CHAPTER 3:
EXISTING ENVIRONMENT, DIRECT EFFECTS, AND MITIGATION

3.1 Introduction

Roadway projects can potentially affect the natural environment (wetlands, vegetation, fish and wildlife, etc.) and the built environment (residential areas, businesses and supporting infrastructure such as roads and services) in many ways.

This chapter of the EA analyzes the environmental consequences of construction and operation of the Build Alternative and identifies and evaluates mitigation measures for environmental impacts. The No Build Alternative is also examined which leaves the roadway mostly as it exists today.

3.1.1 What are the types of environmental effects?

The different kinds of effects or impacts to be evaluated are:

- **Direct temporary or short term –** These effects are typically related to a construction activity and go away when the construction activity stops.
- **Direct permanent or long term –** These effects are more lasting and are associated with the permanent roadway. These effects are often called operational effects because they are associated with the opening and operation of the roadway.
- **Indirect –** Also known as secondary impacts, indirect effects are caused by the project and occur at a later time or a distance from the project. These impacts are discussed in Chapter 4 of this EA.
- **Cumulative –** These are incremental changes that occur in the project area that are considered in relationship to

impacts associated with both past development and anticipated future development. This is the sum of the direct and indirect effects so part of these may be caused by the project. These impacts are discussed in Chapter 4 of this EA.

3.1.2 What are mitigation measures?

We strive to avoid or minimize effects. If that is not possible, we enhance, restore, or create these important environmental features elsewhere.

Using mitigation measures is a way for a project to lessen the effects and impacts of the Build Alternative. Early in a project's development, studies are prepared that describe the environmental impacts associated with a proposed design. One benefit of gathering environmental information early and integrating it into the roadway engineering design process is that it is often possible to avoid some impacts. In other cases, unavoidable impacts can be minimized. When impacts are unavoidable, we evaluate ways to compensate for those impacts. For example, compensating for unavoidable impacts such as wetland fill impacts or stream buffer clearing often means that a project will propose to enhance, restore, or create those important features somewhere else.

3.1.3 What technical studies were prepared and where can I review them?

Copies of the technical studies may be viewed at the locations listed in Appendix B.

Technical specialists prepared studies to determine the project effects on the local environment for both the No Build Alternative and the Build Alternative. They are listed in Appendix B and are incorporated by reference into this environmental assessment.

A compact disc (CD) is available for those who wish to read these documents on a computer. Hard copies are also available. Copies of the CD are available for a $2.50 fee and hard copies are available for $20.00 upon request to Ben Rampp, WSDOT, Olympic Region at (360) 570-6695. A copy of the EA can also be viewed at the WSDOT website at: http://www.wsdot.wa.gov/projects/SR3/SR3BelfairBypassEnvironmentalAssessment/

3.1.4 Will the Build Alternative have any effects on the environment that cannot be fully mitigated?

As discussed within this chapter, various measures will be implemented to mitigate for any adverse effects created by this project. Therefore, the Build Alternative would not have any unavoidable adverse effects on the environment. However, that conclusion will ultimately be made by the FHWA after the EA is circulated and the environmental hearing is held.

3.2 What environmental elements will not be affected by the alternatives in this environmental assessment?

The following resources either do not exist in the project area or are not measurably affected by the build alternative.

- Wild and scenic rivers – there are no designated rivers in the project area. No wild and scenic rivers are within the project limits.
- Energy– there is no measureable effect to energy.

3.3 Why do we study environmental effects and involve the public in project decisions?

We want your input, and we pledge that the decision makers will give it careful consideration.

Our roadway improvement projects are planned to benefit the state's citizens by supporting safe travel and the efficient transportation of goods. The benefits derived from these improvements may reach beyond the local community, but it is at the community level where the project's effects are typically most concentrated.

Both the National and State Environmental Policy Acts (NEPA and SEPA) require us to disclose the social, economic, and environmental effects of our project proposals. These acts ensure that all members of the community have the opportunity and are encouraged to contribute information and opinions that will be given careful consideration by the project's decision makers. Our interaction with the public, agencies, and tribal governments are documented in Chapter 5 – Public, Agency, and Tribal Coordination.

3.4 What areas of effect are addressed in this environmental assessment?

The remainder of this chapter contains findings from the following technical studies:

Transportation	Recreation
Noise	Relocation
Air Quality	Social, Economic, and Environmental Justice
Wetlands	Hazardous Materials
Fish	Archaeological and Historic Resources
Wildlife	Public Services
Vegetation	Utilities
Water Resources	Visual Quality
Land Use and Farmland	Geology and Soils

3.5 Transportation

A Transportation Discipline Report was completed in August 2011. It describes the existing traffic conditions in the SR 3 Belfair Bypass study area and evaluates potential traffics impacts with and without the proposed project in 2035 (design year). This study is listed in Appendix B, and it is incorporated by reference into this environmental assessment.

3.5.1 What assumptions are in the current traffic analysis?

The transportation discipline report addresses the SR 3 Belfair Bypass No Build and the Build Alternatives. The approach taken is to use information that is already available from previous studies along with associated traffic models and assumptions, in order to demonstrate how the project addresses the purpose and need. Data and analyses were updated only where appropriate. This section therefore draws on the methodology and results from the *WSDOT 2009 Belfair Bypass Transportation Discipline Report* that is based on the model developed for the Belfair Bypass traffic analysis report, and later the SR 3 Belfair Area Widening and Safety Improvement project.

The results from the previous travel demand modeling effort were used in compiling this report. A base year of 2006 and a design year of 2035 were established in the previous analysis, and those results are carried over here. This discipline report also assumes

2015 as the opening year, which was interpolated from the previous work. The forecast transportation network assumed improvements identified in the BAWSI report. Land use forecasts for modeling are based upon land use data provided by Mason and Kitsap Counties and supplemented with data from the Office of Financial Management.

3.5.2 How do the two alternatives compare in their ability to move people and goods now and in 2035?

SR 3 provides service between Shelton and Bremerton, connecting with US 101 in Shelton and SR 16 in Bremerton. Bremerton is the major origin and destination for many regional through trips using the corridor, with Shelton being the secondary center in the area. Within the area of the proposed Belfair Bypass, SR 3 connects with SR 106, SR 302, and with SR 300 in Belfair. SR 3 is a Highway of Statewide Significance (HSS) and also part of the National Highway System (NHS).

Existing Conditions in 2008

Within the limits of the proposed project, SR 3 is classified as a Rural-Principal Arterial. The average daily traffic (ADT) on the route varies between 10,000 and 19,000 vehicles in 2010, with the highest volumes at MP 26 which is located in the Belfair commercial area. The road does experience 10 percent to 15 percent higher traffic volumes in the summer months with tourist and recreational traffic. Exhibit 3-1 shows the level of service (LOS) and volume/capacity (v/c) ratios of existing SR 3 within the study area.

Level of Service (LOS) and Volume/Capacity (V/C):

LOS is used to measure the effectiveness of transportation facilities. LOS A is the best, and LOS F is the worst.

V/C is used to assess traffic status. <0.6 is traffic free and >1.1 is inappropriate traffic.

Exhibit 3-1: SR 3 Belfair Vicinity Level-of-Service[1]

State Route 3 Mainline Segments	2006 PM Existing		2015 PM Existing		2035 PM Existing		2015 With Belfair Bypass		2035 With Belfair Bypass	
	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C
SR 302 to SR 106	D	0.38	D	0.48	E	0.73	D	0.4	D	0.52
SR 106 to NE Clifton Lane[2]	D	0.54	E	0.63	F	0.89	D	0.53	D	0.56
NE Clifton Lane to Lake Flora Road[3]	E	0.61	E	0.83	F	1.5	E	0.77	F	1.2

[1] PM Peak Hour, Two-Way, Two-Lane Highway Segment Level of Service

[2] Two-Way Left Turn Lane (TWLTL) within segment

[3] Northbound climbing lane within segment

The route handles a little over 3 million tons of freight per year, with about 1,000 trucks per day using the route. The speed limit is 35 mph, with the exception of MP 27 to 29 where the speed limit is 55 mph.

The No Build Alternative in 2035

The 2035 No Build traffic modeling forecasts intersection and roadway congestion between Romance Hill Road and Lake Flora Road. Congestion would be acute in several locations, especially north of SR 3 at NE Clifton Lane where vehicle operating speeds are predicted to be 9 mph during the evening commute. Several locations south of downtown Belfair would also have unacceptable v/c ratios (>1.10) on the southbound evening commute.

Highway segment analysis on SR 3 between SR 302 and Lake Flora Road shows LOS E between SR 302 and SR 106; LOS F between SR 106 and NE Clifton Lane; and LOS F between NE Clifton Lane and Lake Flora Road. Generally, SR 3 for southbound trips shows higher v/c ratios than northbound direction in the PM peak hour. (See Exhibit 3.5.1 above.)

With the No Build alternative, traffic volumes, congestion, and delays would increase. Access to and from business and other services would become difficult as gaps between vehicle platoons progressing through the corridor become nonexistent. Other transportation projects planned for this area are accounted for in this alternative. One such planned project is the Belfair Area

Widening and Safety Improvements (BAWSI). This project would extend the center turn lane and provide paved shoulders and sidewalks on both sides of SR 3. This project and other potential projects would have beneficial impacts on safety and congestion. The benefits of these projects are considered in the No Build Alternative.

The Build Alternative in 2035

A bypass offers the best prospects for improving travel times through the corridor for regional through traffic, presuming access is limited which is important for maintaining efficient traffic flows. Construction of a bypass would divert over 20 percent of the total trips from SR 3 by separating local from regional travel. Traffic volumes would be redistributed, which could have both positive and negative consequences for commercial and retail businesses along SR 3.

The BAWSI project is assumed in the forecast years. It would provide benefits in the Build future with its sidewalk improvements and consolidation of driveway access. Other access management measures like right-in and right-out can also play an important role in managing traffic flow.

The proposed Belfair Bypass would be a Managed Access facility from the beginning of the alignment at MP 22.81 to the intersection with SR 302, and Limited Access from the intersection with SR 302 to the intersection with Lake Flora Road. An intersection is proposed as part of the Build Alternative at Alta Neighborhood. Limited Access would not preclude future access in the vicinity of Romance Hill Road, and the vicinity of the Kitsap County line. After the Lake Flora Road intersection, the Bypass would switch back to Managed Access.

The Bypass cross-section would include eight-foot shoulders that would accommodate bicycle and pedestrian travel. Separate pedestrian and bicycle paths would not be included along the Bypass. Given the few local access points, low population densities and rural composition, there was no compelling support to accommodate a design beyond the minimum of eight-foot shoulders for bicycle use.

The proposed Bypass would provide an alternate route during emergencies and for emergency services. Regional response time would likely improve.

The effect of the Build Alternative on transit operations is beneficial. Reduced congestion and delay ensures efficient transit operations. Moreover, a bypass would provide alternate faster regional transit routes.

3.5.3 How is the traffic in the SR 3 Belfair Bypass project study area predicted to grow between now and 2035?

SR 3 experiences congestion during peak commute hours, weekends, holidays, and at various times during the tourist season. Considerable delay occurs at intersections located in the Belfair commercial area.

Traffic projections show that without a bypass for regional traffic, operational levels of service on the portion of SR 3 through Belfair will continue to decline. This conclusion is supported by several studies conducted over the last decade.

3.5.4 Are there any safety issues in the SR 3, Belfair Bypass study area now or in the year 2035?

The collision rate on existing SR 3 between the between the Bypass beginning and end points in recent years is 2.67 collisions per million vehicle miles. This is much higher than the 2009 statewide average (0.95) for rural principle arterials, and consistent with urban congested traffic.

Non-injury collisions account for the greatest number of collisions. Though the details of the relationship between congestion and safety are not well defined, it is generally accepted that congestion and rear-end collisions are directly related: In other words, collisions generally increase as congestion increases, but the severity of those crashes is generally lower.

3.5.5 How would the Build Alternative affect the connections with local roads and intersections?

While the Build Alternative has no significant impact on the existing SR 3 alignment through Belfair, significant intersection capacity improvements would be needed at many locations, such as additional through lanes, dedicated turn lanes and vehicle storage capacity by the year 2035. Intersection controls would also have to be improved. These needs are not due to the Build Alternative, but due to the baseline forecast in the corridor. The Build Alternative provides benefits through additional capacity provided by the two-lane bypass. Traffic volume reduction occurs at the existing SR 3 alignment through Belfair, as regional through traffic is diverted to the Bypass. Exhibits 3-2 and 3-3 show the south and north connections of the Bypass to existing SR 3.

Performance measures with the Bypass such as traffic volume reduction through redistribution, reduced intersection delay and improved operating speeds, improved travel time and level of service, are all consistent with the Purpose and Need of the Build Alternative.

3.5.6 How would the Build Alternative affect transit and school bus routes?

Construction of the Bypass would have multiple effects on transit and bus routes on existing SR 3 through the Belfair area. These include a reduction in traffic volumes; reduced congestion leading to improved travel times and operating speeds; and an overall improvement in the level of service.

Therefore, the effects of the project action on transit operations are beneficial. Reduced congestion supports efficient transit operations. Moreover, the bypass would provide an alternate, faster regional transit route.

3.5.7 How would the project affect bicycle and pedestrian traffic?

Bicycle and pedestrian accommodations for the proposed Bypass are suitable for the designed roadway cross-section. WSDOT's Design Manual (2012c) requires bicycle facilities to be included in project development and highway programming and the language in federal rules [23 USC Section 217(g)] and guidelines represents a clear effort to integrate bicycle and pedestrian planning into other transportation planning processes. However, there is no specific rule that requires WSDOT or a local jurisdiction to build bicycle and pedestrian facilities.

WSDOT's Design Manual states that bicycle facilities should be provided on routes identified as local, state or regional significant bike routes and be built to fill in gaps in the existing network when possible. Given the few local access points, low population densities and rural composition there was no compelling need to accommodate a design beyond the minimum of eight-foot shoulders for bicycle use. The eight-foot shoulder is accepted as adequate in accommodating bicycle travel and is the common level of accommodation for this proposed roadway classification. The eight-foot shoulder accommodation would allow Mason

County, if they choose, to identify the SR 3 Belfair Bypass as a bike route.

Being a limited access highway facility, pedestrians would be prohibited on the Bypass. However, the eight-foot shoulder can allow pedestrian use as the result of a vehicle breakdown.

The Limited Access classification, rural nature of the area, and roadway geometrics affords bicyclists adequate and appropriate on-road transportation facilities. The Bypass would provide local and out-of-area bicyclists a route unimpeded from the current congestion and traffic conflicts that are common on the existing SR 3 through Belfair.

3.5.8 How would the traffic flow be affected during construction of the Build Alternative?

Direct effects of the Build Alternative would entail temporary construction effects. It would mean travelers would experience construction related traffic delays and may need to take detour routes for a period of time. Since the Bypass alignment is a new route through forested land, a major portion of the work would not lead to direct disruption of traffic. There would be an increase in traffic as construction workers go to the work site or bring in and remove equipment and materials.

3.5.9 Would local streets be closed during construction?

In general, complete closures of SR 3, SR 302 or the intersecting county roads would not be required for the construction of the Build Alternative. Some intersections would require temporary and intermittent alternate routes as the reconstruction to connect with the highway occurs.

3.5.10 What route would be used to haul construction materials?

SR 3 would be used to access the construction site. SR 302 and SW Lake Flora Road may also serve as alternate routes to access the south and north connections, respectively, between the bypass and existing SR 3.

3.5.11 Would the Build Alternative have unavoidable adverse effects to transportation that cannot be fully mitigated?

The results of this analysis support the conclusion that there would be beneficial transportation impacts as a result of the bypass.

The proposed project would provide a solution to the immediate and long-range regional transportation mobility and safety needs of the SR 3 corridor in northeast Mason and southwest Kitsap Counties. The Bypass would also reduce congestion and improve safety through Belfair, and provide an alternate route for emergency vehicles. Implementation of this project would provide safe and reliable access to regional jobs, goods and services; and improve efficiencies for transit and other public service providers.

The project would not have unavoidable adverse effects to transportation.

3.6 Highway Traffic Noise

A noise technical report was completed in March 2012. It describes the existing noise conditions in the project study area and evaluates potential noise impacts in 2035 (design year) with the No Build Alternative and the Build Alternative. See Appendix B for locations where this study can be viewed. This study is incorporated by reference into this environmental assessment.

3.6.1 What is the nature of highway noise?

Highway noise is a combination of noises from the engine, exhaust, and tires. An increase in traffic volumes, vehicle speeds, or the amount of heavy trucks increase traffic noise levels. Defective mufflers, truck compression braking, steep grades, the terrain and vegetation near the roadway, shielding by barriers and buildings, and the distance from the road contribute to the traffic noise heard at the roadside.

3.6.2 What is the study area for the noise analysis?

This noise study covers up to 1,300 feet from both sides of the proposed highway throughout the project limits. A straight line traffic noise model was used to establish the study area. The model used the existing measured noise and the future predicted noise level to identify substantial increase of 10 dBA or more. The study area then extended to the limits where there exists a substantial increase in the future noise level.

The area is comprised of a mix of residential and commercial land at the south end, dense forest for most of the alignment, and scattered residences at the north end of the project.

3.6.3 How is highway noise measured?

Highway noise is measured in units called decibels (dB). Adjustments in measurement are made to better reflect how an average person hears sounds. The adjusted sounds are called "A-weighted levels (dBA)". This is most similar to how humans perceive sounds on a logarithmic scale. The A-weighted decibel scale begins at zero and represents the threshold of hearing. Loudness varies from person to person, so there is no precise definition of loudness.

3.6.4 What are some typical noise levels for comparison?

Typical noise levels begin as soft as normal breathing at 10 dB which is barely audible. Normal conversation at 40 inches is 60 dB. Busy traffic is 70 dB. Construction noise at 10 feet is 110 dB. Noise levels above 80 dBA are typically described as annoying.

3.6.5 What are the general results of the noise study?

The analysis of the noise impacts in the project area is based on a comparison of future sound levels with existing levels and applicable criteria. Construction noise impacts are based on the maximum noise levels of construction equipment published by the U.S. Environmental Protection Agency (EPA).

FHWA noise abatement criteria are used to evaluate traffic noise impacts. Traffic noise levels are predicted at sensitive receivers based on projected future traffic operations using FHWA Traffic Noise Model version 2.5. Abatement measures that may be taken to avoid or reduce potential noise impacts are discussed where appropriate.

The project environment was evaluated for the presence of receivers sensitive to traffic noise. Twenty-seven receivers were used to model current and future noise impacts under this project's Build and No Build conditions. Predicted peak-hour noise levels were compared to FHWA's noise abatement criteria (NAC) to determine if the project would result in traffic noise impacts.

The project noise analysis revealed that 3 residences currently approach or exceed WSDOT's NAC for noise, which is 66 dBA. This is projected to increase to 14 residences in 2035 without the project due to a slight increase in area noise levels.

Under the 2035 Build Alternative, an estimated 12 residences are expected to exceed the NAC or experience a substantial increase of 10 dBA or more, by the year 2035 without abatement.

Because there is no existing traffic data for the proposed alignment, field measurements were used to identify a substantial noise increase in the design year. A 32 dBA sound level, which is an average of the five field measurements, was used for the receiver that has no traffic data to represent the existing noise level.

Abatement Not Recommended

Noise walls along the right of way to protect most of the affected homes and commercial parcels were evaluated for feasibility and other criteria. Three noise walls were considered at the south end of the project but they were not recommended for construction. The walls have to be technically feasible and of reasonable cost in accordance with WSDOT noise policy. Two of the three walls were found to be not feasible and the third one was found to be not reasonable.

North Mason High school a 4f property was part of the analysis. A receiver representing North Mason High school's outdoor usage area within the new alignment measured 32 dBA will experience a substantial increase of 20 dBA in the design year Build scenario at a noise level of 52dBA.

Because this location experienced a substantial increase greater than WSDOT's 10 dBA, noise abatement substantial increase criteria in the design year 2035, Build scenario, it requires the evaluation of a noise wall.

The noise wall analyzed at this location to determine WSDOT's feasibility and reasonableness was 2,141 feet long with a height of 30 feet, and would not provide at least a 7 dBA noise reduction, a WSDOT reasonableness requirement. Therefore, a noise wall is not recommended for construction at this location.

Noise walls are not recommended for this project. Exhibits 3-4 and 3-5 summarize the existing and predicted noise conditions at the modeled locations.

Exhibit 3-4: Sensitive Noise Receptor Map

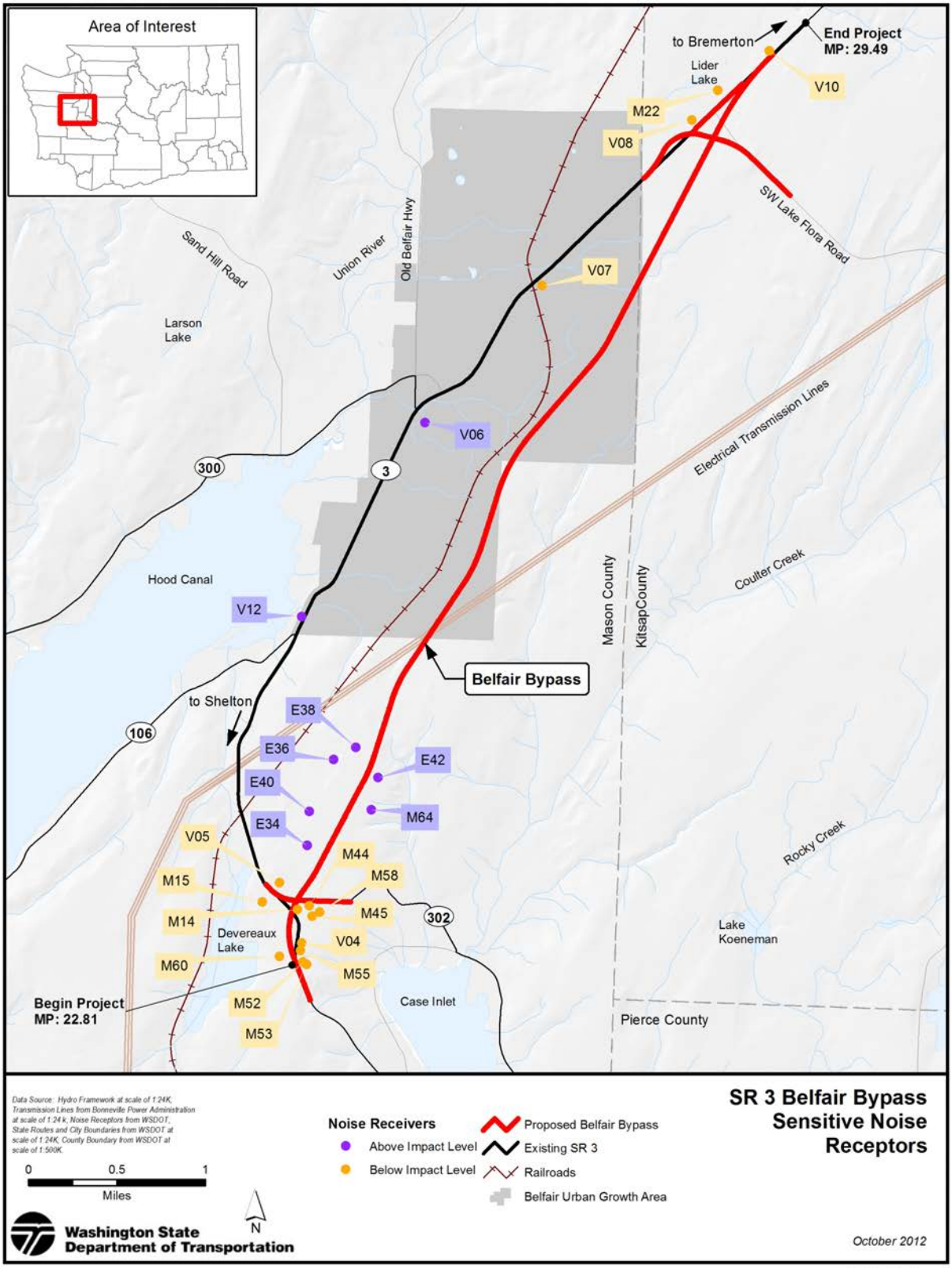


Exhibit 3-5: Sensitive Noise Receptor Table

Site	Location (see Exhibit 3-4)	Dwelling Units	Existing (2011) Laq (dBA)	No Build (2035) Laq (dBA)	Build (2035) Laq dBA
V04	Residential	2	65.1	**67.4**	54.6
V05	H. School Track	1*	55.4	57. 7	57.4
V06	Residential	3	**70.5**	73.1	inactive
V07	Church	2*	**62.8**	**65.9**	inactive
V08	Residential	1	61.3	64.4	64.9
V10	Residential	2	65.3	**68.4**	**69.3**
V12	Residential	2	64.3	**66.2**	inactive
M14	Residential	1	62.5	64.8	64.3
M15	Residential	1	53.5	55.8	54.3
M22	Residential	1	58.1	61.2	61.6
E34	H. Schl Tennis Crt.	3*	31.6	NA	**52.1**
E36	Residential	1	34.8	NA	**47**
E38	Residential	3	30.8	NA	**51.5**
E40	Residential	1	30.9	NA	**48.1**
E42	Residential	2	31.3	NA	**55.4**
M44	Residential	4	50.8	53.1	56.7
M45	Residential	4	51.6	53.9	52.1
M52	Residential	1	59.6	61.9	57.5
M53	Residential	2	56.7	59	54.3
M55	Residential	3	63.3	**65.6**	56.9
M58	Residential	4	46.9	49.2	51.4
M60	Residential	2	50.8	53.1	53.6
M64	Residential	1	50.8	53.1	50.9

Bold numbers = a substantial increase of 10 dBA or greater.

* = Residential Equivalency.

Inactive = Receiver is located within the Existing Alignment vicinity

3.6.6 How loud would construction activities be?

Construction would be carried out in stages, each of which has its own mix of equipment and, consequently, its own noise characteristics. These stages would also occur in different areas along the project corridor.

Typical activities during construction would involve excavation, placement of embankment material, paving, and utility relocation.

The most constant noise source at construction sites would be internal combustion engines. Engine powered equipment

includes excavation equipment, material-handling equipment, and stationary equipment. Mobile equipment operates in a cyclic fashion, while stationary equipment, such as generators and compressors, operate at sound levels fairly constant over time. Because trucks would be present during most phases and would not be confined to the project site, noise from trucks could affect more receptors. Other noise sources would include impact equipment, which could be pneumatically powered, hydraulic, or electric.

The typical noise range of construction equipment is from 68 dBA to 95 dBA. The use of jack hammers can increase the noise to 98 dBA. The use of pile drivers can reach as high as 105 dBA.

3.6.7 When is noise mitigation considered for highway projects?

Roadway projects in Washington State must consider noise mitigation, also called noise abatement, when the noise levels reach 66 dBA or greater. Then, the proposed mitigation locations must meet WSDOT's feasibility and reasonableness criteria as prescribed in the *WSDOT 2011 Traffic Noise Policy and Procedures*.

3.6.8 Is any noise mitigation proposed in the corridor to reduce traffic noise?

As discussed previously in Section 3.6.5, noise walls or other mitigation are not recommended for this project.

3.6.9 Would the Build Alternative have unavoidable adverse highway noise-related effects that could not be fully mitigated?

The noise analysis of the project study area revealed that three sensitive receivers currently approach or exceed WSDOT's NAC. Under the 2035 No Build Alternative, the number of receivers approaching or exceeding the NAC is projected to increase to 14 due to a slight increase in area noise levels. Under the 2035 Build Alternative, an estimated 12 sensitive receivers, including the North Mason High School, are expected to exceed the NAC of 66 dBA or experience a substantial increase of 10 dBA or more

without abatement. Abatement in the form of noise walls were considered, but were not recommended for construction.

Based on the analysis of the North Mason High School, it is determined that moving the alignment of SR 3 closer to the high school would not create substantial impairment of the outdoor recreational fields near the new alignment. While there would be a substantial increase in noise levels compared with existing noise levels at this location, the overall noise levels would not be such that they would prevent participants on the recreational fields from using or enjoying the facilities.

The proposed Bypass would not generate greater noise effects than the No Build Alternative would. Due to projected increases in traffic volumes on SR 3, noise levels are expected to increase by two to three dBA from existing noise levels by 2035 without the bypass. With the Build Alternative, noise levels are projected to increase by about three dBA in 2035. Therefore, because the Build Alternative would not affect a greater number of receptors and would not significantly increase noise levels, a bypass would not result in significant unavoidable highway noise impacts.

3.7 Air Quality

An Air Quality Conformity Analysis was completed in August 2011. It describes the existing air quality conditions in the SR 3 project study area and evaluates potential air quality impacts with and without the proposed project. A Qualitative Greenhouse Gas Emissions Evaluation was also completed for the proposed project that discusses greenhouse gas and climate change. These studies are listed in Appendix B, and are incorporated by reference into this environmental assessment.

Who regulates Air Quality?

Air Quality is regulated by the U.S. Environmental Protection Agency (EPA), the Washington State Department of Ecology (DOE), and the Olympic Region Clean Air Agency.

3.7.1 What is the existing air quality in the project area?

The EPA has established the National Ambient Air Quality Standards (NAAQS) which specify maximum concentrations for carbon monoxide (CO), particulate matter less than 10 micrometers in size (PM_{10}), ozone, sulfur dioxide, lead, and

nitrogen dioxide. The concentrations of these pollutants in the study area are currently below the limits.

As the study area is in compliance with air quality standards and not subject to any specific analysis requirements, a qualitative analysis was performed for this project.

3.7.2 How would air quality be affected if the project is not built?

With the No Build Alternative, traffic congestion through Belfair would continue to increase and no alternate route would be constructed. Stop-and-go-traffic results in higher emissions of pollutants than free-flowing traffic. Therefore, the No Build Alternative would be expected to result in more air pollution than the Build Alternative.

3.7.3 Would the Build Alternative affect air quality?

Congestion would be relieved along the existing SR 3 and in downtown Belfair by providing the bypass as another route alternative. The volume-to-capacity ratio along the existing SR 3 would be significantly reduced with the Bypass.

The increase in Vehicle Mile Traveled (VMT) would lead to higher pollutant level emissions for the Build Alternative along the new highway corridor, along with a corresponding decrease in pollutant levels along the parallel route, existing SR 3. The emissions increase is offset by lower Vehicle Hourly Traveled (VHT) due to construction of the bypass. Therefore, the regional daily pollutant burden levels would not be significantly affected, and the changes in the area's pollutant burden levels would be minor.

The Air Quality Conformity Analysis demonstrates that the project would not cause any new exceedance of the NAAQS. It would also not contribute to any existing exceedance. The project would not delay the timely attainment of any standard.

Greenhouse Gas Emissions and Climate Change

The project would have a beneficial effect in terms of greenhouse gases. For additional discussion of the subject of climate change

and greenhouse gases, refer to the qualitative greenhouse gas emissions evaluation completed for this EA.

In general, project level actions that can help reduce greenhouse gas emissions include:

- Reducing stop and go conditions
- Improving roadway speeds to a moderate level
- Improving intersection traffic flow to reduce idling
- Creating more safe and efficient freight movement
- Expanding transit and non-motorized options for travelers
- Increasing the reliability of transit and HOV travel times
- Increasing vegetation density over pre-project conditions to sequester carbon dioxide.

CO emission rates would fall by 53 percent by 2035 due to the Clean Air Act fuel and engine requirements under both the No Build and the Build Alternatives. The Build Alternative would benefit because of the decline in emission rates and some reductions in congestion along existing SR 3.

No air quality impacts are anticipated from long term operation of the project. No long term mitigation measures are required.

3.7.4 How would the project address Mobile Source Air Toxic (MSAT) emissions?

MSAT are a group of chemicals prioritized by the EPA for reduction in transportation projects. These chemicals are known to adversely impact human health.

MSAT evaluation for this project would be prepared according to the *FHWA 2009 Interim Guidance on Air Toxic Analysis in NEPA Documents* as a project with Low Potential MSAT Effects. Based on FHWA's recommended approach for determining MSAT effects, this project falls within the Tier 2-approach, qualitative analysis for projects with low potential MSAT effects.

We are able to discuss MSAT emissions qualitatively for the project because operations are not expected to change among alternatives. The project improves operations of the highway without creating a facility that is likely to meaningfully increase MSAT emissions.

The amount of MSATs emitted would be proportional to the vehicle mile traveled (VMT). The project adds capacity to the existing roadway but does not increase the average daily traffic compared to the No Build scenario. Because the estimated VMT under future Build conditions are not different than under future No Build conditions, it is expected that there would be no appreciable difference in overall MSAT emissions between the Build and No Build Alternatives. Also, future year emissions would likely be lower than present levels as a result of the Environmental Protection Agency's (EPA's) national control programs that are projected to reduce MSAT emissions.

EPA has issued a number of regulations that will dramatically decrease MSAT's through cleaner fuels and cleaner engines. Between 2000 and 2050, EPA projects that even with a 145 percent increase in VMT, these programs will have a combined reduction of 72 percent in total annual emission rates from 1999 to 2050. These reductions are due to the benefits of national mobile source control programs, including requirements for reformulated gasoline program, a new cap on the toxics content of gasoline, the national low emission vehicle standards and gasoline sulfur control requirements. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future with the proposed project.

3.7.5 How would construction affect air quality and how would the effects be minimized?

Construction activities may cause temporary increases in air pollutant emissions. The construction contractors would be required to comply with all local, state and federal regulations concerning air pollution abatement related to construction activities.

In addition to PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines generate PM2.5, CO, and nitrogen oxide in exhaust emissions. If construction traffic and lane closures were to increase congestion and reduce the speed of other vehicles in the area, emissions

from traffic would increase temporarily while those vehicles are delayed. This increase in emissions would be temporary and limited to the immediate area where the congestion is occurring. Some construction phases (particularly during paving operations using asphalt) would result in short-term odors. These odors might be detectable to some people near the site, and would be diluted as distance from the site increases.

Construction contractors would be required to comply with the state of Washington regulations. These require the owner or operator of a source of fugitive dust to take reasonable precautions to prevent it from becoming airborne. This would minimize emissions from their activities and equipment.

Incorporating mitigation measures into the construction specifications for the project would reduce construction impacts. Possible mitigation measures to control PM10, deposition of particulate matter, and emissions of CO and NOx during construction are listed below:

- Spraying exposed soil with water or other dust palliatives to reduce emissions of PM_{10} and deposition of particulate matter;
- Wetting materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck) to reduce particulate emissions during transportation;
- Providing wheel washers to remove particulate matter that vehicles would otherwise carry offsite to decrease deposition of particulate matter on area roadways;
- Removing particulate matter deposited on paved public roads to reduce mud and resultant windblown dust on area roadways;
- Placing quarry spall aprons where trucks enter public roads to reduce the amount of mud tracked out;
- Covering disturbed soil with appropriate BMPs within the timeframes specified in the WSDOT Standard Specifications Manual would protect soil from wind and water erosion;
- Coordinating construction activities with other projects in the area to reduce the cumulative effects of concurrent construction projects.

3.7.6 Would the air quality for the Build Alternative be in conformance with state and federal regulations?

Conformity Determination

This project meets air quality conformity in accordance with state and federal regulations.

- The project is exempt from inclusion in the Metropolitan Transportation Plan (MTP).
- Because the project is not predicted to affect regional VMT, it is not predicted to impact regional CO, PM_{10}, $PM_{2.5}$, and O_3 levels. The project is also not predicted to impact greenhouse gas levels. MSAT levels are predicted to decrease substantially in the future due to federally mandated programs. The project is not expected to impact this reduction.
- The proposed project meets conformity requirements because the project would not cause any new, or would not contribute to any existing, exceedances of the NAAQS, nor would it delay the timely attainment of any standard.
- Hot Spot modeling is not required for project level conformity because the project area is in compliance with maximum concentrations of regulated pollutants.

3.7.7 Would the project have unavoidable adverse effects on air quality that could not be fully mitigated?

The Air Quality Conformity Analysis shows that the proposed project would not cause any new exceedance of the NAAQS, nor would it contribute to any existing exceedance. The project would not delay the timely attainment of any standard. The project would have a beneficial effect on greenhouse gases by minimizing stop and go conditions, thereby conserving fuel within the project vicinity and promoting efficient energy consumption by moderating speeds.

The project would not have unavoidable adverse effects on air quality.

3.8 Wetlands

Summary of wetland ratings:

Class I = Score > 70

Class II = Score 51 - 69

Class III = 30 - 50

Class IV = < 30

A wetland assessment report was completed in March 2012. It describes the existing wetlands present in the project study area and evaluates potential wetland impacts with and without the proposed project. Additionally, a conceptual mitigation plan was prepared in February 2012 detailing the mitigation measures being considered for the project's impacts to wetlands and wetland buffers. These studies are listed in Appendix B, and are incorporated by reference into this environmental assessment.

Wetlands were rated using the Washington State Wetland Rating System for Western Washington that uses Ecology's rating system with four classes. For example, Class I has the highest value such as a bog wetland that cannot be replaced. Wetlands categories are based on criteria such as rarity, sensitivity, and level of functions. For most wetland types, a cumulative score for functions is assigned based on points given for water quality, hydrologic, and habitat indicators. Category I wetlands are unique and sensitive to disturbance, impossible to replace, and/or provide a high level of functions (70+ points). Category II wetlands provide high levels of some functions and are difficult to replace (51-69 points). Category III wetlands perform moderate functions, are generally disturbed, and are easier to replace (30-50 points). Category III wetlands are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands. Category IV wetlands have the lowest levels of functions and are often heavily disturbed (<30 points).

3.8.1 Why and how are wetlands protected?

Wetlands are valuable natural resources.

They support plant and animal communities while providing valuable functions to human communities.

Wetlands are protected because of the ecological and social benefits that they provide. They can recharge ground water supply, aid in improving water quality of lakes and streams, help control erosion, lessen the effects of flooding as well as provide habitat for a variety of wildlife including waterfowl.

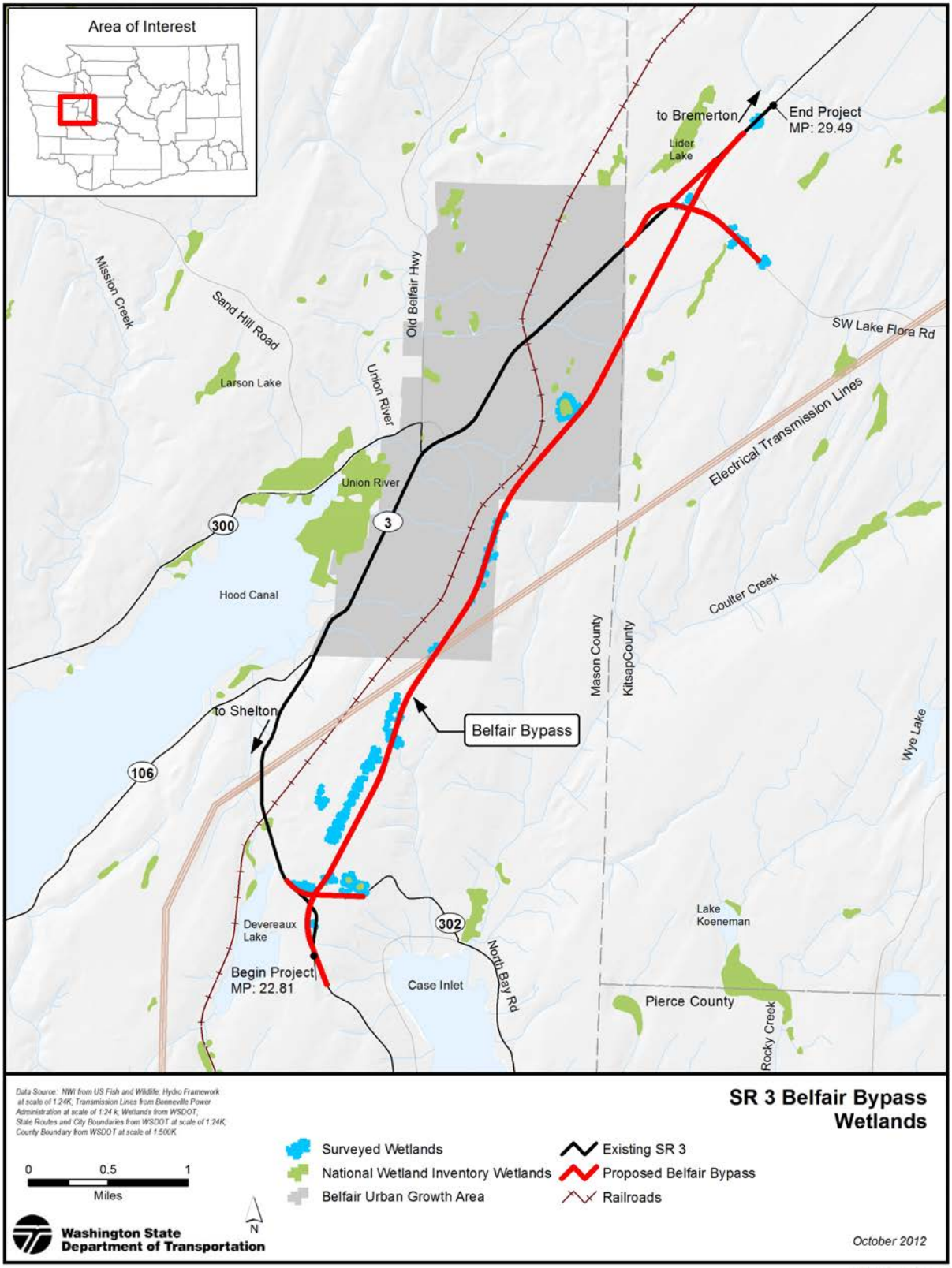
Wetland buffers are areas that surround wetlands and provide protection to the integrity and value of wetlands and their ecosystem.

Wetlands are protected by the federal Clean Water Act Section 404, by the Governor's Executive Orders (EO 89-10, EO 90-04) and other regulations at the federal, state, and local levels. This guidance requires us to have *no net loss* of wetlands if the Build Alternative is selected to be constructed.

3.8.2 How would the Build Alternative affect existing wetlands?

Forty-seven wetlands were identified in the project area (Exhibit 3-6). Using Ecology's four tiered rating system, seventeen of these wetlands are considered Category II and thirty are considered Category III. These wetlands generally provide low to moderate levels of biological, chemical, and physical functions. Appendix G provides general information about each wetland.

Exhibit 3-6: Wetland Map



The Build Alternative would result in permanent and temporary impacts to wetlands. Permanent impacts result in the permanent loss of wetland or waters of the state. Placement of fill in a wetland to construct a road is considered a permanent impact (Ecology et al. 2006a). Temporary impacts to wetlands can occur when it is necessary to cut vegetation to install temporary construction roads, to gain access to complete construction activities, or to install right of way fencing. Temporary impacts consist of short-term and long-term temporary impacts. Short-term impacts last for a limited time, and functions return to pre-impact performance about one year or within one growing season of the impact (e.g., clearing of emergent vegetation). Long-term impacts affect functions in such a way that they can be restored, or would eventually be restored over time, but not within a year or so (e.g., clearing of a forested wetland). Temporary impacts to wetlands have not been calculated due to the current limited level of design. As the design progresses, the short-term and long-term temporary impacts would be evaluated. Both permanent and long-term temporary impacts require mitigation. Temporary wetland impacts would be restored by planting native vegetation, including shrubs and trees, after the construction is complete.

Eighteen wetlands would have permanent impacts. Permanent wetland impacts of 0.81 acre would result from cut and fill activities associated with the bypass project. Appendix G summarizes the impacts as a result of the project and also contains the wetland and proposed bypass location sheets. Impacts are unavoidable, due to the amount and proximity of wetlands in relation to the proposed project.

3.8.3 How would WSDOT compensate for lost wetlands?

Mitigation would occur to compensate for the 0.81 acre of permanent wetland impacts. Additional mitigation would also need to be conducted to compensate for the 5.88 acres of permanent buffer impacts. The mitigation approaches currently being considered that may be used include concurrent mitigation, advance mitigation, mitigation banking, and in-lieu fee. Types of mitigation that may be used include re-establishment, rehabilitation, establishment (creation), enhancement, and preservation.

3.8.4 Would the Build Alternative have unavoidable adverse effects on wetlands that could not be fully mitigated?

Impacts to wetlands were avoided and minimized, but due to the amount and proximity of wetlands in the area, some wetland impacts are unavoidable. Permanent impacts to eighteen wetlands (0.81 acres) and permanent buffer impacts to fifteen wetlands (5.88 acres) would be mitigated. Therefore, the Bypass would not have unavoidable adverse effects on wetlands that could not be mitigated.

3.9 Fish

A fish and wildlife discipline report was completed in May 2012. It describes the existing fishery resources present in the SR 3 project study area and evaluates potential fishery impacts with and without the proposed project. This study is listed in Appendix B, and it is incorporated by reference into this environmental assessment.

3.9.1 What is the Endangered Species Act?

The FHWA is responsible for compliance with Section 7 of the Endangered Species Act (ESA) for this environmental assessment.

The Endangered Species Act of 1973, as amended, provides a means to conserve the ecosystems upon which endangered and threatened species depend. It provides programs for the conservation of those species and the prevention of extinction of plants and animals. The law is administered by the Interior Department's Fish & Wildlife Service (USFWS) and the Commerce Department's National Oceanographic & Atmospheric Administration (NOAA) Fisheries, also known as National Marine Fisheries Service (NMFS), depending on the species. Any project using federal funds must adhere to the requirements of the ESA regarding consultation with the appropriate federal agencies above.

3.9.2 Studies, coordination, and methods

The study area for fish and wildlife is defined as the project footprint, plus those areas extending 300 feet outside the project footprint. This provides a larger but reasonable area within which to assess wildlife habitat.

Coordination has occurred with the Washington Department of Fish and Wildlife (WDFW) and with the (NMFS) and the (USFWS). Stream classifications using the Washington State Department of Natural Resources (WDNR) criteria were documented during field visits.

3.9.3 Are there threatened and endangered species in the study area and how are they impacted?

No habitats that are potentially used by listed, threatened and endangered fish species, as primary resources, would be affected by the proposed project.

3.9.4 Are there any fish resources in the study area and how are they protected?

There is only one stream within the study area. An extreme headwater of an unnamed tributary to Case Inlet is located at the southern extreme of the project limits. The stream was surveyed by the project biologist and is considered to be non-fish bearing within the project limits. Mindy Creek, Belfair Creek, Sweetwater Creek, and Romance Hill Creek cross existing SR 3 to the west but are all outside the 300-foot study area.

Prior to upland work that could possibly affect water quality, Best Management Practices (BMPs) would be in place to protect fish resources from sediment or chemicals from entering streams, either directly or through conveyance through ditches.

3.9.5 If the project is not built, what would be the existing conditions for fish?

Under the No Build Alternative, no construction related effects on fisheries or fish habitat would occur. Current impacts to fish populations and/or habitats are occurring and would continue to occur. Habitat has historically been degraded by logging, grazing, road building, and land development activities. Non-project related residential development over time may occur.

3.9.6 How would fish be affected during construction of the Build Alternative?

No direct effects to fish species are expected during construction because no fish bearing streams occur within the project limits, and all relevant BMPs would be used to insure no sediment containing runoff would enter fish bearing waters of the state.

3.9.7 What other effects would occur under the Build Alternative after construction?

Direct effects to fish species during operation of the SR 3, Belfair Bypass are unlikely because no fish bearing streams occur within project limits and all relevant BMPs would be used to insure no sediment containing runoff would enter fish bearing waters of the state.

3.9.8 How would we offset the effects to protected fish?

Project BMPs would be inspected and modified (as needed) to achieve compliance with water quality standards.

A Stormwater Pollution Prevention Plan (SWPPP) would be fully implemented before, during, and after construction to reduce the likelihood of pollutants reaching any water body within the project study area. The SWPPP would include a maintenance and operations manual that lists the procedures and frequency of applying the procedures required to keep the stormwater management system operating as intended.

3.9.9 Would the project have unavoidable adverse effects on fish that could not be fully mitigated?

The project would not have unavoidable adverse effects on fish.

3.10 Wildlife

A fish and wildlife discipline report was completed in May 2012. It describes the existing fish & wildlife resources present in the SR 3 project study area, and evaluates potential wildlife impacts with and without the proposed project. This study is listed in Appendix B, and it is incorporated by reference into this environmental assessment.

3.10.1 Studies, coordination, and methods

As discussed in Section 3.9, this project must adhere to the requirements of the Endangered Species Act regarding impacts to endangered and threatened wildlife species. In addition, the project must adhere to the requirements of the Migratory Bird Treaty Act.

The Migratory Bird Treaty Act (16 U.S.C. 703-711) is managed by the U.S. Fish and Wildlife Service (USFWS) to conserve migratory bird populations and their habitats.

The MBTA includes 1007 protected species based on the current revised list (2010).

The study area for wildlife is defined as the project footprint, plus those areas extending 300 feet outside the project footprint. This provides a larger but reasonable area within which to assess wildlife habitat.

Information from the USFWS, the WDFW, the WDNR and the NMFS was used to determine if any state or federally listed proposed, threatened, or endangered animal species are located in the project area. Field reconnaissance was conducted to verify existing conditions of the study area.

The USFWS, the WDFW Priority Habitats and Species (PHS) Program, and the Washington Natural Heritage Program maintain records of sensitive, threatened, and endangered species occurring in the state. No sensitive, threatened, or endangered animal species are indicated as occurring on the site by GIS data and none were observed on site or transiting the site during field investigations.

A habitat connectivity assessment was completed for this project. The proposed highway segment is fully within the connected habitat network of two focal species (Black-tailed deer and Western Toad) that were included in the Washington Connected Landscapes Project: Statewide Analysis. The area is important to wildlife movements because of the narrow terrestrial connection between the north end of North Bay and the eastern terminus of Hood Canal. The statewide Connected Landscapes analysis suggests that conserving

terrestrial connections to the Kitsap Peninsula could be most efficiently accomplished by providing permeable conditions at the north end of the project, largely the portion of the project within Kitsap County.

3.10.2 Are there threatened and endangered species in the study area?

The study area has no known occurrences of animal species listed as threatened or endangered under the ESA or that are candidates for such a listing. Nor are there any wildlife species of federal concern or species included in the Washington Department of Fish and Wildlife PHS database.

No habitats that are potentially used by listed, threatened, and endangered wildlife species, as primary resources, will be affected by the proposed project.

3.10.3 Are there wildlife resources in the study area?

Numerous terrestrial wildlife species are likely to be found inhabiting the study area including: rodents (arboreal and terrestrial), insectivores (shrews, moles and shrew-moles), opossum, raccoons, black tailed deer, black bear, coyotes, birds and amphibians (terrestrial and pond breeders). Field visits indicated current presence of arboreal and terrestrial rodents, insectivores, coyote, o'possum, black tailed deer and black bear.

The land within the study area is primarily undeveloped commercial forest land. Habitats for the Migratory Bird Treaty Act (MBTA) include streams, riparian habitat, wetlands, conifer-hardwood forest and residential lands.

Although no reports of such exist, there is a possibility that marbled murrelets may fly over the proposed project area while transiting between Sinclair Inlet to the north and Hood Canal to the south. Marbled murrelets are a listed species under ESA.

The study area also contains numerous wetlands, some of which may contain perennial water in amounts and quality necessary for breeding amphibian reproduction.

3.10.4 If the project is not built, how would wildlife be affected?

If the Bypass is not built conditions in the study area would remain primarily rural and mostly undeveloped forested land. Cumulative impacts from continued growth in the region would occur regardless of whether or not the bypass is built, though at a much slower rate.

3.10.5 How would wildlife be affected during construction of the Build Alternative?

No substantial effects to wildlife are anticipated during construction of this transportation project.

Potential direct effects of the project range from wildlife displacement, loss of nesting and foraging habitat as well as loss of thermal cover and predator avoidance cover.

3.10.6 What other affects would occur under the Build Alternative after construction?

Under the Build Alternative, wildlife would be impacted by increased exposure to vehicular traffic and loss of habitat. There is high likelihood of wildlife being struck by vehicles on the Belfair Bypass. Black-tailed deer and black bear are highly mobile species which occur in the area of the proposed project and are likely to cross the proposed right of way.

Impacts to vegetation in the study area may cause the displacement of wildlife into neighboring habitats. Depending on the ability of the neighboring habitat to support additional wildlife, this displacement may lead to wildlife crowding and a decrease in habitat quality. Modification and fragmentation of habitat could alter species composition in the study area. Species that are better adapted to urbanized landscapes such as crows, rock doves, starlings, and house finches would become increasingly abundant.

The Build Alternative would result in mortality of individual bird and terrestrial wildlife species as well as loss and fragmentation of existing habitat. Increased traffic volumes traveling at greater speeds would likely result from the operation of the project. These conditions would likely result in additional mortality of migratory birds from collisions with automobiles. Automobiles occasionally strike raptors such

as owls and red-tailed hawks that hunt along road right of ways, especially freeways where vehicle speeds are highest. Vehicles also occasionally strike waterfowl and smaller perching birds when suitable habitat occurs along roadways. Juvenile birds are also susceptible to collision with vehicles immediately after fledging due to a reduced capacity for flight and awareness of their new environment. Terrestrial wildlife species crossing the bypass either during dispersal or daily foraging would also be exposed to an increased probability of vehicle collision.

Additionally, the new paved roadway of the Bypass would increase the amount of pollution generating impervious surfaces.

3.10.7 How would we offset the effects to protect wildlife?

Several highway features are recommended for inclusion in the highway design, that promote permeable conditions for wildlife movement, with an emphasis on the Kitsap County portion of the project. These include: installing one or more over-sized box culverts to provide safe passage to a wide range of wildlife, oversized smaller culverts to accommodate small animals that prefer or require a dry land path and creating effective barriers to small animals attempting to cross on the highway at grade.

WSDOT would use all practicable means to minimize impacts to habitats. Based on size and scope of the project, there would be some unavoidable loss of plants and animals due to site preparation, road construction and operation. Measures would be incorporated into the design of the proposal related to landscaping, soil retention, site rehabilitation, stormwater runoff control and habitat restoration that would help reduce the impacts to wildlife and habitat.

Preservation of vegetation would decrease the impacts of project construction and existing native plants and trees would be preserved wherever possible. Trees and shrubs adjacent to the alignment would be preserved as visual buffers wherever possible. Vegetation buffers would also offer wildlife protection from noise and human activity on the site. Landscaping with native species would mitigate habitat losses in the alignment right of way.

3.10.8 Would the Build Alternative have unavoidable adverse effects on wildlife that could not be fully mitigated?

As discussed above, various measures would be implemented to mitigate for any impacts created by the project. Therefore, the Build Alternative would not have adverse effects on wildlife.

3.11 Vegetation

A vegetation discipline Report was completed in April 2012. It describes the existing vegetation present in the SR 3 project study area and evaluates potential vegetation impacts with and without the proposed project. This study is listed in Appendix B, and it is incorporated by reference into this environmental assessment.

3.11.1 What vegetation is found in the study area?

The Belfair Bypass study area lies primarily within a rural environment while passing through the unincorporated Belfair Urban Growth Area (UGA) and terminating within the South Kitsap Industrial Area (SKIA) recently annexed into the City of Bremerton. Much of the area in both Mason and Kitsap Counties are undeveloped forested land.

The project passes through a variety of land use zones and types within the 6.68 mile study area. Vegetation and land use within the study area were classified to evaluate vegetation impacts. Eight cover types, generally following those used in "Wildlife-Habitat Relationships in Oregon and Washington" (Johnson and O'Neil 2001), were identified in the project study area. The eight vegetation cover types identified include:

1. **Commercial and Developed** (typically commercial areas. Understory vegetation is minimal or sometimes completely absent)
2. **Rural and Residential** (characterized by human dwellings and land uses that include a combination of natural and human-construction surfaces)
3. **Coniferous & Mixed Forest** (trees such as evergreen conifers and deciduous broadleaf trees with understory species such as salal, snowberry, ocean spray, salmonberry, etc. Those

areas in excess of 50 percent aerial coverage of coniferous trees were mapped as Coniferous Forest.)

4. **Regeneration** (areas dominated by coniferous trees between 3 and 10 years old. These are areas that have been recently logged and where young coniferous trees have become re-established. The dominant species is Douglas fir.)
5. **Clear-cut** (areas where coniferous forest has been removed through logging and where either there is no regeneration or regenerating trees are under three years old. Other features include stumps, brush piles, dead or downed wood, a possible understory of native shrubs, and a combination of native and non-native herbaceous vegetation.)
6. **Wetlands** (in the 47 wetlands in the study area, typical plant species include red alder, Douglas spirea, salmonberry and slough sedge.)
7. **Roadway and Right of Way** (composed of existing portions of SR 3, SR 302 and Lake Flora Road. Also includes maintained areas of herbaceous non-native vegetation within the right of way.)

3.11.2 Studies, coordination, and methods

The study area extends 150 feet on either side of the current proposed right of way. Additional areas were variously included where additional proposed project elements may be located.

A field verification of vegetation types was conducted in October and December 2011, to ground truth the information previously gathered.

The Vegetation Analysis was done using the following resources:

Aerial photograph; Kitsap County Weed List; Mason County Weed List; WSDOT Geographical Information System (GIS) data; WDNR database; Washington Natural Heritage Program database; Washington Gap Project – Land Cover for Washington State; and Washington State Noxious Weed Control Board.

3.11.3 Are threatened and endangered species found in the project area?

The study area has no known occurrences of plant species listed as threatened or endangered under the ESA or that are candidates for such a listing. There are no plant species of federal concern or species included in the Washington Natural Heritage Program database.

3.11.4 Are noxious weeds present in the study area?

Noxious weeds are found at minimal levels throughout the project area. Noxious weeds are non-native, invasive species and/or plants that contribute to the loss of agricultural production or ecological diversity.

Noxious weeds observed include reed canarygrass, oxeye daisy, St. Johnswort, Canada thistle, bull thistle, Scotch broom, field bindweed, and hairy cats ear.

3.11.5 If the project is not built, how would vegetation be impacted?

There would be no construction related direct impacts under the No Build Alternative. Vegetation would continue to be managed within the SR 3 right of way in its current condition. Management activities would continue to include periodic mowing and selective herbicide application, removal of dead or dying trees and tree limbs that could fall on the roadway, and clearing brush that encroaches on the roadway. These activities affect vegetation by preventing trees from establishing too close to the road and preventing forested areas from developing natural features such as snags and downed wood where there is potential to impact traffic safety. Weed control would continue as needed for noxious weed species as designated by state and county statute.

3.11.6 How would vegetation be affected during construction of the Build Alternative?

Approximately 79.61 acres of vegetated and potentially vegetated land would be permanently impacted by the Build Alternative. The affected vegetated areas are broken down into habitat types – Coniferous Forest (33.04 acres); Regeneration (31.45 acres); Roadways and Right of Way (9.98 acres); Rural and Residential

(6.70 acres); Mixed Forest (4.63 acres); Clear-cut (1.94 acres); Commercial and Developed (1.04 acres); Wetlands (0.81 acres). The total impact acreage above (79.61) excludes Roadways and Rights of Way which are, by definition, already in transportation related use.

Temporary effects to vegetation would also occur outside of the project footprint and within the bypass right of way. These include areas designated to be temporarily affected by construction equipment and areas within 10 feet of cut and fill lines that are designated for clearing and grubbing. The vegetation disturbed or cleared during construction would be restored with native vegetation, and managed to minimize noxious weeds.

No major adverse effects to vegetation are anticipated as a result of the Build Alternative.

There is a potential to introduce additional noxious and invasive species with the road improvements through movement of seeds on construction equipment or vehicles. Use of BMPs would minimize this possibility.

3.11.7 What other effects would occur under the Build Alternative after construction?

With the Bypass built and in operation, the roadsides would be maintained with mowing, weed control, and maintenance of any landscaped areas and wetland mitigation areas (see Wetland section).

WSDOT, Kitsap County, or Mason Counties may apply herbicides to manage invasive non-native species such as blackberry.

3.11.8 Would the project have unavoidable adverse effects on vegetation?

Although the project would result in the permanent conversion of approximately 79.61 acres of potentially vegetated land, this is not considered a significant adverse effect.

3.12 Water Resources

A Water Resources Discipline Report was completed in April 2012. It describes the existing water resources present in the project study area and evaluates potential water resource impacts with and without the proposed project. This study is listed in Appendix B, and it is incorporated by reference into this Environmental Assessment.

3.12.1 What are water resources and why are they important?

The term "water resources" refers to surface waters, groundwater (aquifers and wells), and floodplains. This translates into water quality. Water resources are an important environmental asset to protect as described below:

- Surface waters and floodplains provide valuable wildlife habitat.
- Surface waters are valuable recreation areas.
- Surface and groundwater are sources of drinking water.
- Floodplains are areas where major rain events overflow stream banks to allow natural stream meander.
- Floodplains provide storage for floodwater.
- Water quality is important in maintaining human health, wildlife habitat and vegetation.
- Drainage systems distribute sediment, nutrients and large debris throughout the watershed and provide food plus habitat for aquatic and terrestrial species.

3.12.2 Are there water resources in the study area?

Surface Waters

Stormwater from the proposed Bypass would primarily be infiltrated. Applying this approach to managing stormwater removes any pollutants and contaminants. Since stormwater would not be discharging to surface waters no pollutant loading analysis will be conducted.

The only stream the project would impact is the Unnamed Tributary to North Bay-Case Inlet. Mindy Creek, Belfair Creek, Sweetwater Creek, and Romance Hill Creek cross existing SR 3 to the west but are all outside the 300-foot study area.

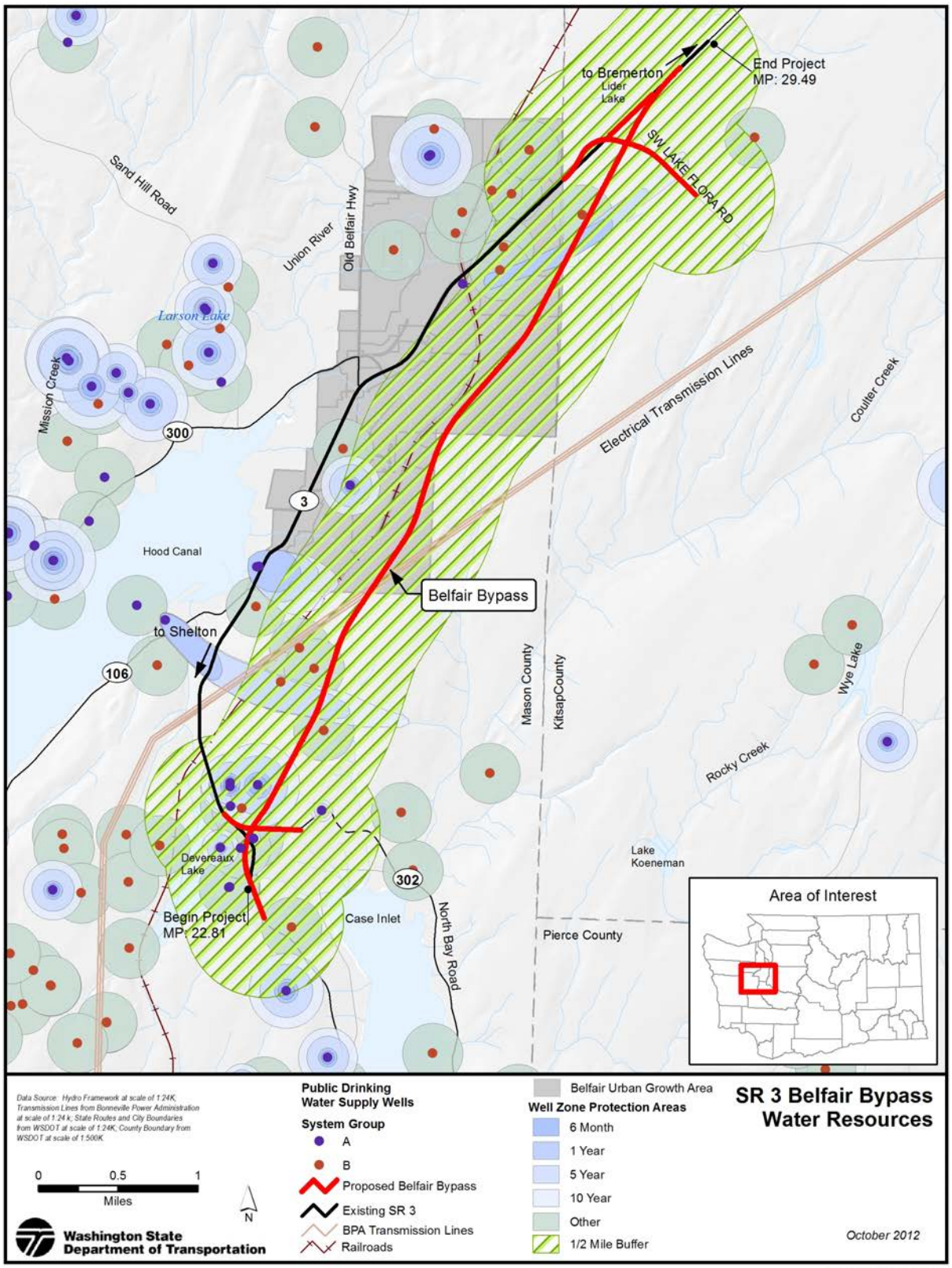
Groundwater

Groundwater in the area serves the community in a handful of ways, the most important of which is to provide clean drinking water to the public. Exhibit 3-7 depicts type A and type B wells located near the project. There are 27 wells within a half mile radius of the project limits. Type B wells are defined in WAC 246-291 and are generally private wells. Type A wells are defined in WAC 246-290 and provide water for a larger population than type B wells.

There is the possibility a water tank and a well house situated on property owned by the Church of Latter Day Saints, located at the intersection of SR 3 and SR 302 could be displaced due to right of way requirements. If construction requirements cause a temporary or permanent disruption to this or any other public water source, the WSDOT will provide an alternative source of water.

Currently, there are no storm water treatment facilities within the project limits. Presently, roadside ditches collect runoff from the existing SR 3 roadway at the connection points of the new alignment.

Exhibit 3-7: Water Resources Map



Floodplains

The assessment of floodplains consisted of reviewing available information on the 100 year floodplains in the project study area. It has been determined the project area does not lie within a 100 year floodplain.

3.12.3 Studies, coordination, and methods

The study area for this discipline is the centerline of the proposed Belfair Bypass to roughly ½ mile on either side. This accounts for the potential effects to water wells in the project vicinity

WSDOT designs roadway improvements to anticipate the effect of the additional pavement on stormwater runoff quantities and water quality. These effects from the Belfair Bypass are expected to occur, and are presented in the Water Resources Discipline Report. Stormwater runoff was calculated from the additional paved areas. WSDOT would provide water quality treatment for an area equal to the new impervious surface as a minimum.

3.12.4 What regulations do we follow when dealing with water resources?

The federal Clean Water Act is the primary federal regulatory mechanism for addressing water quality.

The Clean Water Act Section 401 deals with discharges to waters of the United States that is subject to a federal permit. It requires certification that the discharge would not violate water quality standards. This regulation is enforced by the State Department of Ecology (WDOE) and the Federal Environmental Protection Agency (USEPA).

The Clean Water Act Section 402, National Pollutant Discharge Elimination System (NPDES) covers discharges from point sources, municipal storm systems, and construction areas. WDOE is the lead agency to enforce this regulation.

The Water Pollution Control Act (RCW 90.48) is the primary water pollution law for Washington State. Discharge of pollutants into waters of the state is prohibited unless authorized.

The State of Washington Growth Management Act (GMA), 1990, requires the designation and protection of critical areas such as wetland, fish and wildlife habitat, aquifers and geologically hazardous areas such as steep slopes and areas that flood frequently.

The State of Washington Shoreline Management Act (SMA), 1971, requires local governments to protect shoreline functions of streams that have a flow rate greater than 20 cubic feet per second (CFS), including environmental functions such as fish and wildlife habitat.

The State of Washington Hydraulic Code is administered by the Washington Department of Fish and Wildlife (WDFW). It requires a permit for work that would affect the bed or flow of any state waters. It contains rules that protect all fish, not just the listed species.

The Water Resources Act of 1971 (RCW 90.54) outlines the fundamentals of water resource policy for the state to ensure waters are protected and fully used for the greatest benefit to the citizens of Washington. The Act provides direction to WDOE and local governments in implementing water resource programs.

The Total Maximum Daily Loads (TMDLs) WDOE 303d listings (2008) determine the amount of pollutant loading that a given water body can receive and still meet water quality standards.

3.12.5 What effects would result under the No Build Alternative?

Under the No Build Alternative, the Bypass would not be constructed; therefore there are no construction impacts.

From an operational standpoint, the No Build Alternative would cause the Level of Service to deteriorate due to increased congestion. In addition, the increased traffic would continue to degrade water quality and aquatic habitats and may increase contaminants entering groundwater.

3.12.6 How would water resources be affected during construction of the Build Alternative?

Surface Water

For the Build Alternative, work below the Ordinary High Water Mark (OHWM) is anticipated to occur that may include culvert installation and possible wetland impacts. During construction, best management practices would be developed and implemented to assure that all water quality related commitments, regulations and permit conditions are met.

The proximity of construction vehicles to water resources increases the risk of foreign materials contaminating water resources. This risk would be minimized through the implementation of Best Management Practices (BMPs).

Spills or leaks of hazardous materials could occur within the project limits where construction equipment is parked, used, fueled, or maintained; where infrastructure is renovated or constructed; and where hazardous materials are stored. In addition, concrete leachate may be generated during roadway and bridge construction. If these substances enter waterways, they may degrade water quality, resulting in negative effects on aquatic resources, including fish and the species upon which they feed.

Construction activities during the wet winter months would increase the risk of construction runoff into waters of the State. Impacts from construction activities during wet weather increase the risk of erosion hazards and negative effects to areas with unstable slopes. Construction during the summer months, when there is very little rainfall, would reduce these risks. Activities that pose a greater threat to water resources would occur in dry weather as practical, to minimize these risks.

Construction ground-clearing activities would have the temporary impact of exposing soils to erosive forces. Soil loss from erosion could affect surface water resources and associated habitat by adding suspended solids and increased turbidity into receiving streams. To minimize exposure of open soils to erosion, excavation would occur only where necessary, and exposed soils would be protected by various BMPs which

protect soil from erosion. Advanced planning would ensure a comprehensive erosion control plan and compliance with various environmental permits.

Storm water culverts pass beneath the project area. Most of these would be installed during the summer months when there is little or no flow in the stream. In those cases where the work is being done while there is water flowing through the culvert, a temporary dam and pump bypass system would likely be installed prior to the start of any work activities and remain in place for the duration of the culvert installation. In addition, BMPs would be in place to control any turbidity increase.

Compensatory mitigation would occur to compensate for the 0.81 acre of permanent wetland impacts. Additional mitigation would also need to be conducted to compensate for the 5.88 acres of permanent buffer impacts. The mitigation approaches that may be used include concurrent mitigation, advance mitigation, mitigation banking, and in-lieu fee. Types of mitigation that may be used include re-establishment, rehabilitation, establishment (creation), enhancement, and preservation.

Groundwater

Construction activities that require removal of vegetation could potentially affect groundwater resources with less infiltration. Spills from construction equipment may enter shallow aquifers if not controlled properly.

Floodplain

The proposed project is outside the mapped floodplain boundaries and is not anticipated to change floodplain or flooding characteristics throughout construction.

3.12.7 What other effects would occur under the Build Alternative after construction?

Operational effects may result from stormwater runoff, landscaping maintenance activities, and spills from vehicle accidents. Pollutants in stormwater runoff from roadways typically include suspended solids, nutrients, toxic metals, biochemical oxygen demand, oil, and grease. The preferred method for flow control/ runoff treatment is natural dispersion and infiltration. The majority of this project proposes to provide flow control and treatment by natural dispersion and infiltration. Roadway runoff would sheet flow off the paved surfaces onto the constructed vegetated slopes and existing natural areas within WSDOT Right of Way. If any areas are unsuitable for natural dispersion a different BMP would be used i.e. CAVFS, Media Filter Drain and as a last resort, ponds.

3.12.8 How would we offset the effects to water resources during construction?

The construction impact area would be minimized to the extent possible. To this end, the design intent is to minimize impacts to wetlands, existing wells, other water resources, and to design the Unnamed Tributary to North Bay Bridge such that the bridge footings and piers would be placed above the Ordinary High Water Mark to avoid stream impacts.

Spill Prevention Countermeasure Control (SPCC) measures would be developed by our contractor and implemented to help prevent construction related impacts to water quality. Spills would be controlled by measures outlined in this plan.

Any discharge of construction stormwater to waters of the State would conform to the requirements of a National Pollutant Discharge Elimination System (NPDES) permit to be obtained from Ecology. Testing for water quality would be conducted per the NPDES permit for removal of contaminants and restoration of treatment systems. The NPDES permit requires preparation of a Storm Water Pollution Prevention Plan (SWPPP). These measures, in addition to Best Management Practices (BMPs) would minimize or avoid effects on water quality during construction.

3.12.9 Would the project have unavoidable adverse effects on water resources that could not be fully mitigated?

As discussed above, many measures would be employed to protect the different forms of water resources. Compliance with permit conditions, utilization and maintenance of BMPs, advance planning and adaptive management would ensure that any adverse effects to water resources, including surface water, groundwater, stormwater, wetlands, and floodplains would be minimized.

In considering potential impacts on a watershed scale, it is not anticipated that this project would have a noticeable impact on water resources.

3.13 Land Use and Farmland

A land use and relocation discipline Report was completed in December 2011. It describes the existing land use and farmland present in the project study area and evaluates potential land use and farmland impacts with and without the proposed project. This study is listed in Appendix B, and it is incorporated by reference into this environmental assessment.

3.13.1 What types of land use are in the study area?

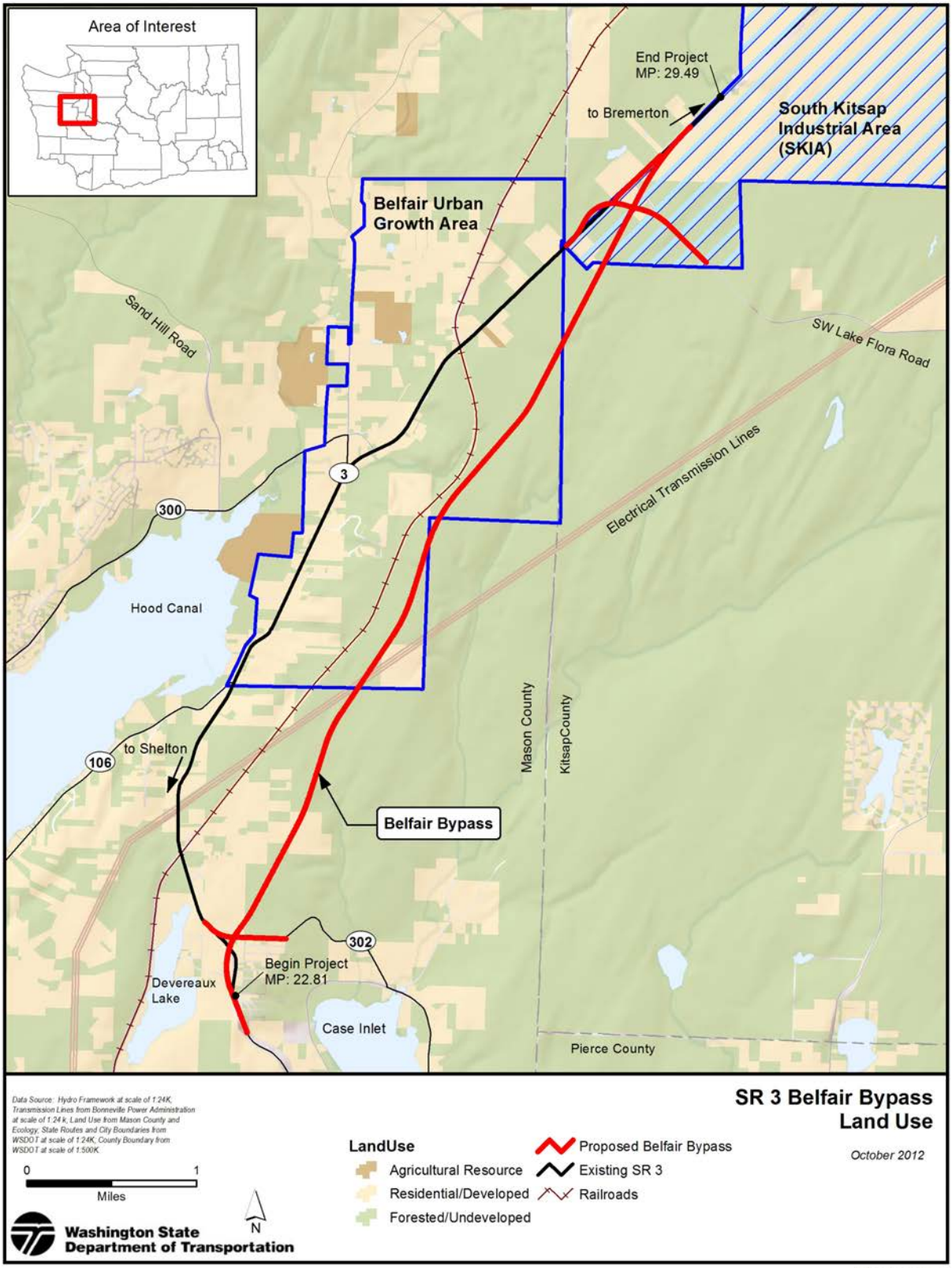
The Bypass project passes through a variety of land use zones and types within the 6.68-mile project study area. The study area lies primarily within a rural environment while passing through the unincorporated Belfair urban growth area and terminating within the South Kitsap Industrial Area recently annexed into the City of Bremerton. Much of the area in both Mason and Kitsap Counties is undeveloped forested land.

Urban Growth Area (UGA)

An area defined by a county to accommodate projected population growth.

Land use types in the study area include residential/ developed, forested/undeveloped, and agricultural resource lands. (See Exhibit 3-8.)

Exhibit 3-8: Land Use Map



3.13.2 What are the currently adopted regional and local land uses and transportation plans in the study area?

Growth Management Act (GMA) (1990) – identifies urban growth area among other items. GMA also specifies that transportation projects be identified and constructed concurrent with future development projects. The Build Alternative is identified in the County Plans shown below.

Washington Transportation Plan (WTP) (2030) – is a blueprint for transportation programs and investment as adopted by the state Transportation Commission. It forms the long-range plan for the state's transportation system.

Washington State Highway System Plan (HSP) (2007-2026) – addresses current and forecasted state highway needs based on the investment options identified in the WTP. The HSP identified the proposed Belfair Bypass project as a Tier III mobility strategy to address a mobility deficiency.

Peninsula Regional Transportation Planning Organization (RTPO) Regional Transportation Plan – is a regional plan that recognizes that the state highway system provides the backbone of the regional road system and serves multiple purposes and accommodates different types of travel. SR 3 is identified as one of the primary regional links for the Olympic Peninsula.

Puget Sound Regional Council VISION 2040 – is responsible for developing the regional transportation and land use vision for King, Kitsap, Pierce, and Snohomish counties. VISION 2040 is PSRC's long-range growth management and transportation strategy for the Puget Sound region. The policies described in VISION 2040 are carried forward in the comprehensive plans and policies of Kitsap County.

PSRC Transportation 2040 – is an action plan for transportation in the central Puget Sound region for the next 30 years. By the year 2040, the region is expected to grow by roughly 1.5 million people and support more than 1.2 million new jobs. Transportation 2040 identifies investments to support expected growth and improve the service that transportation provides to people and businesses, lays out a financing plan that suggests a long-term shift in how transportation improvements are

funded, with more reliance on users paying for transportation improvements, and proposes a strategy for reducing transportation's contribution to climate change and its effect on important regional concerns such as air pollution and the health of Puget Sound. The strategies, programs, and projects described in Transportation 2040 are carried forward in the comprehensive plans and policies of Kitsap County.

Mason County Comprehensive Plan (2005) – is the county's policy plan to guide growth and development through the year 2025. The plan establishes three general types of performance districts; urban growth areas, resource lands and rural lands. Mason County is predominately a rural county; therefore the plan focuses on maintaining rural character as the County moves forward to accommodate growth. Rural lands are those lands outside of the UGAs, but are not designated as resource lands.

There are three UGAs, Shelton, Belfair and Allyn, of which Shelton is the only incorporated UGA in the county. Unincorporated Belfair is the primary commercial center in the northeast corner of North Mason County. Forestry is the primary land use within the UGA, accounting for 40 percent of the area's total land.

Belfair Urban Growth Area Plan – is comprised of approximately 2,400-acre area around and including the unincorporated community of Belfair, to accommodate projected growth to the year 2025. Belfair serves residents within the larger rural geographic area with a population of approximately 23,000. The plan is the reflection of the community's vision for Belfair.

Kitsap County Comprehensive Plan – is the county's policy plan to guide growth and development. The portion of the study area within Kitsap County is dominated by rural land use and the South Kitsap Industrial Area. The South Kitsap Industrial Area UGA was incorporated into the City of Bremerton in 2009. Kitsap County's comprehensive plan identifies rural lands for rural development and protection of rural character. These lands are located outside of UGAs.

City of Bremerton Comprehensive Plan (2008) – provides general policy direction for promoting economic growth and attracting new employment opportunities Citywide. The City

amended the Comprehensive Plan in 2008 to add the "SKIA Manufacturing/Industrial Center (SKIA MIC)" as a new center type. The MIC land use designation was also adopted as part of the City's 2008 comprehensive plan amendment and applied to SKIA. The MIC designation accommodates large scale and heavy industrial and manufacturing uses that cannot be easily mixed with other activities. Its focus is on providing regional growth opportunities for industrial development.

The City is currently in the process of developing a subarea plan along with an Environmental Impact Statement (EIS) for South Kitsap Industrial Area. SKIA, located in southwest Bremerton contains almost 3,600 acres planned for industrial development and use. Existing development of SKIA includes the Bremerton National Airport, the Olympic View Industrial Park and other industrial and commercial uses scattered within its boundaries. The subarea plan will establish goals and strategies that support the planned industrial center.

Mason County Shoreline Master Program – provides the policy framework for management of those Mason County shorelines under the jurisdiction of the Washington Shoreline Management Act. The County is in the process of updating its SMP.

Kitsap County Shoreline Master Program (2010) – provides the policy framework for management of those Kitsap County shorelines under the jurisdiction of the Washington Shoreline Management Act.

3.13.3 Studies, coordination, and methods

The study area for this discipline report is the land area extending approximately one half mile in all directions of the project limits. There are no active commercial farmlands within proximity of the proposed Bypass. The undeveloped land within the proposed project area is primarily forest covered.

Kitsap and Mason Counties zoning plans were field checked to ensure accuracy with current conditions.

3.13.4 What regulations do we follow when dealing with land use and farmland?

We show in Section 3.13.3 that the Build Alternative is in conformance with the Kitsap and Mason County's comprehensive plans and the various other planning documents.

When the conversion of farmland to transportation purposes is proposed, as we have in the construction of the proposed bypass, evidence of coordination is required with the National Resource Conservation Service (NRCS). Two Farmland Conversion Impact Rating forms (CPA-106) were completed by WSDOT and NRCS for Kitsap and Mason Counties. They are contained in the discipline report. Through the Bypass corridor they show that the amount of farmland to be converted in both counties accounts for only 0.01 percent of the farmland in Mason County and 0.02 percent in Kitsap County, per the FPPA.

3.13.5 What effects would result under the No Build Alternative?

Under the No Build Alternative, the proposed project would not be constructed, therefore no property would be purchased for right of way and no subsequent conversion of land use would occur. The reasonably foreseeable future actions would still occur under the No Build Alternative, some of which would contribute to a cumulative effect on land use, of which the Belfair waste water reclamation project would be a major factor. Currently, development within the Belfair UGA cannot meet the zoning allowances without the necessary sewer service and local transportation infrastructure.

According to the Belfair/Lower Hood Canal Water Reclamation Facility Plan EIS, establishment of wastewater service within the Belfair UGA "would result in an almost immediate increase in new construction and ultimately in an increase in impervious surface area" (p. 4.3-18). The wastewater reclamation facility itself is expected to convert 30 acres to accommodate the wastewater reclamation facility site, storage pond, and irrigation area. The site is south and east outside the Belfair UGA.

3.13.6 How would land use and farmland be affected by the Build Alternative?

A total of approximately 92 parcels would be directly impacted by the Build Alternative, depending upon the project's final design. Sixty-six percent (61 parcels) of the impacted parcels are located in Mason County. Of the parcels located in Mason County, 34 percent (21 parcels) are located in the unincorporated Belfair UGA. Sixty-one percent of the impacted parcels in Kitsap County are located within the Bremerton city limits.

There are no active commercial agricultural activities located within the study area in both Mason and Kitsap Counties. Therefore, no anticipated effects to agricultural activities during construction and no operational effects are anticipated.

Temporary impacts during construction would result from increased noise, dust, and traffic congestion. Vehicle delays would occur particularly as the result of lane reductions established to provide work zones. Other impacts as a result of construction would include access to businesses and/or residences, and vehicle delays or detours. Short and long-term shoulder and lane closures may be necessary. The Build Alternative would require construction along SR 3 during the building of the southern and northern termini reconnecting the proposed bypass to the current SR 3 alignment.

While it is not anticipated that construction would result in the loss of property within adjoining land use zones, the function of adjacent properties for applicable land uses may be diminished or precluded until construction activities are completed. While it is difficult to predict the extent of this potential impact, it is not expected to result in any changes to land uses.

3.13.7 How would we offset the effects to land use and farmlands during construction?

Affected businesses and residences would be notified of construction activities in advance (including any necessary closures, lane reductions, etc.). Reasonable efforts would be made to ensure that traffic flow is maintained and negative effects on land use and access revisions are minimized.

To reduce the potential for unplanned local growth and development that could result, in part, from potential cumulative effects due to the Build Alternative, Mason County and Kitsap Counties and the City of Bremerton could strive to retain the current urban boundaries as well as current zoning and density limitations in the rural areas as opposed to allowing greater densities in these areas. The SKIA Subarea Plan under development would assist in focusing growth and development in the Bremerton city limits and allow Kitsap County to maintain rural zoning and low densities adjacent to the urban area.

Mitigation for the Build Alternative's impacts on wetlands is discussed under Section 3.8 in this Chapter.

Since the Build Alternative is consistent and compatible with state, local and regional plans and regulations, no mitigation would be required for compliance.

3.13.8 Would the project have unavoidable adverse effects on land use and farmland that could not be fully mitigated?

The Build Alternative would not have any substantial effects on land use in the study area. Though the proposed bypass would have an impact on land use in both counties, these impacts have been considered in local planning efforts through land use and zoning designations and growth management in accordance with GMA. The Build Alternative is consistent with regional and local plans.

3.14 Recreation Lands

A land use and relocation discipline Report was completed in December 2011. In addition to addressing land use and farmland, it describes and assesses potential impacts to recreational lands with and without the proposed project. This study is listed in Appendix B, and it is incorporated by reference into this environmental assessment.

3.14.1 Studies, coordination, and methods

Recreation facilities and resources in close proximity to the study area include a variety of parks, camps, recreation wildlife areas,

and public school facilities. This section includes information for recreation facilities and resources within a study area of approximately one half mile in all directions of the project limits.

3.14.2 What regulations do we follow when dealing with recreation lands?

Section 4(f) of the Department of Transportation Act of 1966, codified in Federal Law at 49 U.S.C. §303, declares that it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges and historic sites.

Section 4(f) specifies that the Secretary of Transportation may approve a transportation program or project requiring the use of publically owned land of a public park, recreation area, or wildlife and waterfowl refuges of national, state or local significance, or land of an historic site of national, state or local significance only if:

1. There is no feasible and prudent alternative to using the land; and
2. The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuges, and historic sites.

Recreation resources that are acquired or improved with Land and Water Conservation Funding are also protected under Section 6(f) of the Land and Water Conservation Fund Act as stated in FHWA Technical advisory T6640.8A. The Bypass would not impact Section 6(f) resources.

3.14.3 What Section 4(f) resources and other recreation facilities are located within the study area?

Section 4(f) Resources:

Three Section 4(f) resources were identified within the study area. They are described below and shown on Exhibit 3-9.

Devereaux Lake Access

The 1.3 acre Devereaux Lake Access is located about one quarter mile west of the southern terminus of the proposed Belfair Bypass (Exhibit 3-9). The Washington Department of Fish and Wildlife maintains a public access on the northeast shore of Devereaux Lake. There is a paved boat launch, beach access, and parking for about 40 vehicles. The lake offers fishing for rainbow trout and kokanee salmon.

Hawkins Middle School

The Hawkins Middle School is a 4(f) resource located at the northern end of the Campus Drive which connects High School Road and existing SR 3 (Exhibit 3-9). Middle school recreation facilities include tennis courts, baseball fields, football fields, soccer fields, a play ground, and track fields. The public uses the facility for recreation and organized events. The middle school property is located about one quarter mile west of the main alignment.

North Mason High School

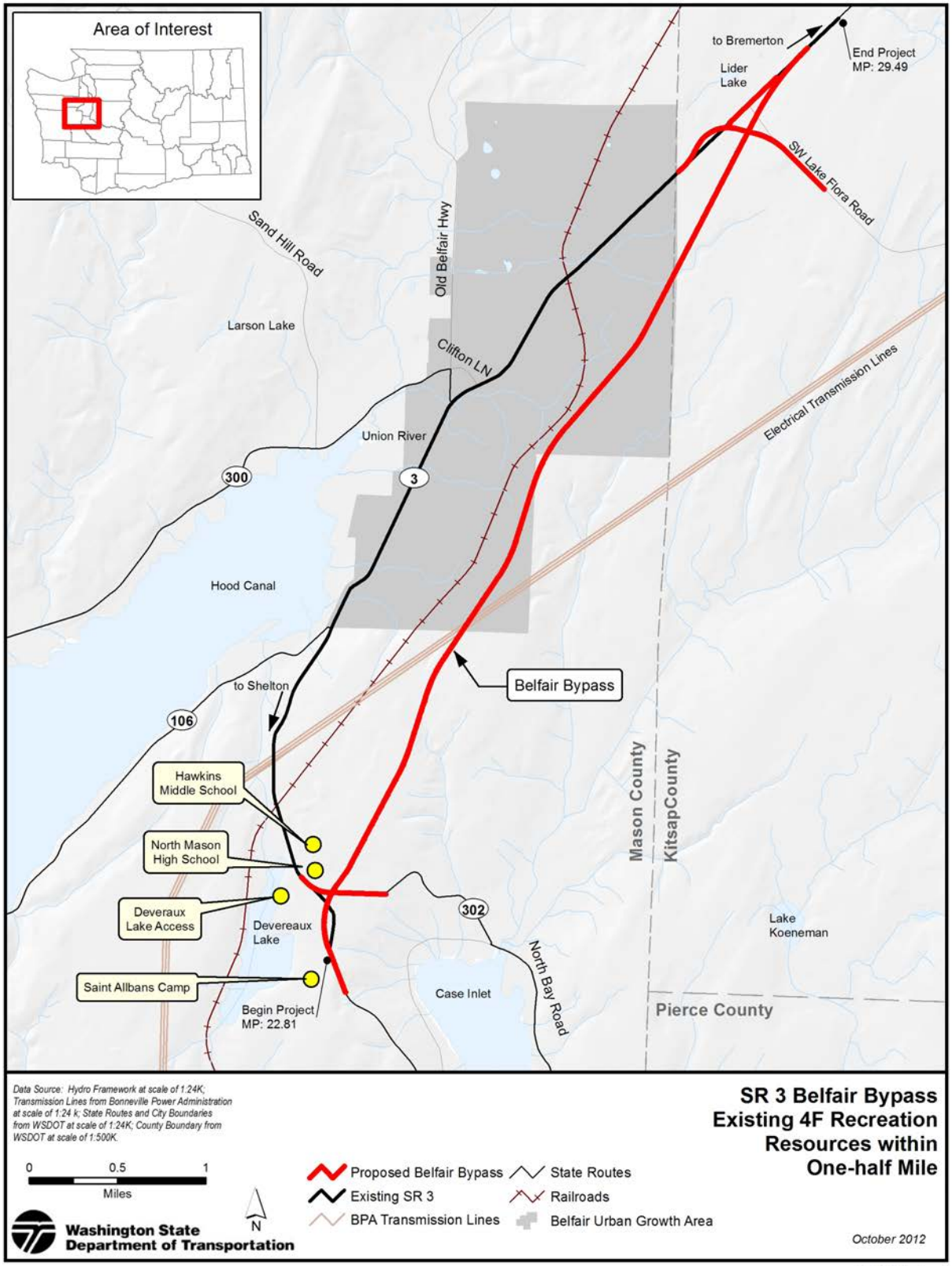
North Mason High School is a 4(f) resource located northwest of the SR 3 and SR 302 intersection (Exhibit 3-9). The total area of school property is about 78.30 acres. The school recreation facilities include ball fields, track and field facilities, and tennis courts that are being used by the public and organized groups.

Non-4(f) Recreation Resources:

Saint Albans Camp

The Saint Albans Camp is located on the southeastern shore of Devereaux Lake and is over 400 acres in area (Exhibit 3-9). The privately operated camp has been run by the Pacific Peaks Girl Scout Council since 1995. This recreational facility is located about a quarter mile west of the southern terminus of the proposed Bypass. It is a year around facility for boating, swimming, hiking, horseback riding, and general art & crafts. Saint Albans Camp does not qualify as a Section 4(f) resource because it is privately owned.

Exhibit 3-9: Section 4(f) resources within one-half mile of the project limits



3.14.4 What effects would result under the No Build Alternative?

Under the No Build Alternative, the proposed project would not be constructed, therefore no property would be purchased for right of way and no subsequent conversion of land use would occur. The reasonably foreseeable future actions would still occur under the No Build Alternative, some of which could contribute to a cumulative effect on land and recreational resources.

3.14.5 How would recreation lands be affected by the Build Alternative?

Impacts to Section 4(f) Resources:

Devereaux Lake Access

The Build Alternative will not result in use of this resource.

Hawkins Middle School

The Build Alternative will not result in use of this resource.

North Mason High School

Proposed impacts to 4(f) resources include a 0.65 acre portion of a baseball/soccer facility at North Mason High School (Exhibit 3-10). The proposed impact would occur just north of the proposed SR 3 / SR 302 intersection near the southeast corner of the school property. Other 4(f) resources on the school property not proposed to be affected by the project include track and field facilities and a tennis court.

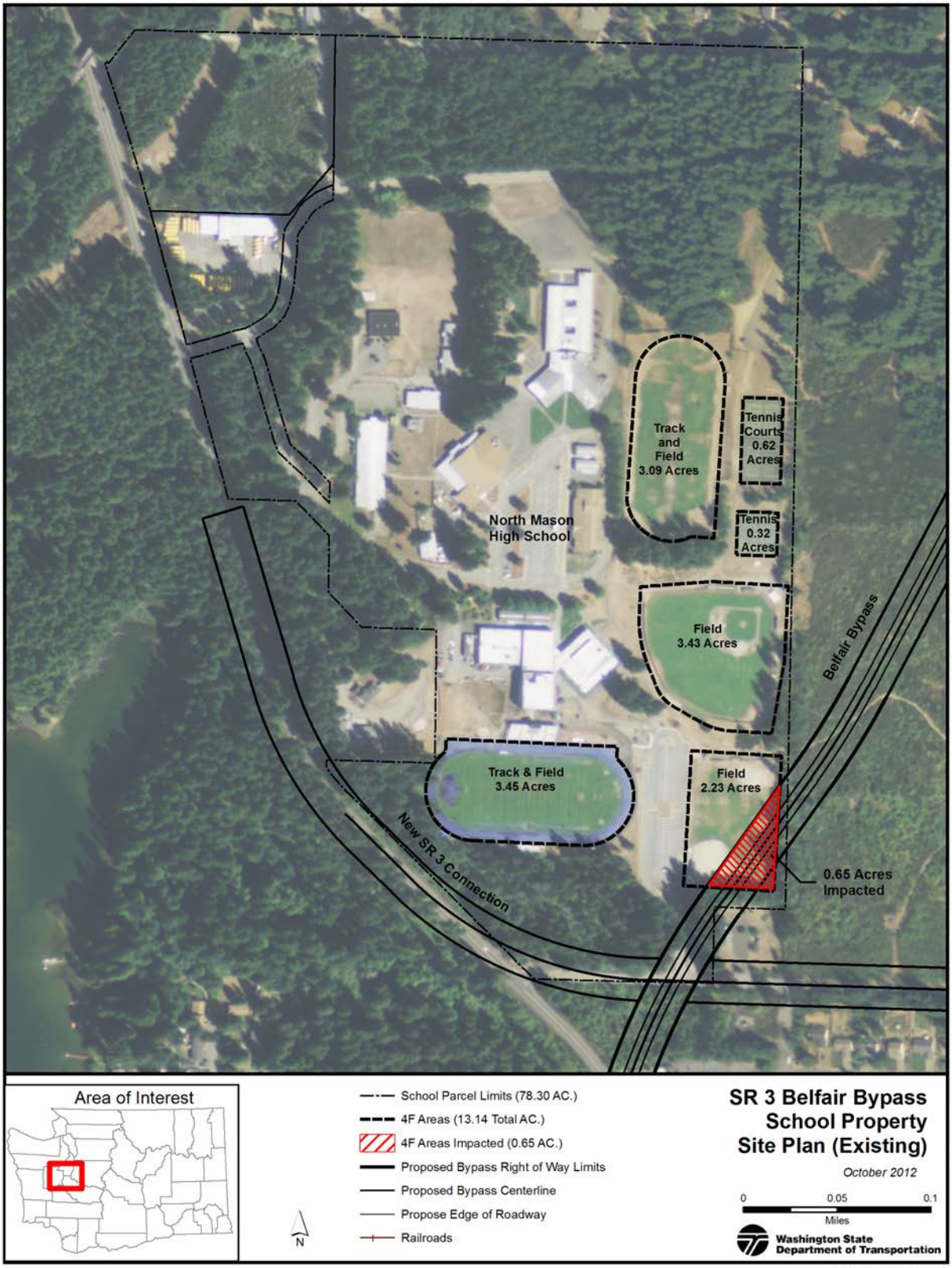
FHWA has determined that after mitigation, the use of the North Mason High School property is de minimis as defined in 23 CFR 771.17, in that it will not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f).

Impacts to non-4(f) Recreational Resources:

Saint Albans Camp

Impacts to non-4(f) resources include a five-acre portion of the 400 acre St. Albans Camp. The potentially affected area comprises 0.05 percent of the total camp property and no areas of the camp specifically used for recreational activities would be affected.

Exhibit 3-10: Proposed Section 4(f) Impacts



3.14.6 How would the effects to Section 4(f) lands be avoided, minimized, or mitigated?

Avoidance and Minimization

All prudent measures have been considered to minimize harm and to provide necessary mitigation of Section 4(f) property as summarized below.

1. To reduce the cost and environmental impacts, WSDOT would purchase right of way only for a two lane roadway instead of a four-lane roadway. Originally, it was decided to purchase right of way for four lanes.
2. The alignment near the North Mason High School has been designed in such a way that the least amount of 4(f) property is impacted. The alignment passes through the southeast corner of the property.

Mitigation

Representatives from WSDOT met with the North Mason School District representatives and explained potential impacts of the SR 3 Belfair Bypass project to the North Mason High School. The School District Superintendent and other district representatives understand that the preferred bypass alignment takes a portion of the ball field, drain field, and adjoining parking area.

Mitigation related to the impacts was discussed during those meetings. Suitable areas for replacing the lost recreation functions were identified both on existing school property and on an adjacent ~40 acre property to the east of the North Mason High School property. WSDOT and the North Mason School District representatives agreed in writing that the WSDOT will replace the function and use of impacted ball fields, drain field, and the parking at mutually agreed upon locations when the project is funded for construction. The replacement will be provided prior to 4(f) impacts unless the school district agrees in writing that removal of the ball field will not negatively impact activities that qualify the site as a 4(f) resource. The letter showing the agreement and signed by the Superintendent of North Mason School District is attached in Appendix J.

3.15 Relocation

A land use and relocation discipline report was completed in December 2011. It describes the existing residential and commercial locations in the Bypass project study area and evaluates potential relocation impacts with and without the proposed project. This study is listed in Appendix B, and it is incorporated by reference into this environmental assessment.

3.15.1 Studies, coordination, and methods

A current site inspection of the entire project study area was conducted to verify existing land uses on a parcel by parcel basis. Each parcel was examined to determine if either alternative would prevent or limit the ability to use property for an existing or allowed land use.

The study area for the analysis extends approximately one half mile in all directions of the project corridor centerline. The affected environment includes the footprint of the project and all areas where effects could occur.

Research was made into what replacement residences and commercial buildings are available in the area. This is discussed later in section 3.15.6.

3.15.2 What regulations do we follow when dealing with relocations of residential and commercial property?

Where right of way acquisition is needed, the acquisition and relocation program would be conducted in accordance with the federal Uniform Relocation and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources are available to all relocated residents and businesses without discrimination.

Chapters 8.08, 8.25, and 8.26 of the WAC would govern right of way acquisition proceedings. These laws ensure fair and equitable treatment of those displaced. They also encourage and expedite acquisition of property by negotiation.

In addition, the State of Washington Uniform Relocation and Assistance and Real Property Act of 1970, as amended, provides for payment of reasonable and necessary costs to relocate people,

businesses, or farms displaced for all build alternatives. This law protects both tenants and owners. It requires provision of advisory services on available housing; ensures prompt fair relocation payments; requires agency review of grieved parties; and provides for relocation assistance payment for necessary moving expenses.

Prior to initiation of acquisition proceedings, state law may provide for payment of necessary increased mortgage interest cost and closing costs for replacement dwelling purchase and for supplemental assistance when necessary for purchase or rental of replacement housing.

3.15.3 What effects to relocation would result under the No Build Alternative?

The No Build Alternative would not result in any construction related effects on the project area. No new right of way would be acquired, and no relocations would occur.

3.15.4 What effects to relocations would result by the Build Alternative?

Pending final design, an estimated four residential units could be displaced, three single-family residences along with associated out buildings (sheds, garages, barns, etc.) and one single-wide mobile home. One of the single family residences and the one mobile home are located in Kitsap County at the northern terminus along Lake Flora Road. The remaining residences are located on the south side of the proposed alignment in Mason County. One is on East Alta Drive and the other is located on SR 302 (Victor Cutofff Road).

No displacements are identified due to increased noise levels and no displacements of businesses are anticipated.

3.15.5 What other effects would occur under the Build Alternative after construction?

A water tank and a well house situated on property owned by the Church of Latter Day Saints, located at the intersection of SR 3 and SR 302 could be displaced due to right of way requirements.

3.15.6 Are replacement housing and commercial business sites available in the study area?

The right of way acquisition and the relocation process is summarized in Appendix F of this EA.

Consistent with the Uniform Relocation Assistance & Real Property Acquisition Policies Act of 1970, relocation of displaced residents/businesses considers the availability of residences similar in cost and access to services as the displaced residences/businesses. Appendix F provides further details regarding the WSDOT's Right of way Acquisition Process.

Replacement housing

Review of the project study area's housing in Mason and Kitsap Counties was conducted by the WSDOT Olympic Region Real Estate Services Office, in August 2011. The area was surveyed for the availability of single family homes and commercial properties for sale in Mason and Kitsap County. A search of the Northwest Multiple Listing Service and the Commercial Brokers Association for currently available residential and commercial properties; the search area was limited to a one mile radius along the proposed alignment. The search identified a total of 24 single family units including site built, manufactured homes and individual condo units were found for sale offering from two to five bedrooms.

It is likely that comparable housing is available throughout the study area.

Relocation of displaced residents depends on the availability of residences similar in cost and access to services as the displaced residences.

Commercial business

Available commercial properties within this limited area include a total of three properties of which one is vacant land; the other two are office/retail improved properties. The proposed alignment is through a fairly rural area with the northeast end of the project about five miles southwest of the Bremerton-Port Orchard area. Expanding the search for commercial properties to a 5-10 mile radius would encompass the Central Business Districts of both of these cities and greatly expand the number and range of available office, retail and industrial commercial properties to more than 100 properties for sale or lease.

3.15.7 Would the project have unavoidable adverse effects on housing and business property availability that could not be fully mitigated?

Four private residences would be relocated, but the state would work with affected occupants to ensure that appropriate replacement housing opportunities are made available to any displaced resident in the project area.

The project would not have unavoidable adverse effects regarding relocation that could not be mitigated.

3.16 Social, Economics, and Environmental Justice

A socioeconomic and environmental justice discipline report was completed in April 2012. It describes the existing conditions in the project study area and evaluates potential impacts with and without the proposed project in 2035. This study is listed in Appendix B, and it is incorporated by reference into this environmental assessment.

3.16.1 What is environmental justice and how do we deal with it?

The environmental justice evaluation determines whether low-income populations or minority populations would suffer disproportionately high and adverse effects of an action. This means that:

1. Low-income populations or minority populations would predominately bear the adverse effects; or
2. Low-income populations or minority populations would suffer the effects and the effects would be considerably more severe or greater in magnitude than the adverse effects suffered by the general population.

If either of these results is discovered, the evaluation goes on to determine whether the project would have beneficial effects for low-income populations and minority populations that would offset any high and disproportionate adverse effects.

The goal of environmental justice is to protect the rights of and to engage those groups who have traditionally been underrepresented in the project development process. Therefore,

we strive to provide meaningful opportunities for involvement in the decision-making process, regardless of race, color, national origin, or income. All potentially affected communities will have opportunities to participate, and their contributions and concerns will be considered fairly. We want to identify factors that could interfere with full and fair participation by all potentially affected communities in the transportation decision-making process, such as access and language and then recommend measures to remedy those barriers. This section identifies any adverse effects of the proposed project and whether minority populations and low-income populations would bear disproportionately high and adverse effects. If yes, we then recommend measures to avoid, minimize, or mitigate those effects.

For environmental justice, the two primary areas of focus are the demographics (are there minority populations or low-income populations in the study area?) and public involvement (how did we involve the public in the transportation decision making process?).

Demographics

Demographic information was retrieved from the 2010 Census, from the Washington State Office of Financial Management, and from the 2009 Washington State Data Book.

Data indicates the presence of minority persons and of low-income persons within the study area, although no identifiable geographical area of predominately minority population or low-income populations is present. Other than White, the highest percentage of any racial group present in these block groups is Hispanic or Latino (of any race) in Mason County (8.7%) & Asian in Kitsap County (6.2%).

Public involvement

Public interaction is essential to involve all populations in the study area to assist in making transportation decisions. The project has a long history of public involvement with the Bypass. The project has been before the public for many years as part of the 2001 environmental assessment (prepared for Mason County). It generated a great deal of public involvement efforts, including open houses, newsletters, public presentations, media

information and public displays. In 2006, a new proposal for further study produced additional public outreach. The public involvement activities since that proposal are as follows:

- October to December 2006: Meetings were organized with individuals and groups.
- January 2007: An Open House was held at the Theler Center in downtown Belfair. The community was well represented at this event. This event focused on the history of the project and showed the design alternatives on the north and south ends of the project.
- April 2007: Another Open House was held at the North Mason High School Gym which had a large area to accommodate more people. The main topics for the open house were to revisit alternatives discussed in the previous open house and to inform the public about progress.
- October 2007: The third open house was also held at the North Mason High School Gym. This open house discussed the alternative chosen for the end connections.
- 2007: WSDOT organized several meetings with individuals and groups to explain the project. Some of the meetings were with The Kiwanis, the Belwood Community, the Alta Vista Community, The North Mason Chamber of Commerce and The Kitsap County Chamber of Commerce.
- In 2008, WSDOT began informing property owners along the Belfair Bypass alignment of upcoming activities such as surveying.
- In 2010, WSDOT staff conducted a public outreach process in order to identify design alternatives that have the potential to reduce the cost of the project and still meet the community's needs. A town hall meeting was held March 17, 2010 at the North Mason High School gym to provide an open forum for community members. A survey was available at this meeting, as well as on the project web site. The Belfair Bypass 2010 Proviso Report to the Washington State Legislature states in the conclusion: "The majority opinion expressed by the community was they want a bypass and they want it soon."
- August 2011: WSDOT sent notices to selected property owners and informed them about the survey activities needed for environmental studies.

Upcoming public involvement activities:

- March 12, 2013: An open house and environmental hearing will be held to provide information on the project design and for the public to provide comments on the NEPA environmental assessment.

Public involvement is also addressed in Chapter 5 and in Appendix I.

3.16.2 What are the existing conditions in the study area and how were they assessed?

Data Collection

Data was collected from visiting the project area and review of aerial photographs, U.S. Census Bureau data and school district data, GIS data, county assessor maps for parcel data, local planning documents, data from Washington State Departments of Revenue and Employment Security, and Washington State Office of Minority and Women's Business Enterprises for listed businesses.

The Washington State Office of Superintendent of Public Instruction updates their data once a year. The most recent school year data is 2007-2008. This data reflects the general population in terms of minority groups, low-income percentages, and Limited English Proficiency.

For social, economic, and environmental justice analysis, the study area extends one half mile in all directions from the project limits.

The Bypass is approximately 80 percent in Mason County, and 20 percent in Kitsap County. The following information regarding the population within the Study Area, is based on Census Tract-level and school district-level statistics.

Social

The highest percent of minority population in any one census tract-block in the study area is Asian at 6.0 percent (Kitsap County Census Tract).

The Limited English Proficiency population in the study area as a whole is well below the 5 percent U.S. Dept. of Justice threshold. There was no evidence in the community of a recent immigrant population or of a language commonly in use other than English. No business signs, advertisements, or establishment observed in a windshield survey through the Study Area indicated the use of another language. The U.S. Census Bureau, 2006-2010 American Community Survey for the two Census Tracts in the study area indicate zero percent of those surveyed age 14 and over spoke no English, or spoke no English "very well." OSPI data correlates with Census data, with less than 1 percent of elementary school student population that could be counted as Limited English Proficient.

The Census Tract in the Mason County portion of the project contains the higher percentage of elderly population. The Kitsap County Census Tract has a larger overall rate of disabled citizens, and households with no vehicle available.

The SR 3 Belfair Area Widening and Safety Improvements project, between SR 106 and Ridge Point Blvd at MP 27.08, is planned for construction starting in 2013. The project includes an improved, full length center left turn lane, and reduced and defined access points through the downtown area. It also would provide wider paved shoulders and new sidewalks on both sides of SR 3 along with improved lighting. This would improve safety for both motorized and non-motorized travel.

Facilities for pedestrians and bicycles are otherwise very limited in the study area. There is sidewalk along SR 3 for only about one-tenth of a mile, along the Safeway shopping center frontage. At the intersection with NE Old Clifton Road, sidewalk with ADA ramps has been added at the corners only, on the east side of SR 3. Otherwise, the shoulder on SR 3 is usable for bicycle and pedestrian travel.

Community Cohesion

Belfair has many assets that support a sense of identity and community cohesion. The library, post office, several churches, and markets are located on SR 3 in Belfair. The Theler Wetlands is a community focus in Belfair, and is a regional center for environmental education. The complex includes the Theler

Community Center, where many events are held. A farmers market, held here May through September, is a draw for local residents as well as visitors. A major annual summer festival in Belfair is "The Taste of Hood Canal." One of the newer festivals is the Hood Canal Highland Celtic Festival.

Interaction within the community can also be gauged by its civic groups and organizations. The Belfair community supports local chapters of the following civic groups and organizations: Boy Scouts of America, Girl Scouts, Boys and Girls Club, Veterans of Foreign Wars, Fraternal Order of Eagles, Freemasons, and the Lions Club, among others.

Community cohesion refers to the interaction of people in the community that leads to a sense of connection.

Economic

The *Mason County 2005 Comprehensive Plan* states that natural resource industries support the county's economy, including both raw materials and value-added specialized forestry and aquaculture commodities. Other major sectors are heavy construction and government services. The Kitsap County comprehensive plan, economic development element reports that the County's economy is mainly supported by the Naval base and shipyard, which helps to keep the economy healthy and stable.

Funds spent on the project locally would have a multiplier effect, such as suppliers buying goods and services from other local businesses. This would also result in a short-term increase in local employment for the duration of construction.

The U.S. Department of Health and Human Services establishes yearly poverty guidelines based on family size and geographical location. They are used to determine financial eligibility for certain federal programs.

Poverty level

Enrollment in free and reduced price meal programs within the study area is slightly less than the state at large. The 2006-2010 American Community Survey data on poverty shows the highest percentage of population below the poverty level to be in the Mason County Census Tract portion of the study area (8.3%). There is no significant difference between the Mason and Kitsap County portions of the study area in terms of poverty.

Businesses

Businesses on SR 3 between the two SR 3 Bypass connections are concentrated about mid-way on SR 3, from the intersection with NE Old Clifton Road south for about 1.5 miles. The largest shopping center and commercial area is in a triangle sided by SR 3, SR 300, and NE Old Clifton Road. Businesses in the study Area include: grocery, drug stores, gas stations, financial services, health care and other professional offices, automobile sales and services, wholesale boat supplies, day care and preschool, pet care, auction center, lumber, landscaping and nursery, and wholesale floral suppliers, in addition to a motel, several restaurants, bars, and fast food establishments. Overall, the business district is geared more toward local and regional residents than toward tourist traffic. However, customer volume at the motel, restaurants, gas stations, and grocery stores can be expected to increase notably during the summer due to tourism.

3.16.3 Which of the existing condition elements apply to low income, minority, elderly, or disabled populations?

Public Transportation

Access to the Mason County Transportation Authority (MTA) bus system is vital for people who do not have a vehicle or a driver's license or who are disabled. These factors often coincide with low-income or elderly populations. Results of a recent survey by MTA found that non-ambulatory ridership was 2.6 percent of their total customers.

Bicycle and pedestrian facilities

Travel by foot or bicycle is important to community health and also to those people who do not have access to a vehicle. Most transit users are also pedestrians, accessing the bus stops at each end of the trip by foot. The Belfair Urban Growth Area Plan's section on Pedestrian Network and Trials states "The pedestrian network in Belfair is limited. There [are] no sidewalk[s] in general and thus it's difficult to walk safely and comfortably along SR-3 and elsewhere within the community. Although Theler Wetland trail system is a wonderful exception, it does not connect to other natural habitat and neighborhood areas. There is a strong support from community members to expand the trail system throughout

the community in different loops that connects different land uses together. This trail system can be used as another alternative route for pedestrians and bikers to get around in town"

Housing affordability

The Washington Center for Real Estate Research / Washington State University reports Housing Affordability for the state. The affordability is calculated, and expressed by an index that measures the ability of a middle income family to carry the mortgage payments on a median priced home. This is reported for the second quarter of 2011. When the index is 100, there is a balance between the family's ability to pay and the cost. Higher indexes indicate housing is more affordable, lower indexes mean less affordable. In the second quarter of 2011, Mason County's Housing Affordability Index score was 207.4. This was calculated based on a median home price of $140,000. Washington State's overall index score was 154.7, with a median home price of $226,900. This indicates that housing in the area is more affordable than in many other parts of the state.

Minority-owned businesses

No businesses owned by minorities are identified in the study area.

3.16.4 What effects would result under the No Build Alternative?

Without the proposed project, the study area and regional users of SR 3 would experience continued congestion and high collision rates in this segment of the highway. As traffic volume continues to increase, safety problems within this segment of SR 3 would be exacerbated. Heavier traffic would make left turns and crossing the highway even more difficult and hazardous for drivers as well as pedestrians.

If the proposed project were not constructed, no property would be purchased for right of way. There would also be no foreseeable access changes.

3.16.5 How would Social, Economic, and Environmental Justice be affected during construction of the Build Alternative?

This project is expected to be under construction for approximately 12 to 18 months. During that time period, it is expected that there would be traffic delays, noise, dust, and fumes from equipment. These effects would be localized and temporary.

At this time, there are no detours planned for traffic during the construction period. However, it could be expected that some percentage of local traffic would choose to take alternative routes using local roads to the north or south of SR 3. Therefore, there could be temporarily increased traffic along county roads within the study area.

Construction noise would temporarily affect residences and businesses. Given the existing types of land uses, this noise would not affect the social interactions of residents within the study area. Access to homes and businesses would be maintained during construction.

Disruption of traffic or creation of noise can cause people to avoid driving in or stopping at businesses in the construction zone. Those businesses that depend on drive-by traffic would be most negatively affected during construction. Since there are very few such businesses in the study area, this would not be a significant impact on the community.

From coordination to date with the North Mason School District transportation services, school bus routes would not be affected by the project. Currently, students are not permitted to cross the highway for pick-up or drop-off. Particular stops would need to be coordinated through the construction period.

Construction activities may cause temporary increases in air pollution emissions. Construction contractors would be required to comply with all regulations for the minimization of dust and emissions.

3.16.6 What other effects would occur under the Build Alternative after construction?

The improved mobility within the Belfair commercial area on SR 3 resulting from the diversion of regional through-traffic is expected to contribute to improving the experience of doing business there. It could spur additional growth and development, including the planned village theme through downtown, and attract more tourism. The improved travel time and operating speeds for through-traffic on the Bypass is also expected to benefit the economic growth in the region.

The Belfair Wastewater and Water Reclamation Facility (sewage treatment facility) is under construction within the study area. While a majority of the zoning within the Belfair UGA is for residential use at a minimum of four units per acre, no new lots could be created within the UGA without public sewer service. The lack of road networks within the UGA has also been a severe limitation to development. Therefore, a significant amount of potential land development has been on hold. Once both the sewage treatment facility and the Bypass are available, there could be a rapid increase in subdivision, building permit applications, and conversion of forest land to residential, given the right economic conditions.

3.16.7 What measures are proposed to minimize or avoid effects to social and economic resources?

The right of way acquisition necessary for the widening has been minimized to the extent possible. Opportunities to relocate within the vicinity appear ample with a good supply of undeveloped land or vacant established land uses within the study area.

WSDOT would work closely with individual residents and businesses regarding driveway configurations and other specific property concerns.

Property acquisition would be done in accordance with the federal Uniform Relocation and Real Property Acquisition Policies Act of 1970, as amended, as well as the Washington Relocation Assistance- Real Property Acquisition Policy. WSDOT would compensate all property owners at fair market value and provide relocation assistance where appropriate.

Construction effects would be minimized for the general public with the following methods:

- Current information on construction and travel delays would be posted on the project website.
- Variable message signs would be stationed in advance of the construction activity area to provide information about delays, if necessary.
- The Olympic Region Clean Air Agency regulations require dust control during construction and measures to prevent the tracking of mud onto paved streets.

Minor impacts to a ball field at North Mason High School are discussed in the Recreation Section (3.14).

See Discipline Reports for Land Use, Public Services, Utilities, Recreation, Noise, Visual Quality, Air Quality and Transportation for other related mitigation measures.

3.16.8 Would the project have unavoidable adverse effects on environmental justice that could not be mitigated?

The data indicates the presence of minority persons and low-income persons in the project area, although no identifiable geographical area of predominately minority population or low-income populations is present. The alternatives analysis completed for the north and south connections of the Bypass to SR 3 considered impacts on residents and businesses. No available data sources can inform WSDOT of the characteristics of the individual residents of the homes that are directly affected. The analysis does illustrate that WSDOT has chosen a preferred alternative for this project without prejudice. This analysis found no demographic group would be disproportionately impacted. The project would benefit all demographic groups in and beyond the project area.

There are no adverse effects that would be predominately borne by a minority or low-income population, or be suffered by the minority or low-income population and be more severe or greater in magnitude than effects on non-minority or non-low-income populations.

3.17 Hazardous Materials

A hazardous materials discipline Report was completed in September 2011. It describes the existing hazardous materials locations in the Bypass project study area and evaluates potential hazardous materials impacts with and without the proposed project. This study is listed in Appendix B, and is incorporated by reference into this environmental assessment.

3.17.1 What hazardous materials could be present in the study area and what impacts could they cause?

Hazardous materials that might be encountered are contaminants present in soil or groundwater that are excavated or dewatered as part of construction work. Typically, such contaminants would have migrated to the area where project construction work would occur in the project area or be drawn into the project area by construction related dewatering activities.

Typical construction impacts may include construction delays and increased costs associated with encounters of unexpected contaminated media, encounters of underground storage tanks (USTs) and associated contamination, spills, demolition activities that require special handling and disposal of contaminated media, worker safety and public health issues, and disposal.

3.17.2 What are the existing conditions of the study area?

The study area for the discipline study extends approximately one mile in all directions of the project limits. Due to the limited development of the lands immediately surrounding the proposed bypass, research concentrated on sites located along the existing SR 3 corridor. Hazardous material releases beyond a one-mile radius of the project area are considered unlikely to impact the project.

A records search and visual inspection of the project area were performed to evaluate the project area and the potential for encountering contamination from hazardous materials. The physical environment was examined as well as the historic and the current land uses in the vicinity of the project area. WSDOT evaluated these natural and built conditions to identify the existence of properties that might be contaminated.

WSDOT identified 17 properties that have or might have soil or groundwater contamination within a one-mile radius of the project area. These properties were identified using the WDOE Facility Site Atlas and Integrated Site Information System (ISIS) and included nine toxics cleanup sites, as well as eight sites listed solely for having USTs. All but four of these sites were excluded from further consideration based on area topography and assumed groundwater gradient to the west/southwest.

Four sites were considered close enough to the SR 3 Bypass connection points to warrant Ecology file reviews. Of these, two sites, near the southern end of the project area near the junction with SR 302, have been cleaned up and two sites were incorrectly plotted. These two sites, located north of the project area on SR 3 near the Bremerton International Airport, are considered unlikely to impact the project based on the distance from the project area actions should such a need arise.

3.17.3 What regulations do we follow when dealing with hazardous materials?

Hazardous materials identification, handling, disposal, and remediation are governed by numerous State and Federal laws, regulations, guidance documents and policies. Chapter 447 (Section 447.02) of the WSDOT Environmental Procedures Manual (EPM) lists the primary statutes and regulations applicable to hazardous materials issues.

3.17.4 How were hazardous materials and wastes identified and evaluated within the project area?

An online review of the ISIS was performed to evaluate the study area and the potential for encountering contamination from hazardous materials sites within a one-mile radius. Due to the limited development of the lands immediately surrounding the proposed Bypass, the database search concentrated on sites located along the existing SR 3 corridor. Hazardous release(s) beyond a one-mile radius of the study area are considered unlikely to impact the project.

3.17.5 Are there any potentially contaminated sites in the project area?

As part of the Bypass project, a number of property acquisitions have been proposed. Acquisition of contaminated sites is not anticipated.

3.17.6 Would the project affect any hazardous materials sites?

It is not anticipated proposed property acquisitions would create liability for WSDOT with respect to hazardous materials cleanup.

3.17.7 What measures are proposed to avoid or minimize effects from hazardous materials during construction and operation?

There are no adverse hazardous materials effects in the study area.

WSDOT would properly handle and dispose of any contaminated soil and/or groundwater encountered. Construction activities would eliminate potential contaminant sources and remove contamination that might otherwise have remained in the environment and continued to migrate. A general special provision would be included in the contract document to address encountering hazardous materials.

Once the bypass is constructed, appropriate BMPs would be in place to control both flow and water quality of stormwater runoff generated by the additional impervious surface. These measures would help minimize effects from any hazardous materials (transported in the runoff) to surface water quality.

3.17.8 What plans and measures would be in place in case of a hazardous spill during construction?

Accidental hazardous materials spills may occur due to construction activities. Construction sites involve various activities, equipment, and materials that can result in a release of hazardous materials into the environment. Construction vehicles and equipment typically use gasoline, diesel, motor oil, transmission fluid, radiator coolant, brake fluid, and hydraulic oil. New construction work typically uses cement, asphalt, tar, paving oils, tack, and paint. A

Spill Prevention Control and Countermeasure (SPCC) Plan is required for all WSDOT construction projects per Standard Specifications Section 1-07.15. Prior to beginning construction, the contractor is required to prepare a project specific plan to be used throughout the duration of the project. The plan must be updated to reflect actual site conditions and practices. Preventing a spill is the primary goal; however, the contractor is expected to be prepared to minimize the impacts of a spill through immediate and appropriate response actions should such a need arise.

3.17.9 What measures are proposed to mitigate the effects of the project?

WSDOT would implement procedures to properly handle and dispose of any contaminated materials encountered and appropriate BMPs would be in place to help prevent spills and respond to any that occur during construction. No significant, unavoidable adverse impacts are expected to result from the proposed project.

3.18 Archaeological and Historic Resources

A cultural resources discipline report was completed in November 2011. This study is listed in Appendix B and is incorporated by reference into this environmental assessment.

3.18.1 Why do we study impacts to archaeological and historic resources?

This project requires compliance with Section 106 of the National Historic Preservation Act of 1966, as amended and it's implementing regulations. The National Historic Preservation Act of 1966, as amended (16 USC 470f, Section 106), requires federal agencies including FHWA to take into account the effects of a project on historic properties included in or eligible for inclusion in the National Register of Historic Places (NRHP). In order to qualify as a historic property eligible for the NRHP, a cultural resource such as a district, site, structure, or object generally must be at least 50 years old, meet one of four criteria of significance, and retain integrity.

The Section 106 process is codified in 36 CFR 800, *Protection of Historic Properties*. As part of the Section 106 process, agencies must consult with the State Historic Preservation Officer (SHPO) to assure that significant cultural resources are identified, and to obtain the SHPO's formal opinion on each property's significance and the impact of the agency's Build Alternative upon the property. To evaluate the Build Alternative's potential effects on cultural resources, WSDOT, in consultation with the SHPO, established the project's area of potential effects (APE), which is the geographic area within which an undertaking may directly and indirectly cause alterations in the character or use of historic properties (36 CFR 800.16). WSDOT then conducted research and completed field work to identify historic properties. WSDOT cultural resources specialists analyzed the proposed project design to determine project effects on the identified historic properties in the APE. WSDOT also consulted with Native American tribes that have historical ties to the study area and could be affected by the Build Alternative.

3.18.2 Studies, coordination, and methods

Several previous studies have been performed in the project vicinity, including a Cultural Resources Discipline Report prepared as part of a Belfair Bypass EA for Mason County by Shapiro and Associates, Inc. A Finding of No Significant Impact was never issued for this EA due to public opposition and court challenges to the project.

The Area of Potential Effects includes all areas where project-related ground disturbance will occur as well as areas where indirect visual and auditory effects could impact historic properties.

WSDOT staff completed additional investigations and completed the *SR 3 Belfair Bypass Cultural Resources Discipline Report* that supplements the earlier study, in order to assist FHWA and WSDOT in compliance with NEPA and Section 106 of the NHPA. As part of these investigations, WSDOT cultural resources specialists conducted a surface-only, pedestrian survey of most of the project APE. The APE was determined to have a low probability for the presence of prehistoric and/or historic archaeological resources based on the available environmental, historical, and archaeological data. For this reason the survey focused on visual inspection of accessible areas, such as logging roads, recreational off-road trails, logged-off forested areas, open

forest, and open non-forested areas. Additional efforts were made to reach identified wetlands and locations where historic maps indicated trails crossing the APE. Shovel probes were placed in four primary areas considered to have a higher probability for archaeological resources:

1. At the south end of the project area, where the APE crosses the historical route of the Oakland Trail towards Allyn
2. Adjacent to two small wetlands in Section 33 of T23N R1W
3. Adjacent to a wetland in Section 28, T23N R1W
4. Adjacent to a small wetland in Section 22, T23N R1W

WSDOT consulted with the Jamestown S'Klallam, the Lower Elwha Klallam, the Port Gamble S'Klallam, the Skokomish, the Squaxin Island and Suquamish tribes about the project APE and potential impacts to cultural resources, including traditional cultural properties. No specific information regarding known cultural resources within the APE was revealed by the tribes. Continued coordination would occur through the design and construction phases.

Section 106 consultation regarding the APE, study methods and report findings has resulted in a determination by WSDOT, acting on behalf of FHWA, that there are no historic properties affected by the undertaking. DAHP concurred in this determination in their letter of February 16, 2012. See Appendix H.

3.18.3 Are there any archaeological or historic resources in the APE?

Archaeological and historic cultural resources identified within the APE during the investigations for this EA include a concrete foundation recorded as archaeological site 45MS200, and the Bonneville Power Administration (BPA) Shelton-Kitsap No. 2 115-kV Transmission Line. No pre-contact resources were identified. Site 45MS200 is a moss-covered concrete foundation on the northeast corner of the SR 3/SR 302 intersection. Research has been unable to determine the age or function of the structure associated with this foundation, and the site has been determined not eligible for listing in the NRHP. The Shelton-Kitsap transmission line has previously been determined eligible for listing in the NRHP.

3.18.4 How would the alternatives affect historic properties?

The No Build Alternative would not affect historic properties.

The Build Alternative is unlikely to affect significant archaeological resources within the APE. Most of the APE has low potential for significant cultural resources. There is little evidence for long-term pre-contact settlement within most of the APE. Evidence of pre-contact use of the APE is likely to have been ephemeral and related to short-term hunting and gathering of upland resources and to use the APE as a travel route between Hood Canal and Case Inlet and points north and south. Based on a number of sources, several trails and roads once crossed the APE. Conclusive evidence of these historic routes has been obscured by vegetation, logging activity, modern trails, road construction and other disturbances. Use of some historic travel corridors has likely extended into the modern period, but modern uses and improvements have obliterated any semblance of their historic appearance and make correlation of historic and modern routes difficult. No historic cultural materials were found in association with any of these travel routes. The single archaeological site identified within the APE, 45MS200, in not eligible for listing in the NRHP.

The only eligible historic property identified by this survey within the APE is the Shelton-Kitsap No. 2 115-kV Transmission Line. The Bypass Project would pass under the transmission lines, which would continue to function as originally intended and would not require alterations to any towers. Therefore, the project would not affect the Transmission Line.

3.18.5 What measures would be taken to minimize effects to archaeological and historical resources?

Continued consultation and coordination with SHPO and the tribes would be helpful in the event that archaeological or historical resources are discovered during construction, to ensure that they are adequately treated and documented.

An Unanticipated Discovery Plan would be in place in the event that cultural resources are discovered through ground disturbing activities during construction.

3.18.6 Would the project have unavoidable adverse effects to archaeological and historical resources?

The project, as it is currently designed would not have unavoidable adverse effects on archaeological or historical resources. Any major design changes to the project may require additional cultural resources evaluation. In such a case, the APE would be reevaluated by the Section 106 consulting parties and adjusted if necessary, potential historic and archaeological resources would be identified and evaluated and the results of additional investigations would be described in addendum reports.

3.19 Public Services and Utilities

A public services and utilities discipline report was completed in March 2012. The report describes the existing public services and utilities located in the Bypass project study area and evaluates potential impacts with and without the proposed project. This study is listed in Appendix B, and it is incorporated by reference into this environmental assessment.

3.19.1 Why do we study impacts to public services and utilities?

Highway construction projects can affect local public services and utilities. Impacts may be temporary (construction impacts to traffic, relocation of utility lines, etc.) or permanent (new stormwater treatment facilities, new transit routes, etc.). WSDOT works with local businesses and public agencies to limit disruptions or other impacts to public services and utilities.

3.19.2 What public services are in the study area?

The majority of the study area lies within Mason County. A large portion of this falls within the Belfair UGA. The Belfair community is not an incorporated city of Mason County, so the county and special districts provide most public services. The northeastern portion of the study area that lies within Kitsap County is mainly within the Bremerton city limits. This area's public services are provided by city, county special districts or community groups.

Fire and Emergency Medical Services

- Mason County Fire District No. 2
- Harrison Medical Center (Bremerton)

Libraries

- North Mason Timberland Library

Police Stations

- Mason County Sheriff (Port Angeles)
- Washington State Patrol, District 8 – Bremerton Detachment

Public Education

North Mason School District

- Belfair Elementary School
- Hawkins Middle School
- HomeLink School
- North Mason High School
- Pace Academy
- Sand Hill Elementary

South Kitsap School District

- Cedar Heights Jr High School
- South Kitsap High School
- Sunnyslope Elementary School

Public Health

- Mason County Public Hospital District No. 2 (Harrison Medical Center, Belfair)

Religious Institutions

- Jehovah's Witnesses (Belfair Kingdom Hall)
- North Mason Bible Church
- North Mason United Methodist Church

Transportation

- Bremerton National Airport
- Mason County Transportation Authority (Park & Ride Lots, Dial-A-Ride service, vanpools and bus service)
- US Navy railroad tracks (commercial freight)

3.19.3 What utilities are in the study area?

Existing utilities within the study area are generally located along SR 3 right of way.

Drinking water

- Belfair Water District No. 1
- City of Bremerton

Electricity

- Mason County Public Utility District (PUD) No. 3
- Puget Sound Energy (Kitsap County)
- Garbage/Recycling
- Kitsap County Solid Waste Division
- Mason County Solid Waste Division

Natural Gas

- Cascade Natural Gas (CNG)

Telecommunication

- CenturyLink
- Comcast
- Mason County Public Utility District (PUD) No. 3 (fiber optic lines)

Sewer

- Belfair Wastewater and Water Reclamation Facility (Operational in July 2012)

3.19.4 Who provides sewer service in the study area?

Previous to this year there had been no municipal sewer system for Belfair or for sections of the study area outside the Belfair UGA, in both Kitsap and Mason Counties. The long anticipated Belfair Wastewater and Water Reclamation Facility became operational in July and Water Reclamation facility became operational in July 2012. This facility has converted septic systems within key areas of the Belfair UGA to a county operated sewer utility.

3.19.5 How is stormwater currently treated?

Mason County does not currently have stormwater management facilities in place. Stormwater along existing SR 3 through the study area is primarily treated by grass lined ditches. Within Kitsap County, the Surface & Stormwater Management Program administered by Kitsap County Public Works, cleans and maintains the county's stormwater facilities; including ditches, catch basins and ponds.

3.19.6 Studies, coordination, and methods

Information collected through various sources (local agencies, service providers & utilities; GIS maps; planning documents; etc.) was used to define typical service routes used by public services and to map existing utilities. The study area begins in Mason County, just south of the intersection of SR 3 and SR 302, and ends in Kitsap County, just north of the intersection of SR 3 and Lake Flora Road. For public services, typical service routes were analyzed to determine how the project might impact the normal operations of each public service. Existing utilities were identified through study of conceptual engineering drawings and aerial photos of the study area. Maps of existing facilities were also provided by the utility companies.

3.19.7 What effects to public services and utilities would result under the No Build Alternative?

No construction would occur under the No Build Alternative, so no effects would occur to public services and utilities.

3.19.8 How would public services and utilities be affected during construction of the Build Alternative?

The Bypass would, for the most part, be constructed away from the existing right of way for SR 3.

SR 3 is the major route between Shelton and Bremerton used by fire, police, and emergency medical providers. Temporary construction effects will be coordinated with the services to minimize effects.

Public services

The Bypass connections with SR 3, near SR 302 at the south end and near SW Lake Flora Rd at the north end, would experience the heaviest construction impacts to existing public services. Traffic delays and congestion during construction periods, would affect levels of service and access to public services.

SR 3 is the primary north-south highway used by fire and emergency medical responders in this area. Construction of the Belfair Bypass would temporarily increase congestion on SR 3, particularly at the proposed intersections of the Bypass and SR 3, which could delay response times.

The library would not experience any impacts from the construction of the Bypass. Patrons of the North Mason Timberland Library may experience temporary delays due to construction.

Response times for sheriff and state patrol officers may or may not be affected by temporary construction related congestion and delays, since officers on patrol would be dispersed throughout the study area. A proactive public awareness campaign detailing upcoming traffic delays would alleviate impacts on police response times.

Construction of the Bypass would temporarily increase traffic congestion, impacting public school busses transporting students to and from school. With adequate public notice school bus routes could be temporarily altered to avoid areas of construction and minimize delays. In addition, a portion of the southern end of the North Mason High School property is within the study area and would be directly impacted. The area impacted is currently being used for outdoor athletic fields. The portion of the property impacted, would be purchased from the North Mason School District to construct the Bypass.

Construction of the Belfair Bypass would temporarily increase congestion on SR 3, north and south of Harrison Medical Center's Belfair Clinic. This would affect patients traveling to the clinic from north or south of the study area. Patients who live within Belfair wouldn't be affected by the construction. A proactive public awareness campaign detailing upcoming traffic delays due to construction would alleviate impacts on those patients coming to the Belfair clinic from outside the study area.

The religious institutions within the project area would not experience any impacts from the construction of the Belfair Bypass.

Coordination with Mason County Transit would be necessary so that temporary construction impacts on traffic congestion could be anticipated, allowing for transit detours during these times.

Utilities

Existing utilities within the project area would experience limited construction impacts, mainly in the two locations where the Bypass would connect with SR 3

Existing water lines would be located along with other utilities prior to construction so they can be avoided. Construction of the Bypass would have no effect on public drinking water.

Existing electrical lines (underground and overhead) follow SR 3. These would be located prior to construction so that construction activities could be coordinated with the electric utilities. Underground lines would be avoided if possible, but may need to be relocated due to the construction of the bypass. The proposed centerline would pass under BPA high voltage power lines and coordination with BPA would be essential to provide adequate overhead clearance for the power lines as the bypass is built. Due to the difficulty in adjusting these high voltage power lines, minor adjustments to the design of this section of the Bypass may be necessary to maintain adequate overhead clearance.

Garbage and recycling services within the project area would not be affected by construction activities.

Existing natural gas lines would be located along with other utilities prior to construction so they can be avoided.

Construction of the Bypass would have no effect on natural gas delivery.

Existing telecommunications lines would be located along with other utilities prior to construction so they can be avoided. Construction of the Bypass would have no effect on telecommunications.

Construction activities for the Bypass would need to accommodate existing wastewater facilities. Due to proximity of the current proposed centerline to the Belfair Wastewater and Water Reclamation Facilities and because the centerline would cross the force main pipeline to the new facilities, consultation with the utility would be required to provide adequate clearance for the force main line and other existing structures. Existing gravity sewer lines along SR 3 through Belfair would not be affected by construction activities.

3.19.9 What other effects would occur to public services and utilities under the Build Alternative after construction?

Emergency service providers (police, fire, emergency medical, etc.) would experience faster and safer response times.

Likewise, public transit would be able to offer faster travel times between Shelton and Bremerton.

Completion of the bypass would allow for increased development within the study area. This should increase demand on utilities as population density increases.

3.19.10 How would we offset the effects to public services and utilities during construction?

Public services

Project specific traffic management plans would be developed and coordinated before construction begins with fire, police, emergency medical services, transit, schools and local agencies. Their input would be requested to minimize effects during construction. The following items are under consideration to be implemented during project construction to minimize disruptions to those using the roadway:

- Current and upcoming construction activities would be posted on the project website.
- Variable message signs would be located in advance of the construction area to provide information regarding upcoming closures or delays.
- Consideration would be given to advertising construction activities with traffic impacts in local newspapers and radio stations.
- Access to all businesses would be maintained.

Utilities

Utilities affected by the project would be identified early with development of relocation or mitigation plans to follow. Relocation plans would be developed with input from the utility owners so that utilities are moved to a safe distance beyond the edge of roadway and construction activities.

Early coordination with the utility companies will occur during the design phase.

3.19.11 Would the project have unavoidable adverse effects to public services and utilities?

Some effects to public services and utilities may include traffic congestion during construction activities, delays or adjustments to transit services and school bus stops, and service interruptions to utilities, such as power, water, phone, etc. However, these interruptions would be intermittent, temporary, and short term.

The project would provide increased capacity, which would result in increased efficiency of transit service and emergency responders.

The project would not have substantial unavoidable adverse effects to public services and utilities that would not be mitigated.

3.20 Visual Quality

A visual quality discipline report was completed in April 2012. It describes the existing visual quality in the project study area and evaluates potential visual quality effects with and without the proposed Bypass project. This study is listed in Appendix B, and it is incorporated by reference into this environmental assessment.

3.20.1 Why do we consider how a project would impact the visual quality of the study area?

The visual experience is an important component of a project and its impact on the environment. How a project looks and fits into the natural or built environment is closely allied with how it functions as a facility. Visual quality is a fundamental concept in planning and analysis. Public concern over negative visual impacts of a project can be a major source of opposition to projects. The visual effect of any alteration must be thoroughly analyzed during project development. Temporary visual impacts during project construction must also be considered.

3.20.2 What are the existing conditions?

SR 3 is the main highway leading into Belfair, with Bremerton to the north and Allyn to the south. Commercial properties are the main properties adjoining SR 3. The existing visual quality in this study area ranges from moderately high to high.

3.20.3 Studies, coordination, and methods

The study area for the discipline study extends in all directions of the project limits in a line of sight. Views towards the highway and away from the highway are analyzed.

This report was conducted in accordance with Section 459 of EPM. These guidelines are consistent with the *U.S. Department of Transportation, FHWA Visual Impact Analysis for Highway Projects*.

Visual quality assessments are prepared by trained professionals exercising professional judgment. The FHWA methodology provides a process of evaluation that guides the professional's judgment and produces an objective assessment of visual quality. It uses a qualitative and quantitative approach to analyze existing

and proposed views of the project area. The process is repeatable by other experts.

Each selected viewpoint represents a substantial portion of the project viewshed. The viewshed is defined as areas with a line-of-sight (exclusive of vegetation) looking toward and away from the project. It represents where the greatest effect to visual quality from the project is anticipated. The five selected viewpoints are representative of views toward and from the roadway for a high number of users.

3.20.4 What criteria are examined when dealing with visual quality?

Three criteria are rated. A rating of 7 is very high, 4 is average, and 1 is very low. The ratings are used to perform an evaluative appraisal of the landscape visual quality:

Vividness: The memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern.

Intactness: The integrity of visual order in the natural and man-built landscape, and the extent to which the landscape is free from visual encroachment.

Unity: The degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or inter-compatibility between landscape elements.

Expert evaluations based on the three criteria have proven to be good predictors of the visual quality using the following sample equation:

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

Each of the three independent criteria evaluates one aspect of visual quality to determine the total visual quality rating for each viewpoint.

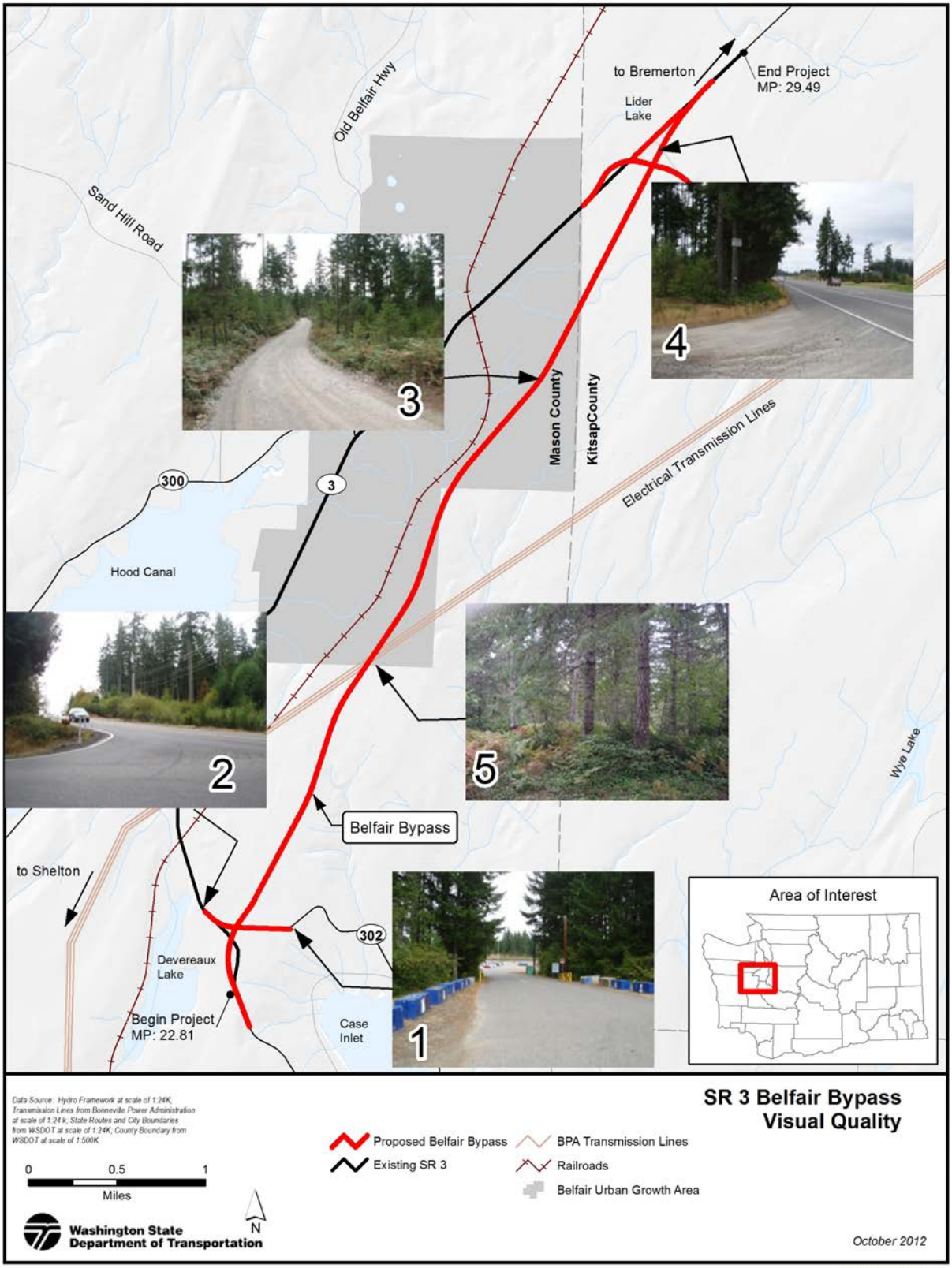
3.20.5 What effects to visual quality would result under the No Build Alternative?

Existing views throughout the study area were rated moderately high on average, with scores ranging from 3.88 to 5.0. Unity of landscape character and form were average. There was also a moderate visual intactness of the natural elements present within the study area. If the project is not built, the visual impacts would occur from increased glare from stalled traffic on SR 3 through Belfair.

3.20.6 How would the Build Alternative affect the existing visual quality?

The following five key views show how the Build Alternative would slightly decrease the visual quality in the Belfair Bypass corridor. Exhibit 3-11 depicts the key view locations within the study area.

Exhibit 3-11: Key Views



3.20.7 How would visual quality be affected during construction of the Build Alternative?

The project would impact the visual quality during and after the construction period. There would be heavy equipment working within the project limits during construction and would likely create dust and distractions for drivers in the project vicinity.

Removal of vegetation and trees would be kept to a minimum, but enough would be removed to accommodate the new roadway.

The contractor may use lighting to allow work at night. The project would use directional lighting to minimize night sky impacts. These impacts are temporary in nature and do not require mitigation.

Exhibit 3-12: Key View 1 – View looking towards the southern entrance of North Mason High School from SR 302.

The visual quality rating would reduce from 4.27 to 3.8 for Key View 1.

Exhibit 3-13: Key View 2 – View MP 23.22

The visual quality rating would reduce from 4.3 to 3.9 for Key View 2.

Exhibit 3-14: Key View 3 – View from Log Yard Rd.

The visual quality rating would reduce from 4.33 to 3.5 due to the disturbance of a large swath of native vegetation for Key View 3.

Exhibit 3-15: Key View 4 – View MP 27.92

The visual quality rating would reduce from 3.88 to 3.4 for Key View 4 due to the removal of trees and visual impacts from adjacent construction yard.

Exhibit 3-16: Key View 5 – View within existing forested corridor

The visual quality rating would reduce from5.0 to 4.25 for Key View 5 due to the removal of native vegetation in the middle of the proposed corridor.

3.20.8 What other effects would occur to visual quality under the Build Alternative after construction?

All roadside areas within the project limits would receive a minimum of Treatment Level 2 as described in the *WSDOT Roadside Classification Plan*. Native vegetation would be replanted on all disturbed roadside areas.

The existing visual quality in this study area ranges from moderately high to high. After the project, five key viewpoints along the proposed corridor show slightly decreased visual quality ratings. Decreased ratings are a result of clearing and grubbing of desirable native vegetation and removal of mature trees that provide visual screening for adjacent residential dwellings.

This proposed project would have an influence on adjacent residential units due to the additional light and glare caused primarily by vehicular traffic.

This project would lower the average visual quality ratings in the project area from 4.2 to 3.7. This decrease in overall visual quality is due primarily to the removal of mature vegetation and addition of asphalt.

A total visual quality rating change of 1.0 or greater is considered to be a substantial visual impact for the purposes of this report. A total visual quality rating change of less than 1.0 point was not considered to be a substantial visual impact. The effects from the Build Alternative are not considered a substantial decrease in visual quality.

3.20.9 How would we offset the effects to visual quality during construction?

WSDOT would perform roadside restoration throughout the project limits. We have applied Context Sensitive Solutions to decrease the visual effects of the project.

Context Sensitive Solutions is a process that involves stakeholders to develop a transportation facility. This considers its total context by preserving scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility (FHWA 2009).

Vegetation

Use of vegetation can visually unify the corridor. Vegetation measures would be implemented as follows:

Clear zone of roadway

We would only plant grass and shrubs within the clear zone of the roadway. Native grasses and forbs seed mixture would be selected to blend cut and fill slopes within the project limits with adjacent land uses.

The highway clear zone is an area on each side of the road that is free from obstructions. Out of control vehicles can recover or safely come to a stop without encountering a non movable object such as a tree, utility pole, etc).

Sensitive areas and buffers

- Disturbance to native plant communities and specimen trees would be minimized by clearly identifying clearing and grading limits. In critical areas and their buffers temporarily disturbed by construction, roadside restoration with densely planted native trees and shrubs would be considered (as long as it is not within the highway clear zone).
- As many trees as possible would be maintained by allowing minimal fill around the base of existing trees.
- Tree species would be selected for replacement that are native and in context with the corridor.

3.20.10 Would the project have unavoidable adverse effects to visual quality that would not be fully mitigated?

The Build Alternative would slightly decrease the visual quality in the Bypass corridor, but the decrease would not be substantial. Removal of vegetation and trees would be kept to a minimum, and native vegetation would be replanted on all disturbed roadside areas.

3.21 Geology and Soils

A geology and soils discipline report was completed in September 2011. It describes the existing soils conditions in the Bypass project study area and evaluates potential impacts with and without the proposed project. This study is listed in Appendix B, and is incorporated by reference into this environmental assessment.

3.21.1 What are the potential impacts to geology and soils?

Potential impacts of the proposed project to the geology and soils include the potential to increase erosion, possible effects to nearby shallow water wells, and the partial depletion of local aggregate resources. Potential impacts of the geology and soils to the project include the geologic hazards of erosion, landsliding, earthquakes, frost action, settlement, and the presence of areas with localized high groundwater and low soil permeability.

3.21.2 Studies, coordination, and methods

The sources of information used for this study included U.S. Geological Survey (USGS) topographic and geologic maps; WDNR Geology and Natural Resource Division geologic maps; Natural Resource Conservation Service (NRCS) county soil surveys; county geologic hazard and critical areas maps; field review of the site; and project site data provided by the Olympic Region Project and Environmental and Hydraulics Offices. During our research, we also contacted the Washington State Department of Natural Resources and utilized numerous county, state, and federal information websites.

3.21.3 What are the soil and geologic conditions in the study area?

Topography

The project corridor is located within the Puget Lowland physiographic province and is situated near the boundaries of Kitsap and Mason Counties, Washington. The proposed alignment trends generally northeast/southwest and traverses glacially-sculpted prairies and uplands. The topography consists of rolling hills and relatively level prairies incised by

generally meandering drainages, controlled by southwest-trending hillocks and valleys sculpted during the last stage of continental glaciations in the region. Various closed depressions in the upland terrain are occupied by wetlands and/or small lakes (such as Devereaux Lake and Kriegler Lake). These are commonly associated with glacial scouring or the formation of *kettles* (by sedimentation around and over *dead ice*) during the last glaciations. The generally hilly and locally planar upland topography has been incised by several drainages, including Coulter Creek (to the east of the alignment) and an unnamed tributary to Coulter Creek traversed by the alignment in the vicinity of MP 24.32 to MP 24.38. Lynch Cove, at the terminus of Hood Canal, is located west of the site, near Belfair. North Bay, at the north end of Case Inlet, is located south of the site. Elevations along the proposed roadway corridor vary from approximately 274 feet to approximately 390 feet.

Climate

The subject corridor is within the Puget Sound Lowlands climatic zone, which has a temperate maritime climate. Winters are typically cool and wet, while summers are generally mild and dry. Winter average temperatures are typically in the 30s to 50s and average summer temperatures are generally in the 60s to 70s. Average annual precipitation is approximately 50 inches and average annual snowfall is approximately 5 inches.

Regional geology and tectonic setting

The subject project is within the Puget Lowland. The Puget Lowland is a broad low-lying region between the Cascade Mountains to the east and the Olympic Mountains to the west. It is mostly underlain by a thick and complex sequence of glacial and interglacial unconsolidated deposits of mainly Pleistocene to Holocene age.

Following melting of the ice sheets, processes of erosion, deposition and plant growth have further modified the landscape. Post-glacial deposits within the project area include alluvial deposits (including sand, silt, clay) in drainages and peat, in current and former wetland areas.

The structural setting of the Puget Lowland is determined by the interaction of tectonic plates. The Juan de Fuca plate is subducting beneath the North America Plate, the surface interface of which is known as the Cascadia Subduction Zone, located approximately 50 miles west of the Washington coast. In addition, the eastern edge of the Pacific Plate is moving northward along the San Andreas Fault to the south. The combination of ongoing subduction of the Juan de Fuca plate and northward movement of the Pacific plate causes a compressional regime in the Puget Lowland resulting in a series of west-to northwest-trending faults and basins and uplifts that are locally bounded by reverse faults. Two such faults in the region are the Seattle Fault, to the north of the project site, and the Tacoma Fault, located approximately 2 miles south of the project limits. The zone between these two faults (including the project area) has been tectonically uplifted by crustal shortening and movement along these faults in an area referred to as the Seattle Uplift. The evidence supports the interpretation that the Tacoma Fault is active and capable of generating large magnitude earthquakes, on the order of magnitude 7.

Regional soils

All of the soils along the subject highway corridor in the Kitsap County portion are assigned to the general soil association 4 -Alderwood-Harstine: Nearly level to steep, moderately deep, moderately ·well drained soils; on uplands.

The Alderwood series consists of moderately deep, moderately well drained soils that formed in glacial till. Alderwood soils are on uplands and have slopes of 0 to 30 percent.

The Harstine series consists of moderately deep, moderately well drained soils that formed in glacial till. Harstine soils are on uplands and have slopes of 0 to 45 percent.

The dominant soil types along the subject highway corridor in the Mason County portion are assigned to the Alderwood Series and the Everett Series.

The Alderwood Series consists of brown, well-drained, upland soils. They have developed from mixed gravelly glacial till dominated by acid igneous rock.

The Everett series consists of somewhat excessively drained, pale-brown gravelly soils. They occur as inextensive gravel ridges on the glacial moraines, or, more commonly, as fairly continuous outwash channels between ridges of Alderwood soils.

Regional groundwater

Most of the subject project is located within Watershed Resource Inventory Area (WRIA) No. 15 (*"Kitsap"*) as defined by the WDNR and the WDOE. The southwest end of the project crosses the administrative boundary into WRIA No. 14 (*"Kennedy-Goldsborough"*). For management purposes, these watershed areas have been divided into subwatersheds, known as Watershed Administrative Units (WAUs). The southwestern end of the project (including the SR3/SR302 intersection) is within the Mason unit (WAU No. 140101); the central portion of the project essentially straddles the boundary between the Key Peninsula unit (WAU No. 150106) and the Lynch Cove unit (WAU No. 150204), and approximately the northern third of the project is within the Lynch Cove unit.

Numerous local resource studies indicate the presence of both shallow and deep groundwater resources in the vicinity of the project, the presence of perched groundwater and permanent and seasonal wetlands, and the possible presence of seasonal springs in areas where the groundwater table and/or glacial till layers may be close to the ground surface.

Corridor geology

The area of the subject alignment is underlain by unconsolidated glacial and alluvial sediments.

Corridor soils

General soil types mapped along or immediately adjacent to the proposed alignment are grouped by county:

Mason County

1. **Alderwood gravelly sandy loam, 5 to 15 percent slopes**
   This soil type is underlain by cemented till (that also consists of gravelly sandy loam) at depths of 24 to 32 inches. It is permeable to roots, but slowly permeable to water.

2. **Everett gravelly sandy loam, 0 to 5 percent slopes**
   This soil occupies the smoother outwash terraces in association with other Everett soils. It differs from Everett gravelly sandy loam, 5 to 15 percent slopes, in that its surface layer is generally 2 to 3 inches thicker; the profile is less variable; and the substratum, or underlying material, is usually more stratified.
3. **Everett gravelly sandy loam, 5 to 15 percent slopes**
   The surface soil is loose, single-grained, pale-brown, gravelly sandy loam, 6 to 8 inches thick. The subsoil grades to a substratum of poorly assorted, predominantly yellowish brown sand, gravel, and cobbly material that is extremely loose and porous.
4. **Indianola loamy sand, 5 to 15 percent slopes**
   The surface soil is brown, very friable, single-grain loamy sand. The subsoil is pale-brown loamy sand. The subsoil gradually changes to the substratum, which is gray and dark-gray sand.
5. **Indianola loamy sand, 15 to 30 percent slopes**
   This soil is generally associated with the Everett and the Alderwood soils and Indianola loamy sand, 5 to 15 percent slopes. The surface layer is thinner than that of the less strongly sloping Indianola loamy sand, and the depth to sand varies more. Where Indianola loamy sand, 15 to 30 percent slopes, is closely associated with the Everett or the Alderwood soils, gravel occurs in lenses or is scattered throughout the profile.

Kitsap County

1. **Alderwood very gravelly sandy loam, 0 to 6 percent slopes**
   This soil is described as a moderately deep, moderately well-drained soil on uplands that formed in glacial till. It generally consists of very gravelly sandy loam and very gravelly loam, underlain by hardpan till. Permeability is reportedly moderately rapid, runoff is slow and the hazard of water erosion is slight.
2. **Alderwood very gravelly sandy loam, 6 to 15 percent slopes**
   The soil description is similar to that for the Alderwood very gravelly sandy loam, 0 to 6 percent slopes, with the exception

of steeper slopes. Runoff is reportedly slow and the erosion hazard is slight.

3. **Neilton gravelly loamy sand, 15 to 30 percent slopes** This soil is described as a deep, excessively drained soil on terraces, benches and uplands that formed in gravelly and sandy glacial outwash. It generally consists of gravelly loamy sand, very gravelly loamy sand and very gravelly sand. Permeability is reportedly rapid to very rapid. Runoff is reportedly slow and the hazard of water erosion is slight.

Corridor features requiring geology (geotechnical) engineering

Based on the current project description, the proposed project would involve new cuts and fills, retaining structures, new intersections and intersection modifications, ditches, storm sewer systems, stormwater treatment facilities, culverts, possible culvert extensions/replacements along the existing SR 3/SR302 segments, and a bridge across an existing ravine (MP 24.32 to MP 24.38). Structure site data and earthwork quantities for the proposed alignment are not available at this time.

Geologic hazards

Potential geologic hazards evaluated include erosion, landslides, seismic hazard, volcanic hazard, flooding, frost action, settlement and the presence of locally high groundwater and low soil permeability areas.

Erosion

The following soil designations within the proposed corridor are identified as having a potential for severe erosion when vegetation is removed: Indianola loamy sand, 15 to 30 percent slopes, and Neilton gravelly loamy sand, 15 to 30 percent slopes. Construction activities for the new alignment would expose loose surface soils that could be subject to water and wind erosion.

Landslides

The south end of the project encroaches upon an existing mapped landslide feature. If significant grade changes or structures are proposed in this area, detailed subsurface investigation (including sampling, laboratory testing, and slope stability analyses) may be needed for advanced design.

Seismic Hazards

There are a number of active faults within the region that are capable of generating significant earthquakes that could affect the site and there are surface scarps and lineaments within the project corridor area that suggest past seismic ground deformation in the vicinity. The Tacoma Fault, in particular, has significant design implications for structures within the project. If significant new structures (other than at-grade pavement areas) are planned in this area, further investigation should occur.

Volcanoes

No active volcanoes are located within the Puget Lowland and prevailing wind patterns tend to direct ash fall from Cascade volcanoes away from the Puget Lowland. The closest volcanic hazard source to the site is Mount Rainier. The project site is considered too distant from this source to experience direct surface effects from an eruption (such as tephra falls and lahars), and both the Kitsap County and Mason County Hazard Identification and Vulnerability Assessments (HIVAs) indicate that the hazard of ash fall in the subject corridor area is relatively remote.

Flooding

The Federal Emergency Management Agency (FEMA) classifies the roadway project area as an area of minimal flooding.

Frost action

Highway pavements especially can suffer serious structural damage during the spring thaw (called the "spring breakup").

The study area does not typically experience the prolonged deep freezes that create frost action.

Settlement

While most of the soils mapped within the corridor limits are relatively dense coarse-grained deposits of glacial origin, several soil designations have been mapped within the corridor limits that could potentially result in excessive settlement, if not mitigated by design features or avoided.

Presence of locally high groundwater

Areas where the groundwater table is relatively close to the surface (or perched on relatively impermeable materials) can affect highway projects in several ways:

- In areas underlain by fine-grained soils, high groundwater can render these areas susceptible to seismically-induced liquefaction
- In areas where adjacent wells have been developed in unconfined shallow aquifers, changes in the groundwater levels due to construction activities (construction cuts that intercept the groundwater table, dewatering and drainage provisions) can affect water yields in these wells
- Areas of high groundwater can affect the availability of storage for potential stormwater treatment facilities (e.g., stormwater ponds)
- High groundwater can substantially affect the stability of proposed cut slopes and embankment slopes.

Additional studies relative to groundwater levels along the corridor would be needed during the design phase to evaluate the applicability and extent of these areas of limitation.

Low soil permeability areas

Areas of low soil permeability are reported in many areas along the subject corridor. These include areas of compact glacial till, as well as fine-grained silts and clays, sediment-filled depressions and wetlands. Areas of low soil permeability could affect required design runoff calculations for surface water management and the sizing of stormwater facilities and conveyance systems.

Permeability reflects the amount of water absorbed by the soil. A high value shows that the water soaks into the soil. A low value shows that the water soaks more slowly into the soil (if at all).

Geologic Resources

Borrow material is the only identified geologic resource within the proposed highway alignment corridor. No aggregate source is identified within the proposed construction limits, based on a search of the WSDOT Aggregate Source Approval (ASA) web site. The potential pit (sand and gravel), quarry, and common borrow sources

in the area may not be complete because the ASA database only includes those sources that submit material to WSDOT for testing. In addition, the database does not provide the Washington State mining permit status. Some of the geologic resources listed in the ASA database may be inactive and not currently permitted for mining. We would need to evaluate the suitability of nearby material sources following a request by the selected construction contractor.

The interactive Aggregate Source Approval (ASA) web search site listed 117 potential sources of materials within Kitsap County and 130 potential sources in Mason County. 26 are listed as being within the same Townships as the subject project.

3.21.4 What effect to geology and soil would result under the No Build Alternative?

Under the No Build Alternative, there would be no potential impacts to the geology and soils along the project corridor as existing conditions and processes would remain as is.

3.21.5 How would geology and soils be affected during construction of the Build Alternative?

Potential impacts of the proposed project to the geology and soils include the potential to increase erosion, possible effects to nearby shallow water wells, and the partial depletion of local aggregate resources. Potential impacts of the geology and soils to the project include the geologic hazards of erosion, landsliding, earthquakes, frost action, settlement, and the presence of areas with localized high groundwater and low soil permeability.

3.21.6 How much material would be transported to and from the site?

The SR 3 Belfair Bypass project is approximately 6.68 miles long. Based on the current project description, the proposed project would involve new cuts and fills, retaining structures, new intersections and intersection modifications, ditches, storm sewer systems, stormwater treatment facilities, culverts, possible culvert extensions/replacements along the existing SR 3/SR302 segments, and a bridge across an existing ravine between MP 24.32 and MP 24.38.

Structure site data and earthwork quantities for the proposed alignment are not available at this time.

3.21.7 What other effects would occur to geology and soils under the Build Alternative after construction?

Under the Build Alternative, potential long-term impacts to the geology and soils from the construction and operation of the proposed facility could include increased erosion due to disturbance of moisture-sensitive and erodible soils; possible locally altered groundwater conditions due to infiltration of runoff and/or interception of shallow groundwater tables in construction cuts; potential for introducing contaminants into the groundwater due to traffic spills and highway runoff; and partial depletion of local aggregate resources. These are design elements typically addressed by WSDOT during the design and construction phases using best management practices and various standardized design procedures.

3.21.8 How would the community be protected from earthmoving activities during construction of the Build Alternative?

Traffic created by earthwork activities

Some earthwork traffic on roads and highways for the construction of the proposed alignment cannot be avoided. However, utilizing on-site common borrow from cuts to construct embankments would reduce the potential impacts to local traffic. Due to the lack of currently approved aggregate resource availability within the proposed highway corridor, aggregate and pavement products may need to be acquired from outside source(s).

Erosion

Erosion by wind and surface water runoff (including the generation of airborne dust during construction) would be an ongoing construction issue. Limiting the acreage of newly exposed soils would reduce erosion. Consideration would be given to limiting earthwork operations to the drier times of the year when erosion potential is reduced. If the soil remains moist, it is unlikely to be eroded by wind during typical construction operations. One way to mitigate wind erosion (and dust generation) is to apply water to the newly exposed soils during construction operations.

Stockpile and waste sites within the project corridor would require similar erosion mitigation methods and techniques described below.

Following the BMPs) outlined in the Temporary Erosion and Sediment Control (TESC) Plan sections of the *WSDOT Highway Runoff Manual* and the *WSDOT Environmental Procedures Manual* would reduce the potential for erosion during construction operations.

Culvert outflow on embankment slopes would be controlled or dissipated by extending culverts near the base of the embankment slope and/or designing hardened, energy dissipating outflow channels on the face of the embankment slopes.

Structural Foundation Excavation

Structural foundation excavation material stored on-site would require similar mitigation methods and techniques as those described in the Erosion section above.

Existing Structures to be Removed or Abandoned

Existing structures to be removed or abandoned, such as residential and commercial structures and appurtenances (including water wells, septic systems, waste dumps, basements, irrigation and drainage systems, etc.) should be demolished, removed or abandoned in place in accordance with the *WSDOT Environmental Procedures Manual*, other applicable WSDOT manuals and procedures; and applicable Federal, State and County agency regulations and permits. The presence of underground structures associated with these existing improvements should be either identified in advance or anticipated during construction (clearing and grubbing) and contingency funding should be provided for proper BMPs regarding demolition, removal, or abandonment and required reporting thereof.

3.21.9 Would the project have unavoidable adverse effects to geology and soil that would not be fully mitigated?

The long-term and construction impacts relative to the geology and soils along the subject alignment would be minimized through detailed geotechnical investigation (including subsurface exploration, sampling, laboratory testing, analyses and instrumentation monitoring) during the design phase of the Build Alternative and through the use of various applicable BMPs in the design and construction of the project.

Applicable Federal, State, County and WSDOT BMPs and permit requirements should be incorporated into construction documents and followed.

The project would not have unavoidable adverse effects to geology and soils that would not be fully mitigated.