ECONorthwest
ECONOMICS · FINANCE · PLANNING

DATE: July 26, 2023
TO: Carly Rice, Mary Phillips, City of Gresham
FROM: Becky Hewitt, Kaitlin La Bonte, ECONorthwest
SUBJECT: Infrastructure Funding and Delivery Memorandum

Introduction

When the City of Gresham first established the Pleasant Valley Concept Plan in the early 2000s, the area had no existing public water, sewer, stormwater, or park infrastructure and was served only by rural roads. The Concept Plan and the Pleasant Valley Development Plan (PVDP) that followed laid out plans for new streets and other future infrastructure, including the preservation of land to meet environmental protection goals and requirements. The original plans largely relied on development to deliver urban infrastructure with cost sharing through System Development Charges and reimbursement districts, both described below. Some of what was planned has been built, but development in the area has lagged and there are still substantial gaps in all systems. The cost of delivering the infrastructure and the complexity of developing systems that extend across multiple ownerships and through resource areas protected with multiple overlays have complicated development of the area. As part of an update to the PVDP, the City asked the consultant team to evaluate remaining infrastructure-related barriers to development.

This memorandum summarizes the status of infrastructure development within Pleasant Valley, remaining gaps and needs, existing funding and delivery mechanisms for necessary infrastructure, and key challenges and barriers. It provides an overview of the existing funding and cost-sharing mechanisms that are available across multiple infrastructure systems, followed by a summary of the status and challenges for each infrastructure system: transportation, sewer, water, stormwater, and parks.

Overview of Existing Infrastructure Funding/Cost-Sharing Mechanisms

System Development Charges

The City of Gresham uses System Development Charges (SDCs) to help pay for infrastructure projects that increase capacity or serve new growth areas. The City has SDCs for parks, transportation, stormwater/ natural resources, water, and wastewater systems. SDCs are the primary source of funding for the infrastructure needed to serve growth. SDCs are paid by new development, usually when a project receives a building permit to begin construction. The total amount of SDCs that a given development owes depends on the scale and nature of the project—SDCs are charged per dwelling unit, per square foot of commercial floor area, or are based on water meter size (for water and wastewater), or similar factors that capture how much new development is proposed.

In a new growth area such as Pleasant Valley, development will often be required to install some of the new infrastructure that the SDCs are collected to fund, and the cost of those infrastructure improvements is deducted from the amount of SDCs the project owes through SDC credits. Credits are available for infrastructure improvements that are:

- on the City's Capital Improvement Program list;
- required as a condition of approval for the development in question; and
- either off-site from the development (not within or touching the property included in the development) or larger/higher capacity than what's necessary for the particular development.[1]

Credits can only be used against the same type of SDC (e.g., park improvements count toward Parks SDCs but not other SDCs) and are generally only available for the share of the cost that exceeds the minimum standard to serve the specific project.[2] SDC credits can be applied to later phases of the same project or transferred to other developments, but under state statute they are only valid for ten years. Credits may be purchased by another developer, but not always for their full value (the City does not participate in the agreement between the buyer and seller, but does transfer the credits from one escrow to another when asked in writing by the owner).[3] Thus, in this situation, the SDCs primarily function as a mechanism to distribute the cost of the improvements among developments in the area rather than a mechanism for the City to collect funds to build the projects directly.

Reimbursement Districts

Reimbursement districts allow the City or a developer who pays the up-front costs to build a piece of infrastructure in a newly developed area that will serve multiple properties to be reimbursed over time as the other properties that can use the new infrastructure are developed and connect to the infrastructure system (e.g., a sewer main).[4]

Infrastructure Systems and Gaps

Natural Resource Restoration & Mitigation

Natural resource improvements will need to be considered during street and utility improvement concept development throughout Pleasant Valley. While the Pleasant Valley Concept Plan discussed environmental restoration being a proactive goal, regulations only require mitigation for unavoidable impacts, and implementation of infrastructure components to date have considered this aspect after infrastructure designs and locations are largely chosen, instead of in conjunction with pre-identified natural resource improvement needs. This lack of

[1] City of Gresham Parks System Methodology Report, 2017.

[2] City of Gresham Parks System Methodology Report, 2017.

[3] City of Gresham staff

[4] City of Gresham Public Works, "Reimbursement Districts," https://greshamoregon.gov/Reimbursement-District/

coordination results in lost opportunities to meet both infrastructure and environmental goals with one project. Any natural resource investments to date have been piecemeal efforts only to meet mitigation requirements. Advance consideration of environmental improvement opportunities would support larger-scale ecological system improvements while turning infrastructure projects into "self-mitigating" efforts. This approach would also assist utilities and transportation in project planning, as the first street or utility project to impact a location's stream, wetland, regulated floodplain, and/or riparian buffer inherits the responsibility of mitigating the impacts to those resources. This responsibility has already complicated development and has the potential to be a significant barrier to development.

Mitigation planning needs to be completed and approved by State and Federal agencies in advance of the project that impacts environmental resources. Without advance consideration of environmental review and mitigation requirements, there is a risk that some development sites in Pleasant Valley could be delayed. Development permits for sites that impact environmental resources cannot be issued by Gresham until the applicant has received approval from State and Federal agencies. Mitigation planning can be a lengthy process, as it can require designs and modeling from multiple technical professionals. Easements or full ownership for mitigation areas may be needed, and review by state and federal regulators adds time to the implementation planning process.

A comprehensive strategy for mitigation is recommended as the most cost-effective approach for both City and private-led street and utility projects. This approach would consider the aggregate impacts to environmental resources and the likely timing of impacts by all City utilities. Such an approach can better account for the overall costs of mitigation and can include these costs in Pleasant Valley System Development Charges and facilitate development. A comprehensive strategy can be more attractive to permitting agencies as it can plan for a systemic uplift of ecological functions and a higher likelihood of long-lasting improvements when compared to more piecemeal implementation of mitigation efforts in the immediate area of infrastructure impacts.

In 2018 the City updated floodplain boundaries and rules and in 2020 the City adopted new simpler regulations to protect riparian and sloped areas. These changes continued the overall level of protection of resource areas in Pleasant Valley but allowed for limited development in these areas with appropriate mitigation. Resource lands are now protected by an overlay, rather than as a separate zone, and are much clearer to identify. Provision of utilities in these areas now have much clearer standards to comply with.

All infrastructure planning should be based on the 2019 TSP updates, Natural Resource Master Plan, and Kelley Creek Regional Master Plan.

Transportation

The plans for Pleasant Valley call for extension of several roads through the study area. In 2019, the City developed a Transportation System Plan (TSP) Refinement Plan for the transportation network within Pleasant Valley to refine future road alignments, select the most appropriate

intersection treatments (signals or roundabouts) for key intersections, refine street designs, and evaluate phasing of street improvements.

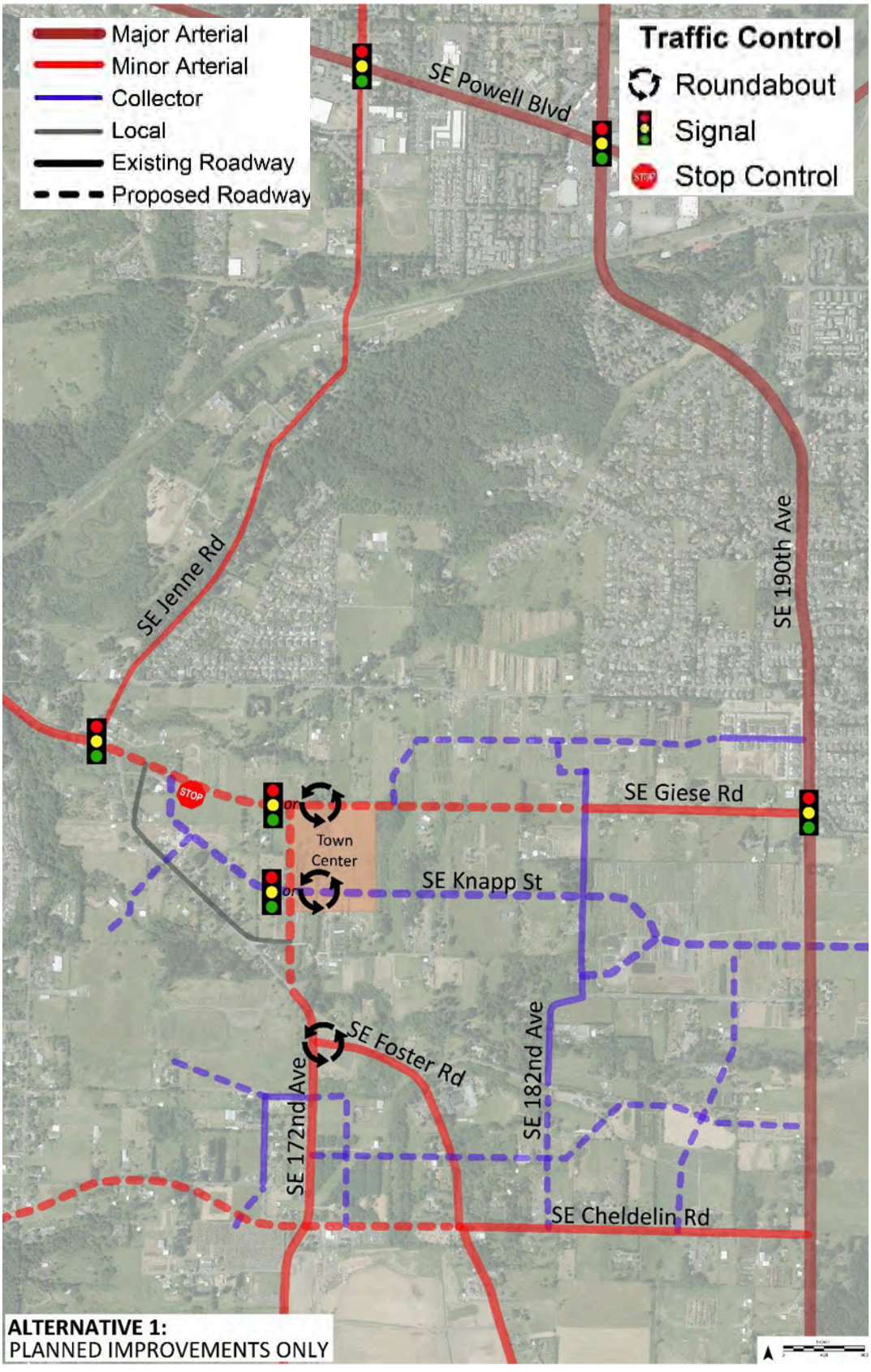
The 2019 TSP Refinement Plan identified a refined preferred alternative transportation network for the Plan District (Exhibit 1). The refined preferred alternative shows roughly the same network of arterials through the plan area as was envisioned in the original concept plan, with some refinement of the Foster Road route east of SW 172nd Avenue. The refined preferred alternative also contains a more detailed network of collectors through the plan area and greater details on the traffic controls needed at major intersections (shown in Exhibit 1). The major planned projects through the area include:

- Extension of Giese Road west to Foster Road at Jenne Road
- Extension of Cheldelin Road west to Clatsop Street
- Extension of 172nd Avenue north to Giese Road
- Extension of 182nd Avenue south to Cheldelin Road
- Construction of SE Knapp Street east-west from Foster Road to 190th Avenue
- Downgrade of SE Foster Road to a local roadway between SE Giese Road and SE Cheldelin Road, with offset intersections at SE 172nd Avenue[5]

None of the planned roads shown in the refined preferred alternative have been constructed yet, except for the collector SW Knapp Drive extending west from SE 190th Drive.

[5] 2019 Pleasant Valley TSP Refinement Plan

Exhibit 1. Refined Preferred Alternative
Source: 2019 Pleasant Valley TSP Refinement Plan



Phasing for the Plan District's refined TSP includes four phases:

- Phase 1 - SE 172nd Avenue/SE Foster Road Improvements[6]
- Phase 2 - SE Giese Road extension to SE Foster Road
- Phase 3 - SE 172nd Avenue extension to Giese Road
- Phase 4 - Collector roadways to be built as development occurs

The TSP Refinement Plan identifies the planned projects that are likely to be development driven and those that are likely to be capital projects that the City of Gresham would have to fund through grants, bonds, or other mechanisms (Exhibit 2). The only projects expected to be funded solely as capital projects are the widening of Jenne Road and the Kelley Creek crossings at 190th and 172nd. The extensions of Giese Road, 172nd Avenue, and the collector system are expected to be developer funded. The remaining projects will likely include some combination of developer and capital improvement funding.[7]

While this is not addressed in detail in the Refinement Plan, some road realignment plans shown as a combination of developer and capital improvement funding may be challenging where they cross a number of small properties and natural resources areas, like streams and wetlands. The new alignments may substantially impact the development potential of some smaller properties, and existing roads could not be vacated until a new one is built to replace it. This suggests that public intervention is likely to be needed to complete new roads or realignments across some of the smaller properties in the study area.

Due to the geometric challenges associated with improving Jenne Road, the TSP Refinement Plan process included a detailed cost estimate for this project. The cost estimate for the Jenne Road improvements between the Springwater Trail crossing and Foster Road is approximately $12,837,000, including $474,000 in environmental mitigation costs. Planning level cost estimates were developed for the remaining arterial networks and totaled $36,600,000.[8]

[6] This is identified in the Refinement Plan as a near-term Multnomah County project. However, per City staff, Multnomah County may build these improvements before the area is annexed, but there is no definitive timeline for this project. The City does have a small amount of in-lieu funds for this project ($44,000), collected from projects that impacted the intersection before it was on the SDC project list, but this represents a small fraction of the estimated total project cost. This project is now on the SDC list.

[7] 2019 Pleasant Valley TSP Refinement Plan

[8] Cost estimates for the TSP Refinement Plan were developed in 2018. Current cost estimates for the improvements included in the Refinement Plan would likely be significantly higher.

Exhibit 2. Capital and Development Projects

Source: 2019 Pleasant Valley TSP Refinement Plan

Construction of the transportation network will require impacts to a number of streams, wetlands, regulated floodplains, or riparian buffers (though the refined preferred alternative was selected in part because it required the least environmental impacts). The TSP Refinement Plan highlights some of the challenges associated with the environmental permitting and mitigation planning that will be required with construction of the transportation network:

> *Due to environmental review and mitigation requirements there is a risk that some development sites in Pleasant Valley could be delayed. Development permits for sites that impact environmental resources cannot be issued by Gresham until the applicant has received approval from State and Federal agencies. State and Federal agency review timelines are long and mitigation requirements that require large land area reduces the economic payoff of specific Pleasant Valley sites.*[9]

Due to the complexity of anticipated environmental permitting, the Refinement Plan recommended a comprehensive mitigation strategy for the area.

Sewer

A key sanitary sewer project through the Pleasant Valley area was completed in 2020 in preparation for development of a subdivision on the eastern edge of the study area. This two-mile trunk line (shown in Exhibit 3) extends east to west through the entire Pleasant Valley Plan District and will serve as the backbone infrastructure for future development throughout much of Pleasant Valley.

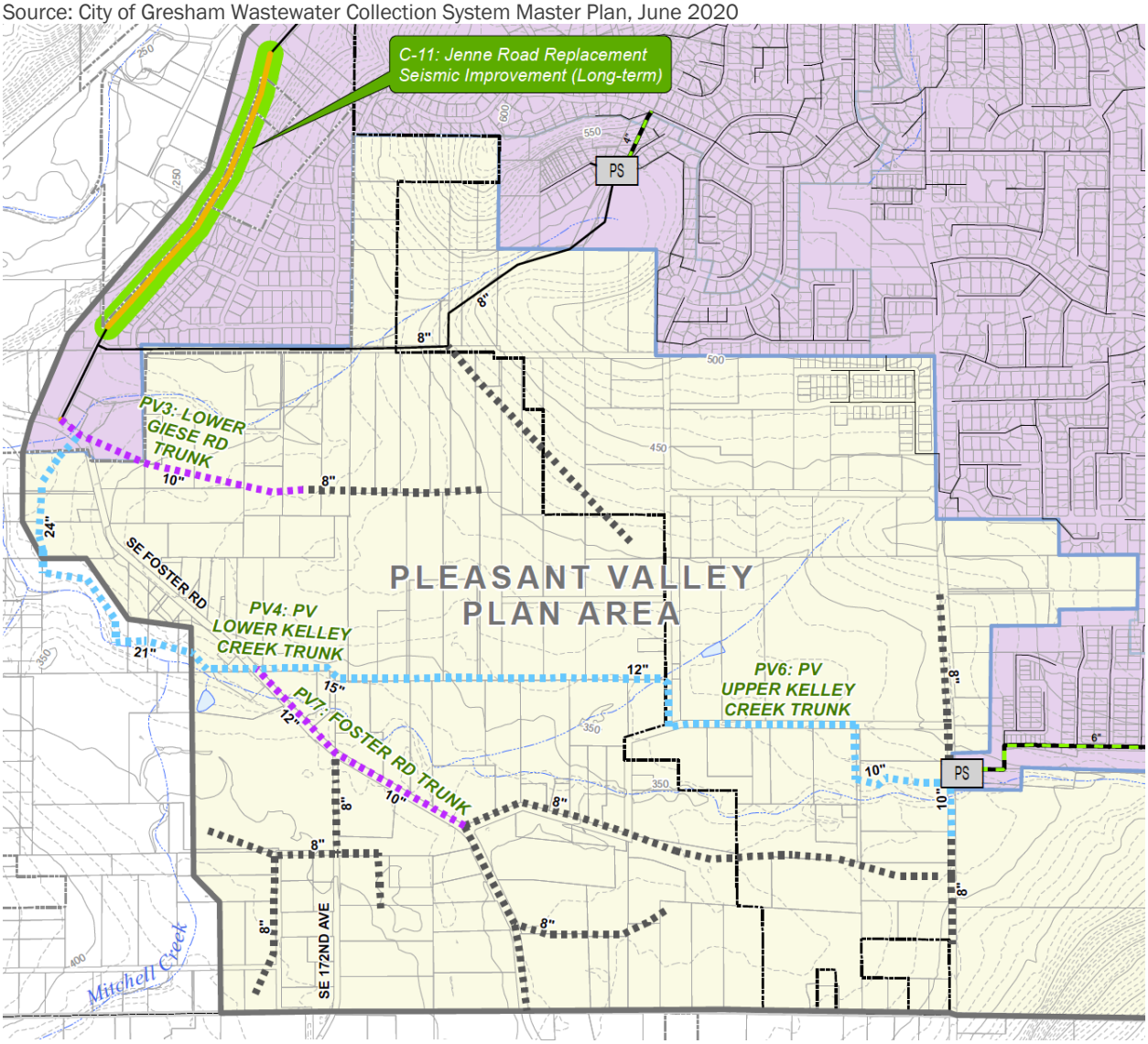
Subsequent development in the central portion of the study area (shown in the reimbursement district in Exhibit 4) will only need to build the sewer lines that connect to the central trunk line, which should reduce barriers to future development.[10] Future development in the north of the reimbursement district boundary may connect to the existing Lower Geise Road trunk line (shown in Exhibit 3). A new half-mile sewer trunk line in Foster Road (shown in Exhibit 3) will be necessary to service the area south of the reimbursement district. However, if development in this southern area occurs after development in the reimbursement district along Foster Road, the Foster Road trunk line will have been built out incrementally and less new major construction will be required to serve this area. Because of these existing and planned trunk lines, City staff expect that build out of the remaining sewer infrastructure needed to serve the area will pose less of a development barrier for developers.

[9] Pleasant Valley Transportation System Refinement Plan, 2019.

[10] City of Gresham staff

Exhibit 3: Pleasant Valley Planned Sanitary Sewer System

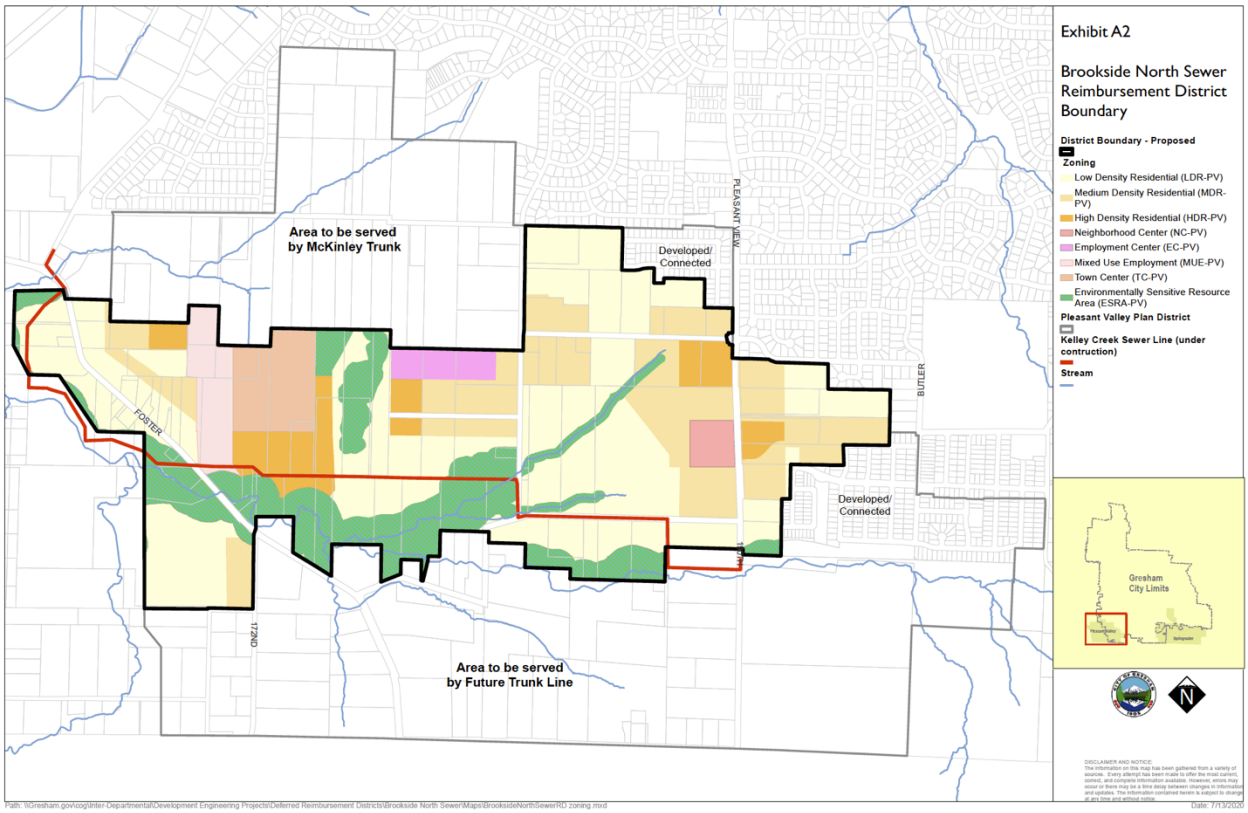
Source: City of Gresham Wastewater Collection System Master Plan, June 2020



Note: the Kelley Creek trunk line has since been constructed and both pump stations have been decommissioned.

Exhibit 4: Brookside North/Kelly Creek Trunk Sewer Reimbursement District

Source: Resolution 3423 - Formation of the Brookside North (Kelley Creek) Sewer Reimbursement District



The sewer line was built by a developer, but the City supported the effort in a few ways that helped make this crucial investment possible for the private sector:

- **At the developer's request, the City established a reimbursement district to collect a portion of the project costs.** The developer applied for (and the City approved) a reimbursement district for the sewer line so that future development in the area will help repay the cost of building the line directly. This allowed the developer a longer time period to collect funds from adjacent properties as they develop because reimbursement districts can be extended beyond their initial ten-year expiration upon request, while SDC credits are valid only for ten years with no option to extend.[11] This is important because the pace of development in the area has been, and may continue to be, slow. Even with the reimbursement district in place, there is no guarantee that the properties that are part of the district will develop and contribute their proportionate share within any reasonable period of time.
- **The City used a conservative estimate of costs to set eligibility for SDC credits.** The project was eligible for SDC credits that exceeded the more narrowly defined costs

[11] Resolution 3423 - Formation of the Brookside North (Kelley Creek) Sewer Reimbursement District

eligible for the reimbursement district.[12] This provided the developer with two mechanisms for compensation for the investment in the sewer. This is important given the challenges with the reimbursement district noted above and the fact that SDC credits are usually not sold dollar for dollar to other developers and there may or may not be demand for them within the ten years they are valid.

- **The City secured easements across the intervening properties to allow for construction of the sewer line.** This was necessary to establish the precise location for the sewer line and to allow the developer and contractors to construct the sewer line across other private properties.

This example may be instructive for overcoming other infrastructure barriers in the area.

Water

Water lines have been extended through the subdivisions that have been built to date. As future development occurs, water mains will need to be extended through the area. The portion of the study area that is not yet annexed to the city is further from existing water mains and will need to extend lines further. These projects are included in the Water SDC project list and are fully SDC eligible.[13] The assumption is that they will be built by developers as needed to serve future development. If development continues to progress from east to west within the study area, allowing for incremental extensions of the water system, this should not be a substantial obstacle. However, properties further west will either need to wait for water lines to be extended across neighboring properties as they develop or potentially consider a reimbursement district if a line must be extended across undeveloped land.

Public Works standards require water distribution system mains be "looped at all possible locations."[14] Per City staff, this requirement is intended to avoid a single point of connection issues by creating large loops throughout the system. In practice, however, developers tend to loop back through their own subdivisions. These subdivision looping systems help avoid water stagnation and quality issues but do not provide as much redundancy as a larger looping system would provide. Nonetheless, City staff do not expect water looping requirements to pose a barrier to development or issues for the water system in Pleasant Valley. The larger loops throughout the Pleasant Valley area will be constructed as the area is built out and lines greater than eight inches in diameter are constructed with development. The single point of connection issue will eventually resolve as the area develops.

---

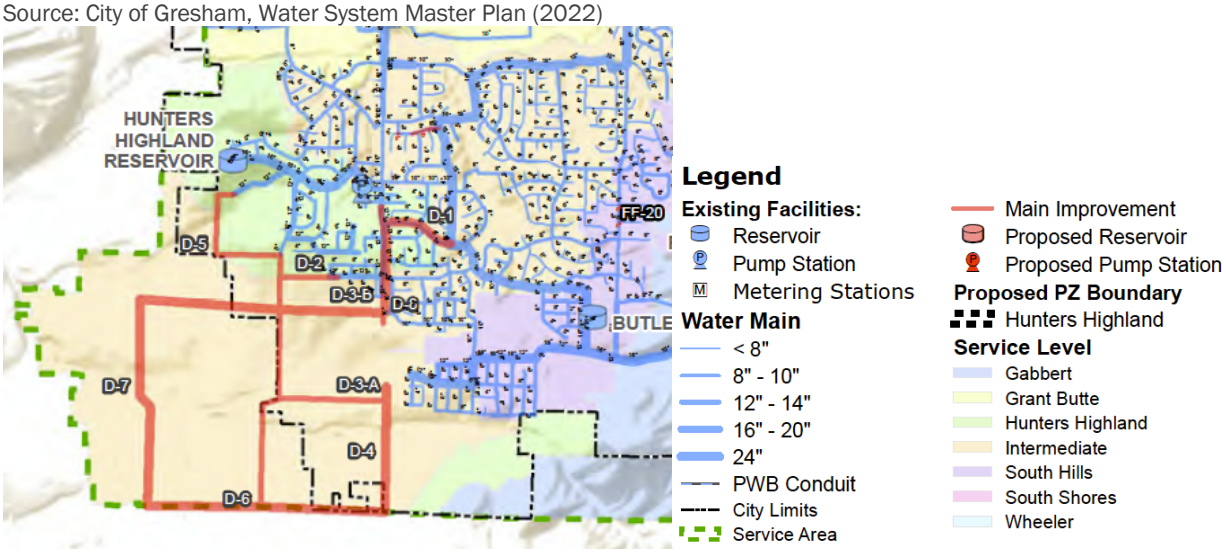
[12] Per City of Gresham staff, of the total SDC-eligible project cost ($9.1 million), $4.9 million was issued in credits and the remaining $4.2 million was included in a reimbursement district. The SDCs for future development in the reimbursement district will be reduced proportionately so that they are not paying the same costs twice.

[13] Per the SDC methodology project list, SDCs will pay for 100 percent of any waterlines greater than 8 inches in diameter.

[14] City of Gresham Public Works Standards Design Standards/Standard Specifications/Standard Details. https://greshamoregon.gov/WorkArea/DownloadAsset.aspx?id=8808

Exhibit 5: Planned Water System Extensions in Pleasant Valley

Source: City of Gresham, Water System Master Plan (2022)



Stormwater

The area has little existing stormwater conveyance infrastructure, which will need to be built as development occurs.[15] The City recently updated its Stormwater Master Plan (2022), including a specific look at the Pleasant Valley Planning District. The update includes plans for future trunk lines along future arterial roadway alignments, sized based on future land use and drainage assumptions. The facilities identified in the updated master plan will be added to the SDC project list with the next update, effective in July 2024, with the assumption that developers will build them as development occurs and receive SDC credits. City staff expects that these additions to the SDC project list will lead to a significant increase in Pleasant Valley Stormwater SDC costs. Pleasant Valley Stormwater SDC credits are only creditable within Pleasant Valley.

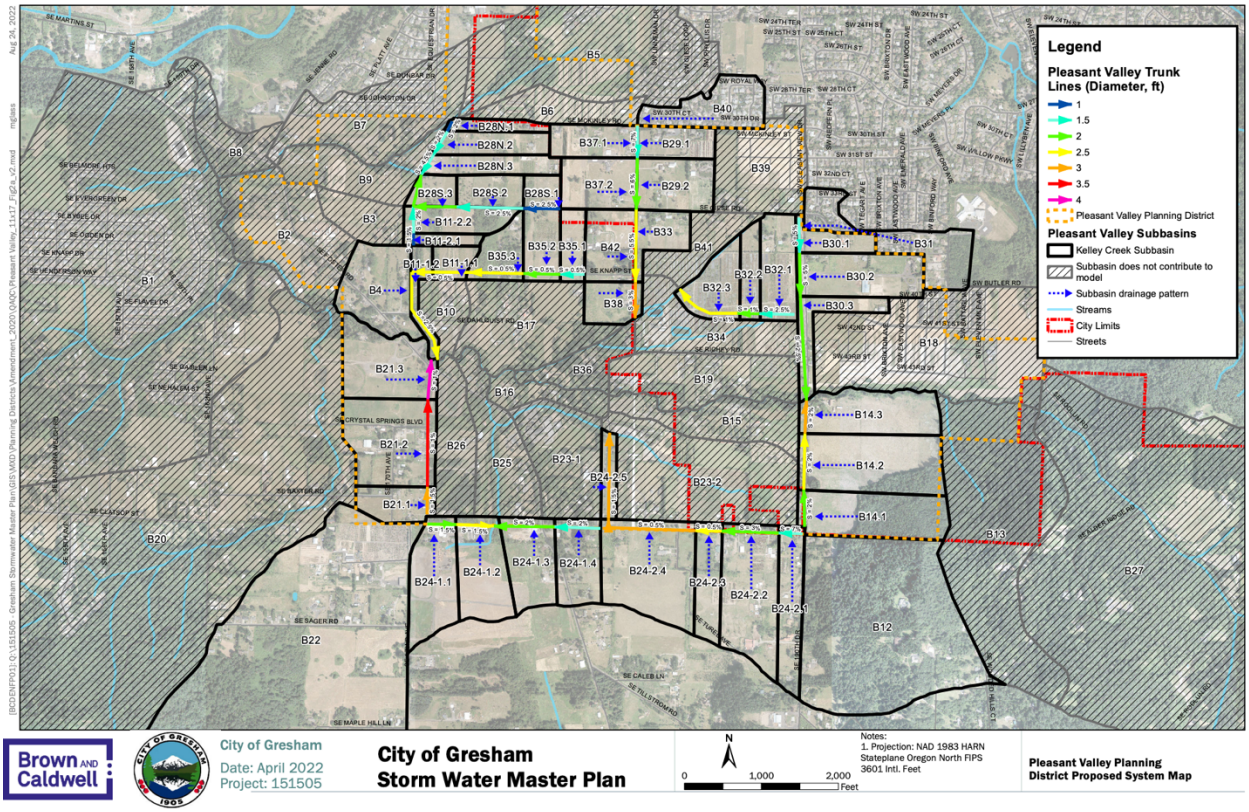
For stormwater detention, the area was initially planned for regional stormwater facilities, which would have required development to build a regional facility and connect to it. When the City updated its SDC methodology in 2017, it moved to allow Pleasant Valley to follow the same flow control and detention requirements as the rest of the city, allowing for subdivision-level stormwater ponds. The move away from regional stormwater facility requirements to smaller-scale detention ponds allows incremental development to move forward more easily.[16]

[15] City of Gresham Storm Water Master Plan, Appendix E: Pleasant Valley Planning District Trunk Line Sizing

[16] City of Gresham staff

Exhibit 6: Pleasant Valley Planned Stormwater Conveyance

Source: City of Gresham Storm Water Master Plan, Appendix E: Pleasant Valley Planning District Trunk Line Sizing



Parks Acquisition

The Pleasant Valley District Plan calls for several neighborhood parks and a community park. The City does not currently have a process for requiring dedication of park lands through annexation or development review. The current parks acquisition process relies on voluntary cooperation from developers and property owners to sell land to the City either prior to development or during development review. This process lacks clear and objective guidelines, is administratively complex, and does not ensure that land will be preserved for parks in the locations designated by local plans.[17]

The City also has Parks SDCs and offers SDC credits for dedicating park land or improving parks. The Parks SDC includes citywide facilities (community parks, paths, and trails) as well as neighborhood parks within three subareas: Pleasant Valley, Springwater, and the rest of Gresham. Residential developments are subject to the Parks SDC and are charged a fee per new dwelling unit. Commercial and industrial development are not currently subject to Parks

[17] Park Lands Acquisition: Code Research and Case Studies, Angelo Planning Group 2017.

SDCs.[18] Development of new residential dwelling units in Pleasant Valley pays a Parks SDC that includes some money (roughly half) based on the cost of future citywide facilities and some based on the cost of parks in Pleasant Valley. The full amount of the Parks SDC is available for an SDC credit; however, credits are currently only transferrable to other development within Pleasant Valley. The value of SDC credits for land dedication is based on a citywide[19] estimated value per acre that was set in 2017 and has been indexed since.[20]

To date, the existing systems have resulted in land dedication for two neighborhood parks within Pleasant Valley, but only one has been built to date. The current system is unlikely to deliver a community park and may or may not be successful for remaining neighborhood park needs. The City is interested in exploring other options for ensuring park land is acquired and built within the Plan District. In 2017, the City worked with Angelo Planning Group (APG) to evaluate alternatives. The preliminary recommendations included:

- **Proactive acquisition**: The 2017 APG memo notes that this would require available funding and staff time. The City now has more staff available than was the case in 2017, but availability of funding is still a challenge. In addition, this strategy may or may not succeed in securing the desired shape and amount of land, given it requires a willing seller and acquisition would generally be for a whole parcel.
- **Acquisition through annexation agreements:** This would apply to the portions of Pleasant Valley that are not yet annexed to the City. The 2017 APG memo notes that additional legal advice is needed to determine how much flexibility would be available through that process but provides preliminary recommendations for how this could work.
- **Acquisition through development review:** This would require code amendments and clear coordination with SDC credit policies. The 2017 APG memo lays out a recommended structure for adding this to the code.

City staff acknowledged that the recommendations from the 2017 APG memo are still of interest, though staffing capacity and funding are limitations in implementation. Additionally,

---

[18] Per the 2017 Parks System Development Charges Methodology Report, commercial and industrial development was previously subject to Parks SDCs in the 2006 Methodology Report but was removed in the 2017 update. The reason cited for this change was because "a review of commercial and industrial SDCs collected between 2012 and 2015 showed that only 2% of the SDCs collected were from Commercial and Industrial SDCs; the SDC calculation was complicated and didn't align well with actual new employee counts, and following a review of other jurisdictions, a better calculation was not found; and based on a review of the Oregon Revised Statute (ORS) 223.301, it was possible that a commercial and industrial SDC based on new employees could be legally challenged."

[19] Land in downtown has a higher value, and land encumbered by an environmental overlay has a lower value, but all other land is valued the same.

[20] From Resolution 3275, "Effective April 1 of each year, the Parks SDCs shall be based on the change in construction costs according to the Engineering News-Record Construction Cost Index for Twenty City National Average (ENR-C) for the previous calendar year using the index published in December measured against the index published in the previous December."

staff expressed interest in exploring the following options for acquiring additional funding or land for parks:

- Reevaluating how commercial development might contribute to Parks SDCs. This review should include evaluation of the potential legal challenges identified in the 2017 Methodology Report.
- Exploring roles a land trust might play in acquiring or holding land until a park can be developed. Staff might also explore whether there are areas of higher-value natural resources that would be suitable for a land trust.

In addition, the City may want to reevaluate how the value of SDC credits is established for park land dedication to ensure that developers are compensated at a rate that is comparable to the value of the land if developed for housing.

Key Findings

There are multiple issues that make infrastructure extension through the Pleasant Valley Plan District challenging.

- **The City relies heavily on private development to provide major infrastructure needed in the area.** The cost of constructing these major infrastructure projects can be a significant barrier for developers, given the associated financing costs. This also puts the City in a passive position of waiting until development can find a way to make all the infrastructure needs work and slows the pace of development.
- **Existing cost-sharing mechanisms may not be delivering value for developers or the City.** While the City offers cost sharing through SDC credits and sometimes reimbursement districts, these cost-sharing mechanisms offer little guarantee of full repayment for the portion of the cost that exceeds what a development owes. This makes them less valuable to developers. While it can be more cost effective for the private sector to deliver the infrastructure, the City may have to compensate developers for the full amount it would cost the public sector as an incentive to take on the project at all, which diminishes or erases the potential cost savings.
- **Sanitary sewer drains from east to west, requiring connections to the west side of the study area, while drinking water infrastructure is available only to the east.** While a major portion of the study area now has access to sewers, portions of the study area that are annexed to the City and adjacent to existing waterlines still do not have sanitary sewer access and areas to the west that are closer to sewer lines are not adjacent to existing waterlines.
- **Small properties may be challenging to develop and limit infrastructure extensions.** Given the number of small properties in the area, some properties may not be economical to develop with high infrastructure costs, which could create barriers to extending development and infrastructure past these properties.

- **Many of the planned infrastructure trunk lines and streets must cross multiple parcels.** If developers must build beyond the limits of the property they control in order to connect to existing infrastructure, they do not have the right to be on other private property to conduct surveys, nor do they have the right to negotiate easements on the public sector's behalf. Because of this, the City would have to play a role in securing easements or right-of-way for any infrastructure project crossing multiple parcels with different ownership. This requires staff capacity, time, and coordination with multiple property owners. It also requires identifying future alignments in greater detail so that the easements or right-of-way are obtained in appropriate locations.
- **Over time, the pipe utility master plans may have become less aligned with the transportation system plan.** It is imperative that stream crossings be consolidated to minimize the impact to natural resources and the need for mitigation. Nonalignment of the plans could lead to confusion and delay for developers.
- **Lack of comprehensive restoration and mitigation planning may pose a barrier to infrastructure construction.** Infrastructure to serve the area will need to cross streams, wetlands, regulated floodplains, riparian buffers, and other environmentally sensitive areas. Federal and state permitting and mitigation requirements for wetland impacts and federal requirements around floodplain fill have associated cost and without a comprehensive plan can add complexity, uncertainty, and time to any development application where these impacts are required. City of Gresham policies implementing Statewide Planning Goals 5 (Natural Resources), 6 (Air, Water, and Land Resources Quality), and 7 (Areas Subject to Natural Hazards)—including Natural Resource Overlay, Floodplain, and Hillside & Geologic Risk Overlay review and permitting requirements—are structured as a secondary consideration, but integrating consideration of these regulations into system design will reduce challenges and improve community outcomes.

Conclusions

Overall, the City's passive, development-led approach to infrastructure provision for Pleasant Valley has likely contributed to the slow pace of growth in the area due to the challenges it poses for development. Those challenges are exacerbated by the fragmented ownership in the area, which makes it difficult to achieve economies of scale or recoup the value of larger infrastructure investments. At the same time, the City also faces challenges in financing and managing the major investments needed in the area because the main funding source is SDCs, which are not available until development occurs, and limited staffing has precluded taking a more proactive role. While some barriers have been removed with recent major project completions and changes to regulations, challenges remain. The City may need to be more proactive to advance key projects and priorities that will unlock additional development or contribute to achieving the vision of a complete community in the area, while continuing to rely on development for many incremental contributions. Future steps in this project can identify the

best opportunities to focus City infrastructure, natural resource protection, and parks efforts in order to maximize the impact on livability, housing production, affordability, and other goals.

Appendix - Mitigation Considerations by Resource Type

Any crossing of a Pleasant Valley water feature may require mitigation. Some stream crossing projects will be "self-mitigating" as a result of rehabilitating an existing crossing to improve fish passage and riparian conditions. New stream crossings will need to be mitigated by improvements to stream function in the general vicinity of the new crossing. Projects can be planned to avoid stream impacts entirely by avoiding any work below the Ordinary High-Water Line, which is the recommended approach for new crossings. Projects impacting the Kelley Creek mainstem will take the longest to permit, as endangered salmonids are present and the stream is designated "critical habitat" by Federal agencies. Any given project on Kelley Creek may need twelve months for the permitting process and will need to be completed during summer "in-water work" windows, so long lead times are advised. While the original Pleasant Valley Concept Plan stated all stream crossings were envisioned to be bridges, current best practice with open-bottom, full-span culverts will meet regulations. These culverts may better avoid adjacent resources and/or better accommodate utilities in a manner that lessens overall impact on sensitive resources.

Floodplains line the entire stream network in Pleasant Valley, providing necessary storage of water during heavy rain events. Floodplain mitigation is triggered if a project would result in a decrease of floodplain storage such that engineering models show there will be a downstream "rise" in the floodplain or an increase in erosive velocities from a project. For instance, replacing an existing undersized culvert with a full-span bridge may reduce upstream flood storage and increase downstream flooding and/or stream velocities. New stream crossings should avoid the regulated and functional floodplains where possible. Any stream crossing rehabilitation or replacement that does not result in a full spanning of the regulated floodplain, or that causes a net increase of fill within the floodplain, will require mitigation. Evaluating the transportation projects below through a comprehensive look at overall floodplain impacts will reduce future conflicts as well as redundancy in the modeling, permitting, and mitigation planning required for each project.

Wetlands occur across Pleasant Valley on private property and along public rights-of-way as water seeps down the basalt buttes and into low-lying areas. The central theme for State and Federal regulations is a no-net-loss of wetland function. Since many existing rights-of-way in Pleasant Valley have wetland indicators where streets are going to be widened or where sidewalks will be built, acquiring property for mitigation is inevitable. Proposed right-of-way areas have not been surveyed for wetland presence; therefore, unanticipated project delays and unforeseen expense are possible. A comprehensive evaluation of likely wetland impacts due to future streets is recommended to allow the City to plan and implement mitigation projects prior to street construction. It is a time-consuming process to find, acquire, permit, and implement advance wetland mitigation, so a process to identify mitigation options should begin at the time formal approval is given to the Pleasant Valley TSP. In addition, whenever City staff are negotiating utility easements with private landowners, they should request permission to survey wetlands prior to signing easement agreements.

A riparian buffer is a forested area near a stream, which helps shade and partially protect the stream from the impact of adjacent land uses. Riparian buffer impacts and mitigation are regulated at the local level and implemented by the City according to riparian condition goals developed in the City's Natural Resources Master Plan. Riparian buffer mitigation will be required for impacts to streamside slopes and vegetation within the Environmentally Sensitive Restoration Area (ESRA). The City will need to have natural resource easement rights in perpetuity or donated ownership by the adjacent landowner in order to accommodate mitigation. Once land acquisition or easements are developed, this type of mitigation is typically the least costly and least time-consuming type of permit obligation to fulfill. Design choices during street and utility projects should prioritize riparian impacts over wetland, stream, or floodplain impacts, unless staff have found a unique riparian feature within the project site that merits special consideration (i.e., an old-growth tree stand).