

Recommended

Pleasant Valley Public Facilities Plan



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City of Gresham
Community & Economic Development Department

City of Portland
Bureau of Planning

For more information on the *Pleasant Valley Plan District*, please contact:

Jonathan Harker, AICP, Senior Planner
Community & Economic Development Department
1333 NW Eastman Parkway
Gresham, OR 97030

Phone: 503-618-2502

Fax: 503-669-1376

TTY: 503-618-2882

E-mail: jonathan.harker@ci.gresham.or.us RE: Pleasant Valley Plan District (CPA-04-1480)

Jay Sugnet, City Planner
Portland Bureau of Planning
1900 SW Fourth Avenue, Suite 4100
Portland, OR 97201

Phone: 503-823-7700

Fax: 503-823-7800

TDD: 503-823-6868

E-mail: pdxplan@ci.portland.or.us RE: Pleasant Valley Plan District

Introduction

The purpose of the Pleasant Valley Public Facilities Plan (PFP) is to establish a framework for how necessary urban services, water, wastewater, stormwater and parks, will be developed and maintained as urbanization occurs with the implementation of the Pleasant Valley Plan District. The PFP for transportation is included as part of a separate Transportation System Plan.

The Pleasant Valley PFP is not intended to be a “stand-alone” PFP but rather will be used by the Cities of Gresham and Portland to amend their respective Public Facilities Plans specific to Pleasant Valley. For the City of Gresham it will amend Volume 2 – Policies, Gresham Community Development Plan. After this introduction following PFP amendments are proposed:

- 10.720 Public Facilities
- 10.721 Water System
- 10.722 Wastewater System
- 10.723 Stormwater Management System
- 10.724 Parks and Recreation System

As required by Title 11 Metro Urban Growth Management Functional Plan a conceptual level services plan for the provision of wastewater, water, stormwater and parks was developed as part of the *Concept Plan* project. Needed facilities for the planned new urban uses were identified, rough cost estimates and likely funding strategies were developed, and maps depicting the general location of public facilities were included.

During the *Implementation Plan* project the PFP, consistent with Oregon Administrative Rules, specifically OAR 660-011-000, was drafted. Addressing relevant administrative rule requirements related to public facilities is appropriate as multiple jurisdictions and service providers share responsibility for delivering public services to Pleasant Valley and, therefore, assuring coordination of service delivery an important part of this plan. Key requirements of the Public Facility Planning Rule (OAR 660-011-010) include:

660-011-0010 The Public Facility Plan

- (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.

The Public Facility Planning Rule is intended to implement Statewide Land Use Planning Goal 11 “...to plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.”

Specific goal requirements that are relevant to the Pleasant Valley urban area include:

- Cities or counties shall develop and adopt a public facility plan for areas within an urban growth boundary containing a population greater than 2,500 persons.

- A “timely, orderly and efficient arrangement” refers to a system or plan that coordinates the type, locations and delivery of public facilities and services in a manner that best supports the existing and proposed land uses.

For each of these urban services, the PFP provides an assessment of existing conditions; a summary of future needs, a financial plan discussion, and recommended goals and policies and action measures. A capital improvements list provides a detailed list of the projects necessary in Pleasant Valley to accommodate planned urban development over the next twenty years. Maps showing the locations of the capital improvement projects are also included.

A key component to the successful implementation of the Public Facilities Plan is the coordination of the multiple government agencies involved in Pleasant Valley, most notably the cities of Gresham and Portland. A March 2004 Gresham and Portland IGA provides a map showing future governance and urban services boundary for the two jurisdictions and generally provides the urban services will be provided by Gresham in areas that Gresham annexes (Area A) and by Portland in areas Portland annexes (Area B). The PFP addresses the roles of city and county jurisdictions and other districts in the delivery of urban services to Pleasant Valley.

For the remainder of Pleasant Valley, which is in Clackamas County (Area C), a final decision on who will provide services to most of this area has not yet been determined. The Cities of Portland and Gresham can serve this area, but do not have agreements in place with the county for doing so. The City of Happy Valley annexed a portion of the area south of Clatsop Street and west of 156th Street (Area D). Happy Valley will serve that area and is responsible for public facility planning in that area.

For planning purposes and to demonstrate that the area can urbanize in a manner that complies with Goal 11, the PFP assumes the cities of Portland and Gresham will serve the balance of Area C. The cities have plans in place that demonstrate its capacity to serve Area C. It can be noted that there are other potential service providers in Area C: Clackamas County Sewer District #1 (sewer), Sunrise Water Authority (water) and City of Happy Valley (parks). Servicing options for these providers, however, are not presented in this plan.

Providing services in Pleasant Valley requires developing and implementing capital improvement plans. Future needs are generally divided into short-term and long-term needs. Short-term priorities are established in approved capital improvement plans that usually cover a 5-year horizon. The intent of these plans is to establish the phasing sequence for major projects over a five-year period, so that as year 1 projects are completed, year 2 projects move forward on the priority list.

Long-range capital improvement needs are determined through master plans that generally have a 20-year planning horizon. System master plans are long-range plans that generally include an analysis of existing conditions, including existing service deficiencies, an analysis of capital improvement needs based on forecast growth projections, and a financing strategy. Most of the projects outlined in this public facility plan are not included in the adopted master plans and, therefore, are listed in the PFP as implementation projects. In general, projects listed in a master plan go through several steps before construction begins, including detailed design and engineering. This work is usually scheduled through the CIP process. While short-term CIPs are approved legislatively, they are non-binding. Annually, service providers approve funding for specific capital projects through the budget process.

The resources and methods used to build and operate the systems outlined in this PFP are a function of their finance structure. Water, wastewater, and stormwater systems are enterprise functions, meaning these services need to be self-supporting. Costs and revenues associated with enterprise functions are dedicated to that service and may not be used for other government functions. The enterprise structure employed for these systems provides a relatively stable financial structure on which to plan and finance capital improvements.

Most capital improvements related to utility services (water, wastewater and stormwater) are financed using a combination of SDC fee revenue - especially for growth related improvements - and retained earnings from utility operations (rate revenue). In the past revenue bonds have been issued to build major improvements, such as new water reservoirs or improvements to the sewage treatment plant, and pledged repayment from these sources. Local improvement districts have also been used to capitalize bond issues for utility improvements.

Park and open space services are accounted for in the General Fund. General fund revenues are discretionary and, therefore, not specifically dedicated. System development charges are collected for capital improvement projects.

Property owners and private developers are required to build and dedicate the necessary public infrastructure that serves their property. When development projects are approved, conditions of approval usually include exactions, which may include on-site and off-site improvements. When a developer is required to oversize a public improvement to serve other development, local governments must reimburse the developer for the portion of benefit that accrues to surrounding properties. Sometimes this is done directly, using accumulated SDC funds or retained earnings, or through the formation of a reimbursement district. The U.S. Supreme Court has elevated the need for equity in the exaction process since the Dolan decision. Private contributions will continue to play an important role in extending public infrastructure to developing areas, but they cannot be relied on to subsidize or augment public resources beyond the level of impact associated with the particular development. Their contribution, therefore, is in enabling service extensions earlier than would otherwise be the case if the city were financing service extensions. Other than this “cash flow” and timing benefit, private contributions are not relied on as a source for funding the extension of public services.

Below is a table that summarizes the amount of capital investment necessary in Pleasant Valley to accommodate planned urban development over the next twenty years.

10.720 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 the Pleasant Valley area into the Urban Growth Boundary (UGB) in December 1998. 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 Pleasant Valley 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* project. The general steps in developing the conceptual public facility plans were:

- Inventorying existing conditions
- Needs analysis
- Laying out system for each of the four alternatives including facilities needs and preliminary cost estimates
- Utilizing system information to evaluate and inform creating a preferred alternative (referred to as the "hybrid plan")
- Describing in the Implementation Strategies document each system including preliminary costs and a set of funding strategies

The *Concept Plan* also included the Steering Committee's adoption of plan goals. A specific goal was adopted for parks and is described in detail in the parks section. No specific goal was developed for water, wastewater, or stormwater public facilities. However, the Steering Committee did adopt, as a planning parameter, addressing the provisions of Title 11, which as previously noted requires a conceptual plan for public infrastructure along with preliminary costs and likely funding sources. Also, a green development goal was adopted which includes describing an intention that stormwater public facilities will be part of a green infrastructure system.

The *Concept Plan* work was the basis for the Public Facilities Plans that were drafted as part of the *Implementation Plan* project. Two steps occurred during the *Implementation Plan* process. One, for each public facility the system descriptions were updated to reflect the Pleasant Valley Plan District map and its land use assumptions for dwellings and population, employment and land areas. The Plan District is a refinement of the adopted *Concept Plan* map. And second, it identified and described the elements necessary to comply with Statewide Planning Goal 11 and OAR 660-011-000 necessary to amend the City's Public Facility Plan for each the public facilities:

660-011-0010 The Public Facility Plan

(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;

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- (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

Current residents of Pleasant Valley are largely self sufficient, and are responsible for their own water supply, wastewater treatment, and stormwater systems. Water is currently accessed via underground wells and wastewater is primarily treated in septic tanks and drain fields. Stormwater runoff is conveyed to natural drainage areas or to drainage ditches adjacent to local roads. All public roads are owned and maintained by Multnomah County and Clackamas County. There are no public parks in Pleasant Valley.

Future Public Facilities Provider Overview

In March 2004, the cities of Portland and Gresham revised a 1998 intergovernmental agreement (IGA) for the Pleasant Valley area regarding proposed jurisdictional boundaries, urban services, and preparation of land use plans for the area. A framework for urbanizing Pleasant Valley was developed and carried out through the planning process. The Pleasant Valley Public Facilities Plan further refines the roles and responsibilities outlined in the IGA. Urban development is expected to proceed only after annexation to an incorporated city. In accord with the 2004 IGA, Gresham agreed to annex the land generally east and north of Mitchell Creek (Area A) and Portland agreed to annex the land generally west of Mitchell Creek and in the Jenne Road area (Area B). A map showing the areas is in appendix B – Pleasant Valley Plan District Future Governance map.

For the remainder of Pleasant Valley, which is in Clackamas County (Area C), a final decision on who will provide services to most of this area has not yet been determined. The Cities of Portland and Gresham can serve this area, but do not have agreements in place with the county for doing so. The City of Happy Valley annexed a portion of the area south of Clatsop Street and west of 156th Street (Area D). Happy Valley will serve that area and is responsible for public facility planning in that area.

For planning purposes and to demonstrate that the area can urbanize in a manner that complies with Goal 11, the PFP assumes the cities of Portland and Gresham will serve the balance of Area C. The cities have plans in place that demonstrate its capacity to serve Area C.

The City of Gresham will be responsible for the provision of urban services for areas annexed into Gresham and the City of Portland will be responsible for the provision of urban services for areas annexed to Portland. This includes all Goal 11 mandated services (water, wastewater, and stormwater) and park services. The IGA states that Gresham and Portland will jointly determine whether wastewater sewage treatment for the mapped areas should be through Portland or Gresham. Preliminary indications suggest that it is more economical for Gresham to pump wastewater flows from Pleasant Valley to its sewage treatment plant. A final solution regarding wastewater sewer service will be made through a refinement study to the City of Gresham Sewer Master Plan.

10.721 WATER SYSTEM

SYSTEMS DESCRIPTION/CONDITION ASSESSMENT

Existing Conditions. Currently, water supplies in Pleasant Valley are from individual wells that tap the groundwater aquifer beneath the Valley. In addition, there is no domestic water distribution system in Pleasant Valley. This source is not adequate to meet the Valley's needs as it urbanizes. Alternatives have been analyzed based on agreements that are already in place for future annexation of three sub areas within Pleasant Valley.

Future Water Supply. The City of Portland supplies water to approximately 840,000 people in the Portland metropolitan area. Its five largest wholesale customers are the City of Gresham, Rockwood People's Utility District, Powell Valley Road Water District, Tualatin Valley Water District, and the City of Tualatin. These customers buy about 40% of the water Portland produces.

The current Portland water system includes two storage reservoirs in the Bull Run Watershed that can store up to 10.2 billion gallons of useable storage. A supplemental groundwater source, the Columbia South Shore Well field, is located east of the Portland Airport and can provide up to 95 million gallons per day ("mgd"). The water system also consists of three large conduits that convey water from the Bull Run Watershed to Portland, key storage reservoirs at Powell Butte, Mt. Tabor, and Washington Park and a vast distribution grid containing over 2000 miles of pipeline.

The water quality of the Portland Water Bureau (PWB) sources meets and exceeds all current U.S. Environmental Protection Agency ("EPA") water quality requirements. The City of Gresham signed a 25-year intergovernmental agreement to purchase wholesale water from PWB in 1980. The Portland system has capacity to meet the future water service demand for all of Pleasant Valley.

Future Water Service Distribution. There is no water distribution system in place in Pleasant Valley except for portions of Area B, which are described below. Fire flows are one of the main criteria in sizing waterline infrastructure and storage needs. Potential fire flow requirements for schools, attached residential and commercial sites can range from 1,000gpm to 3500gpm. Based on specific design criteria, a looped 12-inch waterline can supply flows to meet these demands during a Maximum Day Demand scenario. Locations of these types of sites within the Pleasant Valley area are the determining factor to the layout of the 12-inch waterline facilities.

System Design Assumptions:

- Domestic usage storage requirements:
 - 120 gallons per person per day
 - 2.3 ADD/MDD peaking factor
- Fire flow storage requirements:
 - Single Family Detached — 1000gpm for 2 hours (120,000gal)
 - Single Family Attached — 3000gpm for 2 hours (360,000gal)
 - Commercial / Public — 3500gpm for 3 hours (630,000gal)
 - (In service levels with mixed usage, fire flow storage is based on the highest rated requirements)
- Overall storage requirements based on the following: The sum of 25% of MDD (peaking equalization) plus fire flow storage plus 2 times ADD.

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- Pumping requirement based on supplying MDD.
- Source requirement based on supplying MDD times 25% for Gresham's Intermediate and 720 service levels.

The following narrative describes the systems envisioned to serve the three sub areas within Pleasant Valley.

Area A. The City of Gresham will deliver water to future urban development in Area A. Gresham currently provides water service to approximately two-thirds of city residents, businesses, and industries. The Rockwood Water People's Utility District ("RWPUD") serves the remaining one-third. The Gresham water system is supplied from the Portland Water Bureau ("PWB") Bull Run System and Columbia River well field sources. Gresham currently has seven supply connections from PWB and one supply connection from RWPUD. Gresham has emergency connections via normally closed valves in the water system with RWPUD, Powell Valley Road Water District, Lusted Water District, and City of Troutdale.

The City of Gresham water system has seven service levels. Pressure to the system is provided directly by gravity from the PWB system or from eight water reservoirs supplied from booster pumping stations. Gresham's overall system Average Day Demand ("ADD") is approximately 7 million gallons and the Maximum Day Demand ("MDD") was approximately 14 million gallons. The water system's 8 reservoirs have approximately 28.5 million-gallons ("MG") of total storage. There are seven pump stations, approximately 250 miles of pipeline, and approximately 35 miles of water service pipeline. The system is monitored and controlled by a central supervisory control and data acquisition ("SCADA") system. The SCADA system allows water system operators to monitor and operate reservoirs, pump stations, and supply connections via a central computer control. This ability has enabled efficient operation of the water system by controlling peak demands from the PWB conduits.

Area A has elevations between 340 feet and 580 feet. Area A will be served from two separate service levels – the Intermediate Service Level and the 720 Foot Service Level. The Intermediate Service Level, which has an overflow elevation of 575 feet, can serve elevations between 340 feet and 440 feet. The 720-foot Service Level, which will have an overflow elevation of 720 feet, can serve elevations between 440 feet and 580 feet. A single population for Area A was received from Metro. Acreage as well as population was calculated for the 720-foot service level for the concept plan. These population figures were subtracted from the total population figures from Metro to then determine the expected populations within the Intermediate service level.

The following narrative describes the improvements needed to serve the area.

The *Intermediate Service Level* is served by two concrete reservoirs, which have a total storage of 10 MG, one 6MG reservoir (Regner Reservoir) and the other a 4MG reservoir (Butler Reservoir). Additional storage of approximately 3.5 to 4.0MG is needed in the Intermediate Service Level within Area A in Pleasant Valley. The existing Butler Reservoir site has adequate property to construct an addition reservoir. Additional pumping capacity of approximately 1,650 gpm to 1,950 gpm and source capacity of approximately 1,950 gpm to 2,325 gpm is needed in the Intermediate service level, which would be the level from which to pump to the 720-foot service level.

Two extensions of a 16-inch waterline are recommended: one extending from the existing Butler reservoir and the other extending from the existing system north of the Pleasant Valley study area. This redundancy is an important factor in assuring adequate service to a substantially populated area. The plan envisions 12-inch waterlines in all areas where there is a potential for high fire flows ranging from 1,500 gpm to

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3500gpm. Waterline infrastructure smaller than 12 inches is anticipated to be constructed by development as it occurs.

The 720-foot Service Level will require 400,000 gallons to 1MG of storage for the Pleasant Valley study area. Property acquisition, which is not included in the estimate, will be required for a new reservoir. Location of the reservoir is also not identified at this time. The new 720-foot reservoir will be interconnected with the existing Hunters Highland Service reservoir. Additional pumping capacity of approximately 125gpm to 600gpm is needed for the 720-foot Service Level. The pump station would be located at the Butler Reservoir Site.

For Water, the preferred annexation strategy within Pleasant Valley would be east to west to take advantage of the existing water infrastructure. Our South Hills Service Level through an interim service arrangement can serve the 720-foot Service Level. If development proceeds west to east we could enter into an interim service arrangement with Portland. Pressure would be regulated at this connection to mirror Gresham's Intermediate Pressure Zone (575' elevation). Under both approaches, reserves need to be set aside using SDCs to build the additional water storage facilities for Pleasant Valley.

Area B. The City of Portland will provide water service to urban development in Area B. Area B includes two separate portions of land within the Pleasant Valley study area. The first area is at the NW corner of the Pleasant Valley study area along Jenne Rd, which has elevations between 260 feet and 380 feet. Currently, a 12-inch waterline resides in SE Jenne Road from SE McKinley Road to SE 174th Avenue. This waterline is served directly from the 50MG Powell Butte Reservoir, which has an overflow elevation of 531 feet. An analysis indicates that this 12-inch main could adequately serve this area. The second area is east of 162nd and between Kelley Creek and Mitchell Creek, as well as a small portion of land at the NW corner of 162nd and Clatsop. Elevations in this area range from 340 feet and 450 feet. Currently, a 12-inch waterline resides in SE 162nd from SE Foster Road to SE Clatsop Road as well as a 12-inch waterline in SE Clatsop from 162nd to the west. These waterlines are served from the 3MG Clatsop Reservoir, which has an overflow elevation of 814 feet. This reservoir is served from a pump station located near 162nd and Flavel and has a MDD capacity of 350gpm. A conceptual analysis indicates that this 12-inch main could adequately serve this area.

All the major water transmission and storage facilities are, therefore, already in place for Portland's part of Pleasant Valley. In both subsections of Area B, it is anticipated that property owners, as a condition of service, would construct required distribution mains. However, Portland will need to update its water master plan to show the preferred routing and pipe sizes for Area B to justify requirements for oversizing water distribution facilities. This is especially important because of the potential that a school may be build adjacent to 162nd Street north of Clatsop Street.

Area C. As noted above, there is uncertainty regarding who will deliver water to urban development in Area C. Given that the area is designated primarily for residential development, there are no significant storage or transmission facilities needed to serve the area independently from other parts of Pleasant Valley. The City of Gresham is capable of serving this area.

The Gresham Water Master Plan recommends that the city extend a 16-inch waterline along Cheldelin Road as part of a loop that provides redundancy for serving areas to the north within the Intermediate Service elevation. This line also would be capable of supplying water to all of Area C. For the present, the PFP assumes the City of Gresham will extend a 16-inch waterline along Cheldelin Road and will serve Area C.

A map in Appendix A shows the planned system improvements.

SUMMARY OF FUTURE NEEDS

- The City of Gresham has access to sufficient water supplies to serve all areas within Pleasant Valley and has identified necessary improvements to its water system to serve sub areas A and C. Additional intergovernmental work is needed to determine whether the Gresham serves Area C by annexing this area, or through a special service agreement.
- The City of Portland has storage and transmission capacity to serve Area B, but will need to update its water master plan to clearly identify the size and preferred routing of transmission facilities to establish over sizing requirements. Portland also may supply portions of Area A on an interim basis until adequate storage can be constructed in Pleasant Valley. More analysis is needed to refine this concept. The IGA may need to be amended to enable this solution.
- Additional storage will be needed in the City of Gresham's Intermediate or 720-foot water service level to serve complete development. In the interim, Gresham will be able to serve the eastern parts of Area A from the Hunters Highland and South Hills reservoirs until additional storage is constructed to serve Pleasant Valley. More analysis is needed to refine this service concept.
- The Cities of Portland and Gresham need to consider the impact of water service extensions in Pleasant Valley on their existing SDC programs. In particular, Gresham needs to evaluate which Pleasant Valley projects should be added to their list of eligible projects and determine the appropriate SDC to finance the additional public improvements that will support growth in Pleasant Valley commensurate with existing levels of service.

FINANCING PLAN

The following discussion presents the envisioned strategy for financing water service extensions in the Gresham and Portland sections of Pleasant Valley. For analysis purposes, the boundary between Portland and Gresham is presumed to be Mitchell Creek in the west. The Jenne Road area is also presumed to be part of Portland. All other areas in Multnomah County (Area A) are anticipated to be in Gresham. The final boundary will likely shift away from the creek, but at this time, the shift is not expected to significantly alter the relative cost burden depicted for Gresham and Portland. This discussion assumes Gresham will serve the Clackamas County area (Area C). The ultimate serve and governance provides for Area C have not been determined and will be the subject of future agreements.

Water. Both Gresham and Portland rely on developer contributions, SDCs, and retained earnings from the utility to finance system expansion. Each city has borrowed against future utility revenues to finance major improvements in production, storage and transmission facilities. SDCs are collected by both cities to help finance system expansion.

In the Portland service areas, it is expected that the current mix of private contributions, utility earnings, and SDC will finance necessary system improvements. The existing water system has capacity, pressure, and available storage to serve these areas. Transmission extensions can be financed incrementally with private funds and SDCs. The City will need to review its SDC methodology to determine if the transmission line in 162nd should qualify as an SDC credit eligible project. Otherwise, all improvements would be financed conventionally.

In Gresham, the annexation analysis indicates that the city may have difficulty financing water storage needs in the short term. The Water Fund currently has insufficient reserves to secure revenue bond financing to build the storage and transmission needed to serve Pleasant Valley. Over the long term,

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however, Gresham's existing SDCs should generate enough revenue from within Pleasant Valley to capitalize system improvements.

To address the timing problem for meeting water storage needs, two approaches can be taken. If development proceeds into Pleasant Valley from east to west, most of that land falls within Gresham's 720-foot pressure zone. The city has a moderate amount of capacity in its South Hills Reservoir that could serve development in Pleasant Valley within the 720-foot service pressure zone on an interim basis. As reserves build from SDC payments, Gresham can issue bonds to add long-term storage in this pressure zone for Pleasant Valley. Transmission extensions from both the east and west can be financed conventionally.

If development proceeds into Pleasant Valley from west to east, most development would fall within Gresham's Intermediate Service Level. On an interim basis, Portland could serve as the main water supply for development in the western portion of the valley until Gresham can finance permanent storage reservoirs. During this interim time period, Gresham will need to set aside reserves from SDCs that can be used to secure a bond issue to build storage for areas east of Mitchell Creek that are within the City's Intermediate Service Level. The timing for a bond measure to build this storage will depend on the pace of development in Pleasant Valley. When service can be transferred over to the Gresham service area and inter-tie between Portland and Gresham can serve as an emergency connection.

Gresham needs to review their SDC methodology, especially their improvement fee, to ensure the fee is adequate to recover forecast capital improvement needs in Pleasant Valley. This will be done as part of an engineering study to refine the storage and supply solutions outlined above. The consensus of staff, however, is that there are no extraordinary physical or technical issues associated with water service delivery in Pleasant Valley. If SDCs keep pace with design and construction costs, the area will generate sufficient revenue over the long term to finance necessary water system improvements.

GOALS, POLICIES AND ACTION MEASURES

Goals and Policies.

1. Applicable goals and policies that relate to the provision of public facilities in the existing comprehensive plans for the cities of Portland and Gresham also apply to the Pleasant Valley PFP. In addition to those goals and policies, the following policies are made part of this plan.
2. The Cities of Gresham and Portland and Clackamas County will work cooperatively to identify an efficient solution for extending water service to portions of Clackamas County that are within the Pleasant Valley plan area. Any agreement between Gresham and the County that does not anticipate annexation of this area to Gresham will comply with provisions of ORS 195 for urban service providers.

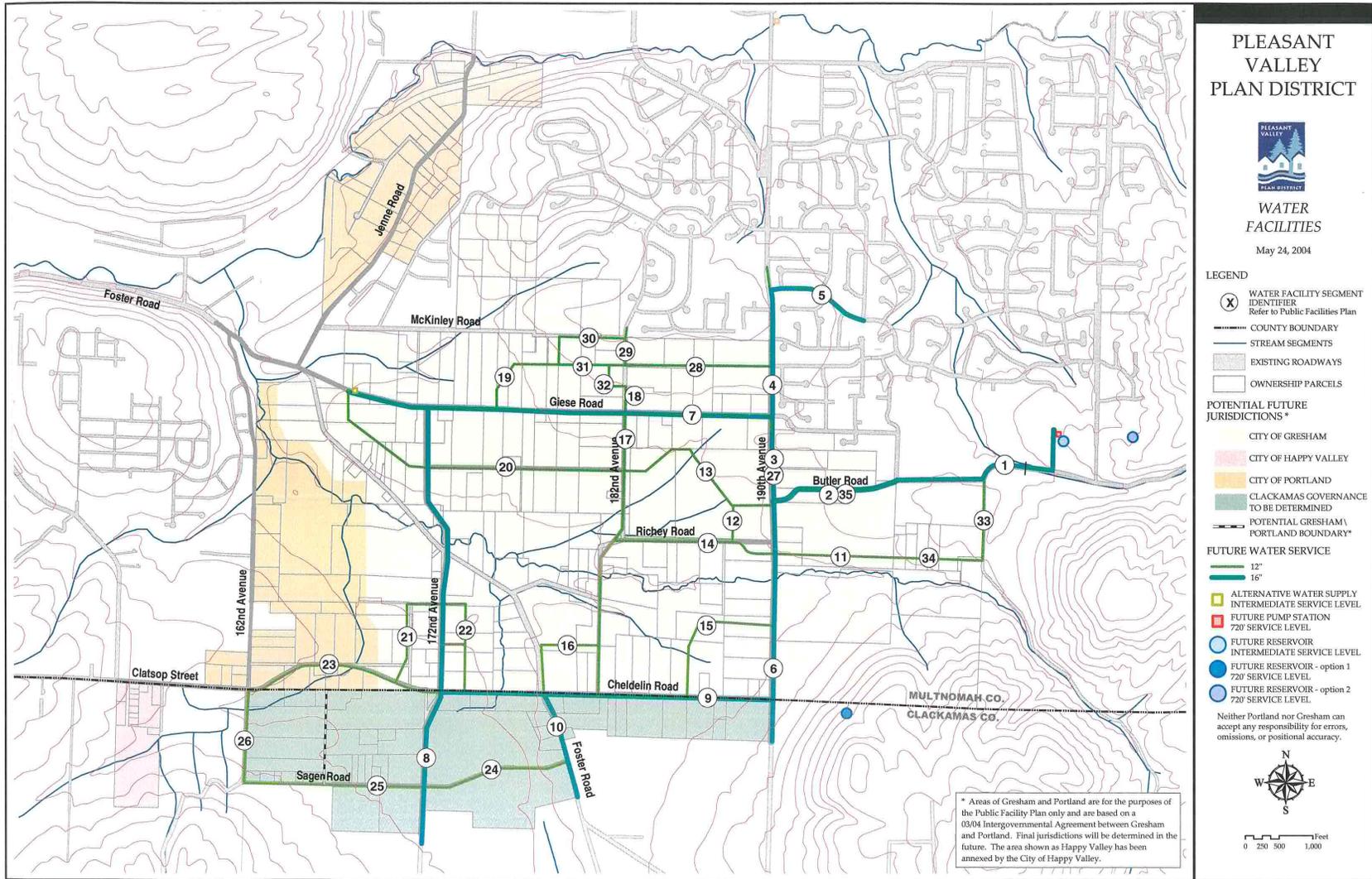
Action Measures

1. Update the City of Portland water master plan to establish the size and preferred routing for water system improvements serving Area B and establishing an interim service agreement with Gresham if annexation proceeds from the west to east.

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2. Review and, if necessary, update the City of Gresham system development charge water improvement fees to include necessary public improvements for serving Areas A and C.
3. Update the City of Gresham 5-Year Capital Improvement Plan to include critical path water system improvements – especially storage in the Intermediate service level - in accordance with the adopted water master plan and annexation plan.
4. If Gresham and/or Portland is to annex and provide services to Area C (in Clackamas County) then Gresham and/or Portland and Clackamas County need to conclude negotiations for territorial expansion and service agreements for Area C.

APPENDIX A



APPENDIX B

Pleasant Valley Public Facility Plan

Water Capital Improvement Project List

Project	Description	Units	Cost ¹	Timing	Responsible Jurisdiction	Funding Source	Comments	Short Term	Long Term
Waterlines									
Intermediate Service Level									
	Size – 16”	Linear feet							
1	Butler Rd west to Butler extension Intermediate Service Level – 16”	3,022	\$362,599	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$ -	\$ 362,599
2	Butler Extension to 190 th – Intermediate Service Level – 16”	1,899	\$227,858	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$ -	\$ 227,858
3	190 th from Butler Rd extension north to Giese – Intermediate Service Level – 16”	1,219	\$146,227	6 to 20	Gresham	SDC/Local	Timing depends on private investments	\$ -	\$ 146,227
4	190 th from Giese north to Willow Parkway – Intermediate Service Level – 16”	1,854	\$222,480	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$ -	\$ 222,480
5	Willow Parkway from 190 th east to Eastwood Ave – Intermediate Service Level – 16”	1,515	\$181,800	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$ -	\$ 181,800
6	190 th from Butler Road extension south to PV boundary – Intermediate Service Level – 16”	3,530	\$423,544	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$ -	\$ 423,544
7	Giese from 190 th to just east of Foster – Intermediate Service Level – 16”	6,309	\$757,075	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$ -	\$ 757,075
8	172 nd from Giese south to PV Boundary – Intermediate Service Level – 16”	6,526	\$783,101	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$ -	\$ 783,101
9	Cheldelin from 190 th to 172 nd – Intermediate Service level – 16”	4,916	\$589,900	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$ -	\$ 589,900
10	Foster from Cheldelin south to PV Boundary – Intermediate Service Level – 16”	1,587	\$190,454	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$ -	\$ 190,454

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Project	Description	Units	Cost ¹	Timing	Responsible Jurisdiction	Funding Source	Comments	Short Term	Long Term
	SIZE – 12”								
11	Richey Road from 190 th east to service level break point – Intermediate Service Level – 12”	1,680	164,640	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$ -	\$ 164,640
12	West side 190 th /South of Plaza to Richey Road – Intermediate Service Level – 12”	1,190	\$116,662	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$ -	\$ 116,662
13	From 182 nd looping through LDR to Plaza – Intermediate Service Level – 12”	2,142	\$209,914	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 209,914
14	Richey Road from 190 th to 182 nd – Intermediate Service Level – 12”	2,444	\$239,531	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 239,531
15	(west of 190 th) between Richey & Cheldelin – Intermediate Service Level – 12”	2,306	\$226,017	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 226,017
16	(east of Foster- 2 lines) between Richey & Cheldelin, Intermediate Service Level – 12”	3,921	\$384,235	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 384,235
17	182 nd from Richey to Giese – Intermediate Service Level - 12”	1,900	\$186,223	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 186,223
18	182 nd from Giese to Neighborhood Park – Intermediate Service Level – 12”	398	\$39,027	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 39,027
19	31 st looping back to Giese – Intermediate Service Level – 12”	1,404	\$137,602	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 137,602
20	(south of Giese) between Linneman & Foster – Intermediate Service Level – 12”	4,723	\$462,855	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 462,855
21	(west of 172 nd) Crystal Springs to Baxter – Intermediate Service Level – 12”	1,725	\$169,095	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 169,095
22	(east of 172 nd -2 lines) Crystal Springs to Cheldelin – Intermediate Service Level – 12”	1,965	\$192,523	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 192,523

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Project	Description	Units	Cost ¹	Timing	Responsible Jurisdiction	Funding Source	Comments	Short Term	Long Term
23	Baxter/Cheldelin from 172 nd west to 162 nd –Intermediate Service Level – 12”	3,010	\$294,943	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 294,943
24	(south of Cheldelin) from Foster west to 172 nd – Intermediate Service Level – 12”	2,200	\$215,603	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 215,603
25	Sager Rd from 172 nd west to 162 nd – Intermediate Service Level – 12”	2,667	\$261,361	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 261,361
27	162 nd from Sager to Clatsop St – Intermediate Service Level – 12”	1,358	\$133,122	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 133,122
720-foot Service Level									
	SIZE – 12”								
35	Butler Road Extension – 720-foot Service Level – 12”	1,925	\$188,607	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 188,607
27	190 th from 25 th to Butler extension – 720-foot Service Level – 12”	3,432	\$336,287	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 336,287
28	31 st Street from 190 th to Linneman – 720-foot Service Level – 12”	2,165	\$212,206	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 212,206
29	SW Linneman from 30 th to 21 st Street – 720-foot Service Level – 12”	552	\$ 54,086	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 54,086
30	McKinley Road from 190 th looping back to 31 st - 720-foot Service Level – 12”	1,391	\$136,282	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 136,282
31	31 st Street from Linneman to McKinley loop – 720-foot Service Level – 12”	983	\$96,382	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 96,382
32	West side of neighborhood park from 31 st to Linneman – 720-foot Service Level – 12”	559	\$54,742	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 54,742
33	Rodlun from Butler south to UGB – 720-foot Service Level – 12”	1,164	\$114,068	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 114,068
34	Richey Road from Rodlun west to service level break point – 720-foot Service Level 12”	1,394	\$136,659	6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	\$ 136,659

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Project	Description	Units	Cost ¹	Timing	Responsible Jurisdiction	Funding Source	Comments	Short Term	Long Term
Reservoir Storage		I. Gallons		6 to 20	Gresham	SDC/Local	Timing depends on private investment	\$	
Intermediate Service Level	3,472,000 Gallons at the Intermediate Service Level	3,472,000	\$5,208,000	1 to 5	Gresham	SDC/Utility		\$5,208,000	\$ 0
720' Service Level	1,182,000 Gallons at the 720' service level	1,182,000	\$1,773,000	6 to 20	Gresham	SDC/Utility			\$1,773,000
Pumping Capacity		Gallons per Minute							
Intermediate Service Level	1,696 Gallons/minute at the Intermediate Service Level	1,696	\$1,696,000	6 to 20	Gresham	SDC/Utility			\$1,696,000
720' Service Level	604 Gallons/minute at the 720' Service Level	604	\$604,000	6 to 20	Gresham	SDC/Utility			\$ 604,000
Source									
Intermediate/720' Service Level	2,875 Gallons/minute at the Intermediate/720' Service Level	2,875	\$862,500	6 to 20	Gresham	SDC/Utility			\$ 862,500
Planning									
Water Master Plan/SDC Update			\$30,000	1 to 5	Gresham	SDC/Utility	Priority Investment	\$ 30,000	\$ 0
Total Waterlines			\$8,647,711						
Total Reservoir Storage			\$6,981,000						
Total Pumping Capacity			\$2,300,000						
Total Source			\$862,500						
Total Planning			\$30,000						
Total Water System CIP Cost			\$18,821,211					\$5,238,000	\$13,583,211

Source: City of Gresham Water Bureau

¹ Costs are based on 2003 data

**Some portions of project service areas fall outside the proposed Annexation Subarea extent or are adjacent to areas outside the study boundary.

10.722 WASTEWATER SYSTEM

SYSTEM DESCRIPTION/CONDITION ASSESSMENT

Existing Conditions. Most of the Pleasant Valley Concept Plan area is within the upper Johnson Creek basin. The Johnson Creek basin is bordered generally by Clackamas County to the south, the City of Gresham to the east, on the north by NE Glisan Street and on the west by SE 45th Avenue. Current land use in the Pleasant Valley part of this basin is rural in nature and the area is served by on-site septic drainfields. This method cannot be relied on to serve planned urban level development. The City of Portland, City of Gresham, and Clackamas County all have the ability to collect and treat flows from all or portions of the Pleasant Valley Area. Alternatives have been analyzed based on service options for three sub areas within Pleasant Valley.

Sewage Collection. The sewage collection system refers to the infrastructure that serves development in Pleasant Valley. The topography within the Pleasant Valley area is such that the majority of the waste generation is within one drainage basin. A conceptual sewage collection system was developed as part of the Concept Planning process for Areas A, B, and C (Technical Appendix 11, Pleasant Valley Concept Plan, Concept D, 2001). A map in Appendix A shows the planned collection system improvements. Most of the system serving Areas A and C is gravity sewers. This design will avoid building sewers in sensitive riparian areas.

The Jenne-Powell sub-basin (former Urban Reserve area 4 and now part of Area B) can be connected directly to the Portland sanitary sewer system via the Foster Road interceptor. The remaining area (former Urban Reserve Area 5 and now the southwestern part of Area B) can be served with a gravity sewer system to a point near the confluence of Kelley Creek and Mitchell Creek. From there this sewage will need to be pumped across Kelley Creek, either to tie in with Portland's Foster Road interceptor or pumped south along Foster Road to the Pleasant Valley main pump station.

For planning purposes, the Concept Plan analysis assumes that Area C, which is within Clackamas County but drains toward Gresham, will be integrated with the sewer collection system for the rest of Pleasant Valley. It is conceivable that sewage from Area C could be collected in a separate system and pumped to Clackamas County for treatment, but this likely would be a more expensive solution and is not anticipated.

Sewage Conveyance and Treatment. The sewage conveyance and treatment system refers to the infrastructure that transports sewage from Pleasant Valley to a wastewater treatment plant for processing and discharge. There are three conveyance and treatment options for wastewater flows from Pleasant Valley. The first option would convey the sewage to the City of Gresham wastewater treatment plant. The second option would direct sewage to the City of Portland wastewater conveyance system for treatment at the Columbia Boulevard Treatment Plant. Both treatment options have advantages and disadvantages, which are described in detail below. The third option only deals with flow from Area C. A simplified description of these solutions follows.

The Gresham treatment solution involves building a 24-inch trunk line – most likely constructed along Foster Road and then up Jenne Road – to an inter-tie point with Gresham's existing sewer system. Some Gresham sewers or pump stations may need to be enlarged to convey the flow to the Gresham sewer plant where sewage would be processed and discharged to the Columbia River. In both these scenarios, the capacity of the main pumping station would be around 3,300gpm to match projected flows from the integrated parts of Areas A, B, and C.

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The Portland treatment option requires transporting the Pleasant Valley wastewater to Portland's sewage conveyance system. One approach would involve building gravity sewers, but this would require extensive construction in the sensitive Kelley Creek and Johnson Creek riparian corridor and stream channel. A more likely solution would be to use a large pump station on the south side of Kelley Creek near 172nd Avenue combined with a pressure sewer line - most likely constructed along Foster Road - to an inter-tie point with Portland's sewer system. Sewage would then flow through Portland sewers, some of which would need to be enlarged to accommodate the additional flow. Sewage would be treated at the Columbia Boulevard treatment plant and discharged to the Columbia River.

An engineering analysis by the City of Gresham has led Gresham to conclude that for Area A and C, the preferred solution is to convey by gravity sewage to the Gresham Treatment Plant. More analysis is needed to determine whether or not some flow from Area B also should be treated in Gresham. A final decision on the treatment option for Area B will be made when Portland adopts amendments to its public facility plan for Area B.

As noted above, it is conceivable that the flow from Area C, in Clackamas County, could be collected and diverted south to Clackamas County Sewer Service District #1. This approach, however, would be expensive because it runs counter to the terrain. This option would only be pursued if the area becomes part of Happy Valley and if an agreement cannot be reached for treating flow from this area in Gresham or Portland.

The City of Portland Treatment Solution. Portland currently treats most of the sanitary sewage generated within the 12,750-acre Johnson Creek basin. Portland also accepts sanitary sewer flows generated in the basin from the city of Gresham at four locations: SE 162nd Avenue and SE Stark Street, SE 176th Avenue, SE Haig Street, and Foster and 162nd Avenue. Portland also accepts sewage flows from Clackamas County Sewer Service District #1 at: SE 132nd Avenue and SE Clatsop Street, SE Linwood Avenue at Johnson Creek Blvd.

The McKinley Estates, located in the Jenne-Powell sub-basin, also is served by Portland. This development is served by an 8-inch sewer line in SE Jenne Road (from SE McKinley Road to Foster Road) and an 8-inch line in Foster Road (from SE Jenne Road to 162nd Avenue), where it discharges into the city's sewer system in a 10-inch line.

Portland completed a Public Facilities Plan in July 1999. This plan included an analysis for serving the Pleasant Valley Concept Plan area. Johnson Creek was modeled using a spreadsheet analysis tool. Infiltration and inflow (I/I) contributions varied within the model, depending on whether actual monitoring data were available. Because of the proximity of the Pleasant Valley Concept Plan area, the modeling effort considered the impacts of both including and excluding this area as part of the analysis. In addition to existing pipes, the model contains hypothetical pipes that may be constructed in the future to serve undeveloped areas within Pleasant Valley. These future pipes were placed on a planning-level alignment based on topography and street location. Sub-basins were delineated so that the flows in these future pipes could be turned on and off as required for the analysis.

In the 2015 base-case (without Pleasant Valley) wet weather scenario, the 10-inch and 18-inch sewer lines following SE Knapp Street were too small to accommodate projected flows. The total deficient length is less than 1,000 feet. The main branch serving the mid-county area (from SE Raymond Street and 122nd Avenue to Division Street and 148th Avenue) ran at 50 to 65 percent capacity. The segment on SE 111th Avenue just upstream of the Johnson Creek Interceptor ran at 70 to 75 percent capacity. The Johnson Creek Interceptor itself was at about 65 percent capacity below SE 112th Avenue and SE Foster Road (one segment was 81 percent) and at 20 to 30 percent capacity in the upper section. In summary, 214

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pipes were zero to 25 percent full; 114 pipes were 25 to 50 percent full; 92 pipes were 50 to 75 percent full; and 8 pipes were 75 to 100 percent full.

The modeling then considered an alternative future condition with full build-out for development in Pleasant Valley and other unserved areas. Under that scenario, some reaches of the Johnson Creek trunk exceeded design capacity. The interceptor ran 80 to 90 percent full in the lower section and 75 to 80 percent full in the upper section, with isolated segments running at 116 percent and 104 percent, respectively. About 645 feet of pipe in two locations would need to be replaced in the Johnson Creek basin.

Further modeling efforts in these areas would aid in predicting whether some of this pipe can be surcharged at an acceptable level. If so, the existing pipeline may not need to be replaced. Before a decision is made about directing flow from Pleasant Valley to Portland, a more sophisticated Stormwater Management Model (“SWMM”) should be developed for the sewer system and reliable cost estimates prepared for related improvements.

In addition to replacing undersized sewer lines, flow from Pleasant Valley would be conveyed through parts of Portland’s sewer system that are being overhauled to reduce combined sewer overflows. The overflow reduction has been accomplished by building very large deep conduit pipes that provide temporary storage for sewage during storm events. This sewage must later be pumped out of the storage conduits for treatment. It is estimated that sewage from Pleasant Valley may need to be pumped three or four times as it traverses the Portland system before being treated. This adds significantly to the cost of conveying and treating sewage through Portland. As a consequence, it is estimated that Portland sewer rates will be 30% or more higher than Gresham rates for domestic service. For areas in the City of Gresham, this rate differential represents a significant concern.

City of Gresham Treatment Solution. The City of Gresham provides sanitary sewer collection and treatment for more than 90,000 residents, businesses, and industries within the City. Through its wastewater management program, the City is able to provide high quality service to ratepayers while protecting the area’s sensitive surface water features. Gresham’s service area contains seven major sewer basins totaling approximately 14,171 acres (22 square miles). In addition to the seven sewer basins, the City also accepts wastewater flows from the City of Fairview (228 acres) and the City of Wood Village (604 acres), and a small amount of flow from the City of Portland. The service area extends from the Columbia River at an elevation of approximately 10 feet to the southern edge of Multnomah County at an approximate elevation of 1,000 feet. The service area is bordered by the City of Portland to the west and Fairview, Troutdale, and unincorporated Multnomah County to the north and east.

Gresham recently expanded its sewage treatment plant and has capacity to serve Pleasant Valley. In February 2001, Gresham updated its Wastewater System Master Plan. The plan included a service analysis for most of the Pleasant Valley Concept Plan area but it excluded Area C within Clackamas County. Like the modeling that was used for Portland, the analysis established a baseline flow condition for Gresham’s existing service area and then identified necessary improvements under build out conditions to accommodate the additional flow from Pleasant Valley. This flow would likely be introduced to Gresham’s system at the west end of the Johnson Creek Trunk.

Without contributions from Pleasant Valley, the Johnson Creek trunk is projected to carry a flow of 1,724 gallons per minute (“gpm”). With Pleasant Valley flows added, the line would need to carry an additional 3,300 gpm to 5,024 gpm, depending on the size of the area served and infiltration rates. This represents an increase of approximately 190 percent. The trunk line does not have capacity to accommodate this flow.

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The closest pipeline with capacity to accept flow from Pleasant Valley is located in SW 11th Ave. just north of where Johnson Creek crosses under Jenne Road. A total of 3,116-linear feet of sewer pipe will need to be upsized to convey the additional flow to the Linneman pump station, and additional piping to convey flow within the Johnson Creek basin. Additional pumping capacity also must be provided. The size of the new force main from the Linneman pump station would need to be increased or a third parallel force main provided to maintain head loss and velocity at reasonable levels given the increased flow. Finally, because the West Trunk, Gresham Parallel Interceptor, and a planned new interceptor are forecast to be at capacity without flows from Pleasant Valley, the size of the new interceptor would need to be increased to accommodate Pleasant Valley flows.

Clackamas County Treatment Solution. Clackamas County's Water Environment Services ("WES") manages 3 service districts that provide sanitary sewer and surface water management service to over 150,000 customers. WES operates and maintains five wastewater treatment systems, 17 pump stations, and more than 240 miles of gravity sanitary sewer pipelines. The Kellogg Creek Wastewater Treatment Plant serves the City of Happy Valley and the unincorporated North Clackamas Urban area. This plant would likely accept any flow diverted from Pleasant Valley.

Area C is in Clackamas County. Gresham does not include any land from Clackamas County within its incorporated boundaries and has no agreements of procedures with the county for doing so. If Gresham and the County do not agree that Area C will be annexed into Gresham, it would still be possible for Gresham to serve Area C through an urban service agreement with Clackamas County. If that approach proves infeasible, Area C could be served by Clackamas County Sewer Service District #1. To do so, the District will need to update its sewer master plan and analyze how best to collect and pump sewage from Area C out of the Johnson Creek basin into the Clackamas basin and identify where to connect to the district's conveyance system. This would not be an efficient service delivery option for sewers.

SUMMARY OF FUTURE NEEDS

- The City of Gresham and Portland have sufficient treatment capacity to serve all areas within Pleasant Valley. Preliminary analysis by Gresham suggests that at least for Areas A and C, Gresham conveyance and treatment would be the preferred option, but both Portland and Gresham would benefit from an engineering analysis that compares the long-term capital improvement and operating costs associated for each alternative. In addition, a more refined engineering analysis is needed to establish a location for the major pump station serving Pleasant Valley and the related force mains. The study needs to be conducted consistent with the 1998 IGA between Portland and Gresham re: future planning for sanitary sewer services in Pleasant Valley. The analysis also should consider the marginal impact on SDC improvement fees of constructing these conveyance facilities. This study is a critical path element because urban development cannot proceed in Pleasant Valley without a solution to the sewage treatment question.
- Building the main pump station and force main is also a critical path public improvement because relatively little urban development can occur in Pleasant Valley without this facility. It may be possible to serve some interim development in the northeastern part of Pleasant Valley using temporary pump stations if there is conveyance capacity in Gresham's existing sewers north of the valley. This interim solution would need to be funded privately and these temporary pump stations decommissioned when the main pump station becomes operational and sewer connections are constructed to the main pump station.
- While both Portland and Gresham have conducted a preliminary analysis of off-site conveyance routes and treatment capacity to serve Pleasant Valley, neither jurisdiction has amended their public facility plans or master plans to include specific sewer improvement projects within Pleasant Valley.

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This step provides certainty to property developers regarding fair-share allocation of improvement costs as well as providing a foundation for updating SDC improvement fees. Master plans should be amended to include the collection system improvements within Pleasant Valley and the off-site system improvements once a conveyance and treatment solution is established.

- Both Portland and Gresham may need to modify their SDC improvement fees for sanitary sewers depending on the marginal cost associated with serving Pleasant Valley. Each jurisdiction also will need to modify their SDC improvement fee project list to make Pleasant Valley system improvements eligible to be financed with SDC revenue.
- Additional intergovernmental work may be needed between Gresham and Portland if any portion of Area B obtains sewage treatment service from Gresham. Gresham and Portland already have intergovernmental agreements for contract treatment service to use in developing such an agreement.
- Additional intergovernmental work is needed to determine whether or not Gresham will serve Area C either by annexing this area, or through a special service agreement. If Gresham serves the area on a contract basis, Clackamas County and Gresham need to make sure this agreement conforms with provisions of ORS 195 related to urban service provider agreements. If need be, Clackamas County Sewer Service District #1 can serve Area C, but no planning is in place to proceed with this solution.

FINANCING PLAN

The following discussion presents the envisioned strategy for financing wastewater service extensions in the Gresham and Portland sections of Pleasant Valley. For analysis purposes, the boundary between Portland and Gresham is presumed to be Mitchell Creek in the west. The Jenne Road area is also presumed to be part of Portland. All other areas in Multnomah County are anticipated to be in Gresham. The final boundary will likely shift away from the creek, but at this time, the shift is not expected to significantly alter the relative cost burden depicted for Gresham and Portland. This discussion assumes Gresham will serve the Clackamas County area (Area C). The ultimate service and governance providers for Area C have not been determined and will be the subject of future agreements.

Sanitary Sewer. Both Gresham and Portland have traditionally relied on developer contributions, SDCs, and retained earnings from the utility to finance system expansion. Each city has borrowed against future utility revenues to make significant improvements to their sewage treatment and conveyance systems. Both cities collect sanitary sewer SDCs to help pay for conveyance and treatment costs related to growth.

The areas of Pleasant Valley that may be annexed to Portland should generate sufficient revenue from private contributions, utility earnings, and SDCs to finance service extensions. There is a capacity limitation in the Portland conveyance system down-gradient from Pleasant Valley, but the flow from the Jenne Road and west Mitchell Creek areas may not significantly alter the scale of that problem or planned solutions to it. Sewer extensions in Portland service areas, therefore, can be financed incrementally with private contributions and SDCs.

In Gresham service areas, the analysis indicates that existing SDCs will not be adequate to finance treatment and collection system improvements. Another solution that may be considered is to use a sewer utility surcharge to offset the added capital and operating costs associated with serving Pleasant Valley. A refinement study to the Gresham Sewer Master Plan will be initiated in FY 2003-04 to analyze this issue and determine which approach should be used.

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As with water, there are short-term service issues that also need to be resolved. If development in Pleasant Valley proceeds from west to east, the city will provide capacity by constructing the 24-inch sewer line from Linneman to Jenne Road at Foster Road. As sewer lines are extended east and south, this would provide an orderly sequence for extending sewer service.

If development precedes from east to west, a solution for funding the construction of the new sewer system through undeveloped property to the Kelley Creek pump station site is through the use of reimbursement districts. The City will likely receive proposals for constructing interim pump stations that would convey sewage from eastern development tracts to existing sewer lines in Gresham. These existing sewer lines were not designed to carry the additional flow that would result from allowing interim pump stations. From a sewer service perspective, this is an undesirable approach because it involves duplicative system investment and additional regulatory and operating costs in high-maintenance pump facilities. It is a policy decision for Gresham to decide if it wishes to allow interim pumping, but this may be a viable short-term service solution.

GOALS, POLICIES AND ACTION MEASURES

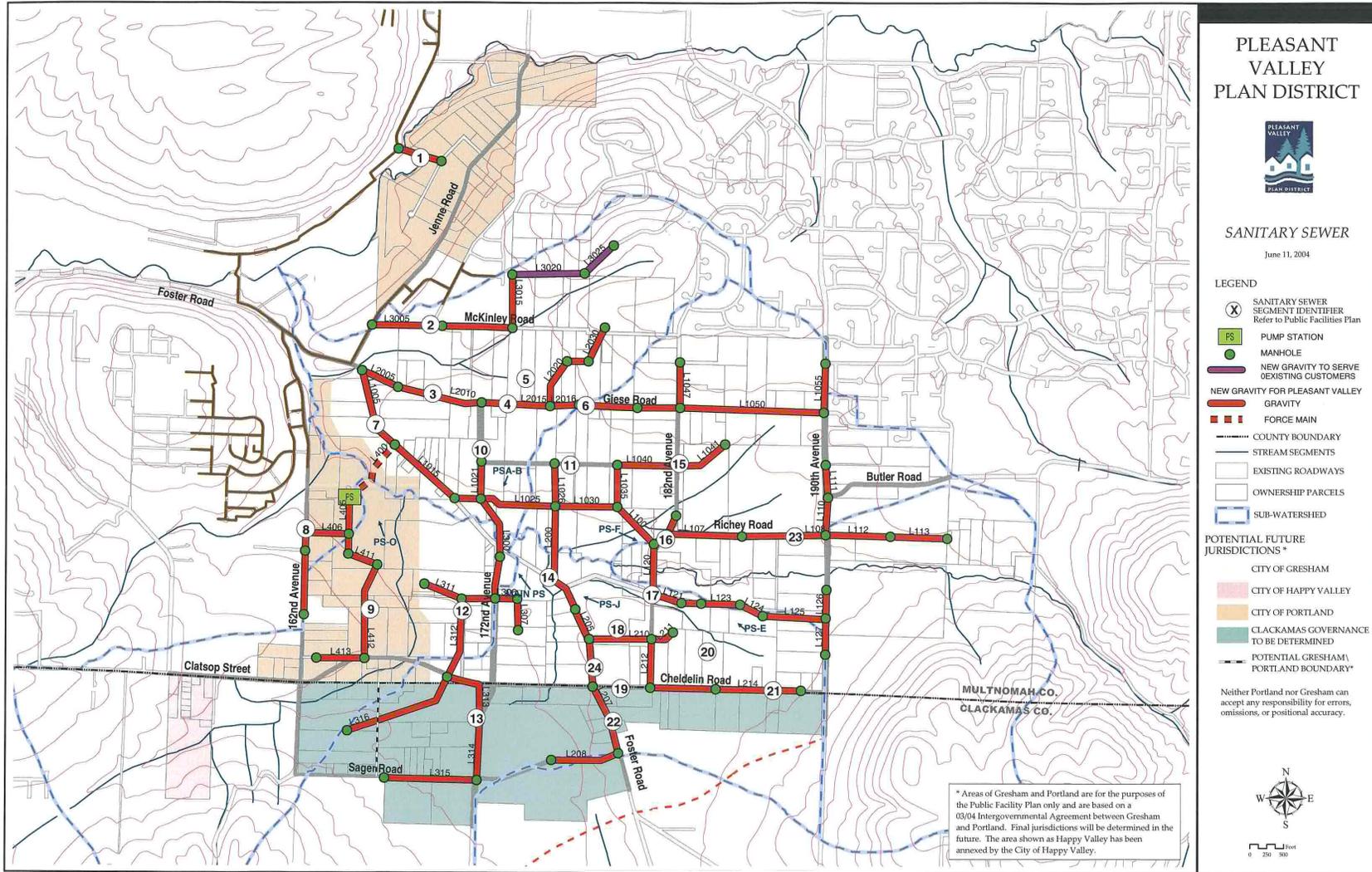
Goals and Policies. Applicable goals and policies that relate to the provision of public facilities in the existing comprehensive plans for the cities of Portland and Gresham also apply to the Pleasant Valley PFP. In addition to those goals and policies, the following policies are made part of this plan.

1. The City of Gresham and Clackamas County will work cooperatively to identify a cost effective solution for serving that part of Clackamas County that is within the Pleasant Valley Concept Plan area. If agreement between Gresham and the County does not anticipate annexation of this area to Gresham, it will comply with provisions of ORS 195 for urban service providers.

Action Measures

1. Update the City of Portland public facility plan to establish the size and preferred routing for sewer system improvements serving Area B.
2. Update the City of Gresham sewer master plan to establish the size and preferred routing for sewer system improvements serving Area A and C.
3. Review and, if necessary, update the City of Gresham and Portland system development charges for sewers. Update the SDC improvement project list to include the relevant Yr 1-5 sewer projects listed in the CIP section of this plan.
4. Update the Portland and Gresham 5-Year Capital Improvement Plan to include critical path sewer system improvements consistent with the annexation strategy that emerges for Pleasant Valley and the conveyance and treatment option that is selected.
5. Gresham and Clackamas County need to conclude negotiations for territorial expansion and/or service agreements for Area C. Regardless of the solution, the agreement needs to comply with provisions of ORS 195 that relate to urban service providers.

APPENDIX A



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APPENDIX B

Pleasant Valley Public Facility Plan

Sanitary Sewer Capital Improvement Project List

Annexation Area	Pipe Name/ Run	Pipe Size (in)	Pipe Length (ft)	2004 Cost	Construction Contingency	Construction Cost	Engineering	Admin.	Project Total	Timing	Responsible Jurisdiction	Funding Source
Area 1A	L4005	8	660	\$79,400	\$3,820	\$103,220	\$18,580	\$ 3,097	\$ 124,896	6-20	Portland	SDC/Local
Area 1A Subtotal				\$79,400	\$23,820	\$103,220	\$ 18,580	\$ 3,097	\$ 124,896	6-20	Portland	SDC/Local
Area 2A	L3005- L3015	8	2,870	\$178,732	\$53,620	\$232,352	\$ 41,823	\$ 6,971	\$ 281,145	6-20	Gresham	SDC/Local
	L2005- L2015	12	2,865	\$405,000	\$121,00	\$526,500	\$ 94,770	\$ 15,795	\$ 637,065	6-20	Gresham	SDC/Local
	L2020- L2025	8	1,055	\$126,000	\$37,800	\$163,800	\$ 29,484	\$ 4,914	\$ 198,198	6-20	Gresham	SDC/Local
Area 2A Subtotal				\$709,732	\$12,920	\$922,652	\$ 166,077	\$ 27,680	\$ 1,116,408	6-20	Gresham	SDC/Local
Area 3A	L1047	8	675	\$ 81,100	\$24,330	\$105,430	\$ 18,977	\$ 3,163	\$ 127,570	6-20	Gresham	SDC/Local
	L2030	8	555	\$67,800	\$20,340	\$ 88,140	\$ 15,865	\$ 2,644	\$ 106,649	6-20	Gresham	SDC/Local
	L2016- L2055	8	4,780	\$561,000	\$68,300	\$729,300	\$ 131,274	\$ 21,879	\$ 882,453	6-20	Gresham	SDC/Local
Area 3A Subtotal				\$ 709,900	\$212,970	\$922,870	\$ 166,117	\$ 27,686	\$ 1,116,673	6-20	Gresham	SDC/Local
Area 2B	L1005	24	715	\$ 151,000	\$45,300	\$196,300	\$ 35,334	\$ 5,889	\$ 237,523	6-20	Gresham	SDC/Local
	L1015	24	790	\$ 224,000	\$67,200	\$291,200	\$ 52,416	\$ 8,736	\$ 352,352	6-20	Gresham	SDC/Local
	L1020	24	365	\$ 76,900	\$23,070	\$99,970	\$ 17,995	\$ 2,999	\$ 120,964	6-20	Gresham	SDC/Local
	Microtunnel- L1015- L1005	24	975	\$1,070,000	\$ 321,000	\$1,391,000	\$ 250,380	\$ 41,730	\$ 1,683,110	6-20	Gresham	SDC/Local
Area 2B Subtotal				\$1,521,900	\$ 456,570	\$1,978,470	\$ 356,125	\$ 59,354	\$ 2,393,949	6-20	Gresham	SDC/Local
Area 2D	L1021	12	550	\$88,500	\$26,550	\$115,050	\$ 20,709	\$ 3,452	\$ 139,211	6-20	Gresham	SDC/Local
	L1025	24	1,130	\$268,000	80,400	\$348,400	\$ 62,712	\$ 10,452	\$ 421,564	6-20	Gresham	SDC/Local

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Annexation Area	Pipe Name/ Run	Pipe Size (in)	Pipe Length (ft)	2004 Cost	Construction Contingency	Construction Cost	Engineering	Admin.	Project Total	Timing	Responsible Jurisdiction	Funding Source
Area 2D Subtotal				\$356,500	\$106,950	\$463,450	\$ 83,421	\$ 13,904	\$560,775	6-20	Gresham	SDC/Local
Area 2C	L1026	18	635	\$130,000	\$39,000	\$169,000	\$ 30,420	\$ 5,070	\$ 204,490	6-20	Gresham	SDC/Local
	L1030	18	915	\$185,000	\$55,500	\$240,500	\$ 43,290	\$ 7,215	\$ 291,005	6-20	Gresham	SDC/Local
	L1035	12	620	\$128,000	\$38,400	\$166,400	\$ 29,952	\$ 4,992	\$ 201,344	6-20	Gresham	SDC/Local
	L1040	8	900	\$118,000	\$35,400	\$153,400	\$ 27,612	\$ 4,602	\$ 185,614	6-20	Gresham	SDC/Local
	Pedestrian Bridge	N/A	N/A	\$8,960	\$2,688	\$11,648	\$ 2,097	\$ 349	\$ 14,094	6-20	Gresham	SDC/Local
Area 2C Subtotal				\$569,960	\$170,988	\$740,948	\$ 133,371	\$ 22,228	\$ 896,547	6-20	Gresham	SDC/Local
Area 3B	L1041	8	810	\$96,000	\$28,800	\$ 124,800	\$ 22,464	\$ 3,744	\$ 151,008	6-20	Gresham	SDC/Local
	L100	18	775	\$100,000	\$30,000	\$ 130,000	\$ 23,400	\$ 3,900	\$ 157,300	6-20	Gresham	SDC/Local
	L105	18	255	\$56,900	\$17,070	\$ 73,970	\$ 13,315	\$ 2,219	\$ 89,504	6-20	Gresham	SDC/Local
	L106	12	300	\$55,100	\$16,530	\$ 71,630	\$ 12,893	\$ 2,149	\$ 86,672	6-20	Gresham	SDC/Local
	L107	8	1,100	\$131,000	\$39,300	\$ 170,300	\$ 30,654	\$ 5,109	\$ 206,063	6-20	Gresham	SDC/Local
	L108	8	1,255	\$148,000	\$44,400	\$ 192,400	\$ 34,632	\$ 5,772	\$ 232,804	6-20	Gresham	SDC/Local
Area 3B Subtotal				\$587,000	\$176,100	\$ 763,100	\$ 137,358	\$ 22,893	\$ 923,351	6-20	Gresham	SDC/Local
Area 3C	L110-L111	8	1,040	\$125,000	\$37,500	\$ 162,500	\$ 29,250	\$ 4,875	\$ 196,625	6-20	Gresham	SDC/Local
	L112-L113	8	1,800	\$212,000	\$63,600	\$ 275,600	\$ 49,608	\$ 8,268	\$ 333,476	6-20	Gresham	SDC/Local
Area 3C Subtotal				\$337,000	\$101,100	\$ 438,100	\$ 78,858	\$ 13,143	\$ 530,101	6-20	Gresham	SDC/Local
Area 1B	L406-L408	8	1,840	\$ 216,000	\$ 64,800	\$ 280,800	\$ 50,544	\$ 8,424	\$ 339,768	6-20	Portland	SDC/Local
	L412-L413	8	2,135	\$ 252,000	\$ 75,600	\$ 327,600	\$ 58,968	\$ 9,828	\$ 396,396	6-20	Portland	SDC/Local
	L411	8	460	\$ 69,800	\$ 20,940	\$ 90,740	\$ 16,333	\$ 2,722	\$ 109,795	6-20	Portland	SDC/Local
	L410	8	295	\$ 35,800	\$ 10,740	\$ 46,540	\$ 8,377	\$ 1,396	\$ 56,313	6-20	Portland	SDC/Local
	L405	8	550	\$ 76,200	\$ 22,860	\$ 99,060	\$ 17,831	\$ 2,972	\$ 119,863	6-20	Portland	SDC/Local
	Force Main Pump Station	8	1,060	\$ 215,000	\$ 64,500	\$ 279,500	\$ 50,310	\$ 8,385	\$ 338,195	6-20	Portland	SDC/Local
		N/A	N/A	\$ 361,648	\$ 108,494	\$ 470,142	\$ 84,626	\$ 14,104	\$ 568,872	6-20	Portland	SDC/Local
Area 1B Subtotal				\$ 1,226,448	\$ 367,934	\$ 1,594,382	\$ 286,989	\$ 47,831	\$ 1,929,203	6-20	Portland	SDC/Local

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Annexation Area	Pipe Name/ Run	Pipe Size (in)	Pipe Length (ft)	2004 Cost	Construction Contingency	Construction Cost	Engineering	Admin.	Project Total	Timing	Responsible Jurisdiction	Funding Source
Area 1D	L300	18	950	\$ 122,000	\$ 36,600	\$ 158,600	\$ 28,548	\$ 4,758	\$ 191,906	6-20	Gresham	SDC/Local
	L305	18	625	\$ 111,000	\$ 33,300	\$ 144,300	\$ 25,974	\$ 4,329	\$ 174,603	6-20	Gresham	SDC/Local
	L310	12	495	\$ 75,300	\$ 22,590	\$ 97,890	\$ 17,620	\$ 2,937	\$ 118,447	6-20	Gresham	SDC/Local
	L311	8	595	\$ 78,000	\$ 23,400	\$ 101,400	\$ 18,252	\$ 3,042	\$ 122,694	6-20	Gresham	SDC/Local
	L312	12	1,205	\$ 172,000	\$ 51,600	\$ 223,600	\$ 40,248	\$ 6,708	\$ 270,556	6-20	Gresham	SDC/Local
Area 1D Subtotal				\$ 558,300	\$ 167,490	\$ 725,790	\$ 130,642	\$ 21,774	\$ 878,206	6-20	Gresham	SDC/Local
Area 4A	L200	18	1,645	\$ 212,000	\$ 63,600	\$ 275,600	\$ 49,608	\$ 8,268	\$ 333,476	6-20	Gresham	SDC/Local
	L205	12	485	\$ 73,800	\$ 22,140	\$ 95,940	\$ 17,269	\$ 2,878	\$ 116,087	6-20	Gresham	SDC/Local
	L206	8	705	\$ 117,000	\$ 35,100	\$ 152,100	\$ 27,378	\$ 4,563	\$ 184,041	6-20	Gresham	SDC/Local
	L210	8	920	\$ 150,000	\$ 45,000	\$ 195,000	\$ 35,100	\$ 5,850	\$ 235,950	6-20	Gresham	SDC/Local
	L306	12	330	\$ 51,300	\$ 15,390	\$ 66,690	\$ 12,004	\$ 2,001	\$ 80,695	6-20	Gresham	SDC/Local
	L307	8	465	\$ 54,600	\$ 16,380	\$ 70,980	\$ 12,776	\$ 2,129	\$ 85,886	6-20	Gresham	SDC/Local
Area 4A Subtotal				\$ 658,700	\$ 197,610	\$ 856,310	\$ 154,136	\$ 25,689	\$ 1,036,135	6-20	Gresham	SDC/Local
Area 4C	L120	18	735	\$ 150,000	\$ 45,000	\$ 195,000	\$ 35,100	\$ 5,850	\$ 235,950	6-20	Gresham	SDC/Local
	L121-L125	8	2,620	\$ 309,000	\$ 92,700	\$ 401,700	\$ 72,306	\$ 12,051	\$ 486,057	6-20	Gresham	SDC/Local
	L126-L127	8	960	\$ 145,000	\$ 43,500	\$ 188,500	\$ 33,930	\$ 5,655	\$ 228,085	6-20	Gresham	SDC/Local
	L211	8	360	\$ 48,900	\$ 14,670	\$ 63,570	\$ 11,443	\$ 1,907	\$ 76,920	6-20	Gresham	SDC/Local
Area 4C Subtotal				\$ 652,900	\$ 195,870	\$ 848,770	\$ 152,779	\$ 25,463	\$1,027,012	6-20	Gresham	SDC/Local
Area 5A	L313	12	1,025	\$ 188,000	\$ 56,400	\$ 244,400	\$ 43,992	\$ 7,332	\$ 295,724	6-20	Gresham	SDC/Local
	L314-L315	8	2,240	\$ 264,000	\$ 79,200	\$ 343,200	\$ 61,776	\$ 10,296	\$ 415,272	6-20	Gresham	SDC/Local
	L316	12	1,770	\$ 319,000	\$ 95,700	\$ 414,700	\$ 74,646	\$ 12,441	\$ 501,787	6-20	Gresham	SDC/Local
Area 5A Subtotal				\$ 771,000	\$ 231,300	\$ 1,002,300	\$ 180,414	\$ 30,069	\$1,212,783	6-20	Gresham	SDC/Local
Area 4B	L207	8	1,060	\$ 141,000	\$ 42,300	\$ 183,300	\$ 32,994	\$ 5,499	\$ 221,793	6-20	Gresham	SDC/Local
	L208	8	1,005	\$ 168,000	\$ 50,400	\$ 218,400	\$ 39,312	\$ 6,552	\$ 264,264	6-20	Gresham	SDC/Local
Area 4B Subtotal				\$ 309,000	\$ 92,700	\$ 401,700	\$ 72,306	\$ 12,051	\$ 486,057	6-20	Gresham	SDC/Local

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Annexation Area	Pipe Name/ Run	Pipe Size (in)	Pipe Length (ft)	2004 Cost	Construction Contingency	Construction Cost	Engineering	Admin.	Project Total	Timing	Responsible Jurisdiction	Funding Source
Area 4D	L212	8	720	\$ 97,700	\$ 29,310	\$ 127,010	\$ 22,862	\$ 3,810	\$ 153,682	6-20	Gresham	SDC/Local
	L213-L214	8	2,230	\$ 263,000	\$ 78,900	\$ 341,900	\$ 61,542	\$ 10,257	\$ 413,699	6-20	Gresham	SDC/Local
Area 4D Subtotal				\$ 360,700	\$ 108,210	\$ 468,910	\$ 84,404	\$ 14,067	\$567,381	6-20	Gresham	SDC/Local
TOTAL PLEASANT VALLEY SERVICE AREA												
		\$ 9,408,440	\$ 2,822,532	\$ 12,230,972	\$ 2,201,575	\$ 366,929	\$14,799,476					
OFFSITE COSTS (PLEASANT VALLEY SHARE)¹						\$5,369,000						
TOTAL PROJECT COST								\$20,168,476				

1. Offsite costs include Jenne/Foster Interceptor, increased capacity at Linneman Pump Station, and Pleasant Valley share of new interceptor capacity.

10.723 STORMWATER MANAGEMENT SYSTEM

SYSTEM DESCRIPTION/CONDITION ASSESSMENT

Existing Conditions. Pleasant Valley is a rural area where stormwater is currently conveyed overland in ditches to natural drainageways. Drainage ditches next to public roadways convey runoff from road surfaces, and in some cases from adjacent private properties, to natural stream channels. Some stream channels are in good condition, although many are degraded. Most of the valley, which has shallow soils underlain by hardpan clays, was tilled to drain the native wetland prairies for farming. Many of the area's small tributary streams were either eliminated or excavated for drainage ditches. Most riparian habitat was removed, except in places where steep banks made farming impractical. The result is a significantly altered watershed that now sustains only a fraction of the once abundant fish and wildlife species native to the valley (see the *Evaluation of Aquatic and Upland Habitat for the Kelley Creek Watershed* for more details).

Planned Improvements. Urban development has historically had a dramatic adverse impact on watershed health, especially in riparian areas. The recommended stormwater system for Pleasant Valley is intended to minimize this impact and maintain or restore watershed functionality using the goals and recommendations of the Natural Resources/Watersheds Implementation and Green Practices Reports. While urbanization is not anticipated to restore the health of the watershed to pre-development conditions, it may actually improve on current conditions and restore parts of the watershed.

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

The swale system will discharge to regional stormwater management facilities that serve two functions. First, they 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 stormwater management facilities, they will regulate the rate and volume of stormwater discharge to the natural stream channels in the Environmentally Sensitive Restoration Areas ("ESRA") to a level that is no greater than the discharge rate and duration of pre-development conditions to the maximum extent practicable.

Acquiring sites for stormwater management facilities is a high priority in the early years as development takes hold in Pleasant Valley. A map showing the approximate location of the proposed stormwater system improvements is included in Appendix A. The final location of facilities is subject to the outcome of the stormwater master plan.

Finally, within the ESRAs, restoration efforts would be encouraged to improve riparian character and function. This would provide multiple benefits, such as improvements in water quality and fish and wildlife habitat, as well as providing greenway belts throughout the urban landscape. The expected Total Maximum Daily Load limitations for temperature in the Johnson Creek basin may enable the use of "water quality credits" in the upper part of the watershed to offset development impacts elsewhere in the watershed, which could provide private financing for environmental restoration in the ESRAs.

Development Regulation. Development guidelines generally allow, and in some cases require, that runoff from impervious surfaces in residential areas be discharged to the public drainage system. While protective of properties, this practice can result in a significant increase in storm discharge to natural drainages that contribute to bank erosion, scouring and wildly fluctuating stream conditions. Some codes require “on-site” detention to manage the rate of discharge to pre-development conditions for a design storm. The success of these regulations, especially in residential areas, has been mixed. Part of the problem is that “on-site” usually means somewhere in the subdivision, a local detention facility is constructed. Unless these facilities are well maintained, however, they do not function as designed and end up bypassing most of the runoff they were suppose to detain. In addition, detention facilities often manage the rate of flow but not the duration. As a result stormwater can discharge into creeks for longer periods than under natural conditions and cause significant erosion.

In Pleasant Valley, the Concept Plan calls for development codes that will require the on-site management of rain for individual property by offering a menu of stormwater management facilities and landscaping systems designed to allow everyday storm runoff to be infiltrated into the ground or evapotranspired. An overflow system would be designed so that when a larger storm occurs, the runoff would be conveyed through a series of swales in the street right-of-way to the public stormwater facilities. The public system would be oversized to handle larger storm events. It is recommended that the stormwater system serving arterial and collector streets be sized for the 100-year storm. The stormwater systems in other streets could be designed for the nuisance storm that also may be combined with regional stormwater management facilities.

Implementation. The stormwater management approach in Pleasant Valley has been designed around a watershed approach. All areas within the watershed need to adhere to the same stormwater management approach for the system to work properly. The stormwater management policies and design guidelines will be incorporated into the SWM plan for the Kelley Creek Watershed. These design guidelines will need to be carefully integrated with street design guidelines. For example, the swale system will have a significant impact on street access from adjoining properties. The whole system will need to be designed differently for pedestrians, cars and trucks, and transit vehicles. To ensure the concept functions seamlessly, both Gresham and Portland will adopt this SWM plan as part of their development code. Both jurisdictions will then enforce the same stormwater design guidelines and regulations.

The stormwater conveyance system will parallel the road system. In addition, the location of regional public stormwater management facilities is only generally known at this time. Their size and how they will work in conjunction with the conveyance system has not been refined to the point where system improvements could be approved for construction. An area stormwater master plan is needed to refine the design concepts for the system to the point where facility design and construction can begin. That planning effort is a critical path element for plan implementation.

SUMMARY OF FUTURE NEEDS

- Stormwater facilities planning needs to be refined for Pleasant Valley in a master plan that more precisely identifies the system design, facility locations, and cost and schedule. The master plan needs to be carefully coordinated with the “green street” transportation system improvements. In addition to facility needs and design goals, the plan also should establish a financing framework for stormwater management in Pleasant Valley. The City of Portland will participate in this planning process because it will be implementing parts of the plan. This planning work is a critical path element for PFP implementation.
- Coordination is needed between Gresham, Portland, Multnomah County and Clackamas County regarding stormwater system planning and design guidelines for public roads and stormwater

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conveyance in Areas A, B, and C. A consistent approach regarding stormwater conveyance standards, development setbacks, allowed uses in the ESRAs, and other issues related to stormwater management should be spelled out in an intergovernmental agreement.

- Gresham and Portland need to develop and adopt uniform stormwater management guidelines for residential, commercial, and industrial development in Pleasant Valley as part of the plan district for the area. Portland and Gresham may both wish to extend the district boundaries to encompass areas that are within the Kelley/Mitchell Creek watershed but outside the Pleasant Valley study area boundary.
- If a city-wide SDC is preferred (rather than Pleasant Valley-specific SDC), Portland and Gresham will need to modify their SDC improvement fees for stormwater facilities depending on the marginal cost associated with serving Pleasant Valley. Each jurisdiction also will need to modify their SDC improvement fee project list to make near-term priority improvements eligible for financing with SDC revenue.
- If a city-wide stormwater utility is preferred (rather than Pleasant Valley-specific rates), Gresham and Portland will need to modify their stormwater utility system to address the added maintenance cost associated with system improvements in Pleasant Valley. An analysis is needed of impacts on existing utility rates, how to phase in rate increases, and how to fairly assess rate adjustments. Both jurisdictions may wish to consider combining stormwater management fees with a street maintenance fee, if available.
- Purchase property for regional stormwater management facilities as soon as possible (after completing the Stormwater Master Plan)

FINANCING PLAN

The following discussion presents the envisioned strategy for financing stormwater service extensions in the Gresham and Portland sections of Pleasant Valley. For analysis purposes, the boundary between Portland and Gresham is presumed to be Mitchell Creek in the west. The Jenne Road area is also presumed to be part of Portland. All other areas are anticipated to be in Gresham. The final boundary will likely shift away from the creek, but at this time, the shift is not expected to significantly alter the relative cost burden depicted for Gresham and Portland. This discussion assumes Gresham will serve the Clackamas County area (Area C). The ultimate service and governance providers for Area C have not been determined and will be the subject of future agreements.

Stormwater. Financing the Pleasant Valley stormwater system requires an innovative approach. Gresham and Portland have traditionally relied on developer contributions, SDCs, and street improvements to pay for stormwater improvements. In Pleasant Valley, however, the envisioned “green street” design is significantly different than the system elsewhere in either city. The swale system costs less to build than an underground pipe system connected to storm drains, but has significantly higher operating costs. The swale system has only been conceptually planned and a more detailed stormwater master plan is scheduled to be developed in FY 2003-04. The study also will evaluate existing SDC, utility fees, and other resources to determine how to finance service delivery.

The annexation analysis for Pleasant Valley indicates that even though swale systems are less expensive to build than pipe systems, existing SDCs in Gresham and Portland will not finance the envisioned swale system improvements. The main reason for this is because the cost of storm drains and storm sewers, which constitute most of the drainage conveyance system, is usually embedded in the cost to build roads.

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In the Pleasant Valley plan, the swale system has been broken out separately. In addition to swales, there are 16 regional stormwater management facilities included in the program costs. The combined shortfall for swales and SWM facilities is around \$6 million.

It is likely, therefore, that stormwater system development fees will need to be increased in Pleasant Valley, either by adopting a Pleasant Valley SDC overlay or by treating Pleasant Valley basins as a completely separate drainage system from other parts of Portland and Gresham and developing a separate financing plan for this system that may include SDCs, utility charges, and/or local assessments. The analysis may have consequences for the SDC methodology used in Portland and Gresham.

An even larger shortfall occurs on the operation side, where the difference in operating costs between a pipe system and a swale system is estimated at \$1 million per year. At build-out, the operating cost for the storm drainage system is forecast to be between 70% and 80% of the forecast O&M cost for the water system, which could result in a residential service rate as high as \$25 per month. One way to offset the difference between existing drainage rates and projected operating costs is to assess Pleasant Valley customers an operating surcharge over and above Gresham's monthly drainage utility fee. Another approach would be to treat Pleasant Valley as a separate drainage district within Gresham (and potentially Portland as well), and establish a basin-wide fee structure for this system. A connection fee also should be considered to finance the initial purchases of specialized equipment for maintaining the swale system.

Finally, financing the stormwater management system will be different than the financing for other infrastructure. As noted above, capital costs for the swale system will likely be significantly less than for a traditional pipe system. Maintenance costs, however, will likely be higher and will affect not only the swale system but also the "green street" system. A financing strategy that examines the feasibility of considering both the capital development as well as the maintenance costs needs to be adopted.

This plan envisions that Pleasant Valley stormwater SDCs will be unique to the area and will pay for constructing both the swale system and the stormwater management facilities. Pleasant Valley residents may also pay a different stormwater utility fee than other areas of Gresham and Portland to recover the higher maintenance costs associated with the swale system. If Gresham establishes street maintenance fees, it may be possible to combine the SWM fee with a street maintenance fee given the integrated nature of the green street and swale system. At this time, it is anticipated that Stormwater utility will be used to provide maintenance for the green street swale system. The swale system has only been conceptually planned and a more detailed stormwater master plan is being developed in FY 2003-04. The study also will evaluate existing SDC, utility fees, and other resources to determine how to finance service delivery. Preparation of the financing strategy is a critical path element and should be integrated with the SWM master planning process.

Appendix A includes a map showing proposed stormwater system improvements.

GOALS, POLICIES AND ACTION MEASURES

Goals and Policies.

GOAL: The Cities shall manage stormwater to minimize impacts on localized and downstream flooding and to protect water quality and aquatic habitat.

The following policies are made part of this plan:

1. Manage stormwater through the use of facilities that rely on infiltration, bio-retention, and evapotranspiration or other processes that mimic the natural hydrologic regime. All local, state and

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federal permit requirements related to implementation of stormwater management facilities must be met by the owner/operator prior to facility use.

2. Stormwater management shall avoid a net negative impact on nearby streams, wetlands, groundwater, and other water bodies to maximum extent practicable.
3. The quantity of stormwater after development shall be equal to or less than the quantity of stormwater before development, wherever practicable.
 - a. Development shall mitigate all project impervious surfaces through retention and on-site infiltration to the maximum extent practicable for up to the nuisance storm event (the nuisance storm is based on a real rainfall event. That closely resembles the 10-year simulated design event). Stormwater discharges from on-site facilities shall be conveyed via an approved drainage facility.
 - b. Where lots are too small for on-site stormwater facilities adjacent private developments may manage stormwater in a shared facility that is appropriately sized and meets water quality and flow control design standards.
 - c. Public stormwater facilities shall be designed such that the rate and duration of flow discharging from facilities for up to a nuisance storm does not lengthen the period of time the stream channel sustains erosion causing flows.
 - d. Conveyance swales and public stormwater facilities shall be designed to provide conveyance for the 100-year storm event.
 - e. Public stormwater facilities shall be designed to provide storage for the nuisance storm event. Facility design is based on the following:

Type of Facility	Design Storm Frequency
Arterial or collector	100 year
All others	10 year

4. The quality of stormwater after development shall be equal to or better than the quality of stormwater before development, as much as is practicable, based on the following criteria:
 - a. Stormwater facilities shall be designed to achieve a jointly adopted SWM Master Plan for the Cities of Portland and Gresham. Presently, Portland requires facilities to be designed to treat at least 70% removal of the Total Suspended Solids (“TSS”) from the flow entering the facility for the design storm specified in the City of Portland Stormwater Management Manual. Gresham’s requirements use presumptive approach rather than performance approach.
 - b. Land use activities of particular concern as pollution sources shall be required to implement additional pollution controls, including, but not limited to, those management practices specified in a jointly adopted SWM Master Plan for Pleasant Valley.
 - c. Stormwater facilities shall meet the requirements for established Total Maximum Daily Load limitations, as provided under the Federal Clean Water Act, Oregon Law, Administrative Rules and other legal mechanisms.
5. Stormwater facilities shall be designed to safely convey the less frequent, higher flows through or around facilities without damage to both upstream and downstream properties, including creek channels.
6. Public stormwater facilities shall be designed using approaches that integrate stormwater and vegetation such as swales, trees, vegetated planters and constructed wetlands. Jurisdictional wetlands cannot be used as stormwater treatment facilities.

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7. Conveyance of stormwater from on-site facilities to approved public stormwater facilities shall generally take place within the public right-of-way through vegetated swales or other stormwater management and conveyance facilities as specified in Metro's Green Streets Manual or the City of Portland Water Quality Friendly Street Designs or a jointly adopted Pleasant Valley District Plan.

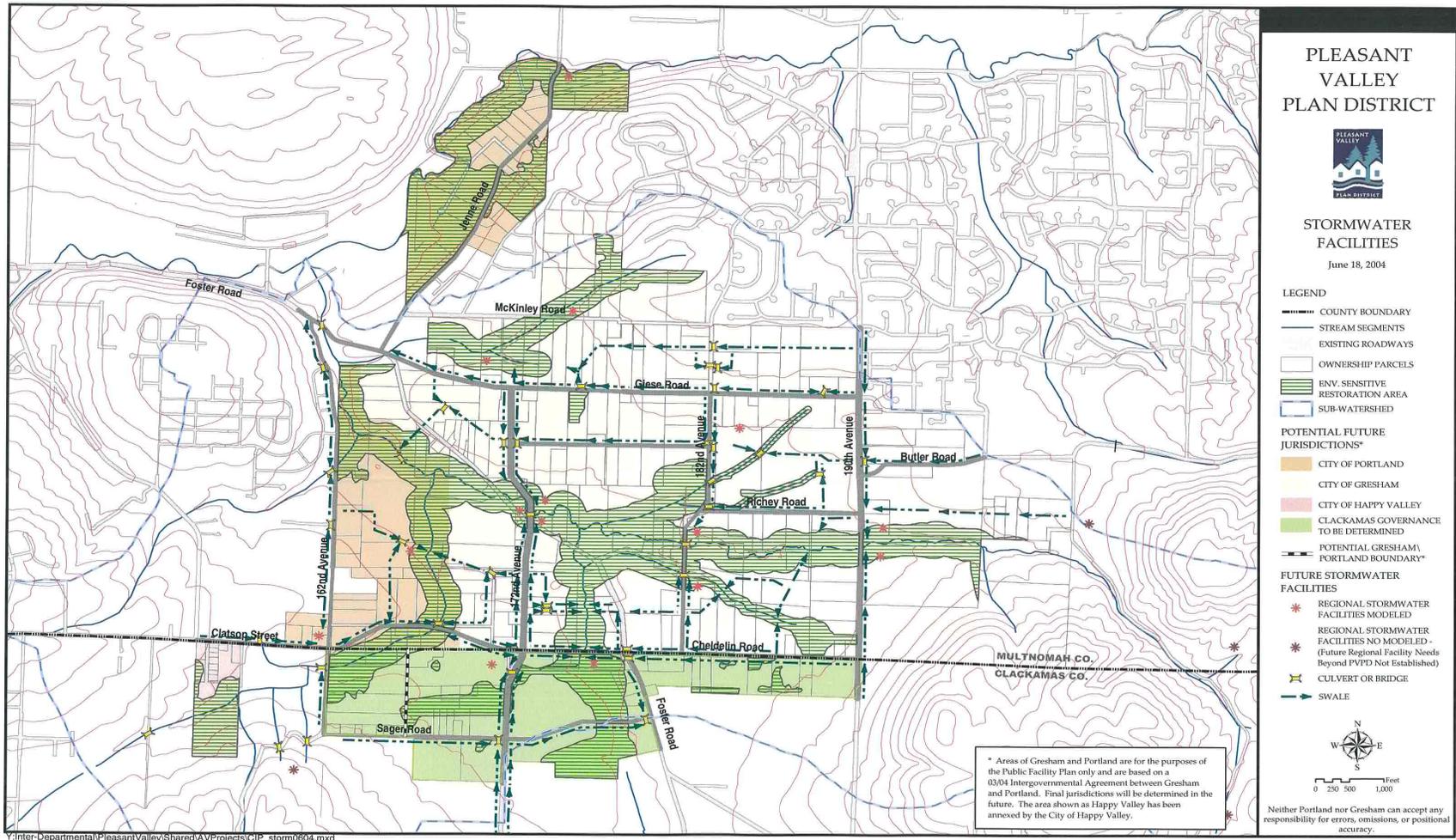
The encroachment of structures and other permanent improvements over public and private stormwater facilities and within public stormwater easements, drainage ways, creeks, streams, seasonal waterways, seeps and springs is prohibited.

8. Equitable funding mechanisms shall be developed:
 - a. For stormwater management facilities maintenance.
 - b. To resolve the deficiencies of the existing system and provide adequate stormwater management services to developing areas.
 - c. To implement a capital improvement program ("CIP") for the stormwater management system.
9. If agreement between Gresham and the County does not anticipate annexation of Area C to Gresham, it will comply with provisions of ORS 195 for urban service providers.

Action Measures.

1. Update the City of Portland public facility plan to establish stormwater management system improvements serving Area B.
2. Update the City of Gresham stormwater master plan to establish stormwater management system improvements serving Area A and C.
3. Review and, if necessary, update the City of Gresham and Portland system development charges for stormwater. Update the SDC improvement project list to include the relevant Year 1-5 stormwater projects listed in the CIP section of this plan.
4. Update the Portland and Gresham 5-Year Capital Improvement Plan to include critical path stormwater system improvements consistent with the annexation strategy that emerges for Pleasant Valley.
5. Gresham and Clackamas County need to conclude negotiations for territorial expansion and/or service agreements for Area C. Regardless of the solution, the agreement needs to comply with provisions of ORS 195 that relate to urban service providers.

APPENDIX A



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APPENDIX B –

Pleasant Valley Public Facility Plan

Stormwater Capital Improvements Project List*

Project #	Project	Description	Linear Feet of Swales	Cost	Timing	Responsible Jurisdiction	Funding Source	Comments
Swales								
New Road Segments								
R1	Foster North	New extension – 1,395 LF	0	\$0	6 to 20	Gresham	SDC/Local	Timing with road imp.
R2	Giese Ext.	New extension – 2,018 LF	1,711	\$148,857	6 to 20	Gresham	SDC/Local	Timing with road imp.
R3	Butler Ext.	New extension – 2,835 LF	1,860	\$161,820	6 to 20	Gresham	SDC/Local	Timing with road imp.
R4	Clatsop Ext.	New extension - 2,938 LF	2,905	\$252,735	6 to 20	Gresham	SDC/Local	Timing with road imp.
R5	Foster South	New extension – 2,581 LF	1,237	\$107,619	6 to 20	Gresham	SDC/Local	Timing with road imp.
Road Extensions								
	On 190th				6 to 20	Gresham	SDC/Local	Timing with road imp.
1	Segment 1	Boundary to Butler – improvement to existing – 122,137.5 LF	1,858	\$161,646	6 to 20	Gresham	SDC/Local	Timing with road imp.
2	Segment 2	Butler to Richey – improvement to existing – 787.5 LF	654	\$56,898	6 to 20	Gresham	SDC/Local	Timing with road imp.
3	Segment 3	Richey to Cheldelin – improvement to existing – 1,912.5 LF	1,904	\$165,648	6 to 20	Gresham	SDC/Local	Timing with road imp.
4	Segment 4	Cheldelin to So Boundary – improvement to existing – 600 LF	557	\$48,459	6 to 20	Gresham	SDC/Local	Timing with road imp.
	On Butler							
5	Segment 5	190 th to Ea. Boundary – improvement to existing – 1,800 LF	1,596	\$138,852	6 to 20	Gresham	SDC/Local	Timing with road imp.
	On Richey							
6	Segment 6	182 nd to 190 th – improvement to existing – 2,325 LF	2,163	\$188,181	6 to 20	Gresham	SDC/Local	Timing with road imp.
	On 182nd							
7	Segment 7	Giese to Richey – improvement to existing – 2,025 LF	2,033	\$176,871	6 to 20	Gresham	SDC/Local	Timing with road imp.
8	Segment 8	Richey to Cheldelin – improvement to existing – 2,362.5 LF	1,626	\$141,462	6 to 20	Gresham	SDC/Local	Timing with road imp.
	On 172nd							

*NOTE: As noted in the text of the PFP, this document is followed by a system master plan. The users are directed to review the Stormwater Master Plan for an up-to-date project list.

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Project #	Project	Description	Linear Feet of Swales	Cost	Timing	Responsible Jurisdiction	Funding Source	Comments
9	Segment 9	Giese to Butler Ext. – improvement to existing – 900 LF	1,379	\$119,973	6 to 20	Gresham	SDC/Local	Timing with road imp.
10	Segment 10	Butler ext. to unknown – improvement to existing – 1,537.5 LF	2,935	\$255,345	6 to 20	Gresham	SDC/Local	Timing with road imp.
11	Segment 11	unknown to Cheldelin – improvement to existing – 1,275 LF	1,945	\$169,215	6 to 20	Gresham	SDC/Local	Timing with road imp.
15	Segment 15	Cheldelin to Boundary – improvement to existing – 1,800 LF	2,555	\$222,285	6 to 20	Gresham	SDC/Local	Timing with road imp.
	On Cheldelin				6 to 20	Gresham	SDC/Local	Timing with road imp.
12	Segment 12	172 nd to 182 nd – improvement to existing – 2,325 LF	3,703	\$322,161	6 to 20	Gresham	SDC/Local	Timing with road imp.
13	Segment 13	182 nd to 190 th – improvement to existing 2,550 LF	3,700	\$321,900	6 to 20	Gresham	SDC/Local	Timing with road imp.
	On Clatsop							
14	Segment 14	162 nd to Boundary – improvement to existing – 1,912.5 LF	1,557	\$135,459	6 to 20	Gresham	SDC/Local	Timing with road imp.
	On 162nd							
16	Segment 16	Foster to unknown – improvement to existing 3,000 LF	2,843	\$247,341	6 to 20	Gresham	SDC/Local	Timing with road imp.
17	Segment 17	unknown to Clatsop – improvement to existing – 2,175 LF	1,413	\$122,931	6 to 20	Gresham	SDC/Local	Timing with road imp.
18	Segment 18	Clatsop to Boundary – improvement to existing – 1,350 LF	875	\$76,125	6 to 20	Gresham	SDC/Local	Timing with road imp.
	On Sager Road							
19	Segment 19	182 nd to 172 nd – improvement to existing – 2,662.5 LF	2,176	\$189,312	6 to 20	Gresham	SDC/Local	Timing with road imp.
20	Segment 20	172 nd to Foster – improvement to existing 2,137.5 LF	2,143	\$186,441	6 to 20	Gresham	SDC/Local	Timing with road imp.
	On Giese							
21	Segment 21	172 nd to 182 nd - improvement to existing – 2,925 LF	2,584	\$224,808	6 to 20	Gresham	SDC/Local	Timing with road imp.
22	Segment 22	182 nd to 190 th – improvement to existing – 2,175 LF	1,788	\$155,556	6 to 20	Gresham	SDC/Local	Timing with road imp.
	On Jenne Rd							
23	Segment 23	All – improvement to existing – 4,500 LF	0	\$0	6 to 20	Portland	SDC/Local	Timing with road imp.

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Project #	Project	Description	Linear Feet of Swales	Cost	Timing	Responsible Jurisdiction	Funding Source	Comments
	Unnamed local connecting streets	Swales associated with unnamed road segments, within subarea extent	33,523	\$2,916,501	6 to 20	Portland/Gresham	SDC/Local	Timing with road imp.
	Outside/Adjacent to PV Plan Area	Swales may or may not be associated with named road, outside subarea context	9,723	\$845,901	6 to 20	Portland/Gresham	SDC/Local	Timing with road imp.
Culverts²								
	23	Various culvert locations @ 100' each		\$462,300	6 to 20	Portland	SDC/Local	Timing with road imp.
	44	Various culvert locations @ 100' each		\$884,400	6 to 20	Gresham	SDC/Local	Timing with road imp.
Regional Detention Facilities³								
					6 to 20		SDC/Local	Timing with road imp.
In Gresham	13	Various Locations		\$14,984,000	6 to 20	Gresham	SDC/Utility/Grants	Timing with road imp
In Portland	3	Various Location		\$3,746,000	6 to 20	Portland	SDC/Utility/Grants	Timing with road imp
Planning Studies								
	Pleasant Valley Stormwater Master Plan	Combined planning effort		\$250,000	1 to 5	Portland/Gresham	SDC/Utility	Priority project
	SDC and Utility rate analysis for SWM	Separate utility feasibility/rate analysis		\$50,000	1 to 5	Portland/Gresham	SDC/Utility	Priority project
Total swale cost								
				\$8,260,302				
Total culvert cost								
				\$1,346,700				
Total Regional Detention Facilities								
				\$18,730,000				
Total Planning Studies								
				\$300,000				
Total Cost								
				\$28,637,002				

¹Includes construction, engineering, inspection and contract administration

²Culvert location will be included in the master plan

³ Sites for regional detention facilities have not yet been determined

***NOTE: As noted in the text of the PFP, this document is followed by a system master plan. The users are directed to review the Stormwater Master Plan for an up-to-date project list.**

10.724 Parks and Recreation System

SYSTEM DESCRIPTION/CONDITION ASSESSMENT

Existing and Planned Facilities. According to the Parks and Open Spaces Implementation Strategies Report, the goal of the Pleasant Valley Parks and Recreation System is to locate and develop neighborhood and community parks, open spaces and trails throughout the Pleasant Valley community. By identifying critical elements for evaluating parks and making effective use of valuable space, parks and recreational areas can be accessible to everyone.

There are no parks located in the Pleasant Valley plan area. One City of Gresham neighborhood park has been developed in the vicinity of the Pleasant Valley Concept Plan area, Butler Creek Park. Butler Creek Park is 3.6 acres in size, and has a basketball court, play equipment, and a picnic area. It is located south of SW 27th Drive and about ½-mile from the project area. The Butler Creek hiking/walking trail passes through the park. The trail extends north of the Park to the Springwater Trail Corridor and south to just south of SW Willow Parkway. A non-funded CIP project exists to extend the trail south to SW Butler Road. This undeveloped section of the trail passes through Centennial School District property. A portion of the site has been recently developed for a new elementary school.

There is an additional, non-funded CIP project for a second City of Gresham neighborhood park, Jenne Butte Park. This park would be located on the north border of the Pleasant Valley Concept Plan area just west of SW Nancy Drive. Jenne Butte Park would be 6.8 acres in size, with amenities such as a basketball court, a picnic area and possibly a softball and/or soccer field. It would connect to the Jenne Butte trail system to the north, which ultimately connects to the Springwater Trail.

The Springwater Trail Corridor is a paved multi-purpose trail that runs alongside or near Johnson Creek. It runs through the portion of the Pleasant Valley project area intersecting at Jenne Road/174th Avenue. The trail is a ‘rails-to-trail’ project extending approximately 16.8 miles from McLoughlin Boulevard in Portland, east to the City of Boring. Jenne Road/174th Avenue intersects the trail within the Pleasant Valley Concept Plan area.

Just north of Pleasant Valley is the City of Portland’s Powell Butte Nature Park, a 569-acre natural area that was once a dairy farm. Powell Butte is a massive volcanic mound with heavily forested slopes and large expanses of open meadows on top of the lava dome. The park includes over 9 miles of trails that are suitable for mountain biking, horseback riding, and hiking. It includes a .6 mile handicapped accessible paved trail. Powell Butte includes a 50,000,000-gallon underground water reservoir that is part of the Bull Run water system. Master plans call for construction of additional reservoirs and a regional water treatment plant within the park.

Background. The Metro Council brought the Pleasant Valley area into the Urban Growth Boundary (UGB) in December 1998. When land is brought into the UGB Title 11 of the Metro Urban Growth Management Functional Plan requires a conceptual public facilities and services plan that provides, among others, for parks and it requires mapping to show the general locations for public open space, plazas, neighborhood centers and parks. Title 11 requires that the City must adopt the parks plan and map as a comprehensive plan amendment before annexation/urbanization.

In 1998, a partnership of jurisdictions sponsored a series of citizen and affected parties meetings concerning Pleasant Valley. A set of preliminary planning goals was developed as part of this process. Elements concerning parks were included in these preliminary goals:

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- The natural resources of the area, including the streams, should be coordinated and included in the parks master planning for this area.
- To ensure that each neighborhood develops into a community with an identity, they shall include provision for local shopping and parks.
- Some open space/plaza will be included in the town center area. The town center area should be developed to protect watercourses and sensitive environmental areas.

In December 1998, Gresham and Portland jointly adopted an Intergovernmental Agreement (IGA) regarding Pleasant Valley. The IGA concerns provisions for creating a plan, future annexations and future provisions for urban services. The IGA provides the Gresham and Portland coordination in creating an urban plan. The goals mentioned above were attached to the IGA and are to be considered when creating the urban plan. The IGA also provides that no urban zoning be applied until the urban plan was adopted by Gresham and Portland and approved by Metro.

The Pleasant Valley Concept Plan Steering Committee endorsed the series of goals at their May 2, 2001 meeting. These goals reflected the vision and values underlying the Concept Plan. They were used in evaluating the four plan alternatives. The goal for parks was: ***Locate and develop parks and open spaces throughout the community.*** *Neighborhood parks, small greenspaces, and open spaces will be within a short walk of all homes. A network of bicycle and pedestrian routes, equestrian trails and multi-use paths will connect the parks and open spaces. The park and trail system will be connected to the Springwater Trail, Powell Butte, and other regional trails and greenspaces.*

Other goals also addressed parks. The “Town Center” goal noted “a central green or plaza will be included as a community gathering space.” The “Create a Community” goal included “recreational” and “open space” in the wide range of opportunities that will foster a unique sense of community. The “Create a Community” goal noted that community includes Pleasant Valley’s “unique areas” and “unique regional landscape.”

The alternatives evaluation generally focused on three components of the park and open space system:

- ***Neighborhood parks.*** These are smaller parks (1 to 13 acres), located within biking and walking distance of users. They provide for basic recreational opportunities. This can include pocket (plaza) parks (usually smaller than 1 acre) that can be located in denser areas.
- ***Community parks.*** These are larger than neighborhood parks (13 to 90 acres). They provide active and passive recreational opportunities and accommodations for larger groups. They are intended to serve several neighborhoods.
- ***Open space.*** These are areas of natural quality for protection of natural resources, nature-oriented outdoor recreation and trail-oriented activities.

Comparative evaluation measures focused on park and open space acreage per person, proximity and ease of access for neighborhood parks and general locations relative to housing, schools and the town center.

Following an extensive evaluation and refinement process, the Steering Committee, at their final meeting on May 14, 2002, endorsed the Pleasant Valley Concept Plan Map and Implementing Strategies. In summary, the central theme of the plan is to create an urban community through the integration of land use, transportation and natural resource elements.

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Selected features of the parks concept plan are:

- **Nine neighborhood parks** – These are 1- to 3-acre facilities that provide access to basic recreation opportunities for nearby residents of all ages and contribute to neighborhood identity. They are generally located near the centers of neighborhoods, although a few occupy edge locations to serve adjacent attached housing. A general descriptor for each park is included in Appendix C.
- **Community Park** – The 29-acre community park is located between the power line and natural gas line easements east of the town center. The purpose of this community park is to provide active and passive recreational opportunities for community residents and accommodate activities for large groups. Facilities could include a children’s play area, competitive sports facilities, off-street parking (must include), permanent restrooms, public art/fountains, group picnic areas, paths, botanical gardens, community centers, amphitheaters, festival space, swimming pools and interpretive facilities.
- **Plazas** – Three plazas are proposed – in the town center and in each of the two neighborhood centers. These will serve as focal points for each of the centers and are expected to be relatively small (1/4-acre for the town center and 1/8-acre or smaller for the neighborhood centers). They may be developed as a multi-use paved area, community green or hybrid.
- **Trails** -- The purpose of trails 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; to provide opportunities for rest and relaxation within a natural setting through trail-related recreation; 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. About 6.6 miles of regional trails are proposed. These trails connect to the Springwater Corridor, Powell Butte and other regional trails and green spaces. They also connect to major destinations – such as the Community Park, town center, employment districts and elementary/middle school complex.
 - The East Buttes Powerline Corridor Trail follows the BPA powerline easement and provides an important north/south connection from the Springwater Corridor Trail and the proposed Gresham/Fairview Trail to the Clackamas River Greenway near Damascus.
 - The East Buttes Loop Trail goes through the heart of Pleasant Valley and parallels Kelley Creek on its north and south sides. The East Buttes Loop Trail connects historic and natural landmarks with the town center and neighborhoods.
- **Open Space.** The purpose of open space is to set aside natural undeveloped areas for the protection of natural resources, nature-oriented outdoor recreation, and trail-corridors. They provide opportunities for rest and relaxation, protect valuable natural resources, provide wildlife habitat, and contribute to the environmental health of the community. Benchmarks for Pleasant Valley open space areas are:
 - Ten acres of open space per 1,000 residents are protected. [Note: Metro Open Space 1997 benchmark standards are calculated at 20.9 acres of parks and open space per 1,000 population.]
 - Habitat areas are enhanced or restored.
 - It includes streams, creeks, or tributaries that are enhanced or restored.
 - Habitat parks can accentuate open space. Habitat parks are partly habitat and partly Community Park.
 - Open space can also include trails, trailheads and interpretive facilities.

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Some characteristics of open spaces include:

- A size large enough to protect the identified resource.
- Spaces may include trails, trailhead amenities (bike racks, picnic areas, portable restrooms, trash enclosures), benches, interpretive signs, and native plants.

A map of proposed park and open space system improvements is included in Appendix A.

SUMMARY OF MAJOR ISSUES

The following are some of the major issues that were considered in a park plan for Pleasant Valley:

The Pleasant Valley Concept Plan has an opportunity to plan comprehensively for parks and open spaces and, more importantly, to implement the plan. An appropriate park system for Pleasant Valley could be developed around three main components:

- Natural areas lands constitute the framework of the open space system. Because of the amount of area involved, the parks system should be organized to complement it and, wherever possible, the land should be used to create opportunities for people to pursue low intensity and low impact recreational activities. However, acquiring and protecting these lands should not be accomplished in lieu of creating other types of recreation spaces.
- A network of neighborhood and community parks equitably distributed and sized to meet demands. The network would provide the majority of recreation opportunities for local residents.
- A series of other parks, such as plazas, boulevards, public gardens and recreation pockets are created to give identify and form to the town center and to define its different precincts. This latter concept can be a powerful tool for creating a memorable and livable new urban community (a potential not often fulfilled).

Schools and Parks. Schools and parks can share facilities such as informal soccer/football, etc., fields and basketball hoops. Sharing facilities can reduce maintenance costs and the amount of acreage needed if the fields were not shared.

Environmentally Sensitive Areas. Caution should be used in locating improved park space or schools next to natural resource areas. Landscaping requirements (fertilizers, etc.) may conflict with natural resources. Field turf and hardscape areas can result in impervious surfaces that may conflict with natural resources. Spreading out parks in neighborhoods away from natural resources can relieve pressures (such as walking the dog) that otherwise might impact natural resources. Because neighborhood parks generally serve different recreational needs than natural areas, the primary consideration for location should be access to the residents it is intended to serve. Often this coincides with the location of schools. Natural areas next to schools can provide important education benefits. Location should ensure that there is a buffer between areas of high activity and natural areas.

Open space. The environmentally sensitive areas do not necessarily provide recreation functions. In some cases, human access should be very limited or prohibited in order to protect natural resource values. Environmentally Sensitive/Restoration Areas (ESRA) should be evaluated for their capacity to support passive recreation use in order to determine whether or not additional open space land is needed to meet projected demands. Given the importance of ESRA's and the fact that it will be a visible identifying feature of the new urban center, it makes sense to locate any additional space adjacent to it. It will be important to identify connected and integrated open space systems within the Kelley Creek/Mitchell Creek system.

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Proximity to Higher Density Areas. Locating parks adjacent to higher density areas is important. Note that park spaces for high-density areas should either be larger or more frequent than in low-density areas because the service area contains more people. Traditionally these areas have been underserved with parks.

Trails and Parks. Opportunities for easy connection of a park to the proposed regional trails should be sought.

Town Center and Parks. The town center should include a handsome well-proportioned park or plaza to serve as a focal point for collective civic action. It should be a space that defines a role for the buildings that surround it, rather than being a remnant space left after the buildings have been designed. A public space will help create a community oriented town center and will support retail. A large central park in the heart of the town center may not be appropriate and could dilute its functionality. A better alternative could be a small hardscape plaza or series of plazas immediately adjacent to retail uses. The size and location can vary depending on design objectives, but might be between 1 and 3 acres in size. However, smaller may be better in the core of the town center and could be as little as 1/8 to 1/4 of an acre – depending on design.

Other Centers and Transit Areas. Consider opportunities for small (less than one acre) urban plazas or recreation pockets at commercial centers and in transit areas. The parks may include multi-purpose paved areas; children's play areas; public art/fountain; seating and basketball hoops.

The total acreage of neighborhood parks should be closer to the benchmark of 1.3 acres per 1,000 residents. A caution utilizing this standard is to consider not only project area but also that adjoining urban neighborhoods might also use the parks.

The number of neighborhood parks should include an easily accessible neighborhood park in every neighborhood. The size and number of parks in any neighborhood should consider the surrounding density.

Design and size of neighborhood parks and community parks should take into account potentially needed recreation facilities. Each park is unique. When designed, parks may include these types of features or other similar features such as: playgrounds, group picnic areas, volleyball courts, basketball courts, soccer fields, football fields, tennis courts, skate park, community garden and/or a community center.

Consider opportunities for small urban plaza/recreation pocket parks at commercial areas and transit areas.

Identify an open space system that will create and connect and integrate an open space network in the Kelley Creek/Mitchell Creek system. The open space should support future Goal 5 (State) natural resources work.

SUMMARY OF FUTURE CIP NEEDS

FINANCING PLAN

The following discussion presents the envisioned strategy for financing service extensions in the Gresham and Portland sections of Pleasant Valley. For analysis purposes, the boundary between Portland and Gresham is presumed to be Mitchell Creek in the west. The Jenne Road area is also presumed to be part of Portland. All other Multnomah County areas are anticipated to be in Gresham. The final boundary

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will likely shift away from the creek, but at this time, the shift is not expected to significantly alter the relative cost burden depicted for Gresham and Portland. This discussion assumes Gresham will serve the Clackamas County area (Area C). The ultimate service and governance providers for Area C have not been determined and will be the subject of future agreements.

Gresham and Portland finance park system operations with general fund revenue. SDCs, grants, land dedication, and special G.O. bond measures have traditionally been relied on to finance park system improvements. Both cities have been successful working with local property owners, developers, civic organizations, and state and federal agencies to create partnerships that have helped develop park and recreation facilities. Metro has been an important partner in this process, especially for the acquisition and development of regional parks and open space facilities.

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

Financing the park and open space improvements may be more difficult than other public facility system improvements. Several factors contribute to this. On the capital improvement side, SDCs can only finance park system improvements to the existing level of service that is provided in the community. The planned improvements in the Pleasant Valley Community Plan are based on desired service levels, not prevailing service levels. Since prevailing service levels are below the benchmark used in the concept plan, SDC revenues from within Pleasant Valley are understandably below the cost of planned improvements. Some parks in Pleasant Valley will likely provide regional benefits, so investment of SDC resources generated outside Pleasant Valley may be justified. In addition, portions of the trail system in Pleasant Valley connect regionally significant trail systems. This improves the chance that that some contribution from Metro and other outside sources could augment local resources.

On the operation side, the problems and potential solutions are more complex. Gresham is having difficulty maintaining its existing park system. Like many cities in Oregon, Gresham has experienced a reduction in general fund revenue relative to service demands since the passage of Measure 50. Managers and elected officials are beginning to ask if it is appropriate to build park facilities if the revenue is not available to maintain these assets. Solving the operations and maintenance problem is, in many ways, a more complex issue that solving the capital funding problem. Without operating revenues, acquired park sites will remain undeveloped and function only as open space with limited, if any, recreation value. Over time, this results in a lower level of service, which in turn lowers the allowable SDC fee the next time the park SDC methodology is updated. Without a more comprehensive solution to the operating revenue problem, parks will continue to compete with police and fire and other general fund services for limited resources.

GOAL

Parks, open space and trails shall be located and developed throughout the Pleasant Valley community.

POLICIES

1. Neighborhood parks, small green spaces and open spaces shall be within a short walk of all homes.
2. A network of bicycle and pedestrian routes, equestrian trails, walking/hiking trails and multi-use paths will connect the parks and open spaces.

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3. The park and trail system will be connected to the Springwater Trail, Powell Butte and other regional trails and greenspaces.
4. The natural area lands will constitute the framework of the open space system. The parks system will be organized to complement the open space system, and, wherever possible, the land should be used to create opportunities for people to pursue low intensity and low impact recreational activities. However, acquiring and protecting these lands should not be accomplished in lieu of creating other types of recreation spaces.
5. There shall be a network of neighborhood parks and a community park equitably distributed and sized to meet demands. The network will provide the majority of recreation opportunities for local residents. A neighborhood park shall be located in every neighborhood. Neighborhood parks and a community park shall be located generally consistent with the preferred concept plan map.
6. A series of other parks, such as plazas, park blocks (boulevards), public gardens and recreation pockets shall be created to give identity and form to the town center. The smaller mixed-use neighborhood centers shall also feature a small park or plaza.
7. There shall be parks located adjacent or near higher density areas.
8. Wherever practical schools and parks shall share facilities such as soccer/football fields and basketball courts. Sharing facilities can reduce maintenance costs and the amount of acreage needed if the fields were not shared.

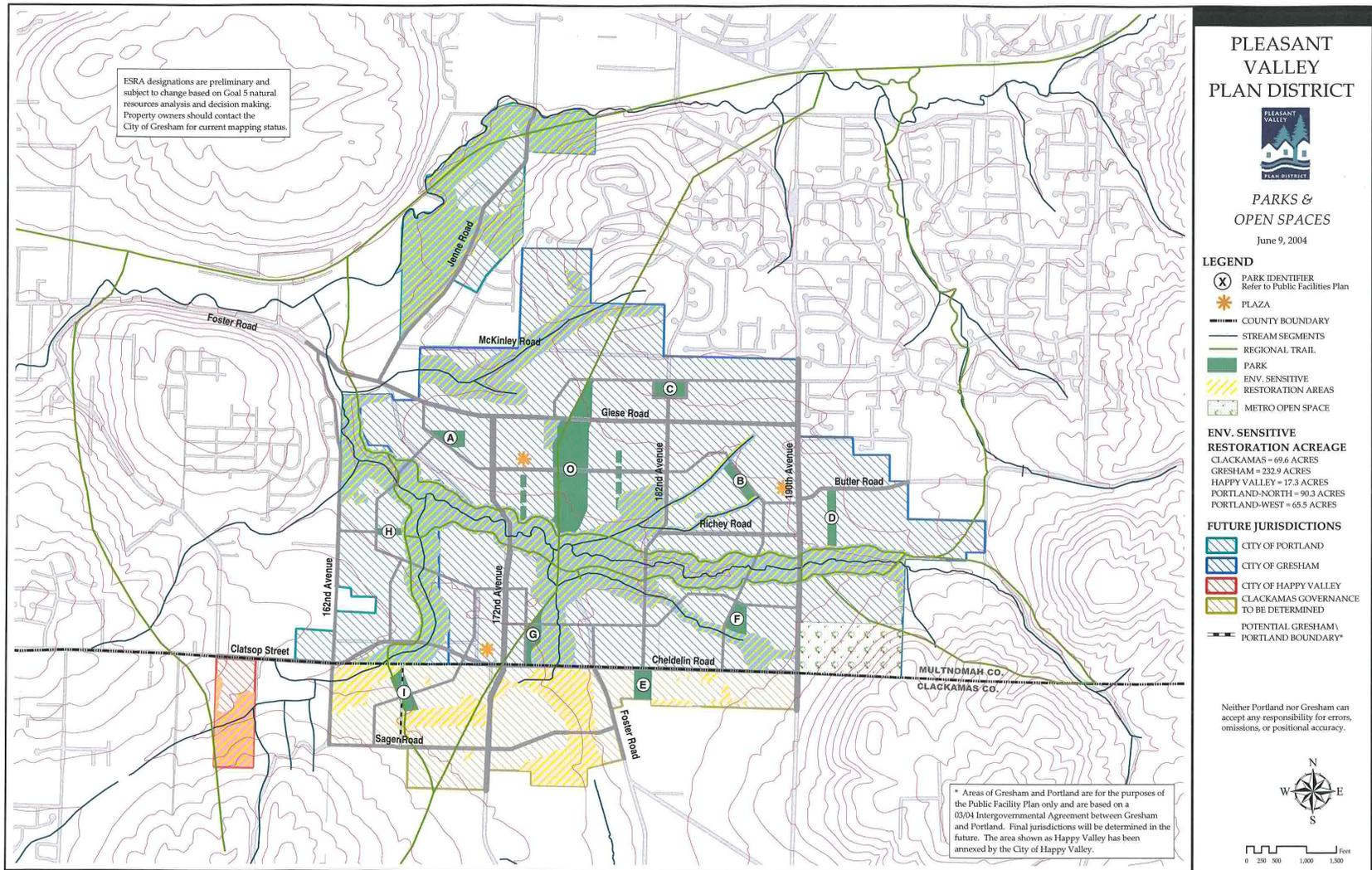
ACTION MEASURES

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

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5. Support designation of the Pleasant Valley regional trails system in the Metro Greenspaces Master Plan. Identify funds that can be used to study the feasibility of the trails, right-of-way acquisition, design and construction. The following have been nominated for inclusion on the Metro Trails and Greenway map:
 - a. East Buttes Powerline Corridor Trail. This trail runs north / south partially via the BPA/Northwest Natural Gas line easement. It connects to the Springwater Corridor Trail and the proposed Gresham/Fairview Trail and to the Clackamas River Greenway near Damascus.
 - b. East Buttes Loop Trail. The trail runs east / west along both sides of the main stem of Kelley Creek. It runs through the heart of Pleasant Valley and provides connections to the Springwater Corridor Trail; the Gresham Butler Creek Trail and a Metro open space area.

APPENDIX A



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APPENDIX B

Pleasant Valley Public Facility Plan

Parks Capital Improvement Project List

Project	Description	Acres/ Length	Cost ¹	Timing	Responsible Jurisdiction	Funding Source
Parks						
A	Neighborhood park	2.5	\$ 1,175,000	6 to 20	Gresham	SDC/Local
B	Neighborhood park	2.5	\$ 1,175,000	6 to 20	Gresham	SDC/Local
C	Neighborhood park	2.5	\$ 1,175,000	6 to 20	Gresham	SDC/Local
D	Neighborhood park	2.5	\$ 1,175,000	6 to 20	Gresham	SDC/Local
E	Neighborhood park	2.5	\$ 1,175,000	6 to 20	Gresham/Clackamas	SDC/Local
F	Neighborhood park	2.5	\$ 1,175,000	6 to 20	Gresham	SDC/Local
G	Neighborhood park	2.5	\$ 1,175,000	6 to 20	Gresham	SDC/Local
H	Neighborhood park	2.5	\$ 1,175,000	6 to 20	Portland	SDC/Local
I	Neighborhood park	2.5	\$ 1,175,000	6 to 20	Gresham/Clackamas	SDC/Local
O	Community park	29.6	\$22,496,000	6 to 20	Gresham	SDC/Local
Open Space						
		135.29	\$ 6,764,500	6 to 20	Gresham	SDC/Local
Natural Resource Areas¹						
		69.6	\$ 3,480,000	6 to 20	Gresham/Clackamas	SDC/Local/grants
		97.61	\$ 4,880,500	6 to 20	Gresham	SDC/Local/grants
		155.8	\$ 7,790,000	6 to 20	Portland	SDC/Local/grants
Trails						
		Miles				
	BPA Powerline (9005 LF)	1.71	\$ 1,282,500	6 to 20	Portland/Gresham	SDC/STP/Metro
	Kelley Creek trails west of BPA (14,658 LF)	2.78	\$ 2,085,000	6 to 20	Portland/Gresham	SDC/STP/Metro
	Kelley Creek trails E of BPA (6,887 LF)	1.30	\$ 975,000	6 to 20	Portland/Gresham	SDC/STP/Metro
	Western N/S trail (7,858 LF)	1.49	\$ 1,117,500	6 to 20	Portland/Gresham	SDC/STP/Metro
	SE corner trail (1,692 LF)	0.32	\$ 240,000	6 to 20	Portland/Gresham	SDC/STP/Metro
	N trail; Springwater corridor	0.59	\$ 442,500	6 to 20	Portland/Gresham	SDC/STP/Metro
	Pedestrian Bridges	9 total	\$ 2,250,000	6 to 20	Portland/Gresham	SDC/STP/Metro
Grand Totals						
				Gresham	Clackamas	Portland
Neighborhood Parks			\$11,045,000.00	\$ 7,050,000.00	\$2,350,000.00	\$1,175,000.00
Community Park			\$22,496,000.00	\$22,496,000.00		
Open Space			\$ 6,764,500.00	\$ 6,764,500.00		

¹ Areas in excess of Open Space benchmark standard.

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Trails & Ped. Bridges			\$ 8,392,500.00	\$ 4,264,920.90	\$ 1,274,531.97	\$ 2,853,047.13
Natural Resource Areas			\$21,471,000.00	\$10,201,000.00	\$ 3,480,000.00	\$ 7,790,000.00
Grand Totals			\$70,169,000.00	\$50,776,420.90	\$ 7,104,531.97	\$11,818,047.13

¹Cost includes cost for land acquisition and development.

Assumptions

Neighborhood Park – Acquisition \$200,000/acre; Development \$675,000/acre

Community Park – Acquisition \$200,000/acre; Development \$560,000/acre

Open Space – Acquisition \$40,000/acre; Habitat Restoration \$10,000/acre

Trails – Acquisition \$300,000/mile; Development \$450,000/mile; Pedestrian Bridge \$250,000 each

Natural Resource Areas – Acquisition \$40,000/acre; Habitat Restoration \$10,000/acre