Department of Ecology Grant No. G1000017



City of Gold Bar Cumulative Impacts Analysis

Skykomish River, Wallace River, and May Creek

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FINAL DRAFT

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Chapter 1: Introduction

A. Department of Ecology Direction and Guidance

The Shoreline Management Act (SMA) guidelines require local shoreline master programs (SMPs) to regulate new development to "achieve no net loss of ecological function." The guidelines (Washington Administrative Code (WAC) 173-26-186(8)(d)) state that:

"To ensure no net loss of ecological functions and protection of other shoreline functions and/or uses, master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts."

The guidelines discuss the concept of net loss in more detail in WAC 173-26-201(2)(c).

The City of Gold Bar's (City's) updated SMP will contain goals, policies, and regulations that prevent degradation of ecological functions relative to the existing conditions as documented in the *City of Gold Bar Shoreline Analysis Report (SAR)*. For those projects that result in degradation of ecological functions, the required mitigation must return the resultant ecological function back to the baseline, as illustrated in the figure below.

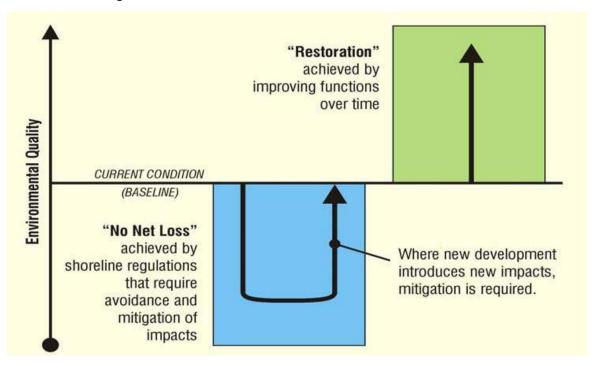


Figure 1 – No Net Loss and Baseline Conditions. Source: Department of Ecology

The City must be able to demonstrate that it has accomplished that goal through an analysis of cumulative impacts that might occur through implementation of the updated SMP. Evaluation of such cumulative impacts should consider:

- (i) Current circumstances affecting the shorelines and relevant natural processes;
- (ii) Reasonably foreseeable future development and use of the shoreline; and
- (iii) Beneficial effects of any established regulatory programs under other local, state, and federal laws.

As outlined in the *Shoreline Restoration Plan* that will be prepared as part of the City SMP update, the SMA also seeks to restore ecological functions in degraded shorelines. This cannot be required by the SMP at a project level, but Section 173-26-201(2)(f) of the Guidelines note that "...master programs shall include goals and policies that provide for restoration of such impaired ecological functions." The *Shoreline Restoration Plan* will have a discussion of SMP policies and other programs and activities in the City that contribute to the long-term restoration of ecological functions relative to the baseline condition.

For those portions of the Skykomish River, Wallace River, and May Creek that are within the City, the following analysis summarizes the existing conditions, anticipated development, relevant SMP and other regulatory provisions, and the expected net impact on ecological function.

B. Relationship to SEPA

The State Environmental Protection Act (SEPA) requires an assessment of environmental impacts. This cumulative impact analysis is a supplement to the environmental review done under SEPA and is intended to address cumulative rather than isolated or individual impacts that might not be considered otherwise as part of the environmental checklist.

The SEPA review process is intended to provide a list of possible environmental impacts that may occur because of a project or change in policy. This helps identify potential impacts that may need to be mitigated, conditioned, or this may result in the denial of a project or proposal. This cumulative impact analysis is intended to look at impacts as a whole based on whether or not multiple similar projects collectively result in gradual, but significant impacts. While SEPA looks at impacts by topic and the effects they may have as a whole for the project area, the cumulative impacts analysis examines impacts that may result from multiple projects over time.

C. Assumptions

This analysis considered foreseeable impacts over time. Impacts are examined in the Skykomish River, Wallace River, and May Creek shoreline jurisdictions as completed in the existing SMP document and in the SAR. In addition, site-specific impacts are expected to be addressed on a case-by-case basis during individual project reviews. This analysis corresponds with the five proposed shoreline environment designations.

Due to current adopted land use regulations and current land use, it is assumed that the eastern portion of the Wallace River shoreline area in the City has significant redevelopment potential. Other areas, such as the existing residential and commercial development near May Creek or the areas along the Skykomish River that are isolated from the rest of the City, are likely to see more slow and incremental changes associated with on-going uses, with no further subdivision of property or intensification of uses. This is discussed in detail later in this document.

D. Document Roadmap

This cumulative impacts analysis summarizes the existing conditions in the three shorelines within the City: the Skykomish River, Wallace River, and May Creek. It details the potential impacts and risks to shoreline functions and processes, identifies anticipated development in each shoreline and how the SMP regulations would address this development, discusses how other local, state and federal regulations would address these potential impacts, and describes the net effect on ecological functions and processes. A cumulative impacts table for the Skykomish River, Wallace River, and May Creek shoreline jurisdictions is included in Appendix 1. The tables describes the relationship between ecological function, potential alteration, resources at risk, and proposed SMP regulations and non-regulatory measures designed to assure no net loss at a minimum.

Chapter 2: Existing Conditions

The following summary of existing conditions in the City's three shoreline areas and the relevant natural processes is based on the final SAR prepared by Otak in December 2010 and additional analysis needed to perform this assessment. The full report includes a more in-depth of discussion of the topics below.

A. Skykomish River

1. Shoreline Environments

Approximately 64% of the upland shoreline jurisdiction associated with the Skykomish River is proposed to be designated as the Natural environment designation. Approximately 36% of the upland shoreline jurisdiction associated with the Skykomish River is proposed to be designated as the High Intensity environment designation.

2. Land Use

Within the 200-foot upland portion of the Skykomish River shoreline jurisdiction, approximately 61% is undeveloped, while the remaining 39% is right-of-way developed as roads or the rail line owned by the BNSF railroad.

The Skykomish River shoreline jurisdiction currently has two zoning designations: Residential -12,500 (R-12,500) (50%) and Community Business (CB) (50%). Future land uses, as indicated by the current designations in the Comprehensive Plan, include Community Business, Residential, and Parks.

The proposed shoreline environment designations reflect both the existing conditions and potential future uses along the Skykomish River, which are not likely to change in intensity or use from current conditions. The designation of shoreline areas reflects the City's intent to continue to encourage existing uses in the future while recognizing the existing nature of this area.

3. Parks and Open Space/Public Access

Presently, there is no existing formal public access to the Skykomish River.

4. Shoreline Modifications

Impervious surfaces within the City's Skykomish River shoreline jurisdiction include State Route 2, the BNSF railroad grade, and a small gravel parking area next to the river.

5. Biological Resources and Critical Areas

a) Geologically Hazardous Areas

The City has not mapped geologically hazardous areas. Should any geologically hazardous areas be determined, those areas shall be subject to the City's regulations set forth in the Critical Area Ordinance (CAO) and SMP.

b) Flood Hazard Areas

The only potions of the Skykomish River's floodway located in the City's shoreline jurisdiction are those portions of the floodway that are located within the City limits. Based on the maps prepared for the City's SAR, there are two residential parcels within the shoreline jurisdiction, with only one built residence found within the floodplain in City limits.

c) Wetlands

According to the City's Comprehensive Plan, Map 8, wetlands are only identified in the southern portion of the Skykomish River. However, the SAR, prepared as part of the SMP Update, does not identify any wetlands within the Skykomish River's shoreline jurisdiction. Any undocumented wetlands located within or adjacent to the City, and which are associated with the shoreline jurisdiction would also be subject to the City's SMP regulations and Critical Areas Ordinance (CAO).

d) Streams

That portion of the Skykomish River within the City travels though the City along its southern boundary.

e) Other Fish and Wildlife Habitat Conservation Areas

Priority Habitats and Species:

Anadromous fish habitat is a wildlife conservation area of concern. According to the Washington State Department of Fish and Wildlife (WDFW), anadromous fish habitat is present in the Skykomish River. The Skykomish River is a known spawning area for Coho Salmon and Chum Salmon. Additionally, the Skykomish River is known rearing habitat for Steelhead, Chinook, and Pink Salmon and Bull Trout. The Endangered Species Act (ESA) lists the Chinook salmon, Steelhead, and Bull Trout as threatened species.

f) Critical Aquifer Recharge Areas

The entire City lies within the critical aquifer recharge area, specifically the High Aquifer Sensitivity Area.

B. Wallace River

1. Shoreline Environments

Approximately 74% of the upland shoreline jurisdiction associated with the Wallace River is proposed to be designated as the Shoreline Residential environment designation. Approximately 26% of the upland shoreline jurisdiction associated with the Wallace River is proposed to be designated as the Urban Conservancy environment designation.

2. Land Use

Within the 200-foot upland portion of the Wallace River shoreline jurisdiction, approximately 73% is developed as single-family residential, while the remaining 27% is undeveloped or right-of-way developed as roads.

The Wallace River shoreline jurisdiction currently has three zoning designations: R-12,500 (40.4%), Residential 9,600 (R-9,600) (54.6%), and Public Space & Parks (PSP) (5.0%). Future land uses, as indicated by the current designations in the Comprehensive Plan, include Residential, Public Facilities, and Parks.

The proposed shoreline environment designations reflect both the existing conditions and potential future uses along the Wallace River. The designation of the shoreline area as Shoreline Residential reflects the City's intent to continue to encourage this use in the future and recognizes the existing nature of this area.

3. Parks and Open Space/Public Access

Wallace River Estates, a subdivision off May Creek Road and adjacent to the Wallace river provides a designated native growth protection area (NGPA), including a 15-foot public ingress/egress exists from the plat road to the NGPA along the Wallace River.

Additionally, Salmon Run Park off 399th Avenue SE is an undeveloped park totaling approximately 1.3 acres along the south bank of the Wallace River. This property was dedicated to the City for use as a park as part of the Olson Short subdivision.

4. Shoreline Modifications

Impervious surfaces within the City's Wallace River shoreline jurisdiction include roads. The 399th Avenue SE Bridge crosses the Wallace River and is of concrete and steel construction. Additionally, there are six residences within the shoreline jurisdiction as well as a 400-foot clearing which spans the River downstream from the 399th Avenue SE Bridge. It is unknown if this clearing is used for agricultural or other purposes.

5. Biological Resources and Critical Areas

a) Geologically Hazardous Areas

The City has not mapped geologically hazardous areas. Should any geologically hazardous areas be determined, those areas shall be subject to the City's regulations set forth in the CAO and SMP.

b) Flood Hazard Areas

The Wallace River's 100-year floodplain and 0.2% Annual Chance Flood hazard falls partially within the shoreline jurisdiction. Based on the maps no built structures are found within the floodway in City limits.

c) Wetlands

There are no mapped wetlands associated with the Wallace River. However, any currently undocumented wetlands located within or adjacent to the City, and which are associated to the shoreline, would also be subject to the City's SMP regulations and CAO.

d) *Streams*

That portion of the Wallace River within the City travels though the City along its northern boundary.

e) Other Fish and Wildlife Habitat Conservation Areas

Priority Habitats and Species:

Anadromous fish habitat is a wildlife conservation area of concern. According to the WDFW, anadromous fish habitat is present in the Wallace River. Fish species identified as using the Wallace River within the City limits include Chinook, Coho, Pink, Chum, Bull Trout, and Steelhead.

Portions of the Wallace River are identified as a Harlequin Duck Breeding Area and riparian area. The riparian buffer of the Wallace River is considered a Fish and Wildlife Habitat Conservation Area.

f) Critical Aquifer Recharge Areas

The entire City lies within the critical aquifer recharge area, specifically the High Aquifer Sensitivity Area.

C. May Creek

1. Shoreline Environments

Approximately 57% of the upland shoreline jurisdiction associated with May Creek is proposed to be designated as the Shoreline Residential environment designation, while approximately 21% is proposed to be designated as the Natural environment, approximately 15% of is proposed to be designated as the Urban Conservancy environment while the remaining 7% is proposed to be designated as the High Intensity environment.

2. Land Use

Within the 200-foot upland portion of the May Creek shoreline jurisdiction, approximately 64% is developed as single-family residential, 27% is undeveloped, 7% is mobile homes, 0.95% is Utilities/Transmissions/Communications, 0.28% is unknown, and 0.23% is developed as government/education uses.

The May Creek shoreline jurisdiction currently has six zoning designations: R-12,500 (54.1%), R-9,600 (37.7%), Residential 7,200 (R-7,200) (0.2%), General Commercial (GC) (1.0%), Community Business (6.3%), and PSP (0.8%). Future land uses, as indicated by the current designations in the Comprehensive Plan, include Community Business, Residential, Public Facilities, Open Space, and Schools.

The proposed shoreline environment designations reflect both the existing conditions and potential future uses along the May Creek, which are not likely to change in intensity or use from current conditions. Designation of Shoreline areas as High Intensity, Shoreline Residential, Urban Conservancy, and Natural environment designations reflects the City's intent to continue to encourage this use in the future while recognizing the existing nature of this area.

3. Parks and Open Space/Public Access

The Creekside Vista subdivision is located in the eastern portion of the City, just beyond the current Urban Growth Area of the City. Both tracts, within the subdivision and immediately adjacent to May Creek have been set aside as NGPAs and are designated to remain in a natural state in perpetuity.

Additionally, May Creek Plat is another subdivision in the City developed alongside May Creek which has a 4,500 square foot undeveloped park tract adjacent to the shoreline. A 15-foot public access easement was granted to the City from the right-of-way on Evergreen Way to access the park and water's edge. The City's Comprehensive Plan notes that the park could be developed as a trailhead, while the City's Pedestrian and Bicycle Plan identifies a proposed soft surface running trail through the park connecting to the path that runs adjacent to May Creek.

4. Shoreline Modifications

Impervious surfaces within the City's May Creek shoreline jurisdiction include roads and rooftops from homes and associated structures. Roads include 1st Street, May creek Place, 1st Avenue W, 3rd Street, Linda Avenue, Evergreen Way, and Gold Bar Drive.

5. Biological Resources and Critical Areas

a) Geologically Hazardous Areas

The City has not mapped geologically hazardous areas. Should any geologically hazardous areas be determined, those areas shall be subject to the City's regulations set forth in the CAO and SMP.

b) Flood Hazard Areas

Most of May Creek within the shoreline jurisdiction falls within the floodway. Based on the maps prepared for the SAR, there are numerous built structures are found within the floodway.

c) Wetlands

There are no mapped wetlands associated with the May Creek. However, based on aerial photography and the SAR, there is a large forested wetland complex located on the right back of May Creek just south of 1^{st} Street. It also appears that a side channel engages when May Creek experiences high flows.

Any other currently undocumented wetlands located within or adjacent to the City, and which are associated with the shoreline, would also be subject to the City's SMP regulations and CAO.

d) Streams

That portion of May Creek within the City travels though the City from the City's northwest boundary to its south and east boundary.

e) Other Fish and Wildlife Habitat Conservation Areas

Priority Habitats and Species:

Anadromous fish habitat is a wildlife conservation area of concern. According to the WDFW, anadromous fish habitat is present in May Creek. Steelhead, Coho, and Chum are identified by WDFW in May Creek, making May Creek a priority habitat. Bull Trout are mapped as being located in May Creek, but downstream of the City limits. The riparian buffer of May Creek is considered a Fish and Wildlife Habitat Conservation Area.

f) Critical Aquifer Recharge Areas

The entire City lies within the critical aquifer recharge area, specifically the High Aquifer Sensitivity Area.

Chapter 3: Ecological Functions and Processes at Risk

The intent of the City's SMP is to assure, at a minimum, no net loss of ecological functions necessary to sustain shoreline natural resources. The following subsections outline specific ecologic functions of the City's shoreline jurisdiction and related processes that are at risk and must be protected by the SMP.

A. Nutrient Delivery and Removal

Nutrient delivery and removal can result from a variety of processes that take place in the City. This would include runoff and irrigation from agricultural uses, residential landscaping, and land clearing. These processes lead to an excess of nutrients being released into the Skykomish River, Wallace River, and May Creek.

B. Groundwater Flow

Groundwater flow within the City's shoreline areas has been altered by development and infrastructure resulting in disrupted interactions between the Skykomish River, Wallace River, and May Creek ecosystems and the hyporheic zone within the City, but especially upstream in Snohomish County. Overbank flooding and hyporheic flows in the floodplain areas are important processes in the Skykomish River, Wallace River, and May Creek basins. These surface and subsurface water flow processes support the hydrology of existing wetlands and the Skykomish River, Wallace River, and May Creek ecosystems.

Development causes greater areas of pollution generating impervious surfaces by paving, creating non-pollution generating surfaces with building construction, and compacted soil. In addition, development removes vegetation that would intercept and treat runoff. All of these factors lead to greater surface runoff and lower infiltration rates, which result in a lower level of aquifer recharge. Wetlands are useful in slowing surface water runoff and storing surface waters in addition to storm water detention facilities that are required in the development of land.

C. Surface Water Flow

Channelization of rivers and streams and filling of wetlands has intercepted and altered surface water flows, resulting in altered flow and lower infiltration rates. This has resulted in increased storm water runoff and increased peak flow and velocities. Ditching, channelization and clearing vegetation from floodplains and aquatic resources can affect hyporheic flows if not protected; these

flows are needed to support existing and potential wetlands as well as the Skykomish River, Wallace River, and May Creek.

D. Sediment Delivery and Removal

Sediment delivery and removal in the City has been affected by land clearing and urban development in the area. Conversion of forested lands to agriculture, timber harvesting, road construction, and development have all changed the sediment transport processes in the area around the City. Increased impervious surfaces and altered hydrology from new developments in the area could also potentially alter sediment processes.

E. Fish and Wildlife Habitat

Fish and wildlife habitat is affected by urban developments, road construction; culverts, loss of riparian cover, and stream bank alterations. Important habitat elements for fish include – riparian cover, large woody debris, passage for migration, clean water, spawning habitat, off-channel habitat, forage habitat, and food sources. There are several areas of spawning habitat in the City shoreline areas, and rearing habitat has been identified in the Skykomish River, Wallace River, and May Creek within the City. Alteration of these habitats, loss of wetlands and riparian areas reduce the habitat areas for many species including small mammals, amphibians, reptiles, birds, and other aquatic and terrestrial species.

Chapter 4: Foreseeable Development in Shoreline Environments

A wide range of possible actions may result in cumulative impacts to the shoreline environment. Consistent with the SMA guidelines, an evaluation of cumulative impacts on ecological functions considers reasonably foreseeable future development and use of the shoreline that is regulated by the SMP, as well as actions that are caused by unregulated activities and development exempt from permitting.

The focus of foreseeable development is on those actions that have been identified as potential impacts to the shoreline environment and that are or would be foreseeable based on past development patterns, dependent on shoreline regulations. This section provides a description of how elements of the SMP address the potential impacts of reasonability foreseeable development, including exempt and unpermitted development.

A. Skykomish River

The Skykomish River contains a modified river corridor. Much of this section of the river has been modified in some manner through shoreline armoring, which has affected some in-stream habitat. There is the potential for unmapped wetlands.

There are two shoreline environment designations along Skykomish River: Natural and High Intensity. Aquatic is the shoreline environment designation for the portion of the river below the Ordinary High Water Mark (OHWM).

1. Patterns of Shoreline Activity

The City has not issued any shoreline permits in the Skykomish River shoreline jurisdiction in the recent past.

2. Residential Development

Under current City zoning, 50.1% of the Skykomish River shoreline jurisdiction is zoned Community Business, while the remaining 49.9% is zoned R-12,500. Given the existing development pattern and the lack of sewer in the immediate future, it not expected that the intensity or type of land use would change.

Under the SMP, in Chapter 4 - Shoreline Use Provisions, development in the Shoreline Residential designation would require a 150-foot standard Shoreline Setback from the OHWM that may be reduced by 25% with buffer averaging.

3. Commercial, Industrial, and Utility Development

In the Community Business zoning district, commercial development could develop on those properties in the Skykomish River shoreline jurisdiction at a maximum of impervious surface coverage of 50% for structures and other impervious surfaces combined. Given the existing development pattern, and the presence of the railroad line, it not expected that the intensity or type of land use would change much from the existing land uses.

Under the SMP, in Chapter 4 - Shoreline Use Provisions, development in the High Intensity designation would require a 150-foot standard Shoreline Setback from the Ordinary High Water Mark (OHWM) that may be reduced by 25% with buffer averaging. A variety of uses such as professional offices, retail shops and associated commercial uses would be permitted outright.

4. Recreational Development

In the R-12,500 zoning district, public recreational facilities are permitted. However, in the Community Business zone, public recreational facilities are not allowed. Given the existing development pattern, it not expected that the existing area would change much from the existing land uses.

Under the SMP, in Chapter 4 - Shoreline Use Provisions, most recreational development would be permitted outright within the High Intensity, Shoreline Residential, and Urban Conservancy environment designations. However, only water oriented recreational development would be conditionally allowed within the Natural environment designation.

5. Overwater Structures

The Skykomish River is not considered navigable. Based on Table 3 of Chapter 5 of the SMP - Shoreline Modification Provisions, overwater structures such as piers, docks, or floats are not allowed in the Skykomish River.

6. Shoreline Stabilization

According to aerial photos and site visits, there is shoreline armoring along the Skykomish River within the City. In the High Intensity and Shoreline Residential environment designations, based on Table 3 of Chapter 5 of the SMP - Shoreline Modifications, restoration and enhancement, soil bioengineering, and structural stabilization would be allowed outright, while groins and weirs would be prohibited. Bulkheads and Riprap would be allowed in the Shoreline Residential designation with a Conditional Use Permit.

B. Wallace River

The Wallace River contains a modified river corridor. Much of this section of the river has been modified in some manner, which has affected some in-stream habitat. There is the potential for unmapped wetlands.

There are two shoreline environment designations along Wallace River: Shoreline Residential and Urban Conservancy. Aquatic is the shoreline environment designation for the portion of the river below the OHWM.

1. Patterns of Shoreline Activity

The City has performed SEPA review for the Wallace River Estates and Wallace Falls Court.

2. Residential Development

Under current City zoning, 53.2% of the Wallace River shoreline jurisdiction is zoned R-9,600, 46.4% is zoned R-12,500 and 0.003% of the shoreline jurisdiction is zoned Public Spaces and Parks (PSP). Single-family residential development could occur in the R-9,600 and R-12,500 zoning districts. The minimum lot size in the R-9,600 and R-12,500 zoning districts is 9,600 and 12,500 square feet respectively when served by City water and public sewer. The minimum lot size is 12,500 square feet when served only by a septic system. Currently, sewer does not serve the City and there are no plans in place to provide sewer in the City. Given the existing development pattern, the maximum number of dwelling units, and the lack of sewer in the immediate future, it not expected that the intensity or type of land use would change.

Under the SMP, in Chapter 4 - Shoreline Use Provisions, development in the Shoreline Residential designation would require a 150-foot standard Shoreline Setback from the OHWM that may be reduced by 25% with buffer averaging. Single-family residential uses would be permitted outright, while duplexes would require approval of a Conditional Use Permit.

3. Commercial, Industrial, and Utility Development

The existing zoning in the Wallace River shoreline area does not allow commercial or industrial development. Utility development has been limited in nature.

4. Recreational Development

Public recreational facilities are allowed outright. These include, but are not limited to open spaces; hard and soft surface play areas; playground equipment; landscaped or natural areas; recreational trail systems; picnic areas; gardens; arboretums; viewpoints and related structures. Given the existing development pattern, it not expected that the existing recreational development would change much from what currently exists..

Under the SMP, in Chapter 4 - Shoreline Use Provisions, recreational development would be permitted outright.

5. Overwater Structures

The Wallace River is not considered navigable. Based on Table 3 of Chapter 5 of the SMP - Shoreline Modification Provisions, overwater structures such as piers, docks, or floats are not allowed in the Wallace River.

6. Shoreline Stabilization

According to aerial photos and site visits, there is no shoreline armoring along the Wallace River within the City. In the High Intensity and Shoreline Residential environment designations, based on Table 3 of Chapter 5 of the SMP - Shoreline Modification Provisions, restoration and enhancement, soil bioengineering, and structural stabilization would be allowed outright, while groins would be prohibited. Bulkheads would not be allowed in the Urban Conservancy and Natural Environment designations, but would be allowed in the High Intensity and Shoreline Residential environment designations with a Conditional Use Permit.

C. May Creek

May Creek is a modified creek corridor. Much of this section of the creek has been modified in some manner, which has affected some in-stream habitat. There is the potential for unmapped wetlands.

There are four shoreline environment designations along May Creek: High Intensity, Shoreline Residential, Urban Conservancy, and Natural. Aquatic is the shoreline environment designation for the portion of the creek below the OHWM.

1. Patterns of Shoreline Activity

The City has issued shoreline permits for the Creekside Estates.

2. Residential Development

Under current City zoning, 53.4% of the May Creek shoreline jurisdiction is zoned R-12,500, 37.8% is zoned R-9,600, 7.2% is zoned General Commercial, 0.008% is zoned PSP, and 0.006% is zoned R-7.200. Single-family residential development could occur in the R-7,200, R-9,600, and R-12,500 zoning districts. The minimum lot size in the three districts is 7,200, 9,600, and 12,500 square feet respectively when served by City water and public sewer or the lot size required by the Snohomish County Health Department for septic systems, whichever is larger. Currently, sewer does not serve the City and there are no plans in place to provide sewer in the City. Given the existing development pattern, the maximum number of dwelling units, and the lack of sewer in the immediate future, it not expected that the intensity or type of land use would change.

Under the SMP, in Chapter 4 - Shoreline Use Provisions, development in the Shoreline Residential designation would require a 150-foot standard Shoreline Setback from the OHWM that may be reduced by 25% with buffer averaging. Single-family residential uses would be permitted outright, while duplexes would require the approval of a Conditional Use Permit.

3. Commercial, Industrial, and Utility Development

In the General Commercial (CG) zoning district, commercial development could occur on portions of four properties in the May Creek shoreline jurisdiction at a maximum of impervious surface coverage of 50% for structures and other impervious surfaces combined. Given the existing development pattern, it not expected that the intensity or type of land use would change much from the existing land uses.

Under the SMP, in Chapter 4 - Shoreline Use Provisions, development in the High Intensity designation would require a 150-foot standard Shoreline Setback from the OHWM that may be reduced by 25% with buffer averaging. A variety of uses such as professional offices, retail shops and associated commercial uses would be permitted outright.

4. Recreational Development

Public recreational facilities are allowed outright. These include, but are not limited to open spaces; hard and soft surface play areas; playground equipment; landscaped or natural areas; recreational trail systems; picnic areas; gardens; arboretums; viewpoints and related structures. Given the existing development pattern, it not expected that the existing recreational development would change much from what currently exists.

Under the SMP, in Chapter 4 - Shoreline Use Provisions, recreational development would be permitted outright.

5. Overwater Structures

May Creek is not considered navigable. Based on Table 3 of Chapter 5 of the SMP - Shoreline Modification Provisions, overwater structures such as piers, docks, or floats are not allowed in May Creek.

6. Shoreline Stabilization

According to aerial photos and site visits, there is no shoreline armoring along May Creek within the City. In the High Intensity and Shoreline Residential designations, based on Table 3 of Chapter 5 of the SMP - Shoreline Modification Provisions, restoration and enhancement, soil bioengineering, and structural stabilization would be allowed outright, while groins would be prohibited. Bulkheads would not be allowed in the Urban Conservancy and Natural environment designations, but would be allowed in the High Intensity and Shoreline Residential environment designations with a Conditional Use Permit.

Chapter 5: State, Local and Federal Regulations

A. City of Gold Bar Shoreline Master Program

As discussed in detail in Chapter 4, the SMP has been put together after consideration of reasonably foreseeable development and how this development could impact the functions and processes that are potentially at risk that were discussed in Chapter 3. In addition to the specific details provided in these previous sections, this section provides a brief overview of the entire SMP and how it generally addresses the protection of ecological functions and processes from cumulative impacts. The section is intended to put the SMP regulations within context of the other regulations that apply to this area.

The first level of protection provided by the SMP is the recognition of five different shoreline environment designation types in the City: High Intensity, Shoreline Residential, Urban Conservancy, Natural, and Aquatic. These environment designations were assigned based primarily on existing and proposed land uses, which implicitly encompasses differing levels of ecological functions and different probabilities and potentials for improvements of ecological functions, as well as the location of critical areas and their buffers. Each environment designation's designated area is outline below.

- The High Intensity shoreline environment designation is assigned to those areas directly south of State Route 2 to the BNSF railroad tracks as well as an area extending approximately from Powell Lane to Smeltzer Road along the south bank of May Creek.
- The Shoreline Residential shoreline environment designation includes the following areas:
 - The south bank of the Wallace River from the western city limits to the first area of unincorporated Snohomish County.
 - Portions of May Creek, extending from the northwest city boundary along the north and south banks to the just the south bank of May Creek just before the creek makes a tangent to the south.
 - A small portion exists along the north bank of May Creek south of May Creek Place surrounded on three sides by the Urban Conservancy shoreline environment designation.
- The Urban Conservancy shoreline environment designation is assigned to the shoreline areas along the north bank of May Creek from 1st Street East to the City boundary, and along the south bank of the Wallace River from the City's boundary with Snohomish County to the easternmost City boundary.

- The Natural shoreline environment designation is assigned to portions of the shoreline areas along the Skykomish River south of the existing railroad tracks as well as the east and west banks of the south fork of May Creek.
- The Aquatic shoreline environment designation is assigned to the Skykomish River, Wallace River, and May Creek waterward of the OHWM.

The proposed SMP contains numerous policies, with supporting regulations intended to protect the ecological functions of the shoreline and maintain, at a minimum, the current level of function. Major sections of the proposed SMP are referenced and summarized in Table 1 below and in more detail in the Cumulative Impact Analysis Table in Appendix A.

Table 1: Summary of Shoreline Master Program Policies and Regulations

SMP Chapter with SMP Goal, Policy or Regulation	Purpose of SMP Provision	Key General Ecological Functions Protected
Chapter 2: Shoreline Environments	Defines and maps the shoreline jurisdiction in the City and defines and maps the environment designations of all the shorelines of the state in the City. Policies and regulations specific to the five designated shoreline environment designations (High Intensity, Shoreline Residential, Urban Conservancy, Natural, and Aquatic) are detailed in this chapter. Specifically, the environments are the key to providing appropriate and specific regulations to ensure no net loss in both developed and undeveloped areas with high functions.	All, with focus on preserving and enhancing shoreline ecological functions.
Chapter 3: General Policies and Regulations	Sets forth the general policies and regulations that apply to uses, developments, and activities in all shoreline areas of the City. Specifically, it contains the requirement that all development and uses meet no net loss, and provides specific standards for areas such as critical areas, vegetation conservation, and water quality.	All, with focus on no net loss, critical areas, vegetation and water quality and quantity.
Chapter 4: Specific Shoreline Use Policies and Regulations	Sets forth policies and regulations governing specific categories of uses and activities typically found in shoreline areas. The policies and regulations cover the following uses and activities: Agriculture, Aquaculture, Boating Facilities, Civic, Commercial Development, Forest Practices, Industry, Parking, Recreational Development, Residential Development, Transportation, and Utilities (Primary and Accessory).	All, with specific focus on the unique aspects of specific uses that require specific and unique requirements to assure no net

SMP Chapter with SMP Goal, Policy or Regulation	Purpose of SMP Provision	Key General Ecological Functions Protected
	Specifically, it contains the requirement that all specific shoreline uses meet no net loss.	loss.
Chapter 5: Shoreline Modification Activity Regulations	Provides policies and regulations for those activities that modify the physical configuration or qualities of the shoreline area, such as shoreline stabilization, clearing and grading, dredging and fill, and overwater structures.	All, with focus on protecting habitat, water quality and water quantity.
	Specifically, it contains the important shoreline modification matrix that describes what modifications are allowed in each environmental designation.	

B. Beneficial Effects of Other Established Regulatory Programs

1. Other Laws and Programs

A number of established local, state, and federal laws and regulatory programs provide beneficial effects on shorelines, besides the SMP and the state shoreline jurisdiction. City regulations and programs include the Critical Areas Ordinance, Comprehensive Plan, and Stormwater Regulations.

The City has no stormwater manual and it is not regulated by an NPDES Permit. Currently, the City is working on a stormwater fee ordinance and in the near future a stormwater manual. The City does have design requirements and new plats are required to meet the most current standards of the Ecology Stormwater Manual. These efforts will have major positive impacts on water quality and water quantity in the shoreline jurisdiction of the City. This will affect the full range of related functions.

State and federal regulations and programs include the Growth Management Act (GMA), SEPA, Regulatory Reform (ESHB 1724), Clean Water Act, Public Trust Doctrine, and Aquatic Lands. In addition, numerous regional programs provide benefits to the City's shoreline.

Through its planning goals, the Growth Management Act (GMA) encourages economic development that is consistent with adopted comprehensive plan and that is within the capacities of the State's natural resources. In addition, the GMA requires local governments to maintain and enhance natural-resource-based industries, including anadromous fisheries and agricultural industries. Policies that give preference to development that is dependent on the economic resources of the

shoreline, including anadromous fisheries and agriculture, would be consistent with these GMA goals. Discouraging intense economic development in critical salmon spawning areas would be consistent with other GMA goals for protecting fish and wildlife habitat, and protecting the environment. Encouraging water-enjoyment uses in appropriate locations would further GMA's directive to increase access to natural resource lands and water.

The Comprehensive Plan directs the general development of the City and the Gold Bar Municipal Code (GBMC) guides the character and quality of development relative to shoreline features, especially through critical areas regulations, landscaping regulations and development regulations.

2. Washington Department of Fish and Wildlife

The WDFW has jurisdiction of in- and over-water activities up to and including the ordinary high water mark, as well as any other activities that could "use, divert, obstruct, or change the bed or flow of state waters." These activities in the City include, but are not limited to, installation or modification of shoreline stabilization measures and accessory structures such as culverts, and bridges and footbridges. These types of projects must obtain a Hydraulic Project Approval from WDFW, which will contain conditions intended to prevent damage to fish and other aquatic life, and their habitats. In some cases, the project may be denied if significant impacts would occur that could not be adequately mitigated.

3. Washington Department of Ecology

The Washington Department of Ecology may review and condition a variety of project types in the City, including any project that requires a shoreline substantial development permit, a shoreline conditional use permit or a shoreline variance, and any project that disturbs more than 1 acre of land. Project types that may trigger Ecology involvement include shoreline modification proposals and wetland or stream modification proposals, among others. Ecology's three primary goals are to: 1) prevent pollution, 2) clean up pollution, and 3) support sustainable communities and natural resources. Their authority comes from the State SMA, Section 401 of the Federal Clean Water Act, the Federal Water Pollution Control Act, the Federal Coastal Zone Management Act of 1972, SEPA, the Growth Management Act, and various RCWs and WACs of the State of Washington.

4. U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (Corps) has jurisdiction of in- and over-water activities up to and including the ordinary high water mark, as well as any associated wetlands. These activities in the City include, but are not limited to, installation or modification of shoreline stabilization measures and accessory structures such as culverts, and bridges, footbridges and restoration activities.

These types of projects must obtain a Section 404 Clean Water Act permit, which will contain conditions intended to prevent damage to Waters of the United States

including the Skykomish River, Wallace River, and May Creek. In some cases, the project may be denied if significant impacts would occur that could not be adequately mitigated. As a federal agency, any activity within Corps jurisdiction that could affect species listed under the Federal ESA must be consulted with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service. These agencies ensure that the project includes impact minimization and compensation measures for protection of listed species and their habitats.

Chapter 6: Net Effect on Ecological Functions and Processes

As described above, the proposed SMP provides a substantially increased level of protection to shoreline ecological functions relative to the existing SMP. On its own, the proposed SMP is expected to protect shorelines within the City, resulting in no net loss of shoreline ecological function. In addition, the application of the SMP may improve ecological functions over time in several areas, including along the Skykomish River, Wallace River, and May Creek through restoration efforts and significant enhancement incentives in targeted areas, such as in the shoreline residential environment designation. State and federal regulations, acting in concert with this SMP, will provide further assurances of improved shoreline ecological functions over time. Together with the implementation of the Shoreline Restoration Plan over time, the SMP is expected to begin to address the enhancement and restoration of shoreline functions in those areas where they are currently impaired.

Appendix 1: Cumulative Impact Analysis Table

Table 2: Cumulative Impacts to Shoreline Environment – The Skykomish River, Wallace River, and May Creek

Shoreline Process and Function	Resource at Risk	Shoreline Alterations Impacting Processes and Functions	Proposed Restoration/ Protection Measures and Draft SMP Policies and Regulations	Non-Regulatory Measures
Process: Nutrient/Pollutant delivery and removal Function: Water quality	The Skykomish River, Wallace River, and May Creek and their floodplains, riparian corridors and potential, undelineated wetlands.	Existing impervious surfaces increase delivery of nutrients to the Skykomish River, Wallace River, and May Creek. Existing ditching, draining, and filling of wetlands. Clearing of riparian buffers. New development may result in additional impervious surfaces and may result in further impacts to existing aquatic resources at risk including associated wetlands. Degree of future cumulative impact: Potential increase in the number of residential lots adjacent to the Wallace River and May Creek shoreline small, so future	Proposed overall measures: reduce impervious surface through LID measures (SMP Chapter 2.E.1, .2, and.3, SMP Chapter 3.B.6, and .10, and Chapter 4.C.1, .12, and .14), protect existing Skykomish River, Wallace River, and May Creek resources and associated wetlands (including buffers) (SMP Chapter 3.B.3), and restore riparian areas (SMP Chapter 3.B.7). The SMP replaces the CAO protections for rivers, stream, and wetlands in the shorelines (SMP Chapter 3.B.3). If there is a conflict between the provisions of SMP and CAO, the provisions most protective of the shoreline jurisdiction shall	Restore degraded wetlands. Restore degraded riparian areas through replanting with native species. Use Low Impact Development storm water controls based on the requirements of the new NPDES Phase II Municipal Permit. The Restoration Plan will outline the non-regulatory measures that will be available to the City to help address these issues.

Shoreline Process and Function	Resource at Risk	Shoreline Alterations Impacting Processes and Functions	Proposed Restoration/ Protection Measures and Draft SMP Policies and Regulations	Non-Regulatory Measures
		impacts should be low. Nutrient/pollutant processes and water quality functions within the City's shoreline from existing roadways and septic systems.	apply, as determined by the City (SMP Chapter 6.Q). SMP Chapter 3.B.3 has replaced Section 5 of the Critical Areas Code (CAO), Ordinance No. 593 (2005) as codified under Chapter 18.08 of the Gold Bar Municipal Code (GBMC) Section 6 of the Critical Areas Code (CAO), Ordinance No. 593 (2005) as codified under Chapter 18.08 of the Gold Bar Municipal Code (GBMC), regulates critical areas such as critical areas such as critical aquifer recharge areas. All shoreline uses and activities shall utilize best management practices (BMPs) to minimize any increase in surface runoff and to control, treat and release surface water runoff so that receiving water quality is not	

Shoreline Process and Function	Resource at Risk	Shoreline Alterations Impacting Processes and Functions	Proposed Restoration/ Protection Measures and Draft SMP Policies and Regulations	Non-Regulatory Measures
			adversely affected during both construction and operation (SMP Chapter 3.B.4.c.7).	
			The SMP specifically addresses water quality in Chapter 3: General Shoreline Provisions, policies and regulations for Water Quality and Quantity, Section 10, specifically policies 1 through 7 and regulations 1 through 3.	
			The Comprehensive Plan addresses cooperation with the Snohomish County Health Department in ensuring septic systems successfully prevents pollutants from entering groundwater.	

Shoreline Process and Function	Resource at Risk	Shoreline Alterations Impacting Processes and Functions	Proposed Restoration/ Protection Measures and Draft SMP Policies and Regulations	Non-Regulatory Measures
Process: Surface and Groundwater flow Function: Reducing downstream flooding and erosion (surface storage), aquifer recharge and storage	The Skykomish River, Wallace River, and May Creek and their floodplains, riparian corridors and potential, undelineated wetlands.	Existing impervious areas and clearing decrease infiltration recharge and subsurface storage, and groundwater discharge to streams, rivers, and wetlands. Existing wetland fill, development in floodplain (including shoreline protective structures) reduces surface storage, overbank flooding and increased flooding frequency and duration. New development will remove forested areas and increase impervious cover. Additional impacts to surface storage functions may occur from shoreline fill and encroachment. Degree of future cumulative impact: There is limited potential for new residential lots along the Wallace River	Proposed overall measures: Minimize impacts to surface and groundwater processes by employing nonstructural approach to reducing downstream flooding and erosion. This would include protecting and restoring wetlands (SMP Chapter 3.B.5.c.3). SMP Chapter 4.B – Table 5 listed the maximum impervious surface limitations for all five shoreline jurisdictions: High Intensity – 50% Shoreline Residential – 35% Urban Conservancy – 30% Natural – N/A Aquatic – N/A The SMP replaces the CAO protections for the rivers, stream, and wetlands in the shoreline (SMP Chapter 3.B.3)	Restore degraded wetlands. Restore degraded floodplain and riparian areas through replanting with native species. Use Low Impact Development storm water controls based on the requirements of the new NPDES Phase II Municipal Permit. The Restoration Plan will outline the non-regulatory measures that will be available to the City to help address these issues.

Shoreline Process and Function	Resource at Risk	Shoreline Alterations Impacting Processes and Functions	Proposed Restoration/ Protection Measures and Draft SMP Policies and Regulations	Non-Regulatory Measures
		and May Creek so impacts in the future should be low. Residential development is not allowed in the Skykomish River shoreline area.	If there is a conflict between the provisions of SMP and CAO, the provisions most protective of the shoreline jurisdiction shall apply, as determined by the City (SMP Chapter 6.Q). Section 9 of the Critical Areas Code (CAO), Ordinance No. 593 (2005) as codified under Chapter 18.08 of the Gold Bar Municipal Code (GBMC), regulates frequently flooded areas. The SMP specifically addresses flood hazard reduction in Chapter 3: General Shoreline Provisions, policies and regulations for Flood Hazard Reduction, Section 5, specifically policies 1 through 6 and regulations 1 through 9.	

Shoreline Process and Function	Resource at Risk	Shoreline Alterations Impacting Processes and Functions	Proposed Restoration/ Protection Measures and Draft SMP Policies and Regulations	Non-Regulatory Measures
Process: Sediment Transport Function: Sediment delivery and removal from area water systems	The Skykomish River, Wallace River, and May Creek and their floodplains, riparian corridors and potential, undelineated wetlands.	Sediment delivery and removal processes have been affected by both natural and man-made factors. Logging and development in the watershed has altered the process of sediment transport. Converting forest vegetation to agricultural land, harvesting timber, mining, constructing roads, and development have altered or accelerated sediment transport processes within the basin. Future Cumulative Impact: Further sediment delivery into water systems without protective vegetation due to land clearing and development upstream of the City. This may affect storage of surface waters in	Proposed overall measures: minimize the delivery of sediment from land alterations through retention of natural vegetation, protection of riparian corridors, application of a comprehensive erosion and sedimentation control program and measures and proper siting of development (SMP Chapter 5.D.2.c.I.3, SMP Chapter 3.B.7.b.2 and .6, and .9.b, SMP Chapter 3.B.5, SMP Chapter 3.B.5, SMP Chapter 4.C.2., 13, and .14). SMP Chapter 3.B.3 has replaced Section 5 of the Critical Areas Code (CAO), Ordinance No. 593 (2005) as codified under Chapter 18.08 of the Gold Bar Municipal Code (GBMC). Section 7 of the Critical Areas Code (CAO), Ordinance No. 593 (2005) as codified under Chapter 18.08 of the Gold Bar	Create incentive programs to conserve and retain native vegetation and restore native vegetation where none is present. Programs such as on-site density transfers and conservation easements could help protect these areas. The Restoration Plan will outline the non-regulatory measures that will be available to the City to help address these issues.

Shoreline Process and Function	Resource at Risk	Shoreline Alterations Impacting Processes and Functions	Proposed Restoration/ Protection Measures and Draft SMP Policies and Regulations	Non-Regulatory Measures
		wetlands and floodplains in this basin, which in turn could affect flooding, and erosion functions within downstream shoreline areas along The Skykomish River, Wallace River, and May Creek.	Municipal Code (GBMC), regulates geologically hazardous areas. The SMP specifically addresses water quality in Chapter 3: General Shoreline Provisions, the policies and regulations for Environmental Impacts, Section 4, Policies 1 and 3 and Regulations 2 and 3, as well as the policies and regulations for Water Quality and Quantity, Section 10, Policies 1 and 3 and Regulations 1 through 3. Under Section 3 Environmental Impacts in Chapter 3: General Shoreline Provisions, land clearing, grading, filling, and alteration of natural drainage features and landforms must be limited to the minimum necessary for development.	

Shoreline Process and Function	Resource at Risk	Shoreline Alterations Impacting Processes and Functions	Proposed Restoration/ Protection Measures and Draft SMP Policies and Regulations	Non-Regulatory Measures
Process: Habitat biodiversity Function: Fish and wildlife habitat, food production and delivery	The Skykomish River, Wallace River, and May Creek and their floodplains, riparian corridors and potential, undelineated wetlands.	Important in-stream and riparian habitat is available in the Skykomish River, Wallace River, and May Creek systems. Habitat functions are altered with development, logging, road construction, culvert installation, loss of riparian cover, and stream and riverbank modification. Habitat elements important to fish include riparian cover, large woody debris, passage for migration, clean water, and spawning habitat and forage habitat, and the availability of food sources. Alteration of forested shrub and herbaceous habitat, loss of wetlands,	Proposed overall measures: protect and restore riparian habitat, aquatic habitat, and wetlands (SMP Chapter 2.E.4.d.3 and 5.d.4 and Chapter 3.B.7 and .9). The SMP replaces the CAO protections for river, stream, and wetlands in the shoreline (SMP Chapter 3.B.3) If there is a conflict between the provisions of SMP and CAO, the provisions most protective of the shoreline jurisdiction shall apply, as determined by the City (SMP Chapter 6.Q). Section 8 of the Critical Areas Code (CAO), Ordinance No. 593 (2005) as codified under Chapter 18.08 of the Gold Bar Municipal Code (GBMC), regulates fish and wildlife	Restore degraded wetlands and aquatic system. This includes restoring degraded riparian and aquatic habitat by planting with native species and addition of habitat feature such as large woody debris and snags. The Restoration Plan will outline the non-regulatory measures that will be available to the City to help address these issues.

Shoreline Process and Function	Resource at Risk	Shoreline Alterations Impacting Processes and Functions	Proposed Restoration/ Protection Measures and Draft SMP Policies and Regulations	Non-Regulatory Measures
		streams, and rivers reduce the overall habitat for wildlife species,	habitat conservation areas.	
		including mammals, amphibians, reptiles,	The SMP specifically addresses water quality in	
		waterfowl, birds and other wildlife species.	Chapter 3: General Shoreline Provisions, the policies and regulations	
		Habitat Connectivity is diminished as riparian cover is	for Critical Areas, Section 3, Regulation 7.	
		removed and aquatic systems are interrupted by culverts, bridges,	Under Policy 14, Section 6, Public Access in Chapter 3: General	
		bulkheads, riprap, filling, and dredging.	Shoreline Provisions, habitat enhancement is an important objective for	
		Loss of habitat features such as large woody debris, snags, banks with overhanging vegetation	the management of shoreline public access sites.	
		and persistent woody vegetation decreases wildlife cover, denning,	Under Policy 2,Section 7, Restoration in Chapter 3: General Shoreline	
		perching and nesting habitat.	Provisions, there is a policy that emphasizes increasing quality, width	
		Future cumulative impacts: Limited number of	and diversity of native vegetation in protected corridors adjacent to riparian habitats to	
		residential lots along the Wallace River and May	provide safe migration	

Shoreline Process and Function	Resource at Risk	Shoreline Alterations Impacting Processes and Functions	Proposed Restoration/ Protection Measures and Draft SMP Policies and Regulations	Non-Regulatory Measures
		Creek, so future impacts should be low. This may affect habitat and water quality functions within the City's shoreline.	pathways for fish and wildlife, food, nest sites, shade, perches, and organic debris. Strive to control non-indigenous plants or weeds that are proven harmful to native vegetation or habitats. Under Restoration in Chapter 3: General Shoreline Provisions, Policy 5 calls for the development of a public education plan to inform private property owners in the shoreline zone and in the remainder of the City about the effects of land management practices and other unregulated activities (such as vegetation removal, pesticide/herbicide use, car washing) on fish and wildlife habitats. Under Section 8, Shorelines of State-Wide Significance in Chapter 3: General Shoreline Provisions, Policies 2	

Shoreline Process and Function	Resource at Risk	Shoreline Alterations Impacting Processes and Functions	Proposed Restoration/ Protection Measures and Draft SMP Policies and Regulations	Non-Regulatory Measures
			through 5 call for the City to protect and restore diversity of vegetation and habitat associated with shoreline areas.	
			Under Section 8, Shorelines of State-Wide Significance in Chapter 3: General Shoreline Provisions, Policy 4 calls for all shoreline development to be located, designed, constructed, and managed to avoid disturbance of and minimize adverse impacts to wildlife resources, including spawning, nesting, rearing and habitat areas and migratory routes.	