indistinguishable from current conditions. Several options are possible to provide parking for the relocated Amtrak station. These include shared use of existing parking facilities, development of a surface lot, or development of a new parking structure. Parking lots are located throughout the Freighthouse Square neighborhood. Any of the options for parking would be compatible with surrounding land uses and would be unlikely to noticeably affect visual quality.

Key Viewpoint P2 – Southgate Elementary School

Changes at this location include a second railroad track to be added 15 feet west of the existing tracks. Changes from the addition of the second set of tracks would most likely not be prominent for viewers from the school since the new tracks would be further away than the existing tracks.

Effects from operational changes would include reduced privacy for teachers and students and the visual disturbance that would accompany faster moving trains. Since some of the classrooms are adjacent to the tracks, the passing trains would likely create a distraction for students and faculty. The intensity of the effects at this location is reduced by the separation between the school and the tracks, and overall effects would likely be minor to moderate.

Key Viewpoint P3 – Nyanza Single-Family Residential Neighborhood

The tracks would be upgraded in this viewpoint, but not relocated. The tracks are visible in the view from this residence; other neighboring homes

vary in how much screening they have installed in their yards. Some homes have fences, tall shrubs, or a combination of both to screen views of the tracks. Even when visible, the physical changes to the tracks in this location would be minor. Given the typical distance between homes and the tracks, the change in the character in the tracks is unlikely to be noticeable in most cases.

Operational effects would be more substantial in this location, with passing trains very prominent in the view. There would be some loss of privacy, as passenger windows would be clearly visible from residences which do not provide their own screening. The effects to both privacy and the quality of the view, however, are reduced by the separation between homes and the tracks. Overall, visual effects in this location would be minor.

Key Viewpoint P4 – Gravelly Lake Townhomes

The tracks would be upgraded in this viewpoint but remain in the same location. The tracks themselves are mostly screened from the residences here, and the visual effects based on physical changes to the character of the track would be minor. Operational effects would be more prominent in this location, which is very near the tracks. With the height of train car windows, train passengers would be clearly visible from the rear yards and second story windows in the residential units. The yards and rear-facing windows are currently very enclosed and private with the exception of infrequent freight trains on the tracks. The higher frequency of train trips and the change from freight to passenger trains would also have an effect on privacy for residents.

The combination of limited separation between the residential units and the tracks, along with effective screening from viewers other than railroad workers and passengers make this location one of the higher affected areas for the Project. Where most of the visual effects associated with the Project are very minor, in this location they are moderate, but not significant.

Key Viewpoint P5 – Union Avenue Southwest Mixed Residential Neighborhood

Similar to Key Viewpoint 1, the physical changes at this location are minor. Viewers may notice minor changes to the overall view accompanying potential upgrades to the rail lines. Most of the residences in this area are one-story, which would reduce the visibility of the physical changes to the line.

Passing trains would be prominent in this view from both the residences and back yards. There would also be privacy concerns for this viewpoint since both homes and yards would be visible from passing trains. Homes

in this area back up directly on the railroad right-of-way, and residents likely have a higher expectation of privacy since there are no other public access ways with views to homes along this section of the Project. Physical effects would be very minor in this location, and, while there would likely be some operational effects, they would also be minor at this viewpoint.

Key Viewpoint P6 – DuPont Multi-Family Residential

Physical changes to the railroad tracks at this location would be minor, with only an upgrade of the existing tracks. The existing vegetation and fencing that provides a partial screen would likely remain in place. When trains are not passing by, there would be a minor change to the view here, although the distance from viewers to the tracks would reduce the prominence of changes to the track and associated improvements. The change to the scenery would be primarily visible from upper floor windows.

There would be operational effects to the view in this location, as passing trains are clearly visible from several residences. Trains would be a prominent feature of the view each time they pass by. Since the new trains passing by would be passenger trains, there are also privacy concerns. However, since the residences also face a public roadway that is closer to residential units than the railway, there is less concern than there would be if the units were screened from other potential viewers.

Overall, the Project would slightly reduce the quality of the visual environment from this viewpoint; however the effects would likely be minor.

Views of Improved Road Crossings

Key Viewpoint R1 – South 74th Street (City of Tacoma)

The Project would add a second track at this location, connecting to the short section of second track already installed crossing the street. Signals and gates have already been upgraded as part of Sound Transit's *Sounder* project. Changes to the visual character and scale of the railroad facilities here would be extremely minor and not noticed by most viewers.

Key Viewpoint R2 – 100th Street Southwest (City of Lakewood)

Double-tracking has been completed in this location as part of Sound Transit's *Sounder* project. No additional visual effects would be expected.

Key Viewpoint R3 – 108th Street Southwest (City of Lakewood)

Double-tracking has been completed in this location as part of Sound Transit's *Sounder* project. No additional visual effects would be expected.

Key Viewpoint R4 – North Thorne Lane Southwest (City of Lakewood)

The crossing in this location would be reconstructed to include new crossing signals, gates, support structures, sidewalks, and reconstruction of the roadway. The newer crossing controls would be more visually prominent than the current signals, and slightly larger in scale. The improved roadway and sidewalk would likely be larger than the current roadway, but would also help to define the roadway area, and could help to reduce the prominence of the large unpaved maintenance access to the adjacent Tacoma Country and Golf Club. The change in visual character and scale would be noticeable here, but would only result in a minor effect to the overall visual quality of the view.

Key Viewpoint R5 – Berkeley Street Southwest (City of Lakewood)

Improvements been completed in this location as part of Sound Transit's *Sounder* project. No additional visual effects would be expected.

Key Viewpoint R6 – Barksdale Avenue (aka DuPont-Steilacoom Road, City of DuPont)

Improvements been completed in this location as part of Sound Transit's *Sounder* project. No additional visual effects would be expected.

What effects can be expected to visual quality for train passengers?

In addition to the view towards the Project, the views of passengers on the trains are also considered in a visual effect study. The current rail line follows the shoreline of Commencement Bay, crosses natural looking landscapes near Point Defiance, and then winds along the shoreline of Puget Sound from just west of Point Defiance until the end of the Project's new alignment near the Nisqually River delta. It is a scenic route.

Views from the train if the Project is constructed would have a much different character, with more views of developed landscapes, I-5, and urban commercial neighborhoods. Overall, the visual quality of the traveler experience on the passenger railroad system would be less scenic through the study area. The effects, however, are not considered significant primarily because of the relatively short duration of this segment of the trip. Compared to the entire trip from Portland, Los Angeles, or in between, the segment included in the study area is quite short, and is consistent with passenger expectations for views when passing through an urban area.

Would the Project result in any significant effects to visual quality?

No significant effects to visual quality are anticipated. In most locations the effects would be very minor. The most substantial effects would be associated with operations of trains, which would include up to 14 new passenger trips daily. Where the tracks are adjacent to residential areas, there would be effects to privacy and quality of the view when trains pass by. Views for rail passengers would be less scenic than the views from the current route.

Would the Project result in any indirect or cumulative effects to visual quality?

Indirect Effects

The Project is located within an existing rail corridor and urbanized area. The only potential indirect effect tied to the Project is that it may indirectly influence redevelopment near the relocated Amtrak Station at Freighthouse Square (see Land Use Discipline Report[3]). Such redevelopment would be consistent with local zoning and approved by state and local agencies and would take place in previously disturbed areas. The potential indirect effect on visual quality will be guided by existing zoning. Because of the City of Tacoma's recent efforts to rehabilitate the area, it is likely that any redevelopment indirectly tied to station relocation would improve the visual quality of the area through renovation of deteriorating buildings or vacant lots. This could have a beneficial indirect effect on visual resources.

Cumulative Effects

Because the Project is located within an existing rail corridor and urbanized area, visual elements that have been and continue to be present in the area are primarily related to transportation, commercial and industrial land uses. There are also a few residential developments adjacent to the rail corridor. The rail corridor precedes most of this development. Future growth in the region is expected to be consistent with land use plans and policies (see Land Use Discipline Report[4]), which may or may not include requirements to protect or enhance elements that contribute to the scenic quality of the area. Development and activities at JBLM occur under federal guidance and are consistent with base planning documents; however, ongoing and future military actions at JBLM could cause a visual intrusion to viewers in the study area.

[3] *WSDOT 2012.*
[4] W*SDOT 2012.*

The Project adds trains in a rail corridor that is currently used by other trains and would be used by more trains in the future. In the context of the existing environment and anticipated future rail operations, the visual elements of the project would not contribute to a cumulative visual impact because it would not change the visual quality of the area. Other reasonably foreseeable actions could result in changes to the visual quality of the study area; however, these effects would not be compounded by the Project.

Chapter 6 – Recommended Minimization Measures

Can visual effects be reduced as part of the Project?

Minimization includes actions that could be taken to reduce or eliminate visual effects that would be caused by the Project. Overall, effects from the Project to visual quality are expected to be minor, and do not require minimization. However, there are some activities that could be incorporated into the Project that would reduce anticipated effects for nearby viewers. The opportunities to reduce effects would be focused on maintaining or improving visual buffers between nearby properties and the rail line.

Where would buffers be appropriate?

Buffers would be most effective where the rail line is adjacent to residential or institutional properties. These locations along the line are typically located in less urban areas, and viewers from these properties are likely to be more sensitive to effects from rail operations than in commercial and industrial neighborhoods.

What types of buffers would be appropriate?

The most effective buffers would be to maintain existing vegetation where appropriate, and add new vegetation at the edge of the rail right-of-way in a few specific locations if possible. Vegetation, especially evergreen trees and shrubs, is an effective buffer that also typically enhances the view. Fencing can also be used as a buffer; however, it is not likely to be effective in many of the locations along the line because of the height of the passing train cars.

What are the recommendations for minimization?

- Maintain existing vegetation at the edge of the railroad right-of-way as possible. In many locations, existing vegetation partially screens the rail line and reduces the perceived scale of the rail corridor. Maintaining this vegetation where possible would reduce the scale of change from current conditions, and reduce the visibility of trains during operation of the Project.
- Enhance vegetative buffers where the rail line is adjacent to residential and institutional properties. In a few specific locations,

generally the locations and neighborhoods described in the key viewpoints above, that it may be possible to enhance screening by adding low-maintenance naturalizing vegetation at the edge of the railroad right-of-way.

Chapter 7 – References

Washington State Department of Transportation 2009. *Pacific Northwest Rail Corridor Tier 1 Environmental Assessment*. Available at: http://wadot.wa.gov/Freight/publications/PNWRCReports.htm

Washington State Department of Transportation. 2012. *Point Defiance Bypass Project Land Use Discipline Report*. September 2012.

Attachment A – FHWA Method Scoring

What is the Federal Highway Administration Visual Assessment for Highway Projects?

The Federal Highway Administration (FHWA) Visual Impact Assessment for Highway Projects is a standard methodology for evaluating visual effects related to transportation projects. The methodology defines three primary characteristics of views: vividness; intactness; and unity.

- **Vividness** describes the strength of the positive impression that the landscape makes on the viewer. Landscapes with high vividness would be considered attractive and memorable for their positive visual qualities.
- **Intactness** describes whether the scenery in a view has been reduced in quality by changes in the landscape or introduction of man-made elements. Landscapes with high levels of intactness would be characterized by attractive natural-looking scenery.
- **Unity** describes how well all the elements in a view look coordinated or appropriate with each other. Either natural or developed landscapes can have high levels of unity if the elements of the scene are generally in harmony with each other.

A numerical value is assigned to each view for each of these characteristics. The numerical ranking provides a basis for comparison between the quality of different views. The evaluation also allows comparison between the current quality of a view and its anticipated quality following completion of a project.

How was the FHWA methodology applied to the Project?

For the Project, each viewpoint was evaluated on a scale of 1-7 for each of the visual quality characteristics described above. Vividness and intactness were also broken down into several subcategories shown in the table below. When using this methodology, landscapes such as the one in the study area generally receive lower scores; this held true for the Project. The lower scores generally reflect the amount of development in the area, the effect of I-5 and major roadways on the landscape, and the frequently haphazard visual character of the mixed land uses found in the study area.

Often, local residents perceive a mismatch between their positive feelings towards a neighborhood and the low scores that the area might receive in this methodology. In general, low existing conditions scores for visual quality do not imply that potential effects are not substantial or important for a project. In this case, however, the physical effects of the Project would be very minor.

For the Project, no numerical visual quality scores were developed for the anticipated views if the Project is completed. In this case, the likely changes to the scenery were too minor for the scoring to reflect a change between current conditions and anticipated future conditions. As described in the body of the report, most effects from the Project are likely to be operational effects related to the increased number and speed of passing trains. Operational effects are generally not evaluated in the FHWA system, and are better described using the qualitative description and evaluation described in the body of the report.

Viewpoint	R1	R2	R3	R4	R5	R6	P1	P2	P3	P4	P5	P6
Vividness												
Landform	4	2	2	3	2	2	2	2	4	3	4	2
Water												
Vegetation	3	3	2	2	2	2	1	1	3	2	4	3
Human-made	2	3	2	2	2	2	4	1	2	1	3	3
Average	3	2.6	2	2.3	2	2	2.3	1.3	3	2	3.7	2.6
Intactness												
Development	2	3	3	2	2	2	4	2	3	2	3	3
Encroachment	2	2	3	3	3	4	2	2	2	2	2	2
Average	2	2.5	3	2.5	2.5	3	3	2	2.5	2	2.5	2.5
Unity												
	3	3	3	2.6	3	3	3	2	3	2	3	3
Average Score	2.7	2.7	2.7	2.5	2.5	2.7	2.8	1.8	2.8	2.0	3.1	2.7