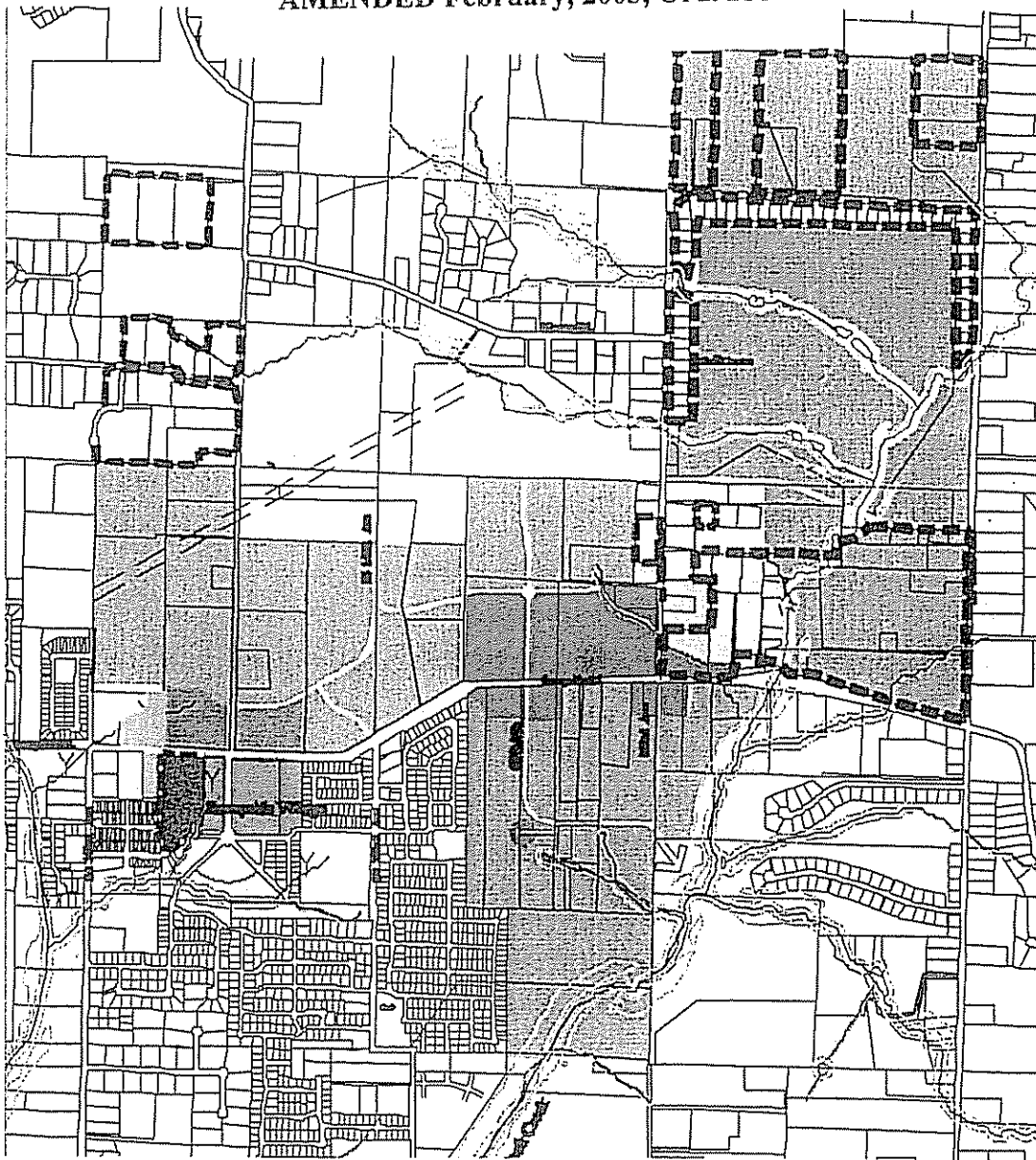


# Rock Creek Comprehensive Plan City of Happy Valley

Adopted June 5, 2001

AMENDED February, 2003, Ord. 255



**ATTENTION USERS:**

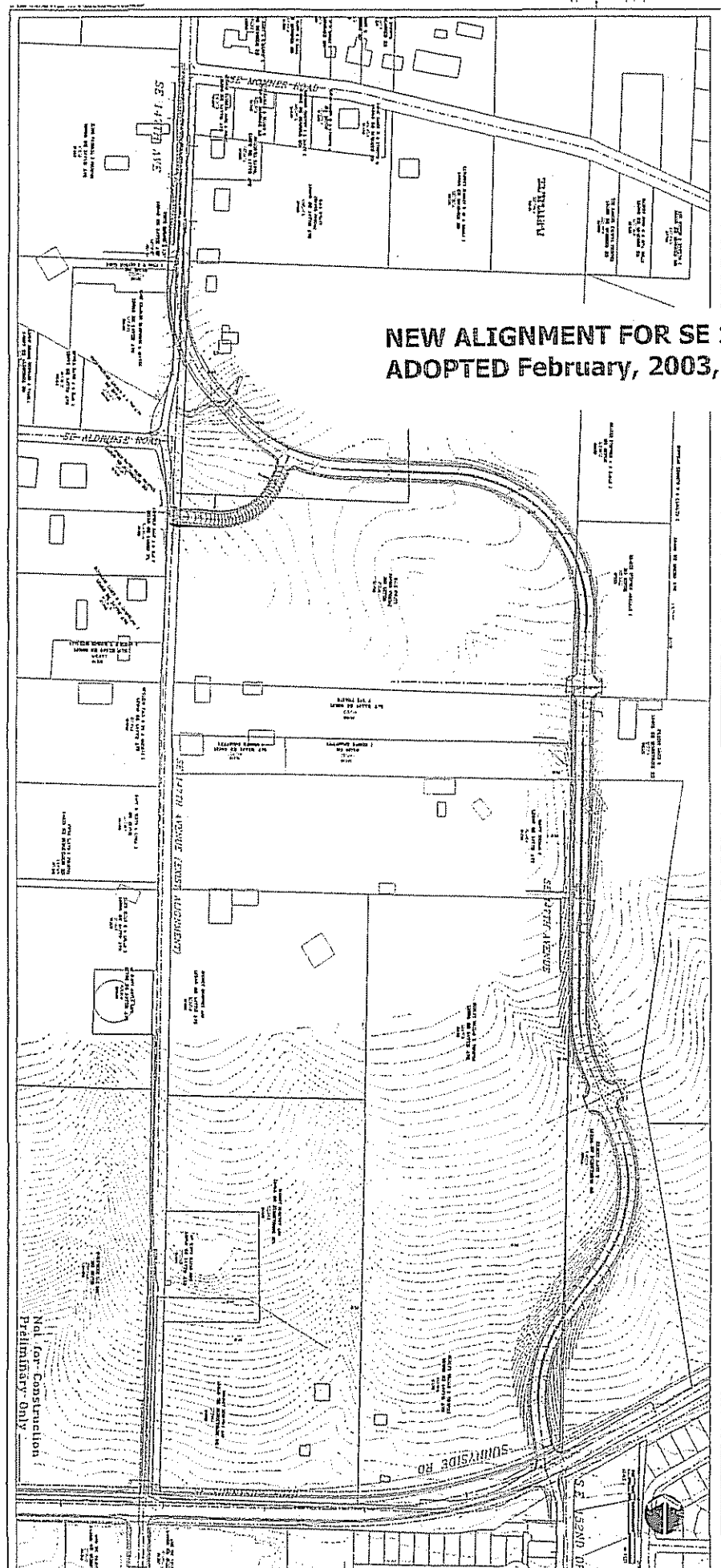
**THE ROCK CREEK COMPREHENSIVE PLAN WAS AMENDED IN  
FEBRUARY, 2003, (Ordinance No. 255)**

**Maps and Illustration in the body of the Rock Creek Comprehensive Plan have not  
as yet been revised.**

**The attached illustrations show the new alignment of SE 147th down to SE 152<sup>nd</sup>  
and the alignment of the east/west collector roadway (Collector B).**

**If you should have any questions, please contact the Planning Department (503-760-  
3325).**

**NEW ALIGNMENT FOR SE 147<sup>TH</sup> AVENUE  
ADOPTED February, 2003, Ordinance 255**



Not for Construction  
Preliminary Only



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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
- *Alignment for SE 147th* Describing a preferred alternative for the reconnection of this key street
- *A street network plan* For major streets to serve the area, with recommendations for local street connections
- *A pedestrian and bike plan* For both on-street and off-street paths
- *A transit plan* Showing potential extensions of bus service
- *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

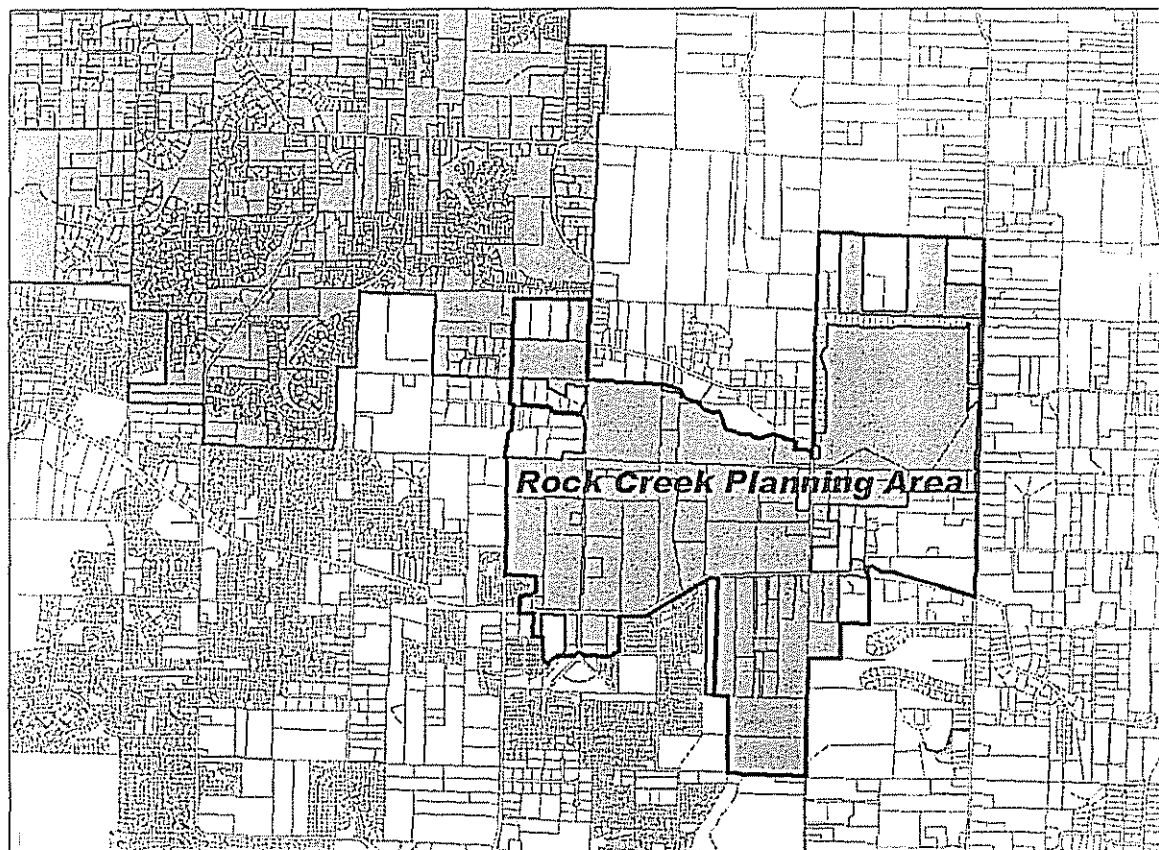
The purpose of the Rock Creek Comprehensive Plan is three-fold:

- 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 1012 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

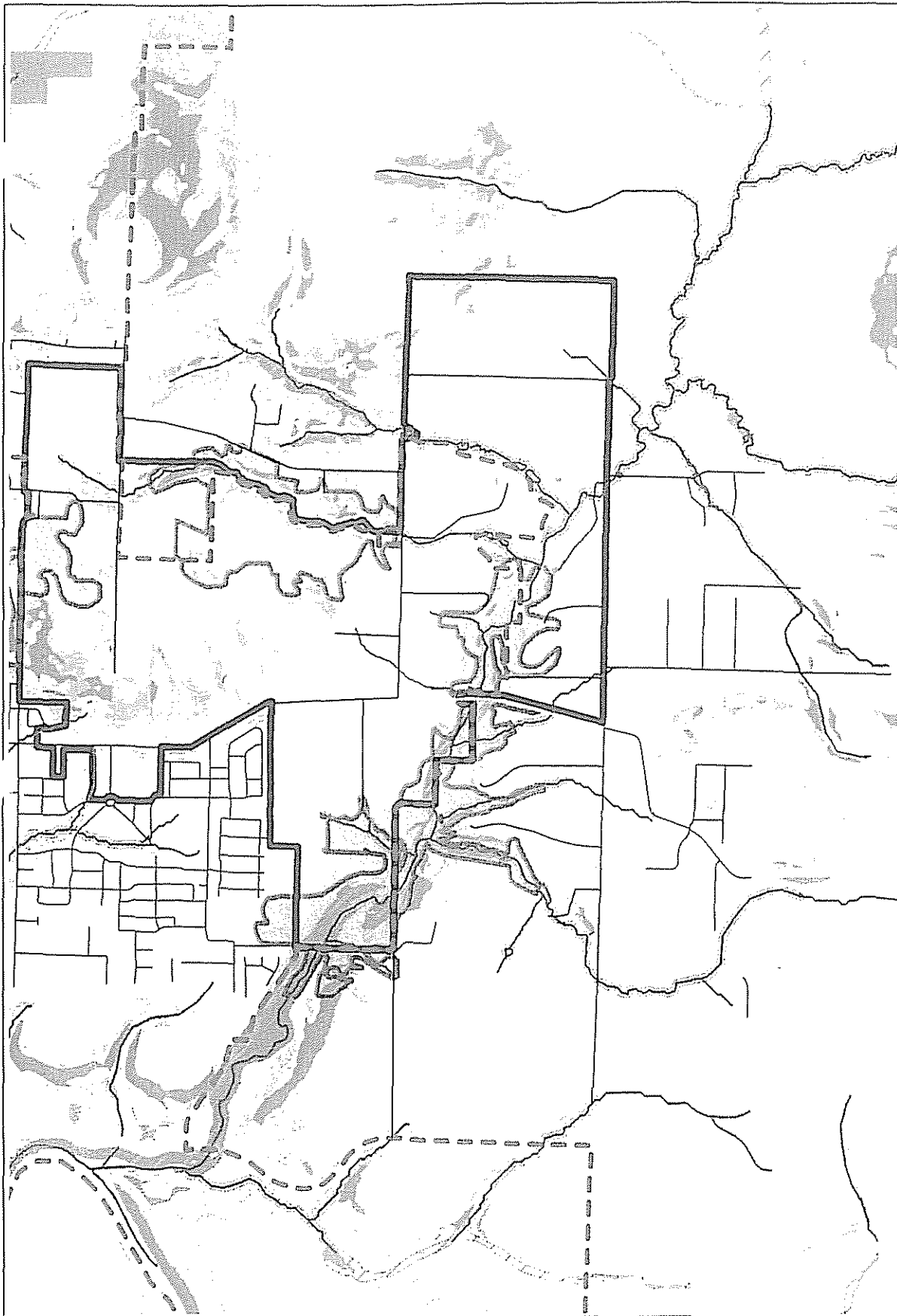
<i>Households</i>	<i>Retail Employment</i>	<i>Other Employment</i>	<i>Total Employment</i>
2,932	42	577	619

## 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

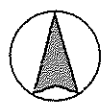
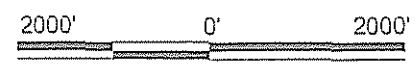
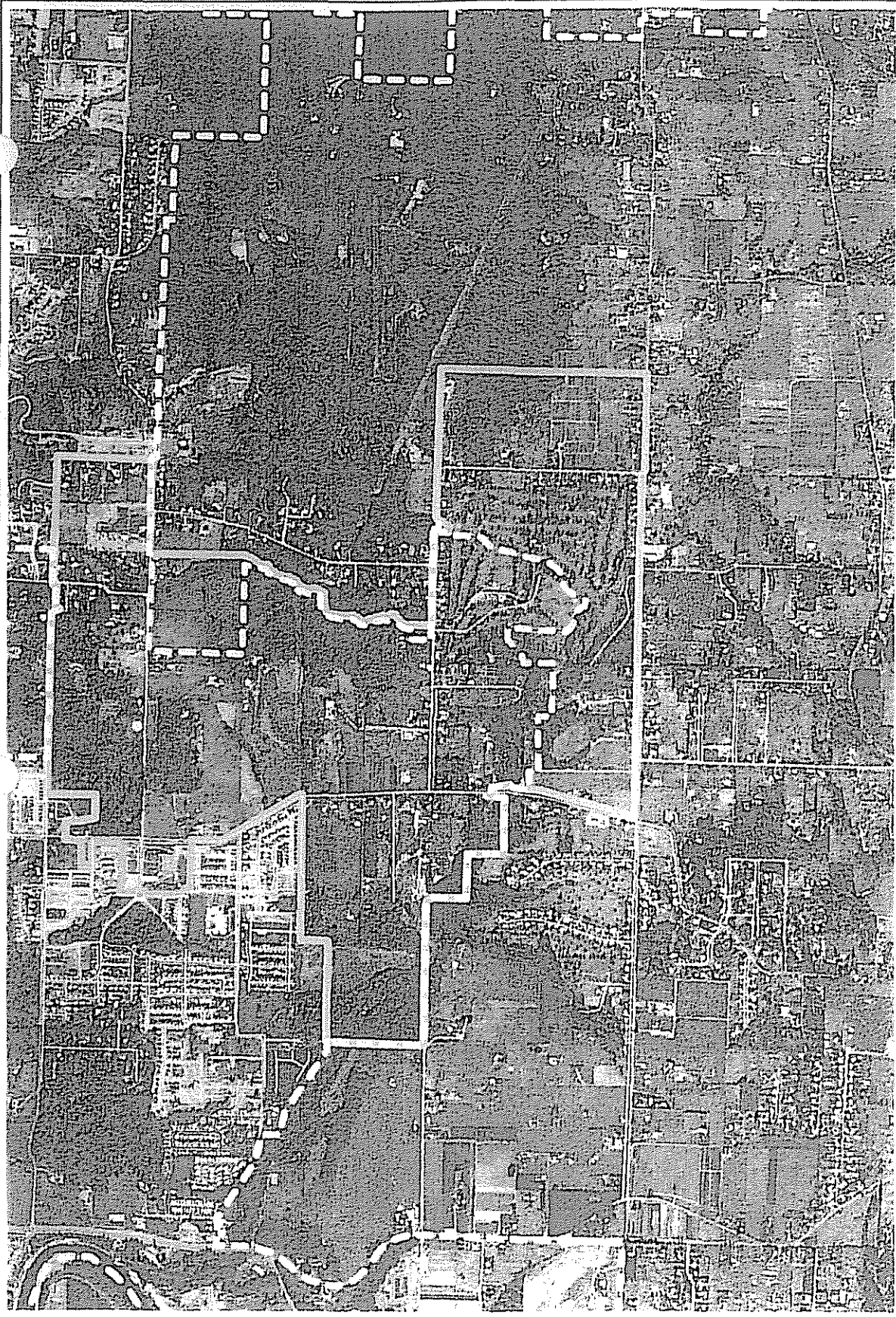




Figure 2



Legend

-  Planning Area Boundary
-  Urban Growth Boundary

Rock Creek Area

Aerial View

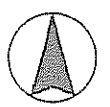
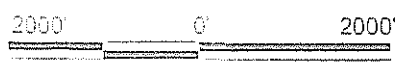


Figure 3

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 ZDO Section 1600)
7. Village Apartment                              Based on Sunnyside Village zone (see ZDO Section 1600)
8. Village Commercial                            Based on Sunnyside Village zone (see ZDO Section 1600)
9. Village Townhouse                             Based on Sunnyside Village zone (see ZDO Section 1600)
10. Civic Use                                        Examples: Community center, library, church

Table 2  
Land Area of Plan Districts

	Gross Developable Acres <sup>†</sup>	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*

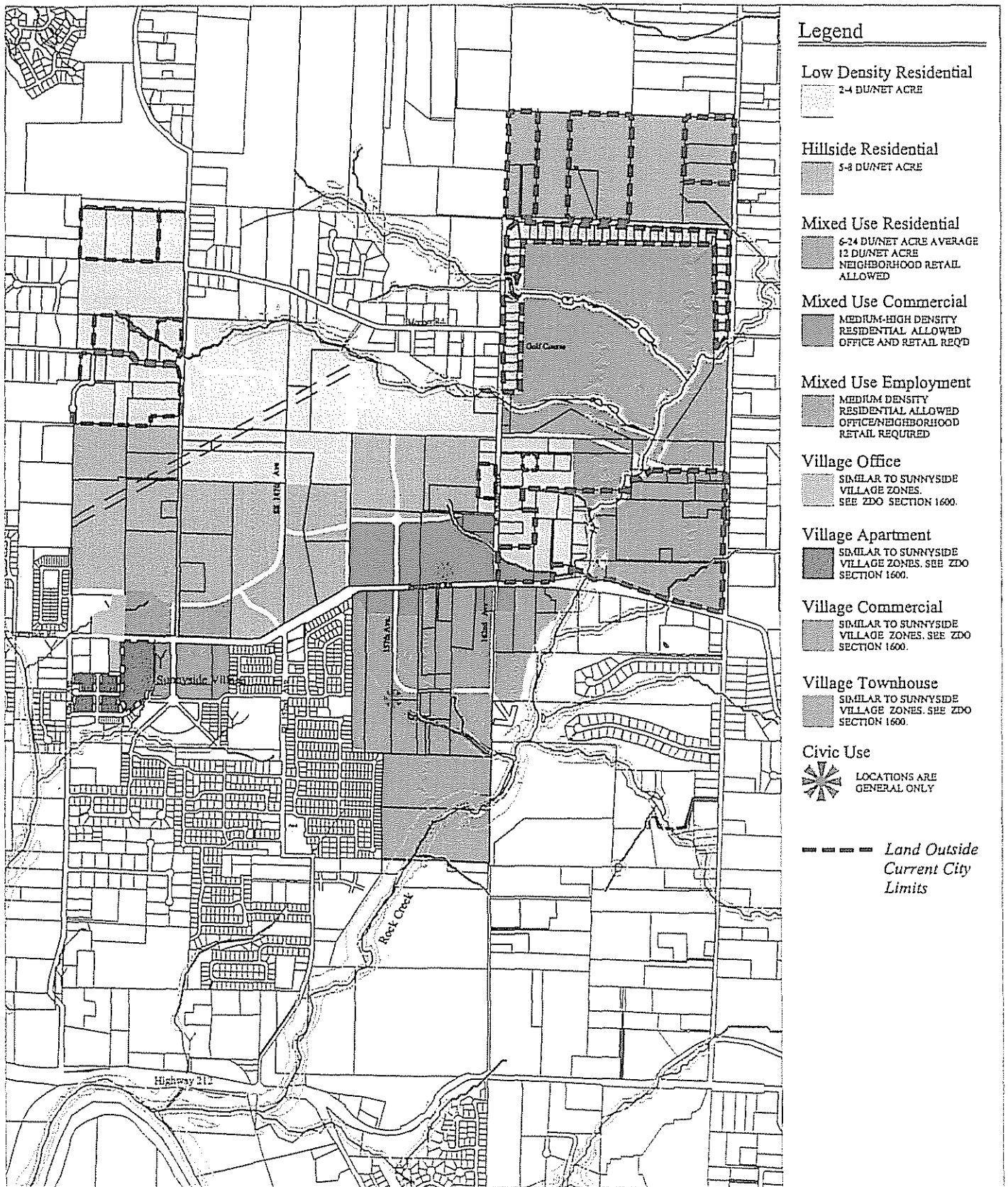
- Major tree groves should be protected and integrated into designs.
- Local streets should be reasonably narrow and connected to form neighborhoods.
- Lots should front onto local streets. Side lot orientation may be appropriate along portions of the collector streets.

### *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

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.

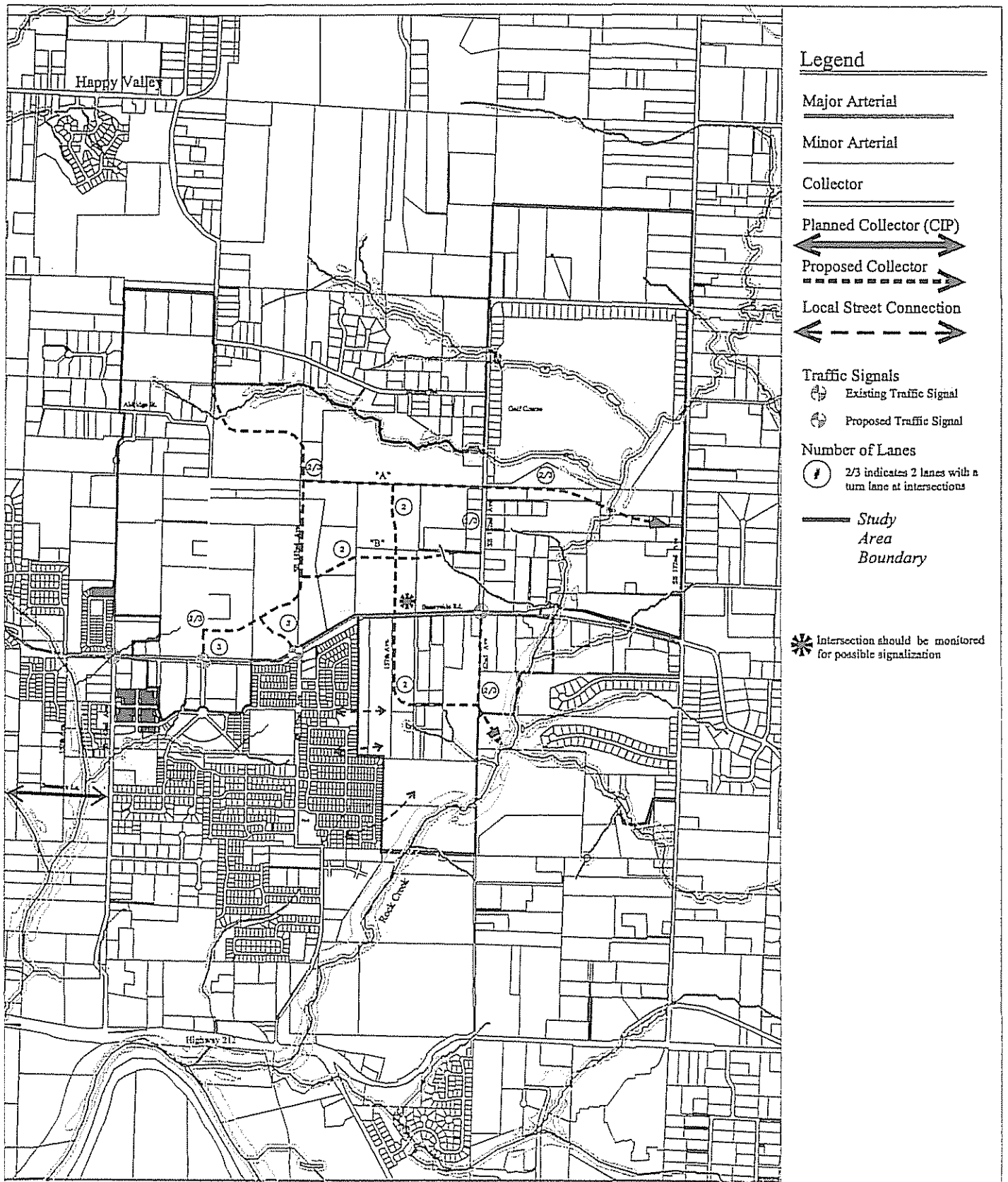
*Civic Uses*

*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.



Rock Creek Area

Functional Classification

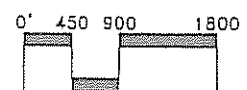


Figure 5

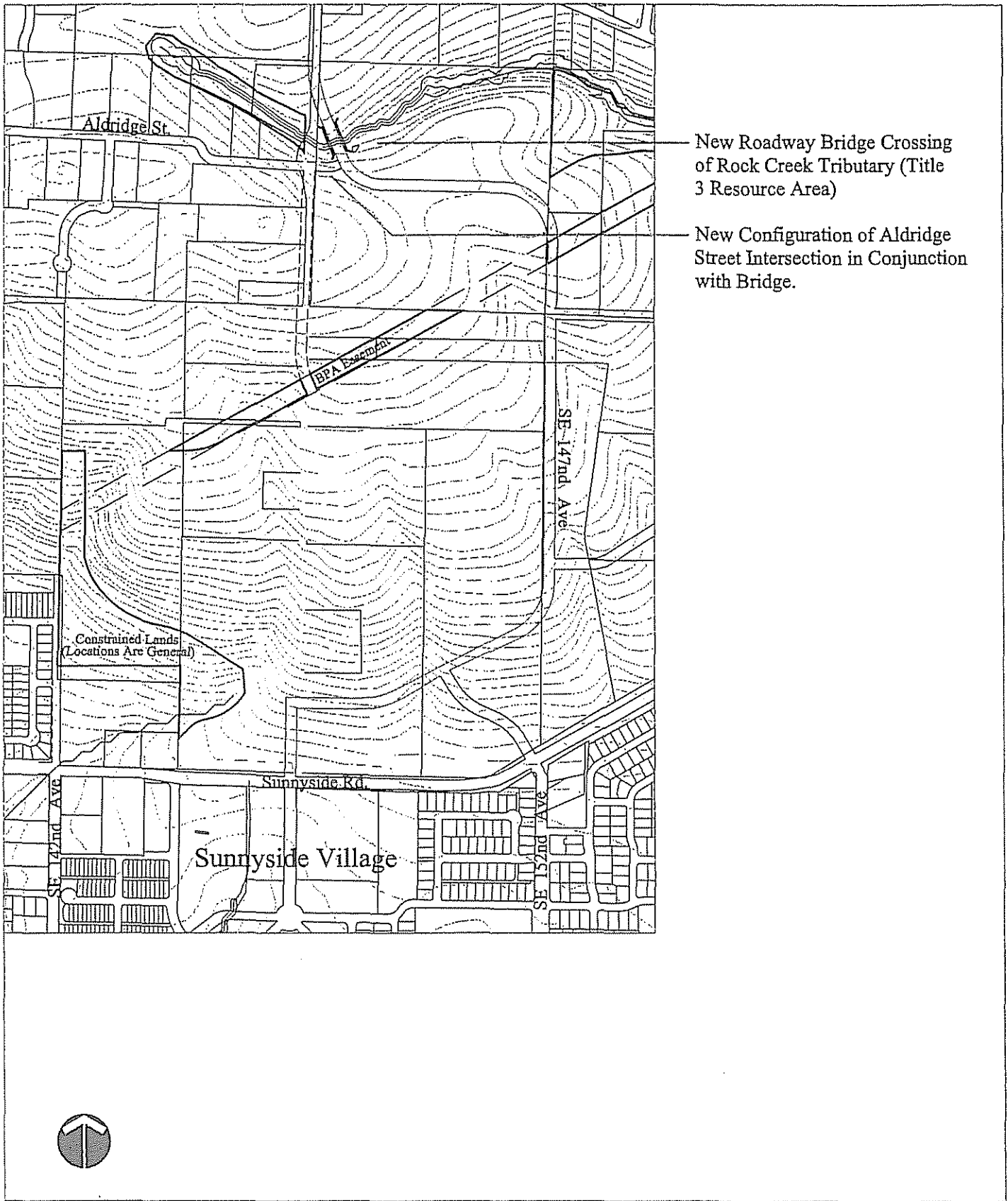
## Recommended Roadway System

The recommended Rock Creek Area roadway system is shown in Figure 5. The figure shows both the functional classifications and the numbers of lanes for the proposed roadways.

### *Collector Streets*

Collector level roadways form the basic structure of the network. The proposed roadway alignments were developed to provide route continuity between arterial roadways and activity centers, and to support the development of a grid pattern made up of local streets to achieve neighborhood connectivity.

- SE 147th Avenue, which is currently closed north of Sunnyside Road due to safety deficiencies associated with the steep grade, would be reopened with a new alignment to correct the safety problems. Improvements will be needed at the existing intersection of SE 147th Avenue and Aldridge Road. The specific improvements will depend on the new alignment of SE 147th Avenue, but will need to address safety issues related to sight distance and the grade of the roadway. See Figure 6 for the proposed alignment.
- A realigned SE 147th Avenue connection will provide collector street access between Sunnyside Road and areas to the north, including Happy Valley. This roadway also provides connections to one east/west collector and one local street through the study area, and to SE 147th and SE 152nd Avenues south of Sunnyside. The Collector "B" will provide a connection from 152nd to SE 142nd, SE 147th, and SE 162nd Avenues. Development of properties benefiting from Collector "B" shall be conditioned to assure adequate transportation facilities are provided. The steep grade of the hillside and impacts to existing properties will be important factors in determining the specific alignment and cross-section of the road.
- A two/three lane collector local street along the northern project boundary and east of SE 162nd will provide an east/west connection between SE 162nd and SE 172nd. This proposed collector will offer a much needed relief valve to Sunnyside Road during highly congested conditions.
- A two-lane collector street north of Sunnyside (labeled "B" in Figure 5) would connect the SE 147th avenue realignment and SE 162nd Avenue, serving east/west traffic within the Rock Creek Planning area. Left-turn lanes on this roadway should be provided at intersections to ensure adequate flow of through traffic. The parallel alignment to Sunnyside and the northern collector, along with connections to north/south streets, will support development of a grid system and local street development conducive to neighborhood connectivity.
- SE 157th Avenue would be constructed as a two-lane collector providing a connection to proposed civic areas north and south of Sunnyside Road. While the exact alignment of SE 157th Avenue has some flexibility, it should intersect Sunnyside Road with adequate spacing between SE 152nd Avenue and SE 162nd Avenue, so that if a traffic signal is needed in the future, it can be integrated with the other signals on the roadway and an efficient signal timing system can be implemented. While there is some flexibility in the exact alignment, the intersection should be at least 500 feet from the horizontal curve in Sunnyside Road (at the southern study area boundary) to ensure adequate sight distance.
- North of Sunnyside Road, SE 157th Avenue will serve the area designated for mixed use commercial, connecting to both proposed east/west collectors at stop-controlled intersections.
- SE 162nd Avenue plays a key role in the Rock Creek area as a north/south collector, connecting the study area to a major arterial (Sunnyside Road) and a minor arterial (SE 172nd Avenue) via Hagen Road. This roadway will be



Rock Creek Area

Proposed  
147th Avenue Alignment

Figure 6

extended south of Sunnyside Road as a three-lane collector serving the Mixed Use Residential area. This roadway could also provide access to potential future development southeast of the study area across Rock Creek.

## **Local Streets**

It is not the purpose of this Comprehensive Plan to design the local street network, but instead to establish the parameters under which these streets should be provided. Local streets are to be provided at a minimum spacing of 10 to 16 streets per mile (every 330 to 530 feet) in order to support neighborhood connectivity.

A minimum of three local street connections to SE 152nd Avenue south of Sunnyside Road is essential to connect the residential neighborhoods with civic and commercial activities planned for the Rock Creek area. These connections are needed to provide internal access without requiring added trips onto Sunnyside Road. The connections should be made from SE 157th and/or SE 162nd Avenues. These streets will be planned concurrent with the specific development proposals in the Rock Creek Area.

## **Transit**

Transit is an important component of the Regional Transportation Plan. The Transit Concept for the Rock Creek area was developed to ensure multimodal transportation options for residents and employees in the study area. (Figure 7)

Scheduled Tri-Met bus service to the study area is currently comprised of the Sunnyside Route 155 and the Mather Road 156 Route, which have timed transfers at the Mark O. Hatfield Transit Plaza at SE 147th Avenue south of Sunnyside Road as shown on Figure 7. Bike storage should be provided at this plaza. Currently, there are one-hour headways between buses on both routes.

Tri-Met currently has no specific plans for expansion of transit to this area. However, Metro has designated Sunnyside Road as a "primary transit route" in its Regional Transportation Plan. This designation indicates bus service between Clackamas Regional Center and Damascus with 15-minute headways during peak hours.

According to conversations with Tri-Met staff, transit service to the Rock Creek area will likely be developed through several sequential and progressive steps in response to development and the associated increase in demand for transit service. These steps would likely include on-demand service for the Rock Creek area in the near term, followed by extension of Route 155 to SE 162nd Avenue. A local route connecting neighborhood nodes to a hub such as the Clackamas Town Center, might then be established, as well as an express route to Damascus. Additional local routes serving the Rock Creek area and the possible extension of other routes, such as Route 157 from Happy Valley, may also occur if sufficient demand occurs.



Local transit service should be developed with consideration to the following:

- In general, transit service should be provided within a one-quarter mile walk from the activity nodes in the Rock Creek area.
- Transit stops on Sunnyside Road should be located at traffic signals to provide safe pedestrian crossing opportunities to access transit.

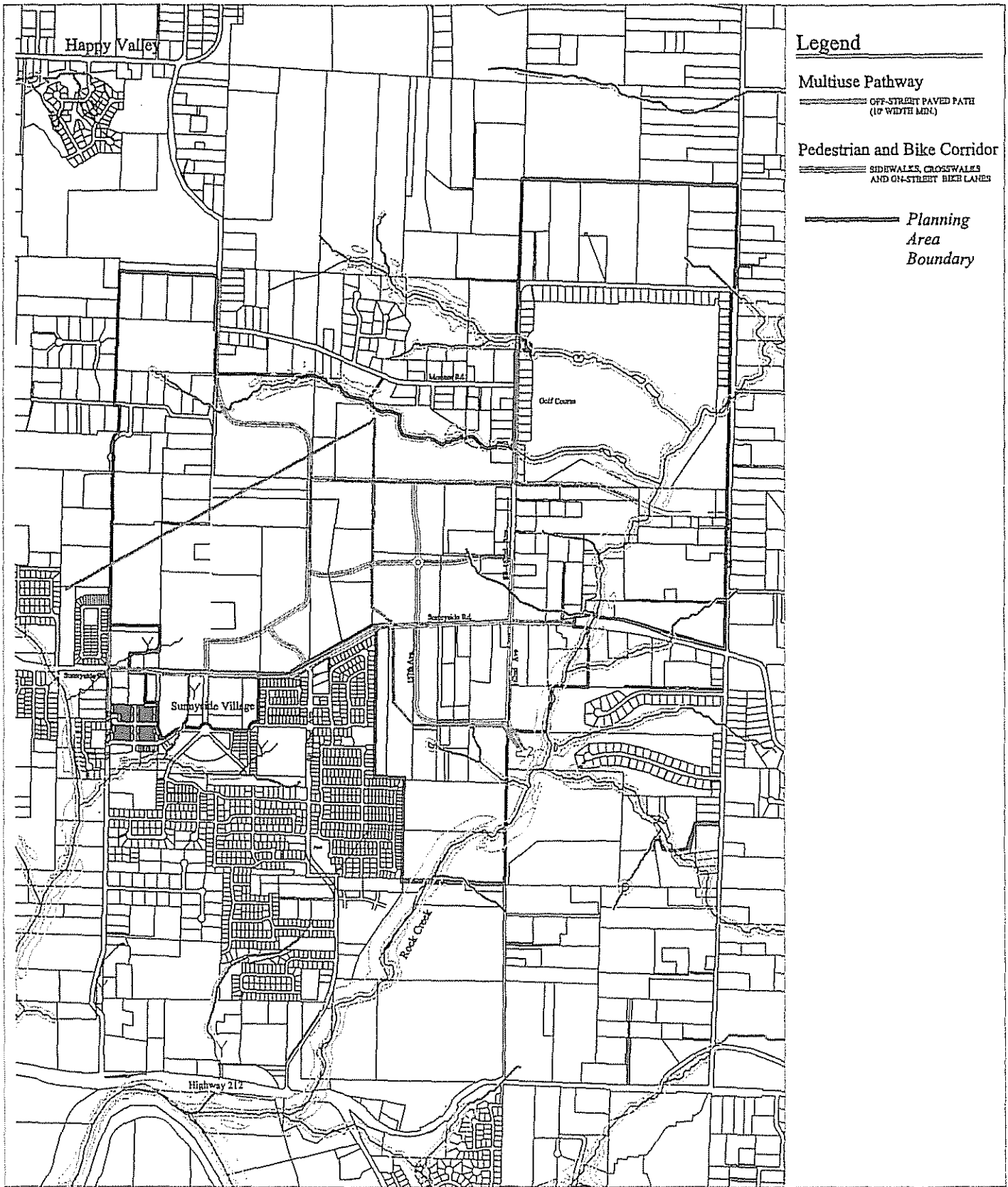
Given the future development indicated by the land use element of this Comprehensive Plan, future transit service on Sunnyside Road would provide service to the civic and commercial centers near SE 157th Avenue. Other areas would be served with on-demand service. If sufficient demand develops in areas more than one-quarter mile from Sunnyside Road, or if safe pedestrian access to bus stops cannot be provided due to the high volume of traffic on Sunnyside Road, additional bus routes may be needed. Figure 7 shows the existing bus routes in the vicinity of the Rock Creek area, and possible future streets for transit service.

### **Pedestrian and Bike Plan**

The Pedestrian and Bike Plan shown on Figure 8 illustrates the major recommended on-street and off-street routes. The entire collector road system is recommended for striped bike lanes, unless topography and other natural constraints dictate that a reduced street width is warranted. A connected local street pattern with approximately 10 to 16 streets per mile is also recommended. This will provide the "finer" network of sidewalks and streets needed to make walking and biking direct and convenient, and reinforce the pedestrian character of the area.

Street connections to Sunnyside Road are likely to be limited to collector streets at one-quarter to one-half mile spacing. Therefore, it is essential that additional north/south pedestrian easements and facilities be provided as development occurs. These should be at the same spacing as local streets: 10 to 16 per mile or every 330 to 530 feet. These connections will encourage local walking trips and transit use by reducing physical barriers and out-of-direction travel. Pedestrian crossings across Sunnyside Road will be provided for at a minimum of two locations in the plan area. These locations will be determined at the time of development.

The proposed location of two multi-use trails, which follow current easements, are shown in Figure 8. Other trails in the Rock Creek Plan area will be located in compliance with the Happy Valley Parks Master Plan. Public trails that are within publicly owned land or easements are encouraged. Metro allows paths and trails within "Water Quality Resource Areas" under conditions to assure that the functions and values of the resource are protected (see Metro Code 3.07.340.B).



# Rock Creek Area

# Pedestrian and Bike Plan

Figure 8





## Forecast Methodology and Evaluation Criteria

### *Forecast Methodology*

The analysis of the Rock Creek area transportation system was based on 20-year forecast traffic volumes, which were developed using the projections in the Sunnyside Road Environmental Assessment (Sunnyside EA). As part of the Sunnyside EA, traffic volume forecasts were developed and analyzed for the year 2020 using development patterns derived for Metro's regional traffic forecasting model. Due to the constrained conditions on Sunnyside Road, the volumes developed in the Sunnyside EA were maintained as the upper limit of allowable traffic on the roadway for the purpose of this Comprehensive Plan.

This concept-level planning analysis considers only daily traffic link volumes and does not consider capacity or level of service at intersections. This methodology is designed to adequately determine the size and classification of the recommended roadway system. However, this analysis does not provide the level of detail to determine specific intersection improvements such as additional right-turn lanes or deceleration lanes.

### *Evaluation Criteria*

To determine how well roadways will operate under forecast traffic volumes, planning-level level-of-service (LOS) analysis was applied to key roadways comprising the Rock Creek area transportation network. Levels of service range from A to F, with LOS A indicating free-flow, unconstrained conditions, LOS E indicating capacity conditions, and LOS F indicating congested conditions. These levels of service are based on average travel speeds through a particular roadway segment.

The methodology, described in the 1997 Update to the Highway Capacity Manual (HCM) provides several levels of detail for analysis, depending upon the amount of information that is available. The lowest level of detail characterizes the Generalized Level of Service Tables and is appropriate for this concept level transportation analysis. The methodology applies default values to the inputs required for the various HCM methods. The generalized tables list level of service for roadways based on maximum average daily traffic (ADT) for various roadway characteristics (such as number of lanes, divided or undivided) and environment (urban, rural, or transitioning). Level of Service D or better is acceptable, and was used as the threshold for assigning roadway classifications within the study area.

### *2020 Background Traffic Conditions*

As described above, the base 2020 traffic volumes were obtained from the Sunnyside EA, which were derived using Metro's EMME/2 travel demand forecasting model. These forecasts reflect the regional levels of housing and employment growth predicted throughout the Portland metropolitan area. For the Sunnyside EA, the model was refined to a finer resolution. The level of development assumed in the Sunnyside EA was approximately 2950 households and 625 jobs.

The Sunnyside EA reported the following key findings and recommendations for Sunnyside Road within the Rock Creek area:

- Sunnyside Road should maintain a five-lane cross-section from SE 122nd to SE 162nd Avenue. A three-lane cross-section was recommended between SE 162nd and SE 172nd Avenues.

- Vehicular access to Sunnyside Road between SE 142nd and SE 152nd Avenues should be provided at the signalized intersections of SE 142nd, SE 147th, and SE 152nd Avenues.
- A major access point should be located at approximately SE 157th Avenue, located midway between SE 152nd and SE 162nd Avenues. SE 162nd Avenue can be signalized if warrants are met.
- Parallel east-west local street connections should be provided to ensure that motorists can use the signals at SE 152nd and SE 162nd Avenues for access to Sunnyside Road during peak hours.
- Minor unsignalized access points could be allowed between pairs of signalized intersections.

*2020 Traffic Conditions with Site Development*

In order to assess traffic conditions with site development, traffic volumes associated with the development were estimated and distributed onto the traffic system based on the proposed development densities and roadway network. The level of development proposed for the Rock Creek area includes just under 3,000 households and 700 jobs, which is effectively equivalent to the Sunnyside EA study. Therefore, the 2020 total traffic volumes for the planning area are appropriately reflected as a redistribution of background volumes based on changes in the proposed development locations and internal roadways.

*Trip Generation*

Future trip generation under the maximum development proposed for Rock Creek Plan was estimated in order to confirm consistency with the forecast traffic volumes applied in the Sunnyside EA. Gross trip generation for the study area was calculated using the standard reference manual, *Trip Generation: Sixth Edition*. The estimated gross trips were then reduced for internalized trips and alternative mode trips to determine the net vehicle trips associated with the study area.

The Rock Creek area is planned to be a residential community, complemented by mixed office and commercial retail uses. The non-residential uses are intended to complement the residential uses; therefore, it is reasonable to assume that internalization of travel will occur, as will utilization of transit service. The internal trip capture rate was estimated using a methodology from the Institute for Transportation Engineers' *1998 Trip Generation Handbook*. The internal trip reduction was estimated to be approximately 10 percent. Additionally, a mode share reduction of five percent was applied. The estimated daily and weekday p.m. peak hour trip generation for the proposed Rock Creek area is summarized in Table 3.

Table 3  
Trip Generation Estimate

	<i>Weekday PM Peak Hour</i>			
	<i>Daily</i>	<i>Total</i>	<i>In</i>	<i>Out</i>
Gross Trips	31,135	3,995	2,315	1,680
Reductions (15%)	4,670	600	345	250
Net Trips	26,465	3,395	1,970	1,430

The trip generation estimate summarized in Table 3 shows that approximately 26,465 daily (3,395 weekday p.m. peak hour) vehicle trips will be generated by the level of development in the Rock Creek Plan. This level of trip generation is consistent with that applied in the Sunnyside EA.

### *Trip Distribution & Assignment*

Although the new trip generation is consistent with that from the Sunnyside EA, changes in the Comprehensive Plan development patterns and internal road network affect the distribution of trips onto the street system. The distribution of trips to and from the site was based on character, proximity, and relative magnitude of desired destinations in the vicinity and region. In general, the estimated traffic volumes increase in the area north of Sunnyside Road and east of SE 152nd Avenue, associated with the mixed use residential development. Traffic volumes along the SE 142nd-SE 147th realignment are somewhat reduced from the Sunnyside EA.

### *Level-of-Service Analyses*

Level-of-service analyses were conducted for the Comprehensive Plan roadway system under estimated future traffic conditions. The level-of-service analyses only evaluated collector and arterial streets. Capacity and level-of-service are not typically applicable to local streets due to low traffic volumes. The findings of the level-of-service analyses are summarized in Table 4.

### *Traffic Control*

Based on the daily traffic volume forecasts traffic signals will be required on Sunnyside Road at SE 142nd and SE 147th Avenues (existing), and on SE 152nd and SE 162nd Avenues. If traffic volumes exceed the forecast levels, and if adequate local street access to the signalized intersections at SE 152nd and SE 162nd Avenues is not provided, the intersection may require a traffic signal in the future. These conditions should be monitored as future development takes place. These findings are consistent with the findings of the Sunnyside EA.

Other than the Sunnyside Road intersections named above, all of the intersections in the proposed roadway network will not require traffic signals. Stop-controlled intersections and roundabouts may be considered as potential traffic control devices. However, the terrain in the study area is generally very steep and roundabouts may not be feasible.

Street	Classification	Lanes	ADT	LOS
<i>Existing Roadways</i>				
Sunnyside Road <i>West of SE 162nd Avenue</i>	Major Arterial	5	20,000 - 24,000	C-D
<i>East of SE 162nd Avenue</i>	Major Arterial	3	11,000 - 12,000	C
SE 162nd Avenue <i>North of Sunnyside Road</i>	Collector	2-3	4,000-6,000	C
SE 147th Avenue Realignment <i>North of Collector "B"</i>	Collector	2-3	7,000-9,000	C-D
<i>Proposed Roadways</i>				
SE 142nd-147th Realignment <i>South of Collector "B"</i>	Collector	2-3	5,000-7,000	C
SE 157th Avenue <i>North of Sunnyside Road</i>	Collector	2	2,000-4,000	C
<i>South of Sunnyside Road</i>	Collector	2	2,000-4,000	C
SE 162nd Avenue Extension <i>South of Sunnyside Road</i>	Collector	2-3	3,000-5,000	C
New Collector "B"	Collector	2	2,000-3,000	C

As Table 4 shows, the proposed new roadways will operate at LOS D or better under the proposed build-out conditions. Sunnyside Road, which was analyzed for volumes consistent with the Sunnyside EA, will operate at LOS C or D west of SE 147th Avenue, where traffic volumes will be highest. It is important to note that arterial LOS is not the same as the delay-based intersection LOS typically reported in traffic studies.

## External Transportation Network

Clackamas County has many transportation projects planned which will be important to facilitating the development of the Rock Creek area. These improvement projects are listed below:

### *Sunnyside Road*

Sunnyside Road is a major arterial that frequently operates at capacity under existing traffic conditions. The Sunnyside EA recommended widening of Sunnyside Road to five-lanes from SE 122nd to the eastern extent of urban development, projected to be SE 162nd Avenue. The remaining roadway to SE 172nd will be a three-lane road. This project is identified in the County's Capital Improvement Program (CIP) as a five-year (1998/99 to 2002/23), unfunded project. However, rapid growth in the area will quickly absorb any additional capacity created by this project. Additional regional level facilities will be needed to accommodate growing demand for travel in this area.

The need for parallel routes to Sunnyside Road has been identified in the Clackamas County Transportation Plan and recent planning efforts. These roadways will be needed to provide access between land uses without requiring additional trips onto Sunnyside Road. Collector "A" of the Rock Creek plan (see Figure 5) provides an alternative east/west route north of Sunnyside Road. The proposed roadway extends west of the study area, consistent with a future connection indicated in the both the Happy Valley and Clackamas County Transportation System Plans. East of the study area, Collector "A" is proposed to cross Rock Creek and connect to SE 172nd Avenue.

The proposed southern extension of SE 162nd Avenue shown in the Rock Creek plan was aligned to accommodate a southern Rock Creek crossing to connect potential development east of the planning area. Additionally, three local street connections to SE 152nd Avenue are proposed to further provide for east-west connectivity and link residential, commercial, and civic activities south of Sunnyside Road (see Figure 5).

### *Sunrise Corridor*

Future construction of the Sunrise Corridor will provide much needed relief for east/west travel demand, and will off-load demand from Sunnyside Road and Highway 212.

### *Highway 212/224*

Improved connections to Highway 212 from the area would relieve considerable pressure on Sunnyside Road.

### *SE 152nd Avenue*

Realignment of a segment of SE 152nd Avenue south of Sunnyside Road has been identified in the County's five-year TIP. However, full reconstruction and widening of this roadway in order to provide an efficient connection from Sunnyside Road to Highway 212 will be expensive and funding for the project has not been identified.

## 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.

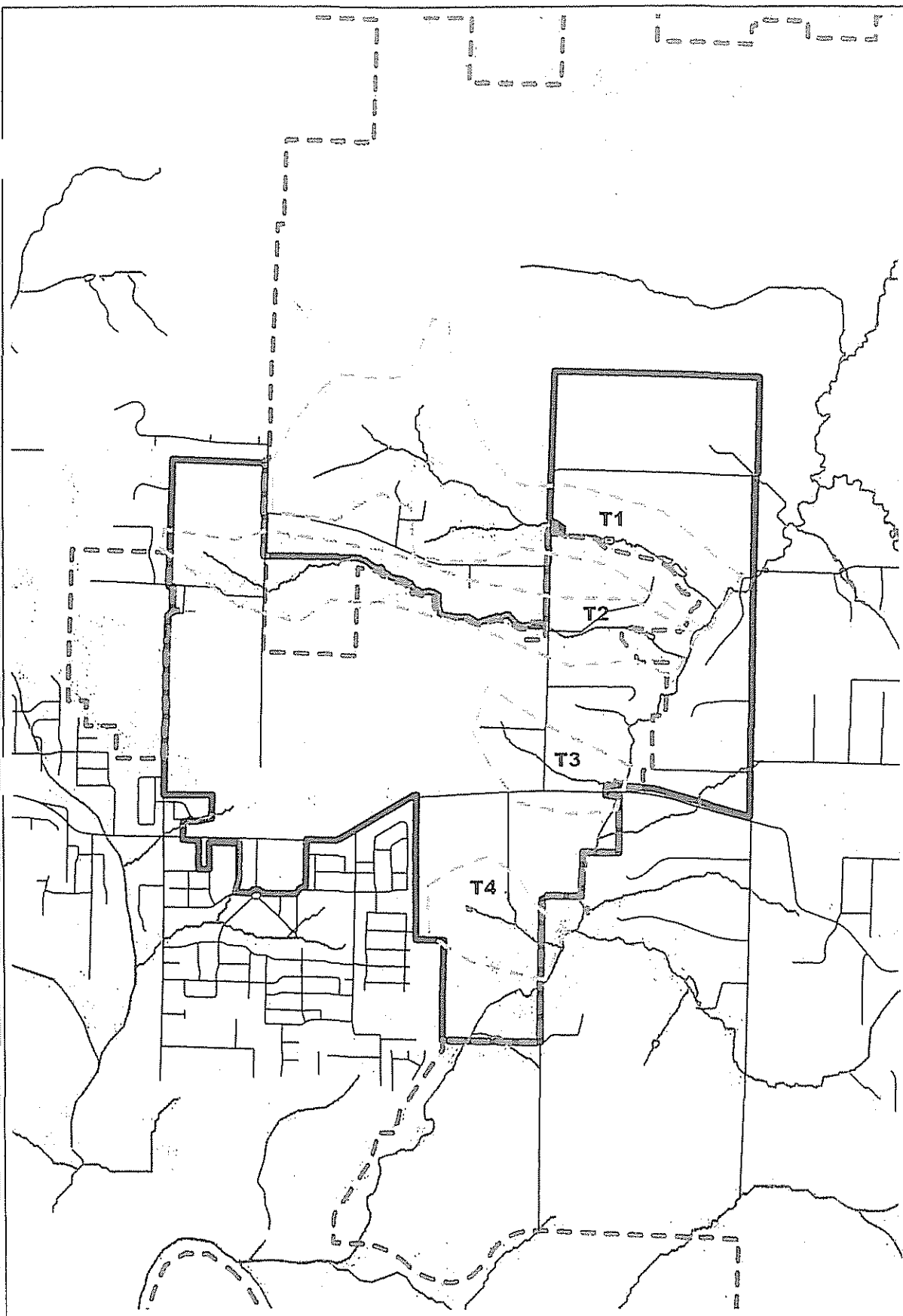
The Rock Creek corridor retains the greatest habitat value in terms of structure, diversity, and connectivity. In this densely forested stream corridor, forage, cover, and nesting opportunities for amphibians, reptiles, small mammals, deer, coyote, and a variety of bird species exist. The Rock Creek 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.

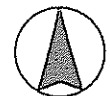
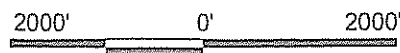
The central portion of the planning area contains both rural/agricultural lands and a significant coniferous forest. In addition to several smaller forest/meadow complexes, the central portion of the planning area is dominated by a western hemlock and Douglas fir forest, which is bisected by a Bonneville 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.



- Legend**
-  Title 3 River
  -  Planning Area Boundary
  -  Urban Growth Boundary
  -  Drainage Boudaries
  -  Streets

Rock Creek Area

Drainage Area Map



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, downstream 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, redbelly dace, 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 streamflow 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 greenspace planning areas 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*

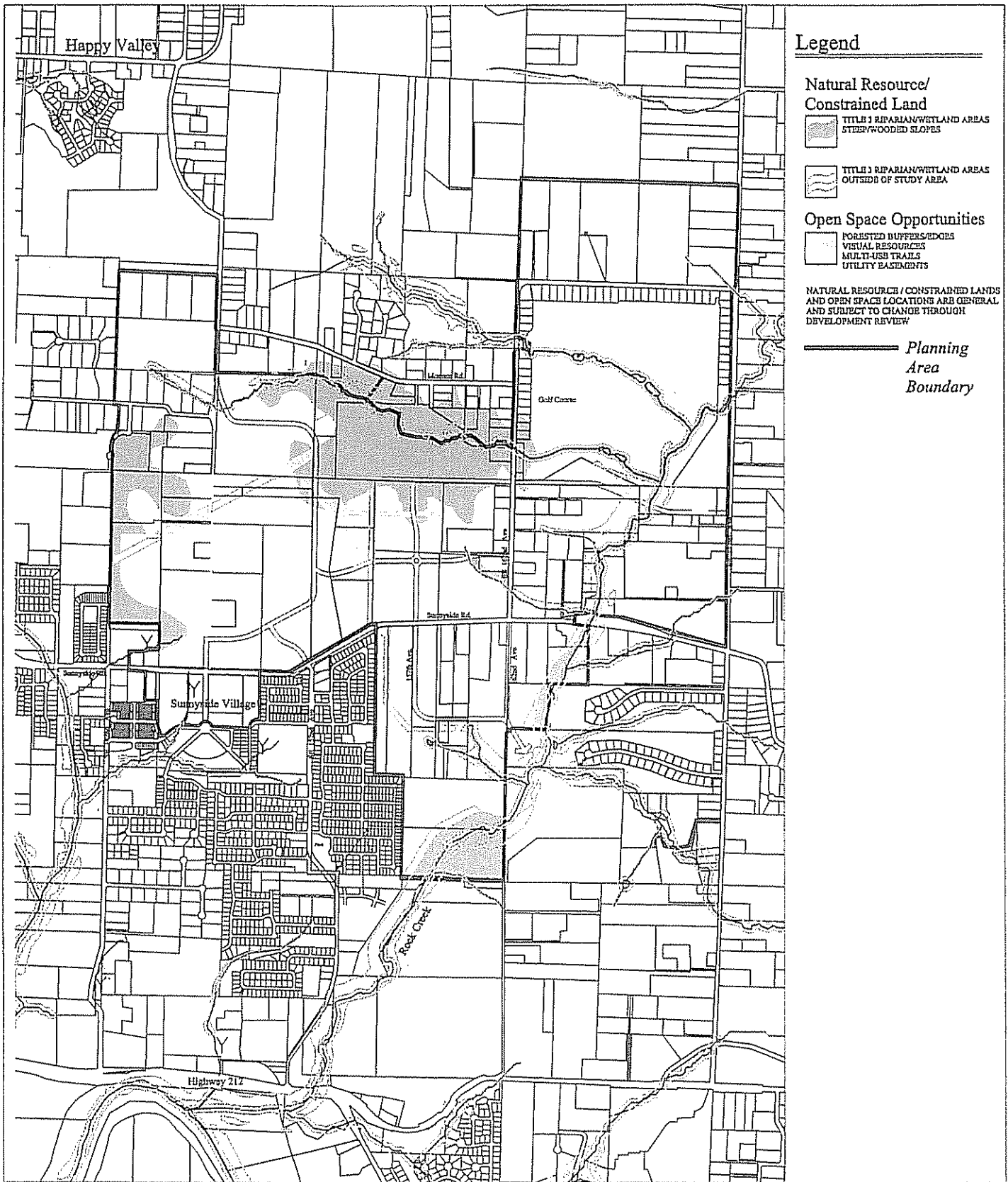
Open space areas (identified in Figure 10) are intended to extend and link the open space network and protect additional forested areas. They augment the visual green spaces as "frames" to the neighborhoods and provide opportunities for trail linkages. Density transfer is encouraged and on-site development 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 drainageways 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 Title 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

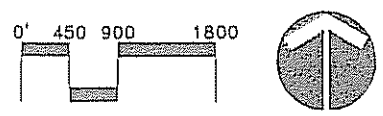


Figure 10

## *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 No. 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.

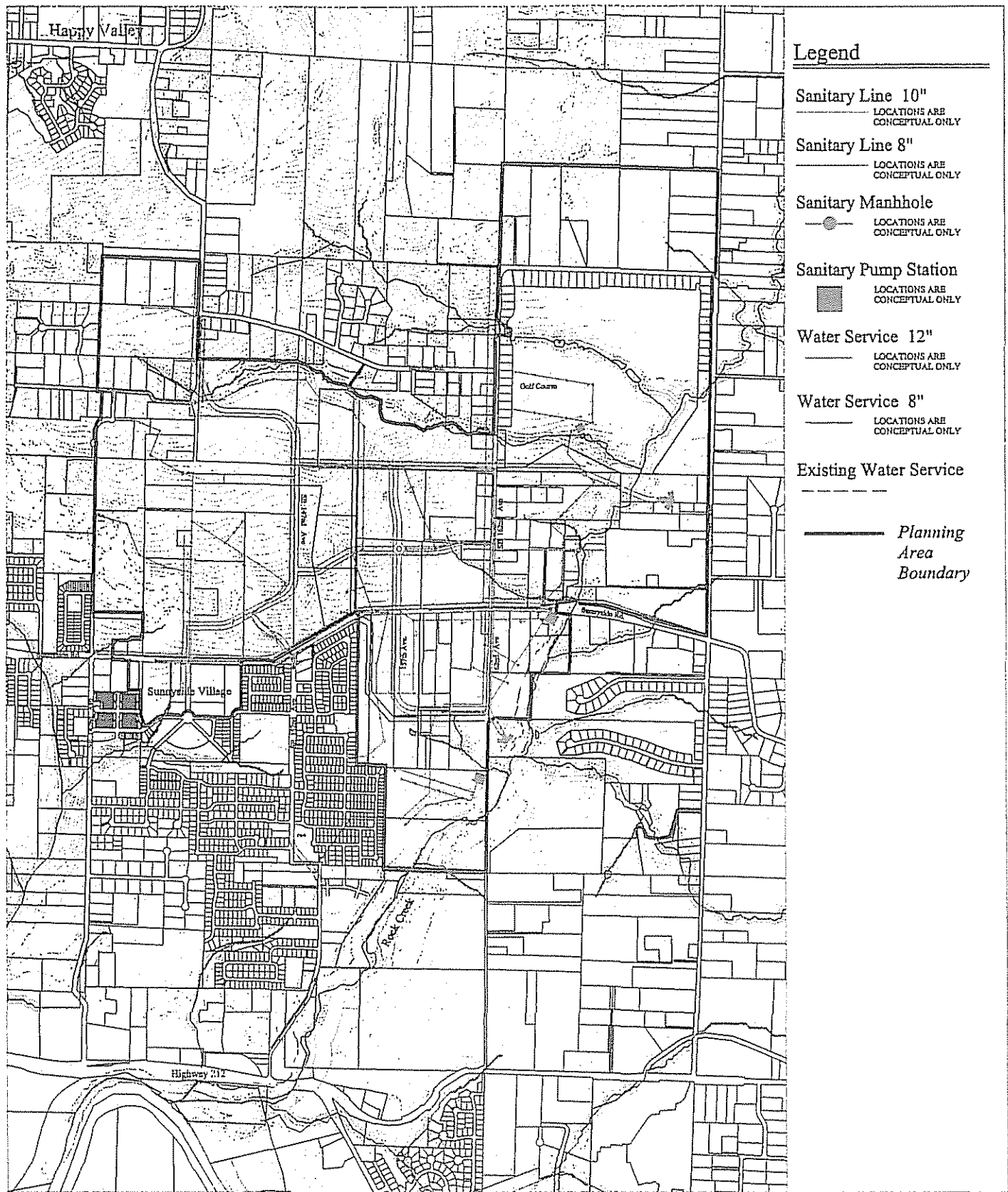
Line sizes within the study area are 8-inch and 10-inch based on the assumed flow quantities per acre. Figure 11 represents the line locations and sizes determined necessary to serve this area.

## Collector Street System

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

## Schools

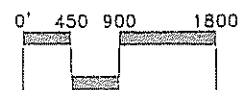
The planning area is within the North Clackamas School District #12. The school district is anticipating the urbanization of the area and planning for new facilities. The district anticipates needing three new elementary schools east of the current Urban Growth Boundary. There is a new elementary school 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.



# 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

Title 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 3.07.1120(F)*).

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 Distribution<sup>1</sup>

	<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
	<u>4,654</u>	<u>1,453</u>	<u>1,050</u>	<u>1,306</u>	<u>845</u>
		31%	23%	28%	18%

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

<sup>1</sup> 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.