

Commentary is for information only.
 Proposed new language is double-underlined;
 Proposed deleted language is ~~stricken~~.

ORDINANCE NO. XX

AMENDMENTS TO VOLUME 2, POLICIES AND SUMMARY OF THE GRESHAM COMMUNITY DEVELOPMENT PLAN, REGARDING
 THE ENVIRONMENTAL OVERLAY PROJECT

THE CITY OF GRESHAM DOES ORDAIN AS FOLLOWS:

Section 1. Volume 2, Policies and Summary, Article 10 Summary of Findings, Policies and Implementation Strategies, Section 10.014 Goal 2 – Land Use Planning, Land Use Policies and Regulations, and Community Design is amended as follows:

Proposed Text Amendment	Commentary
<p>***</p> <p>Section 1, Land Use Policies and Regulations</p> <p>BACKGROUND</p> <p><i>Statewide Planning Goal 2: Land Use Planning</i></p> <p>***</p> <p>Most of Springwater will be developed for industrial uses. These new economic development opportunities are essential for the city’s economic future and ability to fund needed public services. Like it did for Pleasant Valley, Gresham developed concept and implementation plans for Springwater that complied with Metro Title 11. The City Council approved the Concept Plan in November 2004. The Implementation Plan became part of the Comprehensive Plan in December 2005. B3</p> <p>Because of topographic constraints, Kelley Creek Headwaters (KCH) will be developed for low density residential uses. Unlike Pleasant Valley and Springwater, no new development code standards were developed. Instead, the Urbanization (concept) Plan proposed applying the adjacent Gresham Butte low</p>	

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<p>density residential and environmental overlay zoning to KCH. The Urbanization Plan was adopted by Council in July 2009 and became part of the Comprehensive Plan in September 2009.</p> <p><u>As part of the 2020 review of natural resource protection, it was determined that KCH is more similar to Pleasant Valley and Springwater in terms of prior urbanization and natural resource presence and the unified new community protections were applied.</u></p> <p>The Goal 2, Land Use Planning Chapter is related to all other parts of the City’s Comprehensive Plan. In particular chapters pertaining to Natural Resources, Economic Development, Housing, Public Facilities and Urbanization should also be consulted when using these policies and action measures.</p> <p>***</p>	<p><i>Due to the topography, likelihood of wetland presence, and lack of current urban development applying the Pleasant Valley/Springwater riparian buffers is more appropriate.</i></p>
<p>Section 2, Community Design, Trees and Other Vegetation</p> <p>BACKGROUND</p> <p><i>Statewide Planning Goal 2: Community Design – Trees and Other Vegetation</i></p> <p>Vegetation and its Importance</p> <p>Trees and other types of vegetation are integral to the quality of Gresham's urban and natural environments.</p> <p><u>Trees in the urban environment perform a number of functions:</u></p> <ul style="list-style-type: none"> • <u>Contributing aesthetic qualities</u> • <u>Reducing energy usage by providing shading and windbreaks</u> • <u>Reducing the urban heat island</u> • <u>Providing safer more comfortable pedestrian environments</u> • <u>Improving property values</u> • <u>Part of the City’s response to climate change</u> • <u>Providing a comfortable and aesthetic setting in parks to support active and passive recreation</u> <p><u>Trees in the natural environment have other values and functions:</u></p> <ul style="list-style-type: none"> • <u>Contributing to air and water quality,</u> • <u>Stormwater retention</u> 	<p><i>Trees perform different functions in different areas and so need to be regulated differently. This reflects the scientific, social, and external regulatory framework the policies and code is written around.</i></p>

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- Improving soil stability
- Providing erosion control.
- Providing habitat for many species including state sensitive and federally listed species.
- Addressing climate change and providing for climate resilience
- Responding to Temperature TMDL stream shade mandates (state and federal)
- Stabilizing slopes.
- Complying with site restoration plans and state/federal mitigation permits.

~~Vegetation is valuable for its aesthetic qualities and contribution to air and water quality, stormwater retention and wildlife habitat. When appropriately used, vegetation moderates temperatures by providing shade and windbreaks. It is also essential for soil stability and erosion control. Native and ornamental vegetation is also essential to the quality of the city's parks and open spaces by providing a comfortable and aesthetic setting to support active and passive recreation.~~

Efforts to Protect and Enhance Trees and Vegetation

Gresham has taken a proactive position towards protecting and enhancing the City's trees and vegetation. For example, the City's Community Development Code requirements for site design review (Article 7, Site Design Review) requires landscaping and tree protection measures for new multi-family, single-family attached, industrial, commercial, mixed-use, community service and manufactured park development. The City's code also requires vegetation as part of buffering and screening between dissimilar land uses (Article IX, Section 9.0100 – 9.0111). Furthermore, parking lots are required to have special landscape treatment pursuant to Community Development Code, Section 9.0824.

The City also requires the protection and sometimes mitigation or restoration of vegetation when development occurs in the following overlay districts: Floodplain Overlay District; Hillside & Geologic Risk Overlay; and Natural Resource Area Overlay. ~~Hillside Physical Constraint District; and Habitat Conservation Area (HCA) District.~~ Also, the Downtown, Civic Neighborhood, Pleasant Valley and Springwater Plan Districts require new development to provide special landscape treatments. The purpose is to enhance the unique design quality and character of the four districts.

Removed to reflect a more nuanced understanding of trees and vegetation.

Reflecting the requirements (some mandated by the state) to plant more than is removed in some specific circumstances and change to reflect new overlay names.

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The City of Gresham seeks to provide a level of protection for existing trees in the urban environment per Community Development Code Section 9.1000. This section seeks to preserve significant trees; control cutting of trees and retain trees and wooded areas. Tree removal permits are required if a certain size and number of trees are proposed to be removed. Also, the standards require permits for removal of a significant tree(s). A significant tree(s) is defined by the Development Code as a tree or group of trees that have been designated by the City as having unique importance. Removal of a significant tree or trees requires mitigation in the form of planting new trees. ~~This section of the Code also regulates removal of trees in several of the City's Overlay Districts.~~

Gresham's citizens are involved in protection and management of the City's trees. Gresham Revised Code provides for the establishment of an Urban Forestry Subcommittee consisting of seven members, five of which must have expertise with trees such as arborists, nursery operators, landscape architects or foresters.

The purpose of the subcommittee is to advise the City Council and make recommendations to Council and the Planning Commission regarding preservation and protection of trees.

The subcommittee is also responsible for recommending designation of significant trees and maintaining and updating the significant tree list. Also, the subcommittee engages in public education regarding topics such as tree protection, pruning and other maintenance activities.

On July 19, 2011 Council adopted the Urban Forestry Management Plan. Based on the adopted Plan a new section, 10.014.3, has been established.

GOAL, POLICIES AND ACTION MEASURES

GOAL

Protect and enhance the environmental, public health and safety, and aesthetic contribution of trees and other vegetation.

POLICIES

1. The City shall establish regulations to protect and, when necessary, restore trees and other vegetation to support community aesthetics, maintenance and/or improvement of water quality, erosion control and stability of slopes and unstable soils.

Reflecting that trees in different areas are governed by different regulations.

Identifying the role of trees and vegetation in slope stabilization and natural hazard mitigation.

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<p>2. The City shall condition development approval to require preservation of existing trees and mitigation of the consequences of tree/vegetation removal.</p> <p>3. The City shall protect environmental quality and public safety by:</p> <p>a. Regulating removal of trees and other vegetation on steep slopes, <u>in landslide prone areas</u>, within floodplains, <u>water quality (Goal 6 and Title 3)</u>, natural resource (Goal 5 <u>and Title 13</u>) overlay areas, habitat conservation <u>natural hazard (Goal 7)</u> areas and in tree groves and other forested areas.</p> <p>b. Instituting regulations and practices to prevent and immediately resolve hazards such as falling limbs and trunks and dangerous conditions caused by tree removal such as blow-down, landslides, soil erosion, and altered hydrology.</p> <p>***</p> <p>11. The City shall establish an ongoing street tree program to enhance Gresham’s livability by improving the aesthetic and environmental quality of its streets and neighborhoods.</p> <p>***</p>	<p><i>Addition of reference to new data.</i></p> <p><i>Reference to additional protected features.</i></p>
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Section 2. Volume 2, Policies and Summary, Article 10 Summary of Findings, Policies and Implementation Strategies, Section 10.200 Areas Subject to Natural Hazards is amended as follows:

STATEWIDE PLANNING GOAL 7: AREAS SUBJECT TO NATURAL HAZARDS	
<p>10.211 Steep Slopes & Landslides</p> <p>BACKGROUND</p> <p><i>Overview</i></p> <p><u>The general term landslide refers to a range of slope movement processes including rock falls, debris flows, earth slides, and other mass movements. The main triggers of landslides are precipitation, earthquakes, and human activity.</u></p>	<p><i>Language from the DLCD publication “Landslide Hazards: Land Use Guide for Oregon Communities”. This better represents the current</i></p>

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Landslides not caused by humans are a natural process; they shape the landscape and contribute to the overall environmental quality of our world. There are benefits to landslides: “The ecological role that landslides play is often overlooked. Landslides contribute to aquatic and terrestrial biodiversity. Debris flows and other mass movement play an important role in supplying sediment and coarse woody debris to maintain pool/riffle habitat in streams. As disturbance agents, landslides engender a mosaic of seral stages, soils, and sites (from ponds to dry ridges) to forested landscapes”¹. However, when a landslide impacts people, property, or assets (e.g., roads, buildings, and infrastructure), and the environment in a harmful way, it is a natural hazard.

Landslides are a part of the natural process but can affect environmental assets. For example, mass erosion due to landslides may be the source of as much as 50% of the sediment found in a watershed. Human behavior and urbanization may lead to removal of vegetation, alteration of topography (e.g., grading, cutting, and filling), erosion, addition of impervious surface, alteration of natural waterways, changes in stormwater flow, increase in people living in an area (compacting soil, increase in trash) and other activities that may result in landslides that impact people, property, and the environment. These factors of human behavior and urbanization are precursors that increase the risk of landslides. This can result in a single landslide event or a series of cascading events, which may be more than one landslide, or a landslide and another hazard. One environmentally specific result of a landslide can be a dramatic increase in the overall amount of sediment deposited into waterways. Sediment can affect surface drinking water collection systems, fish and wildlife, and the natural environment.

And, although landslides are generally thought of as localized events, occurring on individual hillsides or slopes, big rainstorms or earthquakes can cause large, catastrophic landslides (such as the 2014 Oso landslide in Washington State) or hundreds of smaller landslides within a relatively short time across a wide region (such as the Portland metropolitan area in the winter storms of 1996). These are but two of the ways landslides can be natural disasters.

Landslides lead to an estimated 1-2 deaths per year in Oregon, the average annual loss of life is estimated to be nearer to one or two lives per year (Beaulieu and Olmstead, 199913). However, larger scale events have the potential to cause mass casualties. The winter storms of 1996 led to eight deaths in Oregon due to several

scientific literature, and updated data

¹ Geertsema, M., Highland, L., & Vagueouis, L. (2009). Environmental impact of landslides. In K. Sassa & P. Canuti (Eds.) Landslides – Disaster risk reduction. Springer, Berlin, Heidelberg. doi: https://doi.org/10.1007/978-3-540-69970-5_31

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individual landslides (Beaulieu & Olmstead, 199914). As the state’s population grows, easy-to-develop lands tend to be the first areas developed, leaving more difficult-to-develop areas such as landslide- or other hazard-prone areas. Landslide hazard areas are often areas with steep slopes and higher elevation. These areas can be desirable lands for development, e.g., view properties, that command high prices. They can be complicated to develop, but they become “worth it.” Developing in landslide hazard areas puts more people, structures, and infrastructure in hazard areas. Landslides can have direct and indirect effects on people. Landslide materials blocking roads are probably the most common impacts from landslides. A landslide in January 2017 undermined a section of NW Newberry Road in Multnomah County, forcing a road closure until April 2019 (Multnomah County, 201815). For people who use these roads to commute and transport goods, the effect can be costly in both time and money.

Oregon is a landslide-prone state, with economic losses potentially exceeding \$100 million in direct damage from landslides during severe winter storms. Even without these large events, landslides are a chronic hazard in Oregon, with annual average maintenance and repair costs for landslides in the state estimated at over \$10M. A study for the Portland region found approximately 1,700 landslides have occurred within the City of Portland during the last 90 years (1928– 2016). Of these landslides, approximately 830 occurred during the severe storms in 1996. From these historical data, researchers estimated an average of 20 landslides per year in the City of Portland. They also estimate annual loss from landslides in the City of Portland ranges from \$1.5M to \$3M. In years with extreme winter storms, this estimate can increase to approximately \$64M to \$81M. Burns et al. (201819) found that approximately \$1.65B in land and buildings and almost 6,700 people are located on existing landslides in the Portland metropolitan area. They also found that in some communities, almost 50% of modeled damage and losses in a major earthquake are from landslides triggered by earthquakes. Gresham is included in the Portland area data.

~~Landslides are the downslope movement of rock, soil or related vegetation/debris. Geologists use the term “mass movement” to describe the different types of landslides such as rock fall, soil creep, slump, mudflow or debris flow. These kinds of earth movement can cause severe property damage and loss of life. Landslides are naturally occurring and relatively common in western Oregon especially near the coast, Cascades and within the Columbia Gorge, depending upon local geology, slope and soil conditions. They typically occur on the steep slopes of hillsides, ravines of streams and coastal bluffs/headlands during or shortly after prolonged~~

Replaced with updated scientific information

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periods of heavy rainfall. Although landslides are propelled by gravity, they can be triggered by geologic events (earthquakes, volcanic eruptions) or by human activity (e.g. excavation, grading, timber harvesting). Regardless of what initiates a landslide, the underlying cause in the northwest are periods of continuous rains that saturate the soil and which lubricate and loosen soil particles and rock so as to set the conditions to begin their downslope movement.

Of all the types of landslides, debris flows are probably the most dangerous to people and property. Debris flows are also referred to as mudslides, mudflows, debris avalanches or “rapidly moving landslides”. Debris flows commonly start on steep hillsides (70%+) as soil slumps or slides that liquefy, accelerate to speeds of 35 mph or more and flow down hillsides onto gently sloping ground. Their consistency can range from watery mud to thick rock laden wet cement—dense enough to carry large boulders, trees and cars. Debris flows originating from different locations can combine in ravines and stream channels where their destructive power becomes concentrated and greatly magnified. Debris flows because of their high speed are difficult for people to outrun and can be unexpected because of their often distant off-site origin. They have caused most of the recent landside related injuries and deaths in Oregon. There were a number of debris flows in western Oregon during the intense winter rainfall of 1996. One of these occurred in Douglas County where five people were killed and many others were injured.

Besides being initiated by natural processes, the following are examples of man-made changes to hillside areas that can increase the susceptibility for landslides to occur:

- Excavation/Grading: Excavation is often needed to build homes or roads on sloping terrain. Grading can result in some slopes that are steeper than the pre-existing natural slopes. Since slope steepness is a major factor in landslides, these steeper slopes can be at increased risk for landslides. The added weight of fill and structures can also increase landslide susceptibility.
- Drainage Alterations: Man-made alterations to natural drainage patterns can be a factor that triggers landslides. Broken or leaking water/sewer lines can be problematic as can surface drainage retention facilities that direct water onto slopes. Lawn irrigation and minor alterations to small streams can also result in landslides. Also, surface drainage from the impervious surface areas of development reduces the opportunity for water to be absorbed into the ground and can create flows that cause erosion of slopes and unstable soil conditions.

Replaced with updated language

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- Vegetation Removal: Removing vegetation, such as trees from hillsides, also increases the potential for landslides. In particular, trees through their root systems are capable of holding very large amounts of soil that help to stabilize steep slopes. A recent study by the Oregon Department of Forestry of active landslide sites on state forestlands found that 75% of such sites had been logged during the last 10 years.

Oregon’s Landslide Related Agencies & Programs

The Department of Land Conservation and Development (DLCD) assists state agencies and local jurisdictions in implementing Statewide Planning Goal 7, Natural Hazards. Goal 7 requires jurisdictions to adopt comprehensive plan policies and implementing measures to protect as much as possible, people and property from natural hazards. Landslides are one of the natural hazards mentioned by Goal 7. In 2019 DLCD published “Landslide Hazards: Land Use Guide for Oregon Communities” in conjunction with Department of Geology and Mines (DOGAMI). The DLCD natural hazards planning guide, *“Planning for Natural Hazards: Oregon Technical Resource Guide”*, also addresses landslides. ~~In addition to DLCD, the following state agencies and programs relate to landslides:~~

- ~~Senate Bill 12—During the 1999 session, the state legislature passed Senate Bill 12 in response to the numerous landslides that had occurred during the winter rains of 1996. This bill requires state and local governments to protect people from rapidly moving landslides (or debris flows). As indicated above, these are the most dangerous kind of landslides. Senate Bill 12 has four major components: it directed the Department of Geology and Mines (DOGAMI) to prepare maps of areas potentially prone to rapidly moving landslides, gave local governments the authority to regulate in areas prone to rapidly moving landslides, adopted standards (ORS 195.250-.260) to be applied by local jurisdictions when the DOGAMI mapping is completed, and provided \$50,000 to a jurisdiction (Douglas County was later selected) to develop a model ordinance for regulating development in these areas.~~

~~Pending completion of the DOGAMI mapping, jurisdictions will need to modify their comprehensive plan/development standards and implement the Senate Bill 12 regulations if the DOGAMI maps show rapidly moving landslide areas in their communities. These standards include: requiring a geotechnical report if a property is shown to be within a rapidly moving landslide area, coordinating review of the report by DOGAMI before issuing permits, and regulating dwellings in debris flow areas by imposing mitigation measures and development conditions based on the recommendations of the geotechnical report.~~

Language from the DLCD guide. Updated guide reference.

Outdated information.

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- ~~DOGAMI — DOGAMI has completed some preliminary maps showing potential areas susceptible to rapidly moving landslides for western Oregon jurisdictions, including Gresham. DOGAMI refers to these areas as “Further Review Areas”. They are defined by Senate Bill 12 and ORS195.250 as: “An area of land within which further site specific review should occur before land management or building activities begin because either DOGAMI or ODF (Oregon Department of Forestry) determines that the area reasonably could be expected to include sites that experience rapidly moving landslides as a result of excessive rainfall.”~~

During the last decade, DOGAMI has produced lidar-based, detailed landslide inventory, shallow landslide susceptibility, and deep landslide susceptibility maps for many communities in Oregon. Lidar, a form of laser technology, has significantly increased the ability to locate and map existing landslides. Lidar allows mappers to see the earth’s surface with a much higher level of detail than has ever been available, and as the technology continues to improve, so too does the level of detail. Lidar even allows mappers to see the ground beneath vegetation and trees, as if the earth had been stripped bare. This gives geologists the ability to identify and map landslide features that may have previously been unrecognized or overlooked. Additionally, Lidar technology has enhanced DOGAMI’s ability to model landslide susceptibility and improved the quality of topographic data such as elevation, slope, and contour lines. State Building Codes Division — The division adopts statewide standards for building construction that are then administered by the state and local jurisdictions. These standards include requirements for cut, fill, and sloping of the lot relative to the location of the foundation. There are also foundation design requirements depending upon soil type, soil bearing pressure, and compaction/lateral loads from soil and water on sloped lots. The local building official has the authority to require a soils analysis for any project where it appears the site conditions do not meet the requirements of the code or that special design measures must be taken. State building codes do not, however, set standards for grading not associated with the construction of buildings. However, local jurisdictions have the option of adopting the state grading standards for non-building related grading.

Gresham’s Steep Slope/Landslide Related Standards

Gresham relies upon DOGAMI’s landslide inventory, shallow landslide susceptibility map and high landslide susceptibility maps published as Interpretive Map 57 as well as a the 2014 LiDAR-derived Digital Elevation

Including new data

State building code and guidance regarding that code changes without going through the land use process or meeting Goal 1 of the land use system.

Description of how Gresham had used new data to create the Hillside and Geologic Risk Overlay.

<p><u>Model (DEM) produced by DOGAMI's Oregon Lidar Consortium to create a Hillside and Geologic Risk Overlay (HGRO). The HGRO is based on accumulations of landslide hazards.</u></p> <p><u>Gresham has further chosen to protect areas of 35% slope or greater due to their increased likelihood of risk but also their other values (such as aesthetics and tree canopy).</u></p> <p>Most of Gresham's steep slope areas (15% and greater) and potential landslide areas are found in the southerly part of the City on or near Gresham Butte and the smaller Grant Butte. Gresham regulates development on these slopes through its development code and by implementing applicable state building code standards. The following is a summary of these requirements:</p> <ul style="list-style-type: none"> Gresham's development code has the Hillside Physical Constraint Overlay District that limits development on the buttes and other areas with slopes of 15% or greater. These areas are shown on the Hillside Special Purpose District Map. This overlay district was amended in 2003 in order to provide clearer and more objective standards, offer greater flexibility to avoid development of steeper slopes (>35%) and to be consistent with above Senate Bill 12. Among the purposes of this overlay is to ensure that development proposed on or near hillsides and landslide hazard areas conforms to the natural topography and minimizes the potential of earth movement such as landslides. In general, this overlay limits the percentage of each lot and the overall site area with slopes of 15% and greater <u>accumulation of geologic risk</u> that can be graded (for building pads, driveways, etc.) and essentially requires that sites with slopes greater than 35% be developed through the planned development (PD) process. A PD must dedicate at least 30% of the steeper parts of the site as open space. Also the PD standards allow less housing density (or larger lots) as the average slope of a site increases on <u>heavily slope areas</u>. Building lots are not allowed to include sloped areas greater than 60%. The hillside standards require <u>a geotechnical professional review and certify soils and geology report with recommendations as part of a development application in order to mitigate increased hazard that would otherwise be created</u> evaluate slope stability, bedrock/soil conditions, drainage patterns, seismic risk, and other geological factors. In addition, a geotechnical report is required for any proposed disturbance of slopes greater than 35%. The City's engineering/environmental consultant then reviews these reports and sends comments/recommended conditions to development planning staff. <p>The Hillside Physical Constraint District Overlay and map also address the "rapidly moving landslide" or debris flow areas that are the focus of Senate Bill 12 and ORS 195.250. These are derived from the preliminary</p>	<p><i>Description of the High Slope Subarea of the Hillside and Geologic Risk Overlay</i></p> <p><i>Updated to reflect the new hillside protection paradigm</i></p> <p><i>Rapidly moving landslides are only one type of landslide and are a component of the Hillside and Geologic Risk Overlay.</i></p>
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DOGAMI debris flow maps, referred to by DOGAMI as “Further Review Areas”, and fall within the 15% and greater sloped areas regulated by Gresham’s hillside district. They appear on the City’s hillside district map (attached Map No. 2) as “Higher Landslide Risk Area” and are found primarily on Gresham and Grant buttes. Section 5.0277 (Development in “Further Review Areas”) of the hillside district has standards specifically for development proposed within these areas. With the exception of the geotechnical report requirement, these standards will be applied to development after DOGAMI completes its mapping effort. In the interim, development applications within these areas must include a geotechnical report prepared by a geotechnical engineer. The report must describe those design and construction measures that will be taken in order to reduce the potential for rapidly moving landslides and to maintain slope stability. DOGAMI staff as well as the City’s geotechnical engineering consultant then review the report and make comments that are incorporated into the staff report.

- Gresham also regulates the removal of trees and other vegetation on hillsides through the Hillside Physical Constraint District and Geologic Risk Overlay and through its city wide tree removal regulations. Section 5.0225 of the hillside district requires the maintenance of trees and vegetation outside of developed areas to be mainlined to protect against soil erosion and earth movement. It also prohibits the removal of trees with a circumference of 25 inches or greater (8 inch+ diameter) that are located more than 10 feet from proposed roads, driveways, utilities and building pads. Section 5.0223 also requires that no more than 35% of a development site area be graded or cleared of vegetation. In addition, Section 9.1000 of the development code contains additional citywide tree removal regulations, including a prohibition on the clear cutting of trees on slopes of 15% and greater. Clear cutting is defined as: “Any tree removal which leaves fewer than an average of one tree per 1,000 sq. ft. of lot area, well distributed throughout the entirety of the site.”
- Gresham’s Building Division reviews building permit applications for compliance with the state building code (adopted IBC and IRC) requirements. These include those standards related to placing structures on sloped sites. As previously indicated, the City’s hillside district requires a geotechnical report (in addition to Soils/Geology Report) for development proposed on slopes greater than 35% as well as within the potential rapidly moving landslide areas that have been delineated by DOGAMI. A geotechnical report focuses on the impacts that the particular soil and geologic features will have on a proposed structure as well as the impacts the structure will have on the long term stability of those natural features. If the general geotechnical report for a subdivision or other development recommends that individual reports be done for any future structures such as house foundations and

Trees are regulated through the Hillside and Geologic Risk Overlay

Building permits continue to be required and reviewed. Any state Building Division regulations regarding slope will be reviewed at this time.

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~~retaining walls, then the structural engineer in the City's Building Division reviews these structure related geotechnical reports. A copy is also sent to state DOGAMI staff for their review and comments.~~

- Gresham's development code (Section 9.0500) has city-wide requirements for grading, drainage, erosion control and stormwater detention/treatment. These include specific design standards that limit the steepness of cuts and fills and the composition and compaction of fills. The erosion control standards are intended to prevent soil movement during construction and the sedimentation of waterways. They require applicants to submit an erosion control plan as part of their permit application and to implement the best management practices that are described in the City's erosion control manual.

SUMMARY OF MAJOR ISSUES

The following are some of the issues, circumstances and conditions, which were considered in the update of this Comprehensive Plan chapter.

- Landslides are natural events that can be exacerbated in intensity and frequency by development related activities such as grading and vegetation removal. They typically occur on steep hillsides such as found in the Columbia River Gorge and on the buttes in south Gresham.
- Geologists acknowledge that Gresham has been the site of a number of landslides and has areas that due to slope, geology, and other factors are at high or moderate risk of a number of different types of landslide and DOGAMI and DLCD have provided guidance in adopting debris flows or "rapidly moving landslides" are the most damaging and life threatening kind of earth movement because of their large mass, velocity and distant origin. The state legislature, through Senate Bill 12, directed the state Department of Geology and Mining Industries (DOGAMI) to map areas in western Oregon (including Gresham) that are susceptible to debris flows, adopted development standards for them risk reduction and authorized local jurisdictions to adopt development regulations for these areas in order to protect lives and property.
- Gresham controls development on hillsides with slopes of 15% and accumulations of Geologic Risk greater primarily through its Hillside Physical Constraint Overlay and Geologic Risk Overlay District and associated special purpose district map. ~~These standards and map were amended to address above Senate Bill 12 and state debris flow information as well as to offer more flexible development standards so that the grading, vegetation removal and development of steep sloped areas can be minimized and the potential for landslides is reduced.~~ Gresham also implements applicable state

Updated to better reflect the current scientific understanding of landslide risk

Updated to reflect the basis of the Hillside and Geologic Risk Overlay

Updated to reflect new requirements

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building code standards for locating structures on sloped areas such as through its geotechnical certification report analysis requirements for proposed foundations and retaining walls.

GOAL, POLICIES AND ACTION MEASURES

GOAL

Protect life and property from hazards associated with landslides and unstable soils.

POLICIES

1. The Community Development Code shall discourage land divisions in areas over 35% slopes. Property that is entirely above 35% slopes may be improved to the extent of one dwelling per existing lot of record. Subdivisions of land that are partially above 35% slope shall not generally include development of the portions in excess of 35% slope. Limited development of the portions of the site on greater than 35% slopes may be permitted when these steep slopes encroach into areas which are logical dwelling locations and engineering studies determine that development will be in compliance with accepted engineering design principles. Dwellings planned on greater than 35% ~~up to 60%~~ slopes may be permitted when located within a Planned Development of 10 or more acres in size; and occur on land which is not susceptible to earth movement or landslide hazards; and where construction and design methods are employed to minimize cuts, fills and other potential adverse impacts.
2. Limited development on greater than 35% slopes may occur for a residence on a vacant lot of record, trails/multi-purpose paths, and for the logical extension and provision of public facilities, utilities, and driveways, where construction and design methods are employed to minimize cuts, fills, and other potential impacts. With these exceptions and those related to planned developments (Policy #1), all other sloped areas of greater than 35% on development sites shall be protected by an easement or by dedication of an open space tract.
3. Land divisions on slopes greater than 35% shall only be allowed through the Planned Development (PD) process. The PD standards for hillside development shall encourage the transfer of density to those site areas with less than 15% slopes geologic risk, ~~allow less development density as the degree of slope~~

Updated to reflect the basis of the Hillside and Geologic Overlay

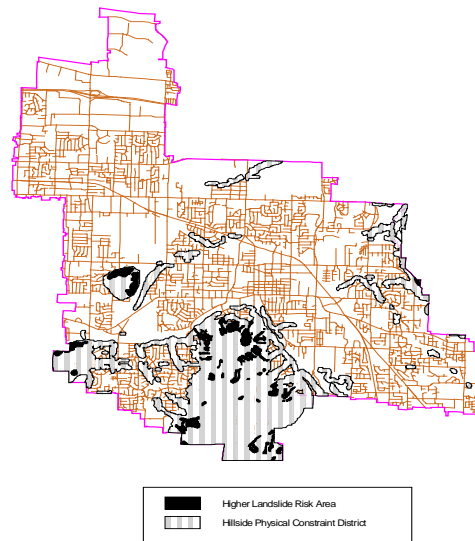
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<p>increases, and limit the amount of sloped areas greater than 35% that can be included as part of building lots.</p> <ol style="list-style-type: none"> 4. Removal of trees on areas with accumulation of geologic risk shall be restricted to prevent clear cutting and to limit removing trees with a trunk diameter of 8-inches and greater. 5. City development standards for slopes of 15% or greater <u>areas with an accumulation of landslide risk</u> shall limit the amount of site area that can be graded, cleared of vegetation, or otherwise disturbed. 6. Development on slopes of 15% or greater <u>areas with an accumulation of landslide risk</u> will require a soils/geology report prepared by a state certified engineering geologist or geotechnical engineer to evaluate geologic conditions and hazards, slope stability, and to provide recommendations for protecting life and property from landslides and soil erosion <u>a geotechnical professional to review design and certify a that development will mitigate any increased hazard that would otherwise be created and the applicant must certify that development will follow geotechnical specification and recommendations.</u> <p>In addition, development within an area identified on the Hillside <u>and Geologic Risk Overlay</u> Physical Constraint Overlay District map as a potential “Higher Risk Landslide Area” shall require a geotechnical report that describes how the proposed construction methods and design measures will maintain slope stability and minimize erosion. <u>a geotechnical professional to review designs and certify a development will mitigate any increased hazard that would otherwise be created.</u></p> <ol style="list-style-type: none"> 7. Development on slopes of 15% and greater <u>areas with an accumulation of landslide risk</u> shall be required to handle surface water runoff in a way that will not destabilize slopes, increase erosion or degrade water quality. 8. The City hillside development standards shall include state ORS 195.250 requirements that pertain to potential rapidly moving landslide (“Further Review Areas”) identified by the state Department of Geology and Mining Industries (DOGAMI). These standards will be applied to proposed development within such areas after their mapping by DOGAMI is finalized. In the interim, the City shall require geotechnical reports for developments proposed in the “Higher Landslide Risk Areas” (DOGAMI’s “Further Review Areas”) that are shown on Gresham’s Hillside Physical Constraint Overlay District map. <p>ACTION MEASURES</p> <ol style="list-style-type: none"> 1. The City will continue to protect steep slopes and landslide hazard areas as public open space/wildlife habitat as Metro bond measure funds and other funding sources become available for this purpose. 	<p><i>Updated to reflect the basis of the Hillside and Geologic Overlay</i></p> <p><i>Updated to reflect the basis of the Hillside and Geologic Overlay</i></p> <p><i>Updated to reflect the requirement for a geotechnical professional to certify designs are safe</i></p> <p><i>Updated to reflect the basis of the Hillside and Geologic Overlay</i></p> <p><i>This state language has been superseded</i></p>
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2. Provide staff resources to inspect hillside developments that are under construction in order to ensure their compliance with erosion control, drainage and slope stability standards as well as compliance with development code limitations on grading and the removal of trees and other vegetation.
3. Encourage and offer incentives for innovative site designs (such as clustering dwelling units) that exceed City standards related to allowed slope disturbance, tree removal, etc., and which propose to set aside a substantial amount of the site as protected open space.
4. Update Gresham’s hillside maps/development standards so that they reflect new maps and other current information from DOGAMI, etc. about the location and severity of potential landslide hazards, recommended content for geologic/geotechnical reports and how landslide risks can be minimized.
5. Provide information to the public on the City’s website and at the building permits center about preventing landslides and soil erosion on hillsides. This should include landslide hazard maps and information about potential risks, using innovative building design techniques for hillsides, using native plantings to stabilize slopes instead of installing a lawn, managing surface water runoff to avoid soil erosion and how to minimize cuts and fills.

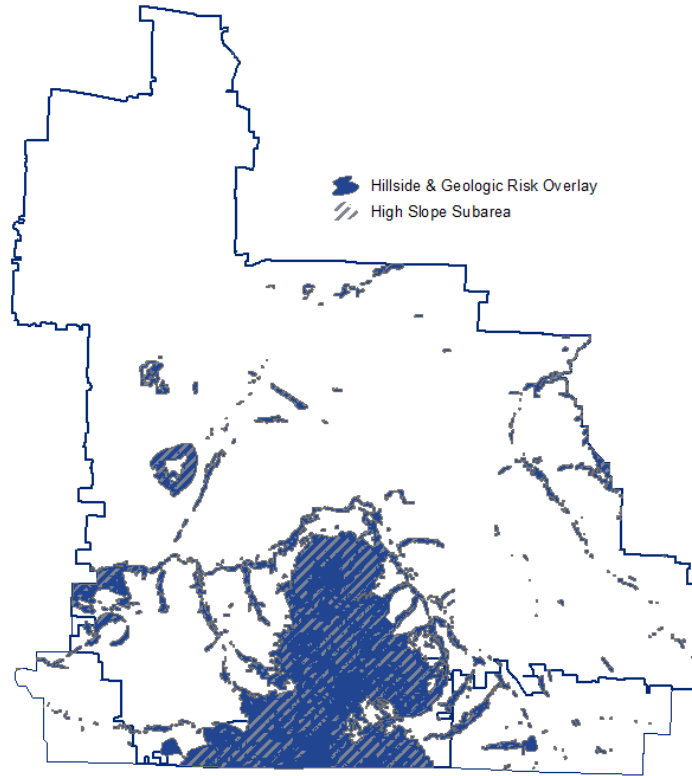
Map No. 2



*Hillside Physical Constraint
District map removed*

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Hillside and Geologic Risk Overlay Map



Hillside and Geologic Overlay map inserted

10.212 Earthquake Hazards

Gresham’s Seismic Risk & Preparedness Measures

Gresham has addressed the potential damage from earthquakes in the following areas:

- The Gresham Emergency Operations Plan (EOP) sets forth the City’s action plan and describes how its departments will respond to various natural hazards and other emergencies. Section III-B of the plan

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addresses earthquakes. In addition to structural damage to buildings, the plan states that an earthquake of between 6.0 and 8.0 on the Richter Scale may include fires/explosions, disruption of vital services such as water and power, looting, and flooding from dam failures on the Columbia and Sandy rivers. The emergency actions listed in the EOP that describe how the City would respond to an earthquake take these possible consequences into account.

- The City’s Building Codes Division of the Community and Economic Development Department (CEDD) reviews building permit applications for compliance with IBC and IRC requirements. The division has a structural engineer who reviews plans for buildings subject to the above-described state seismic standards.
- The Hillside and Geologic Risk Overlay does not directly address seismic risks, however it does help mitigate one of the most common secondary risks, landslides.
- ~~Gresham’s development code has the Hillside Physical Constraint Overlay District that limits development on the buttes and other areas with slopes of 15% or greater. These areas are shown on the Hillside Special Purpose District Map. Among the purposes of this overlay is to ensure that development proposed on or near hillsides conforms to the natural topography and minimizes the potential of earth movement such as landslides. In general, this overlay limits the percentage of lot area that can be disturbed (by grading, etc.) or developed, essentially allows only needed roads and utilities on slopes of 35% or greater, and requires a soils and geology report as part of a development application in order to evaluate slope stability, seismic conditions/risk, and other geological conditions.~~

~~These areas on the buttes that, in the opinion of DOGAMI, are particularly susceptible to landslides (“Higher Landslide Risk Area”) are also shown on the special purpose district map. For proposed development in these areas and in areas with slopes of 35% or greater, the hillside district also requires a geotechnical report prepared by a geotechnical engineer. The report must describe those design and construction measures that will be taken in order to reduce the potential for landslides and to maintain slope stability. DOGAMI staff as well as the City’s geotechnical engineering consultant then review the report and make comments that are incorporated into the staff report.~~

Updated to reflect the name of the department

Gresham’s hillside protections have never covered seismic risk.

Section 3. Volume 2, Policies and Summary, Article 10 Summary of Findings, Policies and Implementation Strategies, Section 10.220 Natural Resources is amended as follows:

Proposed Text Amendment	Commentary
<p>Section 10.221 Natural Resources, Fish and Wildlife Habitat, Water Resources and Ecologically and Scientifically Significant Areas</p> <p>SUMMARY OF FINDINGS</p> <p>Some 45 sites having potential significance as natural resource areas have been identified in the Inventory of Significant Natural Resources and Open Spaces. These include wetlands, riparian corridors, upland areas, and greenways. Many of these sites support a wide variety of plant and wildlife species which add an indispensable element to the quality of life in Gresham. A stand of Hogan's cedar trees has been identified as being ecologically and scientifically significant. These resources perform a number of additional useful functions, including stormwater retention, water cleansing, slope stability, recreation, and visual relief in an otherwise urban landscape. <u>Natural resource catalogue efforts at the city of have been evolved from the time of the City's original Inventory of Significant Natural Resources and Open Spaces (1988), which was a "windshield and limited field work" inventory, to today's sophisticated GIS data-derived records that are refined where possible with field site visits to confirm presence and extent of jurisdictional features and compared against aerial photo interpretation results. Since 2001, resource catalogues have included this combination of GIS analysis, field review, and comparison with aerial photos. These composite methods have been used to identify the present catalogue of protected resources and risk mitigation areas, including: water quality resource wetlands, streams, riparian corridors, upland habitat areas, floodplain management areas, and geologic risk areas. These resources provide complex ecological functions that impact public safety, water quality, habitat values, and community livability, as discussed below.</u> Policies and strategies within this category are intended to protect the most significant of these resources while allowing appropriate degrees and types of development where impacts to these resources can be minimized (Sections 2.300 to 2.370 - Findings document).</p> <p><u>Policies and codes outlined in this section have been developed by the City to comply with federal and state regulations to protect water quality, reduce pollutant impacts, and provide habitat for federally listed salmonid species, and have been developed to ensure substantial compliance with Metro's Urban Growth Management</u></p>	<p><i>Updated to more accurately reflect the current situation</i></p>

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Functional Plan Title 3 (which complies with Oregon Land Use Planning Goals 6 and 7) and Title 13 (which complies with Oregon Land Use Planning Goal 5).

NATURAL RESOURCES POLICY

It is the policy of the City to assist in protecting the quality and quantity of the following resources:

1. Surface water resources
2. Floodplain function
3. Groundwater, aquifer, and drinking water protection
- ~~4.~~ Fish and wildlife habitats.
- ~~5.~~ Visual resources (scenic views and sites).
- ~~3.~~ Water resource
- ~~4.~~ Ecologically and scientifically significant areas
6. Mineral and aggregate resources.
7. Energy sources.
- ~~8.~~ Significant and unique natural features, such as a major stand of trees.

The City will assess the impacts on these resources when a development project is proposed. The project developer and city staff shall outline measures to preserve or mitigate negative impacts on these natural resources.

IMPLEMENTATION STRATEGIES

1. ~~The City~~ An Inventory of Significant Natural Resources and Open Spaces shall be adopted as maintain an appendix to the Community Development Plan. ~~This inventory shall list those catalogue of natural resource and open space resources based upon best available data, comprised of those resources features which are found to be most significant into the community. For each resource the inventory shall include~~ This catalogue will be accompanied by a description of its resource characteristics, and significance, within an analysis of conflicting uses, and a summary of economic, social, environmental, and energy (ESEE) consequences of permitting or restricting conflicting uses.
2. ~~Based on findings contained in the Inventory of Significant Natural Resources catalogue and Open Spaces, provisions associated ESEE analysis,~~ protections shall be adopted in the Community

Updated to better reflect current understanding.

Updated to better reflect current situation, regulations, and practice

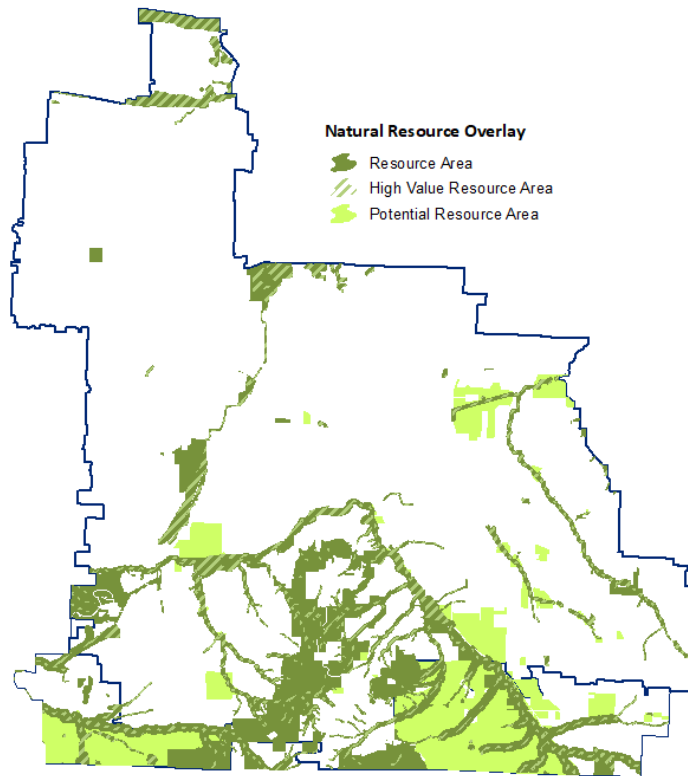
Updated to reflect new terms

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<p>Development Code and Standards document to restrict development actions on specific sites identified in the Inventory when such actions would have adverse impacts.</p> <p>3. Sites as specified <u>as Open Space</u> in the Inventory of Significant Natural Resources and Open Spaces <u>or catalogued as Natural Resources</u> shall be designated on the Community Development Special Purpose District Map as <u>special purpose districts. Such district designations shall include Natural Resource (NRO), and Open Space (OS).</u></p> <p>4. Sites as specified <u>included in the Inventory of Significant Natural Resources catalogue of natural resources and Open Spaces ESEE analysis</u> shall be designated on the Community Development Special Purpose District Map as special purpose districts. Such district designations shall include Natural Resource (NR), and Open Space (OS) <u>Floodplain (FO), Hillside and Geologic Risk (HGRO), Natural Resource (NRO).</u> <u>These districts shall function as special purpose overlay districts.</u></p> <p>4. Sites indicated in the Inventory of Significant Natural Resources and Open Spaces as having particular importance as fish and wildlife habitat areas shall be designated on the Community Development Special Purpose District Map as Natural Resource (NR) districts. The NR district shall function as a special purpose overly district.</p> <p>5. Measures shall be adopted in the Community Development Code and Standards document to restrict development proposed within or adjacent to an NR district <u>NRO</u> site. These measures shall require any such development to take place in a manner which minimizes adverse impacts on the resource site. Findings of public need and lack of alternative sites shall be required in connection with any proposed development activity within an NR district site.</p> <p>6. Within specific wetland sites as identified in the through Gresham’s Local Wetland Inventory of Significant Natural Resources, or which meet the City and Metro’s criteria for a regulated Title 3 wetland, and Open Spaces, development shall be permitted only in connection with an approved plan for mitigation. Such mitigation plan may include creation of a functionally equivalent wetland area elsewhere, in conformance with mitigation policies of the U.S. Environmental Protection Agency, Oregon Department of State Lands, the US Army Corps of Engineers, and the Oregon Department of Environmental Quality’s 401 Water Quality Certification Program, <u>and if the proposed mitigation is within the same watershed (at the 5th field Hydrologic Unit Code scale).</u></p> <p>***</p>	<p><i>Updated to reflect overlays</i></p> <p><i>This policy has not been reflected in code for many years and may be a takings</i></p> <p><i>Updated to reflect code and standards</i></p> <p><i>Updated to reflect new state and federal guidelines</i></p>
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Natural Resource Overlay Map



B. GRESHAM BUTTE SCENIC VIEW

SUMMARY OF FINDINGS

Summary of Findings

The City has had a long commitment regarding the protection of Gresham Butte. In 1980, the City adopted the Hillside Physical Constraint District (HPCD) rules which regulate development on sloped properties such as those found on the Butte. Then, in 1999, the Gresham City Council approved the establishment of the Gresham

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Butte Plan District (GBPD) which covers roughly 95 acres on the top of the butte. The GBPD increased lot sizes to an average of one acre, and included fire suppression, transportation and stormwater rules.

The HPCD was substantially updated in 2003 and refined the way in which density calculations were done for properties such as those found on Gresham Butte and also required the submittal of a Soils and Geology Report outlining the geologic conditions of the land and an evaluation of potential hazards. In 2009, the City adopted the Habitat Conservation Area Overlay District (HCA) which provided more protection for fish and wildlife and upland habitat when construction and development occur within those specified areas. Parts of the Butte are subject to HCA rules.

The HPCD was renamed to the Hillside and Geologic Risk Overlay in 2021 at the same time the HCA was replaced with the Natural Resource Overlay.

In 2013, the Gresham Butte Neighborhood Association requested that the Gresham City Council initiate a review of development rules that could impact the scenic views provided by the Butte. This project, Gresham Butte Scenic View, was included on the 2014 Council Work Plan and was continued to the 2015 Council Work Plan. This project was intended to:

- Update the City’s Community Development Plan findings, goals, policies and action measures relating to the preservation of Gresham Butte’s scenic view. There are no goals or policies specific to Gresham Butte’s scenic view and, although there are five implementation strategies² regarding visual resources, none of them are specifically targeted to the protection of Gresham Butte.
- Review and update current rules and development processes that allow for development on the Butte that could impact the scenic view it provides. There are no development rules for Gresham Butte that would help preserve its view or acknowledge that certain types of development (such as tall structures) could potentially impact that view. Which parcels actually comprise the area known as Gresham Butte is currently undefined.
- Examine land use processes and notice requirements for development on the Butte to make modifications which provide for more extensive notice. The Code does not acknowledge that development on the Butte may affect properties in many areas of the city due to the potential visual

Reflecting changes in names and overlays

² Implementation Strategies are now called Action Measures

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<p>impact of development. Development on the Butte is handled under the same review types and receives the same public notice as the development of property off of the Butte.</p> <p>***</p>	
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Section 4. Volume 2, Policies and Summary, Article 10 Summary of Findings, Policies and Implementation Strategies, Section 10.230 Environmental Quality is amended as follows:

Proposed Text Amendment	Commentary
<p>***</p> <p>10.232 Water Resources Quality</p> <p>INTRODUCTION</p> <p>The City of Gresham and its <u>Within Gresham's</u> Urban Services Boundary encompass four distinct drainage basins. They are <u>portions of the following watersheds</u>:</p> <ul style="list-style-type: none"> ▪ West Gresham ▪ Fairview Creek to the <u>Columbia Slough Watershed, which drain to the Willamette River</u> ▪ Johnson, Butler and <u>Kelley</u> Creeks, <u>which drain</u> to the Willamette River Watershed ▪ Burlingame, Kelly, and Beaver Creeks, <u>which drain</u> to the Sandy River Watershed. <p>Portions of all <u>each</u> of these <u>drainage</u> basins are within a large area that has <u>groundwater resources</u>- water-bearing layers of silts, sands and gravels. This includes the very important Troutdale Gravel Aquifer. This aquifer supplies water to the Columbia Southshore Wellfield. Wells in this area are essential to provide back-up water supply to the Portland Water Bureau and its customers.</p> <p>Each drainage basin is a complex environmental system of topography, vegetation hydrology, and geomorphology. Water flows through each via a network of interconnected streams and drainage ways, underground channels, and aquifers. Water quality problems in one drainage basin not only can affect the</p>	<p><i>Updated to more accurately reflect the current situation</i></p>

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nearest stream system and possibly aquifers, but also all other downstream waters and, sometimes, groundwater resources.

Water pollution, like air pollution, knows no boundaries and can be widespread and harmful. Consequently, the federal government has enacted national laws requiring conformance to minimum standards. Local and state governments are required to conform to federal laws such as the Clean Water Act. In Oregon, the Department of Environmental Quality has the responsibility of implementing the act. ~~Within the Portland Metropolitan region, water quality has diminished to the extent that it has contributed to the decline of several fish populations. These populations have become either endangered or threatened per the federal Endangered Species Act (ESA). This has significant implications. New development activity will have to be evaluated for its impact on water quality; significant restoration efforts to natural drainage ways and streams will be needed. Development of regulations and standards to address ESA requirements are being undertaken by Metro in cooperation with the region's local governments. Gresham and local governments will have a choice—to either adopt Metro's protection program or a local one that accomplishes the same objectives. Gresham created a separate Stormwater Division in its Department of Environmental Services in 1993. This was partly in response to growing awareness of the importance of water quality and expanding federal, state and regional rules and mandates. The City's Stormwater Division is primarily responsible for management of the surface water quality within Gresham. Among its many responsibilities is assuring conformance with federal and state water quality laws and rules.~~

Within the Portland Metropolitan region, water quality impairment, loss of habitat, and loss of stream complexity has contributed to diminished biodiversity. Remnant populations of federally protected salmonids are still present in the Johnson and Kelley Creek systems, with evidence of slightly increasing numbers since 2010. Efforts to improve water quality and other habitat features for these ESA-listed species have been coordinated with water quality improvements within City of Gresham programming within the Department of Environmental Services which oversees public works, water quality, and natural resources programming and community outreach. In addition to those efforts, new development activity will have to be evaluated for its impact on water quality; existing resources will need to be protected, restoration of area creeks and their related buffers will continue to be needed, and the development process will need to ensure that unavoidable impacts are fully mitigated. Water quality protections were adopted by Gresham Community Development Code in 2002 with inclusion of language intended to comply with Metro Title 3 standards, which provided

Updated to more accurately reflect the current situation

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regional implementation guidance for Oregon Land Use Planning Goals 6 and 7. Habitat protections have been incorporated into Gresham’s land use code via compliance with Metro Title 13 (Nature in the Neighborhoods) and through Title 13, with Oregon Land Use Planning Goal 5.

WATER QUALITY ISSUES

Throughout Gresham, urbanization and other activities ~~has~~have caused the loss of naturally permeable surfaces capable of absorbing and filtering ~~surface water~~precipitation and runoff. Drainage ways and streams have been filled, directed into culverts or hardened channels and development has occurred in wetlands and floodplains. This has prevented these resources from storing and filtering stormwater. Also, riparian vegetation has been removed, leaving water bodies exposed to direct sunlight, which significantly increases water temperature. Elevated water temperatures are inhospitable to many forms of aquatic life, especially for many fish species such as salmon, trout and steelhead.

Excess rainwater, often carrying pollutants from impermeable surfaces, flows ~~directly into~~ rapidly through piped drainage systems and open drainage ditches ~~and~~ into our local streams and wetlands. This situation can cause significant problems, including ~~damage to the stormwater system, flooding;~~ hydromodification of the stream channel, which includes downcutting of the channel, widening of stream channels, and bank erosion; sedimentation ~~and, damage to fish and wildlife habitat, and damage to the stormwater system.~~ Furthermore, ~~without the natural ability~~ decreased infiltration due to impervious surfaces and the loss of wetlands, floodplains and riparian soils ~~to store~~ diminishes water storage which can lead to other serious impacts ~~can result,~~ including reduced dry-weather flows, degraded water quality, loss of aquifer capacity, land subsidence and the loss of fish and wildlife habitat.

The potential for groundwater pollution affecting aquifers is a regional concern. If solvents and other toxic materials get in the aquifers, the region’s access to drinkable water would be compromised. ~~This is a particular concern for the aquifer that supplies the Southshore wellfields~~ As Gresham becomes more reliant on groundwater as a drinking water source, protection of groundwater from spills, illicit discharges, and other pollutants is critical.

~~North of the Southshore wellfields, some contamination of shallow aquifers by industrial chemicals has taken place. It is estimated that this occurred over twenty years ago. While no longer occurring, a contaminant plume is slowly progressing toward the location of the deeper wellfield aquifer. Monitoring and remediation efforts are ongoing. Wells have been drilled to bring the contaminated water closer to the surface to allow solvents to evaporate. Other wells are in place specifically to monitor pollutant travel speed and direction~~

Correcting grammar and using more accurate language

Correcting grammar and using more accurate language

Updated to more accurately reflect the current situation and the recent Council policy decision to decrease reliance on Bull Run water.

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In addition to the CWA, the Safe Drinking Water Act and the Endangered Species Act have related water quality protection requirements that Gresham must meet. Also, the state and Metro have adopted rules and policies applicable to local jurisdictions that are intended to implement federal requirements.

The following summarizes the seven federal, state and regional water quality regulatory programs under the Clean Water Act that Gresham and other Oregon jurisdictions must comply with.

National Pollutant Discharge Elimination System (NPDES) Permit for Municipal Separate Storm Sewer Systems

DEQ administers this federally mandated permit program, which requires local jurisdictions to develop and implement management practices that reduce the pollutants carried by stormwater into state waters. State waters include all natural water bodies, plus those waters that connect to other natural water bodies.

Water Quality Standards and Total Maximum Daily Loads (TMDLs)

To comply with federal requirements, Oregon DEQ adopted water quality standards that protect beneficial uses such as drinking water, cold water fisheries, ~~aesthetics~~, recreational contact, agriculture and other uses. DEQ’s standards cover parameters such as bacteria, pH, turbidity, dissolved oxygen, temperature, and total dissolved gas, certain toxic and carcinogenic compounds, habitat and flow modification, and aquatic weeds or algae. Gresham’s ~~stormwater~~ water resources must not ~~cause~~ show a violation of these standards ~~when it flows into state waters~~. If a water body doesn’t meet the standards, DEQ is required to set a TMDL. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant’s sources. Because Gresham surface waters violate one or more water quality standards at some point during the year, DEQ ~~has~~ established TMDLs that required further efforts by Gresham to clean up stormwater and protect and restore riparian areas, as well as wetland and stream functions. The City has been making progress on these goals in part through a City-developed TMDL Implementation Plan and the NPDES permit process.

There are three water bodies within Gresham that are listed by the Oregon Department of Environmental Quality (DEQ) as “water quality limited.” and have TMDLs established. All surface waters draining to listed water bodies are also considered water quality-limited and are to be addressed in a Designated Management Agency’s TMDL response. DEQ is required by the federal Clean Water Act to maintain a statewide list of water bodies that do not meet federal water quality standards. This list is called the 303(d) list because of the section of the Clean Water Act that establishes the requirement. Parameters are removed from the 303(d) list once a

Updated to more accurately reflect the current regulatory situation

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TMDL is set for them, although an approved TMDL does not indicate that the waterbody is meeting the water quality standard. Table 1, below, is the current list of Gresham streams and other water bodies that do not meet current standards.

Table 1
303(d) Listings and TMDLs for Gresham Water Bodies

Updated to more accurately reflect the current regulatory situation

WATER QUALITY LIMITED WATER BODIES WITHIN GRESHAM (10/10/0320)				
Waterbody	Parameter	Time of Year	Year 303(d) Listed	Year TMDL ExpectedApproved
<u>Beaver/Kelly Creek</u>	<u>E. coli</u>	<u>Summer</u>	<u>2002</u>	<u>2005</u>
<u>Beaver/Kelly Creek</u>	<u>Dieldrin</u>	<u>Year Around</u>	<u>2018</u>	<u>Not known</u>
<u>Beaver/Kelly Creek</u>	<u>DDT</u>	<u>Year Around</u>	<u>2018</u>	<u>Not known</u>
<u>Beaver/Kelly Creek</u>	<u>Chlordane</u>	<u>Year Around</u>	<u>2018</u>	<u>Not known</u>
<u>Beaver/Kelly Creek</u>	<u>Biocriteria</u>	<u>Year Around</u>	<u>2018</u>	<u>Not known</u>
<u>Beaver/Kelly Creek</u>	<u>Dissolved Oxygen</u>	<u>Year Around</u>	<u>2018</u>	<u>Not known</u>

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Johnson Creek	PCB and PAHs	Year Around	2002	Not known
Johnson Creek	Temperature	Summer	1998	2003 <u>2006</u>
Johnson Creek	Dieldrin	Year Around	1998	2003 <u>2006</u>
Johnson Creek	DDT	Year Around	1998	2003 <u>2006</u>
<u>Johnson Creek</u>	<u>Endosulfan</u>	<u>Year Around</u>	<u>2018</u>	<u>Not known</u>
<u>Johnson Creek</u>	<u>Endrin Aldehyde</u>	<u>Year Around</u>	<u>2018</u>	<u>Not known</u>
<u>Johnson Creek</u>	<u>Iron</u>	<u>Year Around</u>	<u>2018</u>	<u>Not known</u>
Johnson Creek	<i>Fecal Coliform</i> <u>E. coli</u>	Year Around	1998	2003 <u>2006</u>
<u>Johnson Creek</u>	<u>Biocriteria</u>	<u>Year Around</u>	<u>2018</u>	<u>Not known</u>
<u>Johnson Creek</u>	<u>Mercury</u>	<u>Year Around</u>	<u>2006</u>	<u>2019</u>

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Fairview Creek	<i>Fecal Coliform</i> <u>E. coli</u>	Winter/Spring/Fall	1998	2003 <u>2006</u>
Fairview Creek	<i>E. Coli</i> <u>E. coli</u>	Year Around	1998	2003 <u>2006</u>
Fairview Creek	pH	Spring/Summer	1989	De-List 2004
Fairview Creek	<i>E. Coli</i>	Summer	2002	2007
Fairview Creek	Temperature	Spring/Summer/Fall	1998	2003
Columbia Slough	Iron	Year Around	2002	Not known
Columbia Slough	Manganese	Year Around	2002	Not known
Columbia Slough	Chlorophyll a	Spring/Summer/Fall	Pre-1996	1998
Columbia Slough	Dissolved Oxygen	Year Around	Pre-1996	1998
Columbia Slough	pH	Spring/Summer/Fall	Pre-1996	1998
Columbia Slough	Phosphorus	Spring/Summer/Fall	Pre-1996	1998

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Columbia Slough	Bacteria	Year Around	Pre-1996	1998
Columbia Slough	DDT/DDE	Fish Tissue: Year Around	Pre-1996	1998
Columbia Slough	PCBs	Fish Tissue: Year Around	Pre-1996	1998
Columbia Slough	Lead	Year Around	Pre-1996	1998
Columbia Slough	Dieldrin	Fish Tissue: Year Around	Pre-1996	1998
Columbia Slough	2,3,7,8 TCDD (dioxin)	Fish Tissue: Year Around	Pre-1996	1998
<u>Columbia Slough</u>	<u>Mercury</u>	<u>Year Around</u>	<u>2006</u>	<u>2019</u>

OTHER REGULATIONS AND LOCAL EFFORTS

Wellhead / Well Field Protection

The 1986 federal Safe Drinking Water Act requires states and local agencies to establish wellhead protection zones to safeguard groundwater for drinking. In Gresham, this area is based on a groundwater model simulation of the 30-year time of travel to the municipal production wells owned and operated by Portland, Gresham, and the Rockwood PUD. There are currently two separate areas with similar requirements: the Columbia Southshore Groundwater Resource Wellhead Protection Area. This area is and the Cascade wellfield Protection Area. Both areas are subject to Best Management Practices (BMPs) that are aimed at providing appropriate levels of protection for groundwater.

Updated to more accurately reflect the current situation

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The Gresham City Council, in January 2003, adopted a wellhead protection program for the area in and around Portland's Southshore Wellfields. ~~The program~~the Columbia Southshore Wellfield. In 2013, Gresham City Council expanded the program to cover the Cascade Well Field. The City's Well Field Protection Program includes regulatory standards involving the storage, handling and use of solvents and other toxics that could pollute the groundwater resource. ~~The City's~~ In addition to protecting groundwater in Portland, Gresham and Fairview, the City is discussing expanding the wellhead protection program ~~was the result of a yearlong planning process involving area industries, Gresham, Portland and~~into the Cities of Troutdale and FairviewWood Village.

Underground Injection Control (UIC) Rules

The DEQ administers the federal UIC program in Oregon, pursuant to the federal Safe Drinking Water Act. The UIC program manages injection of fluids into the ground. All stormwater ~~infiltration sumps~~ injection UICs within the City of Gresham ~~are classified as UICs and~~ must be registered and meet regulatory requirements set by DEQ. The City has a Water Pollution Control Facility (WPCF) permit from DEQ that regulates all of the City-owned and operated UICs within Gresham. All new public facilities are required to constructed in a manner than meets DEQ rules, and all private UICs must be registered with DEQ, which requires the owner to obtain a permit and/or meet DEQ's rule authorization.

Endangered Species Act (ESA)

The ESA prohibits the "taking" of a member of any species listed as 'threatened' or 'endangered,' and allows the U.S. Fish and Wildlife Service (USFWS) or National Oceanic Atmospheric Agency (NOAA)-Fisheries to impose some prohibitions for listed species. The ESA defines "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." The requirement is important for Gresham because the City's surface waters are either current habitat for threatened species, or are upstream from such habitat. It has been found that negligent loss or degradation of habitat resulting from land development or water quality degradation can be considered a taking. The jurisdiction that permitted or allowed the offending development can be held liable.

The ESA requires jurisdictions to look at all the activities that occur under their authority that could harm threatened or endangered species. For Gresham and other cities, this not only includes land use regulations, but also management of floodplains and surface water quality and quantity, and the maintenance and other operations associated with running a city. ~~Metro is working with the region's jurisdictions to develop a regional strategy to protect stream corridors and other natural resources necessary for water quality. An important part of the strategy is to protect wetlands~~

Updated to more accurately reflect the current situation

Updated to more accurately reflect the current regulatory environment

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and streams, provide adequate streamside buffers and key upland natural resources that contribute to water quality

Metro has undertaken an extensive natural resource inventory and analysis of these resources. This effort will be followed by development of land use regulations and standards in conformance with USFWS and NOAA objectives.

The idea is that jurisdictions that adopt a water resources protection and land use regulatory plan in compliance with Metro's program, will be safer from legal action. Furthermore, if jurisdictions adopt Metro's program it will allow them to also comply with Statewide Planning Goal 5. The alternative is for jurisdictions to develop their own natural resources inventories and standards. However, any independently adopted program must be found to be in substantial compliance with Metro's own program. The City has integrated ESA considerations into their everyday operations, providing training to Operations and Maintenance staff, engineering staff, and Planning staff on the state and federal protections for ESA-listed species and associated habitat, including streams and wetlands. The City also adopted Metro Title 13 (Nature in the Neighborhood), and through these Title 13 standards, is complying with the habitat protection objectives of Oregon Land Use Planning Goal 5.

Metro Urban Growth Boundary Functional Plan -- Title 3

Gresham has ~~complied~~been in compliance with Metro Functional Plan – Title 3, Water Quality. The City adopted required erosion control and floodplain standards in 2000. In 2002, required ~~w~~Water q~~Quality~~Resource Area (WQRA) protection standards and maps were adopted.

Title 3 requires floodplain regulations to ensure “balanced cut and fill” in floodplains. These provisions ~~are~~were intended to prevent importation of fill into floodplains that would decrease the resource's overall water storage capacity. The City adopted Floodplain Management standards in relation to these Title 3 standards, which also complied with Oregon Land Use Planning Goal 7.

~~The City's Water Quality Resource Area Overlay District map and standards provide for water quality protection by requiring new development to maintain vegetated buffers around streams and wetlands that can filter surface water runoff.~~

Metro Urban Growth Boundary Functional Plan -- Title 13

Gresham has ~~complied~~been in compliance with Metro Functional Plan – Title 13, “Nature in the Neighborhoods”. In 2009, Gresham adopted the safe harbor standards of Metro's Title 13 model ordinance for the annexed areas within the City's Urban Growth Boundary.

Updated to more accurately reflect the current situation

Locally Enacted Regulations, Standards and Green Practices

~~In 1999 through 2001, Gresham has adopted regulations and standards requiring the provision of surface water management systems and stormwater quality control. These provisions form the basis of the city's current regulations to ensure development does not harm water quality and cause the City to be in non-compliance with DEQ standards. They are applied to all major development in the City. In 2019, Gresham updated the City's Stormwater Management Manual to ensure compliance with the most current DEQ regulations as they pertain to Phase I (over 100,000 in population) jurisdictions that carry National Pollutant Discharge Elimination System (NPDES) permits. The manual reflects the most current Best Management Practices for green stormwater infrastructure proven to be successful in protecting natural stream function and water quality. Gresham updated their Temperature TMDL plan in 2020, building upon 13 years of efforts to prioritize and implement riparian area improvements to protect the stream and wetland adjacent vegetation that moderates diurnal temperature fluctuations, attenuates run-off that can negatively impact stream and wetland structure and function, and enhances infiltration of precipitation thereby improving groundwater recharge and local bank storage.~~

~~In November 2003, it is expected that the City will also adopt the Gresham Water Quality manual. The manual is an important tool to control the quality of stormwater resulting from new development. It will serve as a guide to implement "Best Management Practices for Managing Stormwater."~~

~~An integrated approach to planning for and management of land use, transportation and surface water management can have a profound positive impact on water quality. Gresham and other jurisdictions in the Portland metropolitan region are moving toward a "Green Practices" philosophy of managing water quality. The emphasis is to preserve continues to be the evolving science behind green infrastructure that can support or mimic the natural hydrologic cycle to the extent possible. This is done by promoting, to the degree practicable, that surface water is treated on the site where it occurs or infiltrated after treatment; providing as much pervious surface as possible; using natural drainage systems such as vegetated swales and ditches, and preserving and restoring natural streams, wetlands and floodplains.~~

SUMMARY OF MAJOR ISSUES

- ~~1. Urbanization and other human activities in and around Gresham have caused ~~the~~ substantial loss of naturally permeable surfaces and supporting vegetation across the landscape capable of absorbing and filtering surface water. ~~This included loss of~~ loss of wetlands, floodplain area, natural drainage ways, healthy riparian vegetation, and stream ~~channels~~ channel complexity. ~~has also occurred.~~ This has impaired~~

Updated to more accurately reflect the current regulatory environment

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<p><u>the natural hydrologic system of Gresham’s water resources and reduced these the ability of these critical resources’ ability to store, cool and filter surface water.</u></p> <ol style="list-style-type: none"> 2. Surface and groundwater water pollution from both point and non-point sources negatively affect Gresham’s surface and groundwater quality. 3. The potential for groundwater pollution affecting the Troutdale Aquifer that borders the Columbia River is a regional concern. If solvents and other toxic materials used in industrial processes get in the aquifer, the region’s access to drinkable water would be compromised. Shallow aquifers in the general area have already been contaminated. 4. Through the Clean Water Act, the federal government requires the states to establish and enforce specific water quality standards. In Oregon the Department of Environmental Quality has this responsibility, <u>with additional oversight by the US Environmental Protection Agency.</u> 5. Gresham is required to manage surface water quality <u>and quantity</u> to address five categories of federal state and regional surface water quality laws and related implementing rules. These include: <ul style="list-style-type: none"> ▪ National Pollutant Discharge Elimination System (NPDES) Permit for Municipal Separate Storm Sewer Systems ▪ Oregon DEQ Water Quality Standards and Total Maximum Daily Loads (TMDLs) ▪ Well Field / Well Head Protection and Underground Injection Control per the 1986 Federal Safe Drinking Water Act ▪ Endangered Species Act ▪ Title 3— Metro Regional Functional Plan <u>Titles 3 and 13</u> 6. Metro has taken the lead in developing regulatory maps and standards to create a “safe harbor” for local jurisdictions that must comply with the water quality requirements of the Endangered Species Act. Metro’s maps and regulations, once adopted by local jurisdictions, would also allow local jurisdictions to comply with Statewide Planning Goal 5. 7. In 1993, the City created the Stormwater Division in the Department of Environmental Services to specifically manage water quality issues. 8. Since 2000, Gresham has enacted several new local regulations to address water quality and surface water management. These include: <ul style="list-style-type: none"> ▪ Water Quality Resource Area Overlay District and implementing standards; ▪ Erosion Control Standards; ▪ Balanced cut and fill provisions as part of the City’s Flood Plain Standards; 	<p><i>Updated to more accurately reflect the current regulatory environment</i></p> <p><i>Updated to more accurately reflect the current situation</i></p>
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- ~~Standards to ensure installation of surface water management systems and implementation of stormwater quality controls.~~

WATER QUALITY
GOALS, POLICIES AND RECOMMENDED ACTION MEASURES

GOAL

Prevent surface and ground water pollution and improve water quality.

POLICIES

1. The City shall require new development to comply with all land use regulations and other standards necessary to properly manage surface water quality and quantity according to the City's obligation under the Clean Water Act.
2. The City shall ensure, through coordination with the Oregon Department of Environmental Quality, that existing and future land uses with the potential for water discharges, comply with state and federal water quality standards.
3. The City shall establish and maintain water quality plans, regulations and standards consistent with federal, state and Metro laws and rules as necessary to protect surface and groundwater quality and quantity.
4. The City shall protect the water quality, conveyance, storage functions and associated environmental values of streams, wetlands, 100-year floodplains and other natural drainage-ways and water bodies.
5. The City shall protect, and where practicable, restore water quality and the physical and biological integrity of the area's system of wetlands, rivers and streams and associated environmental values, including natural vegetation buffers and fish and wildlife habitats supporting water quality, water quantity, and habitat protections.
6. Related to surface water management, The City shall encourage and support the water quality protective development strategies development of drainage systems that preserve or duplicate mitigate loss of the natural hydrologic cycle functions related to pollutant removal, bank storage, groundwater support, flow

Updated to more accurately reflect the current regulatory environment

Updated to more accurately reflect the current science

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attenuation, velocity reduction and sediment reduction. ~~as a means to store, treat and convey surface water run-off.~~

7. The City shall require that surface water treatment and management of run-off quantities occur on-site for development projects that require development permit approval.
8. The City’s surface water management program shall protect public safety and property and shall be based on long-term practicability and effectiveness.
9. The City shall, prior to approval of an Underground Injection Control (UIC), require documentation of compliance with DEQ groundwater rules. A letter from DEQ approving a UIC rule authorization application constitutes adequate documentation for a UIC.
10. The City shall require that development be a sanitary sewer system per the Gresham Community Development Code and applicable Oregon DEQ rules and standards.
11. The City ~~shall~~continues to implement measures to protect water quality necessary to sustain viable habitat for fish species, particularly those listed by the National Marine Fisheries Service as threatened or endangered.
12. The City ~~shall adopt~~shall enforce all regulations and standards to protect ~~streamside vegetative wetlands, waterways, riparian~~ buffers and other natural resource areas that contribute to water quality, groundwater protection, and flood attenuation consistent with Metro Goal 5 and Title 3, and habitat and resource protection consistent with Title 13. ~~requirements. This includes the need to maintain water temperatures required for viable fish habitat.~~

Updated to more accurately reflect the current regulatory environment

ACTION MEASURES

1. ~~Adopt~~Continue to update adopted stormwater standards to promote the use of “best water management practices” to achieve the City’s water quality objectives.
2. Maintain and when necessary update wellhead / well field protection measures to prevent contamination of groundwater including that which sustains the existing Southshore wellfield.
3. Periodically review and update the City’s water quality related plans, policies, regulations and standards to ensure consistency with federal, state and regional requirements.

<ol style="list-style-type: none"> 4. Work with agricultural interests, Multnomah and Clackamas Counties, the Oregon Department of Agriculture, watershed advocacy groups and others to improve water quality and reduce agricultural runoff in Gresham. 5. Work with other jurisdictions, agencies and advocacy groups to address water quality issues that have inter-jurisdictional impacts. 6. Educate the public about the need to protect water quality and provide opportunities for citizens to be involved in restoration and enhancement projects involving area streams, wetlands and rivers. 7. Plan and implement programs to protect and restore the water quality functions of wetlands, stream corridors and other riparian areas such as: <ol style="list-style-type: none"> a. Acquisition of property and conservation easements; b. Stream restoration and wildlife habitat enhancement projects; c. Erosion control/prevention including protection of hillsides <u>stream banks</u> from actions that cause <u>hydromodification</u>, erosion, and landslides; and d. Re-vegetation<u>Restoration</u> of stream and wetland areas<u>buffers</u>; and protection e. <u>Provision of appropriate existing vegetation</u>wetland and stream mitigation options within the affected watersheds that Gresham is working to protect. 8. Maintain an accurate inventory of stream corridors and their respective environmental conditions as a basis from which to restore their contribution to water quality. 9. Ensure all City operations and public improvement projects are conducted in ways to protect water quality consistent with all applicable regulations. 10. Encourage the use of green practices and use of green building methods and other emerging and innovative water quality technologies to improve water quality in Gresham. 	<p><i>Updated to more accurately reflect the current science</i></p>
<p>SUMMARY OF FINDINGS</p> <p>Temperature has been identified by the DEQ as a parameter of concern for the Columbia Slough<u>all streams within Gresham’s Urban Service Boundary, and Johnson Creek</u>, developed Water Quality Improvement Plans to be implemented by Gresham and studies other<u>Designated Management Agencies</u>. <u>DEQ is currently updating the Temperature TMDL elements of Johnson Creek in 1992 indicated conditions at or above critical temperatures</u>the Water Quality Improvement Plans for growth<u>the Sandy River</u> and spawning of salmonids. Increasing imperviousness as a result of urbanization, as well as the removal of streamside vegetation the</p>	<p><i>Updated to more accurately reflect the current regulatory environment</i></p>

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Lower Willamette and the overhanging tree canopy along Gresham creeks has the potential for raising current water temperatures which in turn destroy fish habitats (see Section 2.450, Volume 1 – Findings document)-tributaries to those rivers.

POLICY

IT IS THE CITY'S POLICY TO MINIMIZE THE REMOVAL OF STREAMSIDE VEGETATION WHICH WOULD ADVERSELY IMPACT STREAM TEMPERATURES.

IMPLEMENTATION STRATEGIES

1. ~~The Community Development Plan will limit and discourage the removal of vegetation and trees along city streams through appropriate flood plain land use designations such as open space, greenways, parkland, and recreation trails.~~
2. ~~The city shall seek a response or assistance from the Department of Environmental Quality or other interested agencies when reviewing future land uses or activities which have the potential to raise water temperatures of Gresham's streams.~~
3. ~~The city shall ensure that future thermal pollution discharges conform to all State and Federal thermal discharge standards.~~
1. The Community Development Plan and related Gresham Community Development Code implements multiple protections of sensitive resources, including streams, wetlands, floodplains, and the critical land and vegetation adjacent to those resources that helps protect the ecological functions of a healthy riparian area. Gresham's Environmental Overlays (Natural Resources Overlay, Floodplain Overlay, and Hillside and Geologic Risk Overlay) include limits to encroachment into sensitive areas, protection of high value resources such as the areas closest to streams and wetlands, veteran trees, and floodways.
2. The City is implementing, and in compliance with, state (DEQ) and federally (EPA) current Water Quality Improvement Plans for shading area streams. These Temperature TMDL efforts have been in place since 2007, with annual reporting to DEQ on progress in increasing riparian tree cover to increase stream

Updated to more accurately reflect the current regulatory environment and scientific best practice

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<p><u>shade and moderate diurnal summer temperature fluctuations in area waterways. As DEQ periodically updates the regulating documents, Gresham will update their Temperature TMDL Implementation Plan to remain in full compliance.</u></p> <p>3. <u>Gresham Community Development Code will continue to be updated in consideration of the most current federal water quality regulations, as implemented by US Environmental Protection Agency and Oregon Department of Water Quality to ensure implementation of those measures that protect water quality—including maximizing bank storage, groundwater recharge, attenuation of erosive stream flow, minimization of hydromodification and slope failure, moderation of diurnal temperature fluctuations adjacent to wetlands and waterways, and capture of sediments and pollutant sources—are informed by current regulatory obligations under the Clean Water Act.</u></p> <p>***</p>	
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Section 5. Volume 2, Policies and Summary, Article 10 Summary of Findings, Policies and Implementation Strategies, Section 10.330 Public Facilities and Services is amended as follows:

Proposed Text Amendment	Commentary
<p>***</p> <p>10.333 Stormwater Management System</p> <p>BACKGROUND</p> <p>***</p> <p><u>Stormwater Challenges</u></p> <p>***</p> <p>Metro Urban Growth Boundary Functional Plan – Title 3: As a part of the Metro Urban Growth Management Functional Plan, Metro code 3.07.310-3.07.370, Title 3 requires Portland area jurisdictions to adopt the Water Quality Resource Area and Flood Management Performance Standards. The water quality standards are intended to provide vegetated buffers around streams and wetlands in order to protect them from urban development. The floodplain standards essentially require “balanced cut and fill.” To comply with these requirements, Gresham has adopted the Water Quality Resource Area (WQRA) <u>Natural Resource Overlay</u> and amended its Floodplain Overlay District in the Community Development Code.</p> <p>***</p>	<p><i>Updated to reflect the overlay changes</i></p>

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Section 6. Volume 2, Policies and Summary, Article 10 Summary of Findings, Policies and Implementation Strategies, Section 10.400 The Social Environment is amended as follows:

Proposed Text Amendment	Commentary
<p>*** 10.412 City of Gresham Parks, Recreation, Open Spaces and Trails Background *** SPECIAL COMMUNITY RECREATION INITIATIVES *** Trails</p> <p>In 1996 the City completed the Gresham Trails Master Plan. The Trails Master Plan is a blueprint for an interconnected network of trails to link together neighborhoods, parks, open space and downtown Gresham. <u>In 2009 the City updated that document to a Parks and Recreation, Trails and Natural Areas Master Plan. Appendix J of the Master Plan (adopted in 2015) refined the plan.</u> The Parks Master Plan recommends an additional nine miles of multi-use trails and 18 miles of hiking trails in the City. It lays out a citywide trail system as part of a larger and interconnected regional trail network. For example, trails in Gresham are planned to connect Gresham to the Columbia River regional parks and the region’s “40-Mile Loop” trail system.³</p> <p><u>Gresham has a total of 32.4 miles of paths and trails and Appendix J shows a further 32.4 miles of planned paths and trails.</u> The backbone of Gresham’s existing trail system is a 4.5 mile section of the 22-mile long <u>are the Springwater Trail Corridor (STC) and the Gresham-Fairview Trail multiuse paths.</u> Many of the trails recommended by the 1996 Gresham Trails Master Plan are proposed to tie into the STC to provide linkages and loop connections within the Gresham community and also with the surrounding regional trail systems. The Springwater Trail Corridor is also part of the 40 Mile Loop.</p>	<p><i>Updated to reflect adopted documents</i></p> <p><i>Updated to reflect current situation</i></p>

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<p>The Springwater Trail is also an integral element of the region-wide Metropolitan Greenspaces Program. Much of the Springwater Trail runs adjacent to the Johnson Creek Natural Resource Area, <u>and the Gresham-Fairview Trail generally runs along Fairview Creek. There are also multuse paths along 1-84 and a portion of the MAX line. The trail system includes soft surface trails and multi-use paths.</u></p> <p>Other Gresham segments of the 40-mile Loop include the eastern loop that runs north to the City of Troutdale and a portion of the Columbia River Trail along Marine Drive. These trail segments also connect residents with other nearby regional trails, including those in the Columbia River Gorge National Scenic Area; the Sandy River Gorge Trail; the Pacific Crest Trail; the Chinook Trail and the Mt. Hood National Forest Trail System.</p> <p>In 2003 the City is engaged in planning and design for a major addition to its trail system. The Gresham/Fairview Trail will be a 10–14 foot wide multi-use path approximately 5.2 miles in length. Much of the trail will be within the Fairview Creek Greenway. When complete, it will be a major north/south connector between the Springwater Trail Corridor, the 40 Mile Loop at Marine Drive and Blue Lake Regional Park. The Gresham 2003–08 Five-Year Capital Improvement Program budgeted funds from a combination of City and Federal sources to complete a major segment of the Gresham/Fairview trail from Burnside to Halsey in the next few years.</p> <p>An interconnected trail system is also important because it provides <u>vital to providing</u> alternative transportation options. A well-developed multi-use path and trail system can reduce reliance on the automobile as a primary transportation mode. <u>As such, Gresham adopted an Active Transportation Plan in 2018 incorporating a plan for pedestrian and bicycle infrastructure including trails.</u></p> <p>The following table lists the location of trail improvements identified in the 1996 Gresham Trails Master Plan. Maps of the proposed projects and more detailed descriptions can be found in the Master Plan.</p> <p>1996 Gresham Trails Master Plan – Recommended Future Trail Improvements ***</p>	<p><i>Updated to reflect current situation</i></p> <p><i>Updated to reflect recently adopted documents</i></p>
<p>10.413.1 Design Standards for Single-Family Attached Dwellings *** DESIGN PRINCIPLES ***</p>	

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<p>3. Shared Open Space Standards for Complexes</p> <ul style="list-style-type: none"> a. Provide useable common open space to create accessible and safe on-site opportunities for passive and active recreation for all ages. b. Incorporate attractive landscaping and site amenities throughout the development site to enhance development quality and livability. c. Enhance opportunities for social interaction by providing opportunities for group gatherings and social recreation. d. Create open space areas and landscaping to soften the urban environment, provide shade, buffering and screening and create pleasant places to rest and recreate. e. Single family attached dwellings that are adjacent to public parks and open space areas may be planned to incorporate the use of and access to these public amenities into their design. f. For single family attached dwelling developments adjacent to public parks or public open space (i.e. school yards, public trails), where the adjacent streetscape will not be negatively impacted (i.e. units with their side or backs to the street), units may be oriented toward the park or open space to allow views from residential units and to promote informal surveillance of the open space. This should not be permitted if the backs or sides of units would face the street. g. Common Open Space Requirements should not be waived for protection of Water Quality Resource Areas or other Natural Areas. However, a reasonable amount of density may be transferred to the buildable portion of the project. <p>***</p>	<p><i>Updated to reflect current situation</i></p>
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Section 7. Volume 2, Policies and Summary, Article 10 Summary of Findings, Policies and Implementation Strategies, Section 10.700 Pleasant Valley Plan District is amended as follows:

Proposed Text Amendment	Commentary
<p>***</p> <p>10.701 Urbanization Strategy and Land Use Planning</p> <p>BACKGROUND</p> <p>***</p>	

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<p><i>Key features of the Concept Plan are:</i></p> <ul style="list-style-type: none"> • A mixed-use town center as the focus of retail, civic and related uses. • A new elementary school and middle school located adjacent to 162nd Avenue. • The location of major roads away from important historic resources and “park blocks” that connect the town center to the historic central section of Foster Road. • A framework for protection, restoration and enhancement of the area’s streams, floodplains, wetlands, riparian areas and major tree groves through the designation of 461 <u>251</u> acres of the valley as “environmentally sensitive and restoration areas” (ESRAs) <u>Natural Resource Overlay</u>. • Designation of a “neighborhood transition design area” adjacent to the ESRA so that neighborhood development is compatible with adjacent green corridors. <p>***</p>	<p><i>This number was for the entire Pleasant Valley planning area, not just that portion in Gresham’s jurisdiction.</i></p>
<p>10.703 Residential Land Use/Neighborhoods</p> <p>BACKGROUND</p> <p>***</p> <p><i>Provide housing choices. A variety of housing choices will be provided, with a focus on home ownership options. Housing options will accommodate a variety of demographic and income needs, including appropriate affordable choices and housing for seniors. The plan will provide for an overall average residential density of 10 dwelling units per net residential acre (i.e., including only residential land), based on a mix of densities. Walkable neighborhoods will form the organizing structure for residential land use. Natural features will help define neighborhood form and character.</i></p> <p>Following an extensive evaluation and refinement process, the Steering Committee, at their final meeting on May 14, 2002, endorsed the Pleasant Valley Concept Plan Map and Implementing Strategies. In summary, the Concept Plan addressed housing and neighborhoods with the following characteristics:</p> <ul style="list-style-type: none"> • Each of the eight Pleasant Valley neighborhoods is intended to include a variety of housing options. • Overall housing density is 10 dwelling units per net residential acre, with 50 percent of the proposed housing as detached and 50 percent attached. • Detached housing choices include small lots (3,000-5,000 square feet), medium lots (5,000-7,000 square feet) and large lots (7,500 square feet and greater). 	

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<p>Locational Attributes. Locational attributes include access to major roads (arterial system), transit service, strong relation to the Environmentally Sensitive and Restoration Areas <u>Natural Resource Overlay</u>, convenient access to the commercial centers and site(s) sizes of 10-50 acres.</p> <p>***</p>	<p><i>Updated to reflect the new overlays</i></p>
<p>10.705 Natural Resources</p> <p>BACKGROUND</p> <p>***</p> <p>Preserve, Enhance, and Restore Natural Resources. <i>The plan will identify, protect, enhance, and restore significant natural resource areas, including stream corridors, forested areas and buttes. These resource areas will provide the basis for identifying buildable and non-buildable areas, and serve as open space amenities for the community. Resource protection will include strategies to protect endangered species, water quality and the aquifer. Resource protection and enhancement will be a shared responsibility of property owners, governments, and developers.</i></p> <p>The work of the Natural Resource/Watersheds work team used this goal as a basis for developing the Environmentally Sensitive/Restoration Areas (<u>later updated to Natural Resource Overlay</u> ESRA). After a thorough inventory of resources in the study area, the work team presented their findings through a series of inventory maps at a Community Forum. Local residents made additions and corrections to the maps, which formed the basis for the ESRA (<u>now NRO</u>) areas. One of the unique aspects of the Concept Plan was the identification of the green infrastructure (ESRA/<u>NRO</u>) prior to the creation of the street network and locating land uses, such as the town center.</p> <p>A tool used for addressing water quality issues, habitat protection issues, and natural hazards mitigation was to divide the Kelley Creek watershed into seven subwatersheds for analysis purposes. Extensive documentation of the scientific basis for resource protection was prepared as part of the subwatershed planning process.</p> <p>Each of the four alternatives created during the 5-day design charrette included the ESRA (<u>now NRO</u>) as part of the base map. As a result, the work team evaluated each alternative using criteria that evaluated the number</p>	<p><i>Updated to reflect the new overlays</i></p> <p><i>Updated to reflect the new overlays</i></p>

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of stream crossings, amount of tree cover, etc. The alternatives that kept major roads and the town center away from the confluence of the creeks in the center of the study area were rated the highest.

Following an extensive evaluation and refinement process, the Steering Committee, at their final meeting on May 14, 2002, endorsed the Pleasant Valley Concept Plan Map and Implementing Strategies. In summary, the Pleasant Valley Concept Plan ESRA is was the green framework for the Pleasant Valley Plan. It constitutes the resource management areas with important ecological functions planned for integration with a new urban community. The long-term goal is to allow for restore restoration and enhancement of sensitive wetlands and stream corridors to more natural vegetation conditions, recognizing that existing homes and other uses will continue in the ESRA (now NRO).

Selected characteristics of the ESRA NRO include:

- Wetlands, upland, and riparian habitats that incorporate 34 habitat types. Wetlands range from open water to forested wetlands. Upland habitat ranges from deciduous and conifer forests to shrubs and habitats of mixed species.
- Habitat migration routes.
- Buffers adjacent to the resources range from 50 to 200 feet, depending on the type of resource.
- The implementation strategies included rough cost estimates, funding strategies, regulatory and incentive options, and restoration priorities.

SUMMARY OF MAJOR ISSUES

State Goal 5 Natural Resources. In order to protect natural resource values, Statewide Planning Goal 5 and its administrative rule require that jurisdictions complete a natural resource inventory, a determination of resource significance, an analysis of the consequences of resource protection, and develop resource protection standards. This work is one of the three central elements in the effort to create an urban community through the integration of land use, transportation, and natural resources.

Updated to reflect the current situation

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The inventory is largely based on information collected during the Concept Planning phase. The purpose of the inventory is to document the quantity and quality of the characteristic vegetation, wildlife habitat, streamside areas, sensitive species, and other natural features in the Pleasant Valley study area.

The inventory is then used to determine which resources are significant. A set of mapping criteria was developed and a computer mapping exercise was used to assist in the process. The following nine different basic functions were used to provide the foundation for the significance determination.

- Water quality
- Channel dynamics and morphology
- Water quantity – stream flow, sources, and storage
- Microclimate
- Fish and aquatic habitat
- Organic inputs
- Riparian and upland wildlife habitat
- Upland sensitive species
- Upland interior habitat

The Goal 5 process then requires an analysis describing the different types of land uses that impact streamside areas, wetlands, and upland forest. Specifically, it requires an analysis of the economic, social, environmental, and energy (ESEE) consequences that could result from a decision to allow, limit, or prohibit certain uses in the significant resource areas (NROESRA).

The final step in a Goal 5 process is the development of a program to implement the outcome of the inventory, significance determination and the ESEE analysis. Programs include both regulatory and non-regulatory elements.

POLICIES

3. Road crossings within the ~~Environmentally Sensitive/Restoration Areas (ESRA)~~ Natural Resource Overlay (NRO) will be designed to provide crossings with the least impact.

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Updated to reflect the new overlays

Updated to reflect the recent Pleasant Valley Transportation System Plan updates

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managing drainage and water quality. The plan will incorporate green street designs, which require greater planter strip widths than outside of the Pleasant Valley and Springwater plan areas. The plan will integrate green infrastructure with land use design and natural resource protection. ~~The plan will incorporate energy-savings measures.~~

As part of the evaluation and concept plan ~~selection~~-update process a hydrodynamic model (~~MIKE 11XP-SWMM~~) was developed, calibrated and run for the Kelley Creek watershed. The purpose of the hydrological modeling was to simulate the impacts that different land use changes and green development practices would have on the water level, flow and extent of flooding through the Kelley Creek system. Different scenarios were developed with variables of the ~~Environmentally Sensitive and Restoration~~Resource Overlay Area (ESRA) (NRO); green development practices such as ~~bioswales~~ raingardens in green streets; ~~landscape planters and ecoroofs~~impervious pavement reductions; and creating a ~~tree canopy throughout the plan area~~localized stormwater treatment ponds.

~~Following an extensive evaluation and refinement process~~Building on the May 14 2002, the Steering Committee, ~~at their final meeting on May 14, 2002,~~ endorsed, ~~the~~ Pleasant Valley Concept Plan Map and Implementing Strategies, ~~in summary,~~ the updated concept plan provides for a “green” stormwater management system intended to capture and filter stormwater close to the source through ~~extensive tree planting~~NRO protection throughout the valley, “green” street designs, ~~swale conveyance and filtration of runoff,~~ and strategically placed stormwater management facilities.

SUMMARY OF MAJOR ISSUES

Kelley Creek Watershed Stormwater Modeling Conclusions:

- A full tree canopy is highly desirable. However, trees may take at least 20 years to grow to maturity and until they are at maturity will not realize the full benefits of stormwater management. Other stormwater management practices are, therefore, necessary.
- Considering the benefits shown in the model of tree canopy on stormwater management, there should be a long-term goal of vigorous tree planting throughout the valley. Additional tree canopy will help to mitigate the potential loss of green development practices due to improper maintenance or inaccuracies in facility sizing or modeling.

Updated to reflect current technology and best practices

Updated to reflect current best practices

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<ul style="list-style-type: none"> • To protect stream habitat, green development practices must be sized larger and located to more adequately <u>to</u> mitigate runoff from larger storms. Facility sizing should be left to the next planning stage when stormwater management plans are written <u>is addressed in the Stormwater Management Manual (SWMM) adopted in 2019.</u> • The use of green development practices may decrease <u>decreases</u> the size of stormwater management facilities needed to be built to prevent nuisance flooding downstream. However, green development practices will not completely manage larger storms and <u>therefore</u> they will be conveyed from green facilities through swales and into regional <u>local stormwater</u> facilities, <u>such as ponds designed and built for the purpose of managing stormwater runoff.</u> • The Environmentally Sensitive and Restoration Areas (ESRAs) <u>Natural Resource Overlay</u> helps to reduce flood peaks for the nuisance, 5-year and 2 ½-year storms <u>events</u>. Initial modeling <u>Modeling</u> shows that the <u>vast majority of the 100-year event</u> footprint stays well within the ESRA <u>NRO</u> with the implication that the <u>ESRA NRO</u> is a flood management tool so that regional <u>local stormwater</u> facilities don't need be sized to manage the 100-year flood, providing a significant cost savings. • Maintenance of green development practices should be addressed as part of the implementation plan for stormwater management. Improper maintenance and enforcement may lead to failure of the stormwater system. • Modeling greatly facilitates and provides information critical to the decision making process. Results tend to be accurate from a relative standpoint when comparing alternative scenarios. However, model representations and results should only be one item among others that influence decisions and project design/implementation. <p>***</p> <p>POLICIES</p> <ol style="list-style-type: none"> 1. Encourage the planting, maintenance and preservation of trees throughout the watershed. 2. Transportation plans will use Green Street designs in the development and design of streets. 3. Community design and infrastructure plans will produce minimal impacts on the environment, including flooding and water quality in Johnson Creek. 4. Infrastructure plans will avoid placement of utilities in the Environmentally Sensitive and Restoration Areas <u>Natural Resource Overlay</u> where practicable. 5. Community design and infrastructure plans will enhance the natural hydrologic system as a fundamental part of managing stormwater and water quality. 	<p><i>Updated to reflect current documents and best practices</i></p> <p><i>Updated to reflect current best practices</i></p> <p><i>Updated to reflect current modeling and best practices</i></p>
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<p>6. Community design and infrastructure plans will incorporate energy-saving measures.</p> <p>7. Community design, infrastructure, and natural resource protection plans will incorporate guidelines for resource management by subwatershed <u>consistently across all watersheds</u>, including stormwater quality and quantity.</p> <p>***</p>	<p><i>Updated to reflect current overlays and best practices</i></p>
<p>10.707 Cultural and Natural History</p> <p>***</p> <p>ACTION MEASURES</p> <ol style="list-style-type: none"> 1. Identify and use historic place names for streets, places and neighborhoods. To the extent practical this should occur during the next implementation plan phase. The names identified in the evaluation report shall be a starting point. The City of Gresham Historic Resources Advisory Committee, the Gresham Historical Society and others should be engaged in determining additional names. 2. Review existing regulations regarding historic landmarks and prepare new ones as needed for Pleasant Valley. Property owners and developers should be engaged in this process before development occurs. The City of Gresham Historic Resources Advisory Committee, the Gresham Historical Society and others should also be engaged. 3. Continue to document the history of the valley and identify historic landmarks. The historic landmarks identified in the evaluation report shall be a starting point. The City of Gresham Historic Resources Advisory Committee, the Gresham Historical Society and others should be engaged in this process. 4. Cultural and natural history will be an element for consideration in future determination of how Foster and Richey Roads function in the Environmentally Sensitive and Restoration Areas <u>Natural Resource Overlay</u>. Historical homes and farm buildings naturally relate to the rural roads on which they front. 5. Integrate a cultural and historical resources plan with parks and trails master plans including a potential historical trail. 	<p><i>Updated to reflect current overlay</i></p>
<p>10.709 Transportation</p>	

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BACKGROUND

Key features of the Transportation element of the Concept Plan are:

- Provide a logical and connected street system that connects directly to community destinations while also avoiding the NROESRA where possible. Plan for a local street system that complements the arterial and collector street system, and meets regional connectivity requirements.

ACTION MEASURES

2. Establish street design standards that respect the characteristics of the surrounding land uses, natural features, and other community amenities. All streets will be designed to support adjacent land uses, accommodate pedestrians and bicyclists and include green streets design elements that help minimize stormwater runoff. Design will be based on the Pleasant Valley Street Designs adopted in the Pleasant Valley Concept Plan Implementation Strategies. In developing street designs utilize Metro publications *Creating Livable Streets*, *Green Streets: Innovative Solutions for Stormwater and Stream Crossings* and *Trees for Green Streets*. The plan district street design standards will provide for:
 - a. Planting and preservation of trees in the street right-of-ways
 - b. Continuous sidewalks along both sides of all arterial, collector, and local streets. Sidewalks should connect to side streets and adjacent sidewalks and buildings. Pervious sidewalk treatments should be considered.
 - c. Landscaped buffer separating travel lanes from sidewalks
 - d. Direct and logical pedestrian crossings at transit stops and marked crossings at major transit stops.
 - e. Short and direct public right-of-way routes to connect residential uses with nearby commercial services, schools, parks and other neighborhood facilities.
 - f. Street design elements that discourage traffic infiltration and excessive speeds on local streets, such as curb extensions, on-street parking, and wider sidewalks and narrowed travel lanes.
 - g. Secure bicycle storage facilities such as bicycle racks and other park and lock accommodations at major destination points including the town center, transit center, recreation areas and office, commercial and employment centers.
 - h. Minimize impervious area and utilize the natural drainage system where practical.

Updated to reflect current overlay

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<p>i. Designing bridges to serve as civic gateways or focal points in the community. Establishing guidelines to help determine most appropriate stream crossing solution for each individual crossing.</p> <p>j. Locating road and multi-use path stream crossing alignments to have the lowest level of impact on a stream or ESRA<u>NRO</u>. Locational considerations shall include crossings perpendicular to the stream and along narrow stream segments. Trail crossings shall consider the needs of equestrians, where appropriate, and pedestrian and bicycle travel.</p> <p>***</p> <p>4. Realign 172nd Avenue as it passes through Kelley Creek NRO<u>ESRA</u> to not follow creek and reduce impact area by keeping it as far west of confluence as practical and minimizing the bridge footprint in the creek and adjacent riparian area.</p> <p>***</p>	<p><i>Updated to reflect current overlays</i></p>
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Section 8. Volume 2, Policies and Summary, Article 10 Summary of Findings, Policies and Implementation Strategies, Section 10.720 Public Facilities (PVPD) is amended as follows:

Proposed Text Amendment	<i>Commentary</i>
<p>***</p> <p>10.723 Stormwater Management System</p> <p>SYSTEM DESCRIPTION/CONDITION ASSESSMENT</p> <p>***</p> <p>Planned Improvements. Urban development has historically had a dramatic adverse impact on watershed health, especially in riparian areas. The recommended stormwater system for Pleasant Valley is intended to minimize this impact and maintain or restore watershed functionality using the goals and recommendations of the Natural Resources/Watersheds Implementation and Green Practices Reports. While urbanization is not anticipated to restore the health of the watershed to pre-development conditions, it may actually improve on current conditions and restore parts of the watershed.</p>	

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In Pleasant Valley, the envisioned stormwater drainage system will serve an important role as the framework for the community’s design. Rather than a conventional approach, which uses storm sewer pipes beneath the street to quickly convey storm runoff to stream channels that are also managed for stormwater conveyance, a more natural system is recommended. In the public right-of-way, adjacent to the area roads, vegetated swales raingardens are proposed to convey treat and detain stormwater. The swales will convey runoff more slowly than a pipe system and provide water quality treatment. These systems cost less more to build than an underground pipe conventional systems, but are more expensive critical to maintain water quality and to diminish peak flows.

The swale-raingarden system will discharge to regional-local stormwater management facilities that serve two functions. First, they raingardens will slow down the stormwater flow and let vegetation in the facility improve water quality by “polishing” the runoff to removing excessive sediment and pollutants. Second, in combination with local stormwater management facilities, they will regulate the rate and volume of stormwater discharge to the natural stream channels in the Environmentally Sensitive Restoration Areas (“ESRA”) Natural Resource Overlay areas to a level that is no greater than the discharge rate and duration of pre-development conditions to the maximum extent practicable.

Because Acquiring siting and acquiring sites for regional stormwater management facilities is a high priority in the early years as development takes hold in Pleasant Valley impractical, and because it is beneficial to treat stormwater closer to where it falls by using local stormwater facilities, those facilities can be developed, in accordance with these principals, as development occurs. A map showing the approximate location of the proposed stormwater system improvements is included in Appendix A. The final location of facilities is subject to the outcome of the stormwater master plan.

Finally, within the NROESRAs, restoration efforts would be encouraged to improve riparian character and function. This would provide multiple benefits, such as improvements in water quality and fish and wildlife habitat, as well as providing greenway belts throughout the urban landscape. The expected Total Maximum Daily Load limitations for temperature in the Johnson Creek basin may enable the use of “water quality

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Updated to reflect new overlays

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credits” in the upper part of the watershed to offset development impacts elsewhere in the watershed, which could provide private financing for environmental restoration in the NROESRAs.

SUMMARY OF FUTURE NEEDS

Stormwater facilities planning ~~needs to be~~ is currently being refined for Pleasant Valley in a master plan update anticipated to be adopted in 2021. That master plan will more precisely ~~identifies~~ identify the system design, facility locations, and cost and schedule. The master plan ~~needs to be~~ will carefully ~~coordinated with~~ integrate the “green street” transportation system improvements. In addition to facility needs and design goals, the plan will also establish a financing framework for stormwater management in Pleasant Valley. ~~The City of Portland will participate in this planning process because it will be implementing parts of the plan.~~ This planning work is a critical path element for PFP implementation.

Coordination is needed between Gresham, Portland, Multnomah County and Clackamas County regarding stormwater system planning and design guidelines for public roads and stormwater conveyance in Areas A, B, and C. A consistent approach regarding stormwater conveyance standards, development setbacks, allowed uses in the ~~ESRAs~~ NRO, and other issues related to stormwater management should be spelled out in an intergovernmental agreements if possible.

Ideally Gresham and Portland ~~need to~~ should develop and adopt uniform stormwater management guidelines for residential, commercial, and industrial development in Pleasant Valley as part of the plan district for the area. Portland and Gresham may both wish to extend the district boundaries to encompass areas that are within the Kelley/Mitchell Creek watershed but outside the Pleasant Valley study area boundary.

If a city-wide SDC is preferred (rather than Pleasant Valley-specific SDC), ~~Portland and~~ Gresham will need to modify their SDC improvement fees for stormwater facilities depending on the marginal cost associated with serving Pleasant Valley. Each jurisdiction also will need to modify their SDC improvement fee project list to make near-term priority improvements eligible for financing with SDC revenue.

If a city-wide stormwater utility is preferred (rather than Pleasant Valley-specific rates), Gresham ~~and Portland~~ will need to modify their stormwater utility system to address the added maintenance cost associated with system improvements in Pleasant Valley. An analysis is needed of impacts on existing utility rates, how to

Updated to reflect current situation

Updated to reflect current new overlays

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<p>phase in rate increases, and how to fairly assess rate adjustments. Both jurisdictions <u>Gresham</u> may wish to consider combining stormwater management fees with a street maintenance fee, if available.</p> <p>Purchase property for regional stormwater management facilities as soon as possible (after completing the Stormwater Master Plan).</p> <p>***</p>	<p>No longer required</p>
<p>10.724 Parks and Recreation System</p> <p>***</p> <p>SUMMARY OF MAJOR ISSUES</p> <p>***</p> <p>Environmentally Sensitive Areas <u>Natural Resource Overlay (NRO)</u>. Caution should be used in locating improved park space or schools next to natural resource areas. Landscaping requirements (fertilizers, etc.) may conflict with natural resources. Field turf and hardscape areas can result in impervious surfaces that may conflict with natural resources. Spreading out parks in neighborhoods away from natural resources can relieve pressures (such as walking the dog) that otherwise might impact natural resources. Because neighborhood parks generally serve different recreational needs than natural areas, the primary consideration for location should be access to the residents it is intended to serve. Often this coincides with the location of schools. Natural areas next to schools can provide important education benefits. Location should ensure that there is a buffer between areas of high activity and natural areas.</p> <p>Open space. The environmentally sensitive <u>Resource areas (RAs)</u> do not necessarily provide recreation functions. In some cases, human access should be very limited or prohibited to protect natural resource values. Environmentally Sensitive/Restoration Areas (ESRA) <u>RAs</u> should be evaluated for their capacity to support passive recreation use in order to determine whether or not additional open space land is needed to meet projected demands. Given the importance of ESRAs and the fact that it will be a visible identifying feature of the new urban center, it makes sense to locate any additional space adjacent to it. It will be important to identify connected and integrated open space systems within the Kelley Creek/Mitchell Creek system.</p> <p>***</p>	<p><i>Updated to reflect new overlays</i></p> <p><i>Updated to reflect new overlays</i></p> <p><i>Mitchell Creek is not in the portion of Pleasant Valley that will be Gresham's jurisdiction.</i></p>

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SUMMARY OF FUTURE CIP NEEDSCAPITAL IMPROVEMENTS

The generalized location of the parks and trails are shown on Figure 1 of the Pleasant Valley Plan District Plan.

The portion is Gresham’s urban service boundary includes::

The Plan Map identifies nine Neighborhood Parks (27.6220 acres), one

- 1 Community Park (29.6025.5 acres)
- 3.4 miles of off-road trails
- Bridges and protected street crossings and
- 441.3 251 acres of ESRA, or Environmentally Sensitive Restoration Resource Areas are planned for Gresham’s Pleasant Valley.

Of the nine Neighborhood Parks, six are proposed to be located in Gresham, one will be situated in Portland and the remaining two will be in Clackamas County. The 29.6-acre Community Park will be sited completely in Gresham. Acreages of the Neighborhood Parks and ESRA parcels cross all areas of governance and have been broken down into the following designations:

Neighborhood Parks and ESRA Parcels Acreage Table

City of Gresham’s Parks and Open Space Standards Table Neighborhood Parks

The Plan District Map illustrates future park properties from A to I and O. Neighborhood parks are intended to serve each residential neighborhood. It is recognized that all acreage, site locations and shapes are considered “floaters” as specific parcels may not be for sale, or purchase costs may prohibit acquisition. The parks master plan, capital improvement plan, and parks system development charge project list should be reviewed annually and updated as needed to ensure that these parks and trail project locations and costs are kept current as properties develop. Sites have been identified as follows:

Park Site A (2.93 acres) North of Sager Road and west of 172nd Avenue—This park site is the most urban of the neighborhood park system, serving both adjacent residential and commercial components. It should also serve as a visual terminus to the north end of the new pedestrian trail connector over Kelly Creek.

The generalized location and type of the parks is shown on the overall plan.

The exact projects have been deleted to allow for better flexibility in locating the parks. As the code does not require the parks be built or land be dedicated for the park with development and the City may have to find alternative land. The Capital Improvement Plan and System Development Charges project lists allow for this. The type of facilities for each park classification are shown in the Parks Master Plan.

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Park Site B (2.87 acres) Nursery Neighborhood between Geise and Richey Roads — Park should be located in the central area of this neighborhood. It is hoped that park edges will connect with two fingers of adjoining ESRA properties.

Park Site C (3.76 acres) An east/west orientation of the park is desired so that it provides a view corridor from the neighborhood. Location as shown also serves as a visual terminus to 182nd Avenue (looking north). This site also provides opportunities for spectacular views “down valley”.

Park Site D (3.19 acres) East of 190th near Butler Road — This location is the eastern most park site. It serves as a pedestrian connector from Butler Road to the East Buttes Loop Trail. The park may be split into two smaller parks, serving north and south neighborhoods.

Park Site E (3.27 acres) South of Cheldelin and East of Foster Road — This site will serve higher residential density neighborhoods. It also is intended as a visual terminus to the south end of 182nd Avenue. This is one of two sites located in Clackamas County.

Park Site F (3.41 acres) West of 190th and north of Cheldelin Road — This park is located between two significant ESRAs in SE Pleasant Valley.

Park Site G (3.39 acres) East of 172nd Avenue and north of Clatsop Street/Cheldelin Road. This park aligns between the ESRA to the east and the Power line Corridor Trail to the west.

Park Site H (1.11 acres) West of Mitchell Creek and adjacent to the planned schools. Located in Portland, this is the smallest park in the inventory. This key site will cross Mitchell Creek and connect with the East Butte Loop Trail.

Park Site I (3.69 acres) North of Sager Road and West of 172nd Avenue — This is the second of two sites located in Clackamas County. Its intent is to connect the two ESRA areas in this SW neighborhood.

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Community Park

~~Park Site O (29.60 acres) The Community Park is centrally located and will provide a wide variety of recreational opportunities to all residents of Pleasant Valley. The park is sited east of the Town Center, framed on either side by overhead transmission lines and underground natural gas distribution lines. The proposed north/south Power Line Trail lies within its boundaries. The northernmost boundary is north of Giese Road, stretching southerly until it meets up with ESRA lands on the northern bank of Kelly Environmental Sensitive Restoration Areas (ESRAs)~~

~~Gresham's Pleasant Valley contains 475.6 251 acres of wetlands, streams and stream corridors. Using City of Gresham standards for calculating Open Space, 135.29 acres from the total amount has been so designated. The balance of the RAs is labeled Natural Resource Areas. The costs for all land acquisition, conservation easements, restoration and maintenance of wetlands, streams, and stream corridors will be substantial. There is no one method that can or should be used for everything. Discussion is ongoing as to which City Departments would have jurisdiction, or would take the lead on this significant issue.~~

Trails

~~The Plan Map identifies 8.19 miles of trails, including 9 pedestrian bridges over Mitchell, Kelly and two additional un-named tributaries. The vast majority of proposed trails fall within the ESRAs, although some crossings are within existing utility corridors while others alignments are on private property. Whenever possible, it is desirable to connect the trails with the parks and open space system. The preparation of a formal park, trails and open space Master Plan for Pleasant Valley will address many of these concerns.~~

FINANCING PLAN

The analysis indicates that forecast SDC receipts would not be sufficient to finance the planned park and trail improvements and open space acquisition in Pleasant Valley. Nor does the analysis include potential restoration costs for ESRAs. There are, however, fairly significant public benefits that come from the restoration of ESRAs. Some public participation in their restoration seems appropriate.***

Updated and moved to CIP list above. Trails were removed from riparian buffers wherever possible with the adoption of Appendix J of the Parks and Recreation, Trails and Natural Areas Master Plan in 2015.

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GOAL, POLICIES & ACTION MEASURES

ACTION MEASURES

1. Amend parks, recreation, open space and trails master plan(s) for Pleasant Valley consistent with the Pleasant Valley Plan District. This includes funding mechanisms and strategies for acquisition, development and operation.
2. Evaluate the natural areas (ESRA) for their capacity to support passive recreation use in order to determine whether or not additional open space land is needed to meet projected demands. The RA lands will not necessarily provide recreation. In some cases, human access should be very limited or prohibited in order to protect natural resource values.
3. Conduct a park and recreation needs assessment to more precisely define parks, open space and trails requirements consistent with the Pleasant Valley Plan District plan.
 - a. The design and size of parks should take into account potentially needed facilities. These facilities can include features such as, but not limited to, basketball courts, sports fields, picnic facilities, community gardens and community center buildings.
 - b. The design and size of open space should take into account the size sufficient to protect resources. A continuous open space network is anticipated for Kelley and Mitchell Creeks. The current city per capita standards for open space acreage is less than areas identified as state Goal 5 natural resources in Pleasant Valley. Open spaces, in addition to natural resources, can include, but are not limited to, trails, trailhead amenities, benches, interpretative signs and native vegetation.
 - c. The design and size of trails should take into account the size sufficient to protect resources and accommodate activities. In addition to the actual trails, features can include, but are not limited to, walk-in trailheads, benches, interpretive signs and native vegetation.

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<p>4. Develop a strategy to establish the identity, design and funding of the community park. Consideration shall be given to future public involvement strategies including a design charrette.</p> <p>5. Support designation of the Pleasant Valley regional trails system in the Metro Greenspaces Master Plan. Identify funds that can be used to study the feasibility of the trails, right-of-way acquisition, design and construction. The following have been nominated for inclusion on the Metro Trails and Greenway map:</p> <p>a. East Buttes Powerline Corridor Trail. This trail runs north / south partially via the BPA/Northwest Natural Gas line easement. It connects to the Springwater Corridor Trail and the proposed Gresham/Fairview Trail and to the Clackamas River Greenway near Damascus.</p> <p>b. East Buttes Loop Trail. The trail runs east / west along both sides of the main stem of Kelley Creek. It runs through the heart of Pleasant Valley and provides connections to the Springwater Corridor Trail; the Gresham Butler Creek Trail and a Metro open space area.</p> <p><u>6. The parks master plan, capital improvement plan, and parks system development charge project list should be reviewed annually and updated as needed to ensure that these parks and trail project locations and costs are kept current as properties develop.</u></p>	<p><i>Updating to reference an annual review of parks projects</i></p>
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Section 9. Volume 2, Policies and Summary, Article 10 Summary of Findings, Policies and Implementation Strategies, Section 10.800 Springwater Plan District is amended as follows:

Proposed Text Amendment	Commentary
<p>***</p> <p>10.803 Sustainability</p> <p>***</p> <p>SUMMARY OF MAJOR ISSUES</p> <p>***</p>	

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<p>Site Development Practices. Green site development practices are implemented through a combination of techniques that minimize the impact of development on the natural areas and surrounding communities. Green site development incorporate the following elements:</p> <p style="padding-left: 40px;"><i>b. Xeriscape Landscaping.</i> Xeriscape landscaping promotes water conservation by minimizing the amount of native vegetation removed, limiting new vegetation to native or drought tolerant vegetation, and limiting irrigation. This approach also supports and encourages protection and restoration of natural areas where development occurs on parcels adjacent to Environmentally Sensitive Resource Areas.</p> <p>***</p>	
<p>10.805 Transportation</p> <p>BACKGROUND ***</p> <p>Key features of the Transportation element of the Plan are:</p> <p>***</p> <ul style="list-style-type: none"> • Provide a logical and connected street system that connects directly to community destinations while also avoiding the ESRA <u>NRO</u> where possible. Mitigate where not possible. Plan for a local street system that complements the arterial and collector street system and meets regional connectivity requirements within the residential and mixed use areas of the plan. <p>***</p>	
<p>10.806 Natural Resources</p> <p>BACKGROUND ***</p> <p><i>The plan will preserve, protect, and enhance natural resources. It will define, protect, restore and enhance significant natural resources, including stream corridors, wetlands, and forested areas. Resource areas will provide the basis for identifying development constraints as well as serving as open space amenities for the Springwater Community. Resource protection and enhancement will be a shared responsibility of property owners, developers and governments.</i></p> <p>The Natural Resource team used this goal as a basis for defining the Environmentally Sensitive Resource Areas (ESRAs) (<u>later updated to Natural Resource Overlay</u> ESRA). After a thorough inventory of resources in the study</p>	

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area, the work team presented their findings through a series of inventory maps at public meetings. Local residents made additions and corrections to the maps. This information, combined with extensive field studies conducted by the project team, formed the basis for assigning significance levels to each resource in the study area. The final ESRA was determined through an Environmental, Social, Energy and Economic (ESEE) study to determine where urban development in resource areas should be allowed, limited, or prohibited.

Selected characteristics of the ESRA/NRO include:

- Wetlands, riparian habitat, and upland habitat offering both opportunities for protection of high value resources, and opportunities for enhancement of degraded resources.
- Habitat migration routes along the waterways and between the buttes.
- Buffers adjacent to the resources of up to 200 feet, depending on the type of resource.
- Implementation strategies including planning-level project cost, funding strategies, regulatory and incentive options, and restoration priorities.

POLICIES

13. Landslide prone with slopes of 25 percent or above shall be protected.

ACTION MEASURES

1. Add the Springwater Community Plan area to the Community Development Hillside ~~Special Purpose District~~ and Geologic Risk Overlay Map.
2. Examine habitat between Botefur Creek & Hogan Creek to identify a potential corridor that may be recommended for preservation for wildlife habitat.
3. Examine habitat between Sunshine Creek & buttes to south of Springwater to identify a potential that may be recommended for preservation for wildlife habitat.
4. Evaluate availability of grant funding to support recommendations in the Springwater restoration program.
5. Continue to evaluate long-term funding opportunities for natural resource preservation, enhancement, and maintenance.
6. Coordinate with stormwater and transportation project implementation to maximize benefits to the natural resources.

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<p>7. Coordinate with Multnomah County for adoption of Goal 5 resource map and local wetland inventory.</p> <p>8. Continue to work with the City of Damascus and other stakeholders to coordinate resource preservation and enhancement efforts.</p> <p>9. Identify funding sources for implementing Natural Resource goals and programs.</p> <p>***</p>	
<p>10.824 Stormwater Management System</p> <p>System Description/Condition Assessment</p> <p>***</p> <p>Planned Improvements. Springwater is a rural area where historical drainage practices have resulted in a significantly altered watershed and have had a dramatic adverse impact on watershed health, especially in riparian areas. The recommended stormwater system for Springwater is intended to minimize the impact of development and maintain or restore watershed functionality using the goals and recommendations described below.</p> <p>Stormwater management in Springwater is based on green practices that include both onsite stormwater management and public infrastructure facilities. Both components use techniques and processes that mimic natural hydrology to the greatest extent practical, reducing impacts of runoff to pre-development conditions, or improving over current conditions.</p> <p><u>In Springwater, the envisioned stormwater drainage system will serve an important role as the framework for the community’s design. In the public right-of-way, adjacent to the area roads, raingardens are proposed to treat and detain stormwater. These systems cost more to build than conventional systems, but are critical to maintain water quality and to diminish peak flows</u> Rather than routing runoff to underground pipes for conveyance, runoff will be conveyed through green street swales and swale culverts, or through drainage channels in areas that do not drain to roadways. Vegetated swales located between the roadway and sidewalks and drainage channels located along environmentally sensitive resource areas (ESRAs) will slow the flow of runoff and also provide some infiltration, reducing the quantity of stormwater that must be managed in regional facilities. Figure 5 shows the proposed location of CIP swales, swale culverts, and drainage channels. These swales and drainage channels will generally have an 8 foot top width, 2 foot bottom width, and 4:1 side slope. In areas where the standard swale geometry does not provide adequate capacity, a 10-foot top width</p>	<p><i>Updated to reflect best management practices</i></p>

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will be provided. Approximately 150,000 lineal feet of swale and drainage channel improvements are recommended.

Twenty-one stream crossings have been identified. These crossings will be a combination of reinforced concrete box culverts, circular culverts, and bridges. All crossings were assumed to provide fish passage. Costs of the culverts or bridges have not been included in the stormwater CIP but will be included in the transportation CIP.

The raingarden system will discharge to local stormwater management facilities that serve two functions. First, the raingardens will slow down the stormwater flow and let vegetation in the facility improve water quality by “polishing” the runoff to removing excessive sediment and pollutants. Second, in combination with local stormwater management facilities, they will regulate the rate and volume of stormwater discharge to the natural stream channels in the Resource Areas RA) to a level that is no greater than the discharge rate of pre-development conditions to the maximum extent practicable.

Because siting and acquiring sites for regional stormwater management facilities is impractical, and because it is beneficial to treat stormwater closer to where it falls by using local stormwater facilities, those facilities can be developed, in accordance with these principals, as development occurs

~~Regional facilities will control the flow of runoff back to the streams in order to regulate the rate and volume of flow entering the stream. In addition, vegetation in the facility will improve water quality by “polishing” the runoff to remove excessive sediment and pollutants⁴. Twenty two new regional stormwater facilities have been identified for the Springwater planning area, as shown in Figure 5. Most (20) of the regional facilities are currently planned to be ponds, and two facilities (located on or adjacent to the mainstem of Johnson Creek) will be dedicated water quality treatment swales. The 22 new facilities includes two facilities in the Brickworks area in the existing City limits, one facility at the base of the Persimmon Country Club, and 19 facilities within the area added as part of the 2002 Urban Growth Boundary expansion. All of the proposed facilities are located in Multnomah County. The facilities range in size from 4 acre feet to 22 acre feet, providing volume for flood control, channel stability enhancement, and water quality enhancement.~~

Updated to reflect best management practices

Removing references to impractical and outdated practices.

⁴ Pleasant Valley Implementation Plan Report, December 2003.

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Siting for the stormwater facilities is an important consideration; by optimizing the location of facilities, the City's investment can be used to maximize public benefit. All of the facilities are located in proposed ESRAs, and acquisition of the property for these facilities will provide the additional benefit of promoting natural resource enhancement or restoration. For example, the ESRA in the vicinity of the Highway #1 regional facility and the drainage channel immediately upstream along the North Fork Johnson Creek has been identified for riparian rehabilitation, and the Highway #2 pond could be developed as part of the Johnson Creek/ Highway 26 wetland complex and floodplain reconnection project identified in the Natural Resource Management Plan. As specific stormwater projects are designed and implemented, the City should refine the stormwater conveyance, detention, and treatment facilities to maximize the opportunity to acquire ESRAs through the stormwater management program and to support implementation of the Natural Resource Management Plan. One of the facilities is located adjacent to a proposed Community Park location north of the Village Center, and could be used to promote public education regarding stormwater management and watershed protection issues. Two of the facilities (Springwater Trail #2 and #3) are located adjacent to the Village Center Loop Trail. Land acquisition costs for these facilities could be offset by Parks department purchase of the ESRA adjoining the trail.

With proper maintenance, the drainage channels raingardens will provide water quality treatment prior to discharge of stormwater to the regional local stormwater facilities. However, if maintenance proves to be difficult due to the location of the drainage channels, appropriate treatment will be provided in the regional local stormwater regional facilities. This allows for a wide variety of vegetation in the drainage channels raingardens, to ease the City's ability to maintain the facilities.

Costs associated with the public stormwater infrastructure recommended in Springwater are shown in Tables 6 and 7 below. Costs are based on the annexation subareas described in the Summary Report. These costs were developed using the same unit cost assumptions as used in the Pleasant Valley Stormwater Master Plan, and are based on an ENR 20 City Construction Cost Index (CCI) of 7297. Land acquisition costs are included for the regional detention facilities, and vary depending on whether or not the facility is located in an ESRA. Costs

Removing references to impractical and outdated practices.

Updated to reflect best practices

Removing references to impractical and outdated practices.

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~~associated with stream crossings (culverts and bridges shown on Figure 5) are included in transportation CIP costs⁵. The total cost of recommend stormwater improvements in Springwater is \$27.7 million.~~

~~***~~

Summary of Future Needs

- ~~• Coordination is needed between Gresham and the new City of Damascus regarding stormwater system planning and design guidelines for the portion of the study area in Damascus (south of Rugg/Stone roads) south of Multnomah County. A consistent approach regarding stormwater conveyance standards, development setbacks, allowed uses in ESRAs, and other issues related to stormwater management should be identified in an intergovernmental agreement.~~
- Modification of the SDC improvement fee may be necessary to fund required improvements in Springwater.
- ~~• Purchase of properties required for regional stormwater management facilities should transpire as soon as the Master Plan is completed, adequate funding is secured, and successful acquisition negotiations completed.~~
- The City of Gresham will not be responsible for NPDES and TMDL compliance for Springwater until areas are annexed to the City. Prior to annexation, regulatory permitting requirements ~~need to be addressed~~ will be the responsibility of Multnomah County.

~~***~~

ACTION MEASURES

1. Implement an SDC policy to provide adequate funding for stormwater facilities in Springwater.
2. Review stormwater utility rates and modify as appropriate to support maintenance of facilities in Springwater.
3. Coordinate with the Parks Division to ensure that development of the Village Center Loop trail is adequately protective of natural resources.

Updated to remove reference to Damascus

Updated to reflect best practices

<p>4. Look for opportunities to enhance natural resource areas through the construction and maintenance of stormwater facilities.</p> <p>5. Update the City’s onsite stormwater management program to address land use types in Springwater.</p> <p>6. Coordinate with the Parks Division to investigate the option of combining drainage channels and multi-use trails if the Employee Loop trail is located along stream corridors.</p>	<p><i>Updated to remove outdated practices.</i></p>
<p>10.825 Parks, Open Space and Trails System ***</p> <p>Open Space ***</p> <p>Plan Recommendations</p> <p>There will be 121.90 – 148.90 acres of Parks funded open space available for purchase based on the LOS recommendations discussed earlier in this section. While this does not limit the total amount of open space that could be acquired in the district, it does give a reasonable goal to be achieved through various funding strategies. Some of this open space will have to be used for the creation of trail corridors. The natural resource assessment has also identified 383<u>447</u> acres of Environmental Resource Area and additional wildlife corridors and natural areas. Realistically, not all of this land will be able to be acquired. The following guidelines have been developed to determine which areas have the highest priority for acquisition when funds become available:</p> <ol style="list-style-type: none"> 1. Acquire land that contributes to the recreational goals of the district. 2. Acquire land that has the highest natural resource significance that is outside of regulation, including areas with high restoration potential and proposed habitat connections. 3. Acquire land that has the highest natural resource significance that is inside of regulation, including creek corridors, wetlands, upland forests and buttes. <p>***</p> <p><u>Trails</u></p> <p><u>The trails in Springwater were incorporated into Appendix J of the Parks and Recreation, Trails and Natural Areas Master Plan in 2015.</u></p>	<p><i>Trails were refined and realigned with the adoption of Appendix J of the Parks and</i></p>

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Employee Loop Trail

Two options are under consideration for the trail system east of US. 26. For one the trail system would exclusively follow the road network, the other would abut the ESRA areas parallel to the stream corridors along the north fork and main stem of Johnson Creek and along the road network as necessary for connectivity. The first graphic below illustrates the conceptual implementation of the trail in relationship to the road and swale in the road network option. The swale corridor will be increased by 4 feet to allow for a more informal planting palette of native species, distinguishing the street edge as a special corridor. The trail itself will be a 12-foot wide multi-use corridor adjacent to the swale and property line. Property owners along the corridor should be encouraged to enhance the trail with native plantings in the setback area adjacent to the trail. In areas with few driveways, the on-street bicycle network can be consolidated into the multi-use trail to reduce the amount of R.O.W. needed.

The following two graphics both illustrate the trail cross section in the second optional alignment adjacent to Johnson Creek or the North Fork of Johnson Creek. The first section illustrates a stormwater swale and landscaped area between private development and the proposed trail location. The second section shows the trail immediately adjacent to private development with the stormwater swale adjacent to the stream and potential stream buffers. The first section allows for easier stormwater conveyance to the swales, while the second option could allow the swale to function as a buffer between the trail and the adjacent ESRA. It is possible that the stormwater conveyance/treatment channel could be constructed under the trail in a form of subgrade filtration facility, however for planning purposes the swale and trail remain separate in both options shown below.

Village Center Loop Trail

To the west of US. 26 the trail system will follow creek corridors to create a roughly 1 mile trail loop. The following graphic illustrates the trail between a protected creek corridor and the street ROW.

As conceived, the Village Center Loop Trail and the vehicular road network will be an integrated plan with a single-loaded road fronting most of the loop trail as shown in the Conceptual Trail Section Adjacent to ROW below. The trail corridor in both sections is a linear 25-foot corridor in which a 12-foot wide multi-use trail will

Recreation, Trails and Natural Areas Master Plan in 2015.

<p>meander though. The width of the corridor may have to be increased in special conditions to maintain a 5% longitudinal slope along the trail. At special points along the trail an overlook can be provided to allow better views into the protected corridor. Creation of the overlook should create the least impact possible.</p> <p>Integrating trails with environmentally sensitive resource areas requires striking a balance between public recreational access and preserving the integrity of the resource. When implementing the trails, designers should reference the Springwater Natural Resources Plan and the Metro Green Trails Handbook for characteristics of protected areas to be considered during trail design.</p> <p>***</p>	
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Section 10. Volume 2, Policies and Summary, Article 10 Summary of Findings, Policies and Implementation Strategies, Section 10.900 Kelley Creek Headwaters Urbanization Plan is amended as follows:

Proposed Text Amendment	Commentary
<p>***</p> <p>KELLEY CREEK HEADWATERS GOAL, POLICIES AND ACTION MEASURES</p> <p>***</p> <p>ACTION MEASURES</p> <p>1. Upon annexation, properties will be given the following land use designations, as applicable, and as shown on the Urban Growth Diagram:</p> <ul style="list-style-type: none"> a. Low Density Residential (LDR-7); b. Hillside Physical Constraint Overlay to protect slopes of 15% and greater <u>and Geologic Risk Overlay on landslide prone area;</u> c. <u>Natural Resource Overlay along streams, riparian areas, wetlands and publicly owned upland habitat</u> Habitat Conservation Area (HCA) Overlay to protect Metro Class 1 and 2 riparian areas along intermittent and perennial streams and publicly owned Class A and B upland wildlife habitat areas; and d. Open Space Overlay for the Metro owned parcels that are dedicated for open space. <p>***</p>	<p><i>Updated to reflect new overlays</i></p>

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Section 11. Volume 2, Policies and Summary, Article 10, Appendices is amended as follows:

Proposed Text Amendment	Commentary
<p style="text-align: center;">APPENDIX A</p> <p style="text-align: center;">FUTURE LAND USE IMPLICATIONS</p> <p style="text-align: center;"><u>SPECIAL PURPOSE DISTRICTS</u></p> <p>These are overlay district designations shown on the Special Purpose District Map. Uses permitted in areas with these designations are generally as permitted in the districts, which are shown on the Community Development Plan Map, subject to special development standards. All of the special purpose districts are related directly to development constraints or to the presence of significant natural resource or open space values. Development proposals within these special purpose districts must include data for determining the actual portions of a development site which are within one of the districts and therefore subject to special development standards.</p> <p>a. Flood Plain <u>Floodplain Physical Constraint District</u> - Development within the 100-year floodplain, as determined by the Federal Emergency Management Agency (FEMA) is restricted where documented natural resource or open space values are also present. In other flood plain areas, development may be permitted subject to design standards intended to minimize potential flood damage, and based on findings that the capacity of the floodplain would not be adversely affected. In low density residential districts, a density transfer credit of two dwelling units for each acre within the floodplain is available.</p> <p>b. Hillside and Geologic Risk Overlay Physical Constraint District: 15% - 35% Slope - This special purpose district is found entirely <u>south of Stark Street and requires geotechnical review of sites for safety and limits overall ground disturbance during development.</u> within low density residential land use districts. Special development standards are applied, and detailed reports concerning soils and engineering techniques are required. Minimum lot sizes range from 14,000 sq. ft. to 29,000 sq. ft., depending on the degree of slope. Clear cutting of timber within this district is prohibited.</p> <p>c. Hillside and Geologic Risk Overlay Physical Constraint District: 35%+ Slopes <u>Highly Sloped Subarea</u> - This district occurs entirely within low density residential land use districts <u>subarea of the Hillside and Geologic Risk Overlay covers areas of 35% slope of greater.</u> Property which is entirely within this district</p>	<p><i>Updated to reflect overlay name</i></p> <p><i>Updated to reflect new overlay</i></p> <p><i>Updated to reflect new overlay</i></p>

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<p>may be improved to the extent of one dwelling unit for each existing lot of record. A density transfer credit of one dwelling unit per acre within this special purpose district is established. Clear-cutting of timber within this district is prohibited.</p> <p>d. <u>Natural Resource Overlay District</u> - This district encompasses sites of high natural resource value <u>along streams, riparian areas, wetlands and publicly owned upland habitat</u> as identified in the Inventory of Significant Natural Resources and Open Spaces. Development within this district is generally limited to uses for which there is a documented public need and where alternative sites are not available. A density transfer credit is available for low density and moderate density residential sites lying partially within this district.</p> <p>e. <u>Open Space District</u> - This district encompasses sites identified as having significance for open space characteristics, as identified in the Inventory of Natural Resources and Open Spaces. Public and private open space areas with this special purpose designation include parks, schools, golf courses, and greenways. Development within this district is limited to community service developments serving a public need and various recreational uses. A density transfer credit is available for low density and moderate density residential sites lying partially within this district.</p> <p>f. <u>Historic Landmark District</u> - This special purpose district designation is applied to historic landmark sites which have been identified in the inventory of Historic and Cultural Landmarks. It also applies to property lying north of Interstate 84, where discovery of archaeological resources during the course of development is likely. Some landmarks with this designation require prior review and approval of proposed exterior alterations, and all landmark structures are subject to standards which could delay issuance of demolition permits.</p>	<p><i>Updated to reflect new overlay</i></p>
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APPENDIX D

The Community Development Special Purpose District Maps are reproduced as separate documents. Special Purpose District Maps identify:

Land which lies within the

- Floodplain Overlay District*;
- Hillside Physical Constraint District HGRO;
- Open Space Districts;
- Historical and Cultural Landmark sites;
- ~~-- Water Quality Resource Area (WQRA);~~
- ~~----- Habitat Conservation Area (HCA) Habitat Classification Map; and~~
- ~~----- Habitat Conservation Area (HC) Habitat Values Map NRO~~

Specific regulations apply to land or sites that have a Special Purpose District Map designation.

~~*The Floodplain Overlay District shall be those areas designated as “special flood hazard areas” on the FEMA “Flood Insurance Rate Maps, Multnomah County, Oregon and Incorporated Areas, December 18, 2009” (FEMA Maps) and said FEMA Maps are adopted by reference and declared to be a part of this Appendix as the Community Development Special Purpose Districts Maps showing the Floodplain Overlay District.~~

Updated to reflect new overlay

APPENDIX I

~~SPRINGWATER – SLOPES OVER 15%~~

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