

**APPENDIX 3: Pre-Qualified Concept Plans**

**Hillsboro**

## I. Introduction (placeholder: information to be provided by WaCo)

## II. City of Hillsboro

### *Population and Employment*

Hillsboro is the fifth largest city in Oregon with a population of over 89,000 residents and covering 14,925 acres (23.32 square miles). Described as an “Uptown Hometown” in its award winning Vision 2020 Program, Hillsboro is a growing community with a strong, diverse economic base.

Hillsboro is home to Oregon’s well-known high tech industry cluster (over 25,000 high tech jobs are located in the city) and has recently been the focal point of an emerging Oregon silicon solar energy manufacturing cluster. Each day roughly 72,500 employees come to work in businesses located in the city. At the same time, farming and timber remain important parts of Hillsboro’s economy.

Over the past two decades, Hillsboro has experienced rapid job and population growth. Between 1990 and 2000, Hillsboro population grew by 89% (37,800 to 71,455), and its employment grew by 90% (20,521 to 38,914). Since 2000, Hillsboro has seen another 25% growth in population (71,455 to 89,145) and 86% increase in employment (38,914 to 72,529). The City’s *Economic Opportunities Analysis & Long-Term Urban Land Needs Assessment (EOA)* prepared by Johnson Reid Land Use Economics in 2009 projects this growth to continue over the next 50 years (Table 1).

**Table 1: Hillsboro Projected Growth Forecasts**

	<b>2008</b>	<b>2035</b>	<b>2060</b>
Jobs	72,905	172,270	347,700
Population	89,145	267,370	350,550
Households	32,410	98,300	132,280

Source: Draft City Economic Opportunities Analysis, March 2009 (Mid-Range estimates)

Hillsboro’s current jobs-housing ratio is 2.2 jobs to 1 dwelling unit. In an effort to reduce vehicle miles travelled and adverse affects contributing to climate change, the city aspires to reduce this ratio to 1.5 to 1. Such an effort will contribute to the region’s goal in becoming “a leader in minimizing contributions to global warming” (Metro’s Characteristics of a Successful Region). Efforts to reach this aspiration include increased densities within areas such as Downtown Hillsboro and Tanasbourne/AmberGlen area, as well as creating complete new neighborhoods consistent with the Region’s 2040 Growth Concept Plan.

Accordingly, the City presents two sets of calculations throughout these findings: (1) The first is based on the County’s long-term (50-years) Urban Reserves land need forecasts established for the preliminary concept planning process; and (2) The second is based on the City’s aspirations, as reflected in and supported by its Economic Opportunities Analysis (EOA)(Attachment A).

### *Existing City Growth Aspirations*

As part of its efforts to attain a better jobs/housing balance within its current City limits, Hillsboro is looking to increase densities in two existing communities: the Downtown Hillsboro Core and the Tanasbourne/AmberGlen communities. A primary focus in these community plans is to bring about significant increases in Hillsboro’s housing capacities, as described below.

**Downtown Hillsboro** is the City’s “Downtown Hometown” located near the western edge of the regional urban growth boundary. Downtown supports major Washington County and City government employers along with a traditional “Main Street” retail core. Major transportation facilities serving Downtown

include a State Highway and the Westside Light Rail, which terminates at the Hatfield Government Center.

The draft *Downtown Framework Plan* lays a foundation for revitalization of the Downtown Core and its surrounding neighborhoods. The Framework Plan aspires to create a vibrant Regional Center where approximately 20,000 people will live and 15,000 will work, adding 3,000 new dwelling units and between 2-3,000 new jobs. Hillsboro is investigating the use of urban renewal to meet its aspirations for Downtown.

**Tanasbourne/AmberGlen Community Plan** area is an existing urban node within which more intensive mixed-use developments are being planned close to major employers, the dynamic Tanasbourne Town Center, and major transportation facilities including a planned Westside Light Rail Red Line Spur and capacity expansions along nearby U.S. Highway 26. The Area vision calls for mid-rise and high-density residential towers and neighborhood-serving commercial uses. A centrally located 15 acre park will provide a focal point, along with 160 acres of additional parks and open space. Approximately 17,000 people will live in the AmberGlen Community and 11,000 will work there when the plan is fully developed, adding 5,000 new dwelling units and 2,000 new jobs.

### ***Existing Transportation***

#### ***Pedestrian and Bicycle***

Sidewalks are provided on many of the city's arterial and collector roadways and are required on newly constructed streets and roadways in Hillsboro. Bikeways on several arterials and collectors form a basic bikeway network. Bikeways generally consist of designated bike lanes and roadway segments where specific accommodations (additional lane widths) have been made. Bike boulevards in Hillsboro include Connell Avenue from W. Main Street to NW Cory Street, Grant Street from N. 1<sup>st</sup> Avenue to NE 28<sup>th</sup> Avenue and Walnut Street from S. 1<sup>st</sup> Avenue to SE 18<sup>th</sup> Avenue.

The Hillsboro Bicycle and Pedestrian Task Force, formed in 2000 to assist in the 2004 Transportation System Plan (TSP) update, determined that a more comprehensive program was needed to effectively achieve connectivity and provide safe cycling and walking options. A new multimodal task force is currently being formed. The task force, which is expected to begin meeting in the fall of 2009, will assist in updating the TSP to comply with the 2010 Regional Transportation Plan.

#### ***Transit***

Hillsboro is served by the Westside Light Rail Transit line, which terminates in downtown Hillsboro. Several industrial employers provide private shuttle services from the Orenco and Quatama Light Rail Transit Stations to the industrial employment centers to the north. Tri-Met provides bus transit service along many arterial and a few collector roadways in the city.

#### ***Automobile***

State Highways that serve Hillsboro include Sunset Highway (US 26), Tualatin Valley Highway (ORE 8)(TV Highway) and Glencoe Road/1<sup>st</sup> Avenue (ORE 219).

### ***Transportation Aspirations***

The proposed urban reserve candidate areas have been selected, in part, based on the opportunities to connect them to existing transportation systems. Both communities are envisioned as being fully integrated to the existing city. Equally important to both new communities are connections by pedestrian and bike trails designed to extend beyond the boundaries into the existing city. These systems will be used for both commuting and recreational purposes.

### ***North Hillsboro Study Area***

Use of light rail transit has increased in Hillsboro due to an increase in frequency and coverage. The City is looking to expand high capacity transit service to the Tanasbourne/Amberglen community in the short-term horizon and to the North Hillsboro Urban Reserve Areas over a 50-year time frame with the cooperation of Tri-Met and Metro. Hillsboro has proposed a light rail extension north from the existing MAX alignment to Evergreen Parkway then north of Hwy 26, and west for future expansion into North Hillsboro industrial land.

### ***South Hillsboro Plan Area***

Hillsboro was recently selected for a Transportation and Growth Management (TGM) Grant for a TV Highway Corridor Plan. The proposed TV Highway Corridor Plan will identify and resolve: (1) weaknesses in the existing transportation network that adversely impact the corridor (such as poor north-south route continuity); (2) conflicts between modes that create unsafe operating conditions (such as at-grade rail crossings and pedestrian/bicycle routes to schools); and, (3) access management issues that contribute to the loss of operating capacity and increased crash rates. The Plan will also address feasible ways in which High Capacity Transit can be implemented and complementary land uses can be developed to support the efficient use of these strategic investments in the TV Highway corridor.

## **III. Potential Candidate Reserve Area**

Hillsboro identified and seeks two areas for Urban Reserves designation: (1) the North Hillsboro study area; and (2) South Hillsboro. The North Hillsboro area contains approximately 8,159 acres bounded by Dairy Creek to the west from NW Evergreen Road north to Sunset Highway (Hwy 26), Jackson School Road to the west and north of Hwy 26; existing roads and the Portland and Western Railroad to the north; Rock Creek to the east; and the existing UGB to the south (Map 1). The South Hillsboro area encompasses 2,330 acres of land north of Rosedale Road, south of the Tualatin Valley Highway, east of the Tualatin River and west of SW 209<sup>th</sup> Avenue (Map 2).

As described below, it is Hillsboro's aspiration to plan for and create "complete communities" that are seamlessly integrated with the existing city. South Hillsboro will include a town center that will serve the new area, as well as surrounding existing communities in Hillsboro and Aloha. A neighborhood center has been designated along Cornelius Pass Road to serve the surrounding compact neighborhoods. Parks and open space will serve new and existing communities.

In the North Hillsboro area, a neighborhood, mixed-use node at NW Evergreen and NW Glencoe Roads will provide neighborhood services to the existing and future medium density residential neighborhoods. Industrial and employment areas are designated adjacent to existing industrial areas along Highway 26. New residential areas, as well as a new town center, will be located to the north of the industrial lands.

### ***Addressing the Review Criteria***

Section IV outlines the planning process undertaken for both North and South Hillsboro, including the past and future public involvement. In Section V, the criteria for Urban Reserves set forth in OAR 660-027-0050 will be applied to each candidate area in sequence.

#### **IV. Concept Planning**

##### ***North Hillsboro Study Area Preliminary Planning Process***

A Draft Preliminary Concept Plan has been prepared for the purpose of determining the suitability of North Hillsboro for future urban development. In the event the area is designated as an urban reserve, a full-scale public outreach process will assist the city in creating a final concept plan for the area.

On March 31, 2009, the Hillsboro Planning Department hosted a North Hillsboro planning charette for local government staff. Participants included staff from the City Economic Development, Engineering, Water and Planning; Clean Water Services; Hillsboro School District; and County long range planning.

Factors considered in the charette were (See Attachment B, Charette Advance Packet)

- 8 Urban Reserve Factors (OAR 660027-0050)
- 8 Metro Great Community Factors
- 8 Elements of a Great Neighborhood
- 4 Hillsboro Community Building Guidelines

Design elements considered were

- Open Space/Parks/Natural Areas (wetlands, floodplains, steep slopes)
- Housing and Employment Areas/Public Facilities and Services
- Transportation/Storm Drainage/Sewer/Water

The charatte participants distilled these 28 considerations, along with the design guidelines, into factors that make livable communities to guide in the process. The resulting guiding factors included:

- Enhancing natural systems
- Supporting economic vitality
- Providing housing choice
- Providing multiple transportation options
- Ensuring cost-efficient infrastructure and public services
- Fostering intergovernmental cooperation
- Connecting to existing communities and
- Emphasizing quality design and third places

The participants used these factors to address habitat and environmental factors, transportation, parks and open spaces and public facilities. The charette resulted in two alternatives that were presented to the Hillsboro Planning Commission at a public hearing in May 2009. Preferred Alternative 3 Concept Plan (Map 1) reflects both input from, and land use/community design preferences of, the Hillsboro Planning Commission. This preferred alternative will accommodate 22,893 new dwelling units (with a population of 57,233) and 64,570 jobs (Table 2). The Draft North Hillsboro Preliminary Concept Plan is provided in Attachment C.

**Table 2: North Hillsboro Development Potential**

2040 Design Type	Gross Acres <sup>1</sup>	Developable Acres	School Acres	Park Acres	Net Developable Acres	Jobs per Net Acre	School Jobs <sup>2</sup>	Job Capacity	Dwelling Units per Net Residential Acre	Dwelling Unit Capacity	Estimated Population
Employment Area	774	619			619	40		24,760	-	-	-
Industrial	2,312	1,850			1,850	19		35,150	-	-	-
Inner Neighborhood	1,691	1,353	115	309	929	-	711	711	15	13,940	34,850
Outer Neighborhood	1,258	1,007	85	230	692	-	529	529	8	5,533	13,833
Neighborhood Center	43	34			34	20		680	20	680	1,700
Town Center	171	137			137	20		2,740	20	2,740	6,850
Open Space	1,261	-			-					-	-
Roads	380	-			-					-	-
<b>Total</b>	<b>7,890</b>	<b>5,000</b>	<b>200</b>	<b>539</b>	<b>4,261</b>	<b>24</b>	<b>1,240</b>	<b>64,570</b>	<b>13</b>	<b>22,893</b>	<b>57,233</b>

<sup>1</sup> Developable acres are exclusive of constrained areas and a 20% deduction for streets and other uses.

<sup>2</sup> School jobs are included in the Inner and Outer Neighborhoods and are calculated at 6 jobs/acre.

Park and school needs to serve the North Hillsboro area were determined in coordination with the Hillsboro Parks Department and School District, respectively. Land area to be dedicated for parks and schools is 539 and 200 acres, respectively (Table 2), with allocations for park types in Table 3 and Schools in Table 4 (*see also* Attachment C for more detailed description of parks and schools).

**Table 3: North Hillsboro Park Types and Sizes**

Park Type	No. of Sites	Avg. Acres	Total Acres
Community	3	21	63
Nature	2	55	110
Neighborhood	8	7	56
Regional	1	200	200
Special Use	5	20	100
Urban	10	1	10
<b>Total</b>	<b>14</b>		<b>539</b>

**Table 4: North Hillsboro Schools Types and Site Sizes**

School Type	Sites	Avg. Acres	Total Acres
Elementary	6	10	60
Middle	3	20	60
High School	2	40	80
<b>Total</b>	<b>16</b>		<b>200</b>

### ***South Hillsboro Plan Area Community Planning Process***

The City used a Construction Excise Tax grant from Metro and City and Area stakeholder funding resources to prepare a South Hillsboro Community Plan. The South Hillsboro Community Plan is the product of a cooperative planning effort among the City, Metro, Washington County and local landowners and stakeholders. The Plan describes future land use and infrastructure/utility systems for 1,566 acres of the South Hillsboro area, including 335 acres in areas 69 and 71 already in the UGB (Attachment D). For the purpose of these findings, it is assumed that the 469 acres area designated as “potential future reserves” not covered by the Plan will be developed as outer neighborhood (Map 2).

In June 2008, the City of Hillsboro Planning Commission and City Council adopted Joint Resolutions that endorsed the Plan; however, the Plan cannot yet be formally adopted as City policy because much of the plan area has yet to be added to the UGB

Considerations in developing the South Hillsboro Community Plan included:

- Metro Great Communities Characteristics
- Hillsboro 2020 Vision
- Natural & Cultural Resource Preservation
- Infrastructure Funding & Phasing
- Market Feasibility

Three overriding community planning objectives are manifested and achieved by the South Hillsboro Plan:

- *Completeness* – a community with the full spectrum of facilities and services. A life-cycle community that addresses the needs and desires of all residents for health, housing, education, shopping and recreation.
- *Connectedness* – a community that provides residents and visitors with full multi-modal access. A community that seamlessly connects neighborhoods and easily transitions from urban to rural lands. A community plan, which in addition to serving future residents, provides older neighborhoods to the east and to the north, with access to needed parks, trails, open space, shopping and family services.
- *Green* – a community that integrates open spaces and neighborhoods. A sustainable community that incorporates state-of-the-art green development practices. Preservation and improvement of existing natural resources and wildlife corridors to create a truly distinct natural environment.

As described in Attachment D, the South Hillsboro Community Plan

*. . .provides the framework for a residential mixed-use community organized around a new town center, complemented by a neighborhood center that can accommodate concentrations of retail and service uses; employment opportunities; civic facilities; schools; neighborhood parks; natural areas; and a variety of housing choices, consistent with Metro’s 2040 Growth Concept.*

The South Hillsboro Community Plan identifies ten distinct land use categories:

- Mixed use/Flex use
- Town Center
- Neighborhood Center
- Compact Neighborhood

- Single Family Neighborhood
- Large Lot Single Family
- Potential Future Urban Reserves
- Recreation/Open Space
- Green Space
- Civic/Institutional

The plan area will accommodate 1,433 new jobs and 10,205 dwelling units (with a population of 25,513) (Table 5).

**Table 5: South Hillsboro Development Potential**

<b>2040</b>	<b>Gross Acres</b>	<b>Net Developable Acres</b>	<b>Dwelling Units/Acre</b>	<b>Dwelling Units</b>	<b>Jobs /Acre</b>	<b>Jobs</b>
Employment Area	6	5		-	40	198
Inner Neighborhood	448	358	15	4,756	-	83
Open Space	925	-	-	-	-	-
Outer Neighborhood	750	600	8	4,482	-	185
Roads	141	-	-	-	-	-
Neighborhood Center	18	13	20	268	20	268
Town Center	42	35	20	699	20	699
<b>Total</b>	<b>2,330</b>	<b>1,011</b>		<b>10,205</b>		<b>1,433</b>

Note: School jobs are included in the Inner and Outer Neighborhoods and are calculated at 6 jobs/acre. School and parks acres in Inner and Outer Neighborhoods were not included in dwelling unit calculations. Results of this analysis differ from the South Hillsboro Community Plan because different metrics were used for purposes of consistency with the County planning metrics.

**V. Urban Reserve Factor (OAR 660-27-0050) Findings for North and South Hillsboro Urban Reserve Areas**

*(1) Urban Reserve Factors: When identifying and selecting land for designation as urban reserves under this division, Metro shall base its decision on consideration of whether land proposed for designation as urban reserves, alone or in conjunction with the land inside the UGB:*

*(a) Can be developed at urban densities in a way that makes efficient use of existing and future public and private infrastructure investments;*

**Response:**

***City Wide Infrastructure Readiness***

Providing superior levels of public facilities and services is vital for developing the proposed urban reserve study areas into a desirable place for residents to live and work. Future development in both North and South Hillsboro will be supported by adequate public services that are coordinated, efficient, and cost-effective, supporting both local and regional planning objectives. Services will be provided in a manner that preserves riparian habitats and enhances water quality and the environment. Opportunities for incorporating sustainable systems and methods will be utilized when possible.

### ***Water Supply***

Hillsboro is the founding and managing partner in the Joint Water Commission (JWC), the regional water supplier. The city is also a contract holder with the Bureau of Reclamation (BOR) for the stored raw water impoundment in Hagg Lake (Scoggins Dam) and is the managing partner of the Barney Joint Ownership Commission (BJOC), which is another raw water impoundment, located in the coast range. Hillsboro is also a key member of the Tualatin Basin Water Supply project, which was formed to secure raw water supply needs for the next fifty years and beyond.

The Hillsboro Water Department has a long history of proactively securing water supplies, treatment production, and conveyance for the city's future needs. As such, Hillsboro is strategically prepared for key industrial growth to fuel the local, regional, and state economy, as well as residential growth to accommodate the necessary workforce.

The JWC and the Hillsboro Water Department recently completed a 40-year capital improvements plan to identify the city's infrastructure needs. Overall, the Hillsboro Water Department's investment share in all projects is estimated to be approximately \$400 million. Funding the infrastructure investment will be accomplished through a mix of revenue bonds, system development changes, and revenue from water sales.

With the base transmission and storage components already existing or planned for current customers, the water revenue investment in expansion area distribution infrastructure is expected to be minimal. Developers are responsible for building distribution infrastructure suitable for their development. The Hillsboro Water Department cost shares with the developer to expand (up size) the distribution infrastructure being constructed to meet long term future needs. On average the Department expects to fund approximately 15% of the overall distribution infrastructure cost due to forward-thinking upsizing (approximately \$2,000 per acre).

The Hillsboro Water Department has strategically located key transmission lines at the north and south edges of Hillsboro. This placement will allow for convenient extension of water service into the proposed urban reserve areas.

### ***Sanitary sewer***

Sanitary sewer is handled by the city in partnership with Clean Water Services (CWS). In order to serve areas recently added to the UGB as they develop, Hillsboro has identified the need to up-size downstream lines, including the Dawson Creek and West Hillsboro trunks. These improvements will be required irrespective of the designation of urban reserves and will be sized to accommodate future growth in reserve areas.

### ***Storm Water***

CWS, Washington County and the City of Hillsboro currently share the responsibility of public storm water management in and around Hillsboro. CWS responsibilities include master planning, operation and maintenance of regional water quality treatment and detention facilities and discharge to natural drainage ways. Washington County oversees open drainage improvements in public rights-of-way associated with County roads in unincorporated areas outside city jurisdiction. The City of Hillsboro's responsibilities within its city limits include the operation and maintenance of all public conveyance systems, some service connections, and discharge to minor tributaries, ditches and intermittent streams.

### ***Electricity, Gas & Cable***

Electricity, cable, gas and communication services will be provided by the private sector. Hillsboro's power provider is Portland General Electric (PGE). PGE has a total combined generating capacity of 1,957 megawatts, and they also operate several Reliability Centers throughout the region.

Reliability Centers serve semiconductor plants, high technology operations and other industries and commercial operations that demand superior power quality and reliability. PGE's design criteria for these Centers features full redundancy at each level of the power network: transmission lines; substation transformers; and feeders. In the event of any equipment failure, the redundant component will pick up the full load requirement ([www.portlandgeneral.com/business/large\\_industrial/reliability\\_centers.aspx](http://www.portlandgeneral.com/business/large_industrial/reliability_centers.aspx)). The Sunset Reliability Center in Hillsboro is designed to meet the unique needs of high-tech manufacturers and companies with power-sensitive operations, including Intel Ronler Acres. This substation is served by:

- Three 115 kV transmission lines connected to a breaker and one half bus. Transmission lines include a pilot wire providing high-speed transfer trip technology clearing a fault within six cycles. A fault occurring in any 2 of the 3 lines will not result in an outage.
- Two 28 MVA and three 50 MVA transformers in the station are configured to provide full redundancy. The station is designed to accommodate four 115 kV lines and eight transformers.
- 13 kV feeders serve high tech customers through redundant underground distribution.

The substation uses metal clad switchgear to minimize exposure to outages from birds and squirrels.

The city recognizes the importance of private utility investments and their impact on attracting new and maintaining existing industry anchors. Coordinated meetings between a prospective companies and private utilities are often arranged and attended by the City staff to discuss requirements, quality, cost, and service in a team approach.

### ***North Hillsboro Study Area***

#### ***North Hillsboro Study Area Densities***

The North Hillsboro area has the potential to develop into a complete community with major employment, town centers and a variety of housing choices. Potential job capacity is 64,570 new jobs, varying by type from 19 to 40 jobs per acre. A potential 22,893 new dwelling units will be provided at densities ranging from 20 units per acres in the centers, to 8 units per acre in the outer neighborhoods, thus providing a variety of housing options and transition to the rural areas beyond (Table 6).

**Table 6: North Hillsboro Potential Densities**

<b>2040 Design Type</b>	<b>Net Dev. Acres</b>	<b>Jobs/ Net Acre</b>	<b>Job Capacity</b>	<b>Dwelling Units/ Net Acre</b>	<b>Dwelling Unit Capacity</b>
Employment Area	619	40	24,760	-	-
Industrial	1,850	19	35,150	-	-
Inner Neighborhood	929	-	711	15	13,940
Outer Neighborhood	692	-	529	8	5,533
Neighborhood Center	34	20	680	20	680
Town Center	137	20	2,740	20	2,740
<b>Total</b>	<b>4,261</b>		<b>64,570</b>		<b>22,893</b>

*North Hillsboro Study Area Infrastructure*

**Water.** Currently, the City has approximately 28 MGD of excess capacity in the North Transmission Line (\$23,000,000 prior investment). Therefore expansion to the to the proposed reserve areas is not expected to cause any significant impacts to existing customers.

The Hillsboro Water Department has strategically located key reservoir facilities (Evergreen Reservoir, \$12,500,000 prior investment) along the northern boundary feeding the high pressure industrial area. This existing facility has excess capacity to serve up to the south edge of Highway 26. Another reservoir is schedule to be constructed near the intersection of NW Evergreen and NW Glencoe Road to serve existing underserved area customers, in addition to serving north to Highway 26. This reservoir will be built regardless of whether the North Hillsboro area is designated as urban reserves for future urban growth boundary expansion and only the size of the reservoir will be impacted based on potential future boundary expansion.

The Hillsboro Water Department is planning to build the North Hillsboro Reservoir and transmission line to supply lands on the north side of Highway 26. The master plan estimates this project to cost \$14 million and is factored into the overall Water Department investment figure. The fate of this project, and resulting cost expenditure, rests solely on the development of lands on the north side of Highway 26.

Consistent with Hillsboro’s readiness to extend water services into the North Hillsboro study area, Metro’s preliminary analysis of water service suitability shows the area as being highly suitable, meaning it will only require typical extensions of service, including general distribution lines and reservoirs with no major facilities needed (Attachment B, Metro Regional Infrastructure Memos).

**Sewer.** For areas north of Hwy 26, the City is exploring options for piping waste to North Plains or to the Columbia River treatment plant. Overall, the North Hillsboro study area has been determined to be highly suitable for serviceability, meaning the area is the easiest and least costly to serve (Attachment B, Metro Regional Infrastructure memos).

In Metro’s preliminary analysis of the efficiency of providing sanitary sewer service (Attachment B), the North Hillsboro area to the east was ranked as efficient, being an area that is the easiest and least costly to serve, requiring upsizing of existing trunk lines or adding new trunk lines. The area to the west was ranked as moderately efficient, being an area “that will require substantial improvements, but relatively easy ones.” Notes for this area included the need for a new pump station near Hwy 26 and McKay Creek

and the existence of relatively large areas of wetland and floodplain near McKay Creek north of Highway 26 (Attachment B, Metro Regional Infrastructure Memos).

**Storm Water.** Regional water quality and detention facilities are recommended to serve the study area. Storm water management should focus on the natural features of the area by using overland flow, drain tiles, natural swales, irrigation channels and ditches adjacent to roadways. Existing lines will need to be extended as development progresses into the North Hillsboro study area. Water quality methodologies in Metro’s “Green Streets” manual will be considered, whenever feasible, as a means to manage storm water.

For industrial development, the city requires developers to make on-site improvements (e.g., detention ponds) for storm water detention, thus having a net zero increase of flow into the system.

**Transportation.** State Highway 26 bisects the proposed urban reserve area. Interchanges are provided at 185<sup>th</sup> Avenue, Cornelius Pass Road, Shute Road, Jackson School Road and Glencoe Road. Table 7 lists the primary existing connections to and through the two sub-areas. Glencoe Road, Shute Road, Cornelius Pass Road and 185<sup>th</sup> Avenue provide connections between the two sub-areas and to the existing city.

**Table 7: Existing Transportation Facilities**

<b>South of Highway 26</b>	
<i>North-South Connections</i>	<i>East-West Connections</i>
Glencoe Road*	Evergreen Road
Jackson School Road*	Scotch Church/Meek
Shute Road*	
<b>North of Highway 26</b>	
<i>North-South Connections</i>	<i>East-West Connections</i>
Glencoe Road*	West Union Road
Jackson School Road*	
Helvetia Road*	
Century Boulevard/Dick Road	
Cornelius Pass Road*	
185 <sup>th</sup> Avenue*	

\* Provide connections over Highway 26.

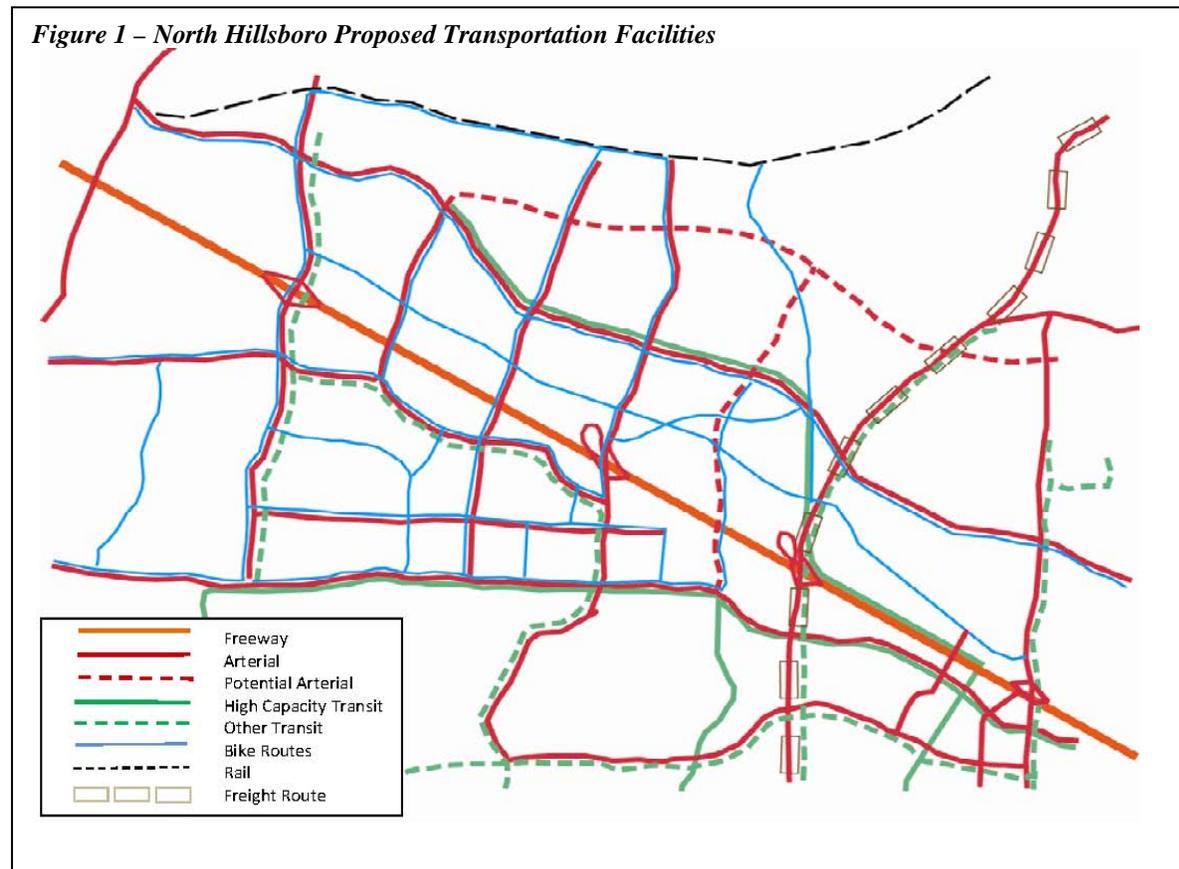
As the study area is currently rural, dedicated bicycle and pedestrian access is limited. New transportation facilities will be crucial in providing connections both within the study area, as well as to existing communities and employment areas. Development in North Hillsboro will impact surrounding roadways and facilities, warranting improvements both on and off-site. As the North Hillsboro area will be developed incrementally, new transportation facilities will need to be constructed with such future growth in mind. Potential transportation routes are illustrated in Figure 1 (*see also* Attachment C).

Metro’s Preliminary Analysis of Providing Urban Level Transportation Services to the North Hillsboro study area arrived at the following rankings for lane cost suitability and connectivity suitability:

- *Medium System Lane and Added Lane Cost Suitability* – The particular data set showed that this area is somewhat suitable for providing a transportation system capable of accommodating urban levels of development.

- *High Connectivity Suitability* - The particular data set showed that the area is among the most suitable for providing a transportation system capable of accommodating urban levels of development.

**Freight Mobility.** Hillsboro expects to continue to grow its industrial employment sector and, as such, the movement of goods is crucial to its future economic viability. In addition to freight movement along Hwy 26, Cornelius Pass Road will serve as a truck freight route. Freight rail is provided along the northern edge of the North Hillsboro area (Figure 1).



### ***South Hillsboro Plan Area***

#### ***South Hillsboro Plan Area Densities***

South Hillsboro has been designed to be a complete town center community in accordance with Metro’s vision for Great Communities. It will provide a variety of housing types, schools, shopping, jobs, recreation, protected natural areas, civic uses, and public gathering places (Table 5). The city endorsed Concept Plan is provided in Attachment E.

#### ***South Hillsboro Plan Area Infrastructure***

South Hillsboro is unique in that it provides an opportunity to create a complete community, directly accessible to available services, with the major land owners committed to the development process. Because of the size of the plan area and the proposed density, mix of uses and amenities, and proximity to a growing job base, the carbon footprint of this community will be smaller and its public infrastructure

cost lower than urban development at the same scale elsewhere in the region. As indicated in the attached Concept Plan, most of the new infrastructure will be funded by the private sector (Attachment D).

South Hillsboro is unique in that a fully developed plan for the provision and financing of infrastructure has been drafted and endorsed by City Council. A description of existing and proposed infrastructure for South Hillsboro is provided in Attachment D at pages 50-54. A complete cost and financing program for infrastructure is provided at pages 55-77.

**Transportation.** The large holdings of participating owners give South Hillsboro the opportunity to provide a coordinated transportation grid. TV Highway, located at the northern boundary of the plan area, is a significant transportation corridor linking Hillsboro to the Metropolitan area. The TGM grant, along with development of the plan area, will result in major improvements to this regional public investment. Extension of Cornelius Pass Road and other north-south connections into the plan area will facilitate movement throughout the plan area, as well as regional needs. Century Boulevard will be merged with 229<sup>th</sup> Avenue, providing additional north-south connectivity and HCT.

**Metro Preliminary Regional Infrastructure Memos.** Metro's preliminary analysis of providing services to South Hillsboro confirms city findings that the area is easily serviced.

Metro's Preliminary Analysis of Providing Urban Level Transportation Services to the South Hillsboro came up with the following rankings for lane cost suitability and connectivity suitability:

- *Medium System Lane and Added Lane Cost Suitability* – The particular data set showed that this area is somewhat suitable for providing a transportation system capable of accommodating urban levels of development.
- *High Connectivity Suitability* - The particular data set showed that the area is among the most suitable for providing a transportation system capable of accommodating urban levels of development.

*Efficient Sewer Serviceability* – This area is the easiest and least costly to serve. It will require relatively simple extensions of the existing system within the area to be urbanized, and could connect directly to existing facilities in the existing urban area. This area is the one of the few areas for which the treatment and conveyance systems inside the current UGB appears to have capacity to serve areas outside the current UGB.

South Hillsboro is located within the map sub-area S26, the comment for which is “contiguous to existing UGB; new [pump station] and FM needed near Rosedale Road and River Road” (Attachment B).

*Urban Level Sanitary Sewer Serviceability – High Suitability:* These areas are the easiest and least costly to serve. This includes those few areas where there is capacity in a nearby treatment plant or conveyance facility, or those areas where capacity could be relatively easily provided. It also includes areas that require substantial improvements, but relatively easy ones for which there is land available or no major issues identified. These also include areas for which topography enables primarily gravity flow to an existing plant. For the most part, these areas will primarily require investment in facilities located inside the area to be developed, but be able to hook up to existing facilities inside the current UGB.

*Urban Level Water Service - High Suitability:* Generally, these areas will only require typical extensions of service – general distribution lines, reservoirs, no major facilities.

***(b) Includes sufficient development capacity to support a healthy economy;***

**Response:**

***North Hillsboro Study Area***

Table 2 identifies 1,850 developable *industrial* acres and 619 developable *employment* acres in the proposed industrial and employment areas of the North Hillsboro study area. These proposed industrial and employment acres are designed to accommodate the growth and expansion over a 50-year horizon of three major, traded sector industry clusters now located in Hillsboro: a mature high technology cluster anchored by Intel, Inc.; an emerging silicon solar energy manufacturing cluster anchored by SolarWorld, Inc.; and an incubating bio-pharma cluster anchored by Genentech, Inc.

The North Hillsboro study area has the potential to significantly enhance the economic vitality of the entire region. The study area is strategically located adjacent to the heart of the Silicon Forest, the center of Oregon's high-tech industry cluster. The preliminary plan is designed to capitalize on existing transportation and utility services located nearby.

The south western portion of the North Hillsboro area has been planned to extend the existing major Westside employment to meet expected demand for specialized industrial uses over the fifty year horizon.

***Industrial***

The EOA (Attachment A) anticipates a medium growth need (net of existing capacity) of approximately 1,277 gross buildable industrial acres through 2035, and 7,373 gross buildable acres through 2060. Hillsboro's combined existing industrial land capacity at 988 acres falls short of estimated 2035 need. The area designated for industrial use in the Concept Plan contains 2,347 gross buildable acres. It is estimated that the district has the capacity to support about 35,000 high quality industrial jobs in the future based upon an aspirational average of 19 jobs per net buildable acre.

The EOA estimates a medium growth need of four (4) industrial sites larger than 100 gross buildable acres through 2035, and twenty-four sites of 100 gross buildable acres or more through 2060. The North Hillsboro Concept Plan area contains four parcels over 100 gross buildable acres that are designated industrial.

The EOA also addresses industrial user's projected demand for sites within a range of acreages that are suitable for certain development types and industrial clusters. Table 8 reconciles the estimated site size demand to the site sizes that currently exist within the study area.

**Table 8: North Hillsboro Industrial Land Need Accommodation**

Concept Plan Land Use Type	Site Gross Buildable Acres Range	Concept Plan Gross Buildable Acres	EOA 2035 Projected Need	Concept Plan Number of Parcels	EOA 2035 Projected Need
Industrial	5 acres or less	173	198	99	28
Industrial	5 to 10 acres	96	(25)	14	(3)
Industrial	10 to 25 acres	199	178	13	8
Industrial	25 to 50 acres	665	217	19	4
Industrial	50 to 100 acres	490	148	8	1
Industrial	over 100 acres	724	535	4	4
<b>Industrial Total</b>		2,347	1,277	157	46

***Large Lot Site Location Factors***

Existing large-site industrial users, as well as site locators, have identified the following key characteristics for site requirements:

1. Industries looking for sites have many requirements that vary by industry group, but all consider the following;
  - (a) Land and buildings that are the amount of property they require,
  - (b) Available and developable,
  - (c) Competitively priced,
  - (d) With infrastructure available (especially reliable electricity, gas and water),
  - (e) With adequate transportation for freight and people movement, and
  - (e) Reasonable development costs.
2. A workforce that is educated, well trained and available is vitally important.
3. Bio-pharma and high tech industries require “clean space,” where potential contamination sources can be controlled.
4. Operating costs must allow for profitable operations (i.e., taxes, utilities, labor costs etc.)
5. Reasonable proximity among anchor companies and their suppliers, vendors, worker residences, etc. can be a key site location factor.
6. Certainty of land development entitlements is critical. As much certainty as possible is needed in the planning and permitting process. Uncertainty or lack of a clear process is reason to eliminate sites. Companies looking to come to the region want to be up and running within a short period of time (usually within six months). For this reason, for companies like Genentech, shovel ready was the threshold issue that led to their decision to come to the region.

The North Hillsboro proposed industrial and major employment center areas meet these requirements in that they provide:

1. Large, seismically stable, vacant sites;
2. Available infrastructure; and
3. Proximity to a skilled workforce, as well as workforce housing (existing and proposed).

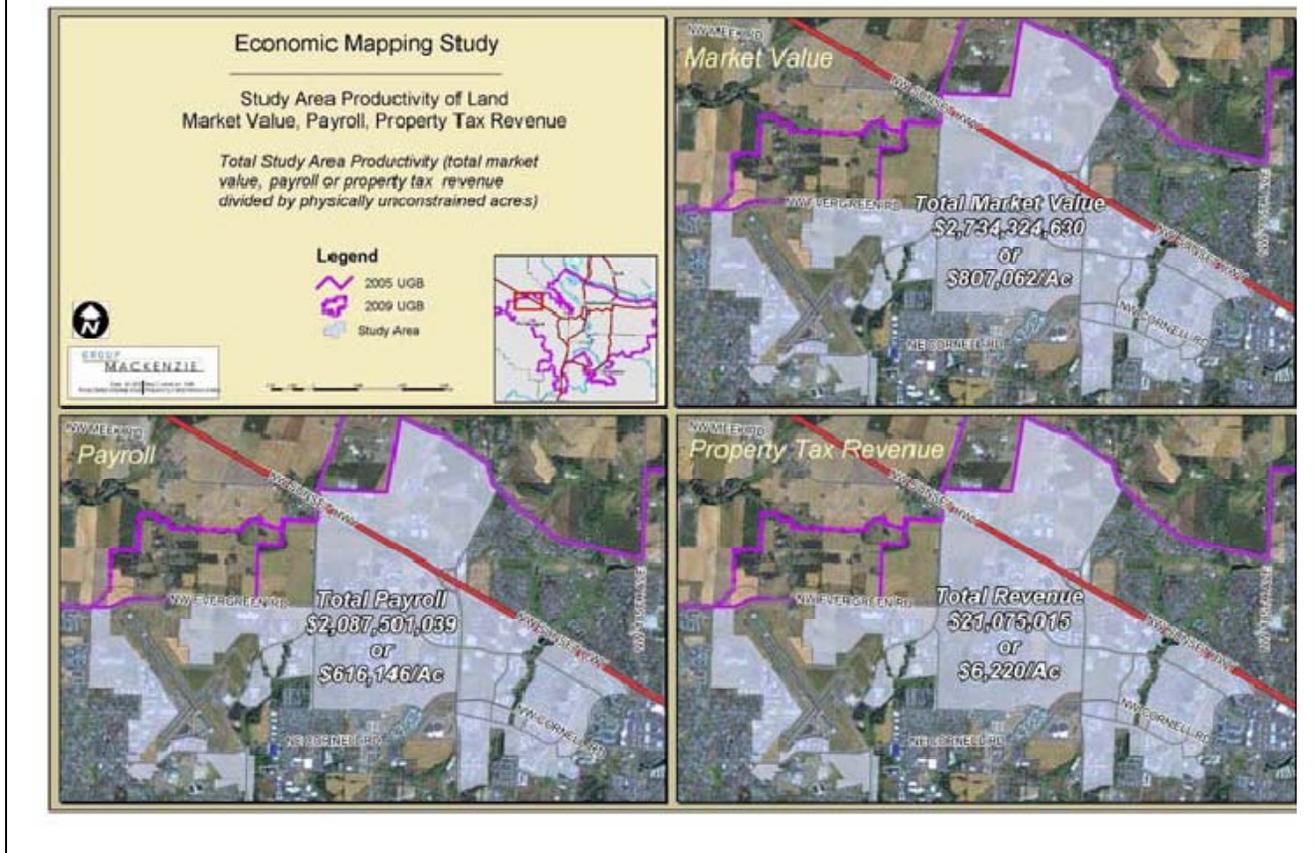
The on-going process will determine the certainty of the availability, as well as the process by which the land will be available.

### ***Long-term State and Regional Economic Impacts***

Over the 50-year Urban Reserves horizon, the industrial/employment uses proposed for the North Hillsboro study area for the expansion, diversification and growth of the three existing industry clusters in Hillsboro/West Washington County will have the beneficial economic consequences for the State, Metro Region, Washington County and Hillsboro. The *Economic Productivity of Employment and Industrial Land – Economic Mapping Pilot Project* (June, 2009)(Attachment F), prepared for the Oregon Business Development Department, has identified the following economic benefits:

- Total Market Value of \$2.08 billion based on an average \$807,000 value per net useable industrial acre of land. This compares to a county-wide average of \$457,575/Acre, thus doubling the county average.
- Annual total payroll of \$2.08 billion based on an average payroll yield of \$616,150 per net usable acre.
- Annual Property Tax Revenue of \$21 million based on an average \$6,220/acre tax assessment land value as a result of State Measure 47/50 valuation constraints.
- Creation of 37,200 industrial jobs primarily in the three industrial cluster categories and 27,150 employment jobs. In 2008, the average payroll per employee working in the three industry clusters was \$77,275.00 per State Employment data sources, and each direct job in this traded sector generated 2.0-2.5 indirect jobs in the Regional/Statewide Economies (Figure 2).

**Figure 2: Productivity of Land – Annual Market Value, Payroll and Property Tax Revenue**



Attachment F presents a series of graphic descriptions from the Economic Mapping Pilot Project of these beneficial economic consequences that would occur from the designation of the proposed industrial/employment Urban Reserves set for the in the North Hillsboro Preliminary Draft Concept Plan. Estimated benefits include:

- Market Value of the North Hillsboro industrial lands of \$2.9 billion;
- Annual payroll taxes of \$2.8 billion; and
- Annual property tax revenue of \$22.6 million (Attachment F).

#### ***Retail & Office Commercial***

The need for office commercial development sites (net of existing capacity) based upon the EOA’s medium demand scenario is estimated to be 984 acres through 2035 and 2,968 acres through 2060. Currently, the city has only 182 acres of commercial land potentially available to accommodate future growth. The North Hillsboro study area contains 779 gross buildable acres designated for office commercial. The job capacity for this area is estimated to be about 25,000 jobs based upon an aspirational average of 40 office jobs per net buildable acre.

The EOA also projects the number of parcels needed by size range. Table 9 reconciles that need with the office commercial parcels within the study area.

**Table 9: North Hillsboro Office Need Accommodation**

Concept Plan Land Use Type	Site Gross Buildable Acres Range	Concept Plan Gross Buildable Acres	EOA 2035 Projected Need	Concept Plan Number of Parcels	EOA 2035 Projected Need
Office	5 acres or less	28	227	12	34
Office	5 to 25 acres	157	294	10	11
Office	25 to 50 acres	301	463	8	9
Office	over 50 acres	293	-	4	-
<b>Office Total</b>		779	984	34	54

The EOA estimates that through 2035, there will be a need for 1,896 gross buildable acres of land zoned commercial retail beyond the 2008 vacant capacity and a need for 4,629 acres by 2060. The North Hillsboro study area contains only 144 gross acres designated for retail. Based on an average of 11 jobs per net buildable acre, this area has the capacity to support around 1,250 jobs. The EOA breaks the need for retail land based upon a range of site sizes. Table 10 reconciles that demand to the study area's projected supply.

**Table 10: North Hillsboro Retail Need Accommodation**

Concept Plan Land Use Type	Site Gross Buildable Acres Range	Concept Plan Gross Buildable Acres	EOA 2035 Gross Buildable Acres	Concept Plan Number of Parcels	EOA 2035 Number of Parcels
Retail	1.5 acres or less	6	550	9	335
Retail	1.5 to 10 acres	61	918	13	92
Retail	10 to 25 acres	77	428	5	17
<b>Retail Total</b>		144	1,896	27	444

### ***Housing***

The northern section of the North Hillsboro study area will provide needed housing to serve new and existing industrial and employment areas. The area will accommodate an estimated 22,893 households for an additional 57,233 people (Table 2). This will result in an average residential density for the plan area of 13 dwelling units per net residential acre.

### ***South Hillsboro Plan Area***

Commercial areas provided in the South Hillsboro Concept Plan include:

- A 45-acre mixed-use town center containing retail and civic space;
- A 16-acre neighborhood center with shopping;
- A 9-acre commercial area next to the reserve Golf Club, designated for tourism-related uses; and
- A transit center located on TV Highway next to the Portland & Western rail line.

South Hillsboro will provide over 10,000 housing units, providing needed housing to serve the city's substantial employment base. Its location within close proximity to major Westside employment areas, including Intel's Aloha campus, will significantly reduce home-to-work vehicle miles traveled and, thus,

carbon footprint across the region. Located approximately 4 miles from major employment centers (existing and proposed), South Hillsboro will provide workforce housing that is important to many large employers looking to locate to the area.

*(c) Can be efficiently and cost-effectively served with public school and other urban-level public facilities and services by appropriate and financially capable service providers;*

**Response:**

Calculations for schools were conducted in coordination with the Hillsboro School District. Additionally, the School District was involved in the community planning process for South Hillsboro, as well as the preliminary concept planning charette for the North Hillsboro area.

With regard to public safety services, including police and fire protection, Hillsboro is a full service city, providing a full array of urban services to its citizens. Hillsboro’s Comprehensive Plan requires that essential services, such as schools and police and fire protection, must be available within five years of a development approval (Hillsboro Comprehensive Plan Sec. 2(IV)(A)(4)). The City is the logical provider of urban services to North and South Hillsboro. As areas in the proposed urban reserves are brought into the UGB and annexed to the city, Hillsboro will work with Washington County and the current service providers to transfer jurisdiction to city services.

Library services are currently provided in the city by Washington County. Hillsboro has the highest circulation rate in the County. It is anticipated that new libraries will be provided as areas develop to maintain the existing high level of service in the city.

***North Hillsboro Study Area***

***Schools***

Based on the amount of residential land and estimated households, the Hillsboro School District estimated that the additional residential land in the area will generate a need for approximately 6 elementary schools, 3 middle schools, and 2 high schools (11,500 school-aged children). The formula used to determine number of schools required is consistent with both County and Beaverton school district formulas.

Having determined the number and types of schools required to serve the North Hillsboro study area, Metro’s school site-size methodology was used to calculate the total acres required for school facilities (Table 11). Schools will be strategically located to ensure safe and convenient access for the entire community and developed in a way that serves multiple uses (parks, recreational and community gathering places).

**Table 11: North Hillsboro Schools Types and Site Sizes**

<b>School Type</b>	<b>Number of Sites</b>	<b>Metro Average Site-Size</b>	<b>Total Acres</b>
Elementary	6	10	60
Middle School	3	20	60
High School	2	40	80
<b>Total</b>	<b>11</b>		<b>200</b>

### ***Public Safety***

Public safety in the North Hillsboro area is currently provided by the Washington County Sherriff's Office. Residents within the current Hillsboro city limits are served by 2 Hillsboro Police Department (HPD) precincts: the Downtown station at 35,000 ft<sup>2</sup> and the NE station at 15,000 ft<sup>2</sup> in size. It is anticipated that an additional 25,000 ft<sup>2</sup> HPD facility (as well as a potential expansion of the NE station) will be needed to adequately serve North Hillsboro residents and maintain service to existing Hillsboro citizens.

Fire protection for the majority of the North Hillsboro area is currently served by Washington County Fire District #2, with a small portion in the east being served by Tualatin Valley Fire and Rescue. Current Hillsboro residents are served by 4 Hillsboro Fire Department (HFD) stations. Additional HFD facilities will be needed to ensure the safety and protection of North Hillsboro residents and their property. The HFD considers several criteria to ensure the City's Standard of Coverage is established throughout the city limits. Some of those criteria include: meeting the service delivery standard of a 4 minute response time for any emergency incident 75% of the time; ensuring that HFD's effective force response is on-scene within 8 minutes 90% of the time; and maintaining the City's current Insurance Service Office (ISO) ratings to that of an ISO 2.

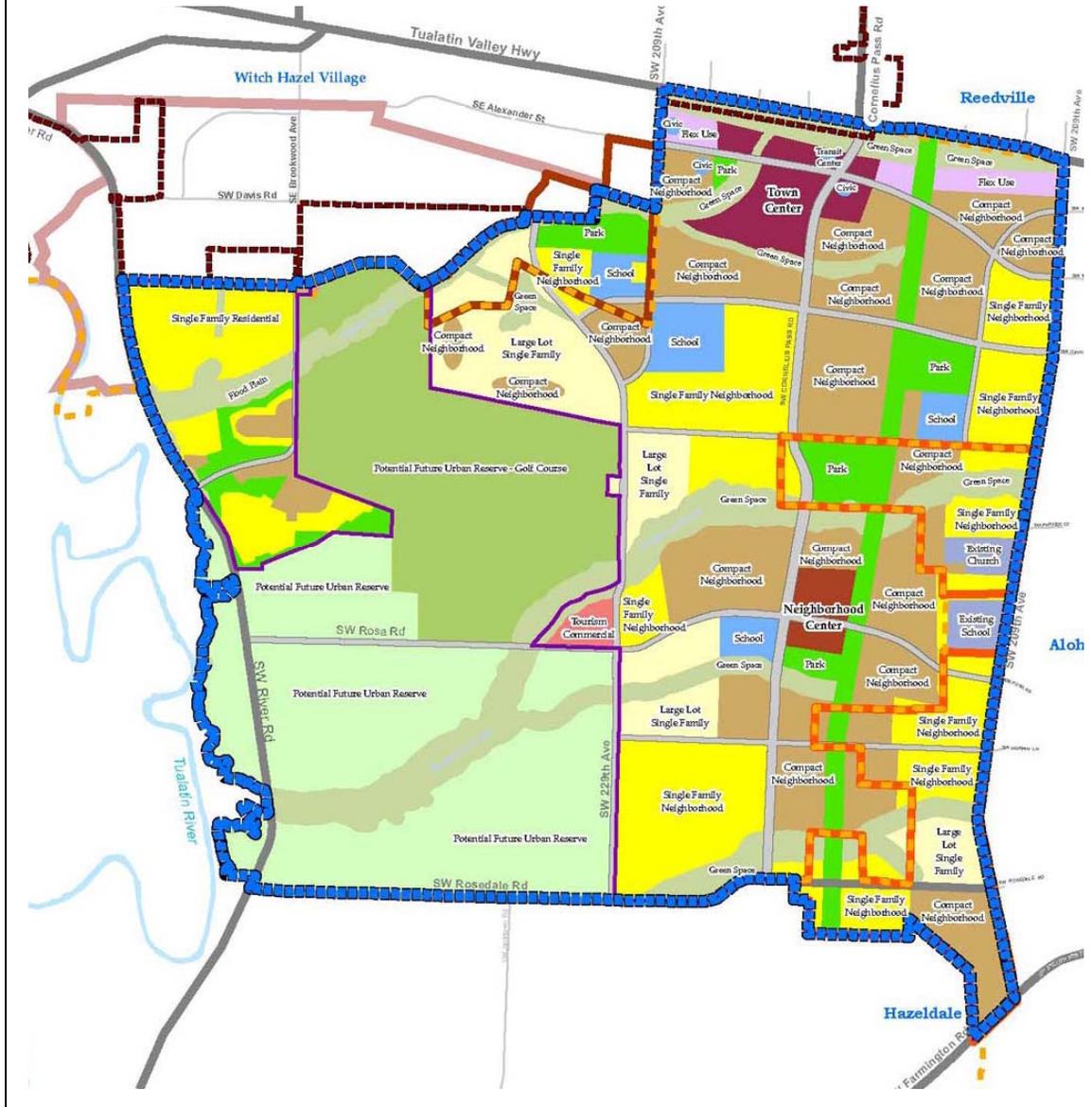
### ***South Hillsboro Plan Area***

#### ***Schools***

The South Hillsboro Community Plan was drafted in accordance with Metro Regional Functional Plan, Title 11 Requirements, including the requirement for a conceptual school plan. Both Hillsboro and Beaverton School Districts were participants in the South Hillsboro community planning effort, ensuring identification of appropriate school sites to serve the existing and future community.

The Hillsboro School District reached an agreement to acquire three (3) school sites, or approximately 50 acres, within the South Hillsboro Community Plan Area (Appendix D, page 26). Figure 3 illustrates proposed school sites. The School District has already purchased or has agreements to purchase 40 acres and new schools opening in Area 71 of the South Hillsboro Plan area include Rosedale Elementary School and South Meadows Middle School.

**Figure 3 – South Hillsboro Community Area Plan**



**Public Safety**

Representatives from Hillsboro Police and Fire departments were actively involved in the development of the South Hillsboro Community Plan. With respect to these services, the Plan provides that:

*The South Hillsboro Community Plan will create neighborhoods with a strong identity that encourages community-based policing and preventive programs for emergency services. A fire station is envisioned within the Town Center and a police sub-station may be included with the Civic Space. The circulation system ensures rapid response-times for emergency services.*

*(d) Can be designed to be walkable and served with a well-connected system of streets, bikeways, recreation trails and public transit by appropriate service providers;*

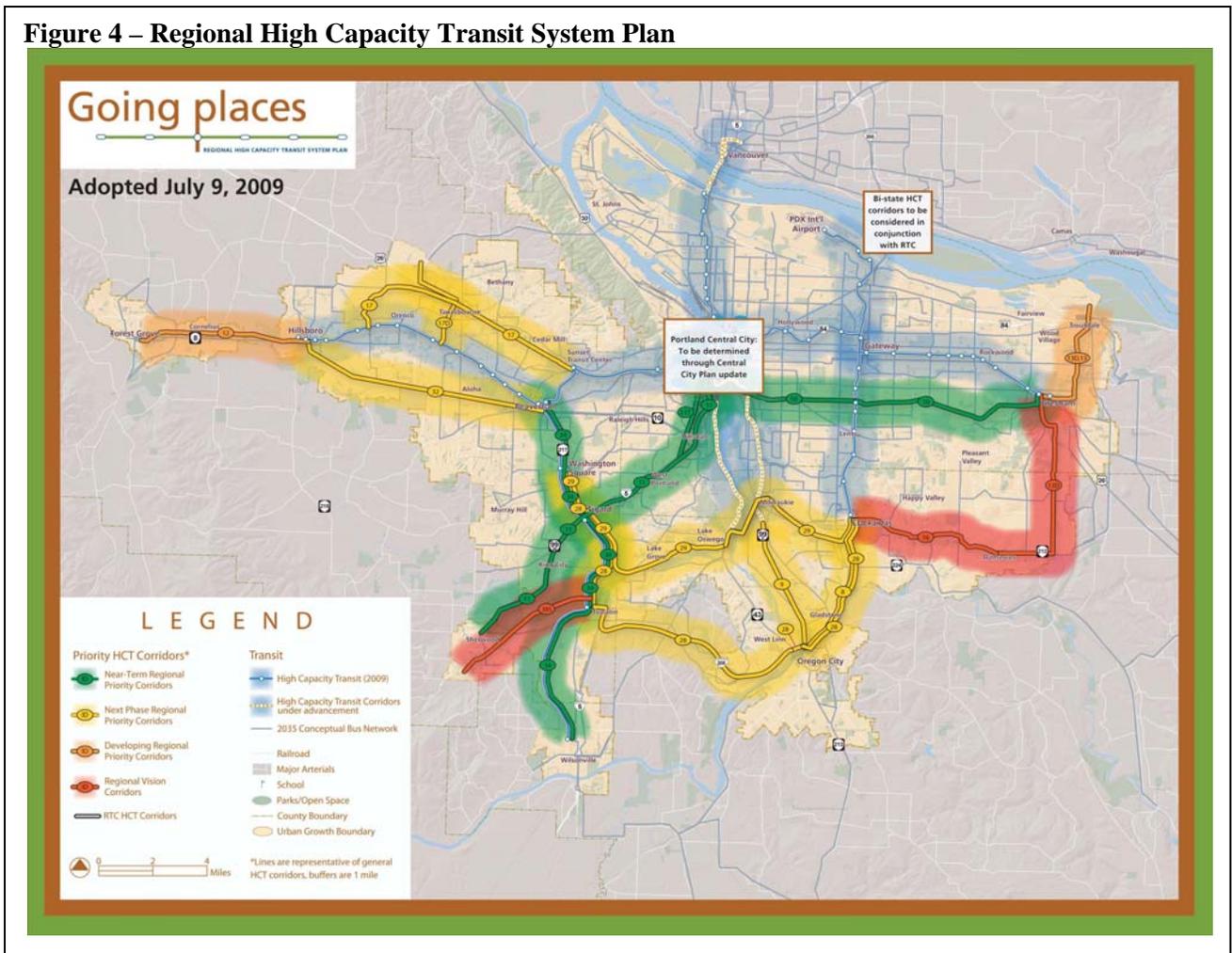
**Response:**

***North Hillsboro Study Area***

Bicycle and pedestrian routes will include lanes and sidewalks along roadways, as well as separate bikeways and trails for commuting and recreation (Figure 1). Important aspects of bicycle and pedestrian routes is connecting residents and businesses with HCT, as well as connecting open areas and parks for recreational purposes. Another important connection is providing safe routes between residential areas and schools. Connections will be provided both within the North Hillsboro area and to existing and proposed facilities within the current City limits as development occurs.

HCT routes are proposed to connect the North Hillsboro area with existing HCT and expected new HCT routes as the Region develops (Figure 4). An existing project under investigation in the Regional Transportation Plan update (2009) is an extension of light rail from Quatama Station, north through AmberGlen and Tanasbourne and north of Hwy 26 (Figure 4). Additional potential HCT routes will provide connections from the existing city employment areas, proposed new employment areas to the north and south and to the new town center (Figure 1).

**Figure 4 – Regional High Capacity Transit System Plan**



**South Hillsboro Plan Area**

As noted and depicted in Figure 3 above, one of the community principles incorporated into the South Hillsboro Community Plan is creating a “connected” community. These connections are intended to provide multi-modal access connecting neighborhoods (new and existing) and providing transitions from urban to rural lands.

Efforts incorporated in the plan to create pedestrian and bicycle amenities include:

- Combining schools, parks and open space corridors to make them walkable for children;
- Integrating open space and transportation corridors to make neighborhoods, public spaces and commercial areas walkable;
- Using a green space circulation system to accommodate walkways, bicycle and hiking trails
- Including active open space and trails connecting parks and schools along the power line corridor;
- Dedicating 333 acres (more than 20% of the plan area) to natural areas, open space and active recreation, including a bike/pedestrian trail system linking all parts of the area and connecting into a region-wide trail system in all directions; and
- Designing grid patterns creating circulation systems to accommodate streets, bike lanes and sidewalks.

The South Hillsboro Community Plan, as well as the TGM grant, recognizes the importance of TV Highway and the need to incorporate high capacity transit (HCT) along this corridor, as well as providing north-south HCT to connect the corridor with major employment areas to the north. The TGM grant will allow the following preliminary concepts to be further refined:

- Transit center along TV Highway to enable a future bus/commuter rail transit system;
- HCT route (Route #56) along Century Boulevard; and
- Expanded transit linkages to Downtown Hillsboro, Hillsboro employment centers and OHSU/AmberGlen.

*(e) Can be designed to preserve and enhance natural ecological systems;*

**Response:**

**North Hillsboro Study Area**

The study area is located within the Upper and Lower McKay Creek and the Upper Rock Creek sub-watersheds. Upper Rock Creek, which is a tributary of the Tualatin River, flows through the study area along with a number of creeks including Holcomb Creek, McKay Creek, Storey Creek, and Waible Creek. Resources in the plan area are shown in Table 12.

**Table 12: North Hillsboro Natural Resources**

<b>Resource</b>	<b>Industrial Acres</b>	<b>Residential Acres</b>	<b>Total Acres</b>	<b>% of Study Area</b>
<i>Flood Plain</i>	177	169	346	4.2%
<i>Wetlands</i>	45	51	96	1.2%
<i>Steep Slopes</i>	90	620	710	8.7%
<i>Habitat Benefit</i>	186	454	640	7.8%

These natural features not only form a physical boundary around the area, they also present an opportunity to create a special character for the area by integrating open spaces into future neighborhoods. The following design guidelines will help to accomplish the goal of making North Hillsboro a special place:

- Preserve and enhance natural areas and open space with the inclusion of neighborhood parks to serve as an organizing element for neighborhoods;
  - Preserve existing trees as part of development;
  - Maintain wetlands and other vegetation as green areas, parks or pathways;
- Integrate natural drainage ways and significant vegetation into the development pattern to serve as transitional buffers, including pedestrian/bicycle connections through natural areas, where feasible; and
- Locate neighborhood parks adjacent to natural drainage ways to enhance surface water quality and manage storm water.

### ***South Hillsboro Plan Area***

The South Hillsboro plan area is located in the Middle Tualatin-Rock Creek Watershed within three sub-watersheds, including Middle Tualatin-Gordon Creek, Butternut Creek and Middle Tualatin-Rosedale Creek. The Tualatin River flows southerly near the western boundary of the plan area, ranging from 300 feet to a quarter mile from the plan area. In addition to several tributaries in the plan area, South Hillsboro contains wetlands and habitat benefit areas (Attachment D, page 12).

Aspects of the plan that will preserve and enhance natural features include creating a greenspace system that will:

- Connect east-west stream corridors with north-south wildlife travel corridors;
- Use the powerline corridor as a north-south greenspace connector for trails and active recreation;
- Preserve wide forested areas (over 200 feet wide) to provide habitat for interior forest species;
- Maintain wetland/stream hydrology in sub-basins (through a stormwater master plan);
- Incorporate trails/passive recreational opportunities in outer edges of greenspace areas;
- Expand future greenspace to improve connectivity with the Tualatin River; and
- Use natural buffers as part of the UGB where possible, to provide a buffer for and complete the transition to agricultural uses.

Specific opportunities that have been identified in the plan include:

- Restoring historic wetlands in mapped hydric soil areas for:
  - Gordon Creek headwaters;
  - Butternut Creek tributary headwaters;
  - Rosedale Creek headwaters;
- Create wetland mitigation bank; and
- Create riparian/upland forest to connect existing mature forest patches and
  - Create wildlife travel corridors to connect Gordon Creek, Butternut Creek, Rosedale Creek and Tualatin River;
  - Create large forested area near the confluence of Butternut Creek and Butternut Creek Tributary; and
  - Expand future riparian/upland forest along the Tualatin River.

*(f) Includes sufficient land suitable for a range of housing types;*

**Response:**

As noted above in Table 1, Hillsboro is forecasting population growth of 261,405 new people and 99,870 new households by 2060. Need for housing based on the EOA’s medium demand scenario is estimated to be 6,206 gross acres through 2035. Currently, the city has only 213 acres of residential and 12 acres of mixed use land potentially available to accommodate future residential growth. Table 13 shows the combined number of gross buildable residential acres that the two proposed urban reserve areas would provide compared with the EOA’s medium projected residential acreage need through 2035.

**Table 13: Hillsboro Residential Need Accommodation**

<b>2040 Design Type</b>	<b>Proposed Urban Reserve Gross Developable Acres</b>	<b>EOA 2035 Projected Need</b>
Inner Neighborhood	2,139	4,307
Outer Neighborhood	2,009	1,349
Centers	274	550
<b>Total</b>	<b>4,442</b>	<b>6,206</b>

***North Hillsboro Study Area***

Map 1 illustrates the residential locations and Table 14 the densities of the residential types.

**Table 14: North Hillsboro Residential Types by Density**

<b>2040 Design Type</b>	<b>Net Developable Acres<sup>1</sup></b>	<b>Dwelling Units/ Net Acre</b>	<b>Dwelling Unit Capacity</b>
Inner Neighborhood	929	15	13,940
Outer Neighborhood	692	8	5,533
Neighborhood Center	34	20	680
Town Center	137	20	2,740
<b>Total</b>	<b>1,792</b>		<b>22,893</b>

***South Hillsboro Plan Area***

Map 2 illustrates the residential locations and Table 15 the densities of the residential types.

**Table 15: South Hillsboro Residential Types by Density**

<b>2040</b>	<b>Net Developable Acres</b>	<b>Dwelling Units/Acre</b>	<b>Dwelling Units</b>
Employment Area	5	-	-
Inner Neighborhood	358	15	4,756
Outer Neighborhood	600	8	4,482
Neighborhood Center	13	20	268
Town Center	35	20	699
<b>Total</b>	<b>1,011</b>		<b>10,205</b>

Note: Results of this analysis differ from the South Hillsboro Community Plan because different metrics were used for purposes of consistency with the County planning metrics.

*(g) can be developed in a way that preserves important natural landscape features included in urban reserves, and;*

**Response:**

See response to Subsection (f) and Maps 1 and 2. Additionally, Hillsboro’s Natural Resources Management Program includes a map which generally identifies the extent and location of significant wetlands, riparian corridors and wildlife habitat areas and their impact areas, as identified in the adopted “List of Significant Goal 5 Natural Resource Sites in the City of Hillsboro” and its supporting document the “City of Hillsboro Goal 5 Natural Resources Inventory and Assessment Report”, and the ESEE analyses, completed pursuant to the Goal 5 and Oregon Administrative Rules 660, Division 23 provisions. Natural resources in annexed areas are inventoried and those determined to be significant and their Impact Areas are added to the Significant Natural Resource Ordinance District as part of the rezoning process.

Development projects located in or partially within the overlay area for the Natural Resources Management Program Ordinance map must address preservation of wildlife habitat, natural vegetation, wetlands, water quality, open space and other natural resources important to the ecosystem in the vicinity of the proposed development site. Also, in accordance with the Tualatin Basin Fish & Wildlife Habitat Program, land developers and property owners are encouraged to incorporate habitat friendly practices in their site design where technically feasible and appropriate.

*(h) Can be designed to avoid or minimize adverse effects on farm and forest practices and on important natural landscape features on nearby resource land, including land designated as rural reserves.*

**Response:**

Farming has been and remains an important industry in and around the City of Hillsboro. The city has worked closely with the county in determining its study areas and in meeting the criteria for urban reserves. Recognizing the resources surrounding the city, Hillsboro has been conservative in its request for urban reserves.

As described below, the city is proposing to use natural features and existing parcelization patterns to avoid conflicts between land uses and to provide transitions to minimize the effects on farming practices. As the urban growth boundary will expand incrementally, expansions will require buffers at the edges to ease the transition to urbanization of new areas. In addition to protecting farmland outside the UGB, the City will explore zoning protections for existing Community Supported Agriculture farms that may be brought into the UGB. Such farms can serve as examples of sustainable urban agriculture, maintaining operations near the people they serve.

### ***North Hillsboro***

Natural features – Dairy Creek to the west and Rock Creek to the east – were chosen as east-west boundaries for the North Hillsboro study area in order to provide natural buffers between urban and rural uses. In addition to these natural buffers, employment, including industrial uses, will help create transition and buffer urban and rural uses to the west. Rock Creek will provide a natural buffer between urban and rural uses to the east. To the north, low density residential uses are envisioned to transition between urban and rural uses. Additionally, the tax lots to the immediate north of the study area are highly parcelized and rural residential in nature, providing an existing buffer to farm uses further north (Attachment B, Maps).

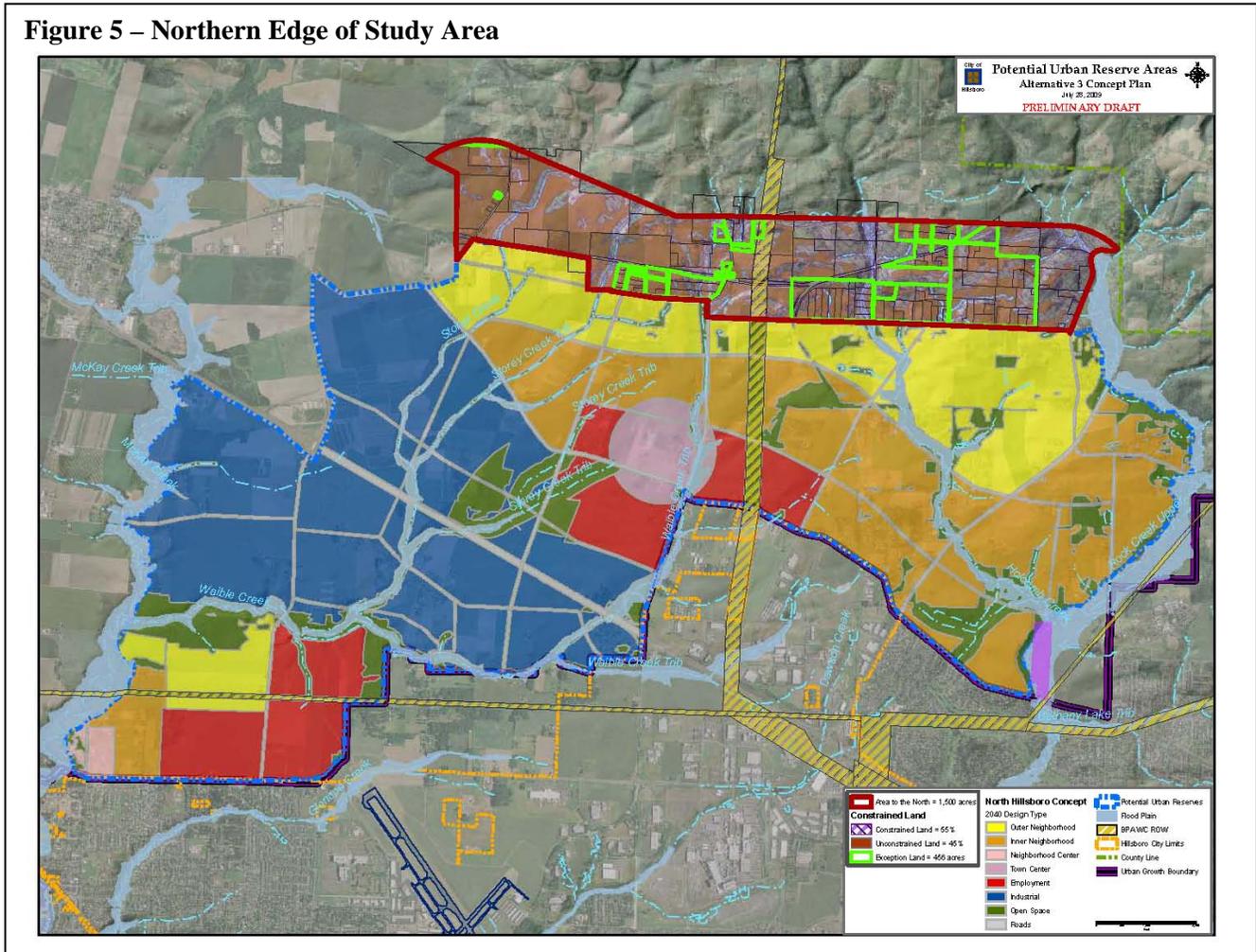
Natural buffers and existing urban development already exist on three sides of the study area providing a very good urban to rural interface. The southern edge of the area abuts the existing Urban Growth Boundary, providing a highly compatible transition area. The entire eastern border and most of the western border of the study area have natural buffers consisting of the adjacent flood plains of McKay Creek and Rock Creek. The northern section of the western edge is designated for industrial use (see Figure 5) which is considered a more compatible use with agricultural due to the minimal amount of potential conflict with customary agricultural practices.

The northern edge of the study area is largely designated for low density residential use. The area to the north outside of the study area has several features that support a compatible transition to commercial agricultural uses, including:

- Highly fragmented lots. The 1,500 acre area within one half mile of the northern residential area is highly fragmented containing around 150 separate tax lots. Approximately one quarter of these tax lots are owned by related parties. The largest tax lot is 178 acres, the next largest is 74 and the smallest is 0.11 acre. The average tax lot in the area to the north is 9.5 acres.
- Natural Features. Fifty-five percent of this area is constrained by flood plain, steep slopes, Goal 5 natural resource, 50 foot stream buffer, or BPA transmission line right of way.
- Approximately 30% (456 acres) of this area is exception land.
- Less than half of the area is zoned Exclusive Farm Use.

All of these factors contribute to a highly compatible urban to rural transect.

**Figure 5 – Northern Edge of Study Area**



### ***South Hillsboro***

The South Hillsboro plan area is also characterized by natural buffers and adjacent urban development on three sides. The northern and eastern edges of the South Hillsboro plan area abut the existing Urban Growth Boundary, providing a highly compatible transition area. The western edge abuts the Tualatin River floodplain and the UGB.

With respect to the southern edge, one of the development program features of the South Hillsboro Community Plan is the use of the new urbanist concept of “urban transect” to create a transitional community (Attachment D, page 38). The South Hillsboro Community Plan urban transect radiates from the centers and corridors, with more intense uses located close to TV Highway, becoming less intense moving outward toward a long term Urban Growth Boundary. On the western edge, natural features will provide additional buffer between urban and rural uses. Additionally, the City of Beaverton has selected the areas to the south of the plan area for one of its urban reserve candidate sites. They have targeted the area adjacent to the South Hillsboro Plan area for the same type of use called for in Hillsboro’s plan - low density residential development.

## VI. Metro Urban Growth Management Function Plan Findings

[To be supplemented]

### VII. Summary

Hillsboro has been a fast growing city for two decades in terms of population and major industrial clusters. It is home to the high-tech industrial cluster and emerging solar energy and bio-pharma manufacturing clusters. The North Hillsboro study area and South Hillsboro community plan area have been selected by the city as areas of interest to continue the city and Westside growth of industry clusters, as well as to provide much needed housing to attain a more balanced housing to jobs ratio. These efforts will allow the city to further the region's efforts of planning for climate change by allowing for fewer vehicle miles traveled and providing density to support additional high capacity transit to and throughout the city.

Both areas of interest are envisioned as complete communities that will be fully integrated with the existing city. As set forth in the South Hillsboro Community Plan, South Hillsboro will be centered around a new town center and neighborhood centers that will serve both the new and surrounding communities. Transportation, including HCT and bicycle and pedestrian pathways, will connect open spaces, schools and commercial areas within the planning area and the surrounding city. An infrastructure plan is included in the Community Plan, including funding of infrastructure costs. Several large property owners are ready to develop housing to serve Hillsboro's major employment centers. The State has recognized the importance of TV Highway, the State highway serving the planning area, by awarding a TGM grant to perform a corridor study. This study will refine transportation and land use solutions for surrounding properties along the corridor, including South Hillsboro.

Preliminary Concept planning for North Hillsboro highlights the importance of this area to the city, regional and state economy. The sub-area to the south of Highway 26, as well as the sub-area to the immediate north, will allow expansion of the city's major industrial employment center, providing large, flat lots sought by industry anchors. New and existing employment centers will be served by housing and supporting office and retail, including a town center, in the northeastern sub-area. The city's existing infrastructure planning demonstrates the ability to extend services into these areas. Metro's preliminary study confirms that infrastructure can be easily extended into North Hillsboro.

Both areas of interest use natural features and existing land uses as buffers to ease the transition from urban to rural uses. In addition to serving as buffers, natural features will be used for parks and open space in the study areas, connecting to surrounding communities and regional trails through a network of bicycle and pedestrian paths.

A variety of housing is provided in the study areas, with the incorporation of low density residential at the edges. The Hillsboro School District has determined the number of schools required for the proposed densities, and the District has already acquired 3 of the 4 sites agreed upon for the South Hillsboro planning area.

North and South Hillsboro offer the region a unique opportunity to grow in a manner that will accommodate expected urban population growth, ensure efficient use of land, provide an orderly and efficient transition from urban to rural land use and provide livable communities in accordance with state land use goals and Metro's Urban Growth Management Functional Plan.

## Attachments

- Map 1 North Hillsboro Potential Urban Reserve Area, Alternative 3 Concept Plan, Preliminary Draft (May 6, 2009)
- Map 2 City of Hillsboro South Hillsboro Community Plan (Plot Date March 21, 2008)
- A Draft Economic Opportunities Analysis and Long-Term Urban Land Needs Assessment, Johnson & Reid Land Use Economics (March 10, 2009)
- B North Hillsboro/Greater Bethany Concept Plan, Preliminary Land Use Alternatives Design Charette Advance Packet (March 31, 2009)
- C North Hillsboro Preliminary Draft Concept Plan (July \_\_, 2009)
- D South Hillsboro Community Plan (January 25, 2008)
- E Joint Planning Commission Resolution No. 1670-P/Joint City Council Resolution No. 2257 (May 29, 2008)
- F Excerpts: *Economic Productivity of Employment and Industrial Land – Economic Mapping Pilot Project* (June, 2009) prepared for the Oregon Business Development Department: