

10.800 Springwater Plan District

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10.800 SPRINGWATER PLAN DISTRICT

Statewide Planning Goal 14: Urbanization

“To provide for orderly and efficient transition from rural to urban land use.”

Introduction

In 2003, the City of Gresham in partnership with Multnomah County and in cooperation with Metro, Clackamas County and others, embarked in planning for a new urban area – Springwater. Springwater was added to the region’s urban growth boundary (UGB) in December 2002 to accommodate forecasted industrial and employment needs for the region. It is 1,405 acres located in Multnomah County south (to the Multnomah/Clackamas County border) and east (as far as 282nd Avenue) of the current Gresham city limits.

Rural residential are the most widespread existing uses in Springwater with a population of 833 (2000 census). Other uses include a portion of a golf course (Persimmons) and few small commercial buildings. The two miles of the main stem of Johnson Creek flows through the site along with an extensive system of tributaries and wetlands. The existing transportation system was designed primarily to serve the rural residential uses and farm to market route for past agricultural uses. The site is served by Highway 26 traveling north to south. There are no public water, wastewater, or stormwater facilities. There are no public parks. The Springwater Corridor trail, a multi-use regional facility, generally parallels Johnson Creek through the site.

New urban areas must be brought into a City's comprehensive plan prior to urbanization with the intent to promote integration of the new land into existing communities. Planning efforts began with the establishment of the Springwater Community Working Group (CWG) which held its first meeting January 2004.

In May 2004, the CWG endorsed a set of goals and policies to guide development of the Springwater Community Plan and subsequent implementation actions. This established essential goals that the Springwater Community would:

- Be economically and environmentally sustainable
- Provide industrial land to generate a variety of family-wage job opportunities
- Foster sustainability through good environmental stewardship
- Have a high quality of life
- Have a well planned transportation system
- Preserve, protect and enhance natural resources

In October 2004, the CWG endorsed the Springwater Concept Plan Draft Map. The central theme of the Plan is to create an urban community for family-wage jobs through the integration of land use, transportation, and natural resource elements and by utilizing sustainable practices. The Council endorsed the Concept Draft Map in November 2004. Subsequently implement plans and ordinances based on the Concept Plan Draft Map were developed as the Springwater Community Plan. In April 2005 the CWG endorsed the Springwater Community Plan.

An extensive planning process has resulted in the Springwater Plan District. The Springwater Plan District will fulfill the desire that resulted from the planning process to create a quality and sustainable industrial and employment environment, with a sense of place that is unique to Springwater. The Plan District will implement this through its large industrial and office employment districts, its mixed use Village Center and surrounding townhouse district, single family and estate housing neighborhoods; transportation alternatives including trails and transit, improvements to US 26, pedestrian friendly urban design and the integration of the natural environment into the design of the community. Critical to the sense of place in Springwater is Johnson Creek and other natural resources including an extensive network of streams and wetlands. The Plan District, with a focus on sustainability and jobs, will allow it to develop in such a way that minimizes impact on these natural features, while allowing these features to enhance the built environment.

What follows are goals, policies and action measures for each of the major elements that make up the Springwater Plan District. Endorsed by the Community Working Group and refined during the development of ordinances, these statements focus on the key concepts and policy directions for subsequent regulations and implementation efforts to realize the Plan District to provide for an orderly transition of Springwater from rural to urban uses.

10.801 CREATE A COMMUNITY

Background

The Metro Council brought Springwater into the Urban Growth Boundary (UGB) in December 2002. When land is brought into the UGB, Title 11 of the Metro *Urban Growth Management Functional Plan* requires that the added territory be brought into a city's comprehensive plan prior to urbanization with the intent to promote the integration of the new land into existing communities.

Title 11 requires a series of comprehensive plan amendments including maps that address provisions for annexation; housing, commercial, and industrial development; transportation; natural resource protection and enhancement; public facilities and services including parks and open spaces; and schools.

Early in the Springwater Community Plan development, a Community Working Group (CWG) was convened to provide input through the planning effort. Together, the CWG and the project team developed a set of goals and policies that were ultimately adopted by the CWG. The purpose of the goals and policies was to identify the City of Gresham's intent to accomplish certain results through the Springwater Community Plan. The following goal was adopted for creating a community:

The Springwater Community shall be an economically and environmentally sustainable community. The primary focus of the plan will be on providing a high number of industrial and industry-related jobs that enhance the economic viability of Gresham, the greater East County region and its citizens. Industrial and employment lands will be complemented with a village center and housing and will be carefully integrated with the upper Johnson Creek system. Sustainable green building and development practices will enhance the community's unique character, while supporting the protection and restoration of the area's natural resources.

In the scenario evaluation process, this goal was used as a way to provide a comprehensive evaluation of the number and type of jobs provided by each scenario, the amount of land used for various employment types, the number of households provided, the impact of Springwater's development on the local and city-wide jobs to housing balance, the ability to logically and cost-effectively provide public services to the community, and the ability to integrate sustainable development features such as low impact development practices.

Summary of Major Issues

The following are some of the major issues that were considered in creating a balanced community for Springwater:

- **Creating a Village Center in an accessible, aesthetically-pleasing location.** The Village Center is located at one of the premier view points in Springwater. The Village Center will have a commercial and mixed-use core, with two sets of park blocks intersecting in a public plaza area. The Village Center will be accessible to nearby residential neighborhoods and to the industrial

and employment areas through both improved transportation corridors and new pedestrian/bicycle trail loops.

- **Considering total development costs when developing annexation strategies.** Since Springwater does not currently have urban services, the cost of initial development in the planning area is strongly linked to the proximity to existing public services. The annexation strategy for Springwater considers not only market drivers and industrial land needs, but the infrastructure cost that must be borne by either the city or the developer.
- **Offering flexibility in development opportunities.** To maximize the attractiveness of Springwater to potential developers, there needs to be a range of opportunities available for industrial development. The Springwater Plan locates various industrial development types to best match the local topograph and transportation access, but provides flexibility to accommodate a wide range of potential employers who can bring high-value jobs to the region.
- **Providing a variety of housing options.** With housing options ranging from large lot “estate” housing to high-density, mixed-use areas, Springwater will provide housing in close proximity to industrial areas for a range of employees.
- **Protecting natural resources as an amenity to the region.** There are many high value natural resources in Springwater that should be protected or enhanced to protect the riparian and upland species in the region and increase the attractiveness of Springwater to developers and residents. This will be achieved through a natural resource management plan that outlines priorities for protection and enhancement activities, and a trail plan that provides access to the riparian areas while minimizing the impact to the natural resources.
- **Providing adequate school facilities.** The Gresham/Barlow School District identified the need for two additional schools in the Springwater area. Approximately 25 acres are needed to site one elementary and one middle school. Although a specific site was not selected, the preference would be to locate the school within walking distance of the Village Center and adjacent residential areas.

Health and the Built Environment

In 2011, the City Council Work Plan included a project to examine how city goals and policies related to the built environment affect health, especially related to obesity. The built environment includes sidewalks, bike lanes, parks, land uses and schools, and plays a role in people’s health by providing access to food options and opportunities for physical activity as part of normal routine. Opportunities to walk, bike and use transit promote active living and a healthier lifestyle. A well-designed and planned variety of uses – such as grocery stores, schools, parks, and employment centers – in close proximity to where people live increases the opportunity for active living. Providing these opportunities, ensuring they are part of a complete network, and ensuring they are designed to promote pleasant and safe experiences increases the likelihood that people will use these modes of travel and increase their physical activity.

GOALS

- 1. The Springwater Community shall be an economically and environmentally sustainable community.*
- 2. Springwater will provide a high number of family-wage jobs that enhance the economic viability of Gresham, the greater East County region and its citizens.*
- 3. Industrial and employment lands will be complemented with a village center and housing, and will be carefully integrated with the Johnson Creek system.*
- 4. The Springwater Community Plan shall result in a strong rural/urban edge.*

Policies

1. The Springwater Community Plan will serve as the basis for the City's comprehensive plan amendments and implementing measures that will guide future urbanization.
2. The Springwater Community Plan will carefully consider Springwater's relationship to adjoining communities and especially its role for economic development as annexations and extensions of public facilities occur.
3. The Springwater Community Plan will provide for full public services including transportation, surface water management, water, sewer, fire and police services, schools, recreation and parks facilities, and connections to open spaces.
4. Urbanization shall be guided by an urban services and financial plan that will ensure that annexation, service provision and development occur in a logical, efficient, and cost-effective manner; that major public facilities are provided at the time they are needed; and that economic development is maximized.
5. Sustainable development will be promoted through a combination of incentives, regulations, and recruitment.
6. The Plan shall create a permanent hard-line UGB edge west of the Orient Rural Center/282nd Avenue.
7. The Plan must comply with State, Regional and Local goals and requirements.
8. The Plan must comply with the Intergovernmental Agreement between the City of Gresham and Multnomah County.

Action Measures

1. Update the City of Gresham's Sewer, Water, and Stormwater Master Plans to reflect the infrastructure needs associated with urbanization in Springwater

2. Implement recommendations of the Water and Wastewater SDC study being conducted concurrently with the completion of this Plan. Update the SDC improvement project list to include the relevant near-term projects listed in the CIP section of this plan.
3. Establish equitable funding mechanisms to implement the recommended CIP for the stormwater management system, and provide adequate funding for stormwater management facility maintenance.
4. Continue discussions with Clackamas County and the City of Damascus regarding service provision in the Sunshine Valley area of Damascus, and negotiate service agreements as appropriate. Regardless of the solution, the agreement needs to comply with provisions of ORS 195 that relate to urban service providers.
5. Establish a Plan District. A Plan District designation provides a means to create unique zoning districts and development regulations that address the specific opportunities and problems identified in the Springwater Community Plan.

10.802 ECONOMIC DEVELOPMENT

Background

Bringing industrial development and family-wage jobs to east Multnomah County was one of the primary drivers for bringing the Springwater area into the UGB. Gresham offers several advantages as an employment center, including a skilled manufacturing workforce, close proximity to the Portland International Airport and regional rail hubs, a respected community college system, and a strong economic development program backed by committed leadership. The Springwater area has scenic views and access to high-end recreational amenities such as the Springwater Corridor Trail, Mt. Hood, and the Columbia River Gorge.

An economic and industrial employment site study, a Village Center study, and a residential housing study were completed to help inform the land use and economic planning for Springwater. They have informed the planning process and helped shape the scenarios and the concept and the final Plan.

The CWG and planning team developed the following Plan goal related to economic development:

The Springwater Community shall provide industrial land that will generate a variety of family-wage job opportunities. Job creation is aimed at correcting the imbalance between the number of households and the number of jobs in the East Metro region and increasing the City's economic strength. The plan will actively encourage businesses with an interest in sustainability and protecting the community's rich natural resources. Springwater will include a village center that can serve residents, employees, and businesses.

Summary of Major Issues

Industrial Development – Current and Projected Employment Trends

While recent employment growth trends in the region have reflected the recession, economic indicators show that the Portland area is in a good position relative to other urban areas to take advantage of industrial growth as the economy recovers. Furthermore, based on its 2025 forecast, Metro clearly sees the East Multnomah County area emerging as more of a job center than it has been in the past, with the area forecast to gain more than 20,000 jobs in the 2000- 2010 period. This is more than one-fifth of all new jobs in Multnomah County and 8 to 9 percent of all new jobs metro wide during the decade. Another 30,000 jobs are anticipated for East Multnomah County over the following 15 years, from 2010 to 2025.

However, Metro’s forecast suggests that traditional manufacturing will not be a significant factor in the region’s job growth. East Multnomah County currently has less than 5 percent of the metro wide industrial employment, and this share is only projected to rise modestly over the next 20 years. As a percent of total jobs added, industrial employment falls from 1 in every 3 jobs added in the 2000-2005 period (32.3 percent) to roughly 1 in 7 by 2020-2025 (13.7 percent).

In addition to global trends affecting manufacturing expansion in general, one reason for the area’s relative lag in anticipated industrial job growth may be its occupational structure. Although Gresham does have a skilled blue-collar labor force, these existing skill sets may not be compatible with the new technology job growth (such as those in advanced processing, and computer and design, for instance) that the metro area – and Gresham – hopes to attract in the coming years.

Telecommunications

The telecommunications component of the North/South Corridor Plan identified several elements that may be useful for the purposes of the Springwater Community Plan. First, the one corridor without any substantial high capacity (fiber) telecommunications services is Hogan Road - 242nd Avenue. This is also the one corridor that extends south into the new communities of Springwater and Damascus, and, therefore, has the highest potential for new additional services. The land uses adjacent to the 242nd Avenue corridor could benefit from this in terms of the timing of new improvements, and the likelihood that high-quality telecommunications services would come through this route. Also, the study recommends that all arterial and highway improvement projects include, at a minimum, a conduit to carry future telecommunications facilities to be installed by the private service providers. This would significantly simplify future telecommunication system expansion.

Target Industries

The team used a combination of quantitative and qualitative methods to identify appropriate industrial targets for Springwater. The target industry list is based on consideration of:

- Existing regional industries and their support services as revealed by an analysis of historical and projected employment patterns in the region and interviews with local economic development and industry professionals
- National growth trends and current market conditions
- A review of published reports and industry cluster studies completed by other researchers and economic development organizations for the region and the state
- The limitations and advantages presented by the Springwater site
- The experience of the project team

The target industries were selected based on existing industry strength in Multnomah County and the Metro region, local industry growth trends higher than those seen nationally, potential to leverage existing research initiatives in the region, ability of the industry to bring high-wage occupations, and the interest of state and local officials in targeting the industry.

Based on this analysis, the target industry list in Table 4 was prepared. Each of these industry targets is profiled in detail in a Target Industry Matrix included in the Reference Documents. For purposes of this table, “Short-term” timeframe refers to 1 to 3 years, “Mid-term 3 to 5 years, and “Long-term greater than 5 years.

Target	Appropriate for Springwater?	Timeframe
Advanced Materials	Yes	Short-term
Medical Devices	Yes	Mid-term
Specialized Software Applications	Yes	Short-term
Forestry & Agricultural Biotechnology	Yes	Mid-term
Nanotechnology	Yes	Long-term
Recreational Equipment/Recreation Technology	Yes	Short-term
Headquarters	Yes	Short-term
Professional Services	Yes	Short-term
Specialty Food Processing	Possible	Short-term
Transportation Equipment/Technology	Possible	Short-term
Logistics	Not Likely	Short-term
Renewable Energy Technology	Yes	Mid-term

Core industries (those companies already established in the region) represent the first tier of economic development opportunity. However, the ability to retain “traditional manufacturing,” even if successfully lured to an area, is increasingly unlikely. With increasingly advanced fabrication requirements, manufacturing should be seen in a new light. Industries were once thought of as the

working of raw material, but are now a matter of design, process control, and assembly. Therefore, identifying companies employing specialized engineering and advanced manufacturing processes should be part of a successful recruitment strategy for Springwater. Within this broad concept, a few specific industries are worthy of consideration, including medical devices, advanced materials, recreational technology, and specialized software applications.

An additional target, corporate headquarters, is also recommended for the study area. There are several obvious benefits from professional service employment, especially when connected with a corporate center. These include environmental friendliness, highly educated workers, and the prestige factor associated with a corporate “brand.” Add to these the potential cluster effect of additional professional activity, such as the need for ancillary services in legal, marketing and accounting activity and the argument becomes stronger.

Portions of the Springwater area are in many ways extraordinarily well suited for a corporate center. The quality golf course, the beauty of the setting, and the availability of housing all come into play. In addition, corporate center recruitment in other parts of the country has resulted in the ability to attract manufacturing, distribution, and commercial development in near proximity. Recruiting a corporate headquarters may prove to be the signature project by which the Springwater study area can become known throughout the State.

Village Center

Workers and residents of the Springwater community will require supporting commercial services. The development of a Village Center is one means for accomplishing this goal. Two important assumptions guided planning for the Village Center:

- The design of the Village Center should meet the needs of future area industries, businesses and residents, as well as nearby existing urban and rural residents. It should not compete directly with existing retail centers in the Gresham area, such as Historic Downtown, the Rockwood Town Center and planned new areas such as the Pleasant Valley Town Center.
- The Village Center should be a walkable, mixed-use district, including medium-density housing, retail and commercial areas.

An assessment was made of the current retail environment in Gresham and the broader region, and of national data on shopping center characteristics to develop an understanding of uses typically found in neighborhood-serving retail areas. There was an evaluation of whether projected population growth in east Multnomah County and expected increases in retail spending would be sufficient to support a Village Center.

The market assessment indicates sufficient demand in east Multnomah County to support the retail portion of the proposed Village Center. The analysis of market demand, coupled with the City’s vision for the area, and Metro’s regulations governing neighborhood-serving retail developments, suggests that an incremental, long-term build-out of the Village Center may be the best strategy for serving the needs of future area industries, businesses, and residents, as well as nearby existing urban and rural

residents. The use of an incremental build-out plan would allow specific phases that could be triggered by certain population and employment thresholds.

Residential

Springwater was envisioned as a community in which people could live, work, and play. Accomplishing this vision requires some level of housing. As part of the planning process the characteristics of housing needed for the Springwater community and crafting an overall strategy for housing within the area were assessed.

Based on the average number of jobs per household in the region, it would take more than 10,000 households to provide the targeted 15,000 employees in Springwater. While some of these jobs could be filled by current residents of Gresham and Springwater or residents of nearby communities such as Pleasant Valley, it is unlikely that all of them would be. Furthermore, one of the key planning requirements was that the commercial and retail services in Springwater would not compete with adjacent centers. For Springwater's commercial and retail services to be self-supporting, a minimum population of approximately 3,000 people is required. While some of the support for the Village Center may come from outside Springwater, it is difficult to estimate the extent to which existing residents would help support the Village Center. Both of these issues point to the need, and capability, of Springwater to support a certain level of housing.

Housing demand within Springwater is likely to be driven to some extent by the industry targets chosen and the City's success in attracting specific companies to the area. However, given the City's goals and the characteristics of the property, the team views some executive housing as a logical strategy for Springwater. The topography of the site, particularly the buttes on the western edge, and the abundant natural features make it an appealing site for high-end residential development. Existing amenities, such as the Persimmon Golf Course and access to Mt. Hood, make the area attractive to outdoor enthusiasts. With the right mix of uses and scale, the Village Center development could be an important element in creating the "complete environment" for corporate executives and upper-level management.

GOALS

- 1. The Springwater Community will provide industrial land that will generate a variety of family-wage job opportunities.***
- 2. The Plan will actively encourage businesses with an interest in sustainability and protecting the community's rich natural resources.***
- 3. Springwater will include a village center that can serve residents, employees, and businesses.***

Policies

- 1. Maximize the land area and accessibility for industrial and industry-related jobs.**

2. Develop a feasible recruitment and marketing plan for short, medium and long-term phasing.
3. Ensure that the site has adequate communication technologies, such as broadband Internet access.
4. Be forward thinking in identifying Springwater industrial job opportunities in anticipating viable opportunities in the short, medium and long-term.
5. Define industrial jobs to include a variety of industrial sectors.
6. Provide for a range of job opportunities, catering to various skill sets and building on the skills of workers in the East Metro region.
7. Consider the relationship of industrial opportunities in Springwater to other employment opportunities including the Oregon Science and Technology Partnership (OSTP), Rockwood Urban Renewal and potential new industrial areas to the south in Clackamas County (Springwater/Damascus) and other new planning areas such as Pleasant Valley.
8. Foster industrial opportunities by enhancing the quality of the built environment.
9. Create a high-quality village center as well as high-quality neighborhoods with a mix of housing options to help foster industrial opportunities.
10. Recruit businesses with a sustainable (“green”) philosophy.
11. Provide many diverse opportunities for family-wage jobs.
12. Work to correct the imbalance of jobs to housing within Gresham and the East Metro region.
13. Work with Mt. Hood Community College to ensure that the training and education needs of incoming business and industry are met.

Action Measures

1. Initiate a target marketing campaign for Springwater in the context of the City of Gresham’s marketing and economic development initiatives.
2. Develop marketing materials (including a brochure, web page, and target industry letters) that reflect a preferred approach and marketing theme. A specific marketing and advertising strategy should be developed with a tracking system that enables the City to evaluate the effectiveness of each marketing channel (mail-outs, telemarketing, trade events) and adjust marketing activities accordingly.
3. Conduct parcel-level inventory for all land within industrial and commercially zoned tracts of Springwater. This inventory should result in the creation of “land briefs” for each parcel that describes all available information on the property, including: ownership, assessed valuation, current sales listing, and available infrastructure.
4. Prepare a list of brokers and owners based on the parcel inventory. Set out a meeting schedule with those brokers and owners to establish interest levels in participation.

5. Identify developer candidates and solicit a request for proposal for specific sites within Springwater. The Village Center should be considered as a pilot project.
6. Work with selected developer(s) to identify and market potential anchor companies. This work should be part of a prospect management system that coordinates the efforts of East County organizations, such as local governments and OSTP.
7. Develop a public relations strategy for Springwater and East County, including the creation of an East County Ambassador program and the preparation of a regional profile.
8. Determine the required level of public commitment to Springwater, including assessing options for public involvement in specific projects and developing an incentive package for Springwater.
9. Ensure that the City development plan code provides for farmers markets as appropriate in the Springwater area.
10. Develop an economic linkage between new Springwater industries and the nursery industry.
11. Consider including conduit for future fiber optic cable as a component of roadway improvements in Springwater.

10.803 SUSTAINABILITY

Background

The City of Gresham's goal for Springwater is to develop an economically, environmentally, and socially sustainable community. Providing sustainable development will help integrate the quality of life with the quality of the community that develops as Springwater is urbanized and annexed. The philosophy of sustainable development starts at the community planning level and continues through the design and construction of individual buildings. Each element along the continuum from community to structure is critical to this systematic model. This approach seeks to balance the use of natural resources with the creation of spaces and places needed to meet the community's social, functional, and economic needs.

Early in the Springwater Community Plan development, a Community Working Group (CWG) was convened to provide input through the planning effort. Together, the CWG and the project team developed a set of goals and policies that were ultimately adopted by the CWG. The purpose of the goals and policies was to identify the intent of the City of Gresham to accomplish certain results through the Springwater Community Plan. The following goal was adopted for sustainability:

The Springwater Community shall foster sustainability through encouraging businesses, industries and homes that are designed and built with good environmental stewardship. This shall be accomplished through green practices that provide for energy efficiency, water conservation, reduced pollution, and avoid environmentally harmful materials and processes. The Springwater Community strives to be a model for successful sustainable industrial development. Development shall also

preserve, restore, and enhance natural resources by meeting or exceeding local and regional standards. Land uses, transportation systems and natural resources shall be carefully integrated and balanced.

Summary of Major Issues

The following are some of the major issues that were considered in planning for sustainable development in Springwater. These issues represent the full range of sustainable development opportunities, from the community level to the building level.

Economic Development. Positioning Springwater as a sustainable community can take several approaches, all of which should be considered during implementation of the Plan.

- Targeting companies that produce environmentally-friendly or holistic products
- Targeting groups of industries that would benefit from co-location and collaboration in the management of resources and environmental concerns such as energy, water, and materials management
- Promoting or requiring green building practices for industrial, commercial, and residential development. The U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System includes standards for building construction and operation that aim to improve occupant well-being, environmental performance, and economic returns of buildings. The LEED program uses both established and innovative practices, standards, and technologies to improve the environment for building occupants and minimize the impact of building construction. Incorporating elements of the LEED program in the Springwater code and supporting developer participation in the U.S. Green Building Council's LEED Program will result in a more sustainable built environment in Springwater, as well as supporting other sustainability goals.

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:

- a. Stormwater Management.** The high level of industrial and urban development planned for Springwater will increase stormwater runoff and pollutant load beyond what is currently experienced. Green or low impact development uses a system of landscaping features that treat and infiltrate stormwater on the development site instead of using a traditional piped collection and conveyance system. Stormwater that is not managed on individual sites will be conveyed using Green Street swales rather than a conventional piped system. The benefit of green development is that it minimizes the production of stormwater runoff and manages it close to the source. These practices mimic the natural hydrology of the area, minimizing erosion and enhancing water quality in the streams. Green development practices include the following:

- i. Minimizing impervious surface coverage
 - ii. Using ecoroofs to absorb precipitation and reduce runoff from developed areas.
 - iii. Maximizing tree canopy through preserving and planting trees in landscaped areas and parking lots, on residential property, in street medians, and in neighborhood and community parks
 - iv. Using onsite stormwater treatment techniques such as bioswales and landscape planters.
 - v. Using Green Streets for all streets that do not have a high level of on-street parking (as in the Village Center).
- b. Xeriscape Landscaping.** 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 Resource Areas.
- c. Minimizing Night Sky Impacts.** Urbanization of Springwater will result in new lighting sources that could increase night sky illumination and impact the nocturnal environment. Applying site lighting restrictions reduces the development impact by avoiding off-site lighting and night sky pollution.

Water Reuse. The high density of proposed industrial development, distance from the City of Gresham’s existing wastewater treatment plant, and potential demand for reclaimed water for either non-contact industrial uses or environmental benefits (such as aquifer recharge, streamflow augmentation, etc.) support investigating wastewater reuse in Springwater.

GOAL

1. *The Springwater Community shall strive to be a model for successful, sustainable, industrial development, and foster continued sustainability through encouraging businesses, industries and homes that are designed for and built with good environmental stewardship.*

Policies

1. Create a sustainable community through business practices, philosophies, and strategies that reduce environmental impacts; for example, using techniques like Leadership in Energy Efficiency and Design (LEED) criteria and renewable energy sources.
2. Target environmental businesses and encourage businesses to use green practices that reduce waste and pollution; avoid waste, pollution, and environmentally harmful materials and processes; conserve water and energy; and protect and enhance the environment, biodiversity and the ecosystem.

3. Utilize green development practices, including green streets. Community design and infrastructure plans should enhance the natural hydrologic system as a fundamental part of managing stormwater and water quality.
4. Create interpretive educational opportunities that allow residents to experience and understand the diverse ecosystem that they are a part of.
5. Preserve, restore and enhance natural resources in ways that help ensure its long-term economic, social and environmental benefits as Springwater urbanizes.
6. Consider wastewater management alternatives other than conveyance to and treatment at the City's existing wastewater treatment facility on Sandy Boulevard.
7. Encourage the planting and preservation of trees.
8. Utilize land as efficiently as possible.
9. Encourage diverse economic activities within the context of industrial and industry-related activities and promote the integration of the Springwater economic development community into the greater Gresham and surrounding East Metro community.
10. Incorporate an integrated Pest Management Program for the entire Springwater Community.

Action Measures

1. Develop regulations, incentives, and development standards that include measures to protect and augment the natural stream system with a vegetated buffer system along streams and wetlands that are critical to the ecological health of the watershed.
2. Develop regulations, incentives, and development standards for managing stormwater onsite through green development practices that rely on infiltration, bio-retention and evapotranspiration, or other processes that enhance the natural hydrologic system.
3. Incorporate green streets designs as described in Metro's handbook entitled Green Streets: Innovative Solutions for Stormwater and Stream Crossings and as designed in the Pleasant Valley Plan District area.
4. Develop regulations, incentives, and development standards to provide for the planting and preservation of trees throughout the study area, including street rights-of-way, community open spaces, parking lots, and other landscaped areas. Include an enforcement program.
5. As industries begin to locate in Springwater, investigate wastewater discharge or non-potable water demands to assess the potential for a water reuse program.
6. Initiate discussions with the Oregon Department of Environmental Quality (DEQ) to investigate the regulatory precedence for or requirements associated with using treated effluent for environmental benefits such as streamflow augmentation and aquifer recharge.
7. Explore the use of chemical free maintenance in City-owned or maintained parks.

10.804 LIVABILITY

Background

The result of developing a complete, sustainable community in which the City's needs for economic development are balanced with natural resource protection and infrastructure development can be summarized in one word: livability. The CWG and the project team characterized the livability goal for Springwater as follows:

The Springwater community shall have a high quality of life. This will be accomplished through compact and sustainable development; a range of housing choices; walkable neighborhoods; access to natural resources and open spaces for employees in the community; preservation of natural resources; and a variety of transportation choices. The community will encompass a village center, or series of village centers, that provide needed services for employees and residents in an attractive human-scale environment. A range of housing choices will be provided within close proximity to services and/or employment areas. Overall, the community shall be a unique environment that creates a sense of place for both residents and businesses, and acts as an economic attractor.

In the scenario evaluation process, compliance with this goal was measured by miles of trails and greenway connectivity provided, acres of the Plan area allocated to parks and open spaces, park and open space accessibility (number of households within a 5- or 10-minute walk), net residential and job densities, and households in proximity to the Village Center.

Summary of Major Issues

Primary elements of the Plan that contribute to the livability of Springwater include the following:

Planning a community- and pedestrian-friendly Village Center. Two sets of park blocks are planned for the Village Center – one along a north/south axis bordered by high-density residential housing, and one along an east/west axis bordered by mixed and commercial uses. These park blocks will intersect in a Village Center park and plaza that will help create the identity of the Village Center and provide a community gathering place. These spaces will produce a pedestrian way through the heart of the Village Center. The Village Center and housing areas are located such that over 75% of the residents of Springwater will be located within a quarter mile walk of the Village Center.

Developing a trail network that provides access to natural resources and employment areas throughout Springwater. Two trail loops are proposed: a Village Center loop offering views of the riparian areas on the west side of Johnson Creek, and an Employee loop trail offering access to industrial and employment areas on the east side of Johnson Creek. These trails will connect with each other and with existing trails in the region, supporting multimodal transportation.

Offering a range of housing options to meet a variety of needs. With a modest number of new households in Springwater, a variety of housing options will be available to meet a range of needs. A portion of the property in Springwater has been designated for large-lot housing. This area has views of Mt. Hood and/or abuts natural resource areas and will provide opportunities for employees to locate

near prospective industrial development sites. A range of townhomes, mixed-use, and single family homes will also provide housing for potential Springwater employees.

Providing parks that build on the area’s natural features and provide appropriate amenities. Two parks with different uses and amenities are proposed for Springwater. The nature-oriented Springwater Community Park is envisioned to be located along the Johnson Creek Corridor and adjacent to the residential districts. It will provide two youth sports fields, and a regionally significant natural park area, providing interpretive educational opportunities. The athletic facility-oriented East Springwater Park will be located east of US. 26, and will provide two to three adult sports fields for employee recreational opportunities as well as for the adjacent neighborhood to the north.

GOALS

- 1. The Springwater Community shall have a high quality of life provided through compact and sustainable development; a range of housing choices in close proximity to services and/or employment areas; walkable neighborhoods; access to natural resource areas, parks, and greenways for employees in the community; preservation of natural resources; and a variety of transportation choices.*
- 2. The park, trail, and open space network shall provide a variety of recreational opportunities for residents, employees, and neighbors of Springwater.*
- 3. The community shall be a unique environment that creates a sense of place both for residences and businesses, and acts as economic attractor.*

Policies

1. Provide a variety of quality housing choices to include opportunities for large-lot housing within compact and walkable neighborhoods.
2. Promote a high standard for development practices. Promote developments and buildings that are pedestrian friendly.
3. Create a sense of place with respect to the community’s cultural and natural history. Incorporate the natural environment into the design of the community.
4. Create a Village Center that serves local residents, businesses and employees. The design of the streets and buildings of the Village Center should emphasize a pedestrian-oriented character where people feel safe.
5. Create a walkable community with an urban form that increases walking, biking and transit options. Access and connections to the Springwater Corridor Trail shall be emphasized as a unique characteristic of the Springwater Community.
6. Locate parks and open spaces throughout the community. Neighborhood parks, small green spaces and open spaces shall be within a short walk of all homes.

7. The park and trail system shall be connected to the Springwater Corridor Trail and connect to other regional trail systems where feasible.
8. The Village Center shall include a plaza, pocket park or other forms or combinations of parks to provide identify and form to the center as well as assembly space.
9. Identify opportunities and needs for civic uses and work with the Gresham/Barlow School District and Mt. Hood Community College to identify the area's education needs.
10. Build upon Springwater's unique characteristics and location, such as its proximity to and views of Mt. Hood.

Action Measures

1. Modify System Development Charges for Springwater to allow acquisition and development of the proposed park areas.
2. Implement design standards for the Village Center that emphasize a human-scale and pedestrian-friendly environment.
3. Seek opportunities for synergies between other city agencies, such as shared park/school sites, regional stormwater management facilities, and trail corridors along transportation routes.
4. Expand on recommended park facility programs to meet the needs of the future residents by holding community workshops and planning days to involve the community in the design process.
5. Look for state and federal funding assistance to help preserve natural resources beyond that open space which will be purchased through Parks fees.

10.805 TRANSPORTATION

Background

A well-planned transportation system is critical to both attracting economic development to Springwater and to achieving the area's goals for livability and sustainable development. The team developed the following goal for transportation:

The Springwater Community will encompass a well-planned transportation system that supports the Springwater Community Plan, while promoting transit, walking, and bicycling. Good design can avoid the effects of heavy traffic on neighborhood safety and the natural environment. A well-connected transportation system using trails, bicycle routes and a variety of street types reinforces a sense of community and provides adequate routes for travel. The site should provide good connections to and from the employment areas and the surrounding community, as well as regional freight and transportation centers.

The transportation plan for Springwater was developed in compliance with transportation plans adopted by the State of Oregon, Metro, Multnomah County and the City of Gresham. Guidelines from these entities were used as a primary resource to develop the policy framework for the mobility standards and street spacing set forth in the Springwater Transportation System Plan (TSP). Review of the Gresham and Multnomah County Transportation System Plans also revealed the current street functional class designations for existing streets and highways, any planned pathways or trails, and any planned transportation improvements within or close to the Springwater area that should be included in the basic framework of the new planning area.

Key features of the Transportation element of the Plan are:

- Create a network of arterials, collectors, community streets, and local streets that accommodates travel demands and provides multiple routes for travel. Key new street extensions and connections include:
 - Two new east-west arterial connections from 242nd Avenue to Telford Road between Rugg Road and 252nd Avenue.
 - A new grade-separated interchange at US 26 in the Springwater Area.
 - A new street connection to Orient Drive around the east side of the existing Gresham neighborhoods.
- Upgrade existing streets and design all new streets to accommodate biking and walking, with special pedestrian amenities on transit streets. Upgrade intersections with safety issues identified as part of the inventory work.
- Provide regional and community transit service on key roads in Springwater, with direct connections to Gresham, Sandy, Clackamas regional center, Damascus, the Columbia Corridor, and downtown Portland. Planned transit streets include 242nd Avenue, Orient Drive, and US 26.
- Provide a logical and connected street system that connects directly to community destinations while also avoiding the NRO 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.
- Provide for direct and convenient access to employment centers that lead to regional facilities, and reduce the possibility of traffic intrusions into neighborhood and rural areas.
- Use Green Street designs that are an integral part of the stormwater management system and provide walkable, tree lined streets.
- Plan for a long-term arterial connection from Hogan Road to US 26 north of the Springwater Corridor Trail, to serve long-term regional mobility needs.

Summary of Major Issues

Major issues faced in the transportation planning for Springwater are described below.

Develop a network of arterial and collector streets adequate to serve future growth in Springwater, while protecting environmentally sensitive areas and adjacent neighborhoods and rural areas from the effects of urbanization.

Traffic analysis conducted as part of the update to the Regional Transportation Plan (RTP) demonstrated that future growth in Springwater would likely have widespread effects on the regional transportation system, despite significant improvements to the primary routes serving the area. Springwater's transportation plan must support the land use goals of the community, protect the natural features that define the area, and improve community access by all modes of travel by providing a variety of travel choices.

The availability of alternative arterials and highways leading away from Springwater are limited.

The rural Springwater community today, in general, is adequately served by US 26, and several city and county two-lane arterial roadways. Recurring congestion occurs during peak periods at major intersections along Burnside Road, Hogan Drive and Powell Boulevard just north of Springwater inside city limits, but delays are within acceptable levels according to city and state standards.

The planned job growth in will create much higher demand for regional travel to I-84, I-205 and the future Sunrise Corridor. A long-time need for freight traffic on US 26 has been more direct and reliable routes connecting to Interstate 84 and Interstate 205. The current adopted plan that provides this type of facility and service expansion is 242nd Avenue and a new connection to I-84 (the 242nd Avenue connector). On-going work by the City of Gresham and East Multnomah County communities on a parallel study to the Springwater Master Plan is reconsidering the North-South Corridor issue. A separate study is also being conducted to examine options for access to US 26 within Springwater. Gresham's ongoing participation in these studies is critical to coordinate the studies' evaluations and outcomes with needs for Springwater.

The existing street system is not adequate to serve future growth. Connect Springwater to major streets in Gresham, Pleasant Valley, and Damascus/Boring in a manner that provides alternatives to US 26 while protecting existing neighborhoods from traffic infiltration.

Additional connections and improvements to existing streets are needed to increase access from Springwater to other parts of the region. However, evaluation of appropriate north/south street connections needs to address the potential impact of traffic generated in Springwater area on adjacent neighborhoods. The Transportation System Plan must balance the need to provide appropriate connectivity between Springwater and the surrounding neighborhoods while minimizing "through" traffic from Springwater to residential Gresham neighborhoods and maintaining a "hard urban edge" at the eastern boundary of the community as required by Gresham's intergovernmental agreement with Multnomah County.

GOAL

The Springwater Community will encompass a well-planned transportation system that supports the Springwater Community Plan, while promoting transit, walking and bicycling. The road and trail network will provide good connectivity within Springwater, with existing neighborhoods, and with the regional trail network.

Policies

1. Provide trail and pedestrian connections between residential and employment centers in the district.
2. Design road crossings of the Springwater Corridor Trail to minimize the impact to the greatest practical extent.
3. Provide for public transit options, such as bus, streetcar and/or light rail within the Springwater community and for east/west and north/south connections to the greater region.
4. Manage and preserve the function of rural roads for rural traffic access and circulation by directing new urban industrial and residential traffic away from the rural area.

10.806 NATURAL RESOURCES

Background

The Springwater Plan area has an extensive natural resource system that includes a two-mile section of mainstem Johnson Creek, four miles of major tributaries, and other unique habitat such as the steep slopes of Hogan Butte. The Johnson Creek Watershed Council has characterized one reach of Johnson Creek (JC16) that flows through Springwater as one of the watershed's highest quality reaches.

To comply with Title 11 of Metro's Urban Growth Management Functional Plan in bringing the Springwater area into the UGB, Gresham's planning for this area must include:

Identification, mapping, and a funding strategy for protecting areas from development due to fish and wildlife habitat protection, water quality enhancement and mitigation, and natural hazards mitigation. A natural resource protection plan to protect fish and wildlife habitat, water quality enhancement areas and natural hazard areas shall be completed as part of the comprehensive plan and zoning for lands added to the Urban Growth Boundary prior to urban development. The plan shall include preliminary cost estimates and funding strategies, including likely financing approaches for options such as mitigation, site acquisition, restoration, enhancement, or easement dedication to ensure that all significant natural resources are protected.

The Natural Resources Plan must also comply with Metro Ordinance 02-969B, Exhibit M regarding the inclusion of the project area in the UGB, and an Intergovernmental Agreement (IGA) between the City of Gresham and Multnomah County establishing guidance for Springwater development planning. Specifically, the IGA states that the Springwater Plan shall:

Establish a consistent and comprehensive plan for urban and rural watershed management of stormwater, stream corridors and confluences, and riparian areas for the Upper Johnson Creek Basin (upstream of the 2002 Gresham city limits). Utilize the City's Johnson Creek Master Plan, Metro Goal 5 requirements (which consider the Endangered Species Act, Clean Water Act, and Statewide Goal 5 planning provisions), and habitat protection measures that are at least equivalent in the level of protection to the County's West of Sandy River Rural Area Plan in development of the watershed plan.

Early in the Springwater Community Plan development, a Community Working Group (CWG) was convened to provide input through the planning effort. Together, the CWG and the project team developed a set of goals and policies that were ultimately adopted by the CWG. The purpose of the goals and policies was to identify the City of Gresham's intent to accomplish certain results through the Springwater Community Plan. The following goal was adopted for natural resources:

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.

The Natural Resource team used this goal as a basis for defining the Environmentally Sensitive Resource Areas (later updated to Natural Resource Overlay). After a thorough inventory of resources in the study 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.

Summary of Major Issues

Major issues associated with natural resource planning and enhancement in Springwater are related to the existing rural development and agricultural practices in the area. MacDonald Creek (Badger) has been modified by Telford Road, and urban development at the headwaters of Botefuhr Creek has changed the flow regime of the creek channel. A Himalayan blackberry monoculture has been

established in the area west of Hogan Road, and an incised channel has minimized the channel's connectivity to its floodplain. Open (ditched) stormwater systems and failing subsurface wastewater disposal systems contribute negatively to water quality in Johnson Creek and the other tributaries in the study area.

Some of the Springwater riparian reaches have relatively intact diverse, mature riparian growth, however many areas lack high-quality riparian vegetation. Areas that appear as wide canopy trees in aerial photography hide understory that has been cleared, with significant streambank erosion occurring.

GOAL

The plan will preserve, protect, and enhance natural resources.

Policies

1. The Springwater Community Plan shall recognize the importance of the upper Johnson Creek system for Gresham, the Portland Metro region and the Willamette Valley.
2. Mitigation for any impacts of development in Springwater to stream corridor function shall be prioritized first on the same tributary within Springwater, secondly in Springwater on Johnson Creek or a tributary, or thirdly as close to the impact area as possible within the Johnson Creek basin.
3. The Plan will result in a green infrastructure that will provide regional natural amenities for future generations.
4. The plan will identify potential opportunities for "natural park" facilities that would enhance the sense of place for economic developments and that could be an attraction for residents and businesses.
5. Stream crossings will be minimized to the greatest extent feasible.
6. Road and pedestrian crossings of the natural resources areas shall be designed for the least impact practical.
7. The entire Johnson Creek Watershed and ecosystem will be considered.
8. To the extent practical, watershed functions and sensitive/natural species will be restored.
9. Barriers to wildlife habitat corridors, such as bridges and roads, shall be designed to provide proper opportunities for wildlife migration.
10. The urbanization of the Springwater Community shall be balanced with the protection of sensitive species and habitat, water quality, and groundwater resources.
11. The urbanization of the Springwater Community shall achieve, to the maximum extent practical, low levels of effective impervious surfaces, high levels of tree protection and

reforestation, management of stormwater as close to the point of origin as possible, improved hydrology and flood protection, and removal of barriers to fish passages.

12. Urbanization of the Springwater Community shall provide appropriate erosion control and shall control sedimentation through the use of green development practices, context sensitive design, and appropriate construction management practices, re-vegetation of disturbed areas, and regular maintenance and monitoring.
13. Landslide prone slopes shall be protected.
14. The use of native plants shall be a priority for re-vegetation and Green Streets.
15. The development code for Springwater shall maintain fish and wildlife habitat protection measures that are at least as protective as those adopted by Multnomah County for the West of Sandy River Plan Area upon annexation.

Action Measures

1. Add the Springwater Community Plan area to the Community Development Hillside 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.
7. Coordinate with Multnomah County for adoption of Goal 5 resource map and local wetland inventory.
8. Continue to work with the other stakeholders to coordinate resource preservation and enhancement efforts.
9. Identify funding sources for implementing Natural Resource goals and programs.

10.821 PUBLIC FACILITIES

Background

This section addresses water, wastewater, stormwater and park public facilities. It is intended to amend the City's public facilities plans for each facility. Amendments to the Public Facility Plan for transportation are located in a separate amendment to the City's Transportation System Plan.

The Metro Council brought Springwater into the Urban Growth Boundary (UGB) in December 2002. When land is brought into the UGB, Title 11 of the *Metro Urban Growth Management Functional Plan* requires that the added territory be brought into a city's comprehensive plan prior to urbanization with the intent to promote the integration of the new land into existing communities.

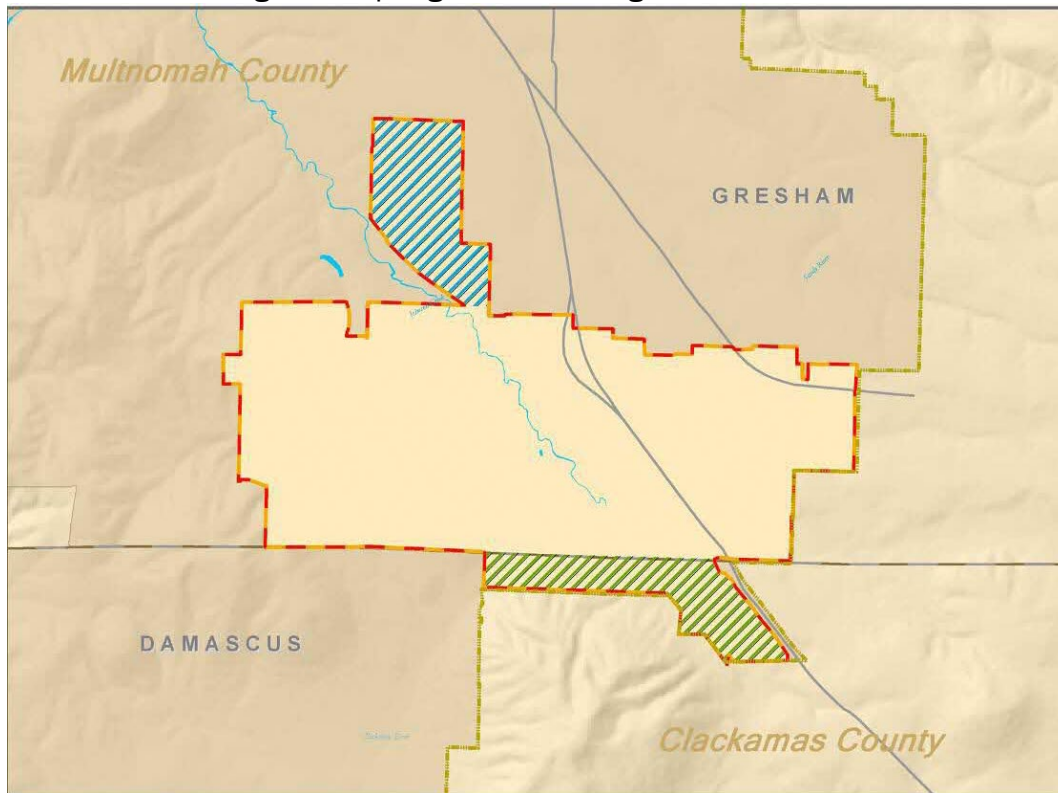
Title 11 requires conceptual public facilities plans for each of these services that demonstrate how Springwater can be served. The conceptual plans are to include preliminary cost estimates and funding strategies, including likely financing approaches and maps that show general locations of the public facilities.

Conceptual public facility plans were developed for water, wastewater, stormwater, and parks during the *Concept Plan* phase of the project. The planning area used for development of public facility alternatives included four distinct areas, shown graphically on Figure 1:

- Approximately 1,152 acres of unincorporated Multnomah County which was included in the 2002 Urban Growth Boundary (UGB) expansion. This is the primary area referenced as the "Springwater Site".
- Approximately 140 acres of unincorporated Multnomah County located at the foot of the buttes west of Hogan Road. This area is within Gresham's UGB and its Urban Services Boundary, but planning for urban services has never been provided. This area is also included in the Springwater Site.
- The "Brickworks" site, which is 183 acres of land north of the Springwater area. It is zoned as Heavy Industrial (HI) and is currently within the City of Gresham. It is included in the Springwater Community Planning area to explore redevelopment opportunities in conjunction with the new annexation area.
- Approximately 139 acres located in Clackamas County. This area was also included in the 2002 UGB expansion, and is now part of the newly-incorporated City of Damascus.

The 2002 UGB expansion also included a "Springwater Phase 2" area, which is primarily the area encompassed by the new City of Damascus. Public facility planning conducted as part of this project considered likely service extensions to the Phase 2 area. Potential service provision for the Phase 2/Damascus area is discussed separately for each utility considered in the public facilities plan.

Figure 1. Springwater Planning Area Elements



The general steps in generating the conceptual public facilities plans were:

- Developing an inventory of the existing system
- Performing a needs analysis based on planned future uses
- Developing a conceptual system layout for each planning scenario, including facility needs and cost estimates
- Evaluating each conceptual public facility system with respect to project evaluation criteria
- Creating a preferred public facility alternative based on the preferred land use, transportation, and natural resource concepts and the scenario evaluation results
- Refining facility needs, cost estimates, and funding strategies for the recommended plan

The *Concept Plan* also included the Community Working Group’s adoption of plan goals. No specific goals were developed for water, wastewater, stormwater, or parks public facilities. However, evaluation measures associated with these public infrastructure areas were incorporated into evaluation measures for the broader community goals (i.e., create a community, livability, sustainability, etc.).

The Concept Plan work was the basis for the Public Facilities Plans that are included in this document. These Public Facilities Plans describe the elements necessary to comply with Statewide Planning Goal 11 and OAR 660-011-0000 necessary to amend the City's Public Facility Plan for each of the public facilities:

660-011-0010

(1) The public facility plan shall contain the following items:

- a. An inventory and general assessment of the condition of all the significant public facility systems which support the land uses designated in the acknowledged comprehensive plan;
- b. A list of the significant public facility projects which are to support the land uses designated in the acknowledged comprehensive plan. Public facility project descriptions or specifications of these projects as necessary;
- c. Rough cost estimates of each public facility project;
- d. A map or written description of each public facility project's general location or service area;
- e. Policy statement(s) or urban growth management agreement identifying the provider of each public facility system. If there is more than one provider with the authority to provide the system within the area covered by the public facility plan, then the provider of each project shall be designated;
- f. An estimate of when each facility project will be needed; and
- g. A discussion of the provider's existing funding mechanisms and the ability of these and possible new mechanisms to fund the development of each public facility project or system.

Service Delivery Overview

Like most rural development in the area, most residents of Springwater are largely responsible for their own water supply, wastewater treatment, and stormwater systems. Water is currently accessed via underground wells and wastewater is primarily treated in subsurface disposal systems. Stormwater runoff is conveyed to natural drainage areas or to drainage ditches adjacent to local roads. There are no public parks in Springwater. A portion of the Springwater Trail – a multi-use regional trail developed as part of Metro's Greenspaces program – runs through the study area adjacent to Johnson Creek.

Future Public Facilities Provider Overview

The Springwater area that was added to the UGB in 2002 lies primarily in unincorporated Multnomah County. The southern portion of Springwater is located in the newly-formed City of Damascus in Clackamas County. The City of Gresham will be responsible for the provision of urban services for areas

annexed into Gresham. The portion of Springwater in Clackamas County was included in the Public Facility Plan development for planning purposes, although the ultimate service provider for this area has not been determined.

As part of the 2002 UGB expansion, Metro also added land known as “Springwater Phase 2” that is located entirely within Clackamas County. It is assumed that water service for this area would not be provided by the City of Gresham, as it is unlikely that the Gresham would annex the area. However, the natural drainage of the region slopes toward Gresham, and therefore it may be logical for Gresham to provide wastewater conveyance and treatment for a portion of the Phase 2 area as it currently does for the Cities of Fairview and Wood Village. The portion of the Phase 2 area that drains by gravity to Gresham is known as “Sunshine Valley.” The Public Facility Plan for wastewater identifies the infrastructure requirements associated with this scenario as a basis for further intergovernmental discussions regarding logical service providers for the Phase 2 area. It is also assumed that stormwater service for this area would most likely not be provided by the City of Gresham. Because of the natural drainage, however, planning for the area downstream of the Sunshine Valley has utilized the assumption that no additional flow and pollutant will be discharged. A set of planning assumptions has been transmitted to Clackamas County and the City of Damascus. The success of stormwater facilities within the Gresham boundary will depend directly on whether planning efforts for the Sunshine Valley area adhere to these or more restrictive assumptions.

10.822 WATER SYSTEM

System Description/Condition Assessment

Existing Conditions. The Springwater area is currently rural in nature, with some residential development and limited commercial development. Currently, water supplies in the area are served through individual wells that tap into the groundwater aquifer beneath the Springwater area. In addition, there is no domestic water distribution system in place in Springwater. As the area is developed to the level of urban development proposed in the Concept Plan, Gresham’s water distribution system will need to expand to provide service to this area.

The City of Gresham provides water to its customers through a wholesale water supply agreement with the City of Portland Water Bureau (PWB) and an intergovernmental agreement with the Rockwood Water People’s Utility District (RWPUD). Water is provided through seven metered connections by the PWB and one metered connection from the RWPUD. In addition to the purchased water, the City plans to use groundwater to supplement the current water supply sources. It is anticipated that the Sunrise Water Authority will serve that portion of Springwater located within Clackamas County.

Water Distribution. The Springwater water distribution system will be an extension of the City’s current distribution system and add to the existing network of pipes, valves, pump stations, and reservoirs. Currently the City is divided into seven service levels that provide water to the various parts of the City. The service levels are supplied either by direct gravity from PWB and RWPUD connections,

or through pump stations pumping directly from the PWB conduits or booster pump stations located in the system.

The Springwater planning area abuts three of the City’s Service Levels: South Hills, Intermediate, and Lusted. These three service levels will be expanded into the Springwater area. The South Hills Service Level currently comprises of about 533 acres and includes the South Hill Reservoir. This reservoir has a capacity of 2.6 million gallons (MG). Water is supplied to this service level through the Regner Road Pump Station #8 with a current capacity of 2,200 gallons per minute (gpm).

The Intermediate Service Level currently covers approximately 2,977 acres and includes two reservoirs: the Butler Road Reservoir (4.0 MG) and the Regner Reservoir (6.0 MG). This service level is supplied by connections to PWB conduits through the Division Street Pump Station from Conduit #4 with a current capacity of 4,000 gpm and the Main Street Pump Station from Conduit #3 with a current capacity of 3,800 gpm.

The Lusted Service Level is currently about 1,112 acres and is served by the Wheeler Road Reservoir (3.2 MG) and the Lusted Tank (1.2 MG). This service level is supplied through the Powell & Barnes Road Pump Station from Conduit #3 with a current capacity of 1,600 gpm. The Salquist Pump Station has a current capacity of 3,825 gpm and pumps water from the Intermediate Service Level into the Lusted Service Level. The Salquist Pump Station has been constructed with a provision for connecting to a future Conduit #5.

System Analysis

Water demand from the proposed development was generated by applying an estimated demand per acre of new developable land based on the *1998 Water System Master Plan*. The demands for each service level from the *1998 Water System Master Plan* were projected over a 20-year planning horizon. These projected demands were divided by the current service level acres to obtain a demand per acre for each service level. This value was then used with the new service level areas to estimate the Springwater demand. The area of each new service level did not include land use designated as wildlife preserve, open space, or environmentally-sensitive areas.

Based on the demands projected from the *1998 Water System Master Plan*, the anticipated average day demand generated from the Springwater development totals 1.0 million gallons per day. Table 2 shows the results of this analysis for the three service levels.

Table 2: Projected Springwater demand based on projected flows in existing service levels

Service Level	Existing Area (acres)	Projected 2025 Average Day Demand (mgd)	Projected 2025 Average Day Demand per Acre (mgd/acre)	New Springwater Area (acres)	Projected Springwater Average Day Demand (mgd)
Lusted	1,112	0.88	0.000795	212	0.17
Intermediate	2,977	3.01	0.001167	535	0.62
South Hills	533	0.91	0.001167	177	0.21

Service Level	Existing Area (acres)	Projected 2025 Average Day Demand (mgd)	Projected 2025 Average Day Demand per Acre (mgd/acre)	New Springwater Area (acres)	Projected Springwater Average Day Demand (mgd)
Total	4,622	4.80		924	1.00

Maximum day demands were estimated from the projected average day demands by using a peaking factor of 2.3, the same as the one used in the *1998 Water System Master Plan*.

A new master planning effort is currently underway. Associated with this effort, demand projections are being revised. The Springwater demand projections should be revised based on this new analysis once the information is available.

One difference between Springwater and the existing City is the level of industry anticipated. Industrial customers can have a wide range of water demands and wastewater generation rates. Water demands from large industrial developments can have a significant impact on water infrastructure needs. In addition, industrial customers typically have a higher demand for fire protection. For the Springwater development, fire flow demands for each broad land use type were assumed to be:

- 3,500 gpm for Commercial and Industrial customers
- 1,750 gpm for Medium Density Residential customers
- 2,500 gpm for High Density Residential customers
- 1,750 gpm for Low Density Residential customers with homes larger than 3,600 square feet
- 1,000 gpm for Low Density Residential customers with homes at or less than 3,600 square feet

The following process was used to evaluate water demands associated with Springwater:

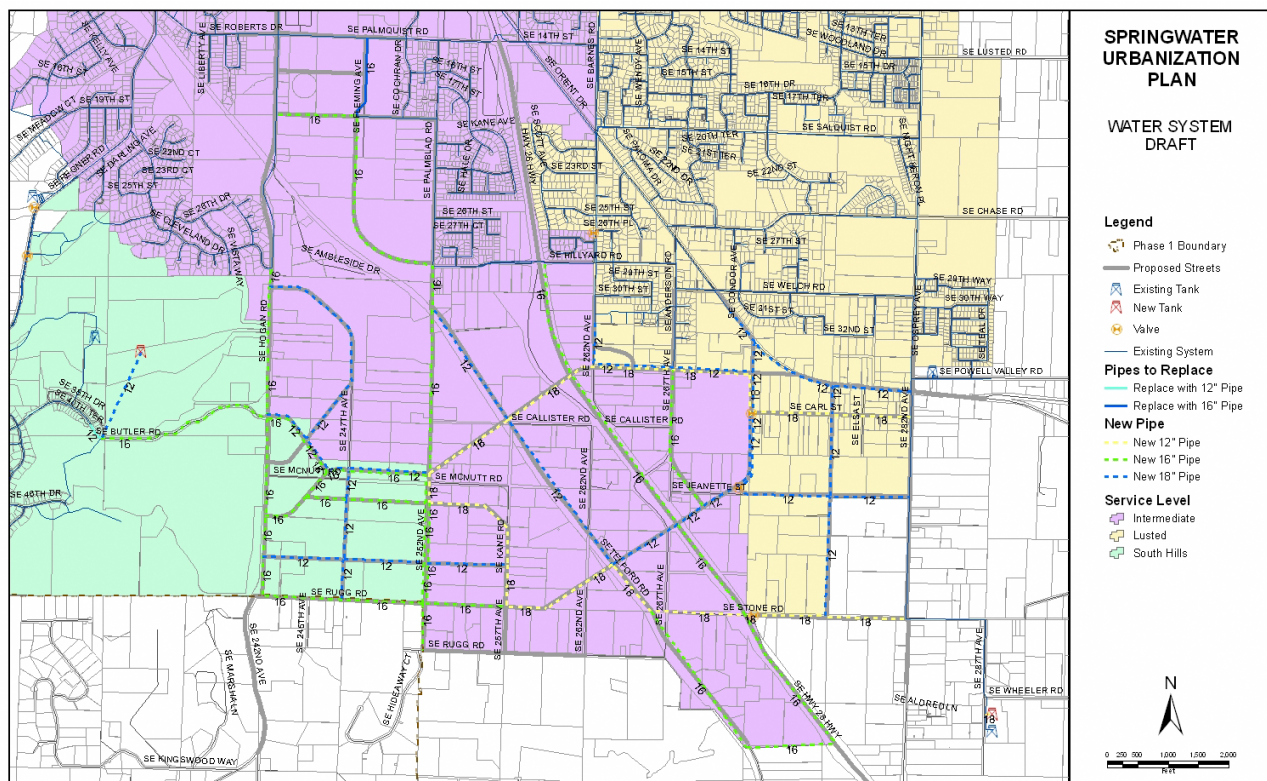
- Establish new service level boundaries within the planning area to determine the area to be added to the existing South Hills, Intermediate, and Lusted Service Levels. The shape of the new service levels was determined based on area topography and location to the existing service levels.
- Define pipe networks and projected flows for the land use concepts developed during planning. The networks were designed to provide as much system looping as possible, and to locate mains in existing or proposed road right-of-way to the greatest extent possible.
- Determine the pipe size for the distribution network in Springwater.
- Evaluate the system to determine whether adequate fire protection is available.
- Evaluate the system to determine whether adequate storage is available.

Based on these assumptions, Table 3 below shows the general system components required for the Springwater area. These are also shown in Figure 2.

Table 3: Springwater water system facilities

New Facilities	
Total Length of New Pipe (LF)	
12-inch diameter (LF)	39,100
16-inch diameter (LF)	47,036
18-inch diameter (LF)	19,858
New pressure Reducing Valves	3
New Wheeler Road Reservoir (MG)	3.2
New South Hills Reservoir (MG)	2.6
Upgrades to Existing Facilities	
Replace 8-inch with 12-inch diameter (LF)	290
Replace 12-inch with 16-inch diameter (LF)	1,330
New Pumps at Regner Pump Station	2 @ 1,100 gpm each

Figure 2 – Proposed Water System Improvements



Summary of Future Needs

Based on the analysis of the proposed water distribution system, recommendations for water system improvements were developed. These recommendations include a distribution network to serve the

Springwater community, and improvements to existing infrastructure in the City to provide additional flow to Springwater from the City’s current sources. To maintain consistency with the City’s current practices, parallel piping is provided in areas adjacent to two pressure zones to minimize the use of pressure reducing valves (PRVs) where possible. Improvements are summarized below.

- The Springwater system is divided into three service levels – extensions of the South Hills, Intermediate, and Lusted service levels. Within each service level there is a network of distribution mains ranging in size from 12-inch to 18-inch. These mains are looped to the maximum extent possible.
- Existing 8-inch and 12-inch mains in two areas will need to be upsized to accommodate the demands anticipated in Springwater.
- Two new pumps will need to be added to Regner Pump Station. These pumps are to be of similar capacity to those existing at the pump station (1,100 gpm capacity).
- Two new reservoirs will be required. One will be located near and of a similar size as the existing South Hills Reservoir (2.6 MG) and the other will be located near and of the same size as the existing Wheeler Reservoir (3.2 MG). Controls at the Regner, Barnes, and Salquist Pump Stations will have to be modified to incorporate these new tanks.

No provisions are included in the recommended plan to serve the Phase 2 Springwater area. The City of Gresham is participating in ongoing discussions with Clackamas County, the City of Damascus, and the Sunrise Water Authority to determine the appropriate service provider for the Phase 2 area.

Recommended capital improvements and associated costs are shown in Table 4 on the following page. Costs are based on the annexation subareas described in the Summary Report.

Table 4. Projected Water System Costs

Annexation Subarea	Timing (Years)	Springwater Service Level	Length of Pipe (ft)	Storage (MG)	Other Facilities	Total Project Cost	Funding Source
1	0-5	Intermediate	5,966	0.0		\$1,061,000	SDC/Local
2	0-5	South Hills	4,806	2.6	2 New Pumps	\$7,545,700 ¹	SDC/Local
3a	0-5	Intermediate	2,402	0.0		\$427,200	SDC/Local
3b1	0-5	Intermediate	4,420	0.0		\$589,500	SDC/Local
3b2	6-20	Intermediate	9,453	0.0		\$1,515,500	SDC/Local
4a1	6-20	South Hills	8,885	0.0		\$1,559,200	SDC/Local
4a2	6-20	Intermediate	2,530	0.0		\$506,300	SDC/Local
4b	6-20	South Hills	9,882	0.0		\$1,566,800	SDC/Local
4c	6-20	Intermediate	6,898	0.0		\$1,227,400	SDC/Local

¹ Includes land acquisition of 3 acres at \$150,000/acre, plus 14% administrative markup

Annexation Subarea	Timing (Years)	Springwater Service Level	Length of Pipe (ft)	Storage (MG)	Other Facilities	Total Project Cost	Funding Source
5a	0-5	Intermediate	3,179	0.0		\$593,200	SDC/Local
5b1	0-5	Lusted	3,296	0.0		\$439,600	SDC/Local
5b2	6-20	Lusted	6,102	0.0		\$1,166,900	SDC/Local
5c	6-20	Lusted	8,028	0.0	1 New PRV	\$1,279,100	SDC/Local
6a	6-20	Intermediate	5,918	0.0		\$922,100	SDC/Local
6b1	6-20	Intermediate	2,592	0.0		\$345,700	SDC/Local
6b2	6-20	Lusted	5,504	0.0	1 New PRV	\$817,100	SDC/Local
7a	6-20	Intermediate	5,824	0.0		\$1,039,800	SDC/Local
7b	6-20	Lusted	4,474	0.0	1 New PRV	\$846,500	SDC/Local
8a	6-20	Intermediate	762	0.0		\$135,500	SDC/Local
8b	6-20	Intermediate	6,694	0.0		\$1,190,400	SDC/Local
Wheeler Res	6-20	Lusted	380	3.2		\$7,615,000	
Total Project Cost						\$32,389,500	

Cost based on ENR 20-City Construction Cost Index (CCI) of 7297

Funding Plan

The following discussion presents the envisioned strategy for funding water service extensions in Springwater. Gresham relies on developer contributions, system development charges (SDCs) and retained earnings from the utility to finance expansion. In the past, Gresham has borrowed against future utility revenues to finance major improvements in storage and transmission facilities.

Depending on the location of initial development, it may be difficult for Gresham to finance water system improvements in the short-term. Funding needs will be minimized if the initial development all occurs within a single service area, and is close to an existing water storage tank. Over the long-term, assuming the City adopts adequate SDCs to cover the required capital improvement projects, SDCs should generate enough revenue from within Springwater to capitalize system improvements.

Gresham has recently undertaken a separate effort to evaluate water and wastewater SDCs. This project is examining options for both city-wide and area-specific SDCs, and will make recommendations regarding potential changes to the existing SDC methodology, especially in the improvement fee, to ensure that the fee is adequate to recover forecast capital improvement needs in Springwater.

GOALS AND POLICIES

Applicable goals and policies that relate to the provision of public facilities in the existing comprehensive plan for the City of Gresham also apply to the Springwater PFP.

Action Measures

1. Implement recommendations of the Water and Wastewater SDC study being conducted concurrently with the completion of this PFP.
2. Update the SDC improvement project list to include relevant near-term projects.
3. Continue to coordinate with the Clackamas County, the City of Damascus, the Sunrise Water Authority, and other stakeholders to establish plan for providing water service for the Phase 2 area.
4. Review options to incorporate a “purple pipe” system where water reuse is encouraged and promoted.

10.823 WASTEWATER SYSTEM

System Description/Condition Assessment

Existing Conditions. The Springwater area is currently rural in nature, with some residential development and limited commercial development. Sanitary sewage generated in the Springwater area is currently treated by on-site subsurface disposal systems. When the area is developed to the level of urban development proposed in the Concept Plan, this type of treatment will not be adequate.

The City of Gresham owns and operates a wastewater treatment facility that treats wastewater for over 107,000 residents, businesses, and industries in the City, as well as the Cities of Fairview and Wood Village. Wastewater receives a high level of secondary treatment at the City’s facility on NE Sandy Boulevard and is discharged to the Columbia River. Due to the topography of Springwater, all wastewater generated from the urban development would naturally drain by gravity to the existing wastewater treatment plant.

For planning purposes, it was assumed that all wastewater generated in Springwater would be conveyed to the City of Gresham’s existing collection system and ultimately to the City’s treatment plant. A portion of the Springwater study area is within the new City of Damascus and Clackamas County (as shown in Figure 1) and therefore could potentially be served by conveying wastewater to the County’s treatment plant operated by Water Environment Services of Clackamas County. This option, however, would require pumping to lift wastewater into the County’s existing collection system. The City of Damascus potentially could provide wastewater services via creation of a new wastewater utility. Final determination of the appropriate service provider for the Clackamas County portion of Springwater will be determined as the Damascus urban planning efforts are completed.

Sewage Collection. The proposed sewage collection system will be a network of pipes used to convey wastewater from the Springwater planning area to the City’s existing system. In general, the most cost-effective and reliable method of conveying wastewater is to locate new pipes in existing or proposed road right-of-way, to use gravity conveyance of wastewater to the greatest extent possible, and to minimize the number of stream crossings.

The Springwater planning area abuts three sewage collection basins in the City of Gresham: Johnson Creek basin, East basin, and Kelly Creek basin. The Johnson Creek basin comprises 4,040 acres and includes the area roughly east of Powell Boulevard from the western City limits to 252nd on the east. This basin is served by a main interceptor (Johnson Creek interceptor) that follows the alignment of the Springwater trail. The interceptor ranges in size from 15- to 42- inches in diameter, and terminates at approximately the intersection of 252nd and Telford Road. Wastewater from this interceptor discharges to the Linneman Pump Station, which conveys the wastewater through a force main and into the main interceptors that deliver wastewater to the treatment plant. Because the Springwater area naturally drains to the Johnson Creek interceptor, and because the *2001 Wastewater System Master Plan* showed significant capacity limitations in the upstream portions of interceptors in the East and Kelly Creek basins, alternatives involving routing flow from Springwater through these basins were not examined.

Analysis of in the *2001 Wastewater System Master Plan* showed that upstream of Regner Road, the Johnson Creek interceptor has just adequate capacity to serve existing residents through build-out of the service area. Downstream of Regner Road the size of the interceptor increases significantly, ranging from 30 inches immediately downstream of Regner Road to 42 inches upstream of the Linneman Pump Station. Preliminary analysis in the Master Plan indicated that this portion of the interceptor can accept up to 10 cubic feet per second (cfs) of additional flow (from outside of the current service area) without exceeding the hydraulic capacity of the system. The Master Plan indicated that additional improvements would be required in the Linneman Pump Station and downstream force main and interceptors to the treatment plant to accommodate additional flows from outside of the current service area.

System Analysis

Sewage flows from the proposed development were generated by applying unit flow factors to various land use types, and adding infiltration and inflow (I/I) associated with the 1 in 5 year rainfall event. This “design storm” is established in the Oregon Administrative Rules (OAR) 340-041-120 sections 13 and 14 as the minimum condition under which the City must be able to convey and treat wastewater with no overflows. Unit flow factors and I/I assumptions were similar to the *2001 Master Plan* and the *2004 Pleasant Valley Master Plan*.

The primary difference between Springwater and the existing City is the level of industry anticipated. Industrial customers can have a wide range of water demands and wastewater generation rates. Wastewater discharges from large industrial developments can have a significant impact on wastewater infrastructure needs. However, these high discharges are often accompanied by high water and wastewater charges for industrial customers, and therefore many large industries employ on-site water conservation measures which reduce the volume of wastewater discharged.

A large discharger in Springwater would also present a potential opportunity for the City to implement a small-scale reuse program and provide reclaimed water to other industrial customers in Springwater; for example, public uses in and adjacent to Springwater (public parks, the Persimmon golf course, etc.),

or agricultural uses in Damascus. Wastewater from such a large discharger (or several large dischargers in close proximity) could be treated in a small package treatment facility. With appropriate treatment to meet the State of Oregon's requirements for reclaimed water quality, effluent from such a treatment plant could be used to offset local water demands through direct reuse, or possibly through aquifer storage and recovery (ASR). Solids from the treatment facility would enter the sewer system for conveyance to and treatment at the City's existing wastewater treatment plant. Pursuing these opportunities, either through onsite conservation programs with individual industries or through a local reuse program, is consistent with the objective of providing a sustainable development in Springwater. Planned infrastructure was sized based on average industrial discharge rates. This assumption reflects a balance between high volume wastewater dischargers and ultimate implementation of some level of local greater recycling or small-scale effluent reuse.

The following process was used to evaluate wastewater needs associated with Springwater:

- Establish sewershed boundaries (sewer service sub-areas) within the planning area to define areas tributary to the model nodes (manholes). The shape of the sewersheds was determined based on projected future land use and area topography.
- Define pipe networks and projected flows for each of the three land use concepts developed during planning. The networks were designed to use gravity for conveyance to the greatest extent possible, and to locate sewers in existing or proposed road right-of-way to the greatest extent possible.
- Determine pipe size and slope for the three collection system networks associated with the three land use concepts.
- Compare alternatives based on evaluation criteria established in project goals and policies.
- Apply evaluation results to selected Concept Plan land use and transportation network to develop final recommendations for wastewater system improvements.

The three land use scenarios resulted in similar wastewater system needs and costs.

Summary of Future Needs

Based on the analysis of the three sewer system scenarios and the final Concept Plan map, recommendations for sewer system improvements were developed. These recommendations include a gravity collection system to serve the Springwater community, and improvements to existing infrastructure in the City to convey the additional flow from Springwater to the City's treatment plant. Improvements are summarized below and shown in Figure 3.

- The backbone of the Springwater collection system is the extension of the Johnson Creek interceptor along Telford road. The interceptor will extend from the terminus of the existing system at 252nd/Telford Road to approximately Stone Road/Telford Road. The interceptor size will range in diameter from 12 inches at Stone Road to 21 inches at the connection to the existing system.

- A series of 8-inch to 18-inch gravity sewers will convey wastewater from the development areas to the interceptor extension. These new sewers will be routed in existing or proposed roadways.
- Two new 8-inch collectors are required to facilitate proposed development on the Brickworks site.
- Several new sewers will discharge directly to the existing Johnson Creek interceptor. These include the collectors from the Village Center area, the residential neighborhood north of the Village Center.
- Downstream of discharges into the Johnson Creek interceptor, several existing pipes will need to be upsized from 15 inches to 21 inches in diameter. These upgrades include pipes 3655-4-001, 3654-4-160, 3654-4-150, 3554-4-220, 3554-4-160, 3554-4-150, and 3554-4-140.
- The capacity of the Linneman Pump Station will need to be increased by 7.2 cfs (4.7 mgd) to provide adequate capacity for flows from Springwater. This is in addition to the capacity increase at Linneman required due to growth within the city limits and the addition of Pleasant Valley.
- A second, parallel 18-inch force main will need to be added downstream of the Linneman Pump Station to maintain acceptable velocities when flows from Springwater and Pleasant Valley are added to the system.

Preliminary infrastructure improvements to serve Springwater Phase 2 (southwest of the current planning area) were developed. These improvements are based on the assumption that all of the area that drains by gravity from Springwater will be served by the City of Gresham. The topography in the Phase 2 area results in gravity wastewater flow being conveyed along Sunshine Creek. The location of the Sunshine Creek drainage area within Damascus/Springwater Phase 2 is shown in Figure 4. It is anticipated that flow from the Phase 2 area would enter the Springwater system at approximately the intersection of 252nd and Rugg Road. In order for the City of Gresham to provide service to this area, the main interceptor through Springwater would need to be upsized, and a new interceptor provided to route this flow from approximately the intersection of 252nd and Telford Road to the treatment plant. An alignment study for this new interceptor would need to be provided in the future to determine the optimal routing of such an interceptor.

Additional capacity at the City's wastewater treatment plant on NE Sandy Boulevard will also need to be allocated to flow generated in Springwater. Planning for future wastewater treatment improvements are addressed in the City's Wastewater Facility Plan.

Recommended capital improvements and associated costs are shown in Table 5. Pipe costs are based on the Tabula 1.0 Conveyance System Cost Estimation software made available by King County, Washington. Costs are based on an Engineering News Record (ENR) 20-City Construction Cost Index (CCI) of 7297.

Figure 3 – Proposed Sewer System Improvements

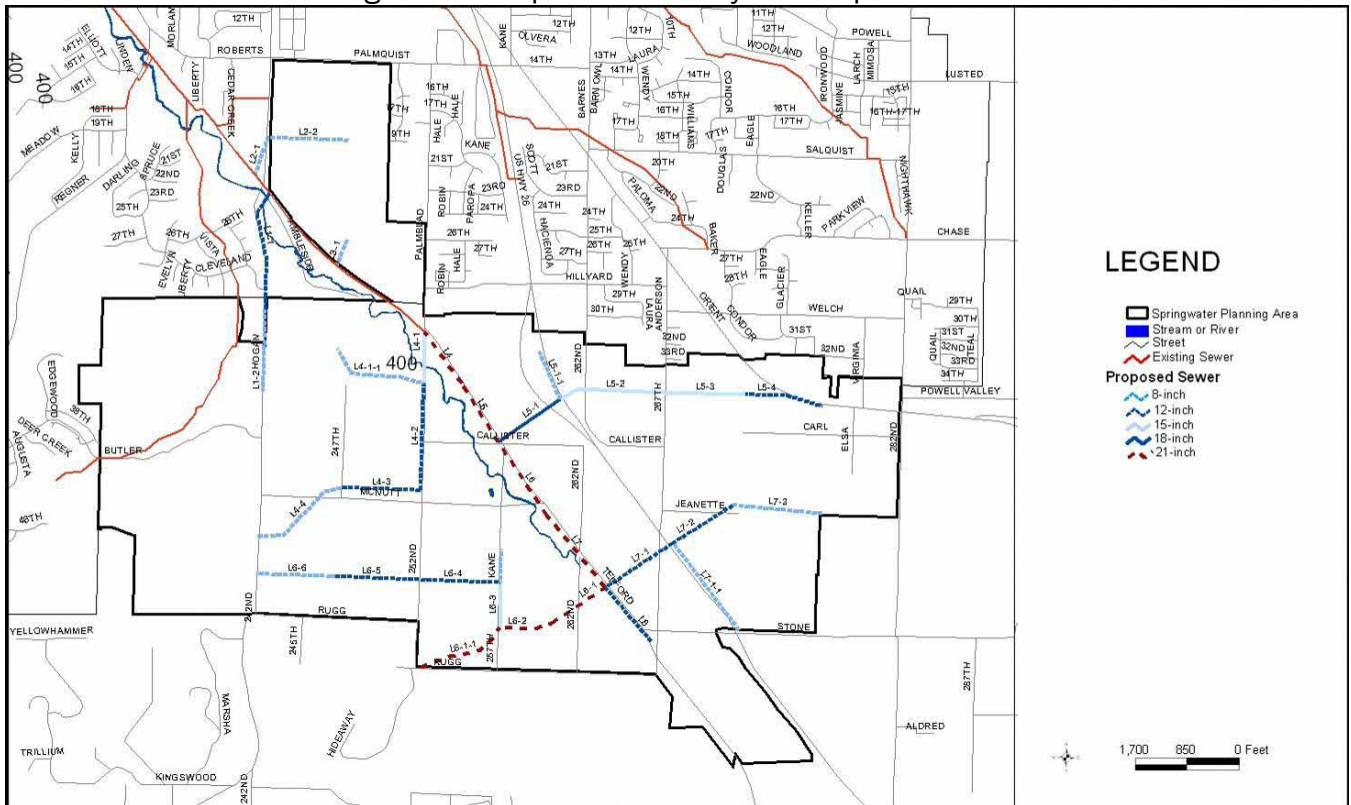


Figure 4 – Springwater Phase 2 and Sunshine Valley Drainage Area

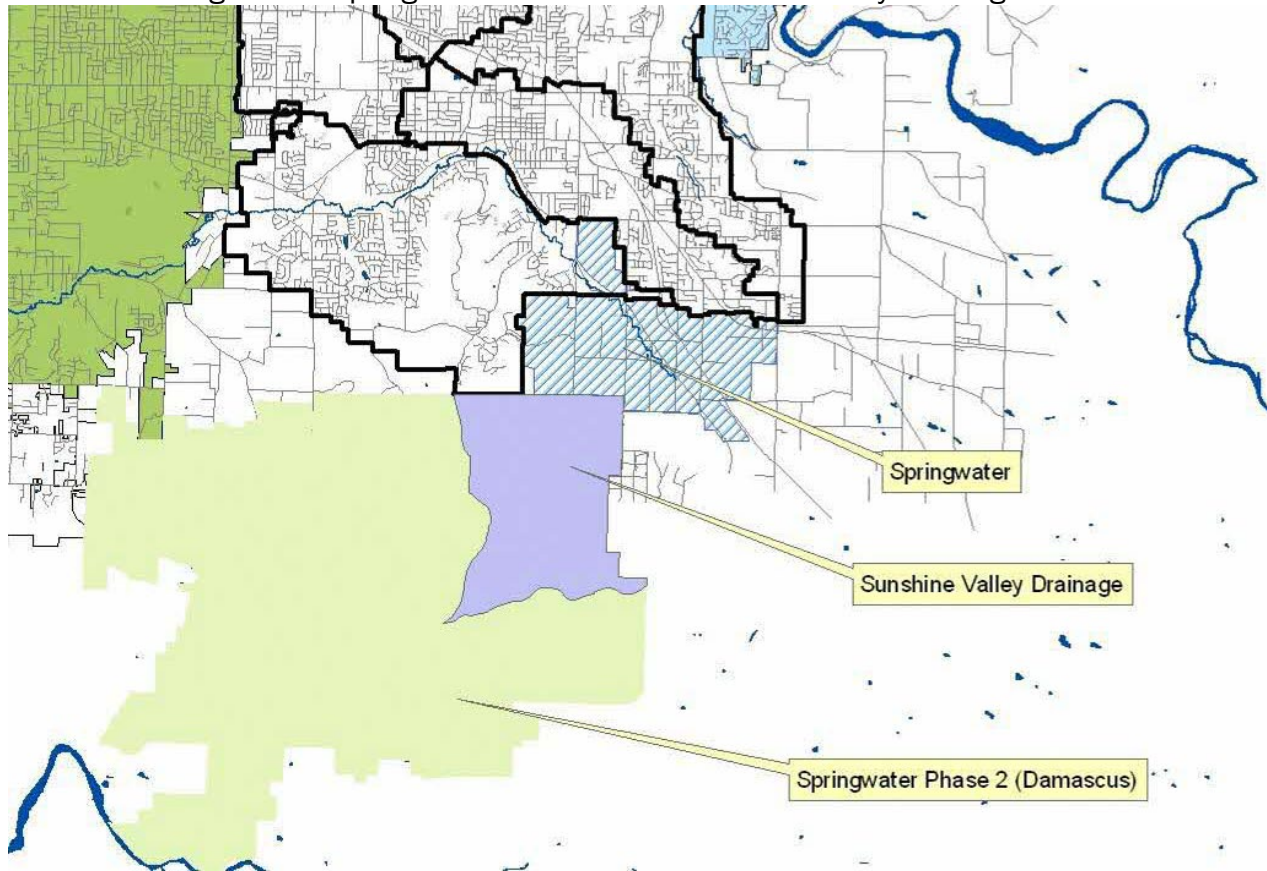


Table 5. Capital Costs of Wastewater Collection and Conveyance Improvements¹

Pipe ID	Pipe Length (ft)	Pipe Size (in)	Timing (years)	Total Project Cost	Responsible Jurisdiction	Funding Source
New Pipes in Springwater						
L6-1-1	1525.5	21	6-20	\$1,325,100	Damascus	SDC/Local
L6-2	864	21	6-20	\$1,108,600	Gresham	SDC/Local
L6-3	738	15	6-20	\$582,300	Gresham	SDC/Local
L6-1	1,066	21	6-20	\$691,500	Gresham	SDC/Local
L8	1,178	12	6-20	\$671,500	Gresham	SDC/Local
L7	1,524	21	6-20	\$1,126,600	Gresham	SDC/Local
L7-1	1,337	12	6-20	\$756,200	Gresham	SDC/Local
L7-1-1	1,817	8	6-20	\$923,900	Gresham	SDC/Local
L7-3	1,490	8	6-20	\$582,800	Gresham	SDC/Local
L7-2	1,169	12	6-20	\$525,500	Gresham	SDC/Local

¹ Does not include Wastewater Treatment Plan infrastructure required by Springwater.

Pipe ID	Pipe Length (ft)	Pipe Size (in)	Timing (years)	Total Project Cost	Responsible Jurisdiction	Funding Source
L5-4	1,294	12	6-20	\$581,600	Gresham	SDC/Local
L5-3	1,333	15	6-20	\$670,200	Gresham	SDC/Local
L5-2	1,777	15	6-20	\$893,200	Gresham	SDC/Local
L5-1	1,243	18	1-5	\$671,600	Gresham	SDC/Local
L6	1,467	21	1-5	\$868,400	Gresham	SDC/Local
L5	1,126	21	1-5	\$666,800	Gresham	SDC/Local
L4-4	1,712	8	6-20	\$669,700	Gresham	SDC/Local
L4-3	1,293	12	6-20	\$581,000	Gresham	SDC/Local
L6-6	1,261	8	6-20	\$493,400	Gresham	SDC/Local
L6-5	1,368	12	6-20	\$614,800	Gresham	SDC/Local
L6-4	1,363	12	6-20	\$528,600	Gresham	SDC/Local
L4-2	1,765	12	1-5	\$793,500	Gresham	SDC/Local
L4-1	893	15	1-5	\$583,500	Gresham	SDC/Local
L4	1,107	21	6-20	\$655,400	Gresham	SDC/Local
L4-1-1	1,681	8	6-20	\$657,600	Gresham	SDC/Local
L1-2	1,355	8	6-20	\$530,200	Gresham	SDC/Local
L1-1	2,175	12	6-20	\$977,700	Gresham	SDC/Local
L6-2-1	550	8	6-20	\$180,200	Gresham	SDC/Local
L5-1-1	865	8	6-20	\$338,500	Gresham	SDC/Local
New Pipes in Existing City Limits						
L3-1	458	8	6-20	\$232,900	Gresham	SDC/Local
L2-2	1,336	8	6-20	\$522,700	Gresham	SDC/Local
L2-1	693	8	6-20	\$352,700	Gresham	SDC/Local
Subtotal Springwater Planning Area				\$21,358,200		
Offsite Upgrades						
Linneman Pump Station Upgrade			6-20	\$2,033,500	Gresham	SDC/Local
Parallel Force Main			6-20	\$1,836,100	Gresham	SDC/Local
Upsize Existing Pipes			6-20	\$1,486,000	Gresham	SDC/Local
Subtotal Offsite Improvements				\$5,355,600		
Total Wastewater Improvements				\$26,713,800		

Additional future needs include:

- Updating the City’s Master Plan to include both capital improvements within Springwater and capital improvements downstream in the City’s existing system required as a result of development in Springwater.
- Updating the City’s sewer SDC improvement fees to provide adequate funding for improvements resulting from development in Springwater.
- Determining the appropriate service provider for the portion of Springwater Phase 1 located in Clackamas County.
- Coordinating with the City of Damascus regarding wastewater system planning and design guidelines for the portion of the study area in Damascus (south of Rugg/Stone roads).
- Continuing to investigate the opportunity for wastewater reuse through satellite wastewater treatment systems in Springwater. Satellite wastewater treatment is becoming more cost-effective for onsite treatment of sanitary wastewater from large industrial sites. There could be multiple benefits of satellite treatment in Springwater, including:
 - Providing irrigation water for public parks or other public areas (schools, government facilities, etc.)
 - Providing flow augmentation in Johnson Creek
 - Providing irrigation water for nursery or agricultural land outside of the study area in exchange for water rights

In addition to these benefits, satellite treatment and effluent reuse is consistent with the desire to make Springwater a green development. Use of satellite or onsite treatment could even be incorporated in a public demonstration project in a highly visible area such as the Village Center to educate the public and further promote sustainable development in the community. The Master Plan should include provisions to allow the City to evaluate the viability of satellite treatment and effluent reuse associated with the unique needs and features of developments in Springwater.

Funding Plan

The following discussion presents the envisioned strategy for funding wastewater service extensions in Springwater. Gresham relies on developer contributions, system development charges (SDCs) and retained earnings from the utility to finance expansion. In the past, Gresham has borrowed against future utility revenues to finance major improvements in wastewater treatment capacity. This approach required wastewater rate increases for existing customers to finance these improvements. The City has not utilized this capital investment acquisition strategy to finance new pipelines or pipeline capacity projects.

Depending on the location of initial development, it may be difficult for Gresham to finance wastewater system improvements in the short term. There are no initial strategic investments that

must occur prior to any wastewater system expansion in Springwater. However, since the closest connection to the existing gravity sewer system is in the northwest portion of the study area, parts of Springwater adjacent or close to this existing system would be the easiest to fund in the short term. Furthermore, the main interceptor through Springwater will be along Telford road. If initial development occurs in the southeastern portion of the Plan District (away from the existing system) or toward the eastern or western boundaries of the Plan District (away from Telford), the cost of initial system improvements will increase and may be difficult for the City to fund in the short term. Over the long term, assuming the City adopts adequate SDCs to cover the required capital improvement projects, SDCs should generate enough revenue from within Springwater to capitalize system improvements.

Gresham has recently undertaken a separate effort to evaluate water and wastewater SDCs. This project is examining options for both city-wide and area-specific SDCs, and will make recommendations regarding potential changes to the existing SDC methodology, especially in the improvement fee, to ensure that the fee is adequate to recover forecast capital improvement needs in Springwater.

GOALS AND POLICIES

Applicable goals and policies that relate to the provision of public facilities in the existing comprehensive plan for the City of Gresham also apply to the Springwater PFP.

Action Measures

1. Implement recommendations of the Wastewater SDC study being conducted concurrently with the completion of this PFP.
2. Continue to coordinate with the City of Damascus and/or Water Environment Services of Clackamas County to determine the appropriate service provider for Sunshine Valley.
3. If Gresham is to provide treatment for any portion of flow from the City of Damascus, participate with City of Damascus and/or Water Environment Services of Clackamas County on an alignment study to identify the appropriate alignment for a new interceptor to convey wastewater to Gresham's wastewater treatment plant.
4. Conclude Gresham and Clackamas County negotiations for service agreements for the portion of Springwater Phase 1 located in Clackamas County. Regardless of the solution, the agreement needs to comply with provisions of ORS 195 that relate to urban service providers.
5. Investigate wastewater discharge or non-potable water demands as industries begin to locate in Springwater to assess the potential for a water reuse program.
6. Initiate discussions with the Oregon Department of Environmental Quality (DEQ) to investigate the regulatory precedence for or requirements associated with using treated effluent for environmental benefits such as streamflow augmentation and aquifer recharge.

10.824 STORMWATER MANAGEMENT SYSTEM

System Description/Condition Assessment

Existing Conditions. Springwater is a rural area where stormwater is currently conveyed overland in ditches to natural drainages. Natural drainages include approximately 2.5 miles of Johnson Creek (ODFW reaches 16 through 19), and eight tributaries, four each on the northeast and southwest sides of the mainstem Johnson Creek. Drainage ditches next to public roadways convey runoff from road surfaces, and in some cases from adjacent private properties, to natural stream systems. Some stream channels are in good condition, although many are degraded. Predominant soils in the area include Cascade Silt Loam, Wolent Silt Loam, Powell Silt Loam, and Wapato Silt Loam. These are generally considered hydric soils with poor drainage characteristics. Many properties in Springwater have been tilled to drain the native wetland prairies for farming. Some riparian habitat has been removed, predominantly in flat areas where farming is prevalent.

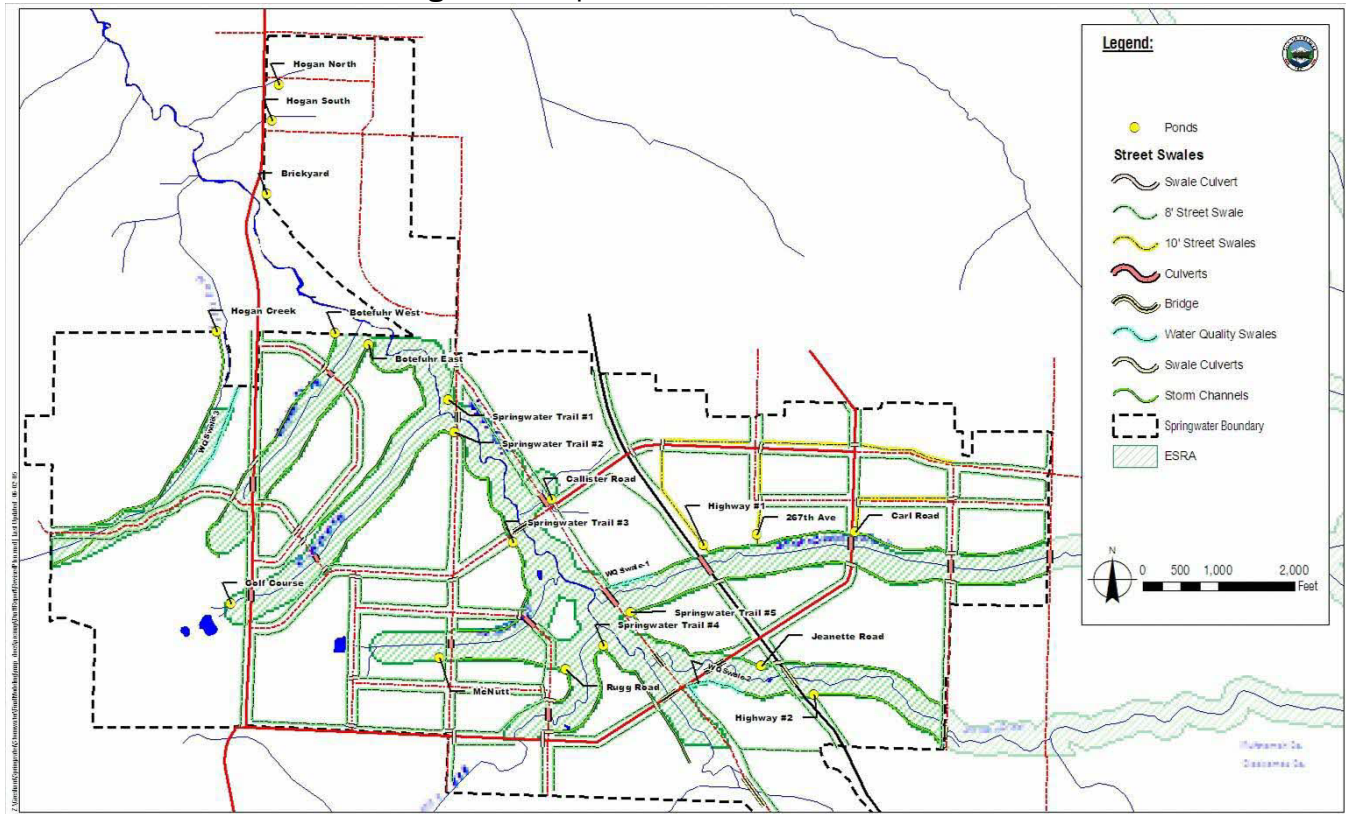
Design Criteria. Regional stormwater management facilities (detention ponds) were designed to include adequate volume for water quality, flood control, and channel stability. The water quality volume is defined as 1/3 of the two-year storm. The flood control volume includes the additional volume of runoff under developed conditions from the 10-year nuisance storm (146-hour storm event). The channel stability volume includes additional volume required to limit release rates to less than the geomorphically significant flow (i.e., flow capable of moving sediment). In this case, the channel stability volume was 50% of the two-year storm under existing conditions. Swales, swale culverts, and drainage channels were designed to carry the 10-year nuisance storm. Stream crossings were designed to convey the 100-year storm for streets identified as arterials and collectors. All other stream crossings were designed to carry the 10-year nuisance storm.

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.

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.

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.

Figure 5. Proposed Stormwater Facilities



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 site 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.

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.

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

Table 6. Regional Stormwater Facility Cost Summary

Pond Name	Total Volume (CY)	Cost Estimate	Timing	Jurisdiction	Funding Source
267 th Ave	30,336	\$2,418,400	6-20	Gresham	SDC/Local
Carl Road	17,041	\$1,368,000	6-20	Gresham	SDC/Local
Jeanette Road	20,946	\$1,676,600	6-20	Gresham	SDC/Local
Highway #2	6,804	\$558,400	6-20	Gresham	SDC/Local
Highway #1	25,601	\$2,044,300	6-20	Gresham	SDC/Local
Hogan South	14,868	\$1,196,300	6-20	Gresham	SDC/Local
McNutt	16,192	\$1,672,200	6-20	Gresham	SDC/Local
Springwater Trail #4	10,343	\$838,400	6-20	Gresham	SDC/Local
Golf Course	14,588	\$1,174,100	6-20	Gresham	SDC/Local
Springwater Trail #3	9,869	\$800,900	6-20	Gresham	SDC/Local
Hogan North	20,827	\$1,667,200	6-20	Gresham	SDC/Local
Callister Road	19,410	\$1,555,300	6-20	Gresham	SDC/Local
Rugg Road	19,955	\$1,598,300	6-20	Gresham	SDC/Local
Springwater Trail #2	8,468	\$690,100	0-5	Gresham	SDC/Local
Springwater Trail #1	18,226	\$1,461,600	0-5	Gresham	SDC/Local
Hogan Creek	7,641	\$624,600	6-20	Gresham	SDC/Local
Botefuhr West	10,878	\$880,700	0-5	Gresham	SDC/Local
Botefuhr East	5,904	\$487,200	0-5	Gresham	SDC/Local
Springwater Trail #5	16,508	\$1,325,900	6-20	Gresham	SDC/Local
Brickyard	14,071	\$1,133,200	6-20	Gresham	SDC/Local
	308,476	\$25,172,000			

Table 7. CIP Swale and Drainage Channel Cost Summary

8' Top Width Swale Cost Summary					
Annex Area	Length	Total Cost (\$)	Timing (years)	Jurisdiction	Funding Source
1	179	\$3,000	6-20	Gresham	SDC/Local
2	8,249	\$136,500	6-20	Gresham	SDC/Local
3a	5,676	\$93,900	6-20	Gresham	SDC/Local
3b1	8,783	\$145,300	0-5	Gresham	SDC/Local
3b2	12,339	\$204,100	0-5	Gresham	SDC/Local
4a	4,385	\$72,500	6-20	Gresham	SDC/Local
4b	9,437	\$156,100	6-20	Gresham	SDC/Local
4c	7,332	\$121,300	6-20	Gresham	SDC/Local
5a	7,706	\$127,500	0-5	Gresham	SDC/Local
5b	9,041	\$149,500	0-5	Gresham	SDC/Local
5c	10,396	\$172,000	6-20	Gresham	SDC/Local
6a	2,930	\$48,500	6-20	Gresham	SDC/Local
6b	6,164	\$102,000	6-20	Gresham	SDC/Local
7a	3,489	\$57,700	6-20	Gresham	SDC/Local
8a	3,534	\$58,500	6-20	Damascus	SDC/Local
8b	1,354	\$22,400	6-20	Damascus	SDC/Local
		\$1,670,800			
10' Top Width Swale Cost Summary					
Annex Area	Length	Total Cost (\$)	Timing (years)	Jurisdiction	Funding Source
5b	4,814	\$93,000	0-5	Gresham	SDC/Local
5c	2,815	\$54,400	6-20	Gresham	SDC/Local
6a	93	\$1,800	6-20	Gresham	SDC/Local
		\$149,200			

8' Top Width Swale Cost Summary					
Annex Area	Length	Total Cost (\$)	Timing (years)	Jurisdiction	Funding Source
Drainage Channels					
Annex Area	Length	Total Cost (\$)	Timing (years)	Jurisdiction	Funding Source
2	4,125	\$74,600	6-20	Gresham	SDC/Local
3a	4,080	\$73,800	6-20	Gresham	SDC/Local
3b1	6,644	\$120,100	0-5	Gresham	SDC/Local
3b2	3,380	\$61,100	0-5	Gresham	SDC/Local
4a	1,702	\$30,800	6-20	Gresham	SDC/Local
4c	3,839	\$69,400	6-20	Gresham	SDC/Local
5b	1,451	\$26,300	0-5	Gresham	SDC/Local
5c	2,258	\$40,800	6-20	Gresham	SDC/Local
6a	3,485	\$63,000	6-20	Gresham	SDC/Local
6b	3,811	\$68,900	6-20	Gresham	SDC/Local
7a	2,575	\$46,600	6-20	Gresham	SDC/Local
7b	3,449	\$62,400	6-20	Gresham	SDC/Local
		\$737,808			

Onsite Practices. Onsite stormwater management in Springwater requires green development practices. Green development practices are a set of techniques that mimic and incorporate the predevelopment hydrology of a site into future development. Green development practices include site management techniques that minimize (1) disturbance to existing soils, tree canopy, and other sensitive natural resource features and (2) impervious surfaces, to reduce the production of surface runoff. They also manage runoff through techniques that use natural areas and landscaping to treat, retain, attenuate, and infiltrate stormwater within each development site instead of using traditional piped collection and conveyance systems. Stormwater management plans relying on green development practices accommodate onsite facilities using the hydrology processes of infiltration to soil and evapotranspiration to atmosphere.¹

An approved Stormwater Management Plan will be required under the new Springwater code. Stormwater management plans provide a mechanism for the City to review how development proposals for stormwater facilities meet the requirements for onsite stormwater management practices. The intention is that the stormwater management plans be submitted and approved along with site plan or preliminary development plat approval. Stormwater management considerations should be included in the City's business recruitment program for Springwater.

¹ Pleasant Valley Stormwater Master Plan, CH2M Hill, July 2004.

Summary of Future Needs

- Coordination is needed between Gresham regarding stormwater system planning and design guidelines for the portion of the study 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.
- 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 will be the responsibility of Multnomah County.

Funding Plan

The following discussion presents the envisioned strategy for funding stormwater service extensions in Springwater. Gresham relies on developer contributions, system development charges (SDCs) and retained earnings from the utility to finance expansion. In the past, Gresham has borrowed against future utility revenues to finance major improvements in stormwater facilities needs.

Depending on the location of initial development, it may be difficult for Gresham to finance stormwater system improvements in the short term. There are no initial strategic investments that must occur prior to any stormwater system development in Springwater. However, since the likely initial annexation areas are located to the east and west of Johnson Creek adjacent to the existing City limits, the City may want to prioritize the Springwater Trail Ponds #1 and #2 for early funding. Likewise, CIP swales located along 252nd should be prioritized for early funding to support the potential annexation of these areas.

GOAL

The City of Gresham shall manage stormwater to minimize impacts on localized and downstream flooding and protect water quality and aquatic habitat.

Policies

The following policies are made part of this plan:

1. Manage stormwater through green development practices that rely on infiltration, bioretention and evapotranspiration or other processes that enhance the natural hydrologic system.
2. Incorporate green streets designs as described in the City of Gresham's Stormwater Management Manual and Public Works Standards.
3. Design culvert improvements for existing and proposed stream crossings to eliminate barriers to fish passage.

4. Ensure that the quantity of stormwater after development will be equal to or less than the quantity of stormwater before development, wherever practicable.
5. Ensure that the quality of stormwater after development will be equal to or better than the quality of stormwater before development, wherever practicable.
6. Design public stormwater facilities using approaches that integrate stormwater vegetation such as swales, trees, vegetated planters and wetlands.
7. Prohibit the encroachment of structures and other permanent improvements over public and private stormwater facilities and within public stormwater easements, drainage ways, creeks, streams, seasonal waterways, seeps and springs.
8. Develop equitable funding mechanisms to implement a CIP for the stormwater management system and provide adequate funding for stormwater management facility maintenance.

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.
4. Look for opportunities to enhance natural resource areas through the construction and maintenance of stormwater facilities.
5. Update the City's onsite stormwater management program to address land use types in Springwater.

(Amended by Ordinance 1789 passed 11/20/18; effective 1/1/19)

10.825 PARKS, OPEN SPACE AND TRAILS SYSTEM

System Description/Condition Assessment

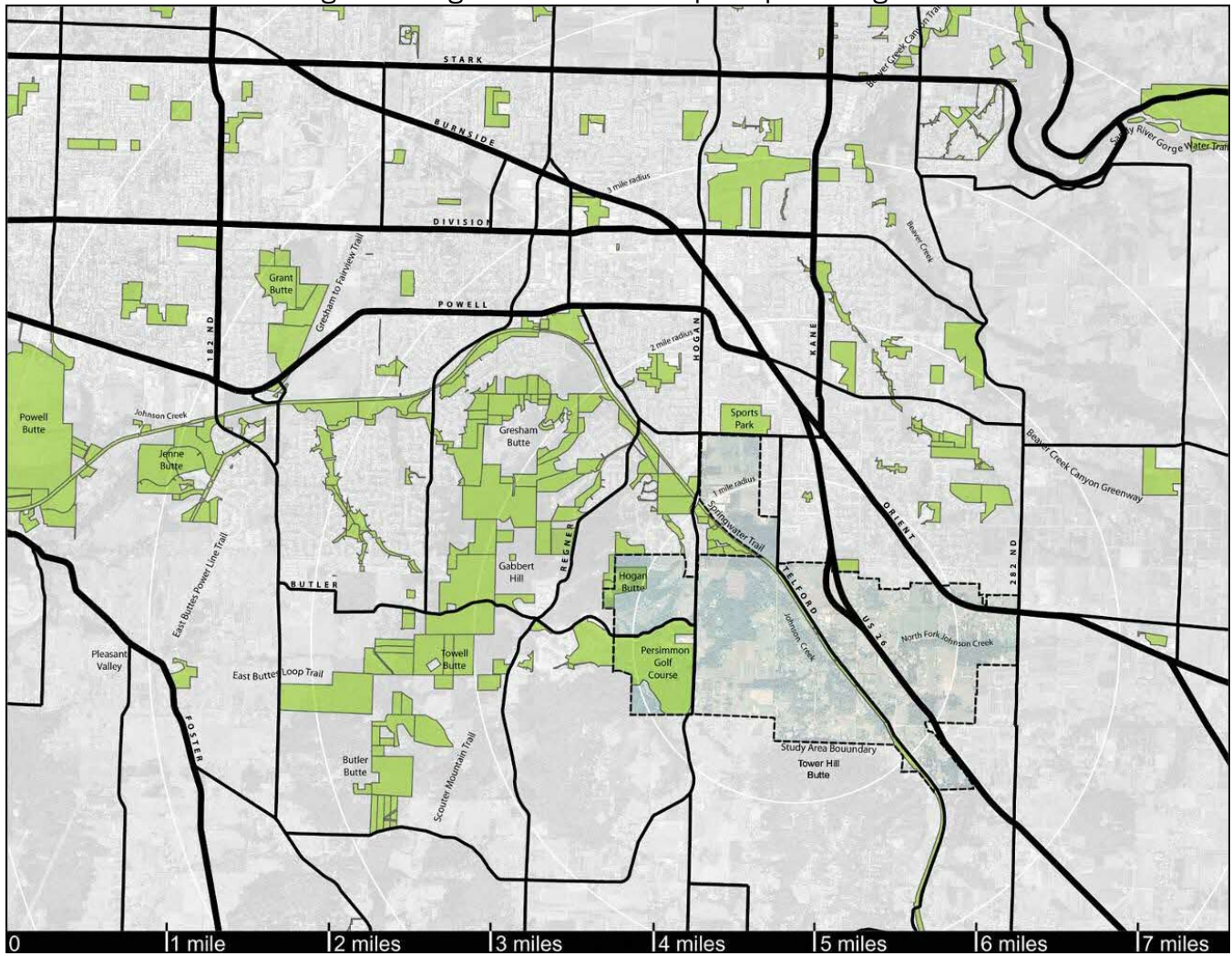
There are currently no parks in Springwater. There is one trail – the Springwater Trail – which bisects the planning area. Both regional and site conditions directly affect the potential of parks, open space, and trails in Springwater. These regional and site conditions are described below.

Regional Connections. The expansion of the Urban Growth Boundary places Springwater at the southeast gateway into the Portland metro area, within a short drive of over 1.5 million residents. Major population centers include: Downtown Portland (14 miles to the west), downtown Gresham (2 miles to the north), and downtown Sandy (9 miles to the southeast). Primary regional access routes include US Highway 26, Hogan Road running north-south through Springwater, and Butler Road which is planned to connect Springwater to Pleasant Valley.

Regional Natural Connections. The buttes and Johnson Creek create a very diverse landscape throughout the region. Intertwined with the natural features are several regional trails that have been outlined by Metro’s Trails Master Plan. Their pattern, along with the open space that has been assembled, is directly correlated to the creeks and buttes in the region. Listed below are several of the regional trails that will potentially link to Springwater’s local trail system. Major trails include the following:

- **Springwater Trail**, the nation’s 499th rail to trails conversion, is one of the most significant trails in the state connecting west from the study area to Milwaukie, OR. It is planned to extend east beyond the study area to Estacada and the Mt. Hood National Forest to connect to the Pacific Coast Trail.
- **40 Mile Loop Trail**, which was part of the original Olmsted Brothers Master Plan, will be located less than a mile to the northeast of the study area along Beaver Creek creating a 160 mile continuous trail.
- The proposed **East Buttes Loop Trail**, which will be located directly to the west of the study area, will connect the Springwater Trail to the **Scouter Mountain Trail** and will loop back to the Springwater. Unlike the Springwater Trail, both of these trails travel along butte peaks offering more intensive hiking.

Figure 7. Regional Access and Open Space Diagram



- **Forested Areas** – The most significant forested areas are along the creek corridors. However there are several forest stands that are important to habitat, recreational activities and educational opportunities outside the creek corridors that should be considered for possible open space acquisition. The graphic below shows the five most significant stands outside the creek corridors. See the Springwater Natural Resources Report for more information.

Parks and Open Space. There are several parks and open space areas adjacent to Springwater. These are described below:

- **Sports Community Park** is a 33.35 acre youth recreation facility within a 30-minute walk of most future residents of Springwater and will help meet future active recreation needs for the district.
- **Southeast Neighborhood Park** is an undeveloped 6.15-acre neighborhood park located directly north of the project boundary adjacent to US 26.
- **Southeast Community Park** is an undeveloped 10-acre community park that may be developed in conjunction with a proposed school adjacent to the site.
- There is a large amount of **open space along the Springwater Corridor** directly to the northwest of the study area, which will play into the overall open space system for Springwater. Most of this land is owned by the City of Gresham and Metro.
- **Persimmon Golf Course**, while privately owned, offers a visual amenity as well as a recreational opportunity not serviced by the City. Connections to it from adjacent neighborhoods could expand the open space system beyond the public parks open space and trail system.

Figure 9. Natural Features and View Corridors Diagram

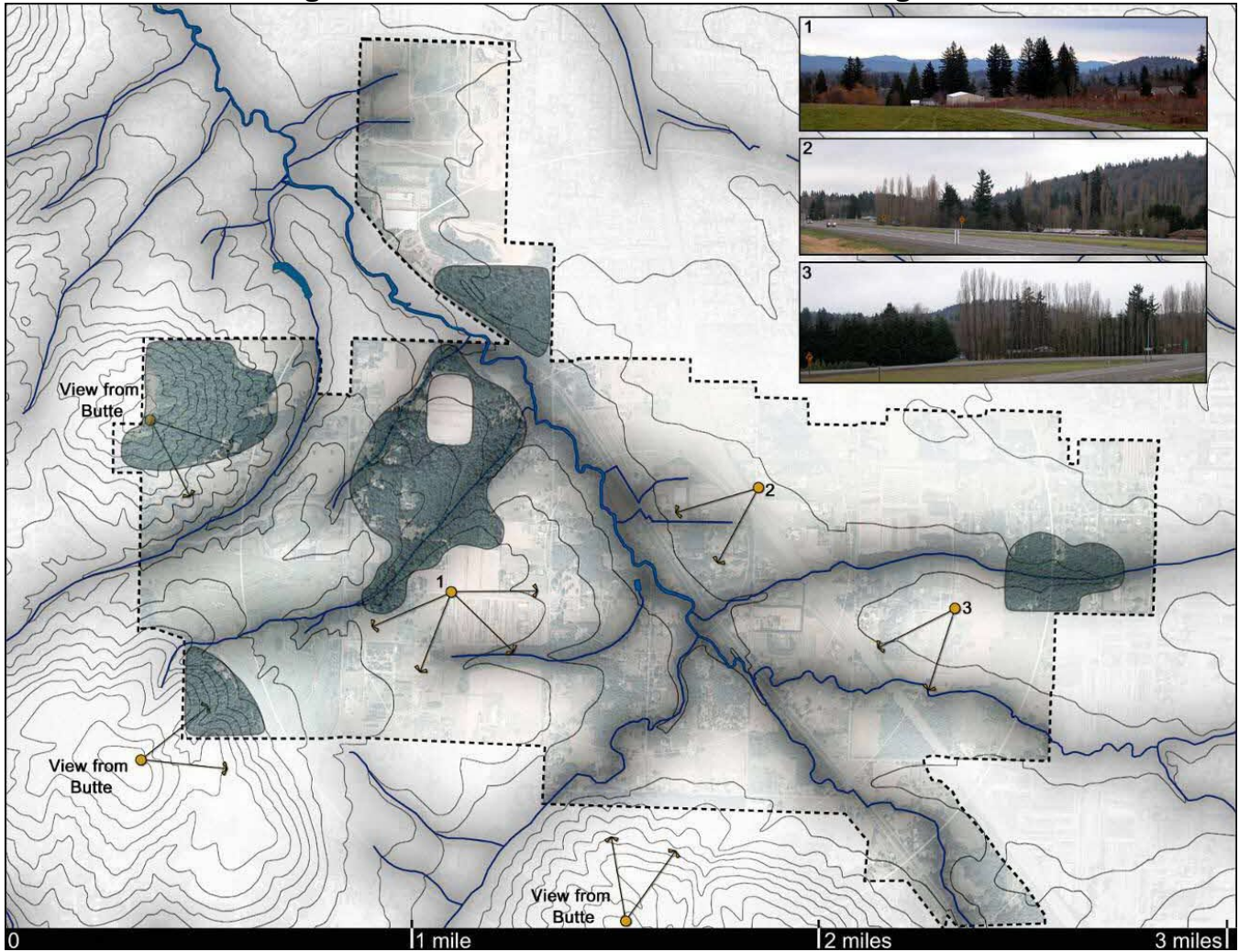
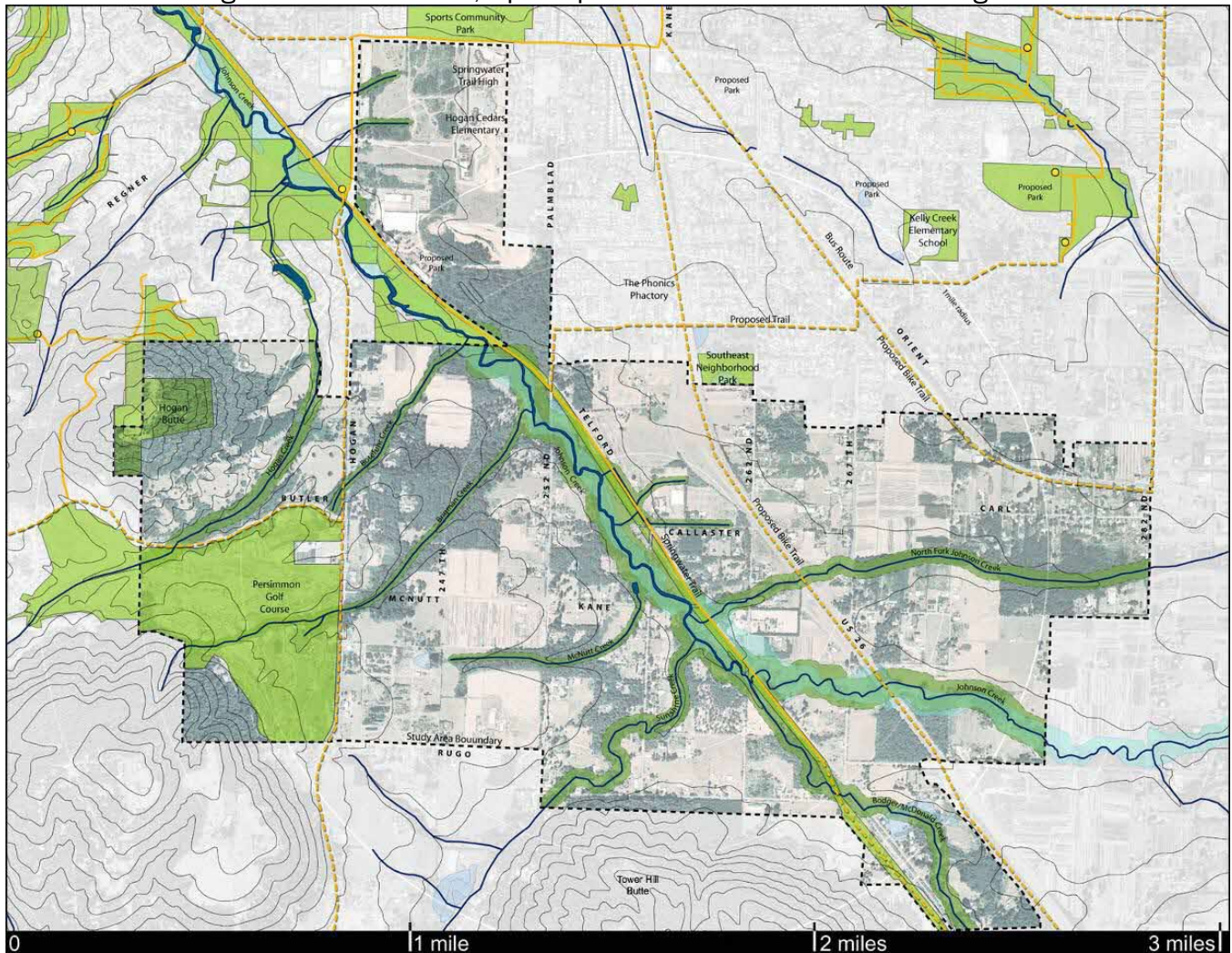


Figure 10. Local Parks, Open Spaces and Trail Connections Diagram



System Analysis

Springwater Levels of Service

Parks, open space and trails standards are intended to facilitate the creation of public amenities for the enjoyment of passive and active recreational activities by the residents and employees of a particular area. This plan has made recommendations for the level at which each type of amenity is offered based on comparisons to national standards and benchmarks created by the National Recreation and Park Association, and Gresham’s previous master planning documents.

Level of Service or LOS is the tool by which the amount of a particular park type is measured to meet the needs of the community. It is calculated by dividing the area, number or length of an amenity by the number of residents in the same district. LOS is usually calculated as a total (usually acres) per 1000 residents.

Springwater Standards

The following LOS recommendations and resulting amenity totals have created the framework by which parks and open space have been allocated in the Springwater district. Park placement and sizing has been considered in reference to the total acres or miles of amenities listed below. Because there has been a range of housing population proposed for Springwater the resulting park amenities has also been listed as a range. These totals are a reference point based on the land use planning process’s best estimate for an eventual total build-out for the district. As Springwater develops, the parks department will have to balance funding resources with existing and future demands to implement the master plan as closely as possible.

The following table is based on the City of Gresham’s adopted list of park types, open spaces and trails, but has been modified for the needs and conditions of Springwater. The totals are based on estimated population ranges of 2,500 to 3,500 households and 17,000 employees at final build-out.²

Table 8. Springwater Parks, Open Space, and Trails Level of Service

Facility	Size/Placement	Benchmark	Total Acres/Miles
Neighborhood Park	.25 to 13 acres, within ¼ mile of residents being served.	1.3 acres/ 1000 residents	8.80-12.30 acres
Community Park	5 to 50 acres for active recreation, but may be similar for alternative functions.	2 acres/ 1000 residents including employees equaling .32 residents	24.40-29.80 acres
Open Space	Varies	10 acres/ 1000 residents including employees equaling .32 residents	121.90-148.90 acres
Trails and Connectors	Connections from neighborhoods and employment centers to all major green space and civic amenities.	Based on ½ mile walk radius from neighborhoods and employment centers.	Estimated 6.2 miles

Modifications to Springwater’s Standards from Gresham’s Adopted Standards

The following items have been modified or added from the City of Gresham’s Standards because of the unique development conditions of Springwater.

- **Removal of Urban Plazas** – Gresham’s standards define urban plazas as a separate category without a specific LOS assigned to it. Because of the low densities in Springwater the category was removed. However, in the Village Center, a plaza and park block will be considered a neighborhood park and the size allocated for each will be removed from the overall neighborhood parkland available.
- **LOS Calculation for Community Park** – Based on the population range being proposed in Springwater, an LOS of 2 acres per 1000 residents would create 13.5- 18.0 acres of community park. A park this size would not support many of the land intensive activities usually associated

² To calculate total residents, households are multiplied by 2.7 residents per households.

with community parks, nor would it allow for any facilities to support the 17,000 employees expected to be working in the district. By including employees in the LOS calculation as being equivalent to 0.32 residents, the available area of community park land increases to a size able to support a nature-oriented community park and an employee-focused adult sports park.

- **LOS Calculation for Open Space** –Much like the community park calculation, the area of land available for protection of natural resources and for trail connectivity is limited using the existing residential LOS calculation. By including employees in the LOS calculation as being equivalent to 0.32 residents, open space will be able to be preserved in residential and employee districts to provide trail connections and natural resource protection. The comparison to Pleasant Valley, provided as an appendix, illustrates the need for including employees in the calculation. By using the 0.32 resident equivalents for employees, the total acreage for open space in Springwater is comparable to the total acreage that will be provided for the primarily residential Pleasant Valley district.

Neighborhood Parks

General Description

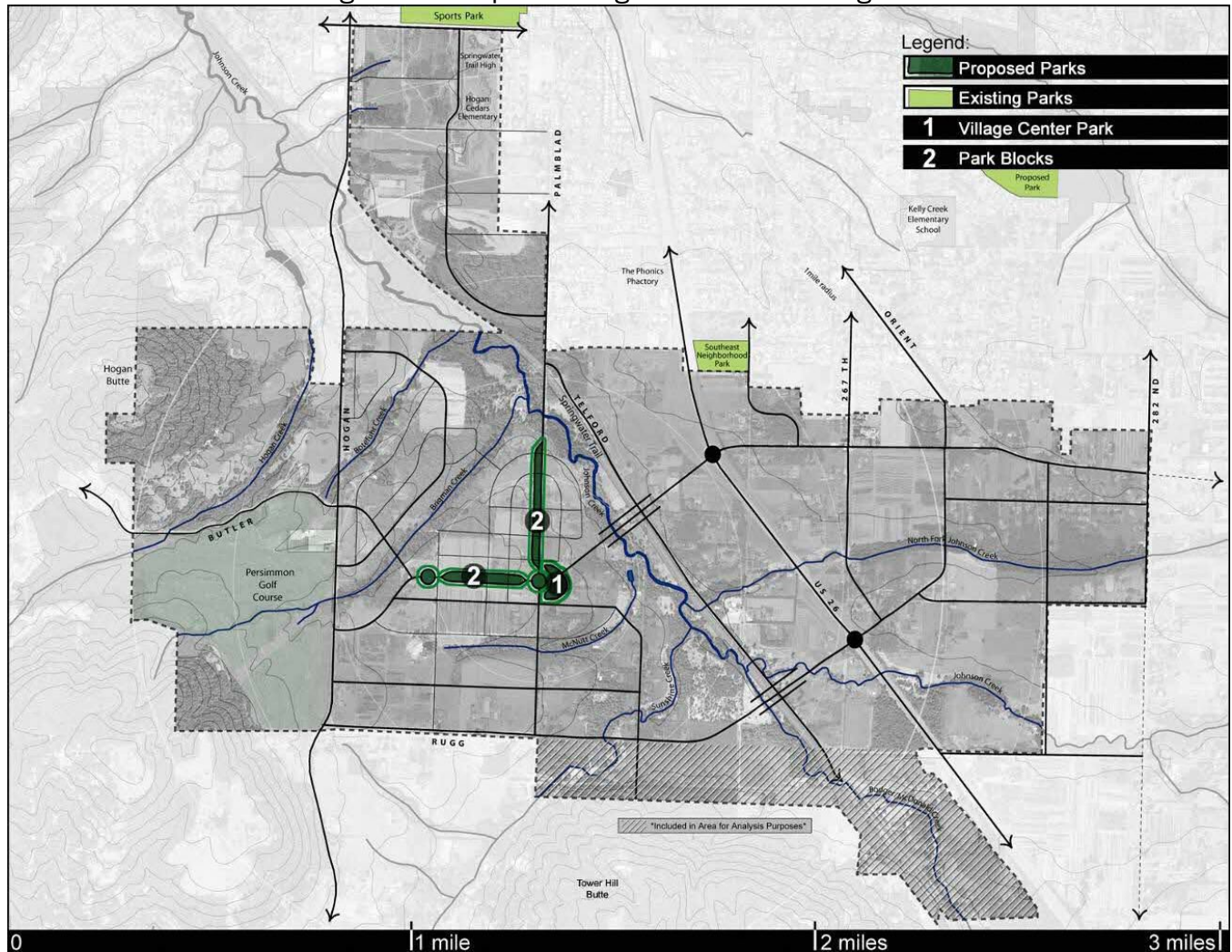
The purpose of neighborhood parks is to provide access to basic recreation opportunities for nearby residents of all ages and contribute to neighborhood identity. They should be located within biking and walking distance of all users. Neighborhood parks may be urban plazas in denser areas to provide space for community events. Neighborhood parks include the following general characteristics:

- **Size and Location:** 0.25 - 13 acres, within ¼ mile of residents being served.
- **May include:** a children’s play area, a multi-purpose paved area, non-organized sports facilities, seating, picnic areas, paths, public art, permanent restrooms, and community gardens.
- Typically would not include off-street parking.

Plan Recommendations

Use the available neighborhood park area to create a unique identity for the Village Center. Two park blocks are proposed along the north-south and east-west axis of the Village Center. These will connect to a Village Center Park and Plaza that will serve as the primary public park for the district.

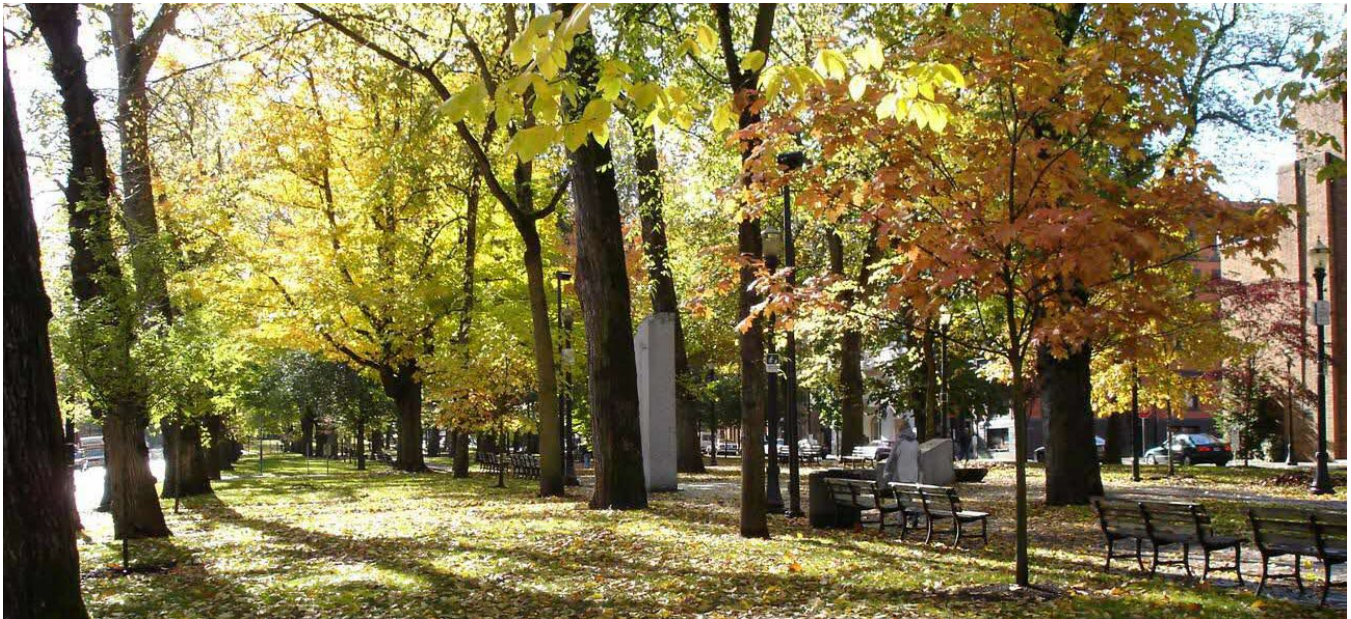
Figure 11. Proposed Neighborhood Plan Diagram



Park Blocks

The west end of the east-west park block is located at the highest point in the Village Center. From this point there is an unobstructed view of Mt. Hood across the project area. Through selective planting, it is envisioned that this view is preserved along the length of the park blocks. The east-west park blocks will be surrounded by mixed-use and commercial uses, in contrast to the north-south park blocks, which will be bordered primarily by dense residential housing. These blocks will define a linear center for the Village Center and a pedestrian way through the heart of the district.

South Park Blocks, Portland



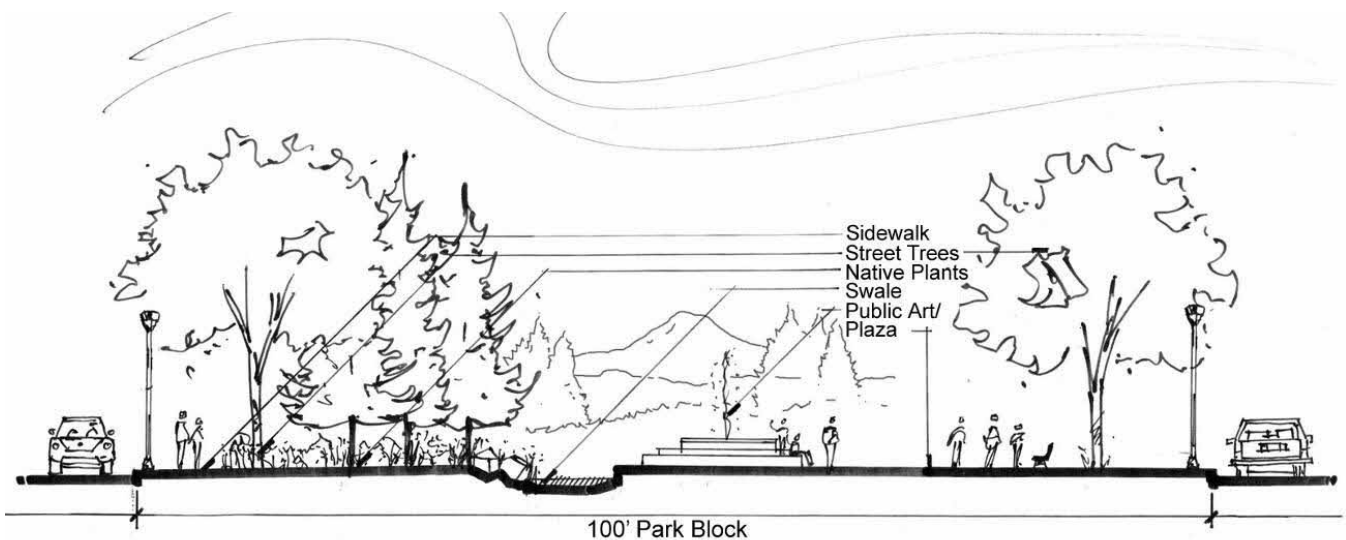
Size: approximately 100' curb to curb.

Program Elements: seating, performance space, public art, pedestrian walks, children's play equipment, and small-scale sports facilities such as basketball and bocce ball.

Potential Synergies:

- Stormwater Management – look for opportunities to incorporate best management practices into the park blocks.
- Transportation – bicycle transportation may be incorporated into the park blocks.

Typical Park Block Section



Village Center Park and Plaza

It is proposed that the Village Center Park and Plaza will be located at the intersection of the north-south and east-west park blocks. They will help to create the identity for the Village Center and should be named accordingly. The plaza should be located adjacent to the densest development in the Village Center creating a transition into the larger neighborhood park site.

View to Mt. Hood from proposed Village Center Park Site



Size: 3-5 acres plus a ½ acre plaza.

Program Elements: multi-use plaza, seating, public art, pedestrian walks, permanent restrooms, children’s play equipment, and non-organized sports facilities.

Potential Synergies:

- Stormwater Management – look for potential regional detention facilities to be located adjacent or inside the park site.
- School Sites – if an elementary school is located in the Springwater district, locating it adjacent to the park could eliminate the need for another play area adjacent to the school.

Village Center Park Character Sketch



Community Parks

General Description

The purpose of a community park is to provide active and passive recreational opportunities for all city residents and employees. Community parks accommodate larger group activities, provide a variety of accessible recreation opportunities for all age groups, offer environmental education opportunities, serve the recreational needs of families, and create opportunities for community social activities.

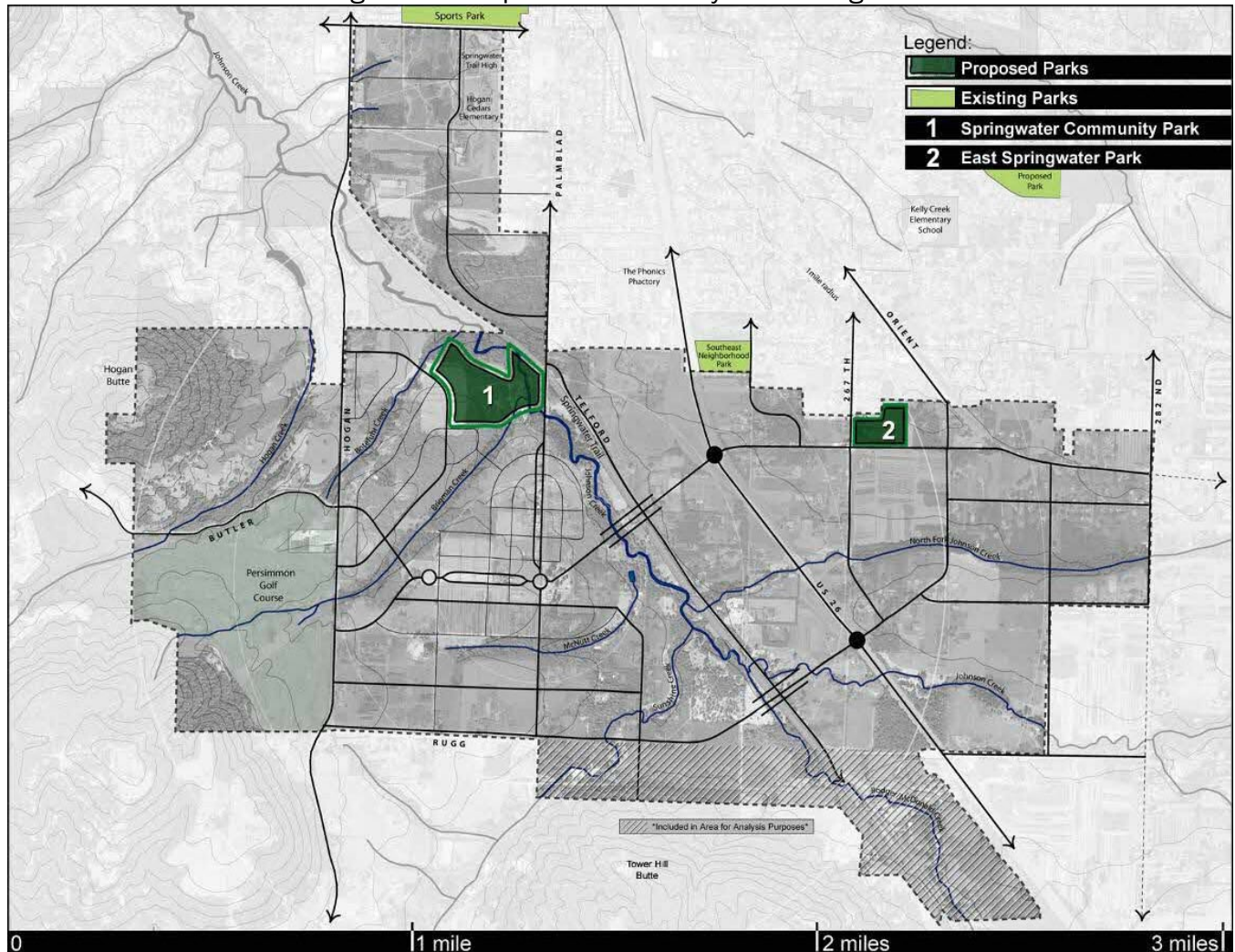
Characteristics of community parks include:

- Size: 5 to 50 acres in size
- May include: children's play area, competitive sports facilities, off-street parking, permanent restrooms, public art, group picnic areas, natural areas, paths, botanical gardens, community centers, amphitheaters, festival space, swimming pools, and interpretive facilities

Plan Recommendations

Create two new community parks, located adjacent to natural resources and/or in areas with good vehicular accessibility. The nature-oriented Springwater Community Park is envisioned to be located along the Johnson Creek Corridor and adjacent to the residential districts. It will provide two youth sports fields, and a regionally-significant natural park area, providing interpretive educational opportunities. The athletic facility-oriented East Springwater Park will be located east of US. 26, and will provide two to three adult sports fields for employee recreational opportunities as well as facilities for the adjacent neighborhood to the north.

Figure 12. Proposed Community Parks Diagram



Springwater Community Park

The proposed Springwater Community Park is intended to tie together open space, trails, and interpretive opportunities into a respectful and educational encounter with the natural environment. By locating the park along the Johnson Creek and Springwater Trail corridor, visitors would be able to enjoy the natural features of the district and become informed of the challenges facing the overall watershed. It is envisioned that this park become the identity of the district. The larger district goals of sustainability should be expressed in the design and implementation of the park.

Fairview Community Park, Fairview



Size: 20-25 acres

Program Elements: Two youth sports fields in the upland area of the park, children’s play area, off-street parking, permanent restrooms, public art, group picnic areas, interpretive trails, nature center, and amphitheater

Potential Synergies:

- Stormwater Management - look for potential regional detention facilities to be located adjacent or inside the park site.
- School Sites – if an elementary school is located in the Springwater district, locating it adjacent to the park would eliminate the need for another play area adjacent to the school.

East Springwater Park

A new community park on the east side of US 26 will serve the existing neighborhood to the north of the project boundary and the future employee population to be concentrated to the south of the proposed park location. The park is intended to be a community-wide resource with organized sports fields for adults and youth, and therefore be accessible by pedestrians, bicyclists and motorists.

East Delta Park, Portland



Size: 5-10 acres

Program Elements: Two to three adult/youth sports fields, off-street parking, permanent restrooms, seating, pedestrian walks, and children’s play equipment

Open Space

General Description

The purpose of open space, greenways and corridors is for the protection and restoration of natural and scenic resources, and the creation of nature-oriented outdoor recreation and trail-oriented activities. It provides opportunities for rest and relaxation, protects valuable natural resources, protects wildlife, and contributes to the environmental health of the community. By preserving and providing access to open space the surrounding property becomes more valuable because of the amenities and views that are created. Characteristics of open space are as follows:

- Large enough to protect resources and support recreational activities.
- May include trails, trailhead amenities (bicycle racks, picnic areas, portable restrooms, and trash enclosures), benches, and interpretive signs.

Plan Recommendations

There will be 121.90 – 148.90 acres of Parks 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 447 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:

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.

Potential Synergies:

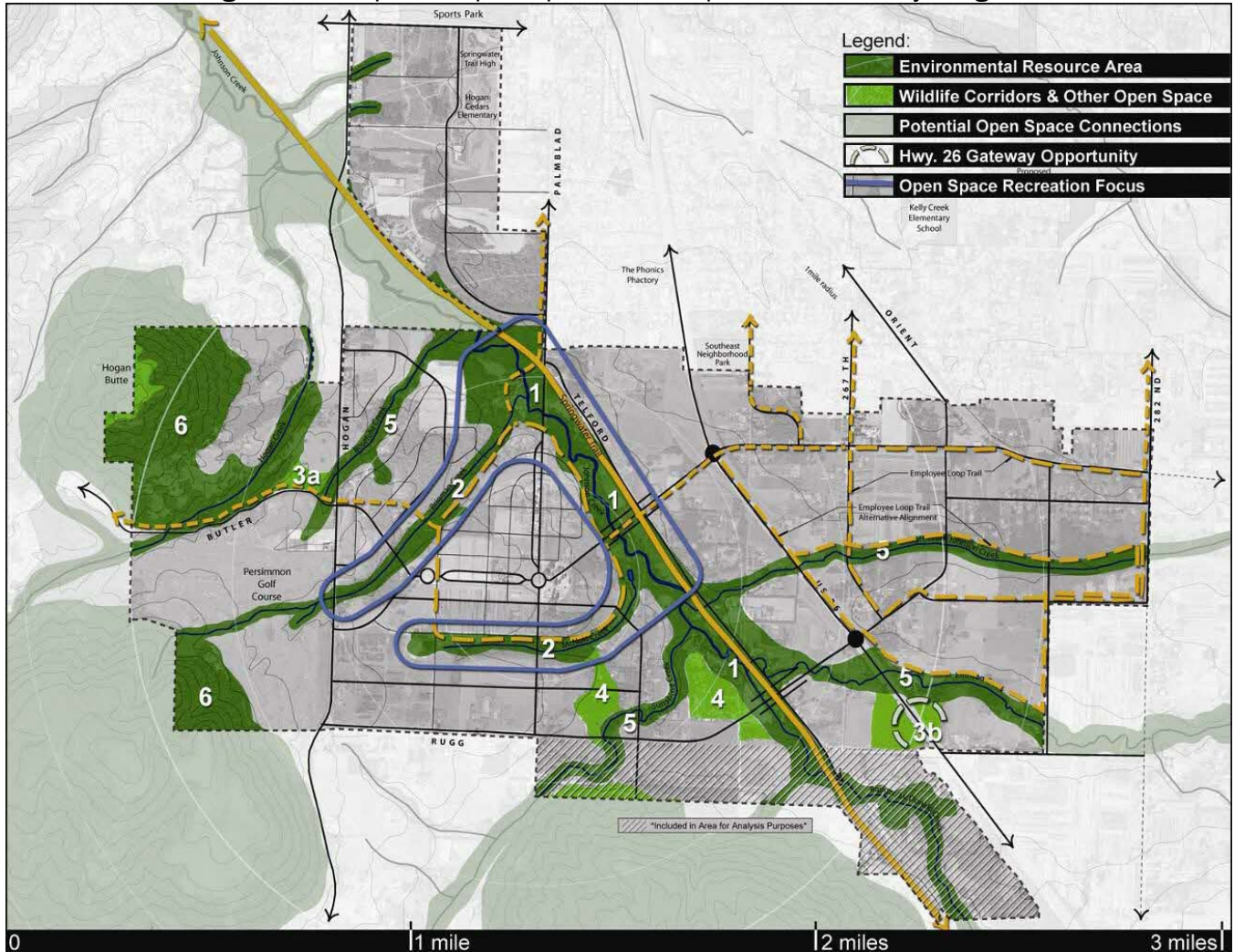
- Stormwater Management - look for potential regional detention facilities to be located adjacent to or in open space.
- Identity – the open space which surrounds the entrance of US. 26 into the urban growth boundary could be enhanced to create a gateway feature into the larger metro area.

The following map and following list have been developed as an outline for open space acquisition and are based on the guidelines discussed on the previous page. The blue line on the map highlights the area that is the focus of open space acquisition for recreational opportunities and includes a large portion of the most valuable natural resources in the district. The list below describes the acquisition hierarchy for the entire district based on recreational and natural resource value. Consult the Springwater Natural Resources Report for further descriptions of natural resource value and potential when making acquisition decisions.

1. Areas along the Johnson Creek and Springwater Trail Corridor, which have the highest resource significance and are part of the trail corridor.
2. The McNutt and Brigman Creek Corridors, which will have the Village Center Loop Trail paralleling them.
3. Wildlife corridors and other natural resources that also have recreational or identity value for the district.
4. The connection from Botefuhr to Hogan Creek, which will provide lowland to upland habitat connectivity and serve as a trail link along Butler.
5. The wetland and forested area along US 26, which will serve as a gateway and identity to the larger metro region, as well as being an important wetland habitat along the Johnson Creek Corridor.
6. All other wildlife connections and natural resources that fall outside of regulation.

7. All other creek corridors, concentrating on those with the highest natural resources value.
8. Upland forests and Buttes with steep slopes.

Figure 13. Proposed Open Space and Acquisition Hierarchy Diagram



Trail System

General Description

The purpose of the trail system is to interconnect parks and open spaces; to maximize access to programs and facilities; to promote physical fitness and health for a variety of users; to encourage social interaction and community pride; and to provide opportunities for rest and relaxation within natural settings through trail-related recreation. These trails also serve to reduce auto-dependency and enhance connections to transit facilities; to link open space amenities with homes, workplaces and other community facilities; and to provide outdoor classroom opportunities for environmental education. Trail characteristics are described below.

- Multi-purpose trails are intended for a broad range of non-motorized uses such as bicycles, wheelchairs, strollers and horseback riding as well as pedestrian uses such as walking, hiking and running. Multi-purpose trails are 10-12 feet wide with 2-foot wide shoulders.
- Walking/hiking trails are intended for specific activities. Some of these trails may be single-use trails restricted to pedestrian use only due to steep slopes, erosive soils, or other sensitive environmental considerations. Walking/hiking trails are 4-6 feet wide with 2-foot wide shoulders
- To the extent possible, trail construction will comply with Metro’s Green Trails handbook.

Noble Woods Park – Hillsboro, OR



Plan Recommendations

Create a Village Center Loop Trail to the west of US. 26 which will follow creek corridors at an appropriate distance to maximize pedestrian experience. This trail should work in conjunction with the vehicular network where roads parallel creek corridors, and be located inside of purchased open space.

Create an Employee Loop Trail to the east of US. 26 which either follows the road network or runs parallel to stream corridors.

Create connections:

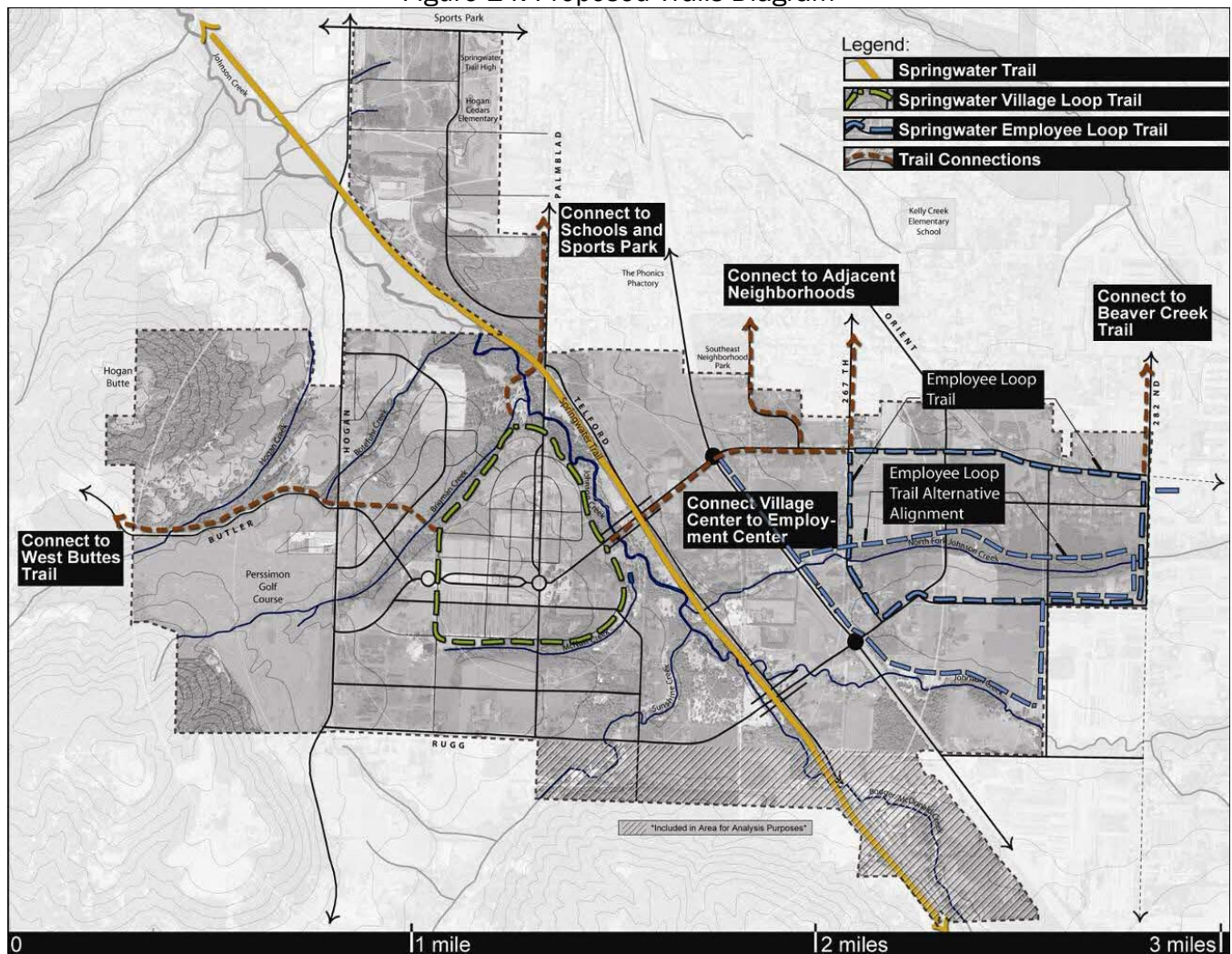
- East Buttes Loop Trail to the west along Butler Road
- The existing schools and Sports Park to the north of the Springwater Community either along Palmsblad or through the proposed development west of Palmsblad.
- The existing neighborhoods to the north of the Springwater Community.
- Beaver Creek Trail to the North East along 282nd.
- The Village Center and Employee Loops by crossing US. 26.

The trail system could also include a connection from Butler Road to the Cedar Lake subdivision along the Hogan Creek corridor, however this option would be pursued through private development rather than as a part of the City of Gresham’s capital improvement program.

Potential Synergies:

- Wastewater Management – Look for potential pedestrian bridge crossings that could be combined with wastewater and other utilities. Specifically, a combined bridge crossing over Johnson Creek between the Hogan Cedars and Springwater Community Park may be needed.
- Stormwater Management – If the Employee Loop Trail is constructed adjacent to streams, investigate opportunities for combining stormwater conveyance and management with the multi-use trail.

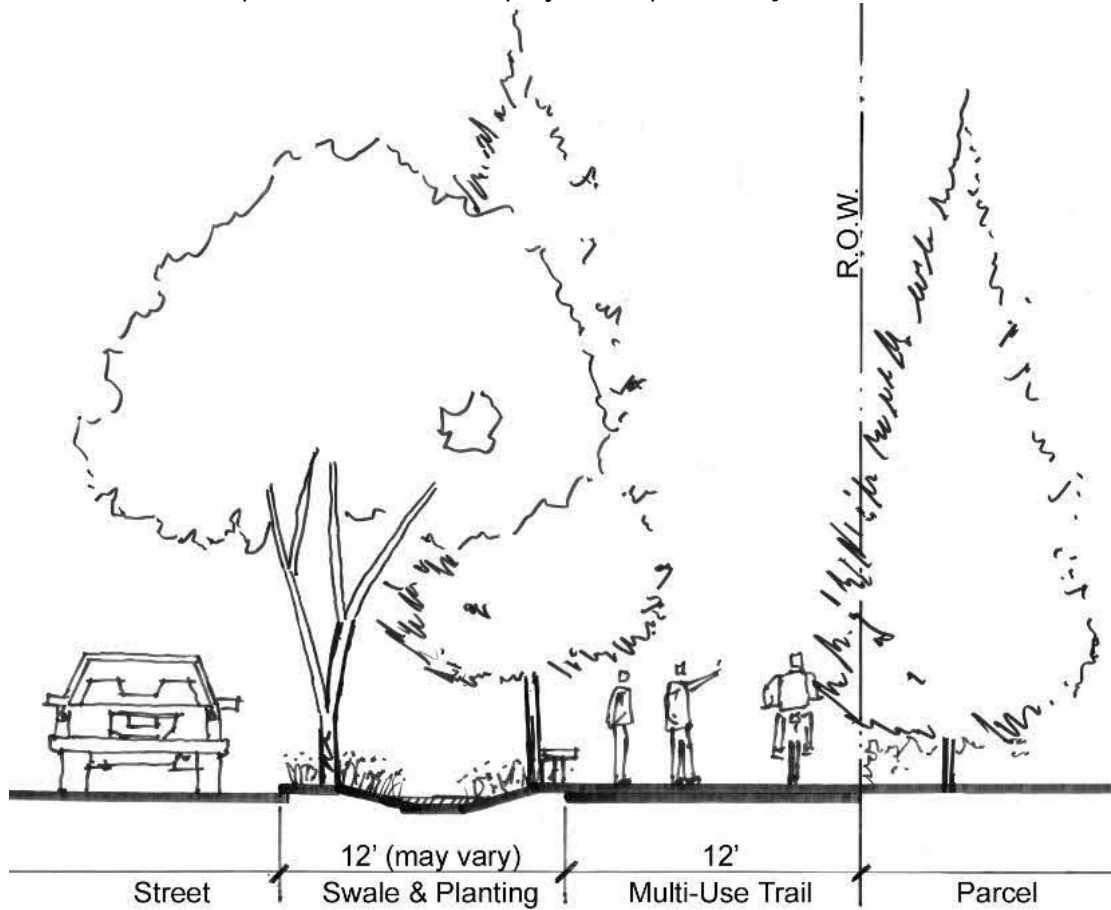
Figure 14. Proposed Trails Diagram



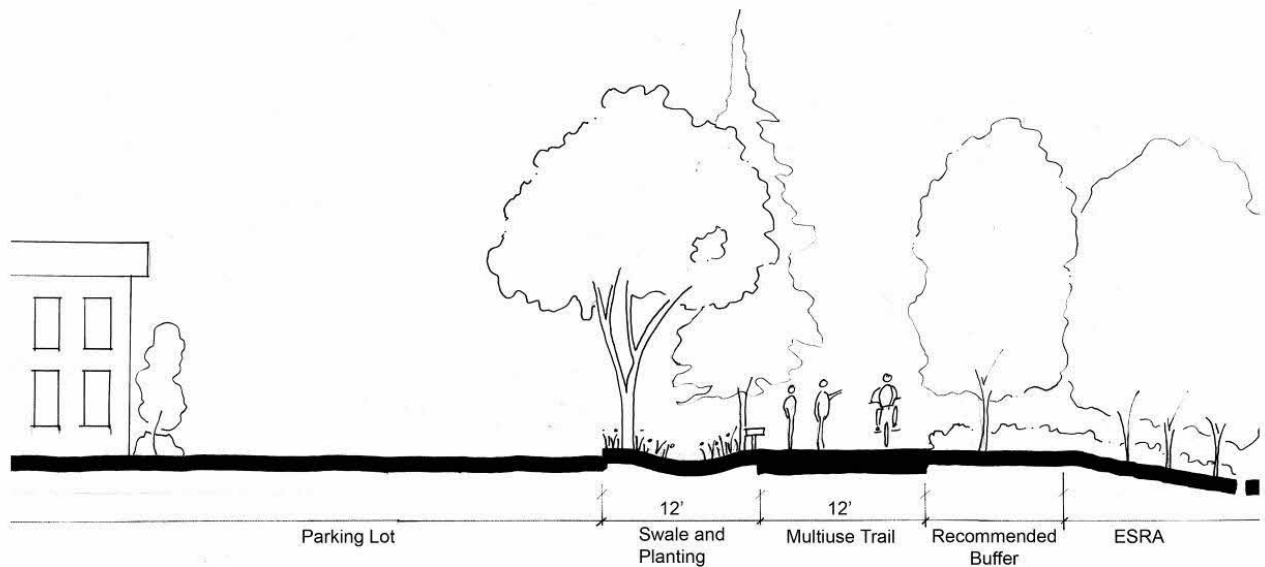
Trails

The trails in Springwater were incorporated into Appendix J of the Parks and Recreation, Trails and Natural Areas Master Plan of 2015.

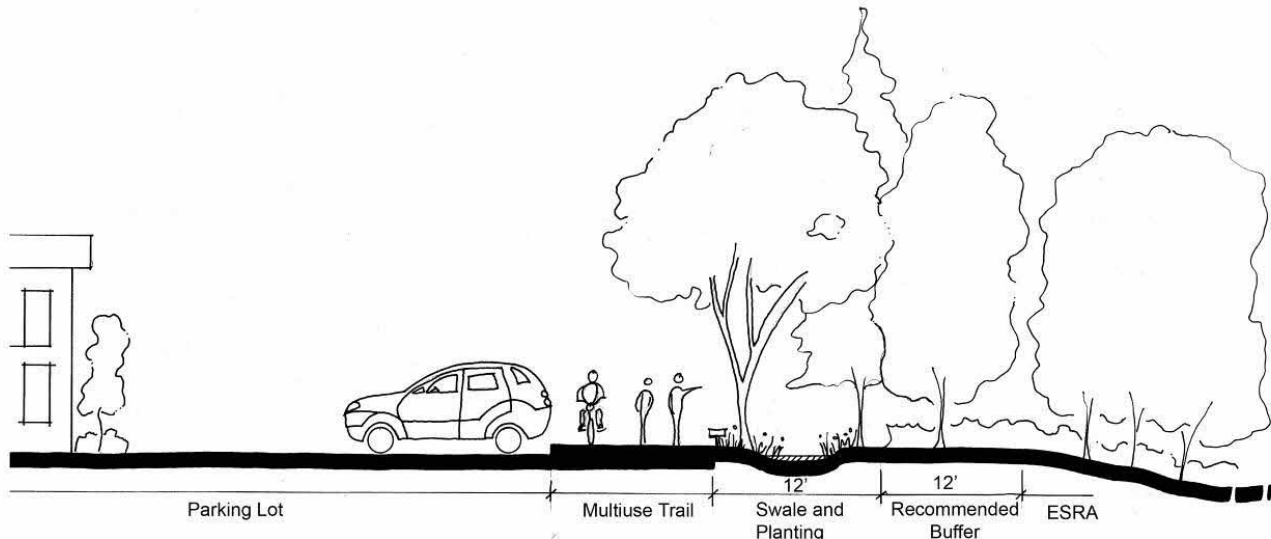
Conceptual Section of Employee Loop Trail Adjacent to Road



Conceptual Section of Employee Loop Trail Adjacent to ESRA – Option 1



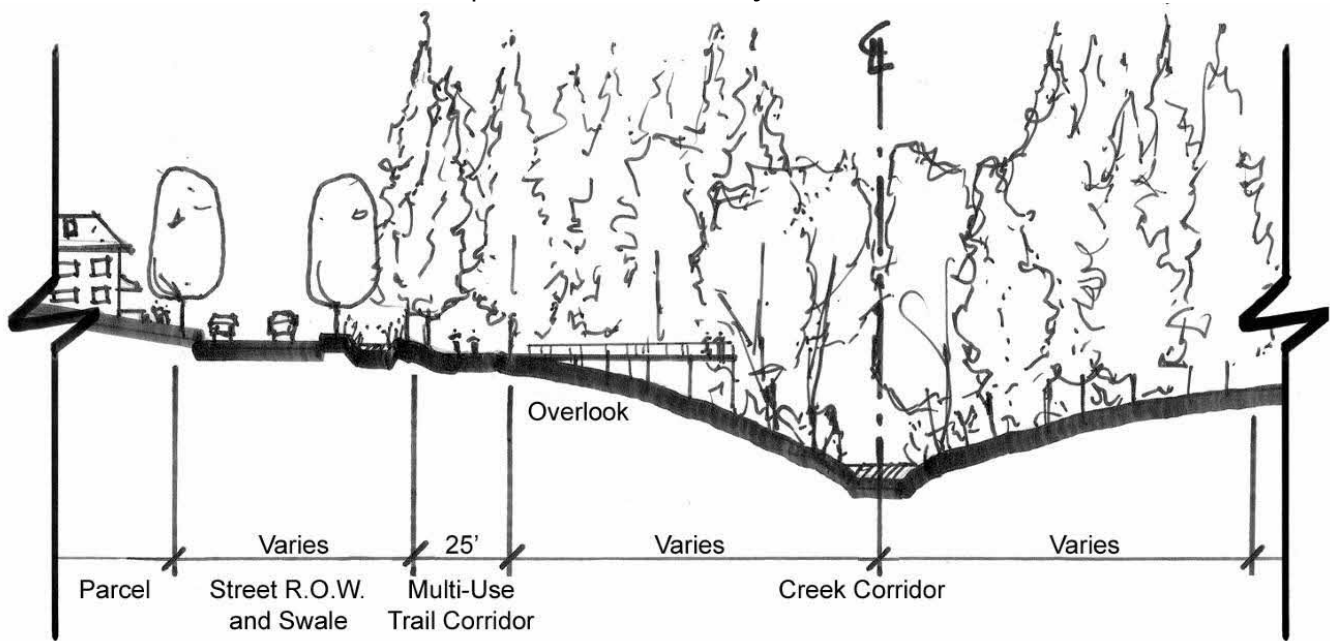
Conceptual Section of Employee Loop Trail Adjacent to ESRA – Option 2



The Employee Loop Trail alignment options (Roadside and Streamside) are under continuing investigation. The following considerations will be weighed in selection of the final location of the Employee Loop Trail:

- Maintenance:** The selection of the roadside vs. streamside alignment option has potential implications for on-going maintenance responsibilities and practices. The roadside option could result in shared maintenance responsibilities between parks and transportation divisions within the City, while the streamside option and its more complex natural area maintenance requirements requires specialized expertise that could be developed in the Parks and Recreation Division. The approach to maintenance practices in the roadside option are pathway litter patrol and conventional landscape maintenance. The streamside option would require litter patrol and a carefully-considered vegetation management plan for habitat preservation and enhancement goals.
- Trail R.O.W. Acquisition:** The evaluation of the acquisition costs for trail ROW alignment options is on-going. The roadside trail has the advantage of being incorporated in the Street ROW acquisition effort, while the streamside option would require a separate negotiation.
- Implementation Cost:** Trails along creeks are potentially more costly to implement because of environmental restrictions and access limitations.
- Connectivity:** Both the roadside and streamside trail alignment options offer similar connections to surrounding neighborhoods and the broader Gresham community. The primary difference in this evaluation is that the streamside option greatly enhances trail users connections to the natural environment over the roadside alignment.

Conceptual Trail Section Adjacent to ROW



Implementation

Parks and Open Space acquisition, Development, and Maintenance Costs

The following cost estimate provides recommended capital improvement plan-level budget estimates for the recommended park, trail, and open space facilities. These are based on current planning level acquisition costs used by the City of Gresham, and on ultimate development of Springwater to accommodate 17,000 employees and 3,500 households. The funding source for all projects will be SDC's.

Table 9. Capital Improvement Costs of Park, Open Space, and Trail Facilities

Facility	Quantity	Acquisition Cost	Development Cost	Total Cost	Responsible Jurisdiction	Timing (Years)
Village Center Park and Park Blocks (12.3 Ac)						
Village Center Park and Plaza	4.4 Ac.	\$880,000	\$1,188,000	\$2,068,000	Gresham	0-5
North-South Park Blocks	3.75 Ac.	\$750,000	\$1,012,500	\$1,762,500	Gresham	0-5
East-West Park Blocks	4.15 Ac.	\$830,000	\$1,120,500	\$1,950,500	Gresham	0-5
Community Parks (29.8 Ac.)						
Springwater Community Park	20.0 Ac.	\$4,000,000	\$11,200,000	\$15,200,000	Gresham	6-20
East Springwater Park	9.8 Ac.	\$1,960,000	\$5,488,000	\$7,448,000	Gresham	6-20
Open Space (148.9 Ac.)						
Johnson Creek	66.0 Ac.	\$2,640,000	\$660,000	\$3,300,000	Gresham	6-20
Brigman Creek	11.0 Ac.	\$440,000	\$110,000	\$550,000	Gresham	6-20

Facility	Quantity	Acquisition Cost	Development Cost	Total Cost	Responsible Jurisdiction	Timing (Years)
McNutt Creek	12.9 Ac.	\$516,000	\$129,000	\$645,000	Gresham	6-20
Hogan Creek	6.5 Ac.	\$260,000	\$65,000	\$325,000	Gresham	6-20
Botefuhr Creek	5.0 Ac.	\$200,000	\$50,000	\$250,000	Gresham	6-20
Sunshine Creek	7.0 Ac.	\$280,000	\$70,000	\$350,000	Gresham	6-20
North Fork Johnson Creek	10.5 Ac.	\$420,000	\$105,000	\$525,000	Gresham	6-20
Bodger/McDonald Creek	12.0 Ac.	\$480,000	\$120,000	\$600,000	Gresham	6-20
Hogan Butte	18.0 Ac.	\$720,000	\$180,000	\$900,000	Gresham	6-20
Multi-Use Trails (6.2 Mi.)						
Village Center Loop Trail	1.65 Mi.	\$495,000	\$742,500	\$1,237,500	Gresham	6-20
Employee Loop Trail	2.2 Mi.	\$660,000	\$990,000	\$1,650,000	Gresham	6-20
Butler Trail	0.75 Mi.	\$225,000	\$337,500	\$562,500	Gresham	6-20
Palmlad North	0.5 Mi.	\$150,000	\$225,000	\$375,000	Gresham	6-20
Village Loop to E. Springwater Pk.	0.65 Mi.	\$195,000	\$292,500	\$487,500	Gresham	6-20
Barnes Road North	0.25 Mi.	\$75,000	\$112,500	\$187,500	Gresham	6-20
267 th North	0.1 Mi.	\$30,000	\$45,000	\$75,000	Gresham	6-20
282 nd North	0.1 Mi.	\$30,000	\$45,000	\$75,000	Gresham	6-20
Pedestrian/Bicycle Bridges (3)						
Butler Trail (Brigman Creek)	1	N/A	\$250,000	\$250,000	Gresham	6-20
Palmlad North (Brigman Creek)	1	N/A	\$250,000	\$250,000	Gresham	6-20
Palmlad North (Johnson Creek)	1	N/A	\$250,000	\$250,000	Gresham	6-20
Total		\$16,236,000	\$25,038,000	\$41,274,000		

These costs are based on the unit acquisition costs listed below. Annual maintenance costs are also given.

Unit Acquisition Costs

Facility	Acquisition	Development
Neighborhood Park:	\$200,000/Ac.	\$270,000/Ac.
Community Park:	\$200,000/Ac.	\$560,000/Ac.
Open Space:	\$40,000/Ac.	\$10,000/Ac.
Multi-Use Trail:	\$300,000/Mi.	\$450,000/Mi.
Ped/Bicycle Bridge:	N/A (Located in Open Space)	\$250,000 Average

Annual Maintenance Costs

Neighborhood Park	\$5,360/Ac.
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Community Parks	\$7,146/Ac.
Open Space	\$715/Ac.
Multi-Use Trails	\$8,933/Mi.
Pedestrian/Bicycle Bridges	\$600/Br.
Neighborhood Park	\$65,928
Community Park	\$212,951
Open Space	\$106,464
Multi-Use Trails	\$55,385
Pedestrian/Bicycle Bridges	\$1,800
Total Maintenance Cost	\$442,528

Summary of Future Needs

Parks, trails and open space will be an integral part of the Springwater community design; serving to enhance economic growth, strengthen community bonds and protect natural resources. Three new parks will be created to serve residents and employees in Springwater. A neighborhood park, located adjacent to the highest residential populations, will be integrated into the Village Center and will consist of a plaza, park blocks, and central park. Two new community parks located adjacent to natural resources and/or in areas with good vehicular accessibility are also included in the plan. The first community park, located along the Johnson Creek Corridor and adjacent to the residential developments, will provide two youth sports fields and a regionally significant natural park area, providing interpretive educational opportunities. The second, east of US 26, will provide two to three adult sports fields for employee recreation. Trails have also been identified to provide pedestrian recreational opportunities and access to features inside and outside of the study area including existing neighborhoods and regional trails to the north and west. Acquisition of 121.90 – 148.90 acres of open space will be based on recreation need and environmental resource criteria, and will be used to preserve natural resources and create pedestrian and wildlife connectivity throughout the district.

Funding Strategies

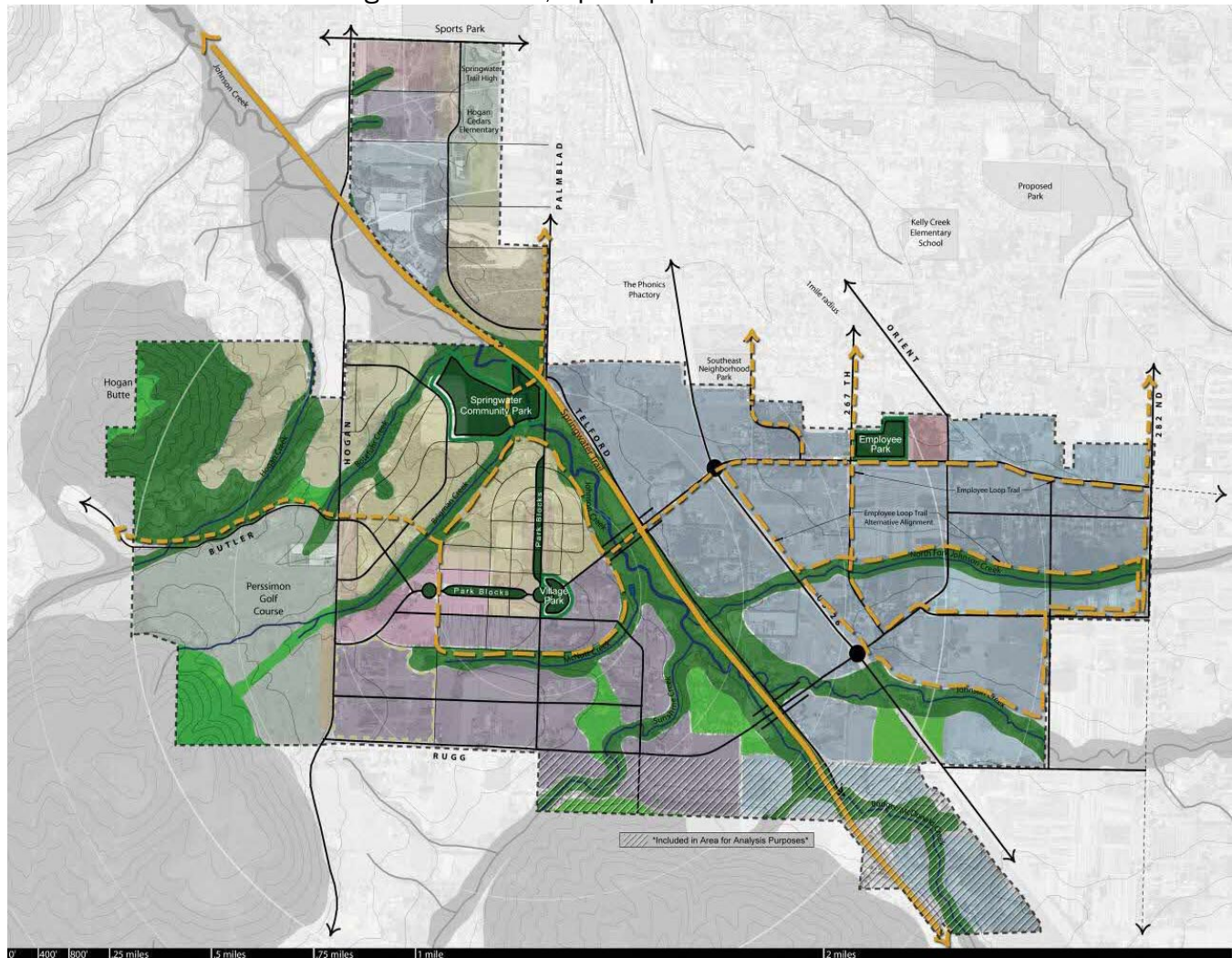
There will be several options for the funding of the Springwater parks, open space and trails system. Traditional methods such as system development charges, grants and land dedication should be considered in concert with a variety of alternative funding strategies to purchase as well as maintain the system. All capital improvement projects should consider future maintenance strategies before they are implemented to ensure a high level of quality and safety for park users.

The following approaches have been summarized as possible funding strategies for implementing the parks, open space and trails recommendations outlined in this document:

- Continue to use System Development Charges (SDCs) for land acquisition and construction, and adjust them as necessary to fully fund park development. Residential and employment districts should be explored because the park LOS for Springwater has been adjusted to provide land for both user groups.

- Grants and donations should continue to be used whenever possible. Numerous programs exist at the state and federal level to assist with natural resource related planning efforts, especially if those planning efforts are related to natural hazard mitigation strategies. In addition to opportunities to obtain funding for the protection and restoration of habitats, opportunities to obtain public open space as part of a hazard mitigation/prevention strategy are available.
- In lieu of charging SDCs, require Turn Key Development of park facilities by developers to eliminate the city's financial burden of constructing the facility. Developers would construct facilities to City specifications, and then turn over to the City as a completed neighborhood park; trail segment or urban plaza after the development is completed.
- In the event that property tax revenues anticipated from annexation are not sufficient to cover the increased cost of parks maintenance associated with the parks, trails, and open space proposed for Springwater, the option of a park maintenance fee or operating levy could be considered as a condition of annexation.
- Consider establishing a Landscape Assessment District (LAD) overlay zone to provide maintenance and construction budgets for the proposed parks in the districts. This district or districts will provide parks funds for Springwater without taxing the rest of the city to implement the new district.

Figure 15. Parks, Open Space and Trails Plan



- On a smaller scale, a homeowner's association model could be implemented around neighborhood parks for the maintenance of the park as well as the neighborhood landscape including medians and parkways.
- On all trails, parks and open space projects look for synergies with other government agencies to share in funding facilities. Possible partnerships could be made on stormwater management, transportation, and school projects.
- User fees could help support more specialized recreational facilities such as interpretive trails or centers located within the Springwater Community Park.
- As a maintenance alternative, businesses should be encouraged to participate in an adopt-a-trail or similar sponsorship programs for parks and trails in the district.
- A non-profit trust is a specialized model which would work as a public/private partnership to raise funds for parks maintenance and development in the district.

- The acquisition of park and open space in the district could be tied to a city-wide General Obligation Bond Measure. This would be most appropriate for open space and natural resources which are regionally significant, such as the Johnson Creek Corridor.

GOAL

An interconnected system of parks, trails, and open space shall be an integral part of the community design, serving to enhance economic growth, strengthen community bonds and protect natural resources.

Policies

The following policies are made part of this plan:

1. Parks, open space and trails shall be implemented to help promote a sense of place with respect to the community's cultural and natural history by building upon Springwater's unique characteristics and location, such as the Johnson Creek corridor and views to Mt. Hood.
2. Parks, open space and trails implementation shall recognize the importance of the upper Johnson Creek system for Gresham, the Portland Metro region and the Willamette Valley.
3. The parks, open space and trails system shall work with other civic improvements such as schools, transportation and stormwater management to consolidate budgets, maintenance and implementation of facilities.
4. The parks, trails and open spaces system shall create interpretive educational opportunities that allow residents to experience and understand the diverse ecosystem that they are a part of.
5. The maintenance and implementation of parks, open space and trails shall encourage the planting and preservation of native plant and tree species.
6. Parks and trails shall be implemented to enhance and protect natural resources.
7. Trails and corridors shall create connections to the Springwater and other regional trail systems as well as links between residential, employment and civic destinations inside and outside of the district.
8. Parks and trails shall be located within a ½ mile of their users, and shall help to create an identity for the neighborhood, which they serve, including dense neighborhoods.
9. Open space shall preserve, restore and enhance natural resources as well as support the other parks and recreation objectives of the community.

Action Measures

The following actions should be taken to implement this plan:

1. When implementing any recommendation, reference all other master plans created as part of the Springwater planning study and look for opportunities for synergies between other city agencies, such as shared park/school sites, regional stormwater management facilities, and trail corridors along transportation routes.
2. Expand on recommended park facilities programs to meet the needs of the future residents by holding community workshops and planning days to involve the community in the design process.
3. Look for state and federal funding strategies to help preserve natural resources beyond that open space which will be purchased through Parks fees.
4. Implement park facility recommendations concurrent with residential and industrial development to meet the needs of the users as they arrive.
5. Review and select from the two alignment options for the employee loop trail east of Highway 26, and modify Transportation System Plan to reflect recommended trail alignment.