



**CITY OF BLACK DIAMOND
PLANNING COMMISSION AGENDA
July 11, 2023
Council Chambers, 25510 Lawson St., Black Diamond**

THIS IS OFFERED AS A HYBRID MEETING AND MAY BE ATTENDED IN PERSON AT THE ABOVE NOTED ADDRESS OR BY JOINING VIRTUAL/TELEPHONICALLY. CALL IN AND JOINING INFORMATION FOLLOWS:

Zoom link to join meeting:

<https://zoom.us/j/4254157187?pwd=RE9OV0VoU1RFc3psSHdjem9mMk9hdz09>

Meeting ID: 425 415 7187

Password: PC

Telephone dial in options:

+1 206 337 9723 US (Seattle)

+1 253 215 8782 US (Tacoma)

Meeting ID: 425 415 7187

Password: 941820

6:00 P.M. - CALL TO ORDER, FLAG SALUTE, AND ROLL CALL

APPROVAL OF MINUTES:

- 1) Planning Commission Meeting of May 9, 2023

PUBLIC COMMENTS: Persons wishing to address the Planning Commission regarding items of new business are encouraged to do so at this time. Please use the "raise your hand" feature and once recognized by the Chair, you may unmute and state your name and city for the record. Please limit your comments to 3 minutes. For those dialing in, please press *9 to raise your hand and *6 to unmute yourself.

PUBLIC HEARINGS: None

STUDY/WORK SESSION:

- 2) Presentation – Comprehensive Sewer System Plan - Scott Hanis and Andrew Williamson

UNFINISHED BUSINESS:

- 3) AHBL PowerPoint Presentation with update to Comprehensive Plan Periodic Update

NEW BUSINESS:

- 4) First Draft Parks, Recreation and Open Space Element / Appendix
- 5) First Draft Natural Environment Element / Appendix

COMMUNITY DEVELOPMENT DEPARTMENT REPORT:

PUBLIC COMMENTS:

ADJOURNMENT:

This site is barrier free. People needing special assistance or accommodations should contact the Community Development Department 72 hours in advance of the meeting at (360) 851-4447



CITY OF BLACK DIAMOND
PLANNING COMMISSION MEETING MINUTES
May 9, 2023, 6:00 PM

CALL TO ORDER, FLAG SALUTE, ROLL CALL

Chairperson Olson called the meeting to order at 6:00 p.m.

Present: Commissioner Kelley Sauskojus
Commissioner Knut Syversen (ZOOM)
Commissioner Pam McCain
Commissioner Felicia Wheatfall
Commissioner Carol Morgan
Chair/Commissioner John Olson

Excused: Commissioner Steve Jensen

Staff: Community Development Director, Mona Davis
City Clerk/HR Manager, Brenda L. Martinez
IT Staff, Jake Kapsandy

APPROVAL OF MINUTES:

1) Regular Planning Commission Meeting of April 11, 2023

There were no changes to the April 11, 2023, minutes and they were approved as presented.

PUBLIC COMMENT: None

PUBLIC HEARING:

2) 2023 Proposed Comprehensive Plan Amendments – Preliminary Docket

Community Development Director Davis briefed the Commission on this and noted that staff is recommending that we do not carry any of the specific suggested amendments forward for a separate 2023 comprehensive plan amendment this year and that Commissioners made a motion to consider these suggestions with the 2024 periodic update. She then shared with Commissioners the reasons for this recommendation.

Chair Olson opened the public hearing at 6:10 p.m.

Kristen Bryant, Bellevue stated that she is one of the submitters and is here to discuss the 2023 amendments. She commented that she knew there were time constraints on what could be amended this year and what could be put off to 2024. Following the process that is put out in code because the comp plan matters, and it does impact applications that go on through the process this year and next until that new update comes to be as it is a real living document. She feels it's important to consider whether certain updates might be worth adopting this year. She mentioned an email she sent regarding the land use map to Commissioners. She discussed specifically the 2023 amendment suggestion on schools. She noted the Enumclaw School District bond failed this year, and it will be hard for people moving into the city of Black Diamond to keep having to send their kids to school in Enumclaw. She stated that even if a bond is passed that schools take a long time to build and one of the issues was clearly funding. She noted that the reason there was a submitted amendment is due to Black Diamond and the Enumclaw School District by extension undergoing unprecedented and unusual growth. She said that the city could legally set up its Comp Plan to have developers pay a higher impact fee to get closer to having money for that school. She also stated that a second thing that is really hard to plan for in a short amount of time, and is the reason for some of the amendments where they ask can the land use map be changed sooner rather than later and touched on environmental impacts. She noted that sometimes the environmental rules are not as protective as they look when you read the code. She provided examples of wetlands and leaving a buffer on salmon streams. She also noted that Oakpointe assured that everything was going to be covered environmentally but it turns out their transportation design to expand the intersections of SR 169 and Ravensdale Road will have a harmful impact on the environment, salmon stream and the wetlands near there. She stressed because of this, it is why at the Comp Plan level, more information is needed before putting through land use changes.

Chair Olsen closed the public hearing at 6:16 p.m.

a) Deliberation and possible action taken on "2023 Proposed Comprehensive Plan Amendments – Preliminary Docket."

Proposed amendments for the 2023 Docket:

- Item #2023-01: Suggested Amendments from Kelley Sauskojus

The requestor has submitted nine suggested edits to the comprehensive plan pertaining to schools, zoning, land use, and transportation.

- Item #2023-02: Suggested Amendments from Friends of Black Diamond (Kristen Bryant, Williams Bryant, Gary Davis, Angela Fetting)

The requestor has submitted and endorsed the nine suggest edits to the comprehensive plan outlined in Item #2023-01 pertaining to schools, zoning, land use, and transportation. The requestor also makes a plea to complete the land use and zoning maps in 2023 and not put off this work until 2024.

- Item #2023-03: Suggested Amendments from Lisa Winters

The requestor asks that a new land use zoning designation of Residential Conservation or R-35,000 (1 unit/35,000 square feet) be added. She requested that her parcel be rezoned from MDR-8 (Medium Density Residential 8 units/acre) to a 35,000 square foot minimum lot size.

There was an extensive discussion amongst Commissioners and staff with the focus on Items# 1 and #2 being the same thing, 2009 FLUM, concerns that things keep getting put off and the need to make sure the comp plan and zoning map are consistent, impacts to property owners, rezones that have been submitted and being vested applications and the process for those, past appeals, the need for a timeline for when things are scheduled and completed, transportation model moving forward, 2019 Comp Plan partial certification, the need to explain why these three submissions are not being recommended to move forward in the 2023 docket, school impact fees, why suggestions weren't itemized like in the past, the expense to tackle the little things, the state not allowing the city to create a rural zoning in an urban city as proposed in Item #3

Final comments were heard by Commissioners.

Chair Olson asked if there was a motion to recommend Item #2023-01 suggested amendments by Kelley Sauskojus in an email dated 2/27/2023 as described and presented tonight to be included in the preliminary docket or is there a motion to recommend Item 2023-01 suggested amendments by Kelley Sauskojus email dated 2/27/2023 as described and presented tonight not be included in the preliminary docket.

ACTION: Item #2023-01 - Commissioner Sauskojus **moved** to have them (Item #2023-01) included in the 2023 docket; **second** Commissioner Wheatfall.

Roll call vote: Commissioner Sauskojus, **yes**; Commissioner Jensen (absent); Commissioner Syversen, **yes**; Commissioner McCain, **no**; Commissioner Wheatfall, **yes**; Commissioner Morgan, **yes**; Chair Olson, **yes**. Motion **passed** 5-1 (McCain).

ACTION: Item #2023-02 - Commissioner Olsen **moved** to recommend that Item #2023-02 suggested amendments from Friends of Black Diamond email dated 3/1/2023 not be included in the preliminary docket for the simple reason that it is already included; **second** Commissioner McCain.

There was discussion regarding breaking the nine items down so that each item could be specifically voted on and the timing difference between the 2023 Comp Plan amendment and the 2024 Periodic update.

Roll call vote: Commissioner Sauskojus, **yes**; Commissioner Syversen, **yes**; Commissioner McCain, **yes**; Commissioner Wheatfall, **yes**; Commissioner Morgan, **yes**; Chair Olson, **yes**. Motion **passed** 6-0.

ACTION: Item #2023-03 - Commissioner McCain **moved** to not include exhibit 3 (Item #2023-03) in the docket for 2023; **second** Commissioner Morgan.

Roll call vote: Commissioner Sauskojus, **yes**; Commissioner Syversen, **yes**; Commissioner McCain, **yes**; Commissioner Wheatfall, **yes**; Commissioner Morgan, **yes**; Chair Olson, **yes**. Motion **passed** 6-0.

STUDY/WORK SESSION - None

UNFINISHED BUSINESS –

3) Continuation of Sign Code under Black Diamond Municipal Code 18.82

Director Davis gave a brief recap of what changes were made to the document at the last meeting.

Planning Commissioners and staff had a robust conversation regarding the sign code layout and how it needs to be improved so it is easier to read and understand.

It was suggested to have staff put together a draft code with options for the Planning Commission to consider using different font colors to differentiate between those options.

NEW BUSINESS: None

COMMUNITY DEVELOPMENT DEPARTMENT REPORT:

Director Davis reported on the following items:

- Reminded Commissioners of joint meeting with Council this Thursday.
- Reported on the next steps and the schedule for the upcoming Comp Plan meetings and the need for possible extra meetings.
- Possibility of the Sewer Comp Plan coming forward to the Planning Commission in June.
- Upcoming events staff will be at and gave examples of Miners Day, Labor Days and Ten Trail events.

- Reminded Planning Commissioners to let the Clerk, CD Director, and Chair know in advance of being absent or if being in attendance via Zoom.
- Community Development staffing update.

PUBLIC COMMENTS:

Kristen Bryant, Bellevue spoke to the Commission.

Commissioner Wheatfall shared that she sent in her resignation to Planning Commissioners today, effective May 10. She expressed appreciation for the opportunity to serve and noted learning a lot.

Chair Olson thanked Commissioner Wheatfall for all her time spent on the Commission.

Commissioner McCain invited another Commissioner to attend with her at a luncheon on June 17 with the keynote speaker being Jake Fry, Co-founder of Small Housing.

ADJOURNMENT:

Commissioner Morgan **moved** to adjourn, **second** Commissioner McCain. **Vote**, motion **passed** 6 - 0. Meeting adjourned at 9:12 p.m.

These minutes were respectively recorded by Brenda L. Martinez, City Clerk/HR Manager

ATTEST:

John Olson, Chairperson

Planning Commission Secretary



Project Information Meeting
Planning Commission



2024 Comprehensive Plan Periodic Update

July 11, 2023

City of Black Diamond
2024 Comprehensive Plan Periodic Update



Introductions and Welcome

- City Staff
 - Mona Davis, Community Development Director
 - Scott Hanis, Public Works Director
 - Andrew Williamson, MDRT Director
 - Jill Kuzaro, Assistant Planner
- Consultant Team (AHBL, Inc.)
 - Wayne Carlson
 - Nicole Stickney
 - Andrew Love
 - Elizabeth Espinoza



Agenda

- General Updates
 - Initial Work Products
 - News and Announcements
- Recap the Visioning / Kick-off Event
 - What did we hear?
- Discuss Document Organization
- Discuss Parks, Recreation & Open Space Element First Draft
- Discuss Natural Environment First Draft
- Council's Direction on proposed "Amendments" and how to handle that process
- Community Survey & Summer Calendar

***"What has
the team
been
working
on?"***



Initial Work Products

AHBL prepared a “Gap” analysis using two checklists to identify areas that need to be addressed

- Puget Sound Regional Council(PSRC) “VISION Consistency Tool”
- WA Dept of Commerce “Periodic Update Checklist for Fully Planning Cities”

Initial Gap Analysis by AHBL on May 12, 2023

Section I: Comprehensive Plan Elements

Land Use Element

Consistent with countywide planning policies (CWPPs) and RCW 36.70A.070(1)

	In Current Plan?	Changes needed to meet current	Notes
	Yes/No	Minimum	

Initial Gap Analysis by AHBL on May 12, 2023
(Reviewing the City of Black Diamond Comprehensive Plan 2015-2035 as Adopted May 2019)

Land Use/Development Patterns

The plan supports the further development of healthy, walkable, compact, and equitable transit-oriented communities that maintain unique character and local culture. The plan supports conserving rural areas and creating and preserving open space and natural areas.

Policies and programs should:

Build thriving urban communities	Page/Policy Reference
Support inclusive community planning (MPP-DP-2, MPP-DP-8)	No specific policies found (recommend adding to page 1-10)
Support the development of compact urban communities and central places with densities that support the Regional Growth Strategy, transit, and walking (MPP-RGS-6, DP-1, DP-3)	No specific policies found
Reduce disparities in access to opportunity and expand employment opportunities to improve the region's shared economic future (MPP-DP-2, Ec-8, Ec-13)	Page 5-11: Policy LU-33
Coordinate with local, state, and federal agencies to identify underused lands such as surplus public lands or environmentally contaminated lands and: ✓ Promote infill or redevelopment in growth centers and existing neighborhoods in a manner that supports the Regional Growth Strategy (MPP-DP-4) ✓ Develop strategies for cleaning up brownfield and contaminated sites (DP-Action-7)	Page 5-4: Policy LU-10
Preserve historic, visual, and cultural resources and consider potential impacts to culturally significant sites and tribal treaty fishing, hunting, and gathering grounds (MPP-DP-5-7)	Page 5-4, Page 5-5
Support inclusive engagement to ensure land use decisions do not negatively impact historically marginalized communities (MPP-DP-8)	Page 5-15: Policy LU-56
Support the design of transportation and infrastructure projects that achieve community development objectives and improve communities (MPP-DP-12-15, DP-17)	Page 7-4: Policy T-3
Promote healthy communities	
Reduce health disparities and improve health outcomes (MPP-RC-3, DP-18)	No specific policies found

Puget Sound Regional Council | VISION Consistency Tool for Local Comprehensive Plans
Updated September 2022

These same checklists will be completed again at the end of the update project to demonstrate compliance and show our work

City of Black Diamond
2024 Comprehensive Plan Periodic Update



Public Input

- Guided by the City's adopted Public Participation Plan:
 - Update website and e-mail list
 - Direct mailings and public notices
 - Workshops
 - Interviews and surveys
 - Comment forms
 - Contacting City staff
 - Planning Commission and City Council



Kickoff and Visioning Process

Results:

- The meeting was well attended. About 50 people attended, not including consultants, City staff, and elected officials.
- Introduced periodic process, publicly launched the citizen involvement effort, and gathered information about resident's opinion about the City's future.
- Constructive feedback shined a light on potential need for information on topics related to development (traffic concurrency, traffic impact fees, school impact fees, etc.)



Kickoff and Visioning Process

Results:

- We confirmed existing vision statement and visioning goals would work with minimal changes.
- Many expressed concern over exceeding the King County growth targets, as the vested master plans were not properly accounted.
- There are also concerns over existing and future capacity of public services and utilities.



Kickoff and Visioning Process

Results:

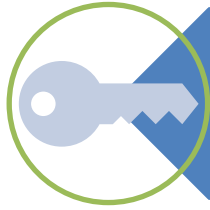
- Multiple comments were received after the workshop, and the City is keeping a parties of record list.
- A full Kickoff and Visioning Workshop summary can be found on the City's 2024 Comprehensive Plan Periodic Update webpage.



Proposed Document Organization

ISSUE / REQUIREMENT	PROPOSED APPROACH
The current Comprehensive Plan has inconsistent page numbering, chapter sequencing problems	The updated plan will be well-organized and structured with consistent formatting and page numbering
Main information with goals / policies is in the chapters (“Elements”) and background / detailed technical info is in the appendixes	Maintain this structure
There will be re-writes, editing and reorganization	We will use tracked changes only for the goals and policy statements
The “Community Character and Demographics” chapter doesn’t really talk about community character	The chapter will be eliminated, and demographic characteristic data/ descriptions will be relocated to the transportation, land use, and housing elements (as appropriate)
We need to summarize the Periodic Update process	We will include this info in the “Introduction” chapter and therefore this part will be prepared last

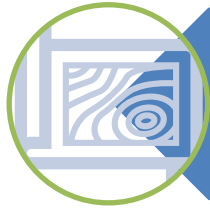
Table of Contents (The “Elements”)



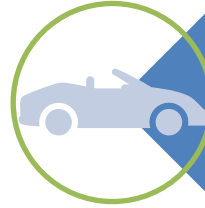
Introduction



Parks,
Recreation, &
Open Space



Land Use



Transportation



Housing



Capital
Facilities &
Utilities



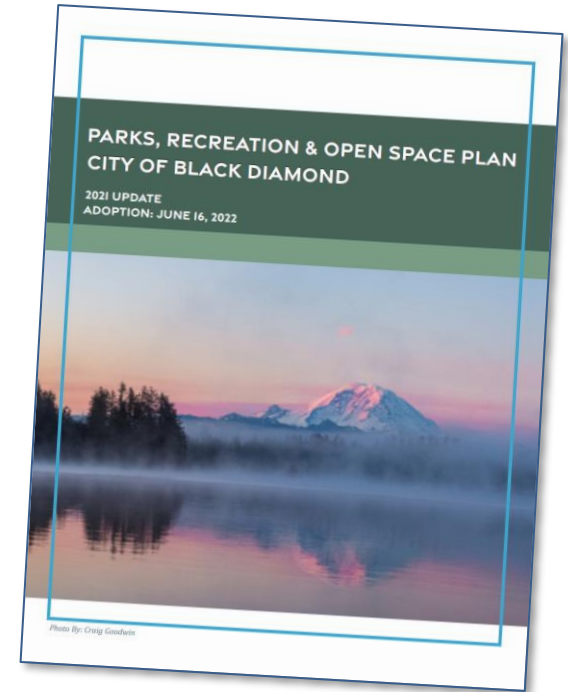
Natural
Environment



Economic
Development

Parks, Recreation & Open Space Element

- Was formerly "Parks, Recreation, Trails and Open Space"
- Removing "Trails" discussion & Goals
 - *"Because of their value to the multi-modal transportation network, trails are discussed in detail in the Transportation Element of this plan."*
- Contains the updated Goals, Objectives and Policies that are in the Parks Plan
 - AHBL has prepared initial amendments, further changes may be needed as we receive further public input
 - We started with this Element because there was so much **recent work done** on the Parks plan which was guided by community input
- The Appendix is updated to align with the Parks Plan and to show current information and data



Natural Environment Element



- Contains Goals and Policies:
 - General
 - **Wetlands**
 - **Fish and Wildlife Habitat Conservation Areas**
 - **Geologically Hazardous Areas**
 - **Critical Aquifer Recharge Areas**
 - **Frequently Flooded Areas**
 - Climate Change
 - Air Quality
 - Water Quality
 - Native Vegetation
- We generally view this section as not controversial or needing extensive discussion or re-writes (conditions are unchanged)
- Additional discussion added: air quality, climate (Appendix)
- Added discussion about SMP



Survey Launched

- The Survey will run 7/11 – 9/5
- Flyers and online announcement
- Minimal questions about **Parks & Recreation** or **Housing**
 - *Why?* These topics have recently been a part of a large “community conversation” through the work the city did on the Parks Plan and Housing Action Plan documents
- Emphasis on questions about **Land use** and **Zoning**
 - Other topics: Transportation, Economic Development, etc.



Questions?

Comprehensive Plan Update Contacts:

- Mona Davis, City of Black Diamond / compplan2024@blackdiamondwa.gov

Comprehensive Plan Update Website:

- Hub for documents, information, and update schedule
- <https://www.blackdiamondwa.gov/comprehensive-plan>



CHAPTER 3: PARKS, RECREATION, AND OPEN SPACE ELEMENT

3.1 Introduction

This element guides the development and stewardship of parks facilities in Black Diamond. This element lays the groundwork for the future of the city's park system. It includes inventories of existing parks and identifies current and future park needs.

Parks, recreational facilities and open spaces are important components of the City and add immensely to the quality of life enjoyed by residents and visitors alike. The demand for more and varied community facilities and for city-sponsored recreation programs increases as the City expands and living standards rise.

The City's parks, recreation, and open space areas are a vital component of the health and wellbeing of the community. Access to these places contribute to Black Diamond's physical and environmental health as they support the City's economic vitality and supply valuable fish, wildlife, and vegetation habitat. Conservation and enhancement of ecological resources within the City is a key concept in this Comprehensive Plan.

City residents and visitors enjoy access to a system of citywide and regional parks, and open space areas. The City parks, recreation, and open space system comprises about 4% of the total city land area and includes a range of uses from conservancy to active play areas. Lake Sawyer, the fourth largest natural lake in King County, offers public access for boating, water skiing, swimming, and fishing.

Other agencies (including King County and Washington State Parks) also provide significant recreational opportunities and manage open spaces benefiting Black Diamond residents. All in all, Black Diamond and other agencies have amassed an impressive amount of open space acreage. Much of it encompasses and preserves valuable streams, wetlands, and habitat conservation areas. Almost every type of park, trail, and open space experience is within or very near the City's boundaries.

The demand for more and varied community facilities and for city-sponsored recreation programs increases as the City expands and living standards rise.

3.2 Planning Framework

This element serves as an overview for Parks and Recreation in the context of other elements of the Comprehensive Plan, including Land Use, Capital Facilities, and Housing. In particular, this element addresses how development of parks in the city relate to other city activities and planning aspects. This element complements the plans already adopted by the city including the City of Black Diamond Parks, Recreation & Open Space Plan (2021 Update, Adopted June 16, 2022).

In addition to the parks, recreation, and open space system, trails are an indispensable feature of the City's active transportation network. Trails provide people with valuable links and nonmotorized transportation between neighborhoods, parks, schools, and other public facilities, and commercial areas. By developing its trail system, the City will improve social interactions, health, equity, and mobility for all residents. Because of their value to the multi-modal transportation network, trails are discussed in detail in the Transportation Element of this plan.

Regulatory Setting and Relationship to Other Plans

Growth Management Act (GMA)

Cities planning under Washington State's Growth Management Act (GMA) are required to include a parks and recreation element in their comprehensive plan. RCW 36.70A.070(8) of the GMA states the parks and recreation element must implement and be consistent with the parks and recreation facilities identified in the capital facilities plan element. The element must also include three components:

- Estimates of park and recreation demand for at least a 10-year period.
- An evaluation of facilities and service needs.
- An evaluation of intergovernmental coordination opportunities to provide regional approaches for meeting park and recreational demand.

This Element meets these directives. The Parks, Recreation, and Open Space Appendix provides an inventory and evaluation of demand and facility and service needs.

Countywide Planning Policies

The King County Countywide Planning Policies (CWPPS) require the identification and protection of local open space in comprehensive plans. The Community Character and Open Space chapter of the King County Comprehensive Plan includes a requirement that all

jurisdictions shall identify, establish, and protect recreational open space and environmentally sensitive areas (King County, 2021). This requirement encourages policies that establish and contribute to the protection and stewardship of open space lands and green corridors.

3.3 Parks, Recreation, and Open Space Concepts

The Black Diamond Parks, Recreation, and Open Space Element highlights the following Vision Goals:

- **Natural Environment Vision Goal 1:** Retain the City’s natural environment and scenic beauty.
- **Land Use Vision Goal 1:** Establish a pattern of development that maintains and enhances a safe and healthy quality of life within the community.
- **Capital Facility Vision Goal 1:** Ensure that public facilities and services are available to support future development.
- **Parks, Recreation, Trails, and Open Space Vision Goal 1:** Support the stewardship of natural resources and amenities throughout the community in the form of parks, trails, open space, and recreation.
- **Economic Development Vision Goal 1:** Encourage job creation by making the community a better place to live, work, play, and do business.

Black Diamond is committed to providing accessible and well-maintained facilities and services for current and future residents and promoting environmental conservation and education for publicly owned natural open space areas. The City endeavors to provide a system of parks, and recreational facilities that are located within easy reach of every resident while satisfying the community’s various recreational needs. The City will most likely continue to face the challenges of meeting the needs of a diverse range of age groups and interests, but it will work to strategically and creatively meet the community’s requirements and expectations.

The City must focus on existing gaps in its parks and recreational system in order to meet future needs as growth continues over the next 20 years. Meeting current and future needs includes having a full variety of park types, such as neighborhood and community parks, as well as enough recreational facilities to support the City’s population.

These needs can be met through the strategic location of new parks, and recreational facilities and by maintaining and upgrading existing facilities. Adherence to adopted Levels of Service (LOS) standards ensures the City is serious about meeting its parks and recreational needs, as does ongoing dialog with city staff and legislators regarding systemwide capital improvements and funding levels. LOS standards will guide the type and location of the new parks and

facilities needed and enable the City to require new development to pay its proportionate share of such facilities.

Planning for and maintaining a connected network of open space areas and green corridors as the city develops is critical for the City to achieve desirable land use and development patterns over time. Doing so can enhance and protect the overall appearance and character of the city while retaining its sense of place, design, and character. Connected open space areas and green corridors serve many important functions including recreation, supporting fish and wildlife habitat, and preserving connections between individual features that comprise a natural system (e.g., wetlands linked by a stream in a watershed). They help connect people with nature and provide numerous economic, health, and educational benefits, as well as allowing spaces where the City's residents can play and rest. Black Diamond's open space and green corridors are composed of parks and other publicly owned land, along with critical areas and their buffers.

Black Diamond continues to look for ways to improve its parks, recreation, and opens space system. Coordination with other agencies and service providers is necessary for ensuring efficiencies in the use of park and recreational facilities and services. The City's network of open space and green corridors trails needs to have connectivity with the broader, regional network optimizing systemwide recreational, social, and environmental functionality.

3.4 Financing

The City's Capital Improvement Program (CIP) and Capital Facilities Plan (the Capital Facilities and Utilities Elements of this plan) describe capital project needs and funding sources for park projects. The parks, recreation, and open space projects included in the City's CIP are the result of the overall strategic park planning efforts that include adopted LOS standards. Capital project financing can come from a variety of sources including current operating funds, real estate excise tax (REET), reserve funds, grants, private sector support, and voter-approved general obligation bonds. Other funding sources such as park impact fees, user/concession fees, special use agreements, public-private partnerships, service contracts, and joint development ventures should be explored to ensure and maximize the City's financial capability to meet the parks and recreational needs. Funding sources should generally be matched to specific needs in order to take advantage of each fund's specific possibilities.

Specific funding strategies may include park and recreation program services user fees and general fund resources for facility maintenance, operation, minor construction, and facility

development. Capital improvements can be funded through the general fund, REET, park impact fees, or other funding sources as described above.

Washington Recreation and Conservation Office (RCO)

The RCO oversees parks and recreation planning throughout the state and is a significant source of grant funding. Through its grant program and ongoing planning activities, the RCO seeks to enhance and maintain statewide opportunities for recreation and protect the best of the state's wildlands and threatened and endangered species.

The RCO program provides leadership, funding, and technical assistance to help communities plan for and implement parks and recreation projects. These projects may include trails, playfields, and other park facilities. In addition, the program helps to protect and restore the state's important habitats and biological heritage through open space protection and conservation.

In order to maintain eligibility for RCO grants, the city should routinely update the Parks, Recreation and Open Space plan and have the plan certified by the RCO. The City currently has eligibility for Habitat and Recreation grants through June 2028.

3.5 Parks, Recreation, and Open Space Goals and Policies

Goal 1: Maintain an updated financially viable plan for meeting park and recreation needs.

Objective 1.1: Update the parks Capital Improvement Plan (CIP) bi-annually as part of the final budget process.

- Policy 1.1.a: Review and update the park's CIP semi-annually based on unanticipated impacts to parks, the budget, or City operations.
- Policy 1.1.b: Increasing costs of operation and maintenance service shall be considered in the annual budget process.
- Policy 1.1.c: Review annual budget against recreation level of service standards to determine if investment corresponds with population growth.
- Policy 1.1.d: Update facility rental or use fees on periodic basis to reflect market rates.
- Policy 1.1.e: Establish a park impact fee and fee-in-lieu program to increase the annual program budget.
- Policy 1.1.f: Maintain records of all investments into park projects.

Objective 1.2: Facilitate partnerships with other agencies and organizations.

- Policy 1.2.a: Coordinate joint capital project planning and investment with other public and private agencies where feasible and appropriate.
- Policy 1.2.b: Maintain a list of park, recreation, and open space grant programs for improvement projects. This list should be updated as new opportunities and programs arise.

Goal 2: Support the stewardship and preservation of the natural environment.

Objective 2.1: Highlight the City’s natural beauty and ecology in parks, recreation, trails, and open spaces.

- Policy 2.1.a: Improve the accessibility to, and availability of, existing look out points, vistas, and environmentally sensitive areas.
- Policy 2.1.b: Prioritize acquisitions of vacant parcels with lookout points, vistas, or environmentally sensitive areas.
- Policy 2.1.c: Incorporate park design and playground features that express the geography and ecology of the region.
- Policy 2.1.d: Revise the Black Diamond Municipal Code to preserve scenic views and vistas.

Objective 2.2: Encourage community stewardship through educational opportunities.

- Policy 2.2.a: Incorporate more interpretive signage on local native habitats, vegetation, and wildlife to educate the public on the natural history of the Pacific Northwest.
- Policy 2.2.b: Organize opportunities for community cleanups of parks and open spaces.
- Policy 2.2.c: Provide educational opportunities for kids at City-sponsored events to learn about habitats, local ecology, and human impacts on the environment.
- Policy 2.2.d: Provide handouts to residents on how to seasonally reduce their environmental impacts and provide information on local quality issues.

Objective 2.3: Incorporate sustainability measures into park operations and planning.

- Policy 2.3.a: Develop a sustainability plan for the City that identifies opportunities and constraints in reducing climate change and environmental impacts.
- Policy 2.3.b: Encourage park and facility design to incorporate sustainably sourced materials.
- Policy 2.3.c: Develop a list of local sources for materials and labor for construction projects. The list shall include businesses that sustainably source materials, operate

within the City, or have sustainability certifications. The list shall be posted on the City's website.

- Policy 2.3.d: Develop an incentive program to encourage developers to incorporate sustainability measures into private park maintenance, operations, construction, and equipment.
- Policy 2.3.e: Develop new parks in sensitive areas to preserve natural areas and habitats from higher impact developments.

Objective 2.4: Demonstrate commitment to enhancing and preserving the environment.

- Policy 2.4.a: Become a recognized Tree City through the Arbor Day Association.
- Policy 2.4.b: Develop an urban forestry plan to preserve forested areas that characterize Black Diamond and contribute to the community's aesthetic.
- Policy 2.4.c: Adopt a community forestry program with a minimum annual budget of at least \$2 per capita to fund educational opportunities about the environment, trees, and preservation.
- Policy 2.4.d: Monitor water quality of the lakes, wetlands, and streams on City-owned land.
- Policy 2.4.e: Develop an environmental reporting program with that provides the public opportunities to report park quality or maintenance issues.

Goal 3: Improve community access to parks, recreation, and open spaces.

Objective 3.1: Improve pedestrian infrastructure in the immediate vicinity of existing parks.

- Policy 3.1.a: Collaborate with Public Works to incorporate all missing pedestrian park linkages in the public rights-of-way into the Black Diamond Transportation Improvement Plan.
- Policy 3.1.b: Work with WSDOT to coordinate pedestrian infrastructure improvements on state routes through the City within one-quarter mile of parks.
- Policy 3.1.c: Elevate project priorities on the CIP if the scope includes ADA accessibility improvements.
- Policy 3.1.d: Develop an ADA Transition Plan to evaluate retrofit and improvement construction projects at existing parks so that access is brought to current code requirements.

Objective 3.2: Increase distribution of neighborhood and pocket parks.

- Policy 3.2.a: Acquire unmaintained homeowner’s association parks that do not meet the maintenance requirements in developer agreements.
- Policy 3.2.b: Consider creating new parks in areas of the City that are outside existing neighborhood or pocket park service areas.

Objective 3.3: Improve recreational opportunities within existing developed parks.

- Policy 3.3.a: Increase the variety and number of recreational opportunities in parks to maximize existing park acreage and achieve LOS A for recreation valuation.
- Policy 3.3.b: Develop safe and convenient access to Lake Sawyer for swimmers.

Objective 3.4: Create a comprehensive trail network connecting facilities with points of interest, recreational opportunities, and parks.

- Policy 3.4.a: Collaborate with King County for the expansion of the Cedar to Green River Trail through Lake Sawyer Regional Park.
- Policy 3.4.b: Determine a potential trail network connection from Lake Sawyer Regional Park to the downtown core and include the trail network in the Black Diamond Transportation Improvement Plan.
- Policy 3.4.c: Codify trail standards to ensure consistency in development of pathways in design, aesthetics, and construction.

Goal 4: Create a sense of place within the parks system by integrating unique landscaping, art, corridors, trails, and recreation opportunities that reflects the City’s history, design, and culture.

Objective 4.1: Delineate the public parks system from privately maintained parks through consistent and thoughtful design and landscaping.

- Policy 4.1.a: Implement a wayfinding signage program throughout parks and trail facilities educating the public on the City’s history and environment.
- Policy 4.1.b: Develop consistent signage standards for park facilities to clarify park ownership.
- Policy 4.1.c: Establish park design standards to create continuity in site design, furnishings, and construction.
- Policy 4.1.d: Adopt standard specifications for park landscaping design and preferred tree species.

Objective 4.2: Emulate the City’s identity by incorporating monuments and art in public parks and open spaces.

- Policy 4.2.a: Incorporate and enhance historic and cultural resources into the park and recreation system.
- Policy 4.2.b: Collaborate with the Black Diamond Historical Museum and other cultural resource experts to incorporate elements of historical significance throughout the City.
- Policy 4.2.c: Acquire and install public artwork and/or cultural displays in community spaces to increase awareness of local history and culture and provide a placemaking component.

Goal 5: Encourage public involvement in the parks and open space planning process.

Objective 5.1: Utilize a variety of communication platforms and methods to keep the public up to date on events, opportunities, and upcoming projects.

- Policy 5.1.a: Maintain a Parks and Recreation webpage that is updated with upcoming meetings, policy changes, and volunteer opportunities.
- Policy 5.1.b: Reduce barriers to participation in the planning process by maintaining a strong online presence on the City’s website and on social media pages that describes upcoming events and methods to participate.
- Policy 5.1.c: The public shall be made aware of all changes relating to the parks capital improvement plan.

Objective 5.2: Foster a stronger relationship with the public by organizing volunteer opportunities.

- Policy 5.2.a: Create a community volunteer association to utilize as a resource for parks maintenance, projects, and grant matching.
- Policy 5.2.b: Distribute information to stakeholder groups to encourage partnerships and volunteering to encourage participation from a variety of community groups.
- Policy 5.2.c: Continue to host community events creating opportunities for social engagement.

Objective 5.3: Continue to prioritize a park planning process that focuses on community input.

- Policy 5.3.a: Involve the community in park planning and design stages of proposed projects to solicit input, generate public support, and communicate project information.
- Policy 5.3.b: Create an e-newsletter sending quarterly updates to interested community members on upcoming events, opportunities, and projects.

- Policy 5.3.c: Survey the community once every five years to understand current preferences, trends, and to evaluate the performance of the parks program.

Parks, Recreation and Open Space Appendix

The City-owned parks, recreation, and open space system has about 176 acres of land for active and passive activities. Additionally, the Lawson Hills Master Planned Development (MPD) is required to designate 134 acres of open space and the Ten Trails open space requirement is 481.4 acres. The PROS Plan and this Element do not include MPDs in the evaluation of the City's parks program because recreational opportunities within MPD neighborhoods are maintained by the developer or homeowners' association.

A detailed inventory and classification of the City's existing system is contained in the parks functional plan, titled, *City of Black Diamond Washington Parks, Recreation and Open Space Plan*, adopted December 2008 and updated in June 2022. This Plan represents the background for the Parks, Trails, Recreation, and Open Space Element.

Inventory

City Parks, Trails, Recreation, and Open Space Inventory

The City owns approximately 176 acres of land committed to a diversity of uses ranging from natural open spaces to a BMX bicycle track and boat launch.

Of the 176 acres, 143 of them are included in the Lake Sawyer Regional Park located at the south end of Lake Sawyer. This area was transferred from King County for future development as a regional park. The park includes Frog Lake, extensive wetlands, streams, and riparian habitat. Amenities include trails, picnic areas, educational signage, and portable toilets. As part of the transfer, King County required a trail route be designated through the property to function as a regional trail link between the Green and Cedar River open space systems. The County also specified a 38.6-acre parcel in the southwest corner of the property be developed for active recreation to include athletic fields to meet Washington State recreational grant requirements. User groups have already developed portions of the property with a system of off-road single-track mountain bike and hiking trails.

In 1993, the City acquired 14 acres of land located around the western boundaries of Jones Lake near the Black Diamond-Enumclaw Road south of the historic downtown. This site contains Jones Lake, adjacent wetlands and riparian habitat. The City also acquired the 27.59-acre Ginder Creek open space parcel northwest of the historic downtown. This site includes Ginder Creek with its adjacent wetlands and riparian habitat. The Jones Lake and Ginder Creek sites both provide significant opportunities for resource conservation, passive recreation, and education.

The City owns and operates recreational facilities including a basketball court, tennis court, and skate park, which is along Park Street adjacent to the Black Diamond Elementary School, and the Lake Sawyer

boat launch located at 296th Avenue on the west side of Lake Sawyer. Other recreational facilities within the City include a playfield located at the elementary school, a community gymnasium operated by the City, and a BMX bike track next to the gymnasium. Both the gym and BMX track are located off of Lawson Street. The total amount of citywide land used for active play areas is about eight acres.

Two pocket parks (Coal Car Memorial Park and Union Stump Park) serve as gateway features for the City in the public right of way. Coal Car Memorial Park, at the intersection of State Route (SR) 169 and Roberts Drive, contains a coal car marker reminiscent of the City's mining history. "Union Stump," which is near Morganville, served as the speaker platform during the union/mining era. Each site is less than one-third acre, and neither has recreational amenities.

Table 1: City Parks, Recreation, and Open Space Inventory

Facility	Type	Acreage	Features
Union Stump	Pocket	0.23	Historical Marker
Coal Car Park	Pocket	0.1	Historical Marker
Jones Lake Open Space	Open Space	14.68	Lake, wetlands, and riparian habitat
Ginder Creek Open Space	Open Space	27.32	Creek, wetlands, and riparian habitat
Eagle Creek Park	Neighborhood	0.96	Basketball Court
Lake Sawyer Boat Launch	Community	1.81	Boat Launch, parking, picnic area, barbeque facilities, swimming, fishing, paths, portable toilets
Lake Sawyer Regional Park	Regional	143	Trails, picnic areas, portable toilets, educational signage
BMX Park	Community	1.06	Dirt Bike Track
Railroad Pocket Park	Pocket	0.13	Historical marker, picnic tables
Skate Park	Community	1.64	Playground, skate park, tennis court, basketball court, picnic area, portable toilet

Other Facilities

Other public and private agencies have amassed significant amounts of acreage within and adjacent to the City for regional facilities, open spaces, and park trails. These areas provide a unique opportunity for the City to create linkage between citywide and regional recreation and open space systems.

Black Diamond In-City Forest

A 50-acre conservancy park located on the hillside above the mining railroad spur and below Oakpointe's Lawson Hills Master Planned Development. The site includes a dense hillside and woodland habitat. The City is working to acquire this site as part of the Black Diamond Urban Growth Area Agreement (BDUGAA).

Black Diamond Natural Area

A 611-acre area extending north from Lake Sawyer Regional Park along Ravensdale Creek and across Black Diamond-Enumclaw Road and Ravensdale Road. This conservancy area has extensive wetlands,

riparian habitat, and Ravensdale Lake. It is owned by King County and under the County's provisions the area is to remain in a conservancy state but may be improved with trails, interpretative facilities, and supporting trailheads. Considerable portions of the property have already been improved by user groups for off-road single-track mountain bike and hiking trails.

Black Diamond Open Space Area Protection Agreement (BDOSAP)

A conservation easement between King County and Plum Creek preserves 1,600 acres of forestland on Ravensdale Ridge to protect wildlife, views, and existing trails. It also includes 645-acres along the Ravensdale Creek corridor to protect water quality in Lake Sawyer. As part of the agreement, 55-acres directly north of the city is set aside as open space to provide a visual buffer along SR-169.

Equestrian Trailhead

A trailhead site found on the Westside of Lake Sawyer Road across from the Lake Sawyer Regional Park. King County intends to develop an equestrian trailhead to access an existing horse trail corridor extending south to the Green River Gorge and Flaming Geyser State Park.

Ravensdale Park

A 20-acre regional sport park complex located on the Kent-Kangley Road with multiple baseball diamonds, open fields, and soccer fields.

Green River Gorge

Conservancy lands situated on both sides of the Green River Gorge from Flaming Geyser State Park east and upriver to Kanaskat-Palmer State Park including Hanging Gardens and Jellum Site. This area includes extensive wooded hillsides and riparian habitat along river shorelines. Off-road hiking trails have been developed along portions of the southern bank of the Gorge.

Flaming Geyser Park

A 480-acre+ State multi-purpose park on both sides of the Green River south of Black Diamond. The site has "geysers" (methane seeps) over the top of coal seams and over 3.0 miles of freshwater shoreline, wetlands, and riparian habitat along the river. The park is improved with kitchen shelters, picnic tables, a swimming beach, volleyball courts, a 25-acre field for equestrian use and 1 mile of horse trails, and 4.3 miles of hiking and biking trails.

Kanaskat-Palmer State Park

A 320-acre multipurpose park on the south side of the Green River Gorge on a small, low plateau in a natural forest setting. The park has 2.0 miles of freshwater shoreline, wetlands and riparian habitat along the river. The park has been improved with hand-carry boat and raft launch sites on call IIIIV river runs, fishing access, picnic ground, and campsites.

Ravensdale Ridge

There are two extensive forest holdings owned and managed by the Washington State Department of Natural Resources (DNR) located between Black Diamond-Ravensdale Road and south of Rock Creek.

Portions of the northern most property have been planned and are being developed by user groups for off-road single-track mountain bike and hiking trails.

King County Regional Trail System

Cedar River and Cedar to Green River Trails consist of 21 multi-purpose trail miles for hiking, biking and horseback riding located on an abandoned railroad track corridor extending from Lake Washington in downtown Renton parallel to the Cedar River through Kent and around Maple Valley to Landsburg Park on Summit Landsburg Road. The Cedar to Green trail extension extends north of Maple Valley SE to Kent-Kangley Road.

Henry's Ridge Mountain Bike Trails

About 7 miles of off-road hiking and single-track mountain bike trails developed within the common area of the Henry's Ridge residential development and the Ravensdale Creek Open Space Area.

Lake Sawyer Mountain Bike Trails

About 4 miles of single-track mountain bike trails developed within the Ravensdale Creek Open Space on both sides of SR-169/Black Diamond-Enumclaw Road and the former Northern Pacific railroad corridor.

Park Types and Level of Service (LOS) Standards

The City adopted the current Parks, Recreation, and Open Space Plan (PROS Plan) in June 2022 as an update to the original 2008 PROS plan. The 2022 PROS plan includes definitions for park types and LOS standards. The following section includes that information from the PROS plan to ensure consistency between the PROS plan and the Comprehensive Plan.

Park Types

The park type classifications establish general parameters to guide siting, acquisition and design decisions for park sites and facilities. Black Diamond strives to organize recreational space in a manner that is responsive to the public needs and provides equitable, spatially balanced opportunities and experiences for all residents. The City's park types consider types of uses, size and relative service area of each park. The park types used in Black Diamond include:

Pocket Parks – Small pedestrian-oriented areas, one-half acre or less, that supply greenery and open space in higher-density developed areas. They may include features such as play equipment, community gardens, historical/information markers, landscaping, seating, and public art.

Neighborhood Parks – Small pedestrian-oriented parks, one acre or less, that serve residents of the immediate, usually residential, area. They may include features such as play areas, basketball courts, community gardens and/or open areas.

Community Parks – Large parks, 1 to 5 acres in size, which provide active recreation facilities for the broader community. They may include features such as parking areas, baseball or softball diamonds, soccer or football fields, tennis courts, aquatic facilities and/or natural areas.

Regional Parks – Parks of at least two acres in size with the capacity to host many people. Park offers activities over a wide service area and connects to adjacent parks or activities. Park typically includes a parking lot, waterfront access, natural areas, and/or amphitheaters

Resource Park – A natural open space park with limited development. Park is typically more passive use and includes trails and interpretive signage. The intent of the park is to preserve natural habitat areas and create educational opportunities on conservation efforts.

Open Space – Undeveloped areas or areas with limited development intended to preserve natural areas within the City for environmental, health, and/or aesthetic reasons. They may include features such as picnic areas, trails, and/or interpretive facilities.

Trails (Non-motorized) – A network of pedestrian or bicycle-oriented paths for recreational and transportation uses. They can be within an existing park or open area or separate. Ideally, they should create a well-connected city- or region-wide system. They may include features such as parking areas, paved or graveled paths, picnic areas, and/or historical/informational markers.

Community Facility – A building that is used for public gatherings or specialized physical activities.

Level Of Service Standards

Level of Service (LOS) is a measurable standard used in understanding the quality and quantity of parks and recreational spaces necessary to meet a community's needs. The Growth Management Act requires that LOS standards be incorporated in the Comprehensive Plan. The previously adopted LOS standards from the 2008 PROS Plan have been revised to follow planning guidelines and reflect the current Black Diamond community. The 2008 PROS Plan described two level of service standards; park distance and facility frequency. The newly adopted LOS standards take into account additional metrics including accessibility, availability, quality, and functionality.

Table 2: 2021 PROS Plan Park LOS Metrics

Level of Service Standard:	A	B	C	D	E
Accessibility Criteria:					
Population within Service Area: Percentage of population within the park service area.	>75%	61-75%	46-60%	30-45%	<30%
Sidewalk Availability: Percentage of parks and recreation facilities that may be accessed by foot within ¼ mile of site.	>80%	61-80%	41-60%	20-40%	<20%
Availability Criteria:					

Park Acreage: Percentage difference of the minimum standard of 15 acres per 1,000 and the existing quantity.	<10%	11-20%	21-30%	31-40%	>41%
Recreation: Percentage difference between existing recreational value per person (\$438.00) and the desired value (\$718.00).	<20%	21-40%	41-60%	61-80%	>80%
Quality Criteria:					
Agency-Based Assessment: Percentage of facilities that are fully functional for their specific design and safety guidelines.	>80%	61-80%	41-60%	20-40%	<20%

Existing Needs

The 2022 PROS Plan has updated level of service statistics, using the above new metrics. The below tables detail the current LOS for Black Diamond's Parks.

According to the Parks, Recreation and Open Space Plan, the average LOS score for population within service areas is C. This signals room for improvement as far as number of parks, and park location. One park, the Skate Park, provides many of the recreational facilities for the community. The Black Diamond Elementary School playfields and the baseball diamond next to the school are being considered part of the Skate Park recreational facilities. There is only one neighborhood park, Eagle Creek Community Park, which serves about 17% of the population. This also falls far below the LOS standard for 75% of the population within 0.5 miles of a neighborhood park. The citywide trail system has not been analyzed to determine how the City is meeting its LOS standards for recreational trails. The following tables show the current park LOS in detail.

Table 3: Population Within Service Area

Park Type	Service Area Standard (Radius)	Population Within Service Area	LOS Rating
Pocket	0.25 Miles	1,030	E
Neighborhood	0.5 Miles	1,163	E
Community	3 Miles	5,990	A
Regional	5 Miles	5,990	A
Average number of people within service area:		3,543	
Average LOS:		C	

Table 4: Sidewalk Availability

Park	Total possible sidewalk length (One street side within ¼ mile, linear feet)	Sidewalk length provided (Linear feet)	Sidewalk coverage	LOS Rating
Lake Sawyer Regional Park	4,046	0	0%	E
Lake Sawyer Boat Launch	2,270	0	0%	E
Skate Park	17,103	11,180	64.4%	B
Ginder Creek Open Space	N/A	N/A	N/A	N/A
Railroad Pocket Park	8,784	7,804	88.8%	A
Eagle Creek Park	11,528	10,858	94.1%	A
BMX Park and Community Gym	3,644	3,582	98%	A
Union Stump Park	10,206	6,301	61%	B
Coal Car Pocket Park	7,472	1,515	20.2%	D
Total/Average	65,053	41,240	63.4%	B

Table 5: Parks Acreage

Population	Number of Parks	Parks Acreage (Total)	Parks Acreage per 100 Residents
5,990	9	176	29.3

Table 6: Recreational Value of Parks

Park	Estimated Investment
Lake Sawyer Regional Park	\$427,028
Lake Sawyer Boat Launch	\$568,927
Skate Park	\$439,861
Ginder Creek Open Space	\$0
Railroad Pocket Park	\$5,000
Eagle Creek Park	\$213,375
BMX Park	\$28,100

Park	Estimated Investment
Union Stump Park	\$47,928
Coal Car Pocket Park	\$21,565
Community Gym	\$854,039
Total	\$2,627,074
<i>Investment Per Person</i>	<i>\$438.57</i>

Table 7: Park Functionality

Park	Operational Score	LOS Rating
Lake Sawyer Regional Park	81.3%	A
Lake Sawyer Boat Launch	67.2%	B
Skate Park	83.3%	A
Ginder Creek Open Space	N/A	N/A
Railroad Pocket Park	81.3%	A
Eagle Creek Park	81.8%	A
BMX Park	57.1%	C
Union Stump Park	87.5%	A
Coal Car Pocket Park	69.2%	B
Community Gym	71.4%	B

Future Needs

To meet the current LOS deficits, new parks will have to be added in the City, in addition to more extensive development of existing park land. The location of new parks will need to account for the “geographic deficit” in certain areas of the City.

For example, the City will need several new neighborhood parks to meet the LOS standard. One of these new parks would have to be in the northern end of the City around Lake Sawyer, where there is a large amount of housing but no existing neighborhood park. Other gaps in neighborhood park coverage include the northeast corner of the City, in the vicinity of SR 169, and the area around the City Center.

The 2022 PROS Plan recommends a recreation investment value of \$718 per person, the amount needed to reach LOS A (100%). To maintain the existing LOS of \$438.57 per person and keep up with population growth, \$5.1 million in new recreation investment would be needed by 2041. To reach the recommended LOS, \$10 million would be needed.

An analysis of the City’s current parks inventory using the park type classifications and LOS standards indicates the City is lacking in pocket and neighborhood parks. However, it is useful to also consider the significant amounts of dedicated county and state open space, park trails, and regional recreational facilities that are near and accessible to Black Diamond residents.

Master Planned Developments

In addition to the existing park and recreation needs, the City needs to consider the effects of future development on its park and recreational facility needs. The City population is expected to reach around 19,262 by 2035. Most of this projected growth is due to the approved Lawson Hills and Villages Master Planned Developments (MPDs). Such a large increase in population significantly increases the number of facilities needed in the city. The provision for parks, trails, recreation and open space areas in the MPDs is guided by the Development Agreement (DA). The Lawson Hills MPD is required to designate 134-acres of open space and the Villages (also known as “Ten Trails”) open space requirement is 481.4-acres. Additionally, both permit approvals include a requirement for the construction of trails. The master developer is obligated under the DA to provide recreational facilities based on the City’s adopted LOS standards.

The potential future recreational facility needs of the City are determined by applying standards to the City’s projected 2035 population. The following table documents the MPD requirements for the provision of parks and recreational facilities. The Master Developer may elect to request the City accept “fee-in-lieu.”

Table 8: Lawson Hills MPD Recreational Facilities Requirement

Facility Type	No. of Required Facilities	Timing of Facilities
Basketball Court	2	One basketball court per every 800 dwelling units constructed. The second facility must be constructed prior to approval of the residential plat containing the 1250 th dwelling unit
Soccer Field	2	One field prior to 800 th dwelling unit receiving Certificate of Occupancy. The second facility must be constructed prior to approval of the residential plat containing the 1250 th dwelling unit.
Youth Baseball/Adult Softball Field	2	One field prior to 800 th dwelling unit receiving Certificate of Occupancy. The second facility must be constructed prior to approval of the residential plat containing the 1250 th dwelling unit.
Tennis Court	2	One tennis court prior to 800 th dwelling unit receiving Certificate of Occupancy. The second facility must be constructed prior to approval of the residential plat containing the 1250 th dwelling unit.

CHAPTER 4: NATURAL ENVIRONMENT ELEMENT

4.1 Introduction

This Natural Environment element guides environmental protection and stewardship in the City, providing a framework for protecting natural resources. Black Diamond has an abundance of natural resources. The forests, fields, lakes, streams and natural drainage systems provide rich habitat for fish and wildlife unlike any other city in King County. The City's extensive natural beauty and intricate ecosystems form the basis of our natural resource and open space network that is integral to enjoying a high quality of life.

4.2 Planning Framework

The primary purpose of this element is to discuss the natural features and amenities in the city, to identify goals and policies for the protection and enhancement of these areas, and to protect sensitive areas from alterations and impacts due to development.

Washington's Growth Management Act (GMA) requires cities and counties to designate critical (or sensitive) areas, which the GMA defines as wetlands; critical aquifer recharge areas (CARAs); fish and wildlife habitat conservation areas; frequently flooded areas; and geologically hazardous areas. According to the GMA, critical areas must be protected using the "best available science" for designating, preserving, and mitigating for impacts when critical areas are affected by development.

The city's Shoreline Master Program (2019) provides additional environmental protection and consistency of development along Lake Sawyer and its associated wetland area (Frog Lake) as well as a very small segment of Covington Creek situated downstream of the Lake Sawyer weir and shorelands within 200 feet of the Creek. The SMP designates a shoreline jurisdiction, which includes four shoreline environments: High Intensity, Shoreline Residential, Urban Conservancy, and Aquatic. The SMP establishes regulations and requirements for development in each of the shoreline environments. The SMP locally implements the state's Shoreline Management Act (SMA) of 1971 (RCW 90.58).

In addition to the established shoreline environments, the SMP includes:

- An inventory of the natural characteristics and land use patterns along shorelines covered by the SMA;
- A permit system to further the goals and policies of both the SMA and the SMP; and
- A Restoration Plan that includes goals, policies, and actions for restoration of impaired shoreline ecological functions.

The SMP, including the goals and policies listed in the SMP, is incorporated as an Element (“Shoreline Element” of this Comprehensive Plan, by reference.

The goals and policies in this chapter provide for the protection, preservation, and maintenance of sensitive areas to provide open space for the enjoyment of City residents; furnish habitat for fish, wildlife, flora and fauna; improve water quality; and reduce the risk to residents of flooding and geologic hazards. The City’s sensitive areas ordinance (Black Diamond Municipal Code Chapter 19.10) regulates land use and development consistent with this Element. Maps illustrating the general area and distribution of the City’s Sensitive Areas are in Appendix 3.

One of the city’s tools for protecting sensitive areas and conserving open space is the Transfer of Development Rights (TDR) program, which is addressed in the “Land Use” Element of this plan.

4.3 Natural Environment General Goals and Policies

Goal 1: Designate and protect the City’s sensitive areas.

Policy NE-1: Use best available techniques to preserve and enhance the functions and values of sensitive areas through policies, regulation programs, and incentives.

Policy NE-2: Actively engage with the King Conservation District to develop a stewardship program to encourage private landowners to manage their land in ways that support the preservation of sensitive areas and associated buffers.

Policy NE-3: ~~Encourage the use of creative and appropriate site design and housing types~~Promote innovative and environmentally sensitive development practices in siting, design, materials selection, construction, and maintenance to balance environmental protection and achievable density.

Policy NE-4: Encourage clustering and density transfers for both commercial and residential development to retain natural features, habitat, and sensitive areas as open space.

Policy NE-5: Coordinate with adjacent jurisdictions and tribes to identify, protect, and develop enhancement plans and actions ~~for habitat networks and wetlands~~for critical areas and habitats that cross jurisdictional lines, and to protect water quality.

Policy NE-6: Support programs and policies to ensure that all residents, regardless of race, social, or economic status, have clean air, clean water and other elements of a healthy environment and prioritize the reduction of impacts to vulnerable populations that have been disproportionately affected.

Policy NE-7: Support and incentivize environmental stewardship on private and public lands.

Policy NE-8: Enforce regulations which preserve natural drainage ways and review development plans to limit impacts on natural drainage ways.

4.4 Wetlands

Wetlands are areas that are inundated through ground or surface waters, either permanently or seasonally, such that they are able to support vegetation typically adapted to saturated soils. Wetlands perform many ecological functions, including flood control, reductions of erosion and siltation, water storage, groundwater recharge, water quality maintenance, nutrient absorption, and supplying fish and wildlife habitat. Additionally, wetlands provide opportunities for open space enjoyment, research and scientific study, and outdoor education, and are economic resources for hunting, fishing, and recreation.

Goal 2: Protect wetlands as ecosystems, and essential elements of watersheds.

Policy NE-7:Policy NE-9: Conserve areas of native vegetation that connect wetland systems, through regulations, incentives and non-regulatory means.

Policy NE-8:Policy NE-10: Ensure wetlands can fulfill their natural functions as recipients of floodwaters and as habitat for wildlife through the sensitive areas ordinance.

Policy NE-9:Policy NE-11: Prevent fragmentation of habitat areas and enhance biodiversity through development review procedures.

4.5 Fish and Wildlife Habitat Conservation Areas

Fish and wildlife habitat conservation areas are lands meant for maintaining populations of species in suitable habitats within their natural geographic distribution so that the habitat available is sufficient to support viable populations over the long term. Fish and wildlife areas are fundamental to the quality of life of the Black Diamond community. Healthy systems that sustain fish and wildlife habitat provide ecosystem services that include clean and abundant water, protection from flooding and climate extremes, and recreational opportunities, and are sources of aesthetic and educational values.

Goal 3: Promote preservation of fish and wildlife habitat corridors.

~~Policy NE-10:~~Policy NE-12: Avoid disturbance to valuable fish and wildlife habitat through the proper location, design, construction, and management of new development.

~~Policy NE-11:~~Policy NE-13: Minimize disruption of areas in current use by endangered wildlife species or by unique wildlife populations.

~~Policy NE-12:~~Policy NE-14: Protect and preserve habitats for species which have been identified as endangered, threatened, or sensitive by the State or federal government.

~~Policy NE-13:~~Policy NE-15: Implement salmon habitat protection and restoration priorities identified in the Water Resource Inventory Area (WRIA) 9 plans.

~~Policy NE-14:~~Policy NE-16: Minimize habitat fragmentation by linking wildlife habitats via corridors. Connect wildlife habitats with each other within the City and the region to achieve a continuous network.

~~Policy NE-15:~~Policy NE-17: Coordinate land use planning and management of fish and wildlife resources with adjacent jurisdictions and Tribes.

~~Policy NE-16:~~Policy NE-18: Maintain a long-term management strategy to prevent the spread of noxious weeds and manage these weeds where they are present in the City.

~~Policy NE-17:~~Policy NE-19: Implement the Shoreline Master Program Restoration Plan.

4.6 Geologically Hazardous Areas

The City of Black Diamond contains areas that are susceptible to the geologic hazards of erosion, sliding, earthquakes, or other geologic events such as differential settlement. In addition, portions of the Black Diamond area are subject to the hazards caused by geological events to areas of coal extraction, known as coal mine hazards. All these types of hazards pose a threat to health and safety of the Black Diamond community when incompatible development is sited in areas of significant hazards.

Goal 4: Avoid and/or minimize potential impacts to life and property from geologic hazards such that the site is rendered as safe as one not containing such hazard.

~~Policy NE-18:~~Policy NE-20: Permit and condition development in geologic hazard areas when it is demonstrated that potential hazards will be stabilized through engineering or structural solutions.

~~Policy NE-19:~~Policy NE-21: Minimize areas of vegetation loss and grading disturbance to protect water quality and prevent erosion, when developing on moderate and highly erodible soils.

4.7 Critical Aquifer Recharge Areas (CARA)

The City is located within the South King County groundwater management area. The groundwater management plan for South King County identifies the western and northwestern portions of the City as having the potential to serve as aquifer recharge areas but offer little contaminant removal ability, leaving groundwater susceptible to contamination. The King County Comprehensive Plan mapped these areas as “Areas Highly Susceptible to Ground Water Contamination” (Figure 4-1). As shown on the figure, the map is intended for informational purposes only and is not specific enough to be integrated into City regulations.

Goal 5: Protect the quality and quantity of groundwater used for public water supplies.

~~Policy NE-20:~~Policy NE-22: Encourage ~~the reduction of the use of reduced pesticides and chemical fertilizers~~pesticide and chemical fertilizer use to the extent feasible and identify alternatives that minimize risk to human health and the environment.

~~Policy NE-21:~~Policy NE-23: Reduce the rate of expansion of impervious surface in the City consistent with local, state, and federal regulations.

~~Policy NE-22:~~Policy NE-24: Improve programs and management strategies designed to prevent and reduce contamination of street runoff and other sources of stormwater.

4.8 Frequently Flooded Areas

Frequently flooded areas are floodplains and other areas that are subject to flooding. They typically include areas within the 100-year floodplain, which is designated by the Federal Emergency Management Agency (FEMA). Frequently flooded areas are generally flat and low-lying and are adjacent to rivers or streams that flood during storm events. These areas perform important hydrologic functions and may present a risk to persons and property from the movement of large volumes of water and debris downstream during storm events. The city regulates development within flood hazard areas according to the Flood Damage Prevention Code, at BDMC Chapter 15.24.

Goal 6: Reduce flood related financial and public safety impacts.

~~Policy NE-23:~~**Policy NE-25:** Minimize the alteration of natural surface water features by man or wildlife that retain or carry floodwaters and prevent land alterations that would increase potential flooding.

~~Policy NE-24:~~**Policy NE-26:** Seek to meet or exceed regulatory standards for floodplain development as these standards are updated for consistency with relevant local, state, and federal requirements including those related to the Endangered Species Act.

4.9 Climate Change

Black Diamond recognizes the importance of supporting local and regional efforts to combat and mitigate the effects of climate change. Environmental protections, emissions reduction, and energy conservation are all important methods of addressing climate change impacts. While other goals and policies address issues that affect climate change, the City has also chosen to employ goals and policies specific to this important issue.

Goal 7: Recognize the value of ongoing preparation and planning climate change impacts by participating in and supporting local and regional efforts to reduce greenhouse gas emissions and prepare for climate change impacts.

~~Policy NE-25:~~**Policy NE-27:** Reduce greenhouse gases through energy conservation, urban forests, and a reduction in vehicle emissions.

~~Policy NE-26:~~**Policy NE-28:** Encourage the innovation of renewable energy resources.

~~Policy NE-27:~~**Policy NE-29:** Promote energy conservation and maximize energy efficiency with programs and educational initiatives aimed to “reduce, re-use, and recycle” at individual and community-wide levels.

Policy NE-30: Support the use of renewable resources and improvements in energy efficiency for new and existing development.

Policy NE-31: Encourage energy-efficient homes, buildings, and building systems.

Policy NE-32: Encourage non-motorized forms of transportation, carpooling, and other trip-reduction measures including the development of paths and multi-use trails throughout the city to potentially reduce auto-dependency.

4.10 Air Quality

Healthy, clean air is vitally important to the health of Black Diamond residents. Keeping the air clear and clean helps maintain valuable views. In addition, federal funding for transportation improvements is linked to compliance with federal air quality standards. Because of its geographic and climatic characteristics, the City experiences strong prevailing winds, long summer days, and temperatures higher than those experienced in areas of King County near Puget Sound. Although there are no air quality monitoring stations in the planning area, southeast King County has a higher concentration of ozone pollution than the rest of the county.

Goal 8: Identify and reduce or eliminate sources of air pollution.

~~Policy NE-28:~~**Policy NE-33:** Adopt local land use planning and development control procedures designed to avoid and mitigate adverse cumulative air quality impacts prior to project approval and construction.

~~Policy NE-29:~~**Policy NE-34:** Discourage using wood as a source of heat for residential development in low-lying areas susceptible to pollution accumulations.

Policy NE-35: ~~Conform to the federal and state clean air acts~~Require all City actions and new development to conform to the federal and state clean air acts.

~~Policy NE-30:~~**Policy NE-36:** Provide regulatory support for electric transportation methods (i.e., electric vehicle charging stations).

4.11 Water Quality

Protecting groundwater and surface waters from pollution and maintaining these resources which can also serve as a critical source of drinking water is vitally important, especially in rural areas. Groundwater is also used for industrial purposes, to generate power, and to irrigate farmland. A finite amount of precipitation is available to replenish local water resources and most of this occurs during the fall and winter. The precipitation that reaches the ground replenishes groundwater and provides base flow for streams, wetlands, and rivers during the dry months of spring and summer. The base flows sustain fish, wildlife, and their habitats, and recreational values.

Goal 9: Ensure the long-term protection of the quality and quantity of groundwater resources within the City.

~~Policy NE-31:~~**Policy NE-37:** The City recognizes the need for aquifer protection and will continue to coordinate planning efforts with King County in maintaining the management plan for South King County ground water through the South King County Ground Water Advisory Committee.

~~Policy NE-32:~~Policy NE-38: ~~Adopt~~ Maintain and enforce stormwater regulations consistent with Ecology's Surface Water Management Manual for Western Washington (2012 or as revised).

~~Policy NE-33:~~Policy NE-39: Require the installation of temporary erosion control measures before construction begins and, after the completion of construction, and their maintenance through the stabilization of the site to control the quantity of sediment entering surface water.

~~Policy NE-34:~~Policy NE-40: The City should encourage and practice low impact development approaches for managing stormwater to protect water quality by controlling pollutants and minimizing flooding and erosion.

4.12 Native Vegetation

The protection of valuable native vegetation is an important objective as well as enhancing Black Diamond by planting native vegetation. Native vegetation helps stabilize the environment's ecological balance by helping to cool and purify the air, generating oxygen, absorbing carbon, slowing and absorbing stormwater runoff, stabilizing slopes, reducing erosion, masking noise, containing glare, and conserving energy. Native vegetation enhances the community's appearance, identity, and natural beauty while providing habitat for fish and wildlife.

Along waterways, wetlands and lakes, native vegetation provides many important functions: it shades the water, thus reducing its temperature in the summer, and it slows stormwater, thus reducing its erosive forces and stabilizing steep slopes. Native vegetation is the basis of the food web that supports local fish and wildlife, and it supplies habitat elements for their survival.

Clearing and grading native vegetation for development can affect the community negatively because it can increase stormwater runoff by removing the vegetation and organic soils that absorb rainwater. Excessive erosion can be very damaging to water quality on adjacent and downstream water bodies, including those that support salmon and other fish. Requirements for clearing and grading and for preserving and replanting native vegetation help prevent these negative impacts by minimizing runoff and erosion.

Goal 10: Preserve trees and native vegetation to protect habitat and ecological functions.

~~Policy NE-35:~~Policy NE-41: Require protection of significant trees and limit unnecessary disturbance of vegetation during all phases of development and require mitigation as needed, including replacement for trees removed during development.

~~Policy NE-36:~~Policy NE-42: Preserve existing natural trees and vegetation on steep hillsides, along stream banks and other habitat areas including habitat corridors, and where visual buffers between uses or activities are desirable.

~~Policy NE-37:~~Policy NE-43: Preserve native vegetation within streams, wetlands, and their associated buffers.

~~Policy NE-38:~~Policy NE-44: Plant suitable native vegetation within degraded stream, wetland, and lake buffers. Encourage planting suitable native trees and native vegetation within steep slopes.

~~Policy NE-39:~~Policy NE-45: Encourage removal of noxious and invasive species as a significant threat to native ecosystems.

~~Policy NE-40:~~Policy NE-46: Require native vegetation that supports wildlife instead of non-native plant species and eliminate the use of invasive species when landscaping new developments.

~~Policy NE-41:~~Policy NE-47: Monitor compliance with the City's Tree Preservation Ordinance ([BDMC Chapter 19.30](#)) ~~to maintain rural character.~~

Natural Environment Appendix

This appendix contains information and analysis used to support the Natural Resources Element of the comprehensive plan.

Existing Natural Features

Drainage within the planning area (the City limits plus the city's Urban Growth Area) is an interrelated system of surface water, groundwater, and wetlands. In order to identify existing drainage characteristics and potential impacts from urbanization, an understanding of the site-specific hydrologic interaction among the components of the drainage system is required.

Surface Water Drainage Basins

Nearly all of the planning area is located in the Rock Creek and Ravensdale Creek Drainage Basins. Rock Creek and Ravensdale Creek are two headwater drainage systems of Lake Sawyer and Covington Creek. Rock Creek drains to the south and southeast portion of Lake Sawyer, while Ravensdale Creek drains to the north and northeast portion of the Lake Sawyer area. Lake Sawyer is the fourth largest natural lake in King County.

Lake Sawyer's outlet is Covington Creek which flows west into the Big Soos Creek drainage system. The Big Soos Creek discharges into the Green River about one mile east of the City of Auburn and about seven miles west of Black Diamond. The southern and western most portions of the planning area touch upon watersheds oriented toward Green River and the Crisp Creek drainage basin (including Horseshoe Lake), respectively. The Lake Number 12 Annexation Area drains to the middle Cedar River indirectly via the lake and wetlands extending east from the lake.

Types of land cover presently found in the Rock Creek and Ravensdale Drainage Basins include remnant forest stands (second and third generation growth); grass; and limited impervious surfaces (roads and a few structures). Forest covered surfaces typically display higher infiltration capacity and less surface runoff potential than grass covered surfaces because the root system of trees is more extensive and deeper than that of grass. The flat to moderate topography of the Rock Creek Drainage Basin further reduces surface runoff potential.

Surface impoundments caused by lakes, wetlands, and streams influence surface runoff by providing storage that helps attenuate the peak rate of discharge. The storage effect of streams is less pronounced than that of lakes and wetlands. In streams, increased surface runoff volumes and prolonged duration of peak rates of discharge results in more impact.

The surface water drainage basins in the planning area are shown in Figure A3-1.



Lake and the Rock Creek wetlands, and Mud Lake Creek influences the water quality of Ginder Creek. All other drainage courses within the Rock Creek watershed are considered minor.

The lakes within the planning area are Lake Sawyer, Black Diamond Lake, Frog Lake, Horseshoe Lake, Jones Lake, Lake Marjorie (also known as Oak Lake), Mud Lake, Lake Number 12, and Lake Sawyer.

Lake Sawyer is the fourth largest natural lake in King County at 286 acres with a watershed of 13 square miles. Lake Sawyer is considered a “shoreline of the state” and is subject to the SMA and the City’s Shoreline Master Program (SMP). The lake is fed by the Rock Creek and Ravensdale Creek drainage systems. Lake Sawyer has experienced water quality problems from various sources, including discharge of inadequately treated sewage from the decommissioned sewage treatment plant located in the Rock Creek drainage. A lake management plan for Lake Sawyer was completed by King County in 2000, and the Lake Sawyer Integrated Aquatic Vegetation Management Plan was prepared by King County in 2015. The City and King County have conducted stormwater monitoring in the lake’s watershed to help identify sources of phosphorus. Data collected by volunteer lake monitors indicate that Lake Sawyer is low to moderate in primary productivity with very good water quality.

Ravensdale Creek has a disproportionately high discharge to drainage area ratio likely due to a high influx of groundwater. Although Ravensdale Creek drainage area is about half that of Rock Creek’s, Ravensdale it has a discharge about three times greater than that of Rock Creek during the dry summer months. The phosphorus concentrations in Ravensdale Creek are relatively low during the wet season but exceed those of Rock Creek during the dry season when most of the flow is comprised of naturally phosphorus rich groundwater. Consequently, Ravensdale Creek contributes about half as much phosphorus to Lake Sawyer as Rock Creek.

Lake Sawyer is an important migration corridor for a late run of coho salmon that pass upstream just before the first of the year. The fish spawn in upper Ravensdale Creek. Lake Sawyer also provides year-round recreational fishing for stocked rainbow trout and warm water fish. The lake is also used extensively for boating, water-skiing, and other recreation. Public access is provided at a boat launch on the northwest side of the lake. An undeveloped 168-acre park is located along the southern part of the lake.

Black Diamond Lake is part of an extended high-quality wetlands system. Black Diamond Lake is approximately 11 acres in size with an average depth of 6 feet and a maximum depth of eight feet and is fed by surface water from a roughly 700-acre watershed and groundwater. Black Diamond Lake has recreational fishing values as it contains bass and other warm water fish. The lake was stocked with rainbow trout by the Washington Department of Fish and Wildlife in 1958, 1963, and 1965. There is a high-quality peat wetland area located upstream from the open water lake.

Frog Lake is located in the northwestern part of the planning area just southeast of Lake Sawyer. Frog Lake is approximately 25 acres in size. It is largely a forested wetland with an open water area. It is identified as a wetland on King County’s iMap Sensitive Areas layer. As a wetland related to Lake Sawyer, Frog Lake is regulated by the City’s SMP.

Jones Lake is 23 acres in size with a watershed of 740 acres. It is fed by Lawson Creek and two other unnamed tributaries but is a highly groundwater-dependent lake that displays a seasonal fluctuation in water level. Jones Lake is classified as a dystrophic lake, characterized by relatively high concentrations of acidic organic materials in solution. These chemical conditions can reduce the rate or prevent the

processes of bacterial breakdown that would otherwise recycle nutrients from dead organic material at the bottom. The bottom deposits of Jones Lake consist largely of unrated organic material which accumulates as peat. Jones Lake and Jones Lake Open Space were acquired by the City using funds from the King County Open Space Bond Fund. Jones Lake has recreational fishing values. Stocking records available for Jones Lake (previously known as Lake Number 14) show the following plantings: 1915 - yellow perch; 1922, 1926, 1928, 1929 and 1930 - eastern brook trout; 1932 - kokanee; 1950 - rainbow trout; and 1956 - rainbow trout. Bass, crappie, and brown bullheads have also been introduced into this system. Warm water species such as yellow perch, bass, crappie, and bullheads can spawn in lakes and establish self-reproducing populations.

Horseshoe Lake, located just west of the City limits, is situated in a topographic depression with no outlet. It is fed by both surface water and groundwater and is particularly sensitive to local changes in the shallow groundwater table.

Lake Marjorie has not been researched other than to identify it as an open water wetland. It is approximately Five acres in size and is described as a groundwater depression. Lake Marjorie is isolated from the other lakes and the Rock Creek drainage system.

Mud Lake is largely a wetland with a drainage basin of 378 acres. It was once part of a mining plan; however, disturbance of the lake is no longer proposed.

Lake Number 12 covers 44 acres and is fed by surface runoff from a 500-acre drainage area and shallow groundwater flow over a less permeable substrate layer. The lake is known to have an aquatic weed growth problem associated with high phosphorus concentrations. The lake is stocked with trout, bass, bullhead, and sunfish. Lake Number 12 is considered a “shoreline of the state” and is regulated by the is regulated by the County’s SMP until such time that it is annexed into the City, at which time the City’s SMP would be amended.. Lake Number 12 is in the City’s UGA northeast of the current City limits.

Groundwater

Groundwater either moves laterally or remains in place as an isolated body of water and slowly moves downward. Shallow groundwater will generally reflect the influence of local precipitation and surface water phenomena. Deep groundwater is generally regional both in terms of size and immunity to local surface water changes. Groundwater characteristics depend largely on subsurface geologic features (stratigraphy) and surficial geologic features (soil type).

Major groundwater sources in the Puget Sound area are found in the glacial and non-glacial deposits formed during the Pleistocene epoch. Geological features in the Rock Creek, Ravensdale Creek, and Crisp Creek watersheds were a product of the Vashon ice flow. The Vashon ice flow left deposits of outwash and till which formed the major groundwater sources in the Rock Creek, Ravensdale, and Crisp Creek drainage basins. Glacial outwash is a medium to highly permeable sand and gravel that produces nominal surface runoff. Precipitation and surface discharges infiltrate the outwash, which generally contributes to recharging deep, regional groundwater aquifers.

Groundwater occurs in three aquifer systems within the planning area. These aquifer systems include 1) a seasonal shallow or perched unconfined aquifer in the weathered soil and recessional outwash overlying till or bedrock, 2) an intermediate depth, regional unconfined and confined aquifer system

within the pre-Vashon glacial and interglacial sediments, and 3) a confined regional aquifer system within the bedrock.

The shallow aquifer system is the primary water resource penetrated by most of the domestic wells in the planning area. The shallow aquifer is particularly vulnerable to contamination from the surface and may dry out seasonally in some areas. The intermediate depth aquifer is recharged over a very large area and is generally protected from contamination from the surface. The bedrock aquifer often contains water with elevated level of minerals, such as iron and sulfur that may affect water quality.

Groundwater flow patterns have both vertical and horizontal components. In the planning area, the primary vertical component of flow is downward percolation from the shallow aquifer, through the underlying till or fractures in the bedrock, and into the intermediate or deep bedrock aquifer. Horizontal groundwater flow in the shallow aquifer discharges to surface water features in the Rock Creek, Ravensdale Creek, and Crisp Creek drainage systems.

Groundwater recharge to the shallow aquifer is primarily from precipitation or infiltration of surface water runoff from adjacent areas. As precipitation falls on the ground surface, a portion infiltrates into the soil. Precipitation that does not infiltrate remains on the surface, filling small depressions or moving downslope as surface runoff. Some shallow infiltrated water (soil moisture) is used by plants and returns to the atmosphere by evaporation. When the soil moisture content is high, water within the soil migrates downward. Downward percolation of water is impeded by relatively impermeable till or bedrock that underlies most of the land. Where water is concentrated within topographically low areas, lowlands such as wetlands and streams, there is generally more recharge than in topographically high, upland, areas where the surficial aquifer is dry much of the time. The intermediate depth and deep bedrock aquifer systems are recharged by infiltrating water over an area much larger than the planning area.

Public Water Supplies

The City currently obtains all of its municipal water from a series of springs (Spring No. 1 through Spring No. 4) located on the east slope of Green River gorge about two miles southeast of the City. The City does not maintain any water wells at present and groundwater withdrawal has not been necessary to supply the city's municipal water needs. The spring system is located in a geologically active area of the Green River gorge (as demonstrated by a large landslide in February 1996) immediately downstream of Spring No. 1. The water quality and quantity are very good; limited only by the approved water rights consumptive allocation of the spring water.

The City has a wholesale contract for water supply from the City of Tacoma that will provide future water supply. The City will continue to withdraw water supply from its springs so long as this source remains viable.

Sensitive Areas

Wetlands

The City conducted an extensive sensitive areas ordinance update in 2008 using the best available science. The City used King County mapping data as well as data from WA DNR, Parametrix, and Jones & Stokes for the updated maps. The sensitive areas ordinance was further amended in 2021.

Development adjacent sensitive areas; wetlands, streams and fish and wildlife habitat conservation areas inside the City are regulated by Chapter 19.10 BDMC (Black Diamond Municipal Code). The sensitive areas regulations contain requirements for designating, rating and mapping wetlands and streams, requires the establishment of buffers, identifies activities allowed within the buffers and describes applicable performance standards, and outlines appropriate mitigation requirements.

The City's sensitive areas ordinance designates and rates wetlands according to the Washington State Department of Ecology (Ecology) wetland ratings system (Ecology Publication #04-06-025). The ordinance also provides additional protection for "core wetland and stream complex" areas associated with Rock Creek, Jones Lake, Jones Creek, Black Diamond Lake, Black Diamond Creek, and Ravensdale Creek and for "headwater wetlands" associated with the headwaters of Ginder Creek, Lawson Creek, and Ravensdale Creek. For project proposals, wetland classifications will be determined using the definitions, criteria, and procedures contained in the ordinance. During the Sensitive Areas Study, extensive wetlands were identified and classified (see Figure A3-2 for a map that shows the approximate location of wetlands, which is subject to field verification and professional delineation / classification).

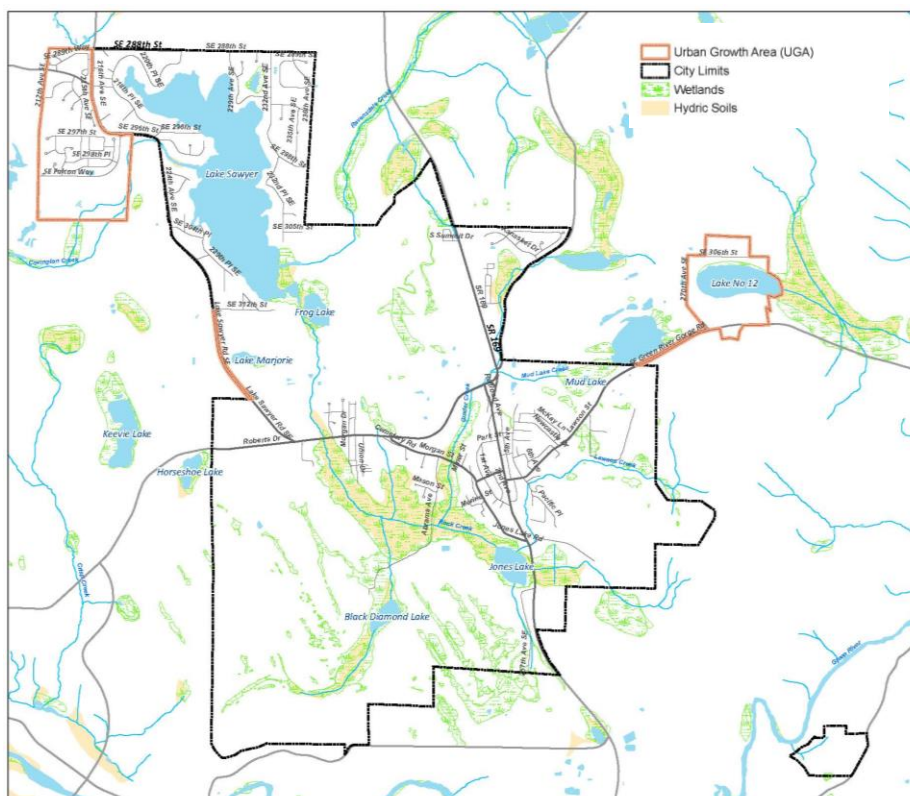


Figure A3-2: Wetlands and Hydric Soils

Fish and Wildlife Habitat Conservation Areas

The GMA requires cities and counties across the state to address land use issues that directly and indirectly impact fish and wildlife habitat. Fish and wildlife habitat conservation is the management of land for maintaining species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not created. This does not mean that all types of all species must be maintained at all times, but it does mean cooperative and coordinated land use planning is critically important among counties and cities in a region. In some cases, intergovernmental cooperation and coordination may show that it is sufficient to ensure that a species will usually be found in counties and cities in a region. In some cases, the designation of fish and wildlife habitat conservation areas should include:

- Areas with which endangered, threatened, sensitive, and candidate species have a primary association,
- Habitats and species of local importance,
- Naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat,
- Waters of the state,
- Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity,
- State natural area preserves and natural resource conservation areas, and
- Areas critical for habitat connectivity, which can include open space corridors designated in comprehensive plans under RCW 36.70A.160.

The “core stream and wetland complex” habitats in the City identified in the sensitive areas ordinance include the streams, lakes, ponds, and wetland complex associated with Rock Creek, Jones Lake, Black Diamond Lake, and Ravensdale Creek along with several unnamed creeks. Other fish and wildlife habitats in the City were identified during the sensitive areas update. These other fish and wildlife habitat conservation areas include the Rock Creek and Ginder Creek corridors, open water ponds, lakes, and riparian forests as areas of high-quality habitat. The sensitive areas code contains requirements for designating and mapping fish and wildlife habitat conservation areas, sets buffer requirements and performance standards for activities allowed within them and their buffers, and outlines appropriate mitigation requirements.

The general habitat types in the Black Diamond area include mixed deciduous and unmanaged evergreen forest, areas of regenerating managed forest, wetlands, lakes, riparian areas, and creeks. Wetlands, riparian areas, and lakes meeting certain criteria are listed as “priority habitats” in the Washington Department of Fish and Wildlife Priority Habitats and Species (PHS) program. The city reviews maps of priority habitat areas when reviewing development proposals.

Wildlife – particularly species that roam widely or have large home ranges – move freely within and among habitat types via wildlife corridors or networks. In urban areas, creeks and streams and their associated buffers function as wildlife corridors. Rock Creek, Ravensdale Creek, and their associated riparian habitat function as a corridor between the upper and lower Soos Creek basin. The Rock Creek corridor likely serves as a route to the Green River and upper parts of the Green River watershed as well, linking wildlife that use the lower Green River watershed and the upper Soos Creek basin.

The following list of drainages and the known fish species are updated from the Water Resource Inventory Area (WRIA) 9 Fish Distribution maps (2000, King County DNR) and the Statewide Washington Integrated Fish Distribution Map (SWIFDM) (2014, WDFW and NWIFC) include:

- **Covington Creek.** Coho, cutthroat trout and steelhead are known to inhabit Covington Creek. The SWIFDM also identifies the presence of fall runs of chinook and chum salmon.
- **Lake Sawyer.** Covington Creek drains Lake Sawyer, which is fed by Ravensdale and Rock Creeks. Lake Sawyer supports populations of cutthroat trout, steelhead, largemouth and smallmouth bass, yellow perch, and rainbow trout (2000 WRIA 9 Fish Distribution Map and WDFW 1991). The SWIFDM indicates the presence of cutthroat trout, chinook, chum, coho, and steelhead in the streams that feed and drain lake Sawyer. The lake is impounded by a small dam at the head of Covington Creek. The dam has a fish ladder that allows passage of migrating coho. However, due to low water flows and creek bed infiltration, however, the fish ladder is not typically passable until December. This factor limits coho use of the upper watershed, including Rock Creek.
- **Ravensdale Creek.** Ravensdale Creek has significant fisheries value and is known to support coho and cutthroat trout. The headwater wetlands are important for maintaining perennial flow, as well as maintaining water quality in Rock Creek.
- **Rock Creek.** A small portion of the planning area drains to Black Diamond Lake and the wetlands surrounding it. The Black Diamond Lake wetlands serve as partial headwaters of Rock Creek. Rock Creek is listed as supporting coho, chum, and chinook salmon, cutthroat trout, and steelhead in the WRIA 9 Fish Distribution Map and SWIFDM.
- **Ginder Creek.** The northeast portion of the planning area drains to Ginder Creek, which drains into Rock Creek. Ginder Creek historically provided good habitat for salmonid spawning and rearing. The 2000 WRIA 9 Fish Distribution Map shows Cutthroat trout presence in Ginder Creek. Based on a 1982 sampling, Ginder Lake supports warm water fish including black crappie, largemouth bass, and pumpkinseed. The SWIFD indicates the creek may also support salmon and steelhead runs. An obstruction limits the passage of adult salmonids upstream as far as Ginder Lake. Electroshocking done during the 1982 survey indicated that Ginder Creek, above State Route (SR) 169 may be able to support other species of fish if passage barriers were removed. The survey generally indicated that Ginder Creek is a relatively productive tributary (John Henry Mine, SEIS).
- **Mud Lake Creek.** This stream provides some habitat for spawning and rearing of salmonids. The cascading portion over sandstone bedrock would prevent passage of salmonids. High turbidity was also identified in the 1982 sampling in Mud Creek, especially at the inlet to Mud Lake. Mud Lake Creek, however, represents an important source of water for Ginder Creek below the confluence near SR 169, at least during the winter months. Fish populations were essentially non-existent in 1982 Mud Creek and in the inlet to Mud Lake (John Henry Mine, SEIS).
- **Crisp Creek.** The eastern edge of the Crisp Creek drainage basin crosses into the City. The Crisp Creek basin drains an area approximately 5.0 square miles with the majority of the basin located upstream of the Keta Creek Hatchery. Crisp Creek and Keta Springs are the water supply for the Hatchery. Crisp Creek is also the sole water supply for the state-owned rearing ponds, located on the mainstem and upstream of the Hatchery. Coho, chum and Chinook salmon as well as steelhead have been produced at the Keta Creek Hatchery.
- **Green River.** The planning area lies within 1 mile to the north of the lower end of the Green River Gorge, between river mile (RM) 42 and RM 47. In this vicinity, the river flows through a steep-sided eroded gorge. The Green River supports significant runs of coho, Chinook, and chum salmon as well as steelhead and sea run cutthroat trout. The SWIFDM identifies the

presence of additional species, including bull trout, rainbow trout, and sockeye. These salmonid runs support important sport and retail fisheries in the Puget Sound Region and the Pacific Ocean as well as within the river system itself.

All of these need highly effective groundwater and stormwater protection to maintain the water quality and ensure sufficient supplies of water for natural production or successful hatchery production. Stream buffers and limitations on land uses contained in the City's sensitive area ordinance help protect the functions and values of these streams as critical fish and wildlife corridors.

Geologically Hazardous Areas

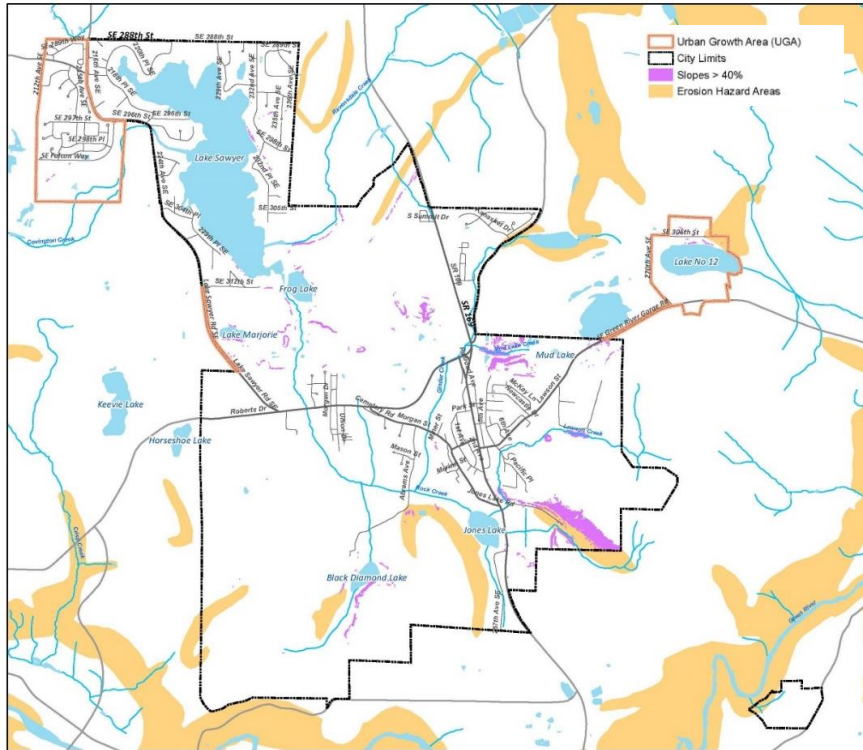
Geologically hazardous areas include erosion hazards, landslide hazards, seismic hazard areas, and mine hazards. Erosion hazards areas and steep slopes are shown in Figure A3-3 and areas of abandoned coal mine workings are identified and mapped in Figure A3-4. Uses, alterations and development in geologically hazardous areas are regulated in accordance with the City's Sensitive Areas regulations.

Erosion Hazard Areas are susceptible to prevailing agents of erosion, such as wind, rain, water, and other natural agents. The severity of erosion depends on factors such as the size of soil grains, soil cohesion, slope gradient, rainfall frequency and intensity, surface composition and permeability, and the type of vegetation cover. Erosion hazard areas are those areas where there is a "severe" to "very severe" rill and inter-rill erosion hazard.

The sensitive areas layer of the King County iMap indicates five small locations within the planning area, including the Ravensdale Creek corridor, as "erosion hazard." Among the Natural Resources Conservation Service soil types identified within the planning area, Alderwood/Kitsap and Alderwood gravelly sandy loam soils are identified by King County as potentially severely erosive. These erosion prone soils are constrained for development—especially in the area of Alderwood and Kitsap loam soils near Black Diamond Lake.

Landslide Hazard Areas are defined in the City's sensitive areas ordinance as areas that are potentially subject to risk of mass movement due to a geologic landslide resulting from a combination of geologic, topographic, and hydrologic factors. These areas are typically susceptible to landslides because of a combination of factors including bedrock, soil, slope gradient, slope aspect, geologic structure, groundwater, or other factors. According to the iMap sensitive areas layer, there are no known landslide hazard areas within the planning area.

Seismic Hazard Areas are areas at severe risk of earthquake damage as a result of earthquake-induced ground shaking, slope failure, settlement, or soil liquefaction. These conditions occur in areas underlain by soils of low density, usually in association with a shallow groundwater table. According to the iMap sensitive areas layer, no seismic hazard areas are identified within the planning area.



Mine Hazard Areas are present and information provided by the Palmer Coking Coal Company indicates that much of the existing City is built over coal mine workings that are deep underground. Most underground coal mining in the Black Diamond area consisted of the “room and pillar” mining technique. “Pillars” of coal were left to support the roof above and allow the mining of adjacent areas, creating rooms. Once abandoned, these “pillars” would collapse and the “rooms” would fill with collapsed roof material, coal debris, and water.

There are known coal mine entrances and stockpiles of coal tailings or mine spoil in the planning area. Mining records indicate that underground mining has occurred in various areas throughout the City. Most of these areas are underlain by deep underground coal workings. The coal mine hazards identified in Figure A3-4 are based on maps available at the Washington State Department of Natural Resources. Section 19.10.430 BDMC defines the degree of hazard as low, moderate, and severe and regulates the allowed uses and activities within these categories.

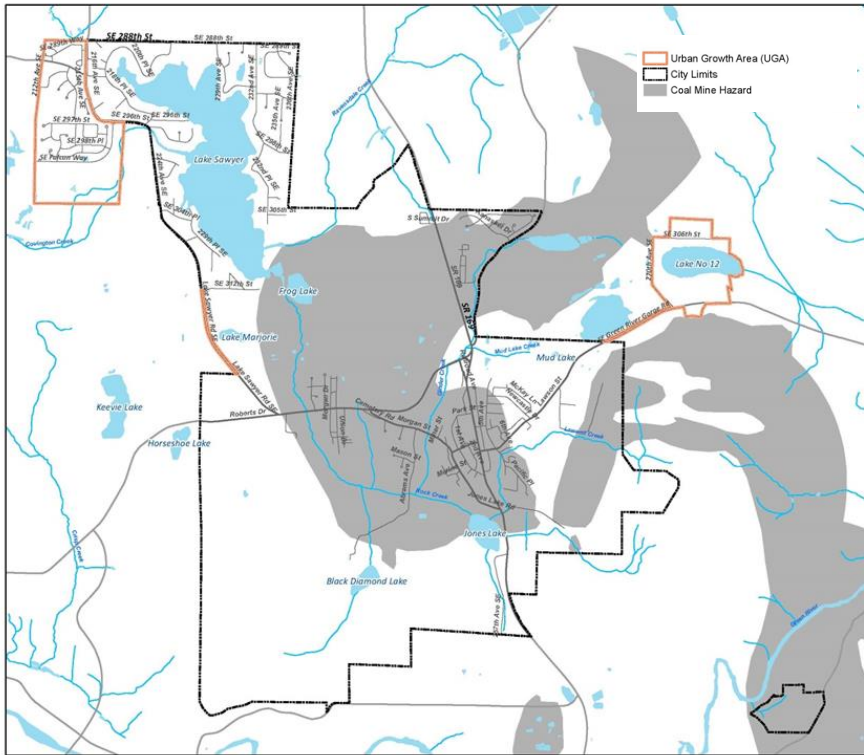


Figure A3-4: Coal Mine Hazard Areas

Areas of **steep slopes** are identified in City Sensitive Areas maps and regulated by the sensitive area ordinance. The steepest slope in the City occurs along the south side of Lawson Hill (also known as Franklin Hill), where isolated portions of the hillside approach 30% slope. Most of Lawson Hill contains 6% to 15% slopes with an area of 16% to 24% slopes. Some isolated slopes which are in the 16% to 24% slope range, are located east of the Black Diamond Lake, along Lawson Road east of Mud Lake, near SE 288th Street and crossing SR 169 north of the City limits. The remainder of the City of Black Diamond Comprehensive Plan area appears to contain slopes from 0 to 15%. Isolated steep slopes may exist throughout the City.

The City's sensitive area ordinance contains designation and mapping requirements, a description of allowed activities and performance standards, and appropriate mitigation requirements for erosion, landslide, and mine hazard areas.

Critical Aquifer Recharge Areas

This area contains a shallow aquifer serving as a source of water to the City of Kent system and Lake Sawyer. Lake Sawyer, Ravensdale Creek, and Rock Creek are identified as being hydraulically coupled to

this shallow aquifer. Figure A3-5 shows areas with high susceptibility to groundwater contamination surrounding Lake Sawyer in the northwestern portion of the City and in the southwestern portion of the City. An area southeast of Lake Sawyer and a small area in the southeastern part of the City are shown as having medium susceptibility to groundwater contamination. Areas around wellheads are also protected. Figure A3-6 shows the “time of travel” that it takes contaminants to reach wellheads from surrounding areas within six months and one, five and ten-year periods.

To protect the critical groundwater recharge areas that supply the aquifers (that in turn supply the domestic and drinking water), the City requires development within the City limits and served by City utilities to use sanitary sewers (no septic systems are allowed). However, in areas served by the Soos Creek Water and Sewer District where sewer service is not available, septic systems are allowed.

Maintaining the water quality and quantity of stormwater runoff within the aquifer recharge areas is important to protecting aquifers from pollutants. Allowing stormwater runoff to infiltrate in recharge areas renews the amount of water in the aquifer. The City’s storm drainage ordinance (codified at BDMC Title 19) requires that runoff be treated before it can be discharged as surface water. The storm drainage ordinance also encourages infiltration. Using the appropriate treatment and infiltration techniques in aquifer recharge areas will help protect aquifer recharge areas and the quality and quantity of water available for drinking and domestic use.

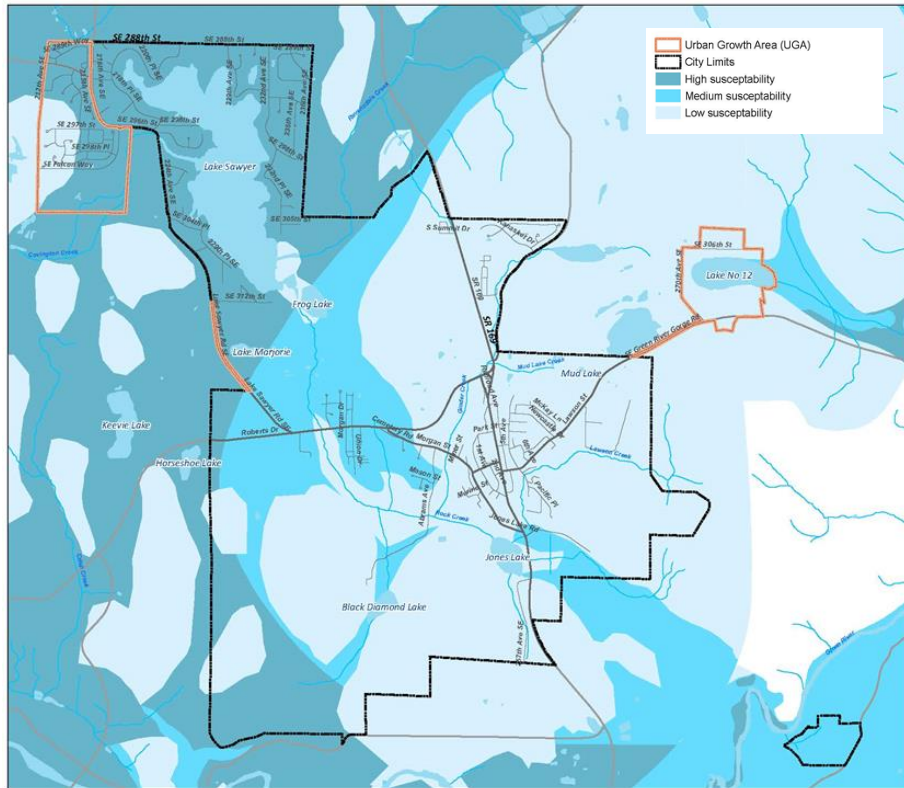
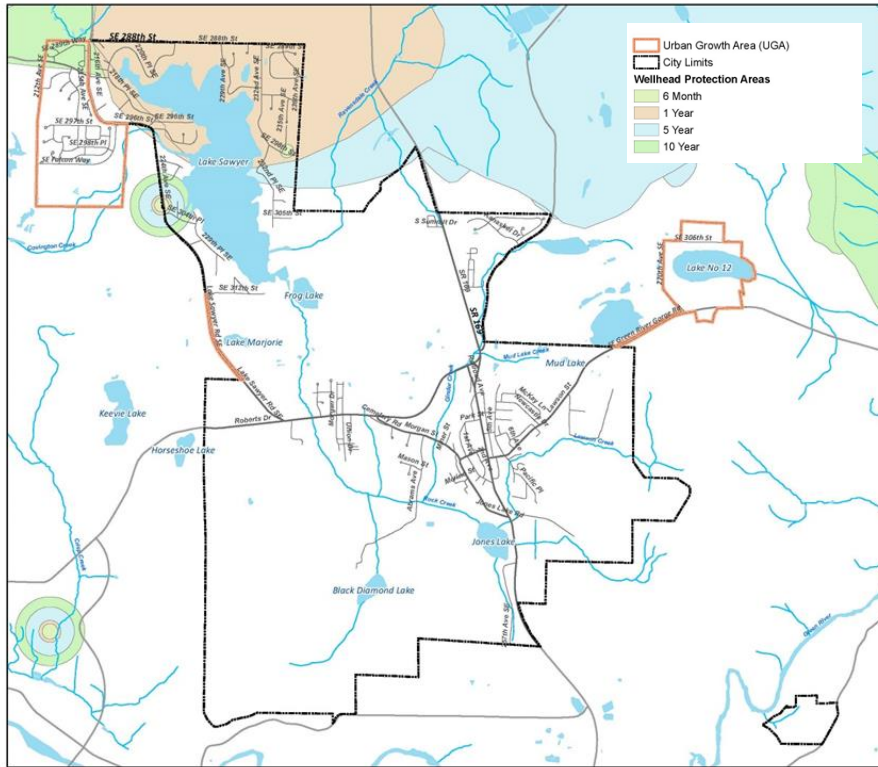


Figure A3-5: Areas Susceptible to Groundwater Contamination



Frequently Flooded Areas

Floodplains ordinarily provide riparian habitat for fish and wildlife, connectivity to wetlands and other habitats, storage and conveyance of stormwater and floodwater, and groundwater recharge. Floodplains are also critical habitat for fish species as safe havens during flood events.

The City has classified and designated frequently flooded areas using the FEMA flood map (Figure A3-7). This map identifies the following areas as being at hazard of inundation by a 100-year flood: along Rock Creek from Morganville to Jones Lake, the southern portion of Ginder Creek, and surrounding Jones Lake and along the east side of Highway 169 (across from Jones Lake). New development in these areas will continue to be regulated by the City.

The King County Interactive Map Folio Flooding Info layer shows a segment of Rock Creek and Jones Lake in the 100-year floodplain in the City.

Commented [CS1]: Update to include 500-year floodplain

Commented [CS2R1]: The 500 year floodplain is referenced in the climate change sections of the PSRC checklist

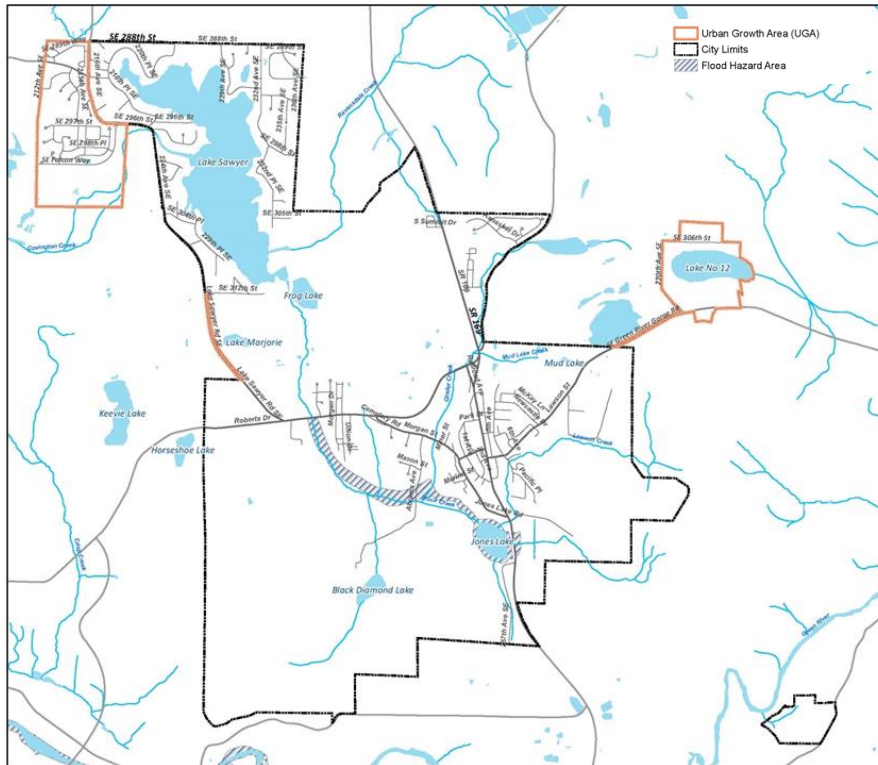


Figure A3-7: Flood Hazard Areas

Air Quality

The City experiences relatively higher ozone pollution concentrations than other areas in King County. This is common for much of southeast King County (the City contributes only marginally to this regional pollution). Zone monitoring is conducted at Enumclaw on a seasonal basis.

Particulate Matter that is inhalable (PM₁₀) consists of very small particles, either solid or liquid, which float in the air and settle very slowly (i.e., soot and dust). PM₁₀ stands for particulate matter that is smaller than 10 micrometers or one-hundredth of a millimeter. Most particulate comes from wood smoke, road dust, outdoor burning, and industry. In the City and surrounding area, the sources of PM₁₀ include local mining operations, a smokehouse, and outdoor burning. Inside the City, the requirements of the Puget Sound Air Pollution Control Agency (PSAPCA) and WAC 173-425-040 prohibit outdoor burning within designated UGAs.

Air quality has also been impacted in recent years by the increase in wildfires in the western US. Washington has seen an increase of 2.83 burned acres per square mile in the past decade compared to previous data (EPA, 2022). According to NOAA, wildfires emit carbon dioxide, black and brown carbon, ozone precursors, and VOCs into the air. These materials impact both the climate and human health. While NOAA's maps indicate that King County is at low risk for fires of concern, nearby Chelan, Kittitas, and Yakima counties are in the highest risk category, and air quality impact from wildfires tend to have a regional effect.

Climate

Black Diamond, along with the Puget Sound region, has already experienced climate change effects, and will likely continue to in the future. By the 2025s, the average summer temperature is projected to increase by up to 6.75 degrees Fahrenheit. The historical (1970-1999) average temperature for Black Diamond and the surrounding area is 62.71 degrees Fahrenheit (King County, 2020). Western Washington has also seen an increase in wildfires. According to the EPA, Washington has experienced an increase of 2.83 acres of burned land per square mile from 2002-2020, compared to 1984-2001 (EPA, 2022). King county data also predicts lower summer precipitation by the 2050s. Other impacts associated with climate change, which should be taken into account when planning, are rising sea levels, increased severe weather events, and increased flooding. Increased water temperature and acidity and decreased air quality will likely affect wildlife in the region.

Geology, Soils and Topography

Geology

The City lies in a geographic area known as the Puget Lowlands, a large land trough extending from the Fraser Valley in British Columbia, Canada, to the Willamette Valley in Oregon and from the Cascade Mountains in the east to the Olympic Mountains in the west. Geologic characteristics in the northern portion of the Puget lowlands are the result of glaciation that occurred during the Pleistocene Era (beginning about 20,000 years ago). Glaciers were once as thick as 3,000 feet during the Vashon Period of the Fraser Glaciation (roughly 15,000 years ago). They deposited till, outwash, and material mixed with volcanic ash in the Puget Lowlands on top of a thick sequence of interbedded sandstones, quartzes sandstones, siltstones, and numerous coal beds. The Black Diamond area is located on the Covington Drift Plain. Two types of deposits occur in the planning area: Vashon till which is generally an impervious mix of gravel, cobbles, and clay laden, sandy silt (known as "hardpan"); and the Vashon stratified drift deposits (generally, permeable) composed of outwash gravels, rocks, and cobbles. Since the last glaciation, urbanization, rural development, logging, gravel mining activities, erosion, and sedimentation have modified the land surface. Weathering and erosion of native soils has resulted in the development of topsoil at the ground surface. The topsoil in undeveloped areas consists of a few inches of silt and sand with decayed leaves and roots. The weathered soils underlying the topsoil consist of a few inches of organic matter, silt, and sand with roots generally extending to a depth of two to six feet. Topographic depressions and low gradient stream channels and wetlands have accumulated organic silt and peat.

Vashon recessional outwash mantles the west portion of the planning area. This soil consists of sand and gravel with variable amounts of alluvial silt and cobbles deposited by rivers emanating from the melting front of the Vashon ice sheet. This soil is considered a valuable gravel resource in this area depending on its thickness and silt content. Vashon till is at the ground surface in some areas of the east portion of the

planning area. Till consists of unstratified silt, sand, gravel, and cobbles that are in very dense condition due to being overridden by the glacial ice. Till is usually 20 to 40 inches thick and probably underlies the recessional outwash but may be absent where eroded during deglaciation meltwater runoff.

Pre-Vashon glacial and interglacial sediments underlie the Vashon till; generally, in the west portion of the planning area where bedrock is deep. The pre-Vashon glacial and interglacial sediments consist of interbedded and/or stratified silt, sand gravel and till. These soils are not exposed at the ground surface in the planning area but are exposed in the upper walls of the Green River gorge south of the planning area and are penetrated by water wells in the west portion of the planning area.

Bedrock of the Puget Group underlies the entire planning area. The bedrock is locally exposed at the surface in the east portion of the planning area and in the walls of the Green River Gorge south of the planning area. The bedrock consists of sedimentary sandstone, mudstone, shale, and coal. Based on elevations of surface exposures and water well logs, bedrock underlies the land at a depth of 200 feet or more in the west portion of the planning area.

Soils (Non-Hydric)

Weathered soils derived from native geologic deposits cover the ground surface in most of the planning area. The following soil information was taken from the November 1973 NRCS "Soils Survey of King County Area." Because this information is based on mapping from aerial photos and may not be totally representative it is used for comparing the general suitability of areas for different land uses. Field verification may be required for specific sites as part of specific project review.

Specific to the Black Diamond vicinity, weathered gravel, sand, and clay left in glacial till plains, terraces and outwash plains at the end of the Pleistocene Era, have formed the local soils. The NRCS characterizes soils by the mixture of clay, silt, sand and organic materials that make up the soil and the degree of slope where the soils are located. Soil types found in Black Diamond are shown in Figure A3-8.

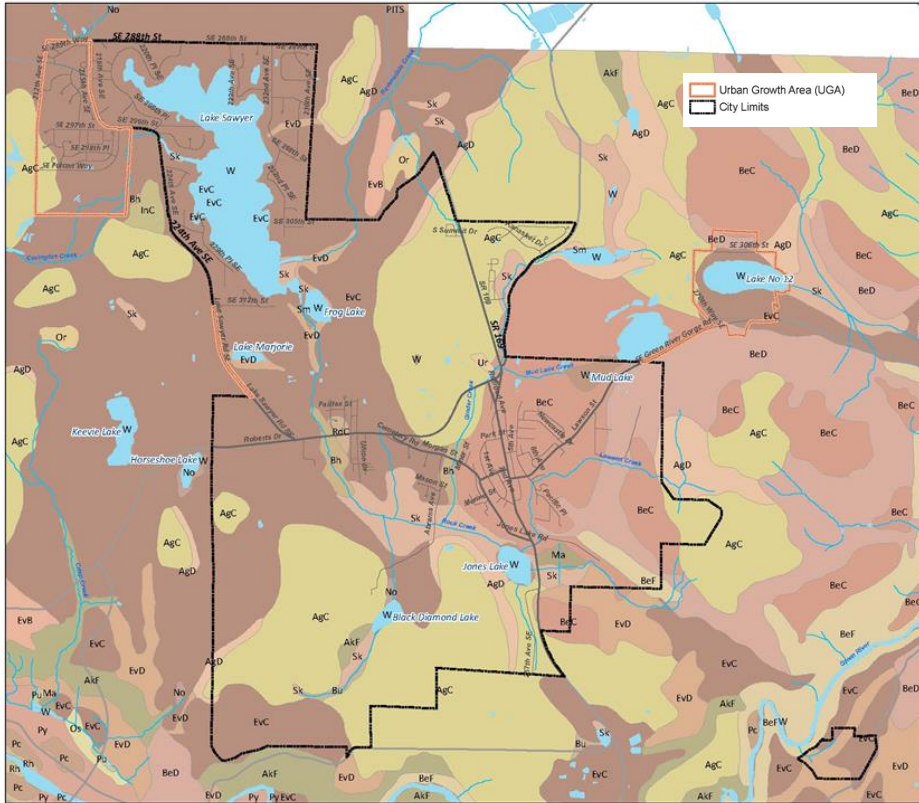


Figure 8: Soil Types

The soil types mapped in the planning area are:

- Alderwood gravelly sandy loam, 15-30% slope (AgD);
- Alderwood gravelly sandy loam, with Kitsap Silty Loam (AgF);
- Alderwood and Kitsap soils, 25% to 70% slope (AkF);
- Beausite gravelly sandy loam, 6 - 15% slope (BeC);
- Beausite gravelly sandy loam, 14 to 30% slope (BeD);
- Bellingham silt loam, 0% slope (Bh), hydric;
- Buckley silt loam, 0% slope (Bu), hydric;
- Everett gravelly sandy loam, 0- 6% slope (EvB);
- Everett gravelly sandy loam, 6-15% slope (EvC);
- Everett gravelly sandy loam, 15- 30% slope (EvD)
- Mixed Alluvial, less than 2% slope (Ma);
- Norma sandy loam, less than 2% slope (No), hydric;
- Ragnar-Indianola association, 2-15% slope (RdC);
- Seattle muck, less than 1% slope (Sk), hydric;

- Shalcar muck, less than 1% slope (Sm), hydric, and
- Urban land filled (Ur).

Alderwood soils (principally AgC) are the most abundant soils present in the planning area. These soils were formed on till plains and roughly correspond with the Vashon till (Qvt). Alderwood surface and subsoils consist of a very gravelly sandy loam that is moderately deep, averaging approximately 30 inches. Extending downward from depths of approximately 20 to 40 inches, the soil layer has been compacted. This material is known as "hardpan." Alderwood soils have the characteristic of moderately rapid permeability above the hardpan layer and very slow permeability through it. Water has a tendency to perch on top of the hardpan layer. In winter, water moves laterally along the top of the hardpan, or it saturates surface soils in topographic low areas creating local areas of hydric soils and wetlands. These wetlands typically do not contribute to aquifer recharge because water does not percolate easily through the hardpan to the aquifer below.

A notable complex of wetlands in Section 23 occurs in topographic depressions on Alderwood soils. These wetlands are consistently oriented in a northwest to southeast direction presumably related to the direction of glacial movement in the area. According to the Site Evaluation and Land Use Concepts prepared for Plum Creek Timber Company properties, the regional groundwater table occurs within the pre-glacial soils that underlie the glacial till (Hewitt Isley, 1991). The regional groundwater table is below and hydrologically separate from the glacial till where the perched groundwater occurs and supports wetlands.

Alderwood soils are stony and commonly experience summer drought after seasonally high (winter), perched water tables diminish. The erosion potential on 15% slopes (AgC) is moderate due to the relatively unconsolidated nature of the till above the hardpan. The erosion potential on 15-30% slopes (AgD) is severe and slippage is moderate; however, only a small area lying within Section 23 exhibits this soil type. Related to agricultural purposes, Alderwood soils are used mostly for timber. If cleared, the soils are suited to grasses.

According to the NRCS, continuous vegetative cover is important to protect the soils adequately against the hazards of severe erosion and sedimentation to maintain the quality of water in streams, and to control runoff. Alderwood soils are not suited to field crops requiring annual tilling and re-seeding.

In general, glacial drift soils, other than the loose weathered colluvium/topsoil, provide excellent support for buildings and roadways and are generally suitable for development. Development limitations that exist are related to areas of seasonal high-water table and steep slopes with erosion potential. The limitations for stormwater infiltration and septic tank drainfields are severe due to the very slow permeability in the substratum (hardpan). Urban development on Alderwood soils requires sanitary sewers.

Alderwood Kitsap soils (AKF) is about 50% Alderwood gravelly sandy loam and 25% Kitsap silt loam. Slopes are 25% to 70%. The distribution of these soils varies greatly within short distances. Drainage and permeability vary. Runoff is rapid to very rapid, and erosion hazard is severe to very severe. The slippage potential is severe. Alderwood Kitsap soil is located along the west edge of the Black Diamond Lake wetland.

Beausite Gravelly Sandy Loam. The Beausite series (BeC, BeD, and BeF) consists of moderately deep, well drained soils formed in sandstone and conglomerate. These soils are on glaciated mountains and

foothills at elevations of near sea level to about 1,500 feet. These soils are well drained with moderate permeability, and runoff is medium to rapid. Beausite soils occur in the area of downtown Black Diamond and east to the city limits.

Bellingham silt loam (Bh) is a poorly drained soil formed in alluvium. These soils are nearly level and are mostly in depressions on the upland glacial till. Permeability is slow. Runoff is slow and the hazard of erosion is slight. Bellingham soils occur along sections of Ginder Creek and Rock Creek.

Everett gravelly sandy loam (EvC), 5-15% slopes, is the second most abundant soil type present within the planning area. These soils were formed in glacial outwash on terraces and outwash plains and were deposited on top of older Alderwood soils described above. Everett soils roughly correspond with Vashon Stratified Drift Deposits (Qvs). These gravelly sandy loam soils are very deep and somewhat excessively well drained. The surface and subsurface soils can be found to a depth of 60 inches, with a weakly cemented layer in the substratum in some areas.

Rainfall in these soils is quickly absorbed and percolates to the groundwater table. Creeks that drain into areas dominated by Everett soils typically intercept the groundwater table and receive most of their flow from groundwater discharge. Runoff is slow to medium. The erosion hazard is slight to moderate. Everett soils are used for timber, pasture, and urban development. Everett soils are also generally suitable for urban development, except in areas of steep slopes. Limitations for septic tank drainfields exist where Everett soils are present because of the potential for aquifer and stream contamination, particularly where slopes exceed 8%. Urban development on Everett soils requires sanitary sewers. Everett gravels provide sand and gravel resources for the gravel pit located in Section 10.

Mixed alluvium (Ma) consists of a variety of alluvial soils in areas too small and too closely associated to map at the scale of the NRCS survey. This land ranges from very well drained to poorly drained. The hazard of stream overflow is severe. Mixed alluvium is located east of Jones Lake and SR 169.

Ragnar-Indianola (RdC) soil is about equal parts Ragnar fine sandy loam and Indianola loamy fine sand. Permeability is moderately rapid in the upper part of this soil and rapid in the substratum. Runoff and erosion hazard is moderate. This soil is used for timber and for urban development. This soil type is located near Morganville.

Urban land (Ur) is soil that has been modified by disturbance of the natural layers with additions of fill material several feet thick to accommodate urban development. Urban land is mapped near the intersection of Roberts Road and SR 169.

Hydric Soils

The definition of a hydric soil is a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Notable, high value wetlands exhibiting hydric (poorly drained) soils such as Buckley silt loam, Norma sandy loam, Shalcar muck and Seattle muck include Black Diamond Lake and the Rock Creek wetland corridors.

Buckley Silt Loam – Buckley silt loam (Bu) occurs in a small, isolated area in the far, southeastern portion of Section 23. Typically, a seasonally high-water table occurs at or near the surface of this hydric soil unit and these soils are typically associated with wetlands. Erosion hazard is slight and runoff is slow. The

limitations for septic tank drainfields are severe due to the very slow permeability in the substratum (hardpan).

Norma Sandy Loam – A small, isolated area of Norma sandy loam (No) is located to the north of Black Diamond Lake. This hydric soil is poorly drained and is typically alluvium, in basins and along stream bottoms. Permeability is moderately rapid, and the seasonal water table is at or near the surface. Runoff is slow, and the erosion hazard is slight. This soil is used mostly for pasture and is severely limited for use with septic drainfields due to the saturated condition.

Seattle Muck – Seattle Muck (Sk) soils occur in limited areas associated with wetlands adjacent to Black Diamond Lake and Rock Creek. These hydric soils are composed of peaty soils originating mostly from sedges. There is a seasonal high-water table at or near the surface, and soil permeability is moderate. Surface water “ponds,” and there is little or no erosion hazard. Like the Norma series, Seattle muck is unsuited for septic drainfields due to saturation and the presence of organic soils. The Seattle muck soil (muck peat, muck, and peat) is generally not suitable for urban development because of the seasonal high-water table and organic soils.

Shalcar Muck – Shalcar muck (Sm) is located at the connection of Rock Creek to Lake Sawyer. Hydric soils are poorly drained organic soils. They are formed in deposits of sedge peat and alluvium along stream bottoms. Slopes are 0% to 1%. Permeability is moderate in organic layers and moderate to rapid in the lower soils. There is a seasonal high-water table at or near the surface. Runoff is ponded and there is no erosion hazard. This soil is typically used for pasture and is severely limited for use with septic drainfields due to the saturated condition.

Topography

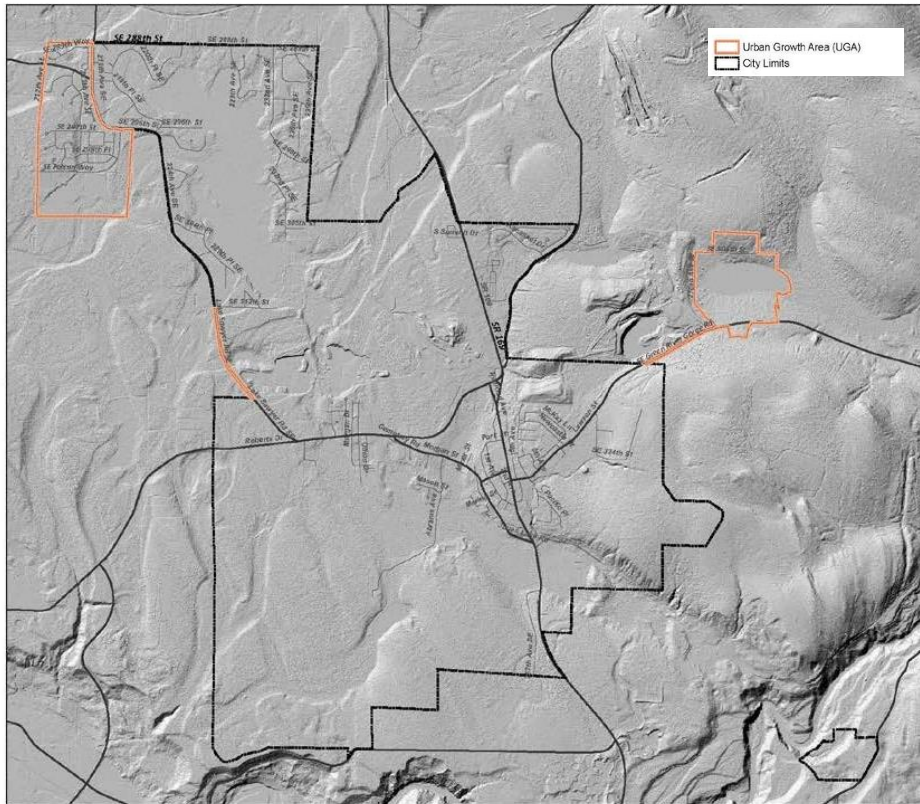


Figure A3-9: Topography

The planning area is located in a small valley on an upland plateau ranging roughly from 525 to 750 feet in elevation and includes the hillside east of the City up to an elevation of 1,180 feet. The plateau is approximately 300 feet above the Green River Gorge. Much of the planning area is characterized by rolling terrain with wetlands and drainage courses located in lower areas. Figure A3-9 shows the topography of the city.