

Rock Creek Comprehensive Plan City of Happy Valley

Adopted June 5, 2001

AMENDED February, 2003, Ord. 255
AMENDED October, 2007, Ord. 363

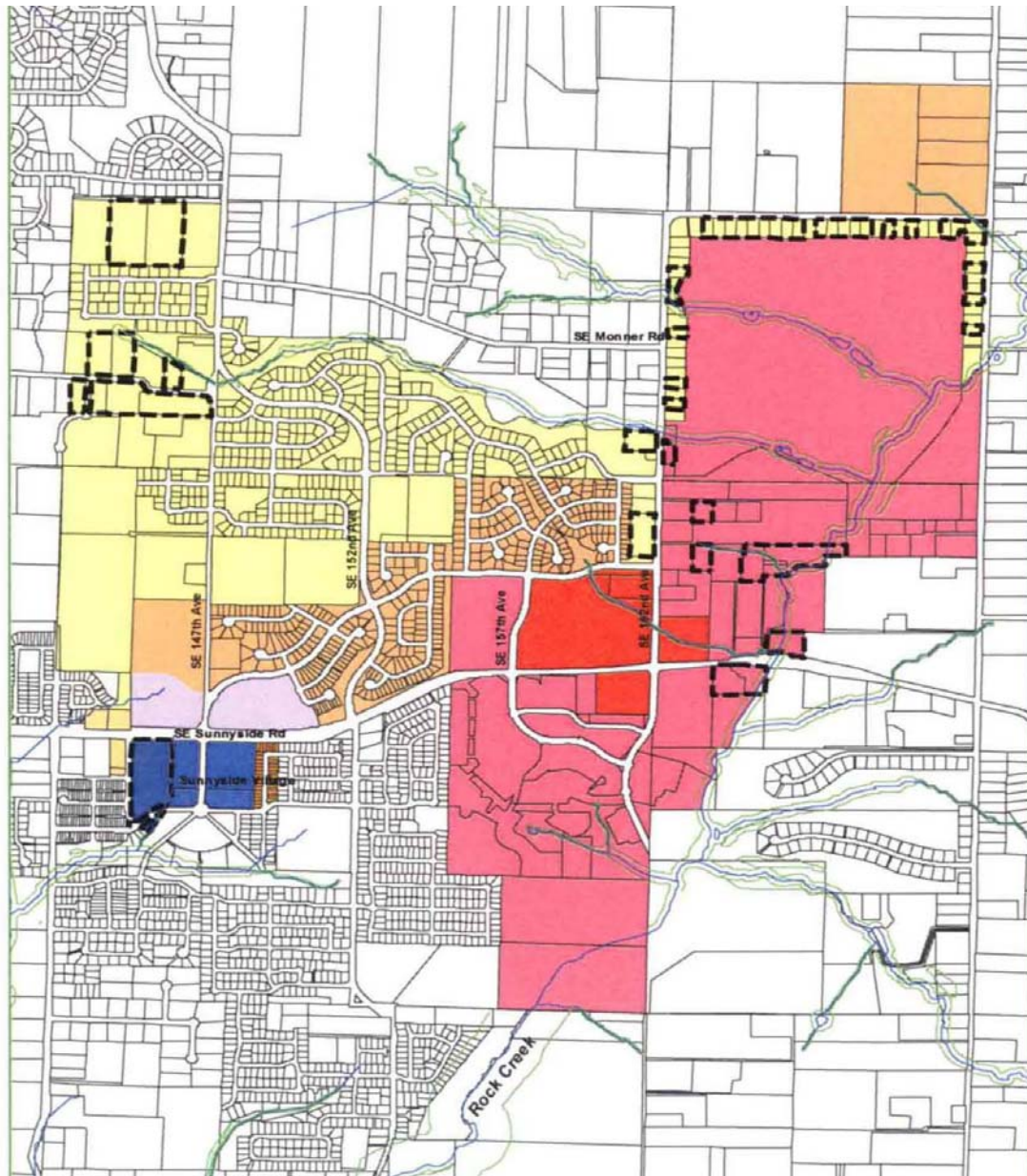


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The Rock Creek Comprehensive Plan illustrates a cohesive concept for new neighborhoods, employment opportunities, transportation connections, parks, and open spaces in the Rock Creek area. It has been created to guide the transition of the area from its rural character to a livable addition to the City of Happy Valley. The plan is a vision for the area that has been prepared through the collaboration of citizens, property owners, and public agencies.

Highlights of the Rock Creek Comprehensive Plan include:

- *A variety of housing choices* Ranging from village-style neighborhoods south of Sunnyside Road to single-family neighborhoods adjacent to Happy Valley
- *Mixed use and job opportunities* Focused near key intersections with Sunnyside Road
- *Civic uses* Located where a community center, church or other civic use can provide a focal point for the community
- *Protected natural areas* To implement regional "Title 3" requirements for stream corridors, and also protect steep slopes
- *Additional open space areas* To preserve and enhance additional natural areas for both environmental and scenic benefits
- *Park recommendations* For a community park and the provision of smaller parks
- *Stormwater recommendations* For a coordinated sub-basin approach to detention and water quality facilities
- *Coordinated public facilities* For water and sanitary sewer infrastructure

Purpose

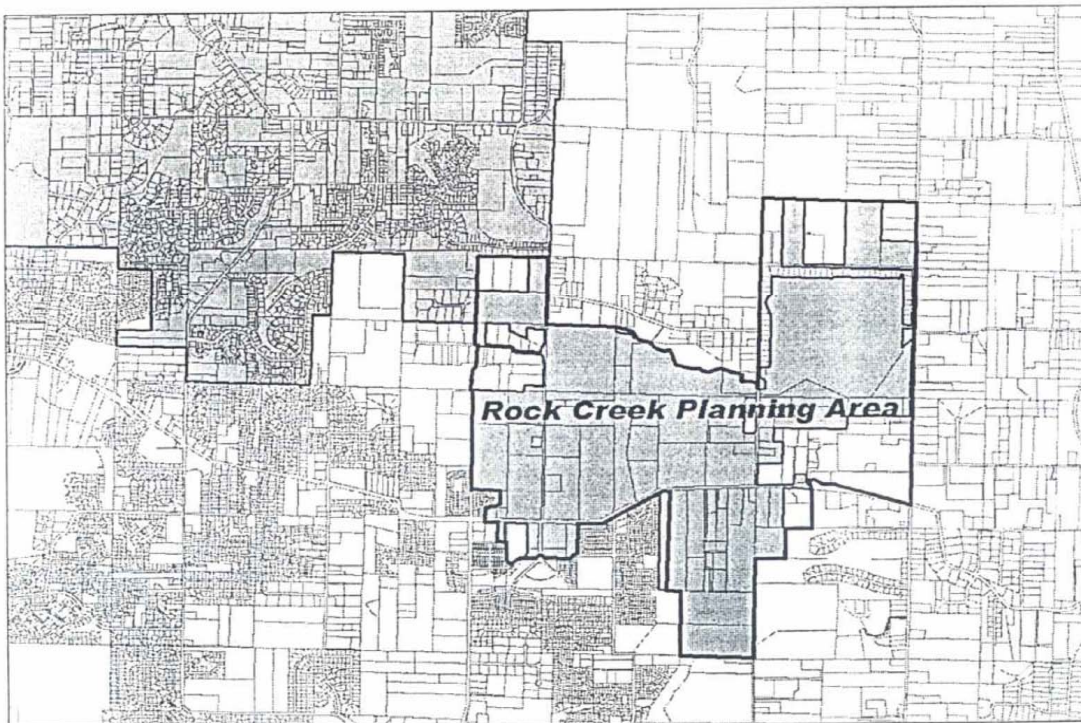
The purpose of the Rock Creek Comprehensive Plan is three-fold:

- To establish a coordinated land use, transportation, natural resource, and public facilities plan for the Rock Creek area
- To ensure that the Rock Creek area is developed in a manner compatible with the established character of the City
- To conform with Metro requirements and recommendations as stated in the Metro Urban Growth Management Functional Plan

Planning Area

The Rock Creek area encompasses approximately 10 12 acres, the majority of which is within the Happy Valley city limits. The area is adjacent to Sunnyside Village and the southeast edge of the Portland Metropolitan Urban Growth Boundary.

Figure 1
Vicinity Map



Existing conditions are illustrated in Figures 2 and 3. Selected features of the area include:

- The Rock Creek stream corridor flows through the Planning Area and is the most significant natural resource area.
- Four west-east flowing tributaries to Rock Creek exist, the largest of which is near the north boundary of the planning area.
- Topography ranges from nearly flat (south of Sunnyside Road) to over 30 percent in slope (north of the Sunnyside Village commercial areas).
- Land uses are primarily rural residential in character. Smaller rural lots (e.g., two to five acres) are clustered along SE 162nd Avenue.
- The Pleasant Valley Golf Course is included in the planning area.
- The area includes a portion of Sunnyside Village that is within the Happy Valley city limits.
- Regional power and natural gas transmission lines traverse portions of the area.
- Two-lane rural roads with soft shoulders and roadside drainage ditches are typical.
- There are spectacular views of Mount Hood and the Cascades, particularly from higher elevations.

Rock Creek Area Planning Requirements

The following summarize key assumptions and selected Metro requirements that guided the development of this document:

- Provide for residential densities of at least 10 dwelling units per net developable residential acre.
- Demonstrate measures that will provide a diversity of housing stock to fulfill the state housing requirements as defined by ORS 197.303.
- Demonstrate how residential developments will include affordable housing without public subsidy. Affordable housing is defined in this document as housing that is affordable to households with incomes at or below area median incomes for home ownership and at or below 80 percent of area median incomes for rental as defined by US Department of Housing and Urban Development for the adjacent urban jurisdiction.
- Provide for sufficient commercial and industrial development for the needs of the area to be developed.
- Provide a conceptual transportation plan consistent with the RTP and consistent with the protection of natural resources as required by Metro functional plans.
- Provide for the identification, mapping and funding strategies for protecting areas from development due to fish and wildlife habitat protection, water quality enhancement and mitigation, and natural hazards mitigation.
- Provide a conceptual public facilities and services plan, including rough cost estimates and financing strategy for those costs (sewer, water, storm drainage, transportation, fire and police protection facilities, and parks).

Household and Employment Targets

The Rock Creek Comprehensive Plan is based in part on the household and employment forecasts from the *Sunnyside Road Environmental Assessment*. The Rock Creek planning work is intended to be consistent with, and build on, the assumptions and transportation analysis completed for the Environmental Assessment. The following table lists the growth assumptions from the Sunnyside Environmental Assessment which were used in the Rock Creek Plan.

Table 1
Year 2020 Forecasts from the Sunnyside Environmental Assessment
Adjusted for Land Area in the Rock Creek Planning Area

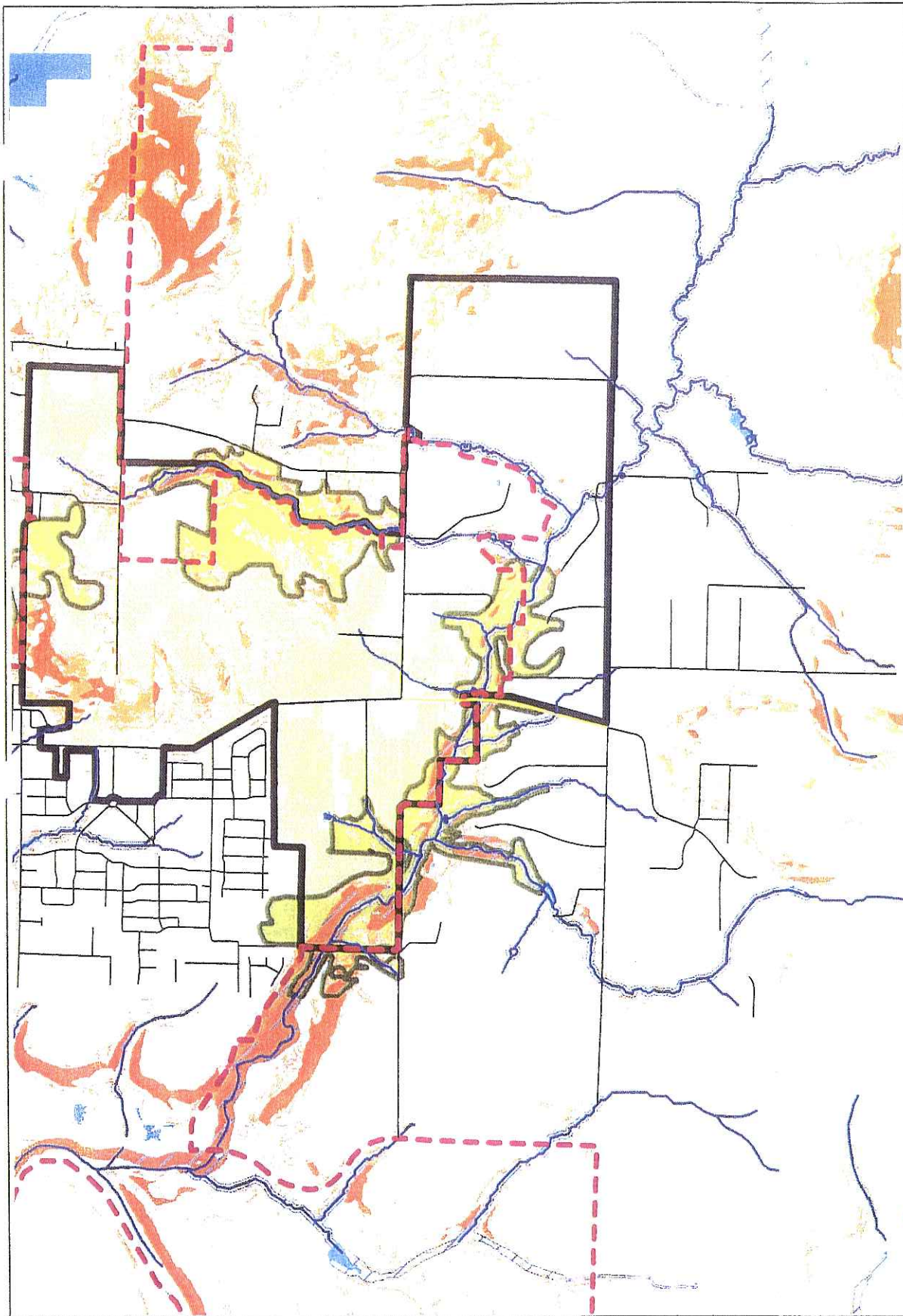
<i>Households</i>	<i>Retail</i>	<i>Other</i>	<i>"Total</i>
	<i>Employment</i>	<i>Employment</i>	<i>Employment</i>
2,932	42	577	619

Rock Creek Community Association Comprehensive Plan Concepts

The Rock Creek Community Association (RCCA) is the community planning organization that covers the Rock Creek area. In 1997, the RCCA developed a set of comprehensive planning concepts that outline the goals, issues, objectives, and planning principles that should guide the area. The following goals are stated in the RCCA's Comprehensive Plan Concepts:

Goals:

1. To develop a transportation system that allows for movement between neighborhoods.
2. To develop a grid system that encourages pedestrian and bike traffic by providing sidewalks and bike paths.
3. To create a system that will connect parks and greenspaces so wildlife can safely travel from one greenspace to another.
4. To plan for parks that are relatively flat and which allow for full and active use.
5. To broaden our economic base by identifying areas that will support light industrial development.
6. To retain and build around natural features wherever possible.
7. To allow for a mixture of housing choices; from multifamily, to large lot, to mini-farms.
8. To plan for neighborhood commercial development that will serve the local neighborhoods.
9. To anticipate growth in our schools, so that additions can be made as needed in an atmosphere of good planning, rather than crisis management.
10. To plan for mass transit to serve our area and the Town Center of Damascus.



Legend

- Unconstrained Buildable Lands
- Constrained Buildable Lands
 - Forest/ Riparian Area
 - 15 - 20% Slope
 - 20 - 25% Slope
- Non-Buildable Lands
 - Title 3 River
 - Title 3 Wetland Buffer
 - Title 3 Riparian Area
 - Greater than 25% Slope
 - Committed Uses
 - Planning Area Boundary
 - Urban Growth Boundary

Rock Creek Area

Existing Conditions

Rock Creek Comprehensive Plan
 Adopted June 5, 2001

[h/rockcreek/gis/base_map](http://rockcreek/gis/base_map)

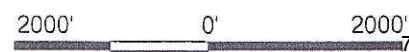
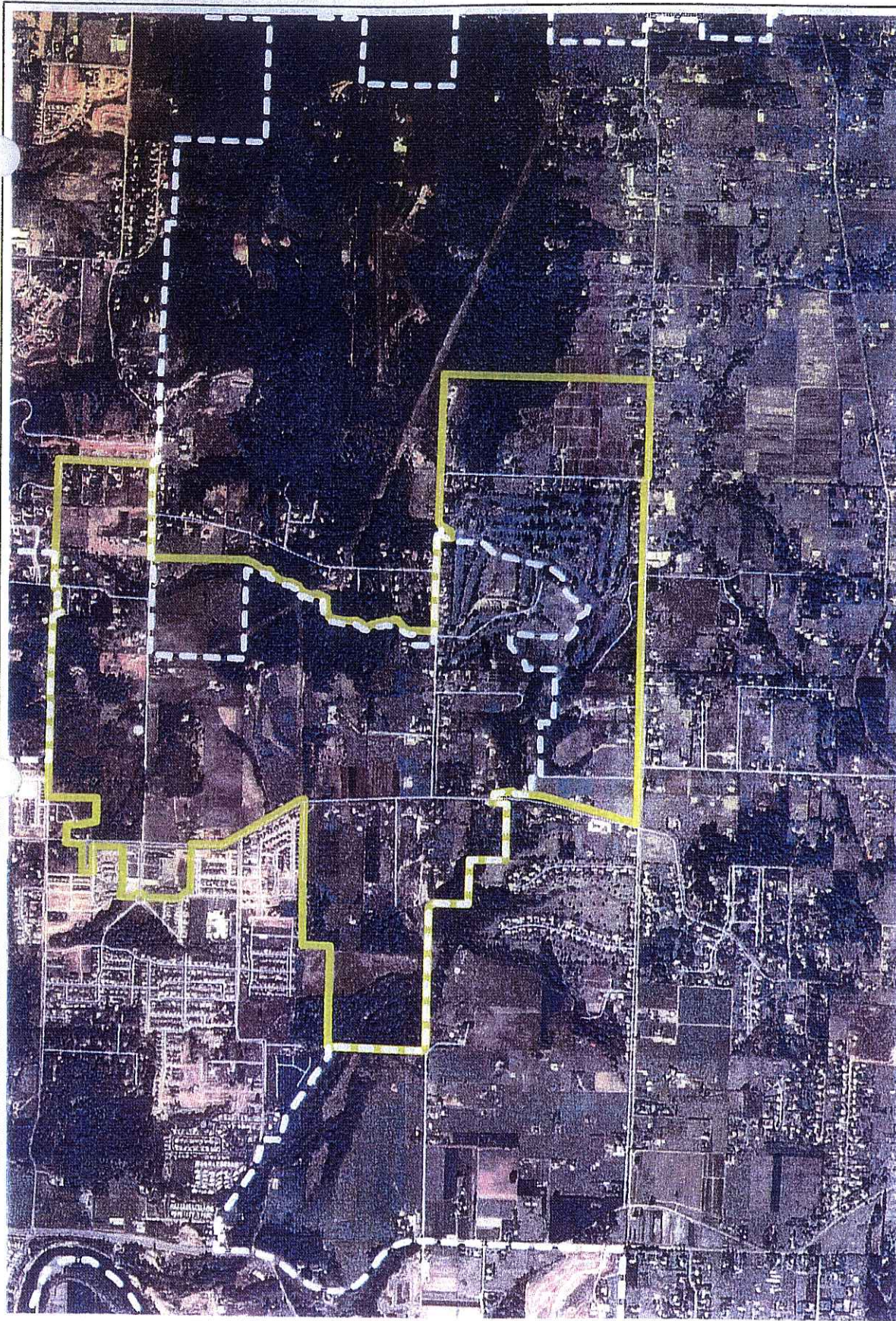


Figure 2



Legend

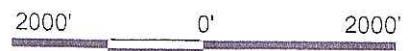
-  Planning Area Boundary
-  Urban Growth Boundary

Rock Creek Area

Aerial View

Rock Creek Comprehensive Plan
 Adopted June 5, 2001

[h://rockcreek/gis/aerial map](http://rockcreek/gis/aerialmap)



The Land Use Plan (Figure 4) is intended to support the creation of a new community of neighborhoods, commercial centers, and open space areas that are linked together by a complete transportation network. The plan emphasizes a variety of housing types, a mix of uses, pedestrian-oriented design, and protection of sensitive natural resource areas.

The Land Use Plan map includes the following ten land use types:

- | | |
|----------------------------|--|
| 1. Low Density Residential | 2 to 4 dwelling units (du)/acre |
| 2. Hillside Residential | 5 to 8 du/acre |
| 3. Mixed Use Residential | 6 to 24 du/acre, with 12 du/acre average
Neighborhood retail allowed |
| 4. Mixed Use Commercial | Medium-high density residential allowed
Office and retail required |
| 5. Mixed Use Employment | Office or neighborhood retail required
Medium density residential allowed |
| 6. Village Office | Based on Sunnyside Village zone (see ZOO Section 1600) |
| 7. Village Apartment | Based on Sunnyside Village zone (see ZOO Section 1600) |
| 8. Village Commercial | Based on Sunnyside Village zone (see ZOO Section 1600) |
| 9. Village Townhouse | Based on Sunnyside Village zone (see ZOO Section 1600) |
| 10. Civic Use | Examples: Community center, library, church |

Table 2
Land Area of Plan Districts

	Gross Developable Acres"	Percent
Low Density Residential	158.4	18.7%
Hillside Residential	184.1	21.7%
Mixed-Use Residential	273.3	32.3%
Mixed Use Commercial	36.0	4.3%
Mixed Use Employment	10.4	1.2%
Civic Use	4.0	.5%
Natural Resource/Constrained Land:'	149.4	17.6%
Open Space Opportunities	31.2	3.7%
	846.8	100.0%

*Does not include committed lands and collector/arterial roads. These acreages reflect the colored land use districts on Figure 4.

Low Density Residential

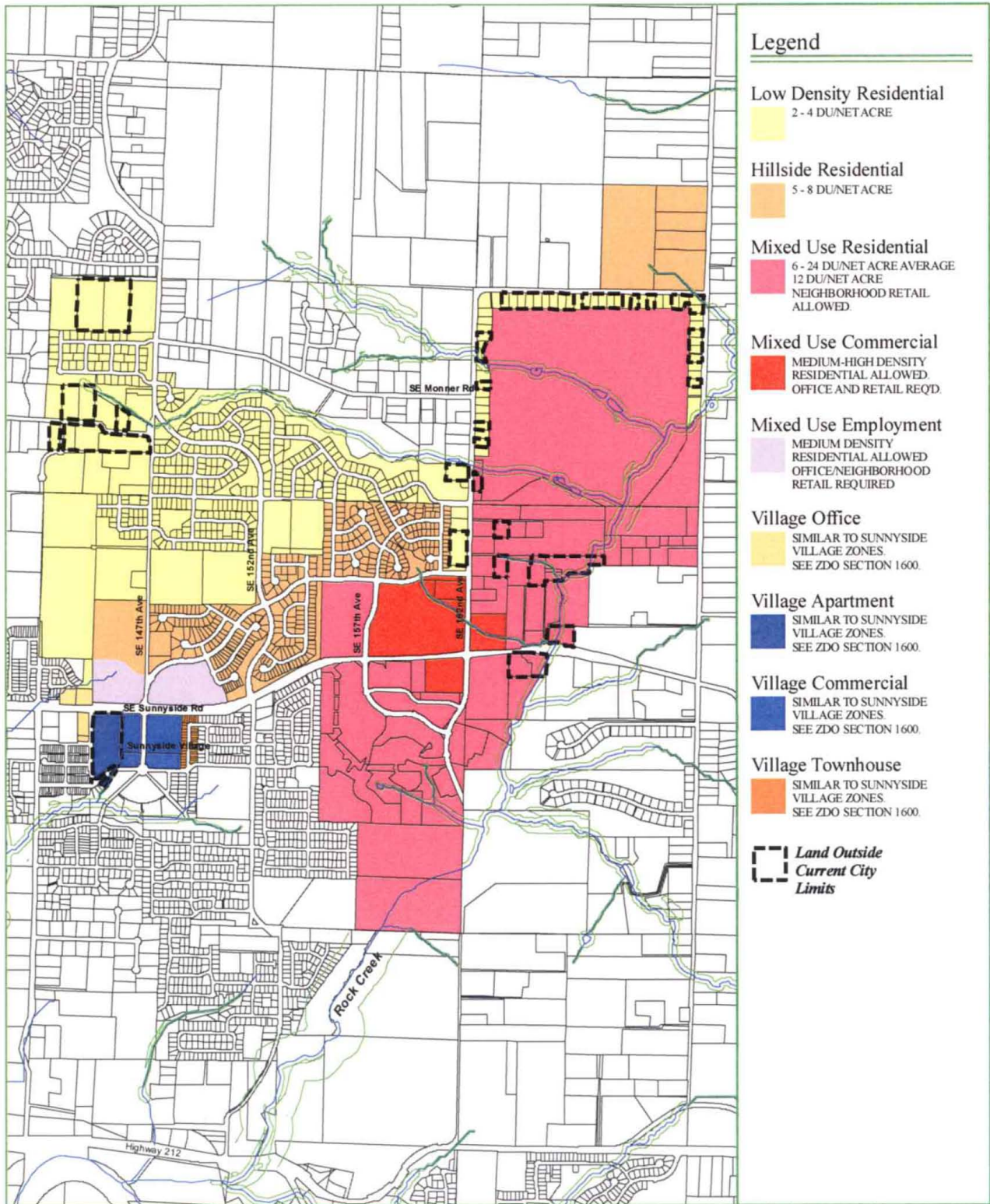
Intent These areas are intended for primarily single family detached housing at up to four units per acre. They provide transition to adjacent areas of existing large lot housing and natural resource areas.

- Characteristics*
- Major tree groves should be protected and integrated into designs.
 - Local streets should be reasonably narrow and connected to form neighborhoods.
 - Lots should front onto local streets. Side lot orientation may be appropriate along portions of the collector streets.

Hillside Residential

Intent Due to slope limitations north of Sunnyside Road, this area is intended for a mix of single family detached and townhome clusters at 5 to 8 units per acre. The proximity of this area to transit and services along Sunnyside Road make it appropriate for the proposed densities.

- Characteristics*
- A mix of housing is encouraged.
 - Local streets, alleys, paths, and stairs should be included to create a "fine grain" of pedestrian connections on the hillside.



Rock Creek Area

Land Use Plan

Rock Creek Comprehensive Plan
 Adopted June 5, 2001
 Amended October, 2007, Ord. #363

Figure 4



Mixed Use Residential

Intent

The relatively flat area south of Sunnyside Road is intended for a wide variety of residential uses, with an overall average of 12 units per acre. This area supports senior housing, apartments, townhomes, and a variety of single-family detached housing densities. Neighborhood retail uses are permitted and intended to provide employment and neighborhood shopping opportunities. The southern neighborhoods should be anchored by a civic use such as a senior center, community center or church.

Characteristics

- The Mixed Use Residential area is intended to have *some* of the characteristics of Sunnyside Village, including:
 - Variety of housing, with similar residential types facing each other
 - Network of connected local streets with a clear block pattern
 - Orientation of buildings and entries to streets and public spaces
 - Civic uses and parks as focal points for the community linked by trails and pedestrian/ bike paths
 - Alleys and recessed garages
 - A network of pedestrian paths in addition to the sidewalk system
 - Overall priority for pedestrian orientation
 - Detailed design of building facades (e.g., front porches, window bays)
- Apartments should be clustered (in clear block patterns) adjacent to the intersection of SE 157th and SE 162nd and Sunnyside, and adjacent to the Civic Use area.
- Residential density should transition away from the apartment areas.
- Alleys are encouraged throughout to provide access to lots that will front on SE 162nd and SE 157th Avenues, and Sunnyside Road.
- On-Street parking should be allowed on SE 162nd and SE 157th Avenues, south of Sunnyside Road.
- Neighborhood parks should be provided as private parks through the subdivision process.
- The proposed community park (approximately 31 acres) should be located with direct frontage and access to one or more collector streets.
- Stormwater/water quality facilities should be integrated into the neighborhood designs, particularly in the areas near the Rock Creek corridor.
- The natural gas line corridor provides a key off-street multi-use path opportunity.
- Development of the golf course property will be done in a manner that buffers existing residential uses and natural resources.

Mixed Use Commercial

Intent

The area north of Sunnyside Road between SE 157th and SE 162nd is envisioned as a mixed use district incorporated into a master planned community. Office and retail uses are permitted and intended to provide employment and neighborhood shopping opportunities serving the area. Various attached housing options are included, with an overall maximum density of about 24 units per residential acre. A civic use and community "green" or plaza (e.g., mini park) would anchor the district.

- Characteristics*
- The large acreage of the existing parcels makes this property ideal for a master planned approach to implementing the district's intent.
 - The mixed *use* provisions and size of this district make it the area with the most potential for providing employment opportunities within the Rock Creek area.
 - The civic use and community green or plaza will establish a key public space for the area.
 - The east-west collector along the north edge of the district should be developed as a two lane street.
 - Curb extensions, traffic circles, and on-street parking should be used strategically to enhance the pedestrian quality of the streets.

Mixed Use Employment

Intent The area directly north of Sunnyside Road and adjacent to SE 147th Avenue is envisioned as a district with a mix of employment, medium density residential and neighborhood-scale retail uses. Office and other employment should be the primary *uses* found in this area with supporting housing at about 24 units per acre. Other allowed *uses* include neighborhood retail, civic uses, parks and wireless facilities.

- Characteristics*
- Buildings should front either Sunnyside Road, SE 147th or local streets with parking to the side or behind the building. Parking should be screened from Sunnyside Road and from neighboring residential *uses*.
Access to uses will be from SE 147th or from local streets.
 - Retail uses should primarily serve the surrounding neighborhoods and front either SE 147th or local streets for the best exposure and easy access with on-street parking available.
 - Streets will be pedestrian friendly to encourage walking.

Civic Uses

Intent Civic uses are an important part of creating a "complete" community. Examples of uses for the two planned civic locations include a senior center, community center, library, post office, and places of worship.

- Characteristics*
- The locations shown on the Land Use Plan are general, but convey the key concept that central and highly visible locations are important.
 - A public space (e.g., plaza, park) should be located adjacent to the civic *use*. The size and nature of the space will depend upon the specific *use*.
 - The structure should face the street, parking should be located to the side or rear.

Existing Natural Resource Values

Wildlife Habitat

Wildlife habitat values are greatest in the areas of the planning area that have experienced the least disturbance and offer the greatest variety in terms of available habitats. However, in even some of the most heavily disturbed areas, opportunities for resource enhancement are available.

The Rock Creek corridor retains the greatest habitat value in terms of structure, diversity, and connectivity. In this densely forested stream corridor, forage, cover, and nesting opportunities for amphibians, reptiles, small mammals, deer, coyote, and a variety of bird species exist. The Rock Creek corridor provides the most significant north-south migration route available to local wildlife that use the project area.

Of the four primary drainages that form western tributaries to Rock Creek, three have been heavily impacted by human activities. The northernmost drainage (shown as T1 in Figure 9), which originates in an off-site forested area and flows largely off site, has been culverted to flow through the golf course area, in the northeast corner of the general planning area. Similarly, the drainage (shown as T2 in Figure 9) located immediately south of the northernmost drainage flows through a variety of land types, including a coniferous forest, prior to being culverted through a portion of the golf course. For both of these drainages, moderate to high quality upper stream reaches are effectively isolated from the Rock Creek corridor by the existing culverts. The off-site forested stream resource areas are anticipated to support a variety of amphibians, small mammals, and bird species.

The next drainage to the south (shown as T3 in Figure 9) has also been affected by local land uses and has marginal natural qualities near its headwater area. However, the lower portion of this drainage flows through a mixed deciduous/coniferous forest, which does provide some habitat value for wildlife migrating to and through the Rock Creek corridor. The southernmost tributary (shown as T4 in Figure 9) provides high quality habitat, as it flows through coniferous forest.

The northeastern portion of the planning area is dominated by the presence of a golf course and semi-urban development (as described above). Although the golf course itself provides only marginal wildlife habitat, due to a lack of cover, structure, and diversity, lands located to the east and west of the golf course provide high quality habitat. Currently, opportunities for migration of wildlife between the high-quality off-site forest and Rock Creek are limited by the lack of cover and/or open stream channel between the two resource areas. Where culverted underneath the golf course, drainages T1 and T2 lack any measure of a functional riparian area. With the exception of the drainages, the majority of the northeastern planning area is dominated by golf course greens, ornamental vegetation, and developed areas.

The central portion of the planning area contains both rural/agricultural lands and a significant coniferous forest. In addition to several smaller forest/meadow complexes, the central portion of the planning area is dominated by a western hemlock and Douglas fir forest, which is bisected by a Bonneville Power Administration easement and by tributary T2. Due to the variety of habitats in this area (agricultural fields, coniferous forest, stream corridors), wildlife habitat is present for small mammals, deer, coyote, and birds. Despite the variety of habitats available, the existing level of site disturbance has resulted in the simplification of available habitats and nesting/escape cover for most species is thought to be limited to the forested area. Foraging opportunities do exist in association with the rural/agricultural areas.

The northwestern portion of the Rock Creek area is dominated by semi-urban development and rural agricultural land use. A western hemlock/Douglas fir forest lies in relatively close proximity to the headwater area of tributary T2. This forested area extends off-site and is part of a larger coniferous forest community. Passerines, small mammals, coyote, deer, and raptors are likely to frequent this forested zone. Although tributary T2 has been degraded in this area, the rural agricultural nature of this portion of the Rock Creek area supports small mammals, visiting deer, and a variety of bird species.

The southern portion of the planning area is dominated by a combination of open meadow habitat and a coniferous riparian forest. This area has perhaps the greatest, least disturbed habitat value of the entire site. Although relatively small in terms of land mass, the area is of high quality and provides a combination of open water (stream), open meadow, and coniferous forest habitat. In addition, Rock Creek flows through a steep canyon in this area, thus adding a level of habitat diversity and complexity not found elsewhere. Amphibians, reptiles, small mammals, songbirds, raptors, and occasional coyote and deer are expected to frequent this portion of the site.

Fish Habitat

Rock Creek Corridor

A natural obstruction to fish passage occurs approximately one mile above Rock Creek's confluence with the Clackamas River. The obstruction, which is a natural 22-foot high waterfall, appears to prevent fish passage to the upper reaches of Rock Creek. However, the use of the upper reaches of Rock Creek by anadromous salmonids has not been ruled out by the resource agencies.

However, down stream of the obstruction, steelhead, coho salmon, and cutthroat trout are known to utilize Rock Creek for habitat. Other species known to be present in Rock Creek below the falls include: Chinook, Pacific lamprey, redbreast shiner, speckled dace, long-nosed dace, northern pike minnow, large-scale sucker, large-mouth bass, pumpkinseed, reticulate sculpin, torrent sculpin, and prickly sculpin.

Although apparently isolated from downstream habitats, high quality fish habitat is found in portions of the Rock Creek corridor that flow through the planning area. These reaches of Rock Creek support resident fish, including cutthroat trout (pers. Com., ODFW, 1999). However, the culvert that passes Rock Creek stream flow underneath Sunnyside Road may present a fish passage concern due to velocity and minimal depth issues.

Although the west-east tributaries T1 and T2 provide areas of high quality fish habitat, mixed with marginal or poor quality areas, significant impediments to fish passage are found in the lower reaches of T1 and T2, where the streams are culverted beneath the golf course. T2 also faces a fish passage concern in the vicinity of the BPA easement, where a poorly designed culvert is located. T3 habitat areas are degraded and lack a quality riparian zone; however the lower reaches of T3 and almost all of T4 provide habitat values both in-stream and in terms of the riparian corridor.

The northeastern portion of the planning area currently offers very poor fish habitat, as is described above. The golf course culverts effectively separate the high quality forested stream corridors to the west from the Rock Creek corridor to the east.

The central portion of the area includes the middle reaches of tributary T2. As described above, this portion of T2 offers high quality forested riparian habitat. Fish habitat opportunities in this area are thought to be good, although in addition to the adjacent golf course culverts, the BPA easement corridor is of concern.

The northwestern portion of the area contains the headwater area for T2. In this reach, the stream has been heavily affected by development and provides marginal habitat value.

Resource Connectivity

Connectivity is an important component of wildlife habitat preservation and management. Few species can exist in isolated pockets and many require more than one habitat type for their existence (e.g., nesting in wooded areas, but requiring open fields near water for foraging). Accordingly, corridors that provide access to a variety of natural areas or habitat types are an essential part of successful natural resource planning.

An evaluation of the planning corridor as a whole, as well as an evaluation of the greater area in which the planning area is located, suggests several locations where opportunities exist to improve connectivity. The following issues are significant from a connectivity standpoint.

Rock Creek is the dominant natural resource feature within the planning area. The creek weaves in and out of the eastern edge of the planning area, providing a north/south connection from the Clackamas River to the northern boundary of the planning area. The corridor is characterized by a dense and diverse forest community.

The Rock Creek corridor is one of the few north/south connections that is not completely blocked by the line of development associated with Sunnyside Road. Accordingly, preservation of this corridor should be considered a high priority from a natural resource standpoint.

As previously mentioned, tributaries T1-T4 drain into Rock Creek from the west. Although currently fragmented and interrupted, these waterways likely provided strong west-east corridor functions in the past. Due to the fact that these corridors provide a physical linkage between Rock Creek and high quality forested resources, the corridors are still considered to have significant potential to provide for functional wildlife movement and dispersal activities. Corridor interruptions are of the type that could be improved to restore a measure of effective connectivity.

Lands located to the north and west of the planning area are characterized by large, extensive forested areas. Maintaining connections between on-site resources and these large forests should be pursued to ensure wildlife species survival and provide wildlife access to on-site water resources.

Water Quality

Water quality data has not been collected for the on-site west-east drainages. However, water quality data available for Rock Creek from ODFW indicate that general water quality conditions, in terms of dissolved oxygen content, turbidity, temperature, and nutrient levels, are relatively good.

Due to the fact that the majority of the planning area is currently stabilized with vegetation, the only obvious sources of potentially significant erosion and sedimentation are found in conjunction with the recently logged southwest corner of the project site and other areas where steep slopes are found (if disturbed in the future). In terms of nutrient enrichment, the golf course, local agricultural *uses*, and domestic residences (lawns etc.) are the most likely existing nutrient sources.

Aesthetic Value (Greenspaces and Trails)

Natural areas play an essential role in the quality of life for residents. Greenspaces and trail systems can fill practical, aesthetic and recreational functions for the residents of the planning area. For instance, trees and vegetation can provide visual buffers for roads, businesses and neighbors, as well as potentially providing separation between communities or neighborhoods. While the greenspaces provide the necessary separation, the trails can provide equally important connections.

However, it is important to remember that, while natural resources provide an amenity for residents, they provide essential habitat for fish and wildlife. Accordingly, when planning opportunities for human interaction with natural areas, it is important that the human uses be designed in such a manner that they protect the existing ecosystem where possible. Accordingly, aesthetic and recreational design options should focus on areas not intended to serve a wildlife connectivity function, or should, at a minimum, carefully constrain human activities within those areas.

A large area in and around the Rock Creek drainage is proposed for greenspace because of existing regulatory constraints and the prime value of the area for wildlife habitat. This is particularly true where the creek flows through the very southern portion of the planning area. The creek in this location not only offers a great diversity of wildlife habitats, but it may have potential habitat for threatened and endangered anadromous fish species.

The tributaries that flow into Rock Creek from the west provide the biggest opportunity for creating and augmenting linkages. Of particular value are the potential linkages that could be provided by daylighting the two drainages that cross the golf course property in the northeast corner of the planning area. These two connections could tie Rock Creek to the large forested area that covers much of the area to the north of the planning areas, as well as the northern portion of the planning area itself. An additional opportunity for providing potential greenspace linkages includes the opportunity to connect the forested northern portion of the planning area to the forested area to the west of the planning area.

The layout for the green space planning are as suggests that the greenspaces in the interior of the planning areas are more suitable for human focused activities (i.e., family parks, ball fields, pedestrian and bike paths). The greenspaces around the perimeter of the planning areas are more conducive to wildlife needs. Accordingly, trails and paths in these areas should be sited very carefully.

Resource Enhancement Opportunities

Opportunities for resource enhancement are found primarily along the three northern Rock Creek tributaries. In these areas, the existing streams have either been culverted beneath the ground for great distances or have had the functional riparian area removed. Restoration of these drainages would provide improved riparian habitat, as well as strong wildlife corridors for species moving between Rock Creek and the large forested tracts located to the north and west of the planning areas.

In addition to restoring historic corridors associated with tributary drainage areas, opportunities to further enhance and protect the Rock Creek corridor should be considered. The integrity of the Rock Creek corridor should be protected, as it serves as the primary north-south movement corridor for fish, wildlife, and bird species.

Opportunities for resource restoration and protection must be balanced with the need for residential development, transportation, recreation, and pedestrian needs. From a natural resource protection standpoint, restoration and preservation of historic riparian corridors, in addition to creating several upland habitat linkages, would provide the most significant natural resource opportunities for the Rock Creek area.

The preservation plan should allow for wildlife movement in north-south, as well as west-east directions. Habitat connectivity with off-site natural resources is important, as is limiting the amount of human intrusion into wildlife corridors through the use of buffers and the avoidance of excessive pedestrian trail systems.

Open Space Opportunities

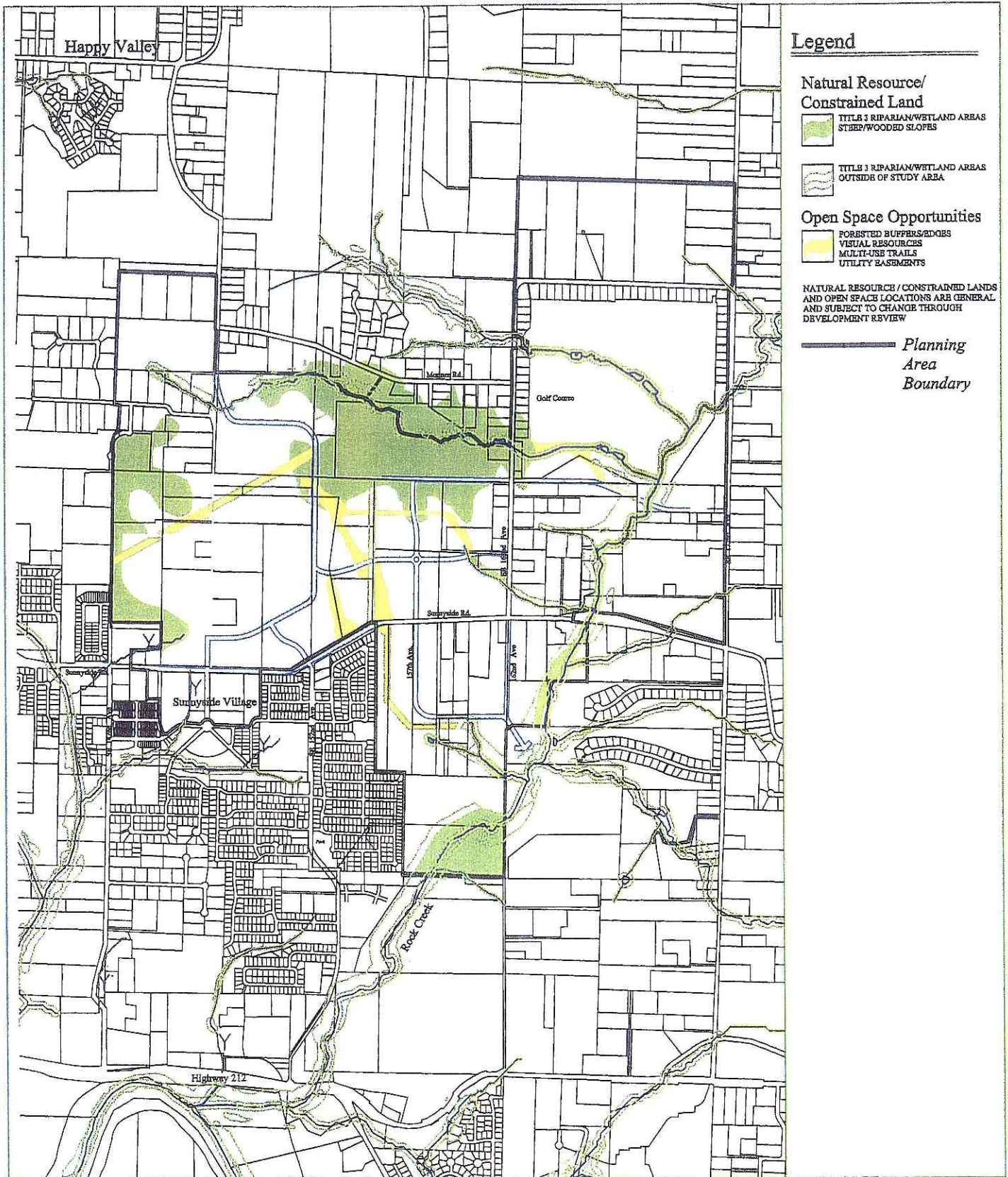
Open space areas (identified in Figure 10) are intended to extend and link the open space network and protect additional forested areas. They augment the visual green spaces as "frames" to the neighborhoods and provide opportunities for trail linkages. Density transfer is encouraged and on-site development potential is limited to cluster housing and other site planning that minimizes disturbance of the open space area. Base densities are determined by the underlying zone.

Multi-use paths should be included in open space areas per the Pedestrian and Bike Plan and the Happy Valley Parks Master Plan. The drainage ways should be enhanced with vegetation supportive to wildlife and shade trees should be planted along all drainages to provide song bird habitat and shade the streams. Implementing ordinances should require retention of the tree canopy with clustering of density outside of the open space opportunity areas.

Natural Resource/Constrained Land

The natural resource/constrained land (identified in Figure 10) includes Tide 3 riparian and wetland areas, and slopes greater than 25 percent, much of which is unbuildable. Several of these areas also coincide with forested areas. These areas are shown with a Natural Resource overlay, with the underlying zoning still governing any development that is not transferred to other areas. The intent is that these areas would remain largely undeveloped and density would be transferred to adjacent areas. The base density (for transfer) would be set at relatively low densities (e.g., two units per acre). Riparian corridors will be protected per county, regional, state, and federal regulations and density transfer is allowed. On slopes greater than 25 percent, densities of one dwelling unit per acre are established. The two collector roads which are planned to cross Rock Creek should provide opportunities for public access to Rock Creek.

Note: The plan maps indicate the general location for these areas, based on information that was readily available during the planning process. More precise mapping will be required at the time of development.



Rock Creek Area

Natural Resources Constrained Lands and Open Space Opportunities

Rock Creek Comprehensive Plan
Adopted June 5, 2001

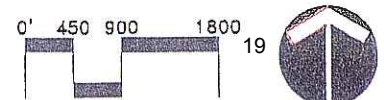


Figure 10

Parks and Trails

The final location of the parks and trails shall be in compliance with the Happy Valley Parks Master Plan. The community park will be approximately 31 acres serving the Rock Creek area and adjacent areas. It should include athletic fields, paved courts for multiple sports, large free play or passive recreation areas, jogging tracks, and natural area qualities. Parking, restrooms, picnic shelters are common support facilities at these types of parks. The location of the community park should be accessible by collector-level streets. A co-location with a large stormwater facility is encouraged.

Private neighborhood and mini parks are also encouraged throughout the Rock Creek area. Private parks are created through the subdivision process and should be developed in accordance with the City of Happy Valley Parks Master Plan.

The estimated park acreage to population, usually expressed as acres of park for every 1,000 people, is 2.8 acres/ 1,000 population. This figure is calculated as follows:

- Estimated residential capacity of Rock Creek Plan = 4,654 dwelling units
- 4,654 dwelling units @ 2.4 person per unit = 11,170 persons
- Total public park acreage is estimated at 31 acres.

The sanitary sewer service for the area is expected to be served through extensions from the Rock Creek trunk and through the existing sewer system in Sunnyside Village. The storm sewer is expected to be collected, detained and treated prior to its discharge into the Rock Creek stream system where it is currently collected. The Mt. Scott Water District is the provider of a public water system. The area will require extension and upgrade of existing government services to serve the future development which currently is identified as commercial, residential and open space. The following section will define the water, sanitary and storm sewer improvements necessary to meet the anticipated needs of the planned uses. The storm drainage analysis is based on the *Surface water Management Rules and Regulations for Clackamas County Service District Na 1* dated June 1, 1999. The sanitary sewer report is based upon the *Happy Valley Sewerage Master Plan*. Water system improvements are in accordance with Mt. Scott Water Districts plans.

Storm Drainage

Storm drainage within the planning area is mostly over land, with some culverts under existing roads and ditches running along side these roads. The area is split into two drainage areas with the southwestern approximately one quarter being a part of the Sieben Creek drainage basin and the remainder draining towards Rock Creek. The highest point of the site is at an elevation of 780 feet and the lowest portion is at Rock Creek at about 160 feet. Slopes generally range from 10 to 20 percent from the peaks of local hills to the southern border of the planning area or to Rock Creek. The exceptions are some localized slopes exceeding 25 percent in the draws on the hillside and approximately 30 acres south of Sunnyside Road and 20 acres at the present day Pleasant Valley Golf Course that are less than 5 percent slope. Most of the area is farm and pasture land. Approximately 10 percent of the area consists of large-lot, single-family residential. There is also an eighteen-hole golf course, and about 20 acres of significant timber left on the site.

Water Environment Services (WES), a department of Clackamas County, currently requires detention and water quality treatment of stormwater runoff. All storm drainage and water quality treatment will conform to WES standards.

Water System

Mt. Scott Water District has been proactive in its implementation of system development fees in order to build the water system to have capacity for areas entering the Urban Growth Boundary. The district has four reservoirs totaling 7.5 million gallons (MG) that would serve the study area. Two wells and water from the Clackamas River supply the area with water. Pumps are in place and sized to move the proposed amounts of water. According to the Mt. Scott Water District, all necessary facilities are in place for any new developments in the planning area with the exception of a 12-inch water line from the higher of the two existing reservoirs on SE 147th Avenue to the intersection of SE 147th and Krause Lane.

District staff indicated that the local water distribution system would likely consist of 6-inch and 8-inch lines. 8-inch lines are shown for the purposes of this plan. (See Figure 11.)

Sanitary System

There are three points of connection to the existing sewer system. The first is at the intersection of Sunnyside Road and SE 147th Avenue. Roughly 10 percent of the study area will flow to this point. The second point is at the intersection of Sunnyside Road and SE 152nd Avenue. Again, about 10 percent of the area flows to this point. The final point is at the eastern edge of Thornbridge Drive at about the 15500 block. The eastern portion of the planning area will need three separate pump stations and the required force mains to get the effluent to a point where a gravity system will work.

The Clackamas County Department of Utilities has completed the Happy Valley Sewerage Master Plan. The planning area being discussed here is included in this master plan. The large pump was identified in the Master Plan as "Rock Creek #1 Pump Station" and listed as potentially being included in the district's Capital Improvement Program. The planning level drawings correspond closely to drawings included in the master plan.

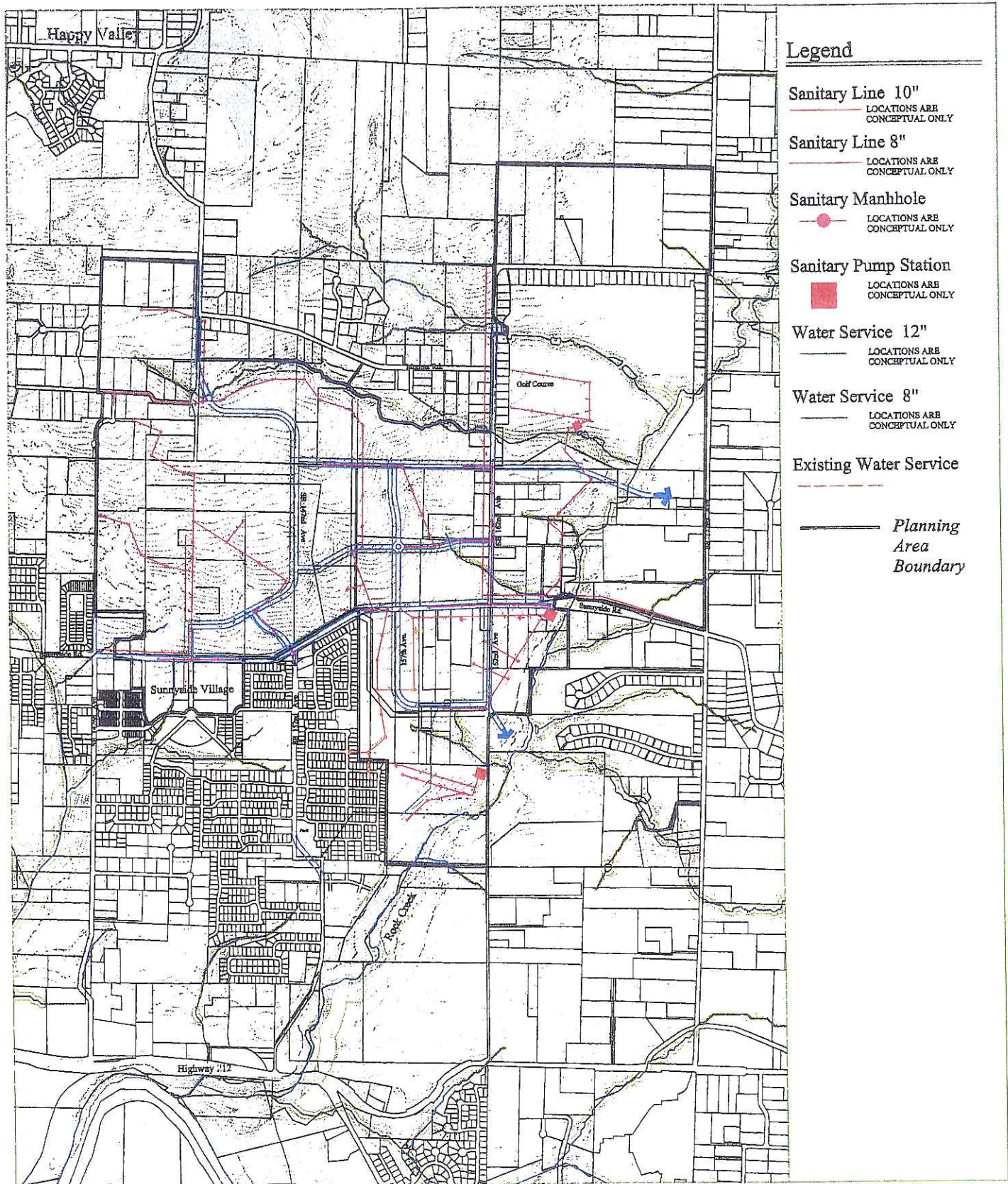
Line sizes within the study area are 8-inch and 10-inch based on the assumed flow quantities per acre. Figure 11 represents the line locations and sizes determined necessary to serve this area.

Collector Street System

The Transportation Plan shown in Figures 5 illustrates the collector street locations for the Rock Creek area.

Schools

The planning area is within the North Clackamas School District #12. The school district is anticipating the urbanization of the area and planning for new facilities. The district anticipates needing three new elementary schools east of the current Urban Growth Boundary. There is a new elementary school in Sunnyside Village, adjacent to the planning area, therefore the District expects that the next new elementary school would be outside of the Rock Creek planning area. There is a possibility of joint high school between Clackamas, Gresham-Barlow and Centennial, probably located in the Pleasant Valley area. Based on these factors, the school district stated throughout the planning process that they do not anticipate a school being built within the Rock Creek planning area.



- Legend**
- Sanitary Line 10" LOCATIONS ARE CONCEPTUAL ONLY
 - Sanitary Line 8" LOCATIONS ARE CONCEPTUAL ONLY
 - Sanitary Manhole LOCATIONS ARE CONCEPTUAL ONLY
 - Sanitary Pump Station LOCATIONS ARE CONCEPTUAL ONLY
 - Water Service 12" LOCATIONS ARE CONCEPTUAL ONLY
 - Water Service 8" LOCATIONS ARE CONCEPTUAL ONLY
 - Existing Water Service
 - Planning Area Boundary

Rock Creek Area

Sewer/Water Plan

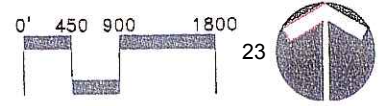


Figure 11

Housing, Jobs, and Affordability

Housing and Employment Capacities

Table 5 lists the key conclusions from an analysis of the housing and employment capacities of the Land Use Plan.

Table 5

Rock Creek Area Housing and Employment Capacity

	<i>Estimated Capacity</i>	<i>Study Targets*</i>	<i>% Difference</i>
Dwelling Units	4,654	2,932	58.7%
Jobs	904	619	46.0%
Net Residential Acres	438		
Dwelling Units Per Net Residential Acre	10.6	10.0	

**Based on 2020 forecast from Sunnyside Environmental Assessment*

Assumptions

1. Net residential *acres* do not include constrained lands, parks, civic, storm facilities, and local streets.
2. Total dwelling units includes 224 dwelling units transferred from Natural Resource Constrained Lands.
3. Local street deduction = 15%.
4. Residential densities per Land Use Plan.
5. Mixed Use Commercial = 30% apartments@24 du/net acre, 70% retail/office mix.
6. Mixed Use Employment = 50% office at 50 jobs/acre, 50% retail at 15 jobs/acre.
7. Jobs on residential land = 12% of jobs from employment lands.
8. Jobs for civic uses = 10 jobs per acre.

Affordable Housing Analysis

Tide 11 of the Metro Functional Plan requires the following:

"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 percent of area median incomes for rental as defined by U.S. Department of Housing and Urban Development for the adjacent urban jurisdiction. Public subsidies shall not be interpreted to mean the following: density bonuses, streamlined permitting processes, extensions to the time at which systems development charges (SDCs) and other fees are collected, and other exercises of the regulatory and zoning powers." (*Metro Code 3.07.]20 (F)*).

Housing, Jobs, and Affordability

Continued

According to data provided by Clackamas County, the 1998 estimated median income for the Sunnyside census tract (CT 222.02) is \$69,451. The 1998 estimated median income for Happy Valley is \$69,438. The County's data include estimates of the *cost* of a home that would be affordable to buyers with these income levels, based upon methodology provided by Metro's Affordable Housing Demonstration Worksheet. The CT 222.02 median income of \$69,451 would enable a buyer to afford a home costing \$207,380. The Happy Valley median income of \$69,438 would enable a buyer to afford a home costing \$218,863.

Table 6 is an estimate of the types of housing that would be available upon implementation of the Land Use Plan. It should be noted that these estimates are one sample "program" of build-out.

Table 6
Estimate Residential Program -Housing Types and Distribution¹

<i>Total</i>		<i>Apartment/ Condominium</i>	<i>Townhome</i>	<i>Small Lot</i>	<i>Large Lot</i>
Low Density Residential	484				484
Hillside Residential	1,238		619	619	
Mixed Use Residential					
Golf course	1,299	781	186	84	248
Apartments	490	490			
Townhomes	245		245		
Single Family	490			490	
Mixed Use Commercial	182	182			
Transfer from Open Space	226			113	113
	4,654	1,453	1,050	1,306	845
		31%	23%	28%	18%

Totals include areas to be annexed, but do not include existing houses unlikely to redevelop.

¹ In this section, apartments are defined as rental housing units. Townhomes are defined as attached single family units where the owner has title to both the lot and the home. Condominiums are defined as housing where the owner bears title to the dwelling unit, but the land is separate and held in common ownership.

Housing, Jobs, and Affordability

Continued

Table 6 indicates that an estimated 51 percent of the housing stock would be townhomes (2,500 square foot lots and less) and small lot (5,000 square feet and less) detached homes. This percentage would be even higher if condominiums at higher densities are included. Townhomes in Sunnyside Village are selling in the \$160-170,000 range, very small lots (4,000 square feet) are selling in the \$140-170,000 range, and lots around 6,000 square feet in size are selling in the \$170-220,000 range. These comparable prices, coupled with the estimated percentage of homes that would fall within the price ranges, indicate that there would be ample opportunity for a buyer with the area's cited median income to find an affordable home within the Rock Creek Plan's housing choices. The Metro requirement to "include" such ownership choices is therefore met.

Rental Housing

The County data referenced above indicate that a renter with 80 percent of the area's median income could afford a monthly rent of \$1,328. This level of rent could readily afford nearly all of the apartments available today in the Sunnyside Village area. It could also afford many smaller homes in the area. The Table 6 data indicates that an estimated 31 percent of the Rock Creek Plan's housing stock will be apartments or condominiums, with additional rental opportunities provided by the townhome and single family housing types. Therefore, the Metro requirement to "include" such rental choices is met.