APPENDIX 47
Kelley Creek Headwaters Urbanization Plan Findings

Section 1: Background

Introduction
The purpose of this document is to summarize the planning process, public involvement and the major elements of the Kelley Creek Headwaters (KCH) Urbanization Plan. It amends Volume 1 – Findings of the Gresham Comprehensive Plan. These findings summarize the factual basis for the proposed goal, policies and action measures that are in Volume 2 – Policies of the Comprehensive Plan.

The urbanization plan will guide the development of Kelley Creek Headwaters. It meets the requirements of Title 11: Planning for New Urban Areas of the Metro Urban Growth Management Functional Plan and consists of the following:

Amendments to Volume 1: Findings of the Comprehensive Plan
- Background Findings (Appendix 47, Section 1)
- Title 11 Compliance Report (Appendix 47, Section 2)
- Urban Growth Diagram (Appendix 47, Section 3)
- Public Facilities Plan (Appendix 47, Section 4)
- Protection of Natural Resources (Appendix 47, Section 5)
- Annexation (Appendix 47, Section 6)

Amendments to Volume 2: Policies of the Comprehensive Plan
- Updated background findings in respect to KCH (Area 13) and Springwater for:
    - Section 10.014 Land Use Planning
    - Section 10.410.1 Urban Services Boundary & General Annexation
    - Section 10.410.2 Annexation & New Communities
- Added reference to Kelley Creek Headwaters to Goal of Section 10.410.2 Annexation & New Communities.
- Revised Section 10.700 Pleasant Valley Plan District to add findings regarding the addition of the above westerly property (Property ID# 340790) to the Pleasant Valley Plan District.
- Added Section 10.900 "Kelley Creek Headwaters Urbanization Plan" with a goal, policies and action measures regarding the urbanization plan.
- Revised Pleasant Valley Plan District Map (Appendix E of Vol. 2) to add a westerly property (Property ID# 340790) to the Pleasant Valley Plan District.

Amendment to Volume 3: Community Development Code of the Comprehensive Plan
- Revised Appendix 1.000, Annexations by changing "Area #13" reference to "Kelley Creek Headwaters" and "Plan Map" to "Urban Growth Diagram" (subsection A1.006.B.3).

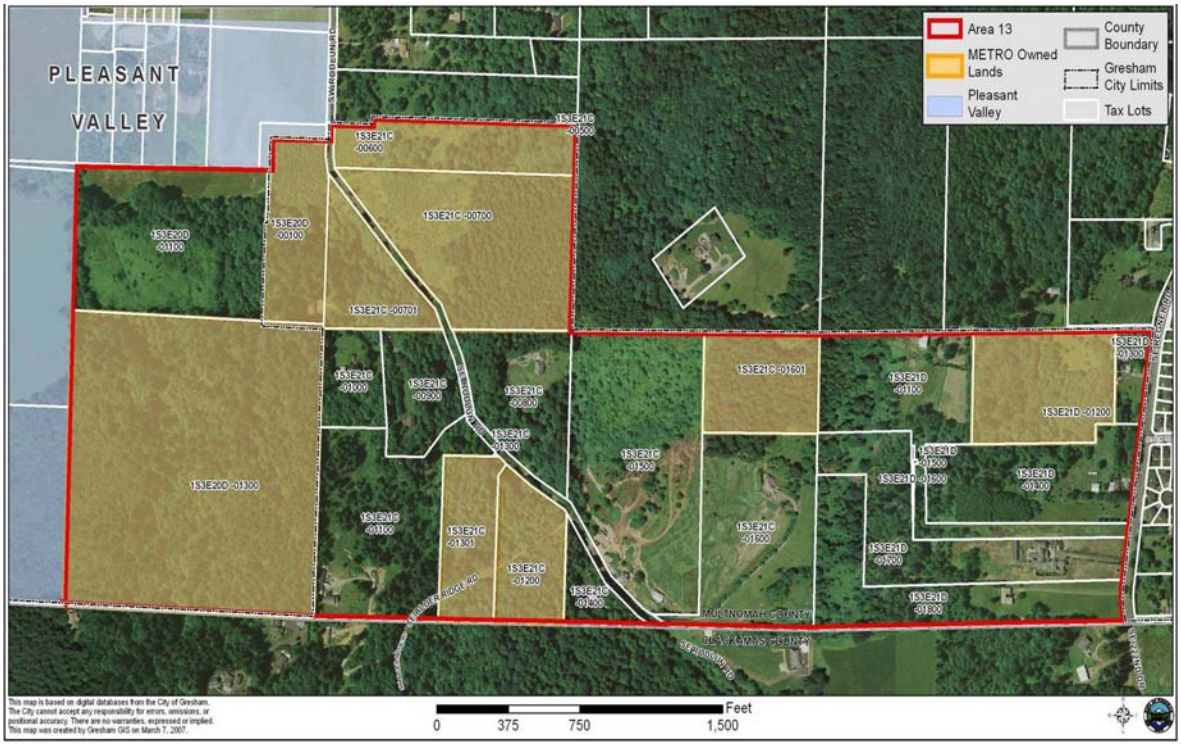
Plan Area Description
The Kelley Creek Headwaters (KCH) area is located near the southwest corner of Gresham and is directly east of the Pleasant Valley Plan District. It is directly north of the Multnomah/Clackamas County line and the City of Damascus (in Clackamas Co.).

KCH contains 220 acres of land divided into 26 tax lots and 15 ownerships. Two of the tax lots (both of which are split by the KCH area boundary) are located within the City limits as part of the 2006 Pleasant

Valley annexations. The remaining tax lots are located in unincorporated Multnomah County and are bounded on the north and east by the City of Gresham.

Of the 26 tax lots, 10 are owned by Metro. These total 99 acres and comprise 45% of the KCH area. All of the Metro owned properties are managed for open space purposes by Metro as part of their Greenspaces Program. The remaining 16 lots are owned by 14 different private parties. Of the 26 lots, 14 have single family residences (including one of the Metro parcels), and 12 are vacant.

Kelley Creek Headwaters (formerly Area 13)



Natural Features

Kelley Creek flows into the KCH area from the south (Clackamas Co.) and bisects the KCH area. It follows along the west side of Rodlun Road before flowing west into the Pleasant Valley Plan District area. Kelley Creek has several intermittent tributaries located in KCH.

Much of the KCH area is wooded. Non-wooded areas are located along Rodlun Road as it passes northwest to southeast through the area and on the east side along Regner Road.

The topography is very hilly with 80% of the area having slopes of 15% and greater. Areas with less than 15% slope are located on the east side of KCH, along Regner Road, and in the northwest portion near the Pleasant Valley Plan District.

Public Facilities

Rodlun Road is classified by the City as a local street and is paved through KCH. However, once it enters KCH (from the north), it narrows from a two lane City street to a one lane County road. There are no sidewalks along any portion of this road. Regner Road is classified by the City as a Collector Street.

No public facilities extend into KCH. Water and sewer is currently provided by individual wells and septic systems. Centennial School District serves the west half of the area and Gresham-Barlow School District the east half.

Existing Zoning

All portions of Kelley Creek Headwaters are currently zoned CFU (Commercial Forest Use) by Multnomah County. New residences are permitted only upon meeting certain conditions. The primary intent of the CFU zone is to protect forest and farm uses. Section 11.15.2042 of the Multnomah County Zoning Ordinance describes CFU, its uses and standards. Also, the SEC, Significant Environmental Concern overlay district protects natural resources, such as the water quality resource areas near Kelley Creek.

Purpose of Urbanization Plan

In December 2002, Metro brought 18,700 acres of previously unincorporated rural land into the Metro area Urban Growth Boundary (UGB) for future urbanization. Metro is required by the State to expand the UGB to accommodate future population growth for the next 20 years. This expansion included the 222 acre area of KCH (Area 13) and the adjacent southerly area that is now the City of Damascus.

Before urban development can happen in KCH a comprehensive planning effort is required that results in a plan to guide future urban development. Oregon state law (Planning Goal 14) requires planning for newly urbanized areas in order to ensure orderly, efficient growth. Title 11: Planning for New Urban Areas of the Metro Urban Growth Management Functional Plan has requirements for the urbanization plan that the City needs to address and adopt into its comprehensive plan.

A previous urbanization planning effort was conducted from 2003 through 2005 for an area that included both KCH and the future City of Damascus. Clackamas County, Metro, Damascus area residents, and the cities of Happy Valley and Gresham participated in this effort. The result was the Damascus/Boring Concept Plan. This plan informed later planning efforts but Gresham was not required to follow it if it developed its own urbanization plan for KCH. In 2006, Gresham City Council directed staff to develop a KCH urbanization plan. As a first step in this process, Council also directed staff to develop an IGA agreement with Metro that would allow Gresham to access Metro Construction Excise Tax funds to help fund the project. Also, the City and Multnomah County amended the IGA to add KCH to those urban reserve areas where the City is authorized to do urban planning. Both IGAs were signed in 2007/2008 and the urbanization planning project began in early 2008. This plan will serve as a guide for urban development, including future land use, the provision of public facilities and protection of natural resources after properties are annexed into the City.

Major Steps of Planning Process

- Inventory and mapping of base conditions such as existing land uses, topography, natural resources, public facilities, ownership patterns, etc.
- A field inventory of streams and wetlands by a natural resources consultant firm (Pacific Habitat Resources).
- Development and adoption of Comprehensive Plan amendments that comply with Title 11 of the Metro Urban Growth Management Functional Plan, including:
  - Urban Growth Diagram maps, which show proposed land use designations (zoning) for KCH;
  - Measures to protect natural resources;
  - A public facilities concept plan that describes the public facilities (sanitary sewers, water, stormwater facilities, etc.) that are needed to serve urban development; and
  - A description of the City's annexation requirements.

- An outreach effort that involved KCH property owners who helped to provide guidance for the planning effort.

Public Involvement

The key means of involving property owners and other interested parties in this planning effort is through Community Forums. The format for each forum has been to begin with an open house for public viewing of maps and individual discussions with staff, a staff PowerPoint presentation of draft project materials, followed with a question/answer period and then concluding with more discussions with individual property owners and others.

Three Community Forums were held at Gresham City Hall: September 25, 2008, March 24, 2009 and May 19, 2009. They were attended by KCH property owners, residents and other interested parties. Before the forums, post cards and Ask Gresham e-mails were sent out to the above stakeholders to announce and remind people of the meetings. Approximately 25 members of the public attended the first two forums and 10 members attended the third forum. After each forum, a public input summary was produced and made available on the project web site to attendees and others.

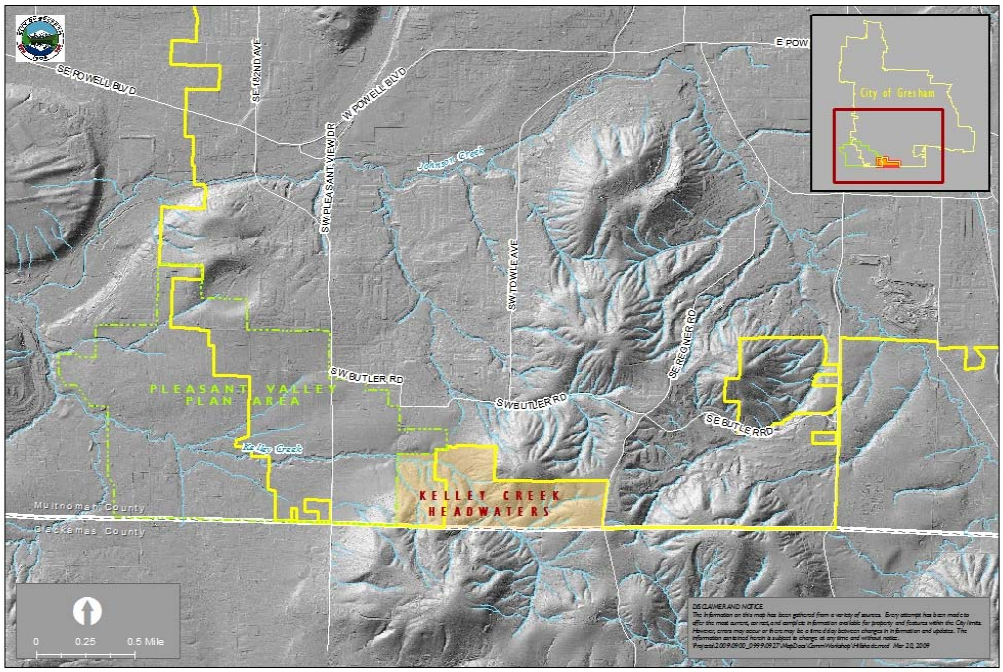
Four Planning Commission work sessions were held for reviewing draft materials: April 28 2008, August 25 2008, February 9 2009 and April 13 2009. The Commission reviewed and gave feedback on draft materials and took public testimony.
A project web site was maintained throughout the process. Project information, including staff contact info, was available and the latest draft materials were posted for viewing. Public could comment and ask questions through the City's Ask Gresham web tool. Ask Gresham participants were notified of community forums, Planning Commission and City Council meeting dates.

Section 2: Metro Title 11 Compliance Report

This report describes how the Kelley Creek Headwaters Urbanization Plan complies with Title 11 of the Metro Urban Growth Management Functional Plan (UGMFP) as well as the conditions regarding Kelley Creek Headwaters (Area 13) found in Metro Ordinance No. 02-969B.

In December 2002, the Metro Council (Ordinance No. 02-969B) brought the 222 acre Kelley Creek Headwaters into the Urban Growth Boundary (UGB) as part of a 12,200 acre expansion of the UGB. Land brought into the UGB is subject to Title 11: Planning for New Urban Areas.

> *"It is the purpose of Title 11 to require and guide planning for conversion from rural to urban use of areas brought into the UGB. It is the intent of Title 11 that development of areas brought into the UGB implement the Regional Framework Plan and 2040 Growth Concept. (3.07.1105 – Purpose and Intent)*
>
> *All territory added to the Urban Growth Boundary … shall be subject to adopted comprehensive plan provisions consistent with the requirements of all applicable titles of the Metro Urban Growth Management Functional Plan and, particularly, this Title 11. The comprehensive plan provisions shall be fully coordinated with all other applicable plans. The comprehensive plan provisions shall contain an urban growth plan diagram and policies that demonstrate compliance with the RUGGOs, including the Metro Council adopted 2040 Growth Concept design types. (3.07.1120 – Plan Requirements)"*



KCH & Vicinity

Title 11 requires the submittal to Metro of the following:

> *"On or before 60 days prior to the adoption of any comprehensive plan amendment subject to this Title 11, the local government shall transmit to Metro the following:*
>
> 1. *A copy of the comprehensive plan amendment proposed for adoption;*
> 2. *An evaluation of the comprehensive plan amendment for compliance with the Functional Plan and 2040 Growth Concept design types requirements and any additional conditions of approval of the urban growth boundary amendment. This evaluation shall include an explanation of how the plan implements the 2040 Growth Concept;*
> 3. *Copies of all applicable comprehensive plan provisions and implementing ordinances as proposed to be amended. (3.07.1130.A Implementation Requirements)"*

The City submitted the Planning Commission draft proposal to Metro on May 21, 2009 and which constitutes a copy of the proposed comprehensive plan amendments and applicable plan provisions and implementing ordinance to be amended. The Kelley Creek Headwaters Urbanization Plan (CPA 09-063) consists of the following:

Amendments to Volume 1: Findings of the Comprehensive Plan

- Background Findings (Appendix 47, Section 1)
- Title 11 Compliance Report (Appendix 47, Section 2)
- Urban Growth Diagram (Appendix 47, Section 3)
- Public Facilities Plan (Appendix 47, Section 4)
- Natural Resources Protection (Appendix 47, Section 5)

- Annexation Strategy (Appendix 47, Section 6)
- Revised Pleasant Valley Plan District Map (Appendix 42, pg. 26) to add a westerly property (Property ID# 340790) to the Pleasant Valley Plan District.

Amendments to Volume 2: Policies of the Comprehensive Plan

- Updated background findings in respect to KCH for:
  - Section 10.014 Land Use Planning
  - Section 10.410.1 Urban Services Boundary & General Annexation
  - Section 10.410.2 Annexation & New Communities
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- Added Section 10.900 "Kelley Creek Headwaters Urbanization Plan" with a goal, policies and action measures regarding the urbanization plan.

Amendment to Volume 3: Community Development Code of the Comprehensive Plan

- Revised Appendix 1.000, Annexations by changing "Area #13" reference to "Kelley Creek Headwaters" and "Plan Map" to "Urban Growth Diagram" (subsection A1.006.B.3).

This report constitutes the compliance evaluation report. The City has scheduled an August 18, 2009 enactment of these Comprehensive Plan amendments, so the 60 days prior provision is met. The City, on April 23, 2009, submitted to Metro an earlier draft of the proposed Comprehensive Plan Amendments, which was at least 45 days prior to the first scheduled hearing (June 8, 2009 Planning Commission hearing).

The rest of this report is organized to first show the text of a Title 11 criterion (bolded/italicized); and second provide findings that describe how the proposed comprehensive plan amendments comply with the specific criterion; and third a conclusion as to whether or not the criterion is met.

Title 11 Section 3.07.1120: Planning for Territory Added to the UGB

A. Specific plan designation boundaries derived from the general boundaries of design type designations assigned by the Council in the ordinance adding the territory to the UGB.

<u>Findings</u>
The KCH area is designated on the 2040 Growth Concept Plan as an inner neighborhood design type, except for the Metro Greenspaces owned property which is designated as open space. Section 3.07.130 Design Type Boundaries Requirement of the Metro Functional Plan describes inner neighborhoods as "residential areas accessible to jobs and neighborhood businesses with smaller lot sizes are inner neighborhoods". The proposed land use district (base zone) for KCH is Low Density Residential -7 (LDR-7) which is a district Gresham currently uses for inner neighborhoods allowing average lot sizes of 7,000 to 10,000 sq. ft. The Open Space Overlay district is proposed for the Metro Greenspace parcels.

<u>Conclusion</u>
This criterion is satisfied.

B. Provision for annexation to the district and to a city or any necessary service districts prior to urbanization of the territory or incorporation of a city or necessary service districts to provide all required urban services.

Findings

The plan area is currently in unincorporated Multnomah County. The City has an Intergovernmental Agreement (IGA) with Multnomah County (Transition of Planning and Development Services) that provides that the City will be responsible for urban planning in KCH (Fifth Amendment - July 2008). This amendment is to a 1979 Urban Planning Area Agreement that specifies that Gresham is to deliver urban services after annexations. The City provides a full range of urban services including water, wastewater, stormwater, fire, police, development and building services, parks and trails, and streets.

The City has an established Urban Services Boundary (USB). The USB establishes the geographical limits of where the City provides, or will provide after annexation, city-supplied urban services. An ordinance (CPA 04-1480) amending the USB to include the Kelley Creek Headwaters, Springwater and Pleasant Valley areas was adopted by the Council and became effective on June 2, 2005. This ordinance also established a new annexation goal to "provide for the orderly and efficient annexation of Pleasant Valley, Springwater and subsequently planned new community urban areas." The later reference applies to Kelley Creek Headwaters. This ordinance also updated the City's annexation approval code to be consistent with Metro Code Section 3.09, including allowing for the expedited annexation process.

Conclusion

This criterion is satisfied.

C. Provision for average residential densities of at least 10 dwelling units per net developable residential acre or such other densities that the Council specifies pursuant to section 3.01.040 of the Urban Growth Management Functional Plan.

Findings

The first urbanization planning effort was conducted from 2003 through 2005 for an area that included both KCH and the future City of Damascus. Clackamas County, Metro, Damascus are residents, and the cities of Happy Valley and Gresham participated in this effort. The result was the Damascus/Boring Concept Plan (DBCP) which was found by Metro to meet Title 11. DBCP included the KCH area. In regard to KCH, the plan proposed:

- Very low density residential (Less Dense Residential) at flatter locations near Regner Rd.
- Hilltop locations were recommended to develop at no more than 1 unit per acre (Transition Areas).
- Steeper areas, public open space areas, and riparian areas (Habitat Conservation Areas) near creeks were identified as Conservation Areas where development would generally not be allowed.
- DBCP indicated that development of KCH (Area 13) according to the above designations would yield 48 additional residential units.

On page 182 of the *Report on the Damascus Boring Concept Plan - February 2006*, the plan indicates that it will provide a capacity for 25,000 additional units for the entire DBCP area and achieve a residential density of 10.1 units per net buildable residential acre. This density meets the above Title 11 provision.

In correspondence dated July 15, 2008, Metro staff stated that since Kelley Creek Headwaters was part of the DBCP area, the KCH urbanization plan can reference the DBCP findings in response to the above provision, as well as for the Title 11 housing diversity requirement (3.07.1120.D) and housing affordability requirement (3.07.1120.E). The 48 units of development capacity calculated for KCH (Area 13) was this area's contribution to the overall residential capacity of DBCP. Consequently, staff states that the City does not need to achieve a calculated capacity of 10 units per acre for KCH.

In calculating the development potential of the recommended Urban Growth Diagram land use designations, staff has calculated that an average of 160 additional units (net density) can be provided in KCH. This is three times the capacity determined under the DBCP designations.

Conclusion
This criterion is satisfied.

D. Demonstrable measures that will provide a diversity of housing stock that will fulfill needed housing requirements as defined by ORS 197.303. Measures may include, but are not limited to, implementation of recommendations in Title 7 of the Urban Growth Management Functional Plan.

Findings
The proposed amendments provide for single family detached dwellings. This is consistent with the housing stock that was anticipated for KCH in the Damascus/Boring Concept Plan as it anticipated single family detached dwellings. As mentioned earlier, Metro has indicated that this area meets this provision as part of the larger DBCP, which showed that it will he providing a diverse housing stock.

Conclusion
This criterion is satisfied.

E. Demonstration of how residential developments will include, without public subsidy, housing affordable to households with incomes at or below area median incomes for home ownership and at or below 80% of area median incomes for rental as defined by U.S. Department of Housing and Development for the adjacent urban jurisdictions. Public subsidies shall not be interpreted to mean the following: density bonuses, streamlined permitting processes, extensions to the time at which systems development charges and other fees are collected, and other exercises of the regulatory and zoning powers.

Findings
Again as in the case of the minimum housing density and housing affordability requirements, the findings of the DBCP applies. The DBCP (pgs 183-184) addresses both the home ownership affordability and rental housing affordability aspects of the above criterion and demonstrates compliance. The proposed residential development for KCH exceeds what was anticipated by the DBCP.

Conclusion
This criterion is satisfied.

F. Provision for sufficient commercial and industrial development for the needs of the area to be developed consistent with the 2040 Growth Concept design types. Commercial and industrial designations in nearby areas inside the Urban Growth Boundary shall be considered in comprehensive plans to maintain consistency.

Findings
The 2040 Growth Concept Map has not designated any KCH lands for commercial or industrial development.

Conclusion
This criterion is not applicable.

G. A conceptual transportation plan consistent with the applicable provisions of the Regional Transportation Plan, Title 6 of the Urban Growth Management Functional Plan, and that is also consistent with the protection of natural resources either identified in acknowledged comprehensive plan inventories or as required by Title 3 of the Urban Growth Management Functional Plan. The plan shall, consistent with OAR Chapter 660, Division 11, include preliminary cost estimates and funding strategies, including likely financing approaches.

Findings
The conceptual transportation plan for Kelley Creek Headwaters is discussed in the Public Facilities Plan of Section 4 of this appendix. No new major roads are proposed because of topographic constraints and low development potential. The plan does however recommend improvements to the two main roads that serve the area – Rodlun Rd. and Regner Rd. (222nd Dr.). These streets would have functional classifications currently found in the City's Transportation System Plan. A system of local streets, connecting to Regner and Rodlun, would be developed as urbanization of KCH progresses.

- Rodlun Rd. is proposed to be a Community Street with an anticipated traffic volume of 3,500 to 10,000 trips per day. It would be improved with two travel lanes, sidewalks and bike paths. Rodlun Rd. would also be designed as a green street with rain gardens and tree wells, located between the sidewalks and travel lanes, for the bio-filtration and infiltration of stormwater runoff.
- Regner Rd. is proposed to be a Collector Street (current classification in adjacent City) with an anticipated traffic volume of 10,000 to 20,000 trips per day. It would be improved with two travel lanes, a center turn lane at street intersections, sidewalks, bike paths and street trees.

The Public Facilities Plan (PFP) also shows in a conceptual manner, that part of the East Buttes Loop regional trail which applies to KCH. The East Buttes Loop, including the KCH segment, is part of the Metro Regional Trails Plan as well as the RTP. The KCH segment would connect the Pleasant Valley segment of the trail with the Scouter Mountain Trail that will come from southerly Happy Valley and Damascus. It will also provide an extension that will be extended north through the existing City (east of Gresham Butte) and ultimately connect to the Springwater Trail. The proposed trail is the only regional transportation facility that is being proposed by the KCH urbanization plan. As such the requirements of OAR Chapter 660, Division 11 apply and the PFP in accordance with these provisions gives a cost estimate for the trail, discusses funding sources, etc.

Since the KCH transportation plan does not propose any regional arterial streets, or trails that are not now part of the RTP, or other major transportation facilities, the plan is consistent with the RTP and no amendments to the RTP are needed. Also, any transportation improvements occurring within an Habitat Conservation Area or Title 3 Water Quality Resource Area will be subject to the requirements of the Habitat Conservation Area (HCA) Overlay District standards. In addition, green development practices will be utilized to help mitigate the impacts of stormwater runoff from impervious surfaces. Green practices and the HCA overlay are discussed in Section 5 of this appendix.

Conclusion
This criterion is satisfied.

H. Identification and mapping of areas to be protected from development due to fish and wildlife habitat protection, water quality enhancement and mitigation, and natural hazards mitigation, including, without limitation, all Habitat Conservation Areas, Water Quality Resource Areas, and Flood Management Areas. A natural resources protection plan to protect fish and wildlife habitat, water quality enhancement areas, and natural hazard areas shall be completed as part of the comprehensive plan and zoning for lands added to the Urban Growth Boundary prior to urban development. The plan shall include zoning strategies to avoid and minimize the conflicts between planned future development and the protection of Habitat Conservation Areas, Water Quality Resource Areas. Flood Management Areas, and other natural hazards areas. The plan shall also include a preliminary cost estimate and funding strategy, including likely financing approaches, for options such as mitigation, site acquisition, restoration, enhancement, and easement dedication to ensure all significant natural resources are protected.

Findings
A natural resources protection plan is found in Section 5 of this appendix. The following natural features have been identified, mapped and proposed for protection:

- Title 13 Habitat Conservation Areas (UGD Maps 2A & 2B)
- Title 3 Water Quality Resource Areas (UGD Map 2B)
- Areas with steep slopes of 15% and greater (UGD Map 3)

The Habitat Conservation Areas and Water Quality Resource Areas will be protected with the City's Habitat Conservation Area Overlay District Overlay. This overlay is based on Metro's Title 13 Model Ordinance. Steep sloped areas (15% +) will be protected with the Hillside Physical Constraint District Overlay. In addition to these zoning requirements, water quality will be protected through green development practices for stormwater management. The above protection strategies are discussed in greater detail in Section 5 of this appendix.

Approximately 45% (100 acres) of KCH has already been acquired by Metro for habitat protection. Because of this large area that has already been acquired for open space, the City is not proposing any additional acquisitions. The City will however:

1. Include the KCH area into its volunteer based habitat restoration efforts as the area annexes into the City;
2. Seek grants and donations to be used for projects should opportunities arise; and
3. Consider, where possible, combining restoration projects with City utility projects in order to minimize costs.

Conclusion
This criterion is satisfied.

I. A conceptual public facilities and services plan for provision of sanitary sewer, water, storm drainage, transportation, parks and police and fire protection. The plan shall, consistent with OAR Chapter 660, Division 11, include preliminary cost estimates and funding strategies including likely financing approaches.

Findings
The proposed urbanization plan includes a Public Facilities Plan (PFP) for sanitary sewer (wastewater), water, stormwater management, transportation facilities and regional trails. The Kelley Creek

Headwaters PFP is discussed in detail in Section 4 of this appendix. The PFP specifically addresses the requirements of OAR Chapter 660, Division 11. For each element it includes description/assessment of the existing public facilities; a system analysis that describes the public facility projects needed to support the proposed land uses; a summary of future needs, a map showing the location of the future facilities, a description of funding sources and recommended policies and action measures regarding future provision of the facility. A cost estimate is given for the proposed trail segments of the East Butte Loop Trail, since this is the only regional facility proposed by the PFP.

Conclusion
This criterion is satisfied.

J. A conceptual school plan that provides for the amount of land and improvements needed, if any, for school facilities on new or existing sites that will serve the territory added to the UGB. The estimate of need shall be coordinated with affected local governments and special districts.

Findings
The Centennial School District serves the west half of Kelley Creek Headwaters and the Gresham/Barlow School District serves the east half. It is estimated that each district would have to serve an additional 50 students, based on the estimated development potential of 160 units for KCH. Both districts were contacted and they responded that they would accommodate the students either in their existing schools or in schools planned for adjacent areas, such as in the nearby Pleasant Valley area.

Conclusion
This criterion is satisfied.

K. An urban growth diagram for the designated planning area showing, at least, the following, when applicable:

1. ***General locations of arterial, collector, and essential local streets and connections and necessary public facilities such as sanitary sewer, storm sewer, and water to demonstrate that the area can be served;***
2. ***Location of steep slopes and unbuildable lands including, but not limited to, wetlands, floodplains and riparian areas;***
3. ***General locations for mixed-use areas, commercial and industrial lands;***
4. ***General locations for single and multi-family housing;***
5. ***General locations for public open space, plazas and neighborhood centers, and***
6. ***General locations or alternative locations for any needed school, park or fire hall sites.***

Findings
Urban Growth Diagram maps have been developed as part of the urbanization plan and are contained in Section 3 of this appendix. They cover the applicable elements of the above list. They include:

- Location of major streets and other needed public facilities;
- Location of steep slopes (15%+);
- Location of Habitat Conservation Areas that includes riparian areas near streams;
- Proposed low density residential (single family) development designation for all properties.
- Location of Metro owned open space parcels; and
- Conceptual locations of regional trails.

No mixed use areas, commercial and industrial lands were identified on the 2040 Metro 2040 Concept Map for KCH and none were determined to be needed. No schools, parks or police/fire facilities were determined to be needed.

Conclusion
This criterion is satisfied.

L. A determination of the zoned dwelling unit capacity of zoning districts that allow housing.

Findings
The development potential for Kelley Creek Headwaters was calculated in a range of three estimates – high, medium and low for the privately owned land (excludes Metro owned land). These estimates began by first deducting 20% of the acreage for roads and other public facilities in order to calculate the capacity on a "net density" basis. Then it assumed the amount of development allowed within the various slope ranges of the Hillside Physical Constraint District, given the proposed LDR-7 zoning, as shown in the table below:

Degree of Slope	**Max. Density (LDR-7)**	**Acres of Private Land**
0 – 14.9% (outside HPCD)	6 units / acre	28 acres
15 – 24.9%	2 units / acre	26 acres
25 – 34.9%	1 unit / acre	22 acres
35% +	1 unit / acre (must be transferred to less than 35% sloped areas)	45 acres

Further assumptions were made below under each estimate regarding the amount of HCA that would be developed and the amount of density, on a 1 unit per acre basis, that could be transferred from the 35% + slopes to the lower slopes. Although development of 35% and greater slopes is generally prohibited by the Hillside Physical Constrain District, this density transfer is allowed to be transferred to lower slopes.

The resulting estimates are:

- High Estimate = 180 Units
  Assumptions: 20% of HCA is developed, 100% of density is transferred from 35%+ slopes to lower slopes

- Medium Estimate = 160 Units
  Assumptions: 10% of HCA is developed, 50% of density is transferred from 35%+ slopes to lower slopes

- Low Estimate = 140 Units
  Assumptions: 0% of HCA is developed, 0% of density is transferred from 35%+ slopes to lower slopes

For purposes of the urbanization plan, the estimated dwelling unit capacity is the medium estimate of 160 units.

Conclusion
This criterion is satisfied.

M. The plan amendments shall be coordinated among the city, county, school district and other service districts.

Findings
The Kelley Creek Headwaters project has been coordinated with Multnomah County, Metro, the Centennial and Gresham/Barlow school districts and the City of Damascus.

Conclusion
The plan amendments have been coordinated with the appropriate agencies. This criterion is satisfied.

Metro Conditions on Addition of Land to UGB (Ordinance No. 02-969B)

1. General Conditions Applicable to All Land Added to UGB

A. The city or county with land use planning responsibility for a study area included in the UGB shall complete the planning required by Metro Code Title 11, Urban Growth Management Functional Plan ("UGMFP"), section 3.07.1120 ("Title 11 planning") for the area. Unless otherwise stated in specific conditions below, the city or county shall complete Title 11 planning within two years. Specific conditions below identify the city or county responsible for each study area.

Findings
The City has an Urban Planning Area Agreement with Multnomah County that gives the City planning responsibilities for urban reserve planning. The agreement was amended in 2008 through an IGA in order to add KCH to the map that shows the areas covered by the agreement.
On June 19 2008, the City and Metro signed an IGA (Contract No. 2835) that allows Gresham to access Construction Excise Tax fund to help finance this urbanization plan The IGA has a time schedule for completion of tasks. The deadline for adoption of the comprehensive plan amendments is no more than 400 days from the date of the agreement (6/19/08). These amendments are scheduled for adoption by the City Council on July 7, 2009, which is within this time limit.

Conclusion
This condition is satisfied.

B. The city or county with land use planning responsibility for a study area included in the UGB, as specified below, shall apply the 2040 Growth Concept design types shown on Exhibit N of this ordinance to the planning required by Title 11 for the study area.

Findings
The 2040 Growth Concept Plan shows an Inner Neighborhood design type with an Open Space design type for the Metro GreenSpace parcels. The Low Density Residential (LDR-7) designation and the Open Space Overlay designation for Metro properties that are shown on Map #1 of the Urban Growth Diagram are consistent with these design types.

Conclusion
This condition is satisfied.

C. The city or county with land use planning responsibility for a study area included in the UGB shall apply interim protection standards in Metro Code Title 11, UGMFP, section 3.07.1110, to the study area.

Findings
The above referenced Urban Planning Area Agreement between Gresham and Multnomah County was amended on January 15, 1998 (Fourth Amendment). One of the amendments gives Multnomah County interim responsibility for applying land use policies and implementing regulations that will ensure the orderly, economic, and efficient provision of urban services in urban reserve areas after annexation by Gresham.

Conclusion
This condition is satisfied.

D. In Title 11 planning, each city or county with land use planning responsibility for a study area included in the UGB shall recommend appropriate long-range boundaries for consideration by the Council in future expansion of the UGB or designation of urban reserves pursuant to 660 Oregon Administrative Rules Division 21.

Findings
No future expansion of the UGB near KCH is proposed or possible. KCH is surrounded by the City of Gresham to the north, east and west and by the City of Damascus to the south.

Conclusion
This condition is not applicable.

E. Each city or county with land use planning responsibility for a study area included in the UGB shall adopt provisions in its comprehensive plan and zoning regulations – such as setbacks, buffers and designated lanes for movement of slow-moving farm machinery - to ensure compatibility between urban uses in an included study area and agricultural practices on adjacent land outside the UGB zoned for farm or forest use.

Findings
As indicated above, KCH is bordered by other cities that are within the UGB. There are no adjacent areas outside the UGB that are zoned for farm or forest uses.

Conclusion
This condition is not applicable.

F. Each city or county with land use planning responsibility for a study area included in the UGB shall apply Title 4 of the UGMFP to those portions of the study area designated Regionally Significant Industrial Area ("RSIA"), Industrial Area or Employment Area on the 2040 Growth Concept Map (Exhibit N). If the Council places a specific condition on a RSIA below, the city or county shall apply the more restrictive condition.

Findings
The 2040 Growth Concept Map does not designate any RSIA, Industrial or Employment areas in KCH.

Conclusion
This condition is not applicable.

G. In the application of statewide planning Goal 5 (Natural Resources, Scenic and Historic Areas, and Open Spaces) to Title 11 planning, each city and county with land use planning responsibility for a study area included in the UGB shall comply with those provisions of Title 3 of the UGMFP acknowledged by the Land Conservation and Development Commission ("LCDC") to comply with Goal 5. If LCDC has not acknowledged those provisions of Title 3 intended to comply with Goal 5 by the deadline for completion of Title 11 planning, the city or county shall consider any inventory of regionally significant Goal 5 resources adopted by resolution of the Metro Council in the city or county's application of Goal 5 to its Title 11 planning.

Findings
Title 13 was adopted as part of the Functional Plan by Metro Council in order to implement the Goal 5 provisions of Title 3. Title 13 was then acknowledged by LCDC to meet Statewide Planning Goal 5 on January 5 2007. Gresham adopted the HCA, Habitat Conservation Area (HCA) overlay on December 16, 2008 in order to comply with Title 13. The regulations of this overlay are based on the Metro Title 13 Model Ordinance. As shown on the UGD maps, this overlay will be applied for habitat protection purposes to the Title 13 Habitat Conservation Areas as they are defined and classified by Title 13 and the Model Ordinance.

Conclusion
This condition is satisfied.

H. Each city and county with land use planning responsibility for a study area included in the UGB shall provide, in the conceptual transportation plan required by Title 11, subsection 3.07.1120F, for bicycle and pedestrian access to and within school sites from surrounding area designated to allow residential use.

Findings
Because of the low number of anticipated dwelling units, both the Centennial and Gresham/Barlow school districts have indicated that the school needs of KCH will be met by existing schools or schools planned for adjacent areas such as Pleasant Valley. As described under criterion "G" of the Title 11 compliance findings, both Regner and Rodlun Road will be improved with sidewalks and bicycle paths and will provide access to adjacent school sites. In addition, the proposed East Buttes Loop trails shown on the UGD will provide additional walking options for future residents. It will connect to easterly Pleasant Valley, northerly Gresham and southerly Damascus.

Conclusion
This condition is satisfied.

2. Specific Conditions Applicable To Area 13 (KCH) and Other Areas

A. Study Areas 6 (partial), 10 (partial), 11, 12, 13, 14, 15, 16, 17, 18 and 19 (partial)

1. Clackamas and Multnomah Counties and Metro shall complete Title 11 planning for the portions of these study areas in the Gresham and Damascus areas as shown on Exhibit N within four years following the effective date of this ordinance. The counties shall invite the participation of the cities of Gresham and Happy Valley and all special districts currently providing or likely to provide an urban service to territory in the area. If a portion of the area incorporates or annexes to the City of Happy Valley or the City of Gresham prior to adoption by Clackamas and Multnomah Counties of the comprehensive plan provisions and land use regulations required by Title 11, the Metro Council shall coordinate Title 11 planning activities among the counties and the new city pursuant to ORS 195.025.
Findings
This condition speaks to the responsibilities of Clackamas County, Multnomah County and Metro. Gresham was invited and did participate in the development of the Damascus/Boring Concept Plan, which included both KCH and what is now the City of Damascus.

Conclusion
This condition is satisfied.

2. In the planning required by Title 11, subsections A and F of section 3.07.1120, Clackamas and Multnomah Counties shall provide for annexation to the Tri-met district of those portions of the study areas whose planned capacity for jobs or housing is sufficient to support transit.

Findings
The KCH area is within the Tri-Met district.

Conclusion
This condition is satisfied.

3. In the planning required by Title 11, Clackamas County shall ensure, through phasing or staging urbanization of the study areas and the timing of extension of urban services to the areas, that the Town Center of Damascus, as shown on the 2040 Growth Concept Map (Exhibit N) or comprehensive plan maps amended pursuant to Title 1 of the UGMFP, section 3.07.130, becomes the commercial services center of Study Areas 10 and 11 and appropriate portions of Study Areas 12, 13, 14, 17 and 19. Appropriate portions of these study areas shall be considered intended for governance by a new City of Damascus. The Damascus Town Center shall include the majority of these areas' commercial retail services and commercial office space. Title 11 planning for these areas shall ensure that the timing of urbanization of the remainder of these areas contributes to the success of the town center.

Findings
This condition applies to Clackamas County and Damascus.

Conclusion
This condition is not applicable.

4. In the planning required by Title 11, Clackamas and Multnomah Counties shall provide for separation between the Damascus Town Center and other town centers and neighborhoods centers designated in Title 11 planning or other measures in order to preserve the emerging and intended identities of the centers using, to the extent practicable, the natural features of the landscape features in the study areas.

Findings
This condition applies to Clackamas and Multnomah Counties.

Conclusion
This condition is not applicable.

5. If, prior to completion by Clackamas County of Title 11 planning for the Damascus Area, the county and Metro have determined through amendment to the 2000 Regional Transportation Plan to build the proposed Sunrise Corridor, the county shall provide for the preservation of the proposed rights-of-way for the highway as part of the conceptual transportation plan required by subsection G of section 3.07.1120 of Title 11.

Findings
This condition applies to Clackamas County.

Conclusion
This condition is not applicable.

6. Neither Multnomah County nor, upon annexation of the area to the City of Gresham, the city shall allow the division of a lot or parcel in an area designated RSIA to create a smaller lot or parcel except as part of the lot/parcel reconfiguration plan required in Condition 7.

Findings
As indicated above, there are no RSIA areas designated for KCH.

Conclusion
This condition is not applicable.

7. Multnomah County or, upon annexation of the area to the City of Gresham, the city, as part of Title 11 planning, shall, in conjunction with property owners and affected local governments, develop a lot/parcel reconfiguration plan for land designated RSIA that results in the largest practicable number of parcels 50 acres or larger.

Findings
As indicated above, there are no RSIA areas designated for KCH.

Conclusion
This condition is not applicable.

Section 3: Urban Growth Diagram

The purpose of this section is to show and describe the Kelley Creek Headwaters (KCH) Urban Growth Diagram maps. This diagram shows the land use designations that are proposed for KCH and how public facilities would be extended into the area to support future urban development. An Urban Growth Diagram is required as part of the urbanization plan for areas added to the regional Urban Growth Boundary by Title 11 - Planning for New Urban Areas of the Metro Urban Growth Functional Plan. It is required to show the following elements (if applicable):

- General locations of arterial, collector and essential local streets and other public facilities.
- Location of steep slopes and unbuildable lands such as wetlands, floodplains and riparian areas.
- Location of Habitat Conservation Areas
- General locations for mixed use areas, commercial and industrial lands. (not applicable to KCH)
- General locations of single family and multi-family housing.
- General locations of public open space, parks, plazas and neighborhood centers.
- General locations of any needed schools or fire stations.

Land Use Alternatives Considered

The City could take one of the following approaches regarding the land use designations for KCH:

1. Develop and apply zoning districts that correspond to the Damascus/Boring Concept Plan designations. This plan proposed very low density residential, 3 units per acre (Less Dense Residential), at flatter locations near Regner Road. Hilltop locations were recommended to develop at no more than 1 unit per acre (Transition Areas). Steeper areas, public open space areas, and the riparian areas near creeks were identified as Conservation Areas where development would generally not be allowed. Development according to this plan would yield only 48 additional dwelling units at build-out in KCH.

2. Apply the Pleasant Valley Plan District designations. These would include the LDR-PV sub-district that allows 5.3 to 7.9 dwelling units per acre and the ESRA designation to protect natural resources. Development in Pleasant Valley is intended to be designed, through the master planning process, as part of individual neighborhoods. These are connected to other neighborhoods, parks, schools, employment areas and the Town Center by a well defined system of streets and pedestrian paths. Most of the KCH area is well removed from the planned locations of the Pleasant Valley neighborhoods, Town Center and other amenities. Providing adequate street and pedestrian path connections to Pleasant Valley would be problematic because of the steep topography and stream network. This would make it difficult for KCH to be integrated into the neighborhood fabric of Pleasant Valley.

3. Apply the zoning and overlay districts that currently apply to the adjacent existing City. The KCH boundary has far more exposure to the existing City, located to the north and east, than to Pleasant Valley. This approach was suggested by many of the KCH property owners at the September 25 community forum. These designations would apply to KCH:
    - A base zoning of Low Density Residential (LDR-7) for all properties.
    - The Hillside Physical Constraint Overlay District for steep slope areas. This overlay also applies to northerly Gresham Butte in the City.

- The Habitat Conservation Area Overlay District for natural resource areas. The HCA Overlay and maps was recently adopted to comply with Metro Title 13 requirements and is based on the Metro Title 13 Model Ordinance. It allows limited development.

Recommended Approach
Alternative #3 was used as the basis for the KCH land use designations. As shown on the draft Urban Growth Diagram, the following designations are proposed:

Map No. 1: Proposed Land Use Designation & Public Facilities

- The Low Density Residential District (LDR-7) would be applied to all properties. This zoning allows single family dwellings on lots with a minimum size of 7,000 sq. ft. or 6.2 units per acre. In those areas covered by the Hillside Physical Constraint District Overlay (for steep slopes) and/or the Habitat Conservation Area Overlay (for natural resource areas), density will be less.
- The Open Space Overlay will be applied to the Metro owned open space properties.

- Public facilities, such as sanitary sewer and water lines, will be extended into KCH from the adjacent existing City. No new major streets are proposed. Rodlun Rd. would be improved to the Community Street standard and would include green street features. Regner Rd. would be improved to the Collector Street standard. Please refer to the attached Public Facilities Narrative for a more detailed discussion.
- This map also shows in a conceptual manner that part of the East Buttes Loop trail system that applies to KCH. These trails are part of the Metro Regional Trails Plan as well as the Regional Transportation Plan.

Maps No. 2A & 2B: Habitat Conservation Area Overlay District

- These maps show fish and wildlife habitat areas that will be protected by the Habitat Conservation Area (HCA) Overlay. The areas shown are based on the map data provided by Metro, as refined by the City using LIDAR topographic information. Both private and publicly owned riparian areas would be protected by the HCA and publicly owned upland habitat.
- Map 2A shows the habitat values (high and moderate) that come into play when the specific or clear and objective HCA standards are used by an applicant.
- Map 2B shows the HCA classifications for the riparian and upland habitats and the Title 3 Water Quality Resource Areas.

Map No. 3: Hillside Physical Constraint Overlay District

- The Hillside Physical Constraint Overlay District will be applied to all sloped areas (10,000 sq. ft.+) that have a slope of 15% and greater. This district limits development on slopes between 15% and 34.9% and generally prohibits development on slopes 35% and greater.

Map No. 4: Existing Slope

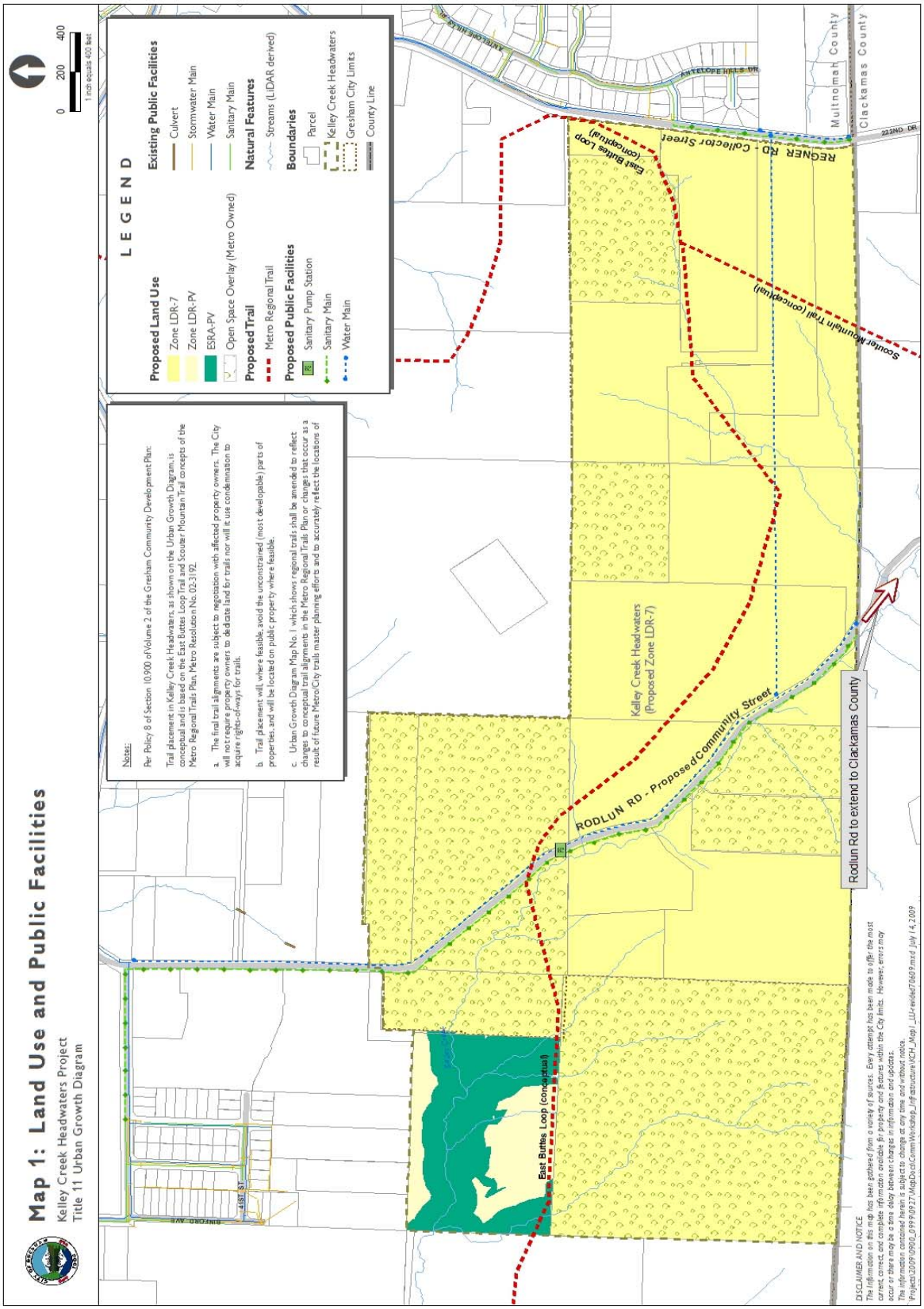
- This map shows the four slope ranges that are referenced by the above Hillside Physical Constraint Overlay District. These are 0-14.9%, 15-24.9%, 25-34.9% and 35% and greater slopes.

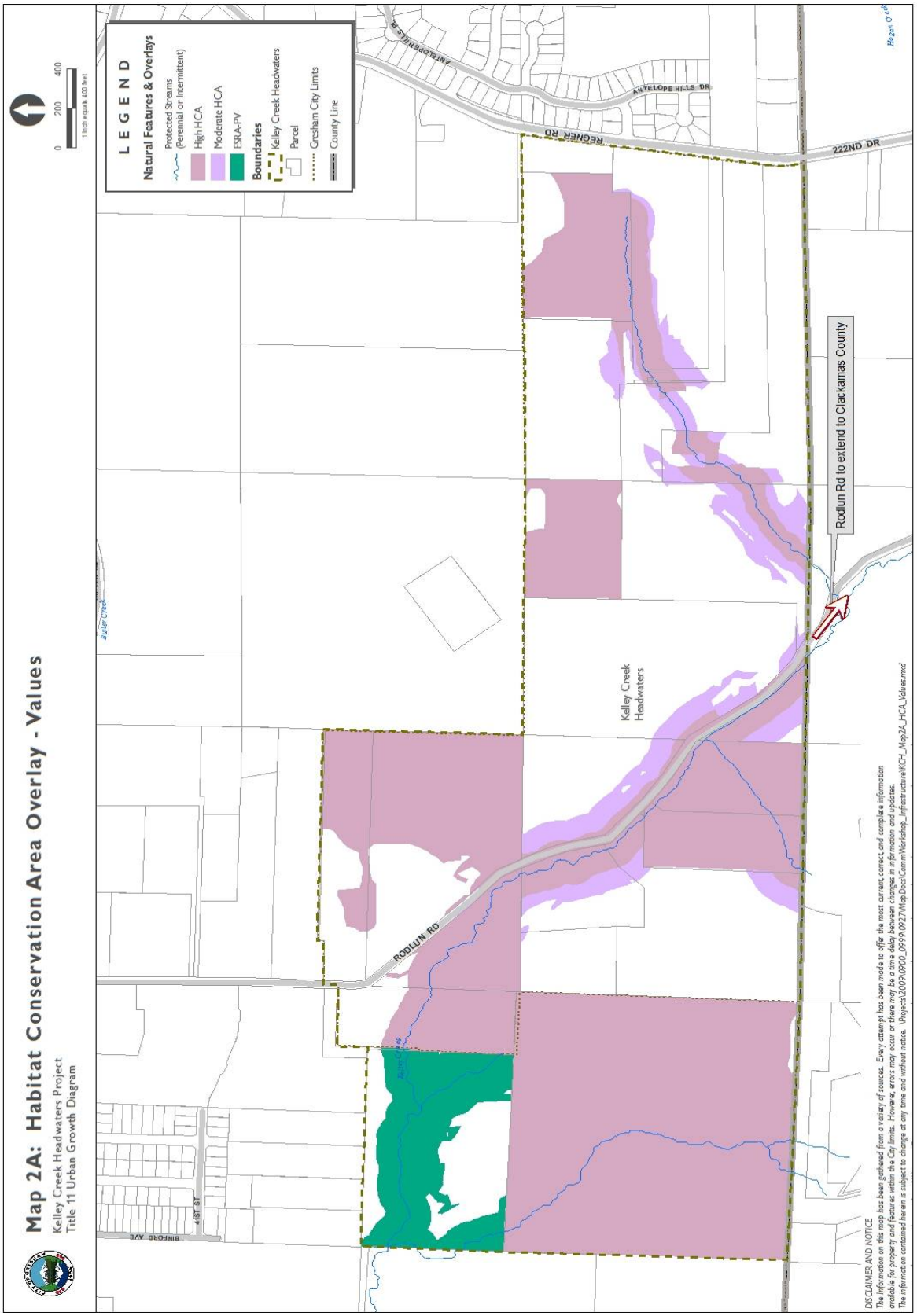
Note: The far westerly property (1S3E20D, T.L 1100) is proposed to have Pleasant Valley Plan District designations. These are the LDR-PV and ESRA sub-districts, which are similar to the LDR-7 district and HCA overlay. They were requested by the property owner who also owns contiguous property in

Pleasant Valley. As in Pleasant Valley, the Hillside Physical Constraint Overlay District will apply to slopes of 15% and greater.

It is estimated that applying the above designations to KCH would provide a development capacity of approximately 160 units.

UGD MAPS


Map 1: Land Use and Public Facilities
Kelley Creek Headwaters Project
Title 11 Urban Growth Diagram
0 200 400
1 inch equals 400 feet
LEGEND
Proposed Land Use
Zone LDR-7
Zone LDR-PV
ESRA-PV
Open Space Overlay (Metro Owned)
Proposed Trail
Metro Regional Trail
Proposed Public Facilities
Sanitary Pump Station
Sanitary Main
Water Main
Existing Public Facilities
Culvert
Stormwater Main
Water Main
Sanitary Main
Natural Features
Streams (LIDAR derived)
Boundaries
Parcel
Kelley Creek Headwaters
Gresham City Limits
County Line
Notes:
Per Policy 8 of Section 10.900 of Volume 2 of the Gresham Community Development Plan:
Trail placement in Kelley Creek Headwaters, as shown on the Urban Growth Diagram, is conceptual and is based on the East Buttes Loop Trail and Scouter Mountain Trail concepts of the Metro Regional Trails Plan, Metro Resolution No. 02-3192.
a. The final trail alignments are subject to negotiation with affected property owners. The City will not require property owners to dedicate land for trails nor will it use condemnation to acquire rights-of-ways for trails.
b. Trail placement will, where feasible, avoid the unconstrained (most developable) parts of properties, and will be located on public property where feasible.
c. Urban Growth Diagram Map No. 1 which shows regional trails shall be amended to reflect changes to conceptual trail alignments in the Metro Regional Trails Plan or changes that occur as a result of future Metro/City trails master planning efforts and to accurately reflect the locations of
East Buttes Loop (conceptual)
Scouter Mountain Trail (conceptual)
REGNER RD - Collector Street
ANTELOPE HILLS DR
222ND DR
Multnomah County
Clackamas County
Kelley Creek Headwaters
(Proposed Zone LDR-7)
RODLUN RD - Proposed Community Street
Rodlun Rd to extend to Clackamas County
DISCLAIMER AND NOTICE
The information on this map has been gathered from a variety of sources. Every attempt has been made to offer the most current, correct, and complete information available for property and features within the City limits. However, errors may occur or there may be a time delay between changes in information and updates.
The information contained herein is subject to change at any time and without notice.


Map 2A: Habitat Conservation Area Overlay - Values
Kelley Creek Headwaters Project
Title 11 Urban Growth Diagram
0 200 400
1 inch equals 400 feet
LEGEND
Natural Features & Overlays
Protected Streams (Perennial or Intermittent)
High HCA
Moderate HCA
ESRA-PV
Boundaries
Kelley Creek Headwaters
Parcel
Gresham City Limits
County Line
ANTELOPE HILLS DR
REGNER RD
222ND DR
Rodlun Rd to extend to Clackamas County
Kelley Creek Headwaters
RODLUN RD
BINFORD AVE
181ST ST
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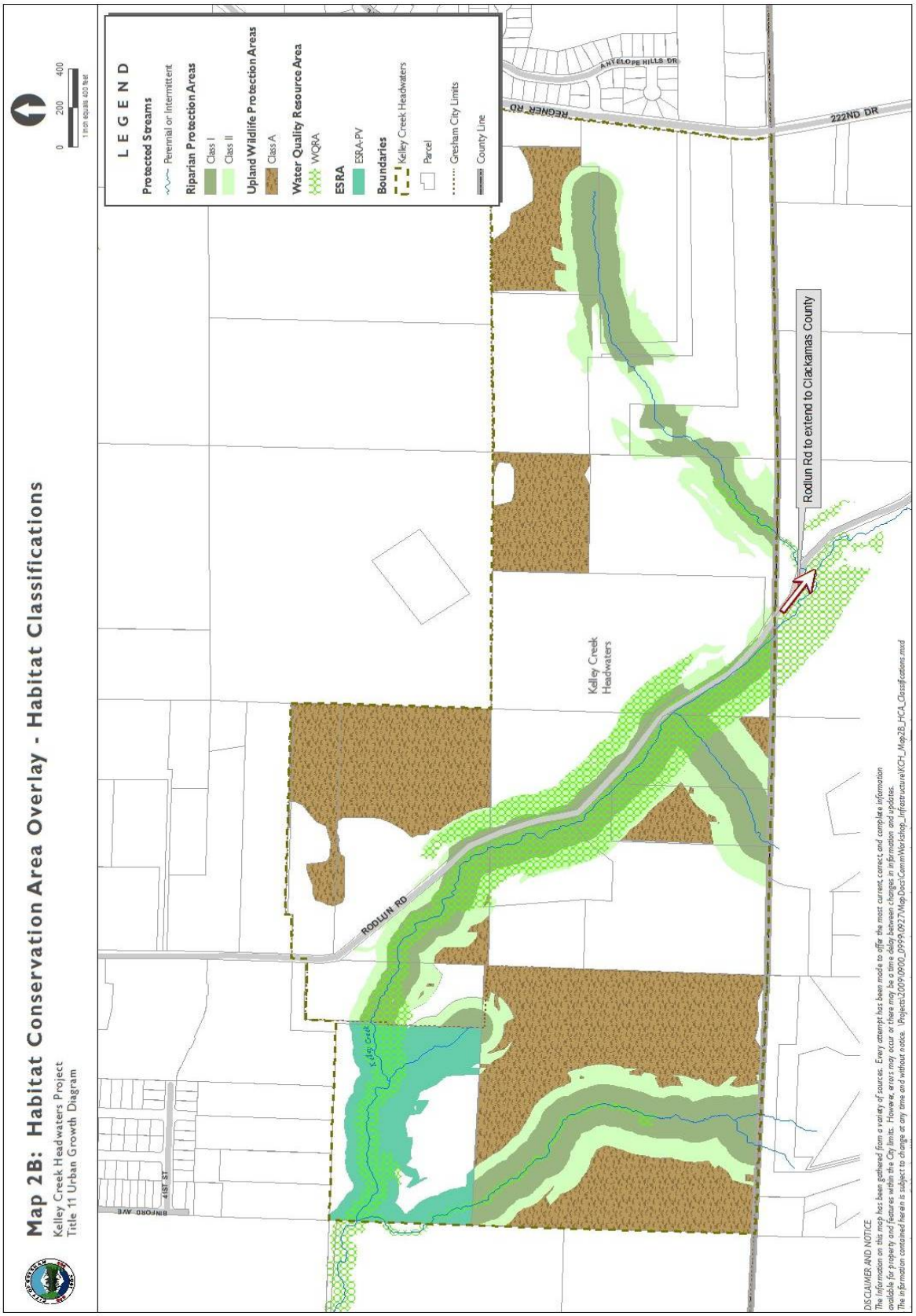
Map 2B: Habitat Conservation Area Overlay - Habitat Classifications
Kelley Creek Headwaters Project
Title 11 Urban Growth Diagram
0 200 400
1 inch equals 400 feet
LEGEND
Protected Streams
Perennial or Intermittent
Riparian Protection Areas
Class I
Class II
Upland Wildlife Protection Areas
Class A
Water Quality Resource Area
WQRA
ESRA
ESRA-PV
Boundaries
Kelley Creek Headwaters
Parcel
Gresham City Limits
County Line
ANTELOPE HILLS DR
REGNER RD
222ND DR
Rodlun Rd to extend to Clackamas County
Kelley Creek Headwaters
RODLUN RD
Kelley Creek
BINFORD AVE
181ST ST
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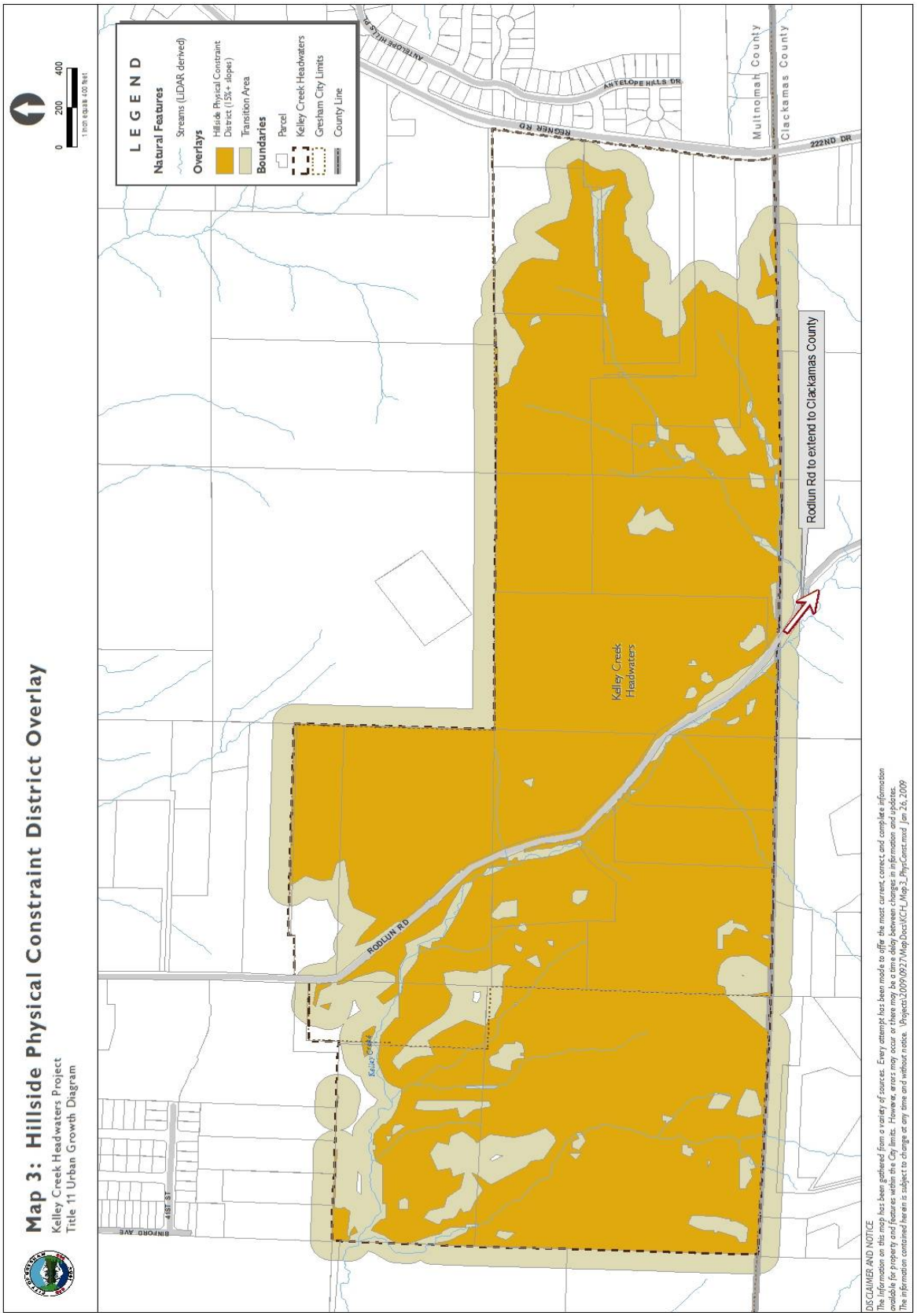
Map 3: Hillside Physical Constraint District Overlay
Kelley Creek Headwaters Project
Title 11 Urban Growth Diagram
0 200 400
1 inch equals 400 feet
LEGEND
Natural Features
Streams (LIDAR derived)
Overlays
Hillside Physical Constraint District (15%+ slopes)
Transition Area
Boundaries
Parcel
Kelley Creek Headwaters
Gresham City Limits
County Line
ANTELOPE HILLS DR
REGNER RD
222ND DR
Multnomah County
Clackamas County
Rodlun Rd to extend to Clackamas County
Kelley Creek Headwaters
RODLUN RD
Kelley Creek
BINFORD AVE
48ST ST
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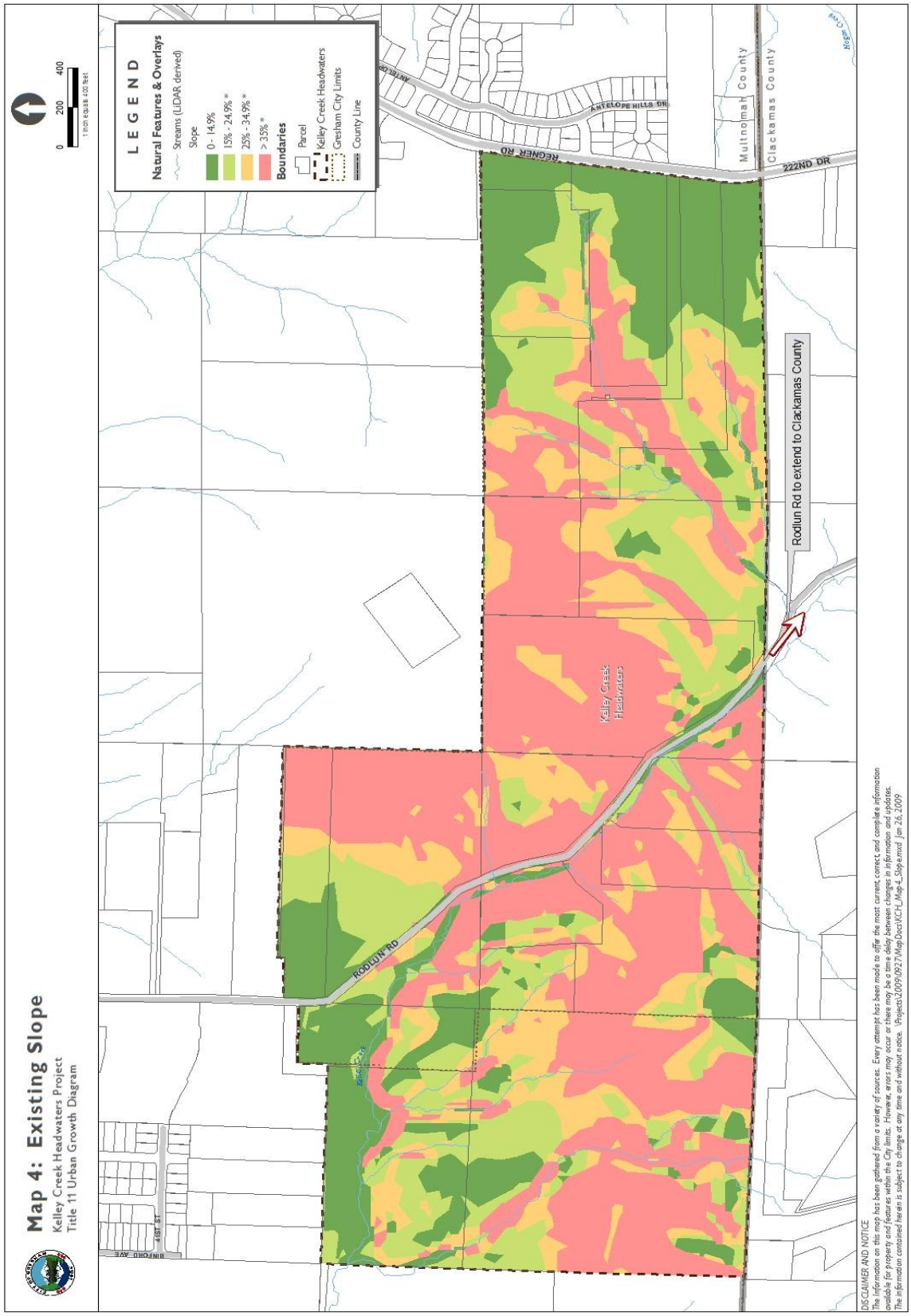
Map 4: Existing Slope
Kelley Creek Headwaters Project
Title 11 Urban Growth Diagram
0 200 400
1 inch equals 400 feet
LEGEND
Natural Features & Overlays
Streams (LiDAR derived)
Slope
0 - 14.9%
15% - 24.9% *
25% - 34.9% *
> 35% *
Boundaries
Parcel
Kelley Creek Headwaters
Gresham City Limits
County Line
BINFORD AVE
1ST ST
RODLUN RD
Kelley Creek Headwaters
REGNER RD
ANTELOPE HILLS DR
222ND DR
Multnomah County
Clackamas County
Rodlun Rd to extend to Clackamas County
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Section 4: Public Facilities Plan

INTRODUCTION

The purpose of the Kelley Creek Headwaters Public Facilities Plan (PFP) is to establish a framework for how necessary urban services, water, wastewater, stormwater and transportation facilities will be provided as urbanization occurs within KCH.

As required by Title 11 Metro Urban Growth Management Functional Plan, a conceptual level services plan for the provision of water, wastewater, stormwater and transportation/trail facilities was developed as part of the urbanization plan. Needed facilities for the planned new urban uses were identified, rough cost estimates were given for regional facilities (trails), likely funding strategies were developed, and maps depicting the general location of public facilities were included.

The PFP is consistent with the Oregon Administrative Rules, specifically OAR 660-011-0000. This 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."

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 policies and action measures. The PFP policies and action measures are included in the Volume 2 amendments of the Comprehensive Plan (Section 10.900).

Long-range capital improvement needs for major or regional facilities (serving an area, not just one development site) 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, and analysis of capital improvement needs based on forecast growth projections, and a financing strategy. 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, the City Council approves funding for specific capital projects through the budget process.

Most capital improvements related to regional utility services are financed using a combination of SDC fee revenue – especially for growth-related improvements – and retained earnings from utility operations (rate revenue). Developers can be required to oversize a public improvement to serve other development, but the City must reimburse the developer the portion of the benefit that accrues to the surrounding properties. 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.

WATER SYSTEM

1. System Description/Condition Assessment

Existing Conditions. The Kelley Creek Headwaters area is currently rural in nature, with some residential development. Water supplies in the area are served through individual wells that tap into the

groundwater aquifer beneath the valley. In addition, there is no domestic water distribution system in place in Kelley Creek Headwaters. As the area is developed to the level of urban development proposed in the Urban Growth Diagram, Gresham's water distribution system will need to expand to provide service to this area.

Gresham currently provides water service to approximately half of city residents, businesses, and industries. The Gresham water system is supplied from the Portland Water Bureau ("PWB") Bull Run System and Columbia River well field sources as well as shared groundwater facilities with the Rockwood Water PUD ("RWPUD"). 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, 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 13.3 million gallons. The water system's 8 reservoirs have approximately 28.5 million-gallons ("MG") of total storage. There are seven pump stations, approximately 257 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.

Water Distribution. The City of Gresham will deliver water to future urban development in Kelley Creek Headwaters Area upon completion of needed transmission line backbones in Pleasant Valley.

The Kelley Creek Headwaters has elevations between 510 feet and 800 feet. The Kelley Creek Headwaters planning area abuts the City's South Hills Service Level. This service level will be expanded into the Kelley Creek headwater area. The South Hills Service Level, which will have an overflow elevation of 940 feet, can serve elevations between 630 feet and 817 feet. The South Hills Service Level currently comprises of about 533 acres and includes the South Hill Reservoir. This reservoir has a capacity of 2.6 million gallons (MG). Water is supplied to this service level through the Regner Road Pump Station #8 with a current capacity of 2,200 gallons per minute (gpm).

2. System Analysis

Water demand from the proposed development was generated by applying an estimated demand per acre of new developable land based on the *2006 Water System Master Plan*. The demands for each service level from the *2006 Water System Master Plan* were projected over a 20-year planning horizon. These projected demands were divided by the current service level acres to obtain a demand per acre for each service level. This value was then used with the new service level areas to estimate the Kelley Creek Headwaters demand. The area of each new service level did not include Metro open space.

Based on the demands projected from the *2006 Water System Master Plan*, the anticipated maximum average day demand generated from the Kelley Creek Headwaters development totals 0.072 million gallons per day. Table 2 shows the results of this analysis for the service level.

Table A1: Projected Kelley Creek Headwaters demand based on projected flows in existing service level.

Service Level	Existing Area (acres)	Projected 2025 Average Day Demand (mgd)	Projected 2025 Average Day Demand per Acre (mgd/acre)	New Kelley Creek Area Buildable (acres)	Projected Kelley Creek Average Day Demand (based on acreage) (mgd)	Total New Area (acres)	New Projected 2025 Average Day Demand (mgd)
South Hills	533	0.91	0.001167	61.5	0.072	594.5	0.98

* To verify the projected demand estimate, based on 2006 Water Master Plan , 150 residences times 2.73 persons per household times 115 Gallon Per Person Per Day (gppd) Demand is 115 is 0.047 mgd.

Maximum day demands will be estimated from the projected average day demands by using a peaking factor of 1.9 as determined in the *2006 Water System Master Plan*. For the Kelley Creek Headwaters development, given the absence of industrial and commercial development, fire flow demands only reflect two potential types of residential development. Considerations in determining water service in the Kelley Creek Headwaters area are:

- 1,750 gpm for Low Density Residential customers with homes larger than 3,600 square feet
- 1,000 gpm for Low Density Residential customers with homes at or less than 3,600 square feet
- Overall storage requirements based on the following: The sum of 25% of MDD (peaking equalization) plus fire flow storage plus 2 times ADD.
- Pumping requirement based on supplying MDD.
- Source requirement based on supplying MDD times 25% for Gresham's South Hills service levels.

The following process was used to evaluate water demands associated with Kelley Creek Headwaters:

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

Based on specific design criteria, a looped 8-inch waterline would be desired to supply flows to meet these demands during a Maximum Day Demand scenario. The estimate presented provides a looped main solution which can meet the minimum fire flows for residential development (1,000 gpm). The location

of residential building sites within the Kelley Creek Headwaters area is the determining factor to the layout of the 8-inch waterline facility.

3. Summary of Future Needs

Based on the analysis of the proposed water distribution system, recommendations for water system improvements were developed. Improvements are summarized below.

- A new 8-inch water main in Rodlun and Regner Roads and an 8 inch connection between the two mains will need to be installed to accommodate the demands anticipated in Kelley Creek Headwaters.

A map showing the approximate location of the proposed water system improvements is included below.

Based on the above assumptions, the area within Kelley Creek Headwaters Area would be served by a looped water supply system resulting in the installation of approximately 7,490 feet of 8 inch ductile iron pipe (DIP).

The City of Gresham will be participating in ongoing discussions with Clackamas County, the City of Damascus, and the Sunrise Water Authority to determine the appropriate service provider for areas south of the Multnomah County line lying in northern Clackamas County.
Funding Plan

Evaluation of the Kelly Creek area indicated that no regional facilities are anticipated to be constructed. The primary funding sources for the development of the water system in Kelley Creek Headwaters will include development exactions for frontage and local street improvements and standard system development charges (SDCs). The developer and/or property owners benefited from water system installation will be responsible for funding water system improvements.

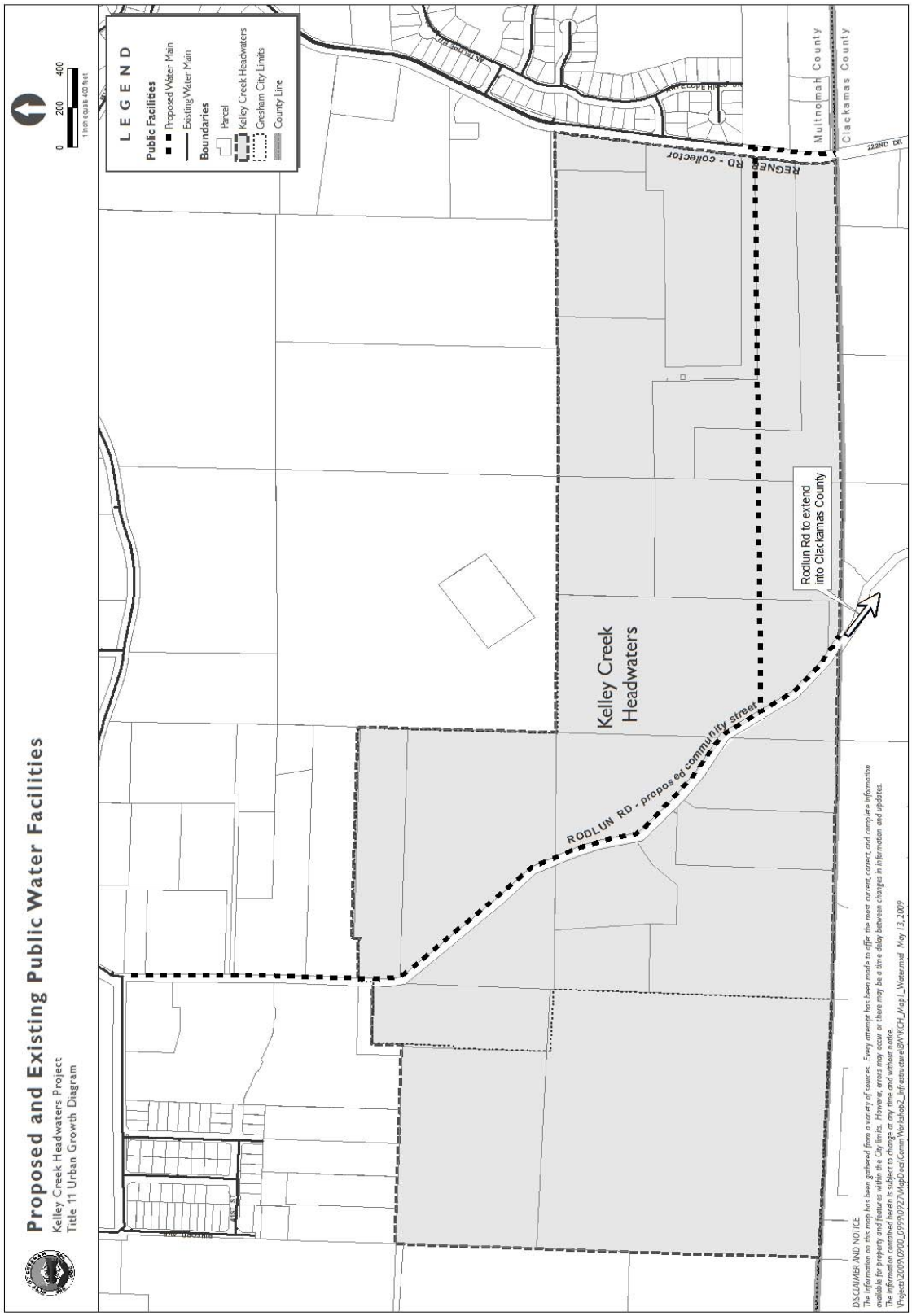
5. Goals, Policies and Action Measures

Goals and Policies. Applicable goals and policies that relate to the provision of public facilities in the existing comprehensive plan for the City of Gresham also apply to the Kelley Creek Headwaters PFP.

Action Measures.

1. Update the SDC improvement project list to include relevant near-term projects.

2. Continue to coordinate with the Clackamas County, the City of Damascus, the Sunrise Water Authority, and other stakeholders to establish plan for providing water service for the area adjacent to Kelley Creek Headwaters and lying within Clackamas County.


Proposed and Existing Public Water Facilities
Kelley Creek Headwaters Project
Title 11 Urban Growth Diagram
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1 inch equals 400 feet
LEGEND
Public Facilities
Proposed Water Main
Existing Water Main
Boundaries
Parcel
Kelley Creek Headwaters
Gresham City Limits
County Line
Kelley Creek Headwaters
RODLUN RD - proposed community street
REGNER RD - collector
Rodlun Rd to extend into Clackamas County
Multnomah County
Clackamas County
222ND DR
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SANITARY SEWER SYSTEMS

1. System Description/Condition Assessment

Existing Conditions. The Kelley Creek Headwaters area is currently rural in nature, with some residential development. Sanitary sewage generated in the Kelley Creek Headwaters area is currently treated by on-site subsurface disposal systems. When the area is developed to the level of urban development proposed in the Urban Growth Diagram, this type of treatment will not be adequate.

The City of Gresham owns and operates a wastewater treatment facility that treats wastewater for over 107,000 residents, businesses, and industries in the City. 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. Wastewater receives a high level of secondary treatment at the City's facility on NE Sandy Boulevard and is discharged to the Columbia River.

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.

Due to the topography of Kelley Creek Headwaters, a large percentage of wastewater generated from the urban development would require pumping to gravity conveyance systems thence to the existing wastewater treatment plant.

For planning purposes, it was assumed that all wastewater generated in Kelley Creek Headwaters would be conveyed to the City of Gresham's existing collection system and ultimately to the City's treatment plant.

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

The Kelley Creek Headwaters planning area lies in two collection basins in the City of Gresham: Johnson Creek and Kelley Creek. Analysis of in the 2001 *Wastewater System Master Plan* showed that upstream of Regner Road, the Johnson Creek interceptor has adequate capacity to serve existing residents through build-out of the service area. Downstream of Regner Road the size of the interceptor increases significantly, ranging from 30 inches immediately downstream of Regner Road to 42 inches upstream of the Linneman Pump Station. Preliminary analysis in the Master Plan indicated that this portion of the interceptor can accept up to 10 cubic feet per second (cfs) of additional flow (from outside of the current service area) without exceeding the hydraulic capacity of the system.

The sewage collection system refers to the infrastructure that serves development in Pleasant Valley. The topography within Kelley Creek area is such that the majority of the waste generation is within one drainage basin. The Kelley Creek basin will need to be pumped to conveyance system improvements

within Pleasant Valley along Butler Road. Once Pleasant Valley improvements have been completed, sanitary sewage will be diverted to a small lift station along Rodlun Road and pumped to the gravity system in Butler Road. Thence wastewater conveyance will proceed to the Linnemann Pump Station.

Additional improvements have occurred at the Linneman Pump Station and downstream force main and interceptors to the treatment plant to accommodate additional flows from outside of the current service area.

2. System Analysis

Sewage flows from the proposed development were generated by applying unit flow factors to various land use types, and adding infiltration and inflow (I/I) associated with the 1 in 5 year rainfall event. This "design storm" is established in the Oregon Administrative Rules (OAR) 340-041-120 sections 13 and 14 as the minimum condition under which the City must be able to convey and treat wastewater with no overflows. Unit flow factors and I/I assumptions were similar to the 2001 *Master Plan* and the 2004 *Pleasant Valley Master Plan.* The area of each new service did not include Metro open space.

The following process was used to evaluate wastewater needs associated with Kelley Creek Headwaters:

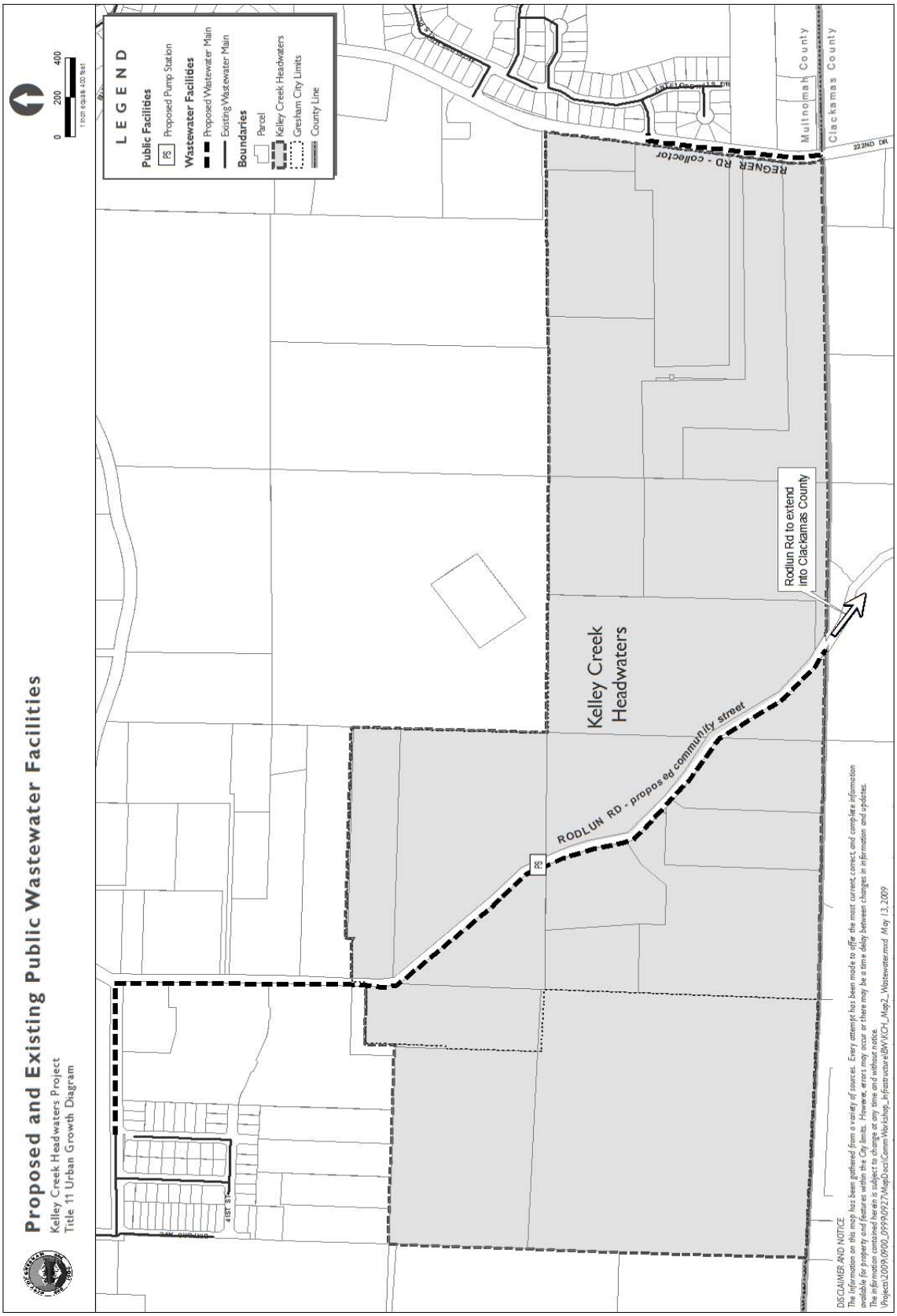
- Establish sewershed boundaries (sewer service sub-areas) within the planning area to define areas tributary to the model nodes (manholes). The shape of the sewersheds was determined based on projected future land use and area topography.
- Define pipe networks and projected flows for the land use concept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

3. Summary of Future Needs

Based on the analysis of the sewer system scenarios and the final Urban Growth Diagram map, recommendations for sewer system improvements were developed. These recommendations include pumped and gravity collection systems to serve the Kelley Creek Headwaters community, and improvements to existing infrastructure in the City to convey the additional flow from Kelley Creek Headwaters to the City's treatment plant. Improvements are summarized below.

- A new 8-inch gravity sewer will convey wastewater from the development areas on Regner Road to existing sanitary sewer interceptors. This new sewer will be routed in existing or proposed roadways.
- A new sanitary sewer lift station and force main at the lowest elevation on Rodlun Road will convey sanitary sewage to a new 8-inch gravity collector which will then convey flows to existing gravity sewer lines in Pleasant Valley.

A map showing the approximate location of the proposed wastewater system improvements is included below.


Proposed and Existing Public Wastewater Facilities
Kelley Creek Headwaters Project
Title 11 Urban Growth Diagram
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1 inch equals 400 feet
LEGEND
Public Facilities
PS Proposed Pump Station
Wastewater Facilities
Proposed Wastewater Main
Existing Wastewater Main
Boundaries
Parcel
Kelley Creek Headwaters
Gresham City Limits
County Line
REGNER RD - collector
Multnomah County
Clackamas County
22ND DR
Rodlun Rd to extend
into Clackamas County
Kelley Creek
Headwaters
RODLUN RD - proposed community street
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Gresham recently expanded its sewage treatment plant and has capacity to serve Kelley Creek Headwaters. This flow would likely be introduced to Gresham's system at the east end of the Pleasant Valley trunk line to Rodlun Road.

With the build-out of Pleasant Valley, the closest pipeline with capacity to accept flow from Kelley Creek Headwaters will be located near the northwest corner of Kelly Creek Headwaters area near the intersection of Rodlun Road and Pleasant Valley Phase 1. A total of 5,705 feet of sewer pipe will be needed to convey the flow towards the Linneman pump station.

4. Funding Plan

Evaluation of the Kelly Creek area indicated that no regional facilities are anticipated to be constructed. The primary funding sources for the development of the wastewater system in Kelley Creek Headwaters will include development exactions for frontage and local street improvements and standard system development charges (SDCs). The developer and/or property owners will be responsible for funding water system improvements.

5. Goals, Policies and Action Measures

Goals and Policies. Applicable goals and policies that relate to the provision of public facilities in the existing comprehensive plan for the City of Gresham also apply to the Kelley Creek Headwaters PFP.

Action Measures.

1. Continue to coordinate with the City of Damascus and/or Water Environment Services of Clackamas County to determine the appropriate service provider for Sunshine Valley.
2. If Gresham is to provide treatment for any portion of flow from the City of Damascus, participate with City of Damascus and/or Water Environment Services of Clackamas County on an alignment study to identify the appropriate alignment for a new interceptor to convey wastewater to Gresham's wastewater treatment plant.

TRANSPORTATION SYSTEM

1. System Description/Condition Assessment

The primary purpose of this section of the Kelley Creek Headwaters Urban Growth Diagram [UGD] is to ensure coordination of planned transportation system improvements with other public utility and infrastructure improvements. The transportation system needs and proposed remedies shall be consistent with the City's Transportation System Plan and current public works standards upon annexation. Other than a brief overview of system needs and general remedies, the UGD does not address transportation issues in detail.

Kelley Creek Headwaters Area occupies a unique geographical location within a series of lava domes and wooded buttes in the southeast portion of the Portland metropolitan region. The area contains a significant environmentally sensitive stream, Kelley Creek, and wetlands. While these natural features provide scenic vistas and recreational opportunities, they also provide challenges from a transportation perspective.

The area is currently served by a transportation system that was designed primarily to serve the farm-to-market travel needs of the agricultural uses that once occupied the valley. Foster Road, 172nd Avenue, Jenne Road, 190th Avenue, 182nd Avenue, Sunnyside Road and Butler Road are the primary routes that connect Kelley Creek to other parts of the region.

2. System Analysis

The existing roadway network within the study area has mostly rural characteristics. Based on current development patterns, the majority of trips from the study area will travel to the north currently and to the south as Rodlun Road is extended into Clackamas County. Regner Road will carry vehicle traffic between Multnomah and Clackamas Counties.

The City's street functional classifications coordinate with classifications adopted by Multnomah County, Metro, and ODOT. Table 1 lists the functional classification definitions for the City. The Gresham Transportation System Plan contains additional detail regarding the functional street classifications. Within the study area, Rodlun Road is not classified by Gresham or Metro.

Based on the classification system below, Rodlun Road would be viewed to be a Community street. Regner Road will be classified as a collector.

Table C1 – Street Functional Parameter Classification Definitions

Street Classification	*Volume*	*Design Speed*	*Travel Lanes*
Principal Arterial	35,000 to 60,000	45 to 55	4 to 6
Arterial	15,000 to 40,000	35 to 45	4
Boulevard	15,000 to 40,000	25 to 35	4
Collector	10,000 to 20,000	25 to 35	2
Community Street	3,500 to 10,000	25 to 35	2

Source: City of Gresham Transportation System Plan, 2002

3. Summary of Future Needs

The city street designations in the Gresham Transportation System Plan were applied to the Kelley Creek Headwater area Public Facility Plan. The street design type designations and cross-section elements were taken from the Pleasant Valley Plan area, since it is the most recent new development that incorporates Green Street components into new street designs. The proposed Street Functional Class Plan for the Kelley Creek Headwaters area was illustrated in Table C1.

Other aspects of the proposed functional class include:

- Safety issues exist for all modes of travel due to topography, awkward intersections and high speeds and traffic volumes. Walking and biking is made difficult by the lack of facilities for these modes of travel.

- There is a need to develop a connection of rural streets adequate to serve future growth in Kelley Creek Headwaters and northern Clackamas County, while protecting environmentally sensitive areas and adjacent neighborhoods and rural reserves from the effects of urbanization. Green street designs will help reduce impervious surface area and incorporate on-site stormwater management within the right-of-way through the use of vegetative filter strips, swales, linear detention basins, infiltration trenches, permeable pavement and tree planting. Street alignments should follow natural contours and features as much as possible, which can help optimize implementation of green street designs.

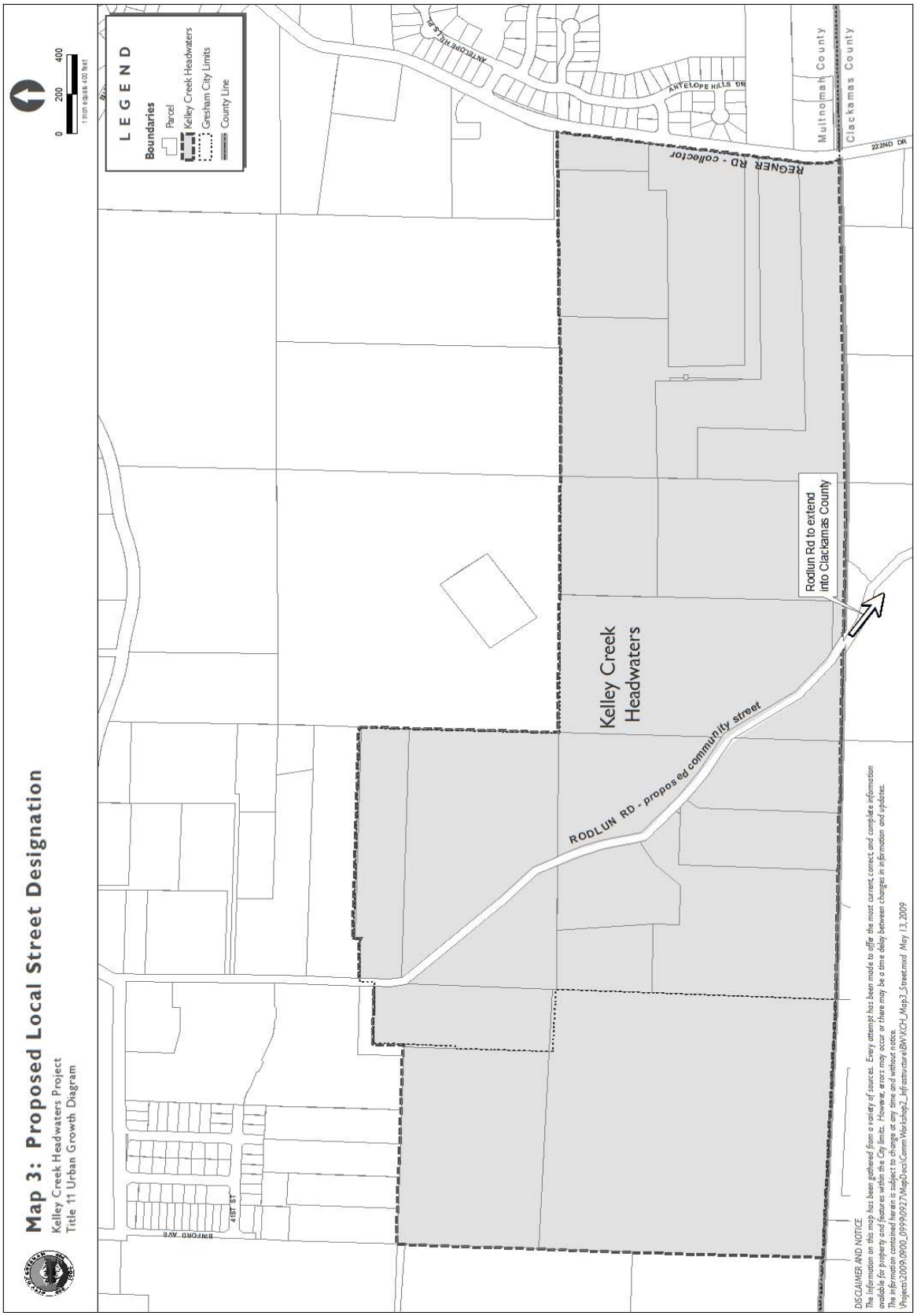
- The topography of Kelley Creek and the need to protect area streams may require the construction of retaining walls to separate the roadway from sensitive areas.

- The existing population base in Kelley Creek Headwaters cannot finance the "backbone" transportation improvements that are needed to serve future development. These improvements will serve local needs of the Kelly Creek Headwaters community and should, therefore, be supported by development. Contrarily, existing Gresham residents and business owners should not have to support development in Kelley Creek Headwaters.

- The future street system needs to provide connectivity from Kelley Creek Headwaters to major streets in Gresham and Clackamas County.

- Kelley Creek Headwaters transportation corridor also will serve as a utility corridor for essential utilities. Coordination is needed between service providers to ensure investment in public facilities is sequenced in a manner that adequately supports planned urban development.

A map showing the approximate location of the proposed transportation system improvements is included below.


Map 3: Proposed Local Street Designation
Kelley Creek Headwaters Project
Title 11 Urban Growth Diagram
0 200 400
1 inch equals 400 feet
LEGEND
Boundaries
Parcel
Kelley Creek Headwaters
Gresham City Limits
County Line
ANTELOPE HILLS DR
ANTELOPE HILLS DR
REGNER RD - collector
Multnomah County
Clackamas County
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Rodlun Rd to extend
into Clackamas County
Kelley Creek
Headwaters
RODLUN RD - proposed community street
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The Kelley Creek Headwaters area plan will include special Green Street designs for local streets. Based on the above assumptions, the area within Kelley Creek Headwaters would be served through the installation of a green parkway design.

4. Funding Plan

Evaluation of the Kelly Creek area indicated that no regional facilities are anticipated to be constructed. The primary funding sources for the development of the transportation system in Kelley Creek Headwaters will include development exactions for frontage and local street improvements and standard transportation improvement fees (TIFs).

5. Goals, Policies and Recommended Actions

Goals and Policies. Applicable goals and policies that relate to the provision of transportation facilities in the existing comprehensive plans for Gresham also apply to the Kelley Creek Headwaters Urban Growth Diagram. In addition, the following policies are proposed:

1. Gresham will inform public works and transportation staff member from adjacent jurisdictions and urban service providers as defined in ORS 195 to share information about planned capital improvements and discuss policy issues affecting the provision of public facilities.

2. Adjacent jurisdictions and other urban service providers will work cooperatively on necessary urban service agreements and intergovernmental agreements to ensure clarity regarding ownership of transportation facilities.

Action Measures. The following action measure is made part of this plan.

1. Gresham and Clackamas County will work toward developing an intergovernmental agreement, if necessary, to ensure the provision of necessary municipal infrastructure in county roads for that part of Clackamas County that is adjacent to the Kelley Creek Headwaters 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.

STORMWATER MANAGEMENT SYSTEM AND NATURAL RESOURCES IMPROVEMENT PLAN

1. System Description/Condition Assessment

Existing Conditions. The Kelley Creek Headwaters (KCH) area is located south of Gresham's Urban Growth Boundary and immediately east of the Pleasant Valley Plan District. Current land use in the area includes forestry, livestock pasture, rural residences, and passive parks and open space. The KCH area consists of moderate to steep slopes. Typical of rural areas, stormwater runoff is currently conveyed overland in ditches, flowing to natural drainages and eventually to Kelley Creek. Kelley Creek flows west/northwest through the central and western portions of the area, with several tributary streams flowing into Kelley Creek from the hillsides north and south of Rodlun Road. Kelley Creek eventually flows to Johnson Creek near the intersection of SE 162nd Avenue and Foster Road.

Portions of central and eastern KCH area have been cleared for farming, residential housing, and roadways, but the majority remains forested. The pasture areas are dominated by mixed non-native

pasture grasses. Areas adjacent to residential homes typically include non-native ornamental plant species.

Dominant overstory species within the forested areas include Douglas fir, western red cedar, big leaf maple, and red alder. The understory is typically dominated by vine maple, red elderberry, salmonberry, snowberry, and sword fern. Non-native species, including Himalayan blackberry, English ivy, and English holly are present along the disturbed edges of the open spaces, or within recently logged tracts of land.

Shallow roadside ditches are present along portions of Rodlun Road, as well as the west side of Alder Ridge Road. In each case, the ditches are located between the roadway and adjacent hillsides, not between the roadway and the creek. The primary function of the ditches appears to be to prevent upslope water from flowing across the roadway, not to convey stormwater runoff from the roadway. Stormwater runoff from roads and other developed areas within the Kelley Creek Headwaters area generally flow directly into the vegetated areas along the road.

As a result of their proximity to the road surfaces and adjacent private properties, the ditches currently convey some untreated stormwater runoff into Kelley Creek, but most of the flow in these ditches is from natural sources. These sources include natural runoff from undeveloped areas, as well as groundwater discharge directly into the ditches or upslope sources. This is evidenced by flowing water in the ditches for up to several days following a precipitation event.

Riparian vegetation along Kelley Creek and its tributaries is variable in width and cover. Tributaries within undeveloped areas that have not been logged recently generally retain a healthy riparian area consisting of native forest, and are greater than 100 feet wide. As the tributaries pass through pasture land, near residences, or logged areas, the forested riparian areas are generally much narrower, and typically have fewer native understory species. Rodlun Road parallels the north bank of Kelley Creek for nearly one-half mile through the central portion of the headwater area, and consequently has less riparian vegetation than the less disturbed south bank. The proximity of Rodlun Road to Kelley Creek is contributing to sediment entering the stream, constricts natural channel configuration, and limits floodplain development and the lateral extent of riparian vegetation. Stream and riparian improvements recommended for the area in general include control of noxious vegetation and planting of native trees, shrubs, and herbaceous plants in the riparian corridor, removing or upsizing culvert crossings, and creating opportunities for the stream to access adjacent floodplain areas during small flood events.

Downstream, Johnson Creek frequently floods in Portland's Lents neighborhood. As the upper headwaters of Johnson Creek, the future hydrology of the KCH area will have a direct impact on this situation. Therefore, the stormwater management plan and design requirements for KCH should utilize every available tool to prevent exacerbating downstream flooding.

2. Stormwater System Analysis

The recommended stormwater management system for KCH is intended to minimize the impact of development (both on water quality and flow rates and volumes) and maintain or restore watershed functionality using the goals and recommendations described below.

Design Criteria. To the maximum extent practicable, Green Development Practices and Green Street Standards shall be used to reduce the rate and volume of stormwater discharge to the natural stream channels in the Environmentally Sensitive/Restoration Area ("ESRA") to a level that is no greater than pre-development conditions for storms up to and including the 25-year, 24-hour storm. Green Development Practices include rain gardens, stormwater planters, and the use of porous paving materials.

Where Green Development Practices cannot be used to manage stormwater, traditional stormwater facilities shall be used to meet quality and detention requirements per the City of Gresham's Water Quality Manual and Public Works Standards.

Due to the limited size of drainage basins within the Kelley Creek Headwaters area and challenging topography, large regional facilities (detention ponds) will not be utilized to manage stormwater. Rather, each development project shall manage stormwater using the City of Gresham's Green Development Practices Manual (for private property) and Green Street Standards (for public street improvements). Both components use techniques and processes that mimic natural hydrology to the greatest extent practical, reducing impacts of runoff to pre-development conditions, or improving over current conditions. The sizing of Green Development Practice and Green Street facilities is a function of native soil infiltration rates, impervious surface to manage, and the magnitude of storm events to manage. For the Kelley Creek Headwaters area, the 25-year, 24-hour storm is the controlling storm for facility sizing.

Rather than routing runoff to underground pipes for conveyance, wherever practicable, runoff shall be conveyed through open swales. Vegetated swales located between the roadway and sidewalks and drainage channels located along Habitat Conservation Areas (HCAs) will slow the flow of runoff and also provide some infiltration. These swales and drainage channels will generally have an 8-foot top width, 2-foot bottom width, and 4:1 side slope. In areas where the standard swale geometry does not provide adequate capacity, a 10-foot top width shall be provided.

With proper maintenance, the drainage channels will provide water quality treatment prior to discharge of stormwater to Kelley Creek.

1. Natural Resources Improvements

Throughout the Kelley Creek watershed, there are issues of noxious weed growth that needs to be addressed, including Himalayan blackberry, English ivy, clematis, English holly, and reed canarygrass. In addition, improved streambank stability, stream shading, and native plant detritus inputs for macroinvertabrate support and salmonid feeding would be realized with increase native tree and shrub cover. The City will incorporate the KCH area into its volunteer-based restoration efforts as the area annexes into the city.

The highest priority for improved stream conditions has been identified on a Metro-owned property at 8282 SE Rodlun Road. An undersized culvert under a driveway restricts flow in Kelley Creek mainstem to the extent that storm flows have frequently overtopped the banks, spilled over the driveway, and caused erosion of the streambank. Past efforts to address the ongoing erosion lead to heavy armoring of approximately 100 feet of the bank with concrete and asphalt chunks. The proposed improvement project would address the undersized culvert, remove the armoring, re-grade the slope, add a terrace shelf along this stretch of stream, improve access to the historic floodplain, and add native tree and shrub cover.

2. Summary of Future Needs

On-site Green Development Practices. Stormwater management goals rely on Green Development Practices on private property and within public streets to manage increases in stormwater flow rates and volumes, facilitating infiltration and evapotranspiration. Green Development Practices are a set of techniques that mimic and incorporate the predevelopment hydrology of a site into future development. Green Development Practices include site management techniques that minimize (1) disturbance to existing soils, tree canopy, and other sensitive natural resource features and (2) impervious surfaces, to reduce the production of surface runoff. They also manage runoff through techniques that use natural

areas and landscaping to treat, retain, attenuate, and infiltrate stormwater within each development site instead of using traditional piped collection and conveyance systems.

An approved Stormwater Management Plan, incorporating green development practices, will be required in the new KCH area. The City's *Green Development Practices for Stormwater Management* provides guidance to developers on how to implement green practices on development sites. Stormwater management plans provide a mechanism for the City to review how development proposals for stormwater facilities meet the requirements for stormwater management and green practices. The intention is that the stormwater management plans be submitted and approved along with the site plan or preliminary development plat approval.

Within the HCAs, improvement efforts will be implemented to increase wildlife support and riparian function. Protecting and enhancing the tree canopy adjacent to riparian areas will also be an important component of the plan to meet expected Total Maximum Daily Load (TMDL) limitations for temperature in the Kelley Creek Headwaters basin.

Coordination is needed between Gresham and the new City of Damascus regarding stormwater system planning and design guidelines for the portion of the area in Damascus (south of Multnomah County). A consistent approach regarding stormwater conveyance standards, development setbacks, allowed uses in HCAs, and other issues related to stormwater management should be identified in an intergovernmental agreement.

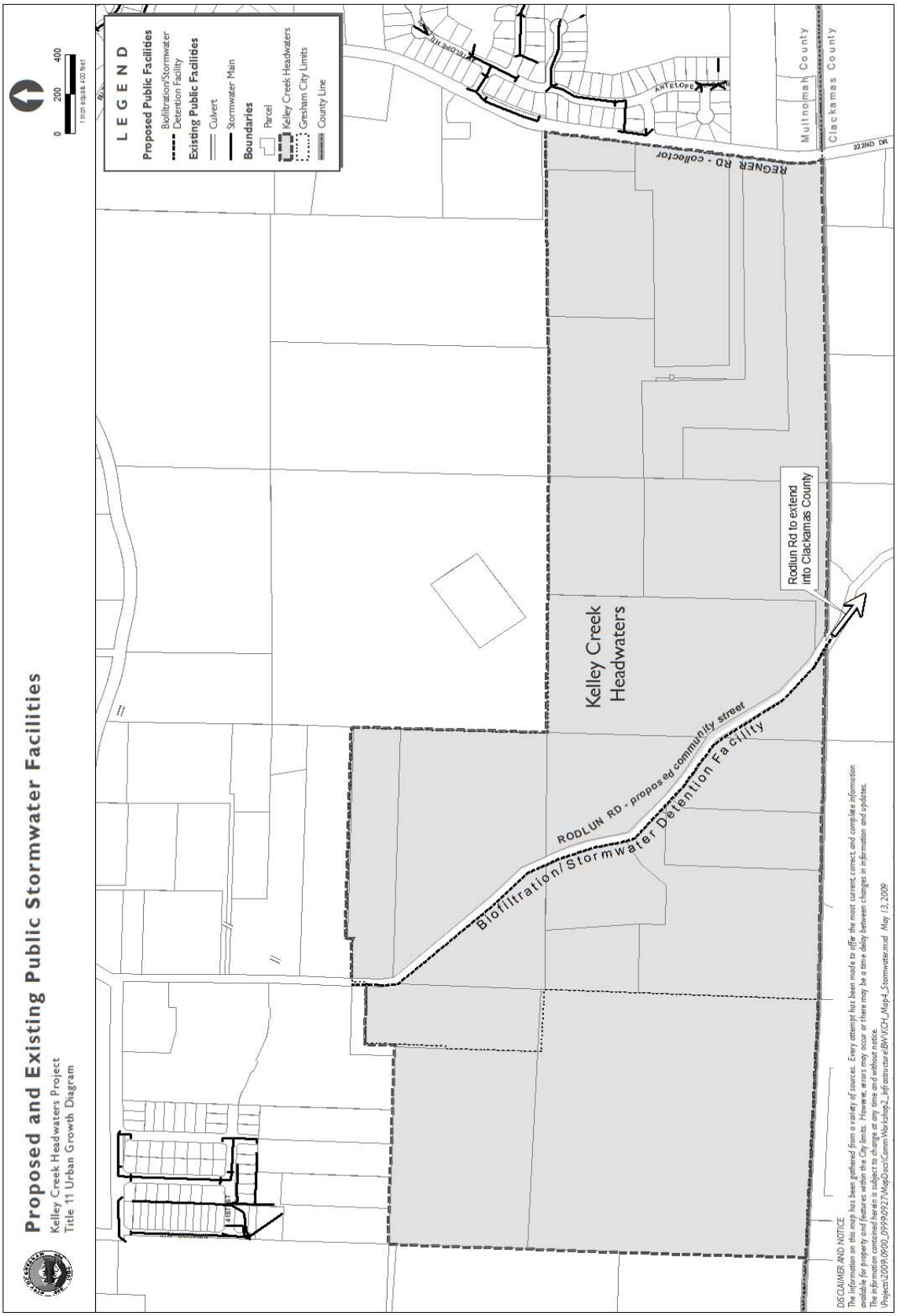
The City of Gresham will not be responsible for NPDES and TMDL compliance for KCH until areas are annexed into the City.

Public stormwater infrastructure that benefits the entire KCH area includes the installation of stormwater facilities to manage stormwater runoff from approximately 3,000 feet of Rodlun and Regner roadway improvements. A culvert and stream improvement project is proposed to address ongoing erosion, stream stability, and riparian function.

3. Funding Plan

Evaluation of the Kelly Creek area indicated that no regional facilities outside of KCH are anticipated to be constructed. The primary funding sources for the development of the stormwater system in Kelley Creek Headwaters will include development exactions for frontage and local street improvements and standard system development charges (SDCs). The developer and/or property owners will be responsible for funding stormwater system improvements.

A map showing the approximate location of stormwater facilities is shown below:


Proposed and Existing Public Stormwater Facilities
Kelley Creek Headwaters Project
Title 11 Urban Growth Diagram
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LEGEND
Proposed Public Facilities
Biofiltration/Stormwater Detention Facility
Existing Public Facilities
Culvert
Stormwater Main
Boundaries
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County Line
REGNER RD - collector
ANTELOPE
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Rodlun Rd to extend into Clackamas County
RODLUN RD - proposed community street
Biofiltration/Stormwater Detention Facility
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6. Goals, Policies, and Action Measures

Goals and Policies. Applicable goals and policies that relate to the provision of public facilities in the existing comprehensive plan for the City of Gresham also apply to the Kelley Creek Headwaters Urban Growth Diagram. The City shall manage stormwater and natural resources to minimize impacts on localized and downstream flooding and to protect water quality and aquatic habitat.

The following policy is made part of this plan:

1 Green development practices, including green streets, will be utilized. Development and infrastructure plans should enhance the natural hydrological system. Employing green practices shall be the fundamental approach to managing stormwater runoff in a way that maintains or improves the water quality of streams and groundwater.

Action Measures. The following action measures are made part of this plan:

1 Design culvert improvements for existing and proposed stream crossings to eliminate barriers to fish passage.

2 Stormwater management shall avoid a net negative impact on nearby streams, wetlands, groundwater, and other water bodies.

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 onsite infiltration to the maximum extent practicable for up to the 25-year storm 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 the 25-year 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.

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 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 Gresham Water Quality Manual.
   b. 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.

6 Public stormwater facilities shall be designed using approaches that integrate stormwater and vegetation such as swales, trees, vegetated planters and wetlands.

7 Noxious vegetation will be controlled within available resources, and streamside areas will be densely vegetated wherever possible to improve stream shading, streambank stability, and aquatic habitat.

8 Look for opportunities to enhance natural resource areas through the construction and maintenance of stormwater facilities.

TRAIL SYSTEM

1. System Description/Condition Assessment

The Kelley Creek Headwaters area is currently rural in nature, with some residential development. There currently are no trail systems in the area. However, Metro has identified the East Powell Butte Loop Trail and the Scouter Mountain Trail in its Regional Transportation Plan and Regional Trails Plan.

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

- Multi-Use (Multi-Purpose) trails are intended for a broad range of non-motorized uses such as bicycles, wheelchairs, strollers and horseback riding as well as pedestrian uses such as walking, hiking and running. They may also be used for commuting purposes. Multi-Use trails are paved, 10-12 feet wide with 2-foot wide shoulders.

- Walking/hiking trails are intended for recreation. Some of these trails may be single-use trails restricted to pedestrian use only due to steep slopes, erosive soils, or other sensitive environmental considerations. Walking/hiking trails are soft-surfaced, un-paved 4-6 feet wide with 2-foot wide shoulders

- To the extent possible, trail construction will comply with Metro's Green Trails handbook.

2. System Analysis

The trails will create connections:

- The East Powell Butte Loop Trail from Pleasant Valley east towards Rodlun Road. This trail is envisioned as the major east-west trail of Pleasant Valley, Kelly Creek Headwaters and the Gresham Buttes. Other regional and local trails will branch off, providing additional direct access to surrounding public natural areas. This trail is included in Metro's Regional Transportation Plan as Project No. 11074.

- The Scouter Mountain Trail is a larger loop trail that will provide access from the Springwater Trail Corridor in the north, to Scouter Mountain in Happy Valley, and down to the Clackamas River to the south. This trail is included in Metro's Regional Transportation Plan as Project No. 11071.

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

Potential Synergies:

- Stormwater Management – If the East Powell Butte Loop Trail is constructed adjacent to streams, investigate opportunities for combining stormwater conveyance and management with the multi-use trail.

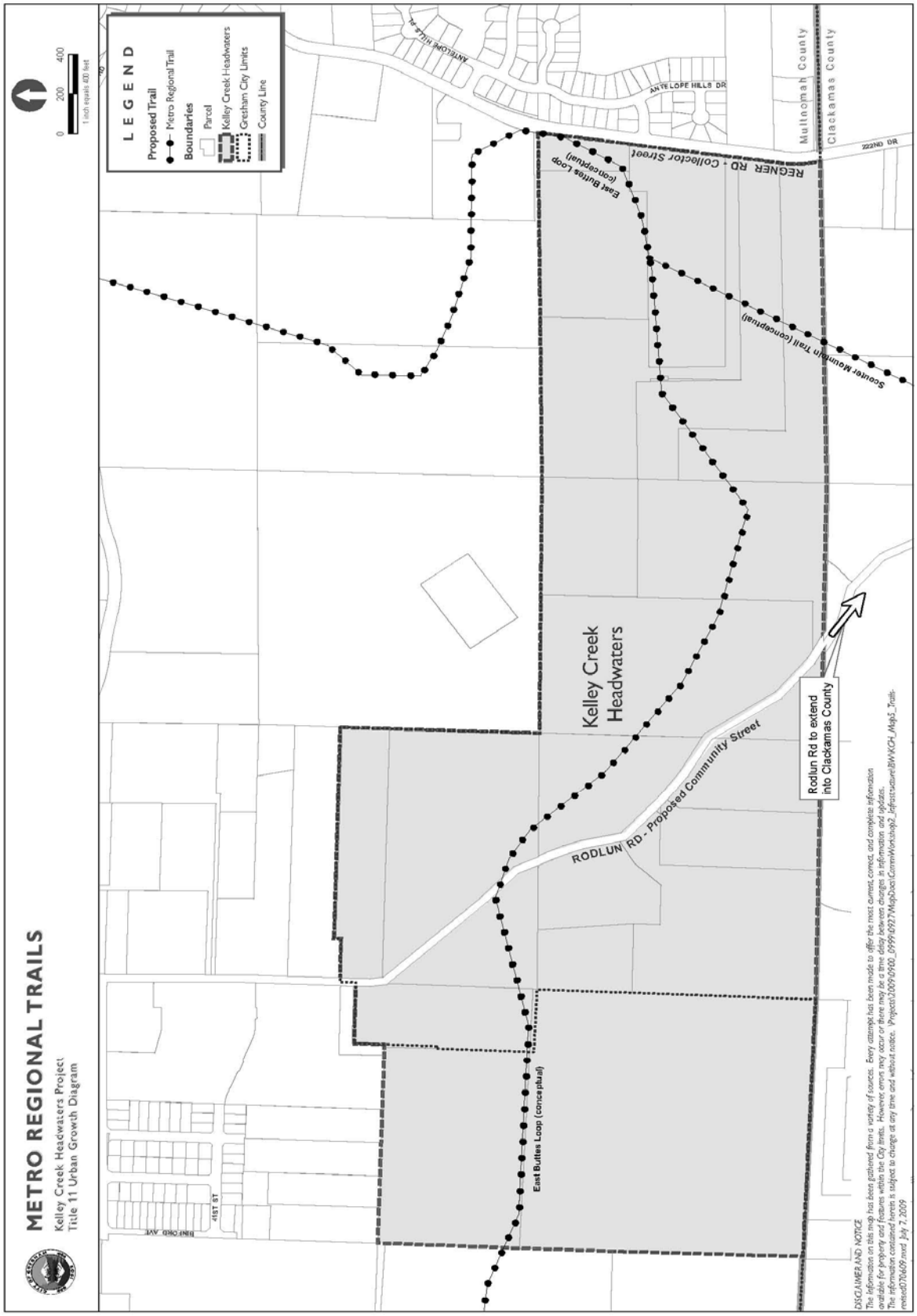
East Powell Butte Loop Trail – This 12.7-mile regionally-designated trail will connect the east side of Portland's Powell Butte Nature Park at the Springwater Trail Corridor through Happy Valley, Damasc**u**s, the Gresham Buttes and reconnecting east to the Springwater Trail Corridor at Regner Road. The Kelley Creek Headwaters segment is estimated at 4,079 linear feet.

Scouter Mountain/Mount Scott Loop Trail – This 15.5-mile regional trail connects the west side of Portland's Powell Butte Nature Park at the Springwater Trail Corridor through Happy Valley, the Clackamas River, Damascus and connects to the East Buttes Loop Trail and the Gresham buttes. The Kelley Creek Headwaters segment is approximately 1,634 linear feet.

3. Summary of Future Needs

Trails and natural areas will be an integral park of the Kelley Creek Headwaters community design; strengthen community bonds and protect natural resources. The East Buttes in Multnomah and Clackamas counties are collectively known as the Boring Volcanic Domes. This area has been the focus of more than 15-year effort to acquire public ownership of these lands to preserve and protect wildlife habitat and scenic viewsheds. The Gresham and North Damascus buttes provide the greatest opportunity to establish a large, contiguous open space area with high natural resource qualities of the scope of Portland's Forrest Park.

A map showing the approximate location of the proposed trails is shown below:


METRO REGIONAL TRAILS
Kelley Creek Headwaters Project
Title 11 Urban Growth Diagram
0 200 400
1 inch equals 400 feet
LEGEND
Proposed Trail
Metro Regional Trail
Boundaries
Parcel
Kelley Creek Headwaters
Gresham City Limits
County Line
ANTELOPE HILLS DR
Multnomah County
Clackamas County
222ND DR
REGNER RD - Collector Street
East Buttes Loop (conceptual)
Scouter Mountain Trail (conceptual)
Kelley Creek Headwaters
RODLUN RD - Proposed Community Street
Rodlun Rd to extend into Clackamas County
East Buttes Loop (conceptual)
BIRCH AVE
181ST ST
DISCLAIMER AND NOTICE
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The information contained herein is subject to change at any time and without notice. Projects\2009\0900_0999\0927\Maps\docs\CommWorkshop2_Depictsource\BWKCH_Map5_Trails-revised070609.mxd July 2, 2009

4. Calculated Cost & Funding Plan

The above discussed trail segments are the only regional public facilities being proposed for Kelley Creek Headwaters. As such, an estimated cost is required by OAR 660-011-0000. The same trail segments are proposed by the Pleasant Valley Plan. The per foot cost for the East Buttes Loop trail (PV Project # 10069.2) was calculated to be $490.32 per foot and the Scouter Mt. Trail (PV Project # 10071)was calculated to be $677.31 per foot. These "per foot" estimates for each trail was then multiplied by the linear footage of each trail within KCH, as determined by GIS staff, to arrive at the following total costs for both segments.

Trail	Cost per ft.	KCH Length.	KCH Total Cost
East Buttes Loop	$490.32	4,079 ft.	$2,000,015
Scouter Mt.	$677.31	1,634 ft.	$1,106,725

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

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

- Continue to use System Development Charges (SDCs) for land acquisition and construction, and adjust them as necessary to fully fund trail development.

- Grants and donations should continue to be used whenever possible. Numerous programs exist at the regional, state and federal level to assist with natural resource related planning efforts, especially if those planning efforts are related to natural hazard mitigation strategies. In addition to opportunities to obtain funding for the protection and restoration of habitats, opportunities to obtain public natural areas as part of a hazard mitigation/prevention strategy are available.

- On all trails, parks and open space projects look for synergies with other government agencies to share in funding facilities. Partnerships also exist with non-profit organizations such as land trusts.

5. Policies and Recommended Actions

Policies: The following policy is made part of this plan:

1. Trail placement in Kelley Creek Headwaters, as shown on the Urban Growth Diagram, is conceptual and is based on the East Buttes Loop Trail and Scouter Mountain Trail concepts of the Metro Regional Trails Plan, Metro Resolution No. 02-3192.

a. The final trail alignments are subject to negotiation with affected property owners. The City will not require property owners to dedicate land for trails nor will it use condemnation to acquire rights-of-ways for trails.
b. Trail placement will, where feasible, avoid the unconstrained (most developable) parts of properties, and will be located on public property where feasible.
c. Urban Growth Diagram Map No. 1 which shows regional trails shall be amended to reflect changes to conceptual trail alignments in the Metro Regional Trails Plan or changes that occur as a result of future Metro/City trails master planning efforts and to accurately reflect the locations of built trails.

Action Measures: The following actions should be taken to implement this plan:

1. Construction and maintenance of trails shall encourage the removal of exotic (non-native) species and the planting and preservation of native trees and other plants.

2. If the East Powell Butte Loop Trail is constructed adjacent to streams, investigate opportunities for combining stormwater conveyance and management with the multi-use trail.

3. Gresham will seek grant funds from Metro and other sources to help finance the construction of trails.

4. The trails system shall create interpretive educational opportunities that allow residents to experience and understand the diverse ecosystem that they are a part of.

Section 5: Protection of Natural Resources

The following natural features have been identified, mapped and proposed for protection:

- Title 13 Habitat Conservation Areas (UGD Maps 2A & 2B)
- Title 3 Water Quality Resource Areas (UGD Map 2B)
- Areas with steep slopes of 15% and greater (UGD Map 3)

The Habitat Conservation Areas and Water Quality Resource Areas will be protected with the City's Habitat Conservation Area Overlay District Overlay. This overlay is based on Metro's Title 13 Model Ordinance. Steep sloped areas (15% +) will be protected with the Hillside Physical Constraint District Overlay. In addition to these zoning requirements, water quality will be protected through green development practices for stormwater management.

Habitat Conservation Area Overlay & NR Inventory
The HCA Overlay has the following features:

- It offers to applicants who want to develop within the HCA two alternative sets of development standards:
    - Clear and objective standards where the applicant has to meet a number of specific development standards. These include a percentage limitation on the amount of habitat that can be disturbed, depending upon its habitat class rating (high, moderate or low), standards for proposed partitions and subdivisions, and specific mitigation standards for replacing impacted habitat.
    - Discretionary standards that are general guidelines. These basically require the applicant to demonstrate that there is no way to avoid building in the habitat, that the design of the development, after analyzing alternative designs, minimizes impacts to the various

functions of the habitat and that any loss of habitat functions will be mitigated. The discretionary standards also offer more flexibility in regard to the design and location of a mitigation area compared to the more specific mitigation standards found in the above clear and objective standards.

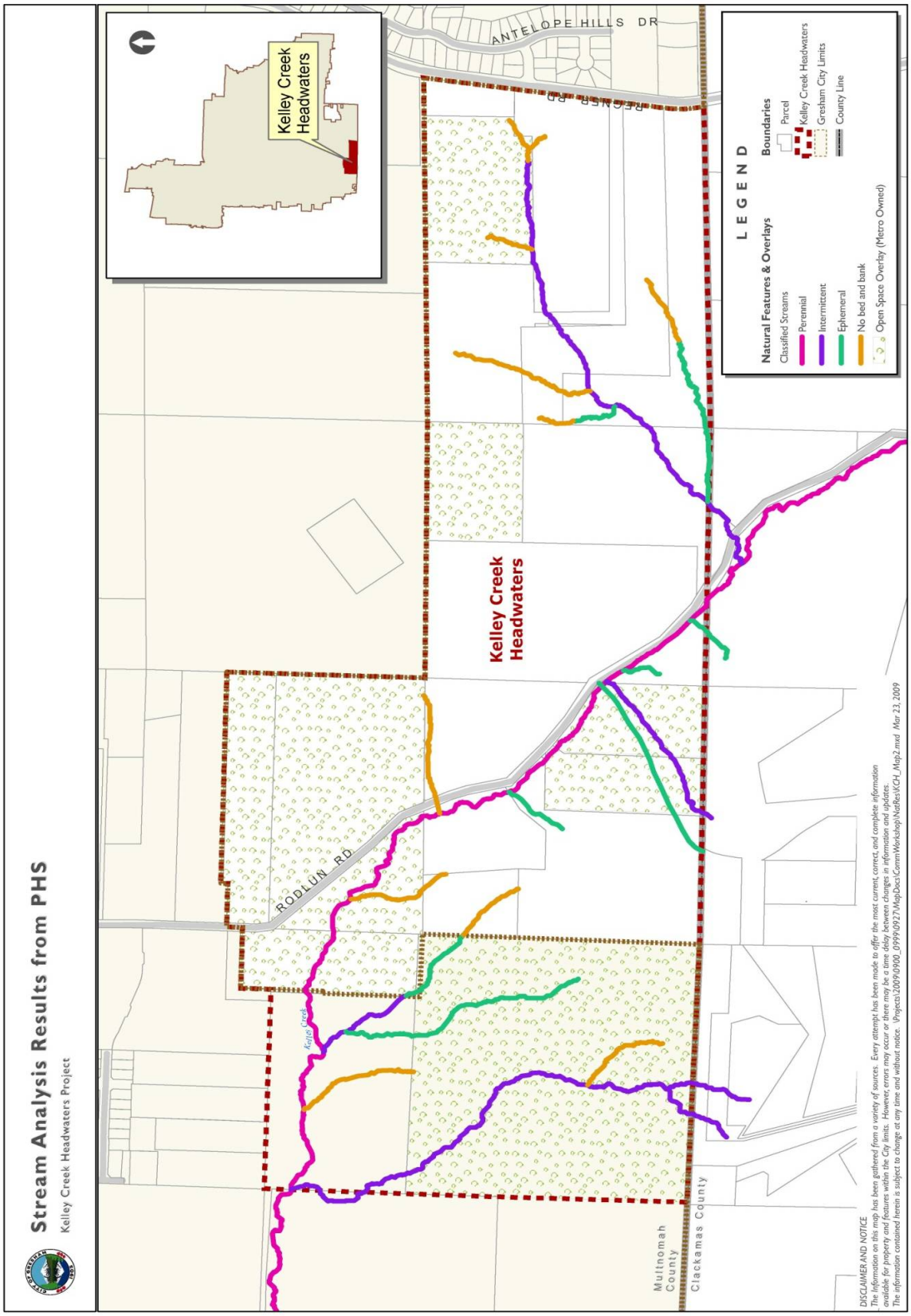
- It has a variance section for properties where the application of the standards would cause an unreasonable hardship and severely restrict their use.
- For development within habitat areas or proposed within 100 ft. of such areas, there is a mapping verification process. This includes a simple process for applicants who believe that the habitat map is accurate and other processes for the correction of mapping errors.
- There is also a list of uses and activities that are exempt from the HCA regulations. These include the continued maintenance of lawns and gardens that are within a habitat boundary, habitat restoration projects, the maintenance or replacement of roads and utilities when no additional incursion into a habitat area is proposed, and minor encroachments (such as a utility shed) into a habitat area that do not exceed 120 sq. ft. of impervious surface.

The Habitat Conservation Area (HCA) Overlay maps (UGD Maps 2A & 2B) show where the HCA standards will be applied. These are the riparian areas of perennial and intermittent streams and publicly owned (by Metro) upland wildlife habitat.

The maps also reflect the results of a natural resource inventory. The previous natural resource inventory was based on laser based topographic information using LIDAR aerial photography. At the September 25, 2008, a number of property owners said that the natural resource maps were showing streams in areas where there were not present. This discrepancy necessitated the need for a new field based inventory and the City hired Pacific Habitat Services (PHS) to conduct it. After obtaining the consent of property owners, PHS visited properties and did the following:

- Checked for the presence of streams, primarily visual evidence of a defined bed and bank.
- Classified streams as perennial, intermittent and ephemeral, using the Oregon Stream Duration Assessment Method. Only perennial and intermittent streams are required to be protected by the HCA and Title 13.
- Checked for the presence of Locally Significant Wetlands, which are defined by the state. These wetlands are required to be protected by the HCA/Title 13 and Goal 5.

The results of the inventory showed that there were streams shown on the LIDA based maps where there were no streams (“no bed and bank”) and some streams were shown as intermittent when they were really ephemeral. The inventory map that shows the results of the analysis of KCH streams is shown below.


Stream Analysis Results from PHS
Kelley Creek Headwaters Project
Kelley Creek Headwaters
ANTELOPE HILLS DR
BRONER DR
RODLUN RD
Kelley Creek Headwaters
Multnomah County
Clackamas County
LEGEND
Natural Features & Overlays
Classified Streams
Perennial
Intermittent
Ephemeral
No bed and bank
Open Space Overlay (Metro Owned)
Boundaries
Parcel
Kelley Creek Headwaters
Gresham City Limits
County Line
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Finally, no Locally Significant Wetlands were found that require protection by the HCA. Instead, some minor "possible wetlands" (less than ½ acre) areas were found that are not regulated.

Hillside Physical Constraint District Overlay
As in the northerly buttes area of the City, the Hillside Physical Constraint District overlay will be applied to steep sloped areas of 15% and greater. This overlay has the following features:

- It limits development on steep slopes by allowing less density than permitted by the underlying zoning (see table below). The greater the slope, the lower the density allowed.
- It limits the amount of tree/vegetation removal and site grading that can occur on development sites.
- It requires soils and geology reports to evaluate slope stability, bedrock/soil conditions, drainage patterns, seismic risk and other geological factors. This requirement also applies to "transition areas" which are areas within 100 ft. of slopes of 15%+.

Approximately 80% of KCH is affected by the Hillside Physical Constraint District. These areas are shown on UGD Map #3. UGD Map #4 shows the location of the slope categories that the overlay references (based on LIDAR topographic data).

The following table lists the categories, the density to be allowed within each category and the amount of privately owned land (excludes Metro open space) in KCH that fall within each category. All properties within KCH will be zoned LDR-7 which allows a maximum density of 6 units per acre. However, as indicated below, substantially less density will be allowed on steep slopes than on level land.

Degree of Slope	**Max. Density (LDR-7)**	**Acres of Private Land**
0 – 14.9% (outside HPCD)	6 units / acre	28 acres
15 – 24.9%	2 units / acre	26 acres
25 – 34.9%	1 unit / acre	22 acres
35% +	1 unit / acre (must be transferred to less than 35% sloped areas)	45 acres

Green Development Practices
Stormwater management goals rely on Green Development Practices on private property and within public streets to manage increases in stormwater flow rates and volumes, facilitating infiltration and evapotranspiration. Green Development Practices are a set of techniques that mimic and incorporate the predevelopment (natural) hydrology of a site into future development. Green Development Practices include site management techniques that:

- Minimize disturbance to existing soils, tree canopy, and other sensitive natural resource features.
- Minimize impervious surfaces, to reduce the production of surface runoff.
- Manage runoff through techniques that use natural areas and landscaping to treat, retain, attenuate, and infiltrate stormwater within each development site instead of using traditional piped collection and conveyance systems.

An approved Stormwater Management Plan, incorporating green development practices, will be required in the new KCH area. The City's *Green Development Practices for Stormwater Management* provides guidance to developers on how to implement green practices on development sites. Stormwater management plans provide a mechanism for the City to review how development proposals for stormwater facilities meet the requirements for stormwater management and green practices. The intention is that the stormwater management plans be submitted and approved along with the site plan or preliminary development plat approval.

Within the HCAs, improvement efforts will be implemented to increase wildlife support and riparian function. Protecting and enhancing the tree canopy adjacent to riparian areas will also be an important component of the plan to meet expected Total Maximum Daily Load (TMDL) limitations for temperature in the Kelley Creek Headwaters basin.

Coordination is needed between Gresham and the new City of Damascus regarding stormwater system planning and design guidelines for the portion of the area in Damascus (south of Multnomah County). A consistent approach regarding stormwater conveyance standards, development setbacks, allowed uses in HCAs, and other issues related to stormwater management should be identified in an intergovernmental agreement.

The City of Gresham will not be responsible for NPDES and TMDL compliance for KCH until areas are annexed into the City.

Public stormwater infrastructure that benefits the entire KCH area includes the installation of stormwater facilities to manage stormwater runoff from approximately 3,000 feet of Rodlun and Regner roadway improvements. A culvert and stream improvement project is proposed to address ongoing erosion, stream stability, and riparian function.

Natural Resources Improvements

Throughout the Kelley Creek watershed, there are issues of noxious weed growth that needs to be addressed, including Himalayan blackberry, English ivy, clematis, English holly, and reed canary grass. In addition, improved streambank stability, stream shading, and native plant detritus inputs for macro-invertebrate support and salmon feeding would be realized with increase native tree and shrub cover.

The City will undertake the following in order to improve habitat conditions:

1. Include the KCH area into its volunteer based habitat restoration efforts as the area annexes into the City;
2. Seek grants and donations to be used for restoration projects should opportunities arise; and
3. Consider, where possible, combining restoration projects with City utility projects in order to leverage funds and minimize costs.

The highest priority for improved stream conditions has been identified on a Metro-owned property at 8282 SE Rodlun Road. An undersized culvert under a driveway restricts flow in Kelley Creek mainstem to the extent that storm flows have frequently overtopped the banks, spilled over the driveway, and caused

erosion of the streambank. Past efforts to address the ongoing erosion lead to heavy armoring of approximately 100 feet of the bank with concrete and asphalt chunks. The proposed improvement project would address the undersized culvert, remove the armoring, re-grade the slope, add a terrace shelf along this stretch of stream, improve access to the historic floodplain, and add native tree and shrub cover.

Section 6: Annexation

Before development of a property in Kelley Creek Headwaters can occur, it must be annexed into the City. Because of its relatively small area and limited development potential, unlike Pleasant Valley and Springwater, the City will not take a pro-active role in encouraging property owners to annex. Rather it will wait until individual property owners or groups of property owners approach the City and request annexation.

Gresham's procedures for annexation comply with state and Metro requirements. In order for a property to be eligible for annexation, it must be contiguous to the City limits. Multiple parcels and property owners can be processed as a single application as long as the parcels form a contiguous area that abuts the City limits. There are two ways for a property owner(s) to initiate or start the annexation process:

1. An expedited annexation application can be made if submitted with petitions that have the written consent of 100% of property owners and at least 50% of the registered voters within the affected area. No public hearing is required and City Council makes a decision on its consent or business agenda. A 20 day public notice of the decision date is required.
2. A public hearing annexation application can be made if submitted with petitions that have the written consent of property owners of more than 50% of the land area and at least 50% of registered voters within the affected area. A 45 day public notice of the City Council hearing is required.

An annexation application must address the approval criteria in Appendix 1.000 of the Community Development Code, including applicable state and Metro criteria. In regard to the public facilities (sewer, water, roads, etc.), the criteria require that either:

1. That funding mechanisms to construct needed public facilities are in place; or
2. A public facilities agreement has been executed that will guarantee the funding of public facilities prior to or concurrent with a development permit application.

As shown on the Urban Growth Diagram maps, the applicable land use districts will be assigned to properties at the time of annexation. Development approvals must be obtained prior to actual land divisions or construction of improvements on private properties. Once construction of the private and public improvements has been completed and final inspections/approvals have been obtained, a development can be occupied.