

Chapter 6 Mitigation Measures

What are the preliminary mitigation measures for Alternative 2?

The preliminary mitigation measures for Alternative 2 (the Applicant's proposal) are outlined in this chapter, and organized by Built Environment and Natural Environment.

This should be considered a preliminary list, as the Master Planned Development will go through future approval processes, at which time additional impacts may be identified, and which could require mitigation not included in this list. As part of the MPD process, the City will determine which of these mitigation measures may be made conditions of project approval.

At the time future implementing applications are submitted, and approvals sought, the City will determine whether and what type of additional environmental review is required to address any additional identified impacts.

Mitigation measures are identified in the EIS to address adverse environmental impacts that are likely to occur as a result of a proposal. Mitigation measures are changes or conditions added to a proposal that will avoid, minimize, or compensate for adverse impacts.

Mitigation is defined as:

- Avoiding;
- Minimizing;
- Repairing or restoring;

- Reducing or eliminating over time;
- Replacing, enhancing, or providing substitute resources; and/or
- Monitoring the impact and taking appropriate corrective measures.

Mitigation can come in a variety of forms, from paying impact fees to local school districts, or changing the design of the project to avoid impacts to wetlands or other sensitive areas. Some mitigation may be required by city or county development regulations, or other local, state, or federal laws. Mitigation can also be based on information on adverse environmental impacts in the SEPA document.

The EIS has identified *general* mitigation measures for Alternative 2 only. However, *specific* mitigation for a proposed project will be identified during the MPD process. No development will occur without the approval of the City on such items as mitigation.

The following list of potential mitigation measures could be implemented to meet the requirements of SEPA. For some identified impacts, no specific mitigation measures are necessary if existing City standards or State law already provides adequate mitigation of potential impacts.

Built Environment

Land Use

No specific mitigation is identified for land use impacts, since the City's current Comprehensive Plan allows for any of the alternatives to be developed.

However, development will need to be in compliance with several codes and ordinances; compliance with the policies and standards set forth in these ordinances should mitigate many of the impacts on the surrounding areas and on the character of Black Diamond.

These include:

- City of Black Diamond Comprehensive Plan
- Master Planned Development Ordinance – BDMC 18.98
- Sensitive Area Ordinance – BDMC 19.10
- City of Black Diamond Engineering Design and Construction Standards
- MPD Design Standards and Guidelines
- Tree Preservation Ordinance – BDMC 19.30
- Gateway Overlay District Ordinance
- Black Diamond Urban Growth Area Agreement

Transportation

Over the course of project build out, construct all new roadway alignments as depicted in the 2025 Transportation Element of the Comprehensive Plan, or functionally equivalent alignments as approved by the City and/or other jurisdictions, that are necessary to provide access to and circulation within the project.

In addition, the following intersections (Exhibit 6-1) should be monitored under a Transportation Monitoring Plan which could be incorporated into the Development Agreement for the MPD, with each designated improvement being required as the time defined in the Monitoring Plan. When a threshold established in the Transportation Monitoring Plan is met, the proponent

could be required to file the application(s) necessary to initiate design and construction for the improvements such that the LOS standard is never exceeded. For example, if the LOS standard is LOS E, the threshold could be set at LOS D, upon which time the mitigation process would be initiated. The timeframe in which application(s) would need to be filed after the designated trigger is met could also be stipulated in the mitigation monitoring plan.

Intersection improvements outside the City limits may be mitigated through measures acceptable to the applicable agency.

Exhibit 6-1
Intersection Improvements

Study Intersection	Jurisdiction	Mitigation
SE 288th Street/216th Avenue SE	Black Diamond	Signalize. Add NBR turn pocket.
SE 288th Street/232nd Avenue SE	Black Diamond	Add NBR turn pocket and provide a refuge for NBL turning vehicles on EB approach.
SR 169/SE 288th Street	WSDOT	Signalize. Add NBL turn pocket. Add second SBT lane (SBTR).
SE Covington Sawyer Road/ 216th Avenue SE	Black Diamond	Add EBL, NBL and SBR turn pockets.
SE Auburn Black Diamond Road/ 218th Avenue SE	King County	Provide a refuge for NBL turning vehicles on EB approach.
SE Auburn Black Diamond Road/ Lake Sawyer Road SE	Black Diamond	Signalize. Add WBL turn pocket.
SE Auburn Black Diamond Road/ Morgan Street	Black Diamond	Roundabout.
SR 169/Roberts Drive	Black Diamond/WSDOT	Add second SBT and NBT lanes. Add SBL and NBL turn pockets.
SR 169/SE Black Diamond Ravensdale Road (Pipeline Road)	Black Diamond/WSDOT	Add second SBT and NBT lanes. Add SBL turn pocket.
SR 169/Baker Street	Black Diamond/WSDOT	Signalize.
SR 169/Lawson Road	Black Diamond/WSDOT	Signalize. Add SBL turn pocket.
SR 169/Jones Lake Road (SE Loop Connector)	Black Diamond/WSDOT	Signalize. Add WBL, NBL, and SBL turn pockets.
SR 169/SR 516	Maple Valley/WSDOT	Add second NBL turn pocket.

Exhibit 6-1**Intersection Improvements**

Study Intersection	Jurisdiction	Mitigation
SR 169/SE 240th Street	Maple Valley/WSDOT	Add additional SBT lane on SR 169 from north of 231st Street to Witte Road. Add second NBT lane at SR 169/240th Street.
SR 169/Witte Road	Maple Valley/WSDOT	
SR 169/SE Wax Road	Maple Valley/WSDOT	
SR 169/SE 231st Street	Maple Valley/WSDOT	
SR 169/SR 18 EB Ramps	Maple Valley/WSDOT	
SR 516/SE Wax Road	Covington/WSDOT	Add second SBL, WBR, and NBL turn pockets.
SR 516/168th PI SE	Covington/WSDOT	Add NBL and EBR turn pockets.
SR 516/Covington Way SE	Covington/WSDOT	Optimize signal timings.
SE 272nd Street/160th Avenue SE	Covington/WSDOT	Signalize.
SE Kent Kangley Road/ Landsburg Road SE	Maple Valley/King County	Add SBL turn pocket and provide a refuge on WB approach for SBL turning vehicles.
SR 169/SE Green Valley Road	WSDOT	Signalize.
SE Auburn-Black Diamond Road/ SE Green Valley Road	King County	Provide a refuge on EB approach for NBL turning vehicles.
SR 169/North Connector	Black Diamond/WSDOT	Signalize. Add second SBT and NBT lane. Add EBL, EBR, SBR, and NBL turn pockets. End additional NBT lane 1,000 feet north of intersection.
Lake Sawyer Road/Pipeline Road	Black Diamond	Signalize. Add EBL, WBL, NBL, and SBR turn pockets.
SE Auburn Black Road/Annexation Road	Black Diamond	Signalize. Add EBL, EBR, WBL, NBL, and SBR turn pockets.
SR 169/South Connector	Black Diamond/WSDOT	Signalize. Add SBR and NBL turn pockets.

As noted above, for each potential signal, first consider and present a conceptual design for a roundabout as the City's preferred method of intersection control.

Explore multi-party opportunities that bring additional Metro transit and Sounder transit to Black Diamond, explore the possibility of a new park and ride location or improve the existing location, and promote Metro's Rideshare program.

Over the course of the project build out, assist in reducing transportation demand by including adequate facilities for alternative modes such as transit, bicycling, and walking, that will connect on-site trails and pathways to other parts of the City, as well as allow for a connection between the Lawson Hills MPD and The Villages MPD.

Noise

Long term noise controls shall be addressed through BDMC Chapter 18.78.

Short term construction noise should be reduced by employing the best management practices below:

- Construction noise could be minimized with properly sized and maintained mufflers, engine intake silencers, engine enclosures, and turning off equipment when not in use.
- Stationary construction equipment should be located away from sensitive receiving properties where possible. Where this is infeasible, or where noise impacts would still be likely to occur, portable noise barriers should be placed around the equipment (pumps, compressors, welding machines, etc.) with the opening directed away from the sensitive receiving property.
- Although as safety warning devices, back-up alarms are exempt from noise ordinances; these devices emit some of the most annoying sounds from a construction site. Where feasible, equipment operators should drive forward rather than backward to minimize this noise.
- Ensure that all equipment required to use backup alarms utilizes ambient-sensing alarms that broadcast a warning sound loud enough to be heard over background noise but without having to use a preset, maximum volume. Or, use broadband backup alarms instead of typical pure tone alarms. Such devices have been found to be very effective in reducing annoying noise from construction sites.
- Requiring operators to lift rather than drag materials wherever feasible can also minimize noise from material handling.
- Substituting hydraulic or electric models for impact tools such as jackhammers, rock drills, and pavement breakers would also reduce construction noise.
- Electric pumps could be specified if pumps are required.

- If pile driving becomes necessary, impact pile-driving should be minimized in favor of less noisy pile installation methods. If impact pile driving is required, the potential for noise impacts should be minimized by strict adherence to daytime only (or more stringent limits), especially when pile driving is within 500 feet or less of sensitive on- or off-site receivers. Pile driving noise may also be reduced using sound-absorbing barriers or other means.
- Finally, the developer could establish a noise control “hotline” that would allow neighbors affected by noise to contact the City or the construction contractor to ask questions or to complain about particularly noisy activities.

At the time of construction of the Lawson connector between Lawson Road and SR-169, install noise mitigation in the form of a 6-foot solid wooden fence and/or berms and landscaping along the new Lawson connector road where it abuts existing residential uses.

Other means of noise mitigation may be proposed at the time of engineering design, but must meet the same criteria as would be met with the mitigation described above.

Public Utilities – Water

The facilities listed below, or functionally equivalent facilities, are necessary to serve the development as proposed. The timing for construction and installation of these facilities shall be determined through review of implementing development proposals, such as a preliminary plat.

- Upgrade Spring Supply source per the WSFFA.
- Utilize the Tacoma Intertie, in addition to the Spring Supply per the WSFFA.
- Construct an appropriately sized Upper Lawson Reservoir.
- Construct a pump station and transmission main adjacent to 965 reservoir to the east annexation area. Alternatively, provide water modeling to support a functionally equivalent improvement, upgrade the pump station at the 850 reservoir to pump directly to the 1175 reservoir and remove the 965 reservoir from service.

- Install local water main distribution system within Lawson Hills with appropriate pressure reducing stations in 1175, 965, and 850 pressure zones consistent with the City's comprehensive plan.
- Extend and loop 850 zone water main to North Triangle.
- Install pressure reducing valve at North Triangle.
- Install 750 and 850 zone water main distribution main within North Triangle.
- Construct any other water supply and storage improvements as presented in City Comprehensive Plan which are necessary to serve the proposed development.

Public Utilities – Sewer

The facilities listed below, or functionally equivalent facilities, are necessary to serve the development as proposed. The timing for construction and installation of these facilities shall be determined through review of implementing development proposals, such as a preliminary plat.

- Install local collection and conveyance systems within Lawson Hills and North Triangle.
- Construct Trunk Line No. 2 in Lawson Hills.
- Upgrade and connect Botts Drive sewer main to Trunk Line No. 2.
- Construct Trunk Line No. 3 in North Triangle to new Pump Station No. 2. Alternatively, a functionally equivalent improvement, such as temporarily locating the pump station proposed on the North Triangle, may be approved with the MPD.
- Construct Pump Station No. 2.
- Construct Force Main No. 2.
- If determined necessary, construct sewer flow equalization storage reservoir.
- Construct any other wastewater storage and distribution as presented in the City Comprehensive Plan which are necessary to serve the proposed development.

Public Utilities – Stormwater and Water Quality

Stormwater runoff that is collected from impervious surfaces shall be mitigated in accordance with the 2005 *Stormwater Management Manual for Western Washington*, and stormwater designs shall include low impact development techniques wherever practical and feasible.

Runoff from basins tributary to Lake Sawyer must provide water quality treatment in accordance with the phosphorous control menu in the 2005 *Stormwater Management Manual for Western Washington*.

Provide enhanced water quality treatment as required by the 2005 *Stormwater Management Manual for Western Washington*.

All development within the North Triangle shall utilize infiltration for flow control and phosphorous control mitigation due to the well drained soils on-site.

Implement a surface water monitoring plan that identifies locations to monitor surface water upstream and downstream of stormwater pond outfalls. The purpose of the plan is to monitor surface water temperatures during the warmest six months of the year and ensure that stormwater discharge does not cause an increase in receiving water bodies. Monitoring shall occur for a period of two years once discharge occurs. The plan will describe a threshold and evaluation using state standards and outline possible remedies if negative temperature impacts are found.

Require a predominant use of native plants as part of the planting palette within the MPD. Reduce lawn planting wherever practical.

Reduce pavement widths to minimize stormwater runoff.

Where point discharges to streams must occur, design the outfall to minimize impacts to the stream channel and avoid areas of significant vegetation.

Construct any other stormwater treatment and storage improvements (or a functional equivalent) as presented in the City Comprehensive Plan which are necessary to serve the development.

Visual and Aesthetics

Lighting will be subject to BDMC Chapter 18.70.

Minimize the aesthetic impacts of grading along the ridgeline of Lawson Hill and promote views from the valley floor that blend rooftops with the surrounding natural environment by implementing one or more of the following:

- (a) Preserve mature trees in natural open spaces, and if hazardous tree removal is required, replant at a 3:1 ratio with minimum 12-foot-tall evergreen trees.
- (b) Require design guidelines that include material and color choices that blend with the surrounding environment and preclude materials such as shiny metal roofs.
- (c) Plant native trees in open spaces, parks, and streetscaping.

When roads are built that intersect existing streets or facilities, or are constructed adjacent to existing streets, plant landscaping along the street and in other open space areas to soften building profiles and stormwater facility edges.

Historic and Cultural Resources

Prior to demolition of the miners' housing on the project site, the Proponent shall complete the National Register of Historic Places nomination process with the Washington State Department of Archaeology and Historic Preservation (DAHP). If any properties are determined eligible for the NRHP, the following mitigation strategies may be used:

- Additional consultation with the DAHP may be needed for additional research and archaeological testing to determine the limits and contents of the site with respect to NRHP eligibility and controls.
- Consider establishing a possible interpretation of historic miners' housing at the project site to benefit local history, residents, and visitors to the area.

Public Services – Parks and Recreation

Provide parks facilities in accordance with impacts to level of service.

If the Lawson Hills school site is developed and the Proponent proposes to build a joint-use facility, the Proponent shall provide at least one youth/adult baseball/softball field, soccer field, tennis court, or basketball court in conjunction with the school site or at an alternative location to assist in providing community park amenities to the MPD.

Public Services – Schools

Full build out of the MPD would warrant school facilities for which the following mitigation shall be imposed:

- a) A separate school mitigation agreement with the School District and the City will be entered which will provide adequate mitigation of impacts to school facilities; or
- b) Impact fees will be paid at the rate specified in the Enumclaw School District 2009 Capital Facilities Plan or as subsequently amended.

Public Services – Public Safety

The proposed development may require additional fire facilities and equipment, including a new or expanded fire station. A mitigation condition imposing a proportionate share of funding may be necessary.

Retain additional police and fire staff as indicated based on increased populations. Calculate needs at each phase of MPD approval.

Natural Environment

Geology, Topography, and Soils

Mitigate all potential hazards in accordance with the Sensitive Areas Ordinance.

Erosion Hazards

Soil erosion can be addressed during site design and construction. During construction, the use of silt fences, hay bales, temporary sediment ponds, truck wash areas, regular road cleaning, and straw mulch or rock coverings can minimize risks associated with erosion. The Proponent will be required to obtain coverage under the Department of Ecology's NPDES General Permit for Construction sites for each phase of the buildout.

Utilize stormwater detention facilities that avoid increases in peak stream flows.

In cases where vegetation is an effective means of stabilizing stream banks, protect stream banks from disturbance to reduce the adverse impacts to stream erosion.

When a stream crossing occurs, utilize bridges or appropriately sized culverts for roadway crossings of streams to allow peak-flow high-water events to pass unimpeded and also preserve some normal stream processes.

Design stormwater facilities to avoid discharging concentrated stormwater flows on moderate and steep slopes in order to avoid severe land erosion.

Landslide Hazards

Avoid landslide hazard areas and utilize sufficient setbacks to increase the safety of nearby uses, or, where feasible, grade out the landslide hazard area to eliminate the hazard.

Manage stormwater and groundwater to avoid increases in overland flow or infiltration in areas of potential slope failure to avoid water-induced landslides.

Mine Hazards

Designate the most severe hazard areas as open space and route roads and utilities to avoid such areas. Where avoidance is impossible, utilize the process in the SAO and Engineering Design and Construction Standards (ED&CS) to build roads and utilities through these areas.

Utilize flexible utility lines when developing above mine hazard areas.

Vegetation and Wetlands

If wetland impacts are unavoidable, create new wetlands and enhance existing wetlands in accordance with the SAO.

Replace the functions and values lost by direct wetland impacts, specifically wildlife habitat, flood control, and water quality functions.

Utilize structural measures such as silt fences and temporary sediment ponds to avoid discharging sediment into wetlands and other critical areas.

Provide “on the ground” protection measures such as wetland buffers or root protection zones for significant trees.

Utilize low impact development techniques wherever practical and feasible.

Jones Lake and Wetland Complex

Route clean excess flows to Jones Lake and the wetland complex to ensure that summer water levels are not significantly decreased below existing water levels.

Fish and Wildlife

Limit impacts to Lawson Creek and Jones Lake Creek by connecting new stormwater conveyance pipes associated with development to the existing culverts that contain Lawson Creek and Jones Lake Creek under SR 169. If that pipe-to-pipe connection cannot be achieved, then Best Management Practices (BMPs) shall be used.

Install wildlife crossing signs along Lawson Street to warn drivers of elk crossing the road.

Require wildlife forage preferences in plant species selection for enhancement areas.

When designing landscape plans for development parcels adjoining wetland buffers or wetland buffer enhancement planting plans, consider locating mast-producing species (such as hazelnut) to mitigate for reduced food sources resulting from habitat reductions.

Climate Change

Minimize the extraction, processing, transportation, construction, and disposal of building materials through use of on-site materials, recycling, and proper waste management.

Ensure design guidelines allow the use of solar, wind, and other renewable sources.

Reduce transportation demand by including adequate facilities for alternative modes such as transit, bicycling, and walking, that will accommodate a future connection between on-site trails and pathways to other parts of the City, as well as accommodate a future connection between the Lawson Hills MPD and The Villages MPD.

Should a large employer or a group of similar employers locate in the commercial areas of the MPD, consider implementing a Transportation Management Association to reduce vehicle trips.

Summary

This should be considered a preliminary list, as the Master Planned Development will go through future approval processes, at which time additional impacts may be identified, and which could require mitigation not included in this list. As part of the MPD process, the City will determine which of these mitigation measures may be made conditions of project approval.

At the time future applications are submitted, and approvals sought, the City will determine if this EIS document needs to be supplemented or appended in order to address any additional identified impacts.