

# CHAPTER 4:

## INDIRECT AND CUMULATIVE EFFECTS

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### 4.1 Introduction

The purpose of this chapter is to describe the potential indirect and cumulative effects of the Proposed Action.

Indirect effects (also known as secondary effects) are effects caused by the project, but the effects are away from the project in distance, or occur over time after the project is constructed. These effects are in the chain of cause-and-effect from the initial project construction, and can include change in resources such as land use, economic vitality, and water quality.

Cumulative effects are the summation of effects on the environment that result from the action when added to other past, present, and foreseeable future actions, regardless of what agency or person undertakes those actions.

### 4.2 How were indirect and cumulative effects analyzed?

Each discipline report referenced in Chapter 3 analyzed potentially affected resources in terms of direct impacts and indirect impacts. The primary indirect effects being reported are local land development and regional economic growth. The Bypass would facilitate the development of land that would be made accessible by the new road, and the new development along with the improved travel times would spur economic growth in the project area and the region (the greater northern Mason County/southern Kitsap County area).

With land development and economic growth being the primary indirect effects, the geographical area in which indirect and cumulative effects were considered extends at least one-half mile in all directions from

the proposed bypass (the study area for the land use and economic impact analyses), but also includes the existing SR 3 through the Belfair commercial area. The indirect effects were considered in relation to other recent, current, or planned transportation and land development activities, to arrive at a projection for the combined or cumulative effects that could result. Cumulative effects are by definition interrelated, and therefore are discussed as such in this chapter.

### **4.3 What indirect effects are expected from the Bypass project?**

The Bypass would influence the pattern of development within the study area. A majority of the Belfair Urban Growth Area (UGA) is currently undeveloped and lacking roads, but is zoned for at least four residential units per acre. Without the Bypass, development would continue to be very limited to being adjacent to existing roads. The SR 3 Belfair Bypass project will facilitate development both within the UGA and the rural area that it would pass through. One of the planned access points on the Bypass, at Alta Road/Mason County future Razor Road Extension, is outside of the UGA.

While land development is an aspect of economic growth, it also affects the resources and the community in other ways. Land development results in increased impervious areas, such as roads, parking lots, sidewalks, and buildings. This means more storm water run-off, and less natural infiltration to groundwater. Changes to surface water and groundwater flow affect aquatic ecosystems in the area. Thus, there is a potential for water quality and fish habitat to be indirectly affected within the area including the Hood Canal, Case Inlet, and local rivers and streams.

Land development removes trees and other vegetation, affects wetlands, and displaces wildlife. The addition of a new highway to the east of Belfair may make wildlife movement more difficult. This may lead to a long-term increase in wildlife mortality from vehicle collisions in the study area.

Land development leads to increased demand for public services and utilities: police, fire and emergency, public education, library, extension of water, garbage collection, stormwater treatment, power generation and distribution, and telecommunications.

Conversion of rural, forested, undeveloped land to residential and commercial uses changes the visual quality and noise levels in the area.

The Bypass is projected to divert about 20% of the SR 3 traffic, and thereby reduce traffic congestion through the commercial district of Belfair. This should contribute to improving the conditions for doing business, supporting the envisioned village theme, and attracting more tourism within Belfair.

Improved travel time for through traffic on the Bypass is expected to benefit the economic growth in the region, with growth in commercial enterprises and employment.

#### **4.4 What other transportation projects are known in the area?**

The following are other transportation projects that would have effects that would add to those of the Bypass.

##### **Recent**

WSDOT completed two improvement projects on SR 3 in 2007:

A safety improvement project between Imperial Way and Sunnyslope Road, in Kitsap County, added a two-way left turn lane, and extended the southbound truck climbing lane.

A safety and congestion improvement project within the Belfair commercial area installed a traffic signal at the intersection of SR 3 and SR 106. It also added a left turn lane and right turn pockets.

##### **Current**

WSDOT is currently funded to complete the first stage of SR 3 Belfair Area Widening and Safety Improvement Project. This project will extend the center turn lane, and provide paved shoulders and sidewalks on both sides of SR 3 through the main commercial area of Belfair. This project is scheduled to be constructed by Summer 2013.

Construction of the South Kitsap Industrial Area (SKIA) Cross Connector project is underway. This is a new rural major collector road between Bremerton National Airport and Lake Flora Road in Kitsap County. The purpose is to provide access and mobility through the industrial area and airport in this part of the City of Bremerton. Phase one of the Cross-SKIA Connector project was completed in October 2010.

## **Planned**

Mason County may proceed with plans for county roads connecting to the Belfair Bypass:

**Razor Road Extension** – a connection between East Razor Road, on the west side of SR 3, to the future bypass road. This connection would be at the currently planned intersection of the Bypass and Alta Road, in the rural area south of the Belfair UGA.

**Romance Hill Road Extension** – a connection between SR 3 and the future bypass road. This would further facilitate development within the Belfair UGA and the planned new commercial area adjacent to the Bypass.

**Newkirk Road** – a connection between SR 300 and SR 3. This connection would include an at-grade rail road crossing, and add a critical link in the roadway network.

## **4.5 What significant developments are known in the area?**

The following are other types of development projects that would have effects in the study area.

### **Recent**

Within the study area, a great majority of new housing in recent years has been in the rural area, outside of the UGA. With very limited public roads and other infrastructure in much of the Belfair UGA, development has occurred primarily adjacent to SR 3. Since 2008, development in the Belfair UGA has been further restricted, awaiting sewer service. With the first phase of the Belfair/Lower Hood Canal Water Reclamation Facility now in operation, subdivision and development is permitted.

The most commercial development recently has been taking place on the west side of SR 3 near SR 300 and NE Old Clifton Road. Harrison Belfair Urgent Care recently opened at SR 3 and NE Romance Hill Road.

### **Current**

The Belfair Wastewater and Water Reclamation Facility (sewage treatment facility) was recently constructed and is now in operation. The facility is located just outside the border of the Belfair UGA. The wastewater treatment plant is planned to expand to 30 acres by 2025.

## Planned

Property in Kitsap County at the SR 3/Lake Flora Road intersection, is one of three sites being considered for location of a new Washington State Department of Corrections (DOC) facility, the Westside Prison Reception Center. The site evaluation process is currently on hold (DOC capital facilities office, personal communication, October 10, 2012).

SKIA is one of eight Manufacturing Industrial-Centers (MIC) in the Puget Sound Region as classified by the Puget Sound Regional Council (PSRC). It is projected that this area will experience significant job growth over the next 20 years.

## 4.6 What cumulative effects are expected in the area?

The following are the effects that are considered reasonably foreseeable as a result of the Bypass combined with other transportation projects and development in and around the study area.

Along with the new waste water treatment plant being in operation, the construction of the Bypass would have cumulative effect in terms of facilitating development. With much of the Belfair UGA having been restricted from development due to lack of infrastructure, there could be a sharp increase in subdivision development, building permit applications, and conversion of forest land to residential, given the right economic conditions.

There would be an increase in air pollution in currently undeveloped areas due to vehicle emissions on the new Bypass and other new roads. There would also be at least a short-term decrease on existing SR 3 as traffic congestion is reduced and vehicle trips are distributed over a larger network of roads.

Cumulative land development impacts in this area include loss and degradation of wildlife habitat, including land, water, and wetlands. The proposed Bypass is located in an area where the land narrows between Hood Canal and Case Inlet. Therefore, there is also a narrow land connection for terrestrial wildlife movements. For wildlife that do not cross marine waters, this terrestrial passage is all that connects the vast land area of the Kitsap and Tahuya Peninsulas with the rest of western Washington. High-speed traffic on a new bypass will further inhibit wildlife movement and result in wildlife being killed by vehicles. The associated land development will exacerbate this as habitat is further fragmented.

Increases in impervious surface areas restrict groundwater infiltration and subsequent recharge of a shallow aquifer system. While the Build Alternative will have only a small impact on the shallow aquifer system, the cumulative effects with other roadway improvement projects and subsequent urbanization can alter flow patterns, water table elevations and seasonal high water. Water quality can be affected by a change in flow rate. Decreases in base flows create higher concentrations of less diluted pollutants. Higher flood peak flows can create a strong first flush effect where pollutants are washed into water bodies.

All of the new transportation improvements together will make this area more attractive for development, add to economic development and land use changes. Land development facilitated by the Bypass will in turn result in added traffic on the Bypass. Once local roads are connected to the Bypass, these intersections may eventually need to be reconstructed separated-grade interchanges in order to safely handle the traffic. Private land development and expanded infrastructure and utilities will have cumulative effects on the visual quality and noise levels in the region.

#### **4.7 What mitigation measures exist or would be proposed for these cumulative effects?**

The decisions as to where and how development will occur are made within local land use planning efforts. Local and regional land use plans have been adopted following applicable laws, as discussed in Chapter 3, and in detail in the *SR 3 Belfair Bypass Land Use Discipline Report*. Each of these plans is evaluated for environmental effects. Planned growth within the UGAs should provide the opportunity to increase the efficiency and reliability of services and utilities. Permit conditions from regulatory agencies along with BMP's will be utilized to mitigate stormwater impacts.

Regulatory and voluntary efforts to improve fish habitat in the local area will continue with or without the project. Groups such as the Hood Canal Dissolved Oxygen Program, the Hood Canal Salmon Enhancement Group, and others are actively working to protect and enhance water quality, fish, and fish habitat on the Hood Canal.

Potential mitigation for wildlife impacts connected with the Bypass includes constructing a wildlife crossing of the Bypass. The most promising location for this would be near the northern end, within Kitsap County. The Bypass alignment crosses an intermittent stream in this area, which would provide the opportunity for an over-sized culvert. In order for

such a wildlife-crossing to be beneficial, there must be a wildlife corridor preserved on either side of the highway leading to the crossing. Land would need to be designated for a wildlife corridor before development overtakes the area.

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