Evergreen concept plan

Prepared for:
The City of Hillsboro

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Evergreen Concept Plan Project Team

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I. Background

A. Evergreen Concept Plan History

In 2005, the Metro Council added the 534-acre Evergreen Concept Planning Area (Figure I-1 and Figure I-2) to the Region's Urban Growth Boundary (UGB) to help provide a 20-year industrial land supply within the Portland Region as required by State law.[1] The Evergreen area is currently in unincorporated Washington County. The Evergreen Concept Plan is the fulfillment of an agreement between the City of Hillsboro and Washington County that the City would prepare the industrial area concept plan for future employment growth in the Evergreen planning area. Concept plans are required when lands are added to the UGB to ensure that the transition over time from rural to urban uses occurs efficiently and consistent with the identified land needs that justified their inclusion.

B. Evergreen Concept Planning Process

The City hired a team of land use planning, transportation, natural resources, real estate and economic development consultants in January 2007 to assist with the development of an Industrial Development Concept Plan for Evergreen. These professionals, in addition to key management staff from the City, became the Project Management Team and were responsible for the coordination and technical analysis necessary to compile the Evergreen Concept Plan. Planning for the 249-acre Helvetia Concept Planning Area, which came into the UGB in 2004, was undertaken by the Project Management Team at the same time, in a parallel planning process.

1. Project Goals and Objectives

One of the first tasks of the Project Management Team was to develop a set of Concept Plan goals to guide the project. The Goals and Objectives listed below were used to develop and evaluate the Conceptual Illustrations (as discussed in Chapter IV of the Concept Plan) and future implementation measures.

[1] See Appendix B, Metro Ordinance No. 05-1070A.

Goal 1: Create Area-wide Economic Opportunities and Value

- Address state and regional directives for adequate and available industrial sites, while accommodating community and Area stakeholders development concerns;
- Develop and carry out a strategy to strengthen and diversify the local industrial economic base and sustainable employment opportunities; and
- Formulate and adopt flexible industrial site development management guidelines for the Area capable of adjusting to shifting market opportunities and constraints.

Goal 2: Integrate Area Industrial Uses with Hillsboro Industrial Sanctuary

- Identify Area industrial development phasing strategy and steps that reflect market opportunities and constraints and Area stakeholders concerns;
- Integrate management of Area natural resources and environmental features into industrial development sites;
- Coordinate Area industrial uses and development with surrounding industrial uses and activities; and
- Revise the Shute Road Concept Plan as needed to provide an integrated set of industrial uses and development concepts for the combined Evergreen-Shute Road Areas.

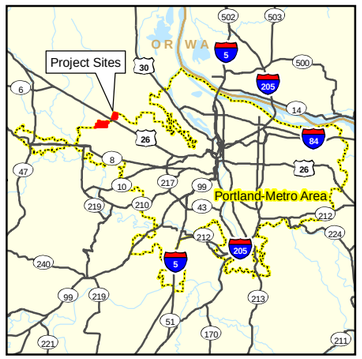
Goal 3: Provide Adequate Supporting Industrial Development Infrastructure

- Determine and describe Area infrastructure (sewer, water, roads, utilities, etc) capacity requirements needed to adequately support the development of prescribed industrial uses and concepts for the Area;
- Identify infrastructure phasing steps to implement the Evergreen Concept Plan in a manner that reflects market and financing opportunities;
- Identify equitable financing methods to promote the orderly and economic provision of public services and private utilities; and
- Explore Area-wide public and private development financing tools that capture and apply, as needed, increased Area land values to help finance the construction of public infrastructure needed to support planned Area industrial uses and concepts.

Figure I.1

Project Vicinity

Evergreen/Helvetia UGB
Concept Plans



LEGEND

- Project Sites
- UGB
- Roads
- Tax Lots

N

0 1,500 3,000
Feet

Angelo planning group

CH2MHILL

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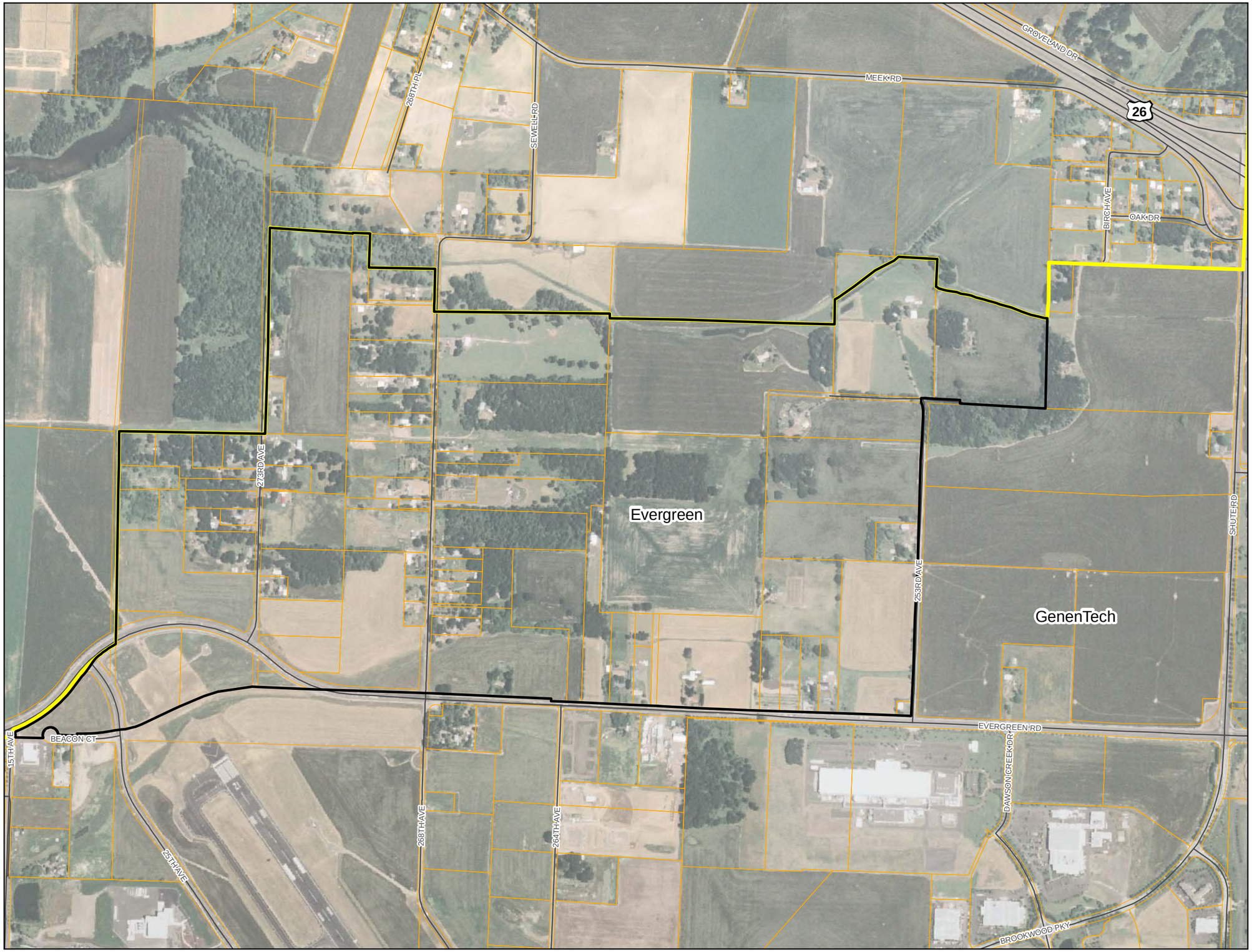
Figure I.2

Evergreen Concept Planning Area

Evergreen/Helvetia UGB
Concept Plans



LEGEND

- Evergreen Site (Planning Area = 532.93 ac)
- UGB
- Roads
- Tax Lots

N

0 800 1,600
Feet

Angelo planning group

CH2MHILL

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Goal 4: Promote Community Awareness and Stakeholder Involvement

- Recognize and respect the varied characteristics and levels of stakeholder support and readiness for industrial development;
- Offer meaningful opportunities for participation and involvement of stakeholders and property owners in shaping the development options and implementation steps;
- Establish a clear understanding of industrial development steps and implementation actions such as zoning and annexation; and
- Identify opportunities for partnerships between property owners, the development community and the City.

2. Project Approach

The project approach for the Evergreen Concept Plan included compiling information on existing conditions in the study area to create a "baseline" for future planning, engaging in a public involvement strategy that actively involved property owners and interested citizens, and soliciting advice from economic development, real estate, and regulatory, land use, and transportation specialists. To this end, the project was informed by Economic Trends Workshop panelists (see Chapter III., Evergreen Concept Plan Development Program), a Technical Advisory Committee, a Project Development Panel and the Evergreen Stakeholders Advisory Group (ESAG) which was comprised of property owners within the Evergreen planning area and some additional interested parties.

The following is a summary of the objectives and expected outcomes of the Evergreen Concept Plan planning process:

- Compliance with Metro's Concept Planning requirements and the conditions that the Metro Council placed on the area;
- Recommendation for industrial land uses and design concepts that demonstrate how the area can develop in an efficient manner;
- Integration of the Shute Road Concept Plan with the Evergreen Road Concept Plan;
- Identification of public facility and infrastructure needed to support industrial

development;

- Participation and involvement of stakeholders and property owners in shaping the development and design concepts and implementation steps;
- Demonstration of market feasibility, strengths, opportunities, conditions and requirements to achieve the industrial development concepts; and
- Completion of implementation steps including comprehensive plan and zoning ordinances, annexation strategies and management plans and tools.

The ultimate goal of the project was to develop Industrial Concepts (see Chapter IV. Evergreen Industrial Area Concept Plan) and develop a comprehensive Concept Plan that would serve as a road map for future development in Evergreen. Implementation of the Concept Plan will be carried out through the City's adoption of policy changes to the Comprehensive Plan and amendments to the Development Code to include the Evergreen Special Industrial District (see Chapter V., Implementation Steps).

3. Technical Advisory Committee

The Evergreen Concept Plan's Technical Advisory Committee (TAC) was comprised of representatives from the Department of Land Conservation and Development (DLCD), Oregon Department of Transportation (ODOT), Washington County Planning Division, Port of Portland, and the City's Engineering and Planning Departments. Members acted as technical advisors for the project, as well as liaisons to policy makers within their agencies. The TAC met three times during the course of the project and provided technical and policy information that assisted in the refinement of the Industrial Urban Growth Diagrams (see Chapter IV. of the Concept Plan).

4. Stakeholder and Community Involvement

Shortly after the kick-off in January 2007 of the Evergreen Concept Plan project, a survey was sent to all property owners in the study area. Answers to the survey questions indicated how long residents had resided or owned property in the area, their knowledge about the Evergreen area being brought into the UGB, and the current use of their land. Most important to the planning process, survey responses also indicated suggestions to guide growth in the area.

At the start of the project, the Project Management Team decided to involve property owners more directly with the planning process by assembling them into a stakeholder's advisory group. All 61 property owners within the Evergreen study area were invited to participate on the Evergreen Stakeholders Advisory Group (ESAG). The ESAG was also open to all interested parties. Four ESAG meetings were held over the course of the project; one of these meetings was held in conjunction with a project open house for the broader area. ESAG meeting attendance ranged from 24 to 37 attendees at each meeting. ESAG members reviewed and provided feedback on key findings and conclusions of the planning process, including survey results, existing conditions in the study area, and proposed industrial urban growth concepts. In the final ESAG meeting members discussed refinements to the growth concepts and proposed comprehensive plan policy and development code amendments that would implement the Evergreen Concept Plan.

One open house was held to present information related to the concept planning project and to solicit feedback from a wider public. Participants at the open house were planning area property owners, neighboring property owners, and members of Citizen Planning Organization (CPO) #8. A newsletter was developed to inform the public about the planning process and to invite people to attend first open house. This newsletter was distributed to the ESAG, property owners in the Evergreen area, and neighboring properties. The open house was held principally to discuss existing conditions within the study area and to solicit issues for the project team to consider as it prepared the Concept Plan. The last ESAG meeting was open to interested members of the public and focused in detail on the Industrial Urban Growth Concepts (see Chapter IV. of the Concept Plan) and the proposed policy and land use regulatory language that implements the Concept Plan

The ESAG and other interested members of the public were also kept informed through a project website (www.evergreen-helvetia.org) where information and products related to the Evergreen planning process were posted. Appendix C contains a complete summary of community outreach activities associated with the Evergreen concept planning. Appendix D contains the materials used at ESAG meetings.

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II. Existing Conditions

A solid and comprehensive understanding of the existing conditions in the Evergreen area provided the foundation for the development of the Concept Plan. An analysis of existing physical, policy, and economic characteristics that define the area and an identification of issues relevant to the area was the subject of the Existing Conditions Report (Appendix A). The summary of the site conditions for the Evergreen area included in this section is based on information in the Existing Conditions Report.

The Evergreen area is in unincorporated Washington County and is zoned Future Development 20 Acre (FD-20). Ultimately, in order for industrial development to occur in the Evergreen area, properties will need to annex to the City of Hillsboro and be zoned for urban industrial uses (See Chapter V., Implementation Steps, in the Concept Plan).

A. Area Characteristics

The Evergreen planning area is located to the northeast of downtown Hillsboro. It encompasses 534 acres and lies north of the Hillsboro Airport, south of Highway 26, and west of NW Shute Road and the area that is regulated by the Shute Road UGB Concept Plan. Evergreen Road forms the southern boundary of the planning area.

Evergreen lies within the Lower McKay Creek streamshed. Waible Creek, located in the northern portion of the Evergreen area, is a tributary of McKay Creek. The topography is flat to gently rolling, ranging from about 205 feet elevation at NW 253rd Avenue (east) to about 170 feet at the Waible Creek floodplain (north). The northern portion of the planning area drains to Waible Creek; the southern portion flows to a ditched tributary of McKay Creek.

Land uses in the Evergreen area are a mixture of agricultural-related uses and rural residential uses. Some areas of Evergreen are being actively farmed. More recently, the area has attracted suburban residences, in particular in the western portion of the planning area, on lots that access NW Sewell Road and NW 273rd Avenue. Housing stock in the area includes farm houses, mid-century and later ranch-style residences, and larger new homes

(built within the past ten years). The sole commercial use in the area is a nursery located at 5010 NW Sewell Road. This business is located on residentially zoned land.

A defining feature of the built landscape is the Bonneville Power Administration (BPA) high-voltage transmission line that runs in an east-west direction through the north central portion of the Evergreen concept planning area. The most notable built structure in this area, just south of the Evergreen area and within the Hillsboro city limits is a 422,000 square foot plant built in 1998 for the production of silicon chips. This facility was recently purchased by SolarWorld AG, a manufacturer of solar panels. The other notable land uses in the vicinity include the site of the new Genentech Building to the east and the Hillsboro Airport to the south. The Port of Portland owns vacant land in the southwestern corner of the study area (approximately 70 acres), a portion of which lies within the runway protection zone, as well as land south of Evergreen Road, outside of the study area. The Hillsboro Airport's runway is situated northwest to southeast and the runway protection zone extends into the southwest corner of the study area, over land also owned by the Port.[2]

B. Transportation Network

Future growth in the Evergreen area will have impacts on the transportation network in the area. A list of the roadways that serve the Evergreen area, which jurisdiction is responsible for them, their classification and the current average daily vehicular trips they carry is included in Table II-1 below.

[2] Documents governing the Hillsboro Airport are reviewed in Appendix A, Existing Conditions Report. One of these documents, the Hillsboro Airport Compatibility Study Update (November 2005) was prepared in order to re-examine noise management efforts and land use policies that were established in the 1993 Hillsboro Airport Compatibility Study. One of the recommendations of this update is that an Airport Safety and Compatibility Overlay Zone for the Hillsboro Airport should be created and adopted by the City of Hillsboro and Washington County to allow certain restrictions on development within that zone. Work is currently underway to establish airport protection zones; some of these zones will cover areas of the Evergreen area.

Table II-1: Existing Roadway Jurisdiction, Functional Classification and Characteristics[3]

Roadway	Jurisdiction	Motor Vehicle Functional Class			Approximate ADT 2007
		ODOT	Washington County	City of Hillsboro	
Hwy 26 west of Shute Rd	ODOT	Rural Principal Arterial	Freeway	Freeway	40,800
Hwy 26 east of Shute Rd	ODOT	Urban Principal Arterial – Freeway	Freeway	Freeway	56,300
Evergreen Rd	County	N/A	Arterial	Arterial	12,770
Evergreen Pkwy	County	N/A	Arterial	Arterial	12,920
Cornell Rd	County	N/A	Arterial	Arterial	31,080
NE 25th Ave	City	N/A	Arterial	Arterial	7,390
E Main St	County	N/A	Arterial	Arterial	14,320
W Baseline Rd	County	N/A	Arterial	Arterial	10,430
Shute Rd	County	N/A	Arterial	Arterial	30,600
Brookwood Pkwy	County	N/A	Arterial	Arterial	14,140
Cornelius Pass Rd	County	N/A	Arterial	Arterial	27,410
Glencoe Rd	County	N/A	Arterial	Arterial	6,690
NW Jackson School Rd	County	N/A	Arterial	N/A	5,620
NE Jackson School Rd	County	N/A	Collector	Collector	6,140
Huffman St	City	N/A	Collector	Collector	1,350
Meek Rd	County	N/A	Collector	N/A	340
NW 229th Ave	City	N/A	Collector	Collector	10,380
Sewell Rd	County	N/A	Local Street	N/A	N/D

Notes: ADT obtained from published ODOT, Washington County, and City of Hillsboro data.

N/A = Not Applicable

N/D = No Data Available

Analysis included as part of the Existing Conditions Report (Appendix A) provided a review of existing transportation conditions for the Evergreen study area that was used to establish a baseline for the evaluation of the impact of the proposed industrial development. Several

[3] Two existing County roadways within the study area that not included in this table are NW 273rd Avenue and NW 253rd Avenue.

intersections in the City of Hillsboro and Washington County that will be utilized by future employment users in the area were evaluated. At each location, traffic data was gathered and analyzed to evaluate current conditions and performance for all modes of travel. Additional data was collected for other aspects of the transportation system including built facilities, as described by Metro GIS data, and reported traffic volumes on state and county facilities. The Transportation chapter of the Existing Conditions Report describes the characteristics, usage, and performance of the study intersections.

Most of the study intersections were found to currently operate within the performance standards during the PM peak hour.[4] The exception are four of the signalized intersections - Evergreen Pkwy/NW 229th Ave , Evergreen Pkwy/Cornelius Pass Rd , Brookwood Pkwy/Cornell Rd , and Brookwood Pkwy/E Main St-W Baseline Rd - that are operating near capacity and exceeding Washington County standards with volume-to-capacity (v/c) ratios greater than 0.9. The greatest delay at an unsignalized intersection is experienced at Jackson School Road/Hwy 26 WB ramps where over 400 vehicles make a westbound left turn from the stop-controlled approach, more than four times the volume of any other movement at the intersection.

Truck (heavy vehicle) volumes were collected as part of the intersection turn movement counts and were used in motor vehicle operations calculations. The highest truck volumes for the study area are generally found along north-south routes or intersections where two arterials meet.

The assessment of pedestrian facilities found that narrow sidewalks exist along many of the study area roadways with gaps occurring mostly where there are vacant properties or properties outside the city limits of Hillsboro. For bicyclists, bike lanes are provided on many of the arterial roadways within the city limits of Hillsboro but there are no bike lanes provided outside city limits. Pedestrian and bicycle volumes at the study intersections were counted during the PM peak periods. The greatest amount of non-motorized traffic was

[4] The PM peak hour intersection volumes were used to determine the existing study intersection operating conditions based on the 2000 Highway Capacity Manual methodology for signalized and unsignalized intersections.

observed at the Evergreen Parkway/Cornelius Pass Road intersection, with 10 pedestrians counted (9 pedestrians traveling east-west; 1 traveling north-south) during the PM peak.

Transit service is provided in the study area by the Tri County Metropolitan Transportation District of Oregon (TriMet), which provides transit service for the Portland Metro area including the counties of Clackamas, Multnomah and Washington. Route 47 travels along Baseline Road, NW 229th Avenue, and Evergreen Parkway, connecting the Hillsboro Transit Center to the Willow Creek/SW 185th Ave Transit Center.

C. *Utilities*

Currently, utilities in Evergreen are commensurate with the agricultural and rural residential land uses in the area. A more detailed description of the existing utilities available in Evergreen can be found in Chapter V. of the Existing Conditions Report (Appendix A.). A summary of available utilities is found below.

1. Public Utilities

Clean Water Services (CWS) is the public utility responsible for providing wastewater and stormwater services in the Tualatin River Watershed. The primary regulatory driver for sanitary sewer is Clean Water Services and their Design and Construction Standards. These standards regulate the design, conveyance, and installation of sanitary sewer within the Washington County UGB. There is currently an existing sanitary sewer conveyance network in the vicinity of the Evergreen Road planning area The McKay Creek Trunk line extends from the west to NW 273rd Avenue (extended south of NW Evergreen Road) and terminates at the Rock Creek Treatment Plant. To the east of the planning area, the Dawson Creek Trunk terminates south of Evergreen Road, approximately 900 yards south of the intersection of NW Evergreen Road and NW Dawson Creek Road. The Dawson Creek Trunk flows into the Rock Creek Trunk which also terminates at Rock Creek Treatment Plant. The area to the east of Evergreen is currently under partial development and the terminus of a new sanitary sewer line will be approximately 1,600-feet from Evergreen's eastern boundary. This line could potentially be used to carry sanitary flow from a small portion of eastern Evergreen; however, it is limited by both topography and downstream capacity.

Clean Water Services also manages the conveyance, detention and water quality treatment of stormwater within the Washington County UGB. There is currently no stormwater conveyance system within the Evergreen planning area, with the exception of a storm system in the eastern section of Evergreen Road. In general, the eastern section of Evergreen is curb and gutter and served by an enclosed storm system. The western section of NW Evergreen Road is drained by roadside ditches. The storm system within NW Evergreen Road should have limited capacity to accept drainage from the Evergreen Road Planning Area. The original system design should have included capacity for flow from the proximal areas of the Evergreen Road Planning Area based on the zoning in place at the time of design, which was agricultural.

The City of Hillsboro Water Department oversees the design and installation of water distribution within the City of Hillsboro Water District. There is currently a water distribution network adjacent to the south side of the Evergreen concept planning area. There are two service mains along NW Evergreen Road. One main is an 18-inch City of Hillsboro water line and the other is the 66-inch high-pressure transmission water line owned by the Joint Water Commission.[5] Based on previous findings documented in a study performed by Group Mackenzie, the 66-inch high-pressure water line is not available for connecting into and providing direct service to the Evergreen area. It does, however, provide a large volume of water and adequate pressure to support the existing 18-inch water line along NW Evergreen Road and future distribution networks. According to the City of Hillsboro, the 18-inch water line has adequate flow and pressure to service the project area. No water distribution service mains have been identified along north, east, and west borders of the Evergreen concept planning area.

2. Private Utilities

Private utility providers to the Evergreen area include Portland General Electric (PGE), NW Natural Gas, Bonneville Power Administration, and Qwest and Verizon (telephone).

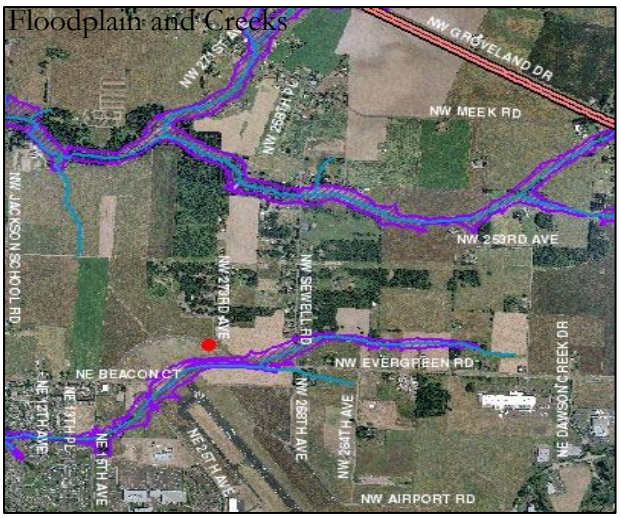
[5] The Joint Water Commission (JWC) consists of TVWD and the cities of Hillsboro, Beaverton, Forest Grove and Tigard. The JWC owns a 60 million gallon per day (MGD) treatment plant and a 20 million gallon reservoir. TVWD owns 10 MGD of treatment capacity. See http://www.tvwd.org/pdf/fact_sheets/jwc_fact_sheet.pdf.

Electric power is supplied to the planning area PGE and the provider is planning to build a technology enhanced substation on approximately 10 acres within the Evergreen concept planning area. The Bonneville Power Administration (BPA) maintains a high-voltage transmission line that runs in the east-west direction through the north central portion of the Evergreen area. The routing is approximately 1000 feet south of the northern border of the area.

D. Natural Resources

Natural features and environmental constraints identified in the 534-acre Evergreen planning area include riparian corridors, wetlands, floodplains, groundwater resources, and natural areas. Defining the natural landscape in the Evergreen area is the Lower McKay Creek streamshed. The major stream in the Evergreen area is Waible Creek, a tributary of McKay Creek.

The Evergreen area is flat to gently sloping and populated primarily with hydrologic soils that have a relatively low rates of infiltration and high runoff potential, particularly when wet. Average annual precipitation is on the order of 40-inches per year, with the majority of precipitation falling during the winter months.



The major stream in the Evergreen area is Waible Creek, a tributary of McKay Creek. Waible Creek and its tributary flows east to west near the north side of the planning area. It is mapped on the preliminary (September 28, 2007) Flood Insurance Rate Maps (FIRM) as a Special Flood Hazard Area (SFHA) and designated as Zone AE in the preliminary Flood Insurance Study. A SFHA is defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year.

The 1-percent annual chance flood is also referred to as the "base flood". Within areas designated Zone AE, purchase of mandatory flood insurance is required by FEMA.


Waible Creek looking east from Sewell

A tributary to Glencoe Swale, a tributary of McKay Creek, flows east to west along the south side of the Evergreen Road Planning Area. This drainage crosses Evergreen Road near the north edge of the Hillsboro Airport. It is mapped on the preliminary FIRM as a SFHA and designated as Zone AE from its crossing of Evergreen Road to just east of Sewell Road, where its designation changes to Zone X. An area designated Zone X is identified as moderate flood hazard areas having a 2-percent annual chance flood. Flood insurance is available but not required in areas designated Zone X. A portion of the Glencoe Swale tributary extends beyond the area designated as Zone X. This portion was not studied as part of the preliminary Flood Insurance Study.

Currently, most rainfall infiltrates the soil mantle. The amount of impervious surface area is relatively low. Surface runoff mostly occurs during storms, and then only at low elevations. Shallow groundwater is present at varying soil depths, and varies by season and rainfall. Agricultural and rural-residential land uses probably altered groundwater quantity and quality through ditching and field tiling.

E. Cultural Resources

The Evergreen concept planning area contains portions of the Edward Constable Donation Land Claim (DLC), the Henry Sewell DLC, and the William Baldra DLC (General Land Office 1862).

The Evergreen concept planning area contains one historic residence, the John W. Shute House, and the historic sites of the Methodist Meeting House and Sewell Clay Works.


John W. Shute House

The John W. Shute House stands at 4825 NW 253rd Avenue. John W. Shute. Shute was a prominent member of the community as the president of the First National Bank in Hillsboro and the J.W. Shute Bank. He was married to Elizabeth Constable, the daughter of the first known settlers in the area, Edward and Priscella Constable. The house that was built for John and Elizabeth Shute is significant due to its association with an early influential and prominent local figure and is listed on the Washington County Historic Inventory.

The Methodist Meeting House was constructed in 1844 on the southeast portion of the Edward Constable DLC (opposite the Shute house across NW 253rd Avenue). The Meeting House was dismantled in 1868. Currently, the previous location of the Meeting House is an agricultural field. The building no longer stands but a sparse historic archaeological site has been recorded nearby that may represent archaeological deposits, possibly including a graveyard, associated with the Methodist Meeting House.

Sewell Clay Works, located in the southeast corner of the intersection of 268th Avenue and NW Evergreen Road, was begun by James H. Sewell, son of English-born pioneers Henry and Mary Ann Sewell. The works began as a manufacturing facility for drainage tile needed on the Sewell farm. By 1893, the North Pacific Clay Works as it was then named, was the largest tile manufacturer in the state and served a national clientele (Washington County Cultural Resource Inventory 1983).

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III. Evergreen Concept Plan Development Program

A. Summary of Economic Trends Workshop

On Monday February 26, 2007, the City of Hillsboro hosted an Economic Trends Workshop at the Hillsboro Civic Center Auditorium that served as the "kick-off" to the Evergreen and Helvetia Concept Plans. The Workshop consisted of three panels and a roundtable forum, where experts from the Portland metro region and around the country discussed economic and industry trends from both a local and national perspective. The workshop was intended to inform the upcoming concept planning of the Evergreen and Helvetia Industrial Areas through the exploration of economic trends and emerging industry clusters in Washington County. Panelists discussed issues related to workforce, flexibility in site planning, target industries, and regional collaboration. A full summary of the Economic Trends Workshop is included in Appendix E.

B. Economic Characteristics of the Area

In order to assess the area's development potential, a detailed analysis of ownership and development patterns was performed at the beginning of the concept planning process. This work is included in the Existing Conditions Report (Appendix A). There are 61 landowners in the Evergreen Area. An estimated 371 acres (71 percent) of property in the Evergreen Area is owned by 16 property owners with 10 or more acres of land. The largest landowner, the Port of Portland, owns an estimated 70 acres of vacant land in the southwestern portion of the Area. However, no single tax lot is larger than 50 acres.

Vacant lands comprise an estimated 40 percent (205 acres) of property in the Evergreen Area. Sixty percent (314 acres) of property is improved, primarily with single-family residences and farm structures that occupy only a limited portion of the total lot area. Approximately 25 percent of improved properties are small- to medium-size lots under 10 acres, whereas 35 percent of improved properties are larger lots of 10 acres or more.

Existing demographics also provide an indication of future development types in the area. The Economic Characteristics chapter of the Existing Conditions Report summarizes population, employment, income, and educational attainment. One of the conclusions from

this data research is that there is an available, well-educated workforce in Hillsboro and Washington County, which makes these places a desirable location for high-tech employers that require a high degree of education, specialized training and management experience.

Hillsboro's industrial economy is fueled by companies such as Intel and Sun Microsystems that specialize in computer and electronic product manufacturing (NAICS 334). In addition to several large, high-tech manufacturing employers, major healthcare facilities and customer service call centers also are located in Hillsboro. The majority of existing industrial users on the Westside are within the high-tech cluster. Recent investments by companies such as Genentech and SolarWorld have increased interest and speculation with regard to the City's potential to attract biosciences and sustainable industries firms. Local real estate and economic development experts generally agree that the Evergreen and Helvetia Areas are most likely to accommodate growth in the high-tech and semiconductor industries and sustainable industries.

C. Development Program

A development program – a narrative and quantitative description of how a property or area could be developed – was developed for both Evergreen and Helvetia to serve as a guide for the development of the respective Concept Plans. The development program (Appendix F) describes an overall identity for the project areas, including how the properties will be best positioned. The overall objective is to prepare concept plans that offer the opportunity to capture target markets, maintain economically viable conditions, and strengthen prospects for financial success while addressing Metro's and Hillsboro's goals for job creation and place making.

The development program for Evergreen responds to a series of "Big Ideas" that describe the general type of development that the community desires and that is likely to be achieved. Serving as objectives for the planning effort, these Big Ideas become benchmarks against which concept alternatives can be evaluated. The Big Ideas that will drive employment growth in Hillsboro, and Evergreen in particular, are described below:

Category	Users	Land/Building
Industry of Today (what we've already got)	Silicon (Intel, solar, display panels)	Large campuses (200 acres, 100 acres, etc.)
Industry of Tomorrow (what Hillsboro is beginning to see)	Medical, pharma, bio (Genentech, OHSU), sustainable energy	Medium campuses (75 acres)
Industry of the Future (what Hillsboro could get someday)	Medical (biochips, merging of industries of today/tomorrow)	Office/flex/R&D space, medium to large single-user campuses
Other components		
Services to support all three paradigms	Software companies, suppliers	Leased space in industrial parks or 10-20 acre single-user sites
Commercial service center	Hotel, bank, food	5-10 acres

The ability for Evergreen to actually capture the above industries is driven by Hillsboro's strengths, such as having a pool of skilled workers in the technology and silicon industries, relatively cheap and reliable power, and a proximity to similar types of industries.

The development program includes a variety of assumptions about market opportunities and implementation. These assumptions include a program development planning horizon of year 2030, that the eastern portion of Evergreen will develop first before expanding westward, and that land banking will occur as larger users enter the area and purchase more property then is initially needed in order to preserve the opportunity for future expansions. A complete list of these assumptions is found in Appendix F.

1. Development Types

The program for Evergreen includes combinations of development types and typical parcel sizes. The development types are described below:

Sustainable, Environmental and Energy Businesses (50 to 100+ acres): These sites provide locations for major corporate and manufacturing campuses for global companies in the sustainable, environmental, and energy industries. The variety of sizes allows for a range

of product development (vertically integrated) as well as supporting corporate office and R&D functions. Potential industries could include those related to solar and silicon manufacturing, wind energy, high technology, and biotechnology.

Biotech Campus (35 to 50+ acres): A biotech campus would provide a medium-sized parcel for a business that would be directly related to Hillsboro's emerging biotech industry. Industry Suppliers (10 to 20+ acres): Industry supplier parcels provide sites for businesses that provide materials and services in support of the larger industrial users in Evergreen and elsewhere in Hillsboro. These could include both manufacturers as well as distributors of products that are used in the manufacture of products at other companies. Potential users could include suppliers of test equipment, uniforms and linens, lab supplies, sub-components and circuit boards, and packaging materials.

Industrial Incubators, Start-ups, and Spin-offs Business Parks (12 to 40 acres): These sites would be developed by commercial developers and leased in multi-tenant business and industrial parks. Leased park space is needed for smaller and emerging companies that do not have the capital or desire to be owners or for those that are in a growth mode and want the flexibility to move in the future. Industrial business parks typically have a unifying brand and image, which is controlled by a set of CC&Rs. Some industrial business parks may have a focus on raw industrial space, while others may be more focused on flex buildings that combine office and industrial space. Based on interviews with developers, sites of between 20 and 40 acres are preferred.

Industry Research and Development (R&D) Parks (20 to 30 acres): Similar to the above, industry R&D parks provide flexible development space (either as a single user or multi-tenant) for supporting businesses and spin-offs from Hillsboro's core and emerging technology industries.

Support Commercial Services (5 to 10 acres): Support commercial services are a key component of most employment centers. A commercial service center provides needed daily services for employees (food, banking, convenience goods) and is an amenity that attracts employers to the area. By locating the service center where it will be within walking

distance to many employees (yet remaining visible to drive-by traffic), it can also reduce midday traffic trips.

These development types were the basis for the industrial use categories listed in the proposed Evergreen Road Area Special Industrial District (ESID) in the Hillsboro Development Code (see Appendix L).

2. Programs for the Alternative Concepts

The development program for the Evergreen area provides the opportunity for large parcels to accommodate campuses for Fortune 500 companies and global leaders in cutting-edge industries such as high technology, sustainable and environmental energy, biotech, biomedical, and other industries that have not even been invented yet. Supporting these anchor uses at Evergreen would be a range of development sites and smaller campuses to provide space for flex uses, research and development companies, incubator businesses, suppliers, spin-off/start-up companies, and other businesses that have a direct connection to the large campus users at Evergreen and in the surrounding area. In order to provide needed amenities for businesses and employees, as well as to reduce trips outside the area, up to two small commercial service centers are also provided to accommodate uses such as banks, restaurants, and limited retail.

Three unique development programs have been prepared that correspond to the three Conceptual Illustrations for the Evergreen Concept Plan (see Chapter IV. in the Concept Plan). The *Evergreen Development Programs* tables in Appendix F demonstrate the types of users, and the amount of land they would use, under each growth scenario.

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IV. Evergreen Industrial Area Concept Plan

A. Industrial Urban Growth Conceptual Illustrations

The purpose of this section is to present illustrations that show how the Evergreen area may develop in the future. The Industrial Urban Growth Conceptual Illustrations ("Conceptual Illustrations" or "Concepts") that were developed for Evergreen reflect the types of users the City of Hillsboro would like to attract to the area, considers the lotting patterns and physical location of the area that will be urbanized with industrial uses, and respects existing natural features. These Conceptual Illustrations are not zoning maps but rather are expressions of how the area could develop, consistent with the Evergreen Concept Plan. The Concepts are consistent with the proposed policy and code language that implements the Evergreen Concept Plan (see Chapter V., Implementation Steps) and the corresponding transportation improvements necessary to support the anticipated industrial development (see Section B, Transportation Plan).

The Evergreen site is planned as a "Primary Industrial" area. The intent is for the Evergreen site to serve as an area of logical progression for new industries that are consistent with the caliber and quality of those existing primary industrial uses currently located south of the site. Further, the site is planned as a framework for a sustainable industrial environment that helps attract and retain top workforce talent.

1. Conceptual Illustration A

Conceptual Illustration A was developed to address a projected robust demand in the Sustainable Energy & Environmental Business industry.

As shown in Conceptual Illustration A, multiple parcels are provided to accommodate the same Sustainable Energy & Environmental Business land use type. The largest parcel, in the 200-acre range, is located adjacent to current bio-pharm development (Genentech) and north of SolarWorld and one medium parcel, in the 100-acre range, is established for development of a separate campus. In addition, Concept A provides a single smaller Industrial Business Park and two Commercial Nodes at highly-visible intersections (locations are not specific, but commercial uses are allowed). While developing the plan, respect was

given to the 100-year floodplain along the northern site boundary, which was not encroached upon by the proposed concept.

In addition to addressing these land-use issues, this concept also responds to concerns about minimizing the number of parcels affected by future acquisition of property, and to providing north/south transportation connectivity through the site. Acquisition concerns are addressed by using existing property lines to define the areas proposed for future uses and the proposed roadway network. Connectivity concerns are addressed by connecting 263rd Avenue to NW Sewell Road north to the planning area boundary. Additional transportation connectivity concerns related to this concept include the possibility of not extending NW Huffman Road in order to preserve a large parcel that extends the North South boundaries and to the West through the planning area. Additional circulation is gained by adding an East /West connector road between NW Sewell & NW 263rd to the north of the Industrial Business Park.

2. Conceptual Illustration B-1

Conceptual Illustration B1 was developed to accommodate a wider variety of land uses, with relatively equal areas allocated for each development type.

As shown in Conceptual Illustration B-1, these land uses include Sustainable Energy & Environmental Business, Industry Suppliers , Biotech Campus, Industry R&D Parks , Industrial Business Park , and Commercial Nodes at highly-visible intersections (locations not specific – see ESID code language in Appendix L). Included within each land use type are multiple parcels with relatively equal amounts of land for Sustainable Energy & Environmental Business, Industry Suppliers and Biotech Campus, with smaller amounts of land and multiple parcels for Industrial Business Parks and a single smaller parcel for the Industry R&D Park. Additional benefits of this concept are the compatible placement of the Biotech Campus adjacent to the existing Bio-pharm facility (Genentech) to the East, and the preferable location of the Industry R&D Park in the North East corner of the site. A detriment to this concept is the lack of a single developable parcel in excess of approximately 100 acres. While developing the plan, respect was given to the 100 -year floodplain to the

Evergreen
concept plan

Figure IV.1
Conceptual Illustration A

October 2007

Legend

- Sustainable Energy & Environmental Business
- Industrial Business Park
- Commercial Node
  location not specific - see ESID

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Feet

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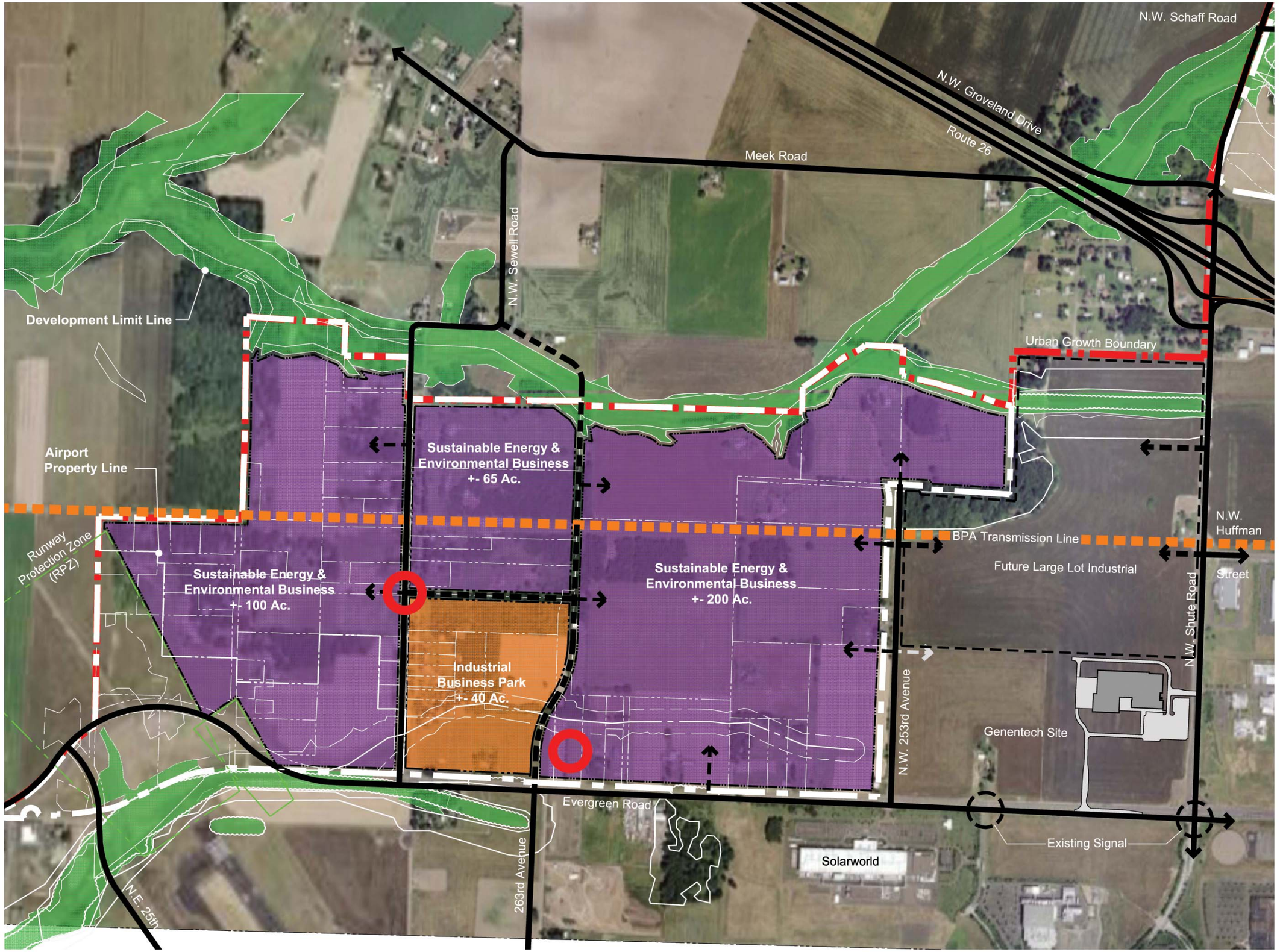
CITY OF HILLSBORO



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Evergreen
concept plan

Figure IV.2
Conceptual Illustration B-1

October 2007

Legend

- Sustainable Energy & Environmental Business
- Industry R&D Parks
- Biotech Campus
- Industry Suppliers
- Industrial Business Park
- Commercial Node
  location not specific - see ESID

N

0 800 1,600
Feet

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N.W. Schaff Road
N.W. Groveland Drive
Route 26
Meek Road
N.W. Sewell Road
Development Limit Line
Urban Growth Boundary
Industry Suppliers +- 30 Ac.
Airport Property Line
Sustainable Energy & Environmental Business +- 70 Ac.
Industry R & D Parks +- 40 Ac.
N.W. Huffman Street
Runway Protection Zone (RPZ)
Industrial Business Park +- 25 Ac.
Industry Suppliers +- 75 Ac.
Sustainable Energy & Environmental Business +- 45 Ac.
BPA Transmission Line
Future Large Lot Industrial
Biotech Campus +- 105 Ac.
N.W. Shute Road
N.W. 253rd Avenue
Industrial Business Park +- 12 Ac.
Industrial Business Park +- 28 Ac.
Genentech Site
Evergreen Road
Existing Signal
Solarworld
263rd Avenue
N.E. 25th

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north which was not encroached by the proposed concept.

In addition to providing space for a wider variety of tenants, this concept also responds to concerns about minimizing the number of parcels affected by future acquisition of property and providing north/south and east/west transportation connectivity through the site. Acquisition concerns are addressed by using existing property lines to define the areas proposed for future uses and the proposed roadway network. Connectivity concerns are addressed by extending NW Huffman Road through the site to the west and extending NW 263rd north to the NW Huffman extension. An additional benefit of the proposed layout of NW Huffman is the flexibility of the curvilinear road. This layout could potentially grow or shrink parcels to the north and south of the road, according to changes in land use needs, and also adds a more attractive internal campus circulation spine.

3. Conceptual Illustration B-2

Conceptual Illustration B-2 was developed to accommodate a variety of land uses, with a premium placed on developer-initiated Industrial Business Park projects.

As shown in Conceptual Illustration B-2, the land use include Sustainable Energy & Environmental Business, Industry Suppliers, Biotech Campus, Industry R&D Parks , Industrial Business Parks , and Commercial Nodes at highly-visible intersections (locations not specific – see ESID). Included within each land use type are a single parcel of relatively equal amounts of land for Sustainable Energy & Environmental Business and Biotech Campus, with smaller amounts of land and single parcels for the Industry Suppliers and Industry R&D Parks. Additional benefits of this concept are the compatible placement of the Biotech Campus adjacent to the existing Bio-pharm facility (Genentech) to the east; a detriment is the location of the R&D Park near the airport with a potential for exceeding noise and vibration limitations. While developing the plan, respect was given to the 100-year floodplain to the North which was not encroached by the proposed concept.

In addition to providing space for a wide variety of tenants, this concept also responds to concerns about minimizing the number of parcels affected by future acquisition of property by large industrial users and providing north/south and east/west connectivity through the site. Acquisition concerns are addressed by using existing property lines to define the areas proposed for future uses and the proposed roadway network. Connectivity concerns are addressed by extending NW Huffman through the site to the west and extending NW 263rd north to the North Huffman extension. An additional benefit of the proposed layout of NW Huffman is the increased efficiency of a linear road layout.

Evergreen
concept plan

Figure IV.3
Conceptual Illustration B-2

October 2007

Legend

- Sustainable Energy & Environmental Business
- Industry R&D Parks
- Biotech Campus
- Industry Suppliers
- Industrial Business Park
- Commercial Node
  location not specific - see ESID

N

0 800 1,600
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N.W. Schaff Road
N.W. Groveland Drive
Route 26
Meek Road
N.W. Sewell Road
Development Limit Line
Urban Growth Boundary
Industrial Business Park +- 40 Ac.
Sustainable Energy & Environmental Business +- 110 Ac.
Airport Property Line
Runway Protection Zone (RPZ)
Industry R & D Parks +- 25 Ac.
Industrial Business Park +- 60 Ac.
Industry Suppliers +- 40 Ac.
Biotech Campus +- 105 Ac.
BPA Transmission Line
Future Large Lot Industrial
N.W. Huffman Street
N.W. Shute Road
N.W. 253rd Avenue
Industrial Business Park +- 12 Ac.
Industrial Business Park +- 28 Ac.
Genentech Site
Evergreen Road
Existing Signal
Solarworld
263rd Avenue
N.E. 25th

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B. Transportation Plan

This section provides an overview of the future transportation conditions within the Evergreen Concept Plan area, both without additional development in the Evergreen planning area and with full development of the Evergreen planning area consistent with the Conceptual Illustrations. Listed in this section are improvements to the transportation network that will be needed to mitigate traffic levels anticipated from development in Evergreen. Also listed are improvements and associated costs needed to onsite collector roads and fronting arterial streets.

1. 2030 Future Conditions

In order to determine what impacts future industrial development in the Evergreen planning area would have on the transportation system, twenty-one study intersections were analyzed without the addition of Evergreen project traffic for the 2030 PM peak hour to determine the transportation system improvements that would be required if buildout of the Concept Plan did not occur. Seventeen of the study intersections would require mitigation in order to meet performance standards. The following table identifies those 17 intersections that will require improvements to meet performance standards without the addition of any development in the Evergreen planning area (see Appendix G, Transportation Forecasting Documentation for full transportation analysis).

Table IV-1: Transportation Mitigations for 2030 No Build Conditions (Without Concept Plans)

	Location	Improvement Item	Planned Project?
1	NW Glencoe Rd/ NW Evergreen Rd	Add a northbound right turn lane	NEW
		Add a northbound right turn overlap	NEW
		Add second westbound left turn lane	NEW
		Add additional southbound receiving lane on Glencoe south of intersection to Milne for dual westbound left turn	NEW
2	NE Jackson School Rd/ NW Evergreen Rd	Add a northbound right turn overlap phase	NEW
3	Evergreen Road	Widen to 5 lane section from NE 253rd-Glencoe *(TSP project)*	Hillsboro TSP
4	New East-West Carrying Capacity	New roadway (or expanded existing roadway) to relieve traffic on Evergreen at Shute Road and Cornelius Pass	NEW

	Location	Improvement Item	Planned Project?
		(*Needs to be considered in TSP update)*	
5	NW Shute Rd/ NW Evergreen Pkwy	Add northbound right turn overlap phase	NEW
6	NW 229th Ave/ NW Evergreen Rd	Add a northbound right turn overlap phase	NEW
		Add a southbound right turn lane	Hillsboro TSP
		Add second northbound right turn lane	NEW
7	NW Jackson School Rd/ NW Meek Rd	Add a single lane roundabout	NEW
8	NW Jackson School Rd/ Hwy 26 WB Ramp	Add a traffic signal	NEW
		Add a second westbound left turn lane	NEW
		Add a second southbound receiving lane on Jackson School south of the intersection	NEW
9	NW Cornelius Pass Rd/ NW Evergreen Pkwy	Add an eastbound right turn lane	Hillsboro TSP
		Add a northbound right turn lane	
		Add second northbound left turn lane	Hillsboro TSP
		Add second southbound left turn lane	Hillsboro TSP
		Add second westbound left turn lane	Hillsboro TSP
		Add westbound right turn lane	Hillsboro TSP
		Add second westbound right turn and overlap	NEW
10	NW Helvetia Rd/ NW Jacobson Rd	Add a traffic signal	NEW
		Add a northbound right turn lane	NEW
11	NW Shute Rd/ Hwy 26 WB Ramp	Add a single lane roundabout	Draft RTP
		Widen structure over Hwy 26 for additional northbound lane (modification to current RTP project)	NEW
12	NW Shute Rd/ Hwy 26 EB Ramp	Add second northbound through lane	NEW
13	NW Shute Rd/ HW Huffman St	Remove trees in median and install two-way left turn lane.	NEW
		Install traffic signal controls.	*Built by Others*
14	NE Brookwood Pkwy/ NE Cornell Rd	Add second eastbound left turn lane	NEW
		Add second westbound left turn lane	NEW
		Add westbound right turn lane	NEW
		Add southbound through lane	NEW
15	NE Brookwood	Restripe to add second eastbound through lane	NEW

	Location	Improvement Item	Planned Project?
	Pkwy/ W Baseline Rd	(five lane section east of intersection as TSP project)	
		Add second southbound through lane	NEW
		Add southbound receiving lane south of intersection	NEW
		Add second westbound left turn lane	NEW
16	NW Jacobson Rd/NW Century Blvd	Add a traffic signal	NEW
		Add northbound right turn lane	NEW
		Add northbound right turn overlap phase	NEW
		Add southbound left turn lane	NEW
17	NW Cornelius Pass Rd/ NW Jacobson Rd	Add second eastbound left turn lane	NEW

The project numbers in Table IV-1 correspond to project locations indicated on Figure IV.4.

Only four study intersections would not require mitigation due to background traffic growth. These improvements would be triggered by other growth in the area without the assumed Concept Plan development. These findings indicate that transportation improvements in the area are needed in addition to what was projected in the Washington County and Hillsboro TSPs. The additional improvements account for traffic growth projected to the year 2030, ten years beyond the 2020 TSP projections.

Since most of the study intersections would not meet performance standards under the 2030 No Build (e.g. no development in Evergreen) scenario, a number of transportation mitigations would be needed without the adoption of the Evergreen or Helvetia Concept Plans. Most of the mitigations are focused on adding capacity at major intersections. A few would involve substantial expansion to existing roadways, and should be considered as part of the Transportation System Plan update for the city. Specifically, the Evergreen Road corridor between NW Shute Road and Cornelius Pass Road far exceeds planned capacity by 2030. For the purpose of this study, it was assumed that expanding the Evergreen Road corridor would be one possible method to meet this need, even though the city would need to officially support this decision at a later time, or select another option, such as alternative routes that can add capacity or more aggressive transportation demand management solutions.

2. Recommended Improvements with Development in Evergreen Planning Area

With the addition of industrial development in the Evergreen planning area, four intersections would require additional mitigation with Concept Plan traffic levels in order to meet performance standards in 2030:

The additional mitigation required at these locations (assuming mitigation triggered by the No Build scenario is built) in order to meet performance standards is listed in Table IV-1.

Table IV-2: Additional 2030 Transportation Improvements Needed for Evergreen Concept Plan

	Location	Improvement Item	Planning Cost + ROW*
A	NW 229th Ave/NW Evergreen Rd	Add second northbound left turn lane	$750,000
		Add second southbound left turn lane	$750,000
B	NW Brookwood Pkwy/W Baseline Rd	Add a southbound right turn lane	$375,000
C	NW Shute Rd/NW Evergreen Rd	Add eastbound right turn lane	$375,000
D	NW Sewell Rd/NW Evergreen Rd	Add a traffic signal	$250,000
		TOTAL COST	**$2,500,000**

*Notes: *Assumes additional 50% to project costs for Right of Way.*

The project letters in Table IV-2 correspond to project locations indicated on Figure IV.4.[6]

2030 Planned Transportation Improvements

[6] Also indicated on Figure IV.4 is a project location "E." This project is an intersection mitigation project necessary due to development in the Helvetia area. See Appendix G for the full transportation analysis for both the Evergreen and Helvetia planning areas.

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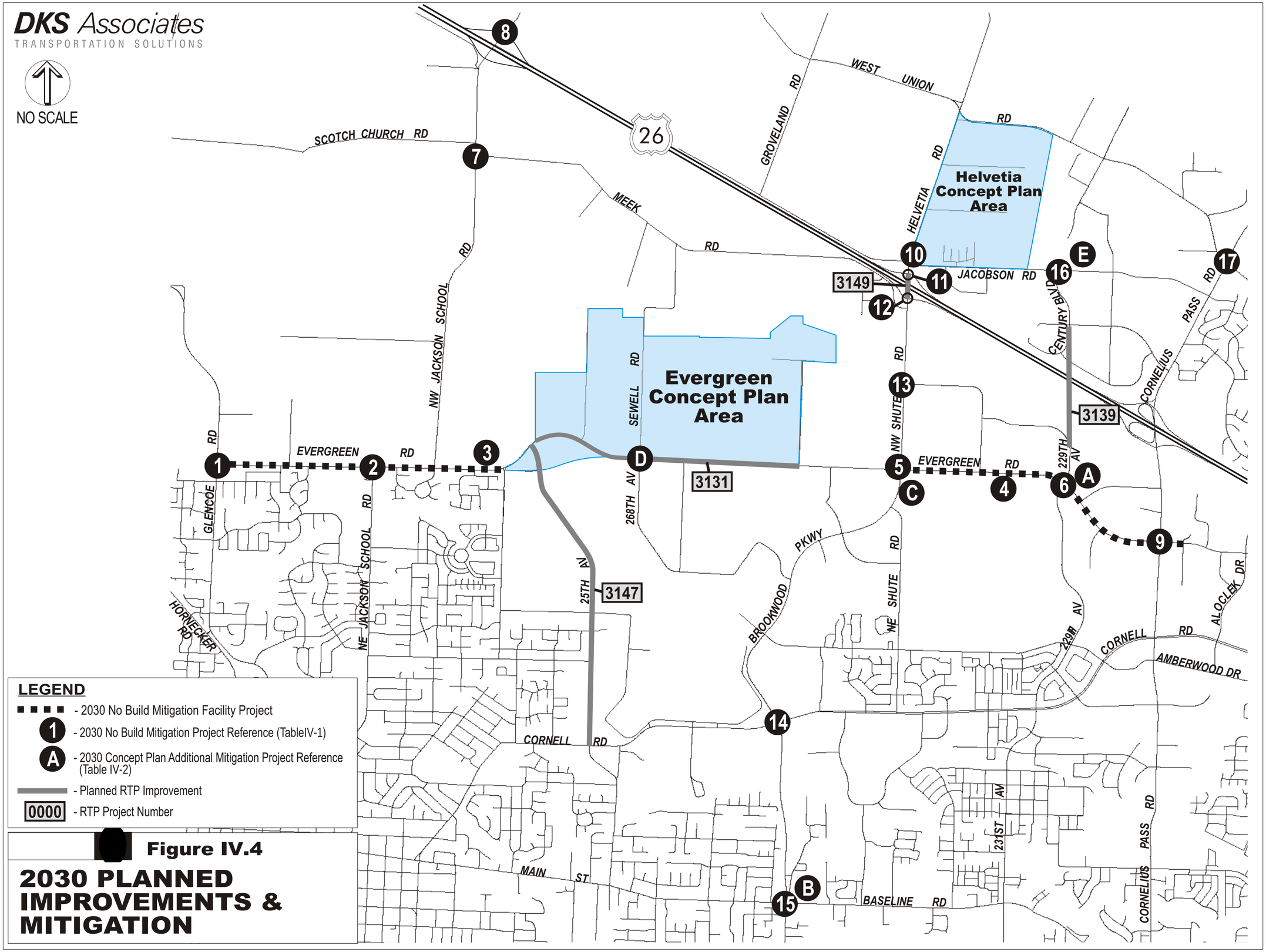
NO SCALE



LEGEND

- 2030 No Build Mitigation Facility Project
- 1 - 2030 No Build Mitigation Project Reference (TableIV-1)
- A - 2030 Concept Plan Additional Mitigation Project Reference (Table IV-2)
- Planned RTP Improvement
- 0000 - RTP Project Number

Figure IV.4

2030 PLANNED IMPROVEMENTS & MITIGATION

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3. Site Circulation and Access Improvements

The Evergreen concept plan site identified new street networks that connect to existing public streets along the frontage. The street improvements associated with the Evergreen Road site were evaluated to determine preliminary engineering cost estimates. Most of these improvements are onsite collector roads, and the half-street improvements to the fronting arterial streets.

The street improvements for NW Evergreen Road site include the NW Huffman Road extension from the Genentech property boundary, and the upgrade of existing Sewell Road to urban county standards. The NW Huffman Road cross-section should be designed to 3-lanes west of the eastern Evergreen planning area boundary. From that point to NW Shute Road, the forecasted traffic volumes will require additional capacity, such as a 5-lane street cross-section.

In addition, the fronting street improvements of Evergreen Road to a full 5-lane section along the site to NW 281st Avenue have been included in the cost estimates. These include right-of-way onsite, street constructions, and conservative assumptions about project design, administration and construction. The total cost for these improvements is $49 million, including the cost for right-of-way. These improvements should be eligible for System Development Charge credits, since they are or will be considered as planned improvements in the City of Hillsboro and Washington County Transportation System Plans. Refer to Appendix G for cost estimate details.

Table IV-3: Evergreen Road Site Street Improvements

Street	Extent	Facility Type	Right-of-Way	Construction Costs	Total Cost
Sewell Road	Evergreen Road to Meek Rd.	3-lane Collector	$5,218,184	$6,715,500	$14,375,684
Huffman Road	E. Boundary to W. Boundary	3-lane Collector	$10,282,892	$13,634,500	$23,917,392
Evergreen Road	NW 281st to Meier Jurgen	5-lane Arterial	$3,302,845	$7,515,625	$10,818,470
				$27,865,625	**$49,111,546**

C. Highway 26 / Shute Road Interchange

The Highway 26 / Shute Road interchange has been and will continue to be a major entry point to the large industrial employment base in the northern portion of the City of Hillsboro. The addition of the Evergreen and Helvetia planning areas to the Urban Growth Boundary and the anticipated employment that will be generated in these areas will place greater demand on the Highway 26 / Shute Road Interchange to provide access into this section of the City. The Shute Road Interchange is currently approaching or exceeding the mobility standard identified in the *Oregon Highway Plan* (OHP) for this facility. Of primary concern is the heavy westbound off ramp traffic during the AM peak hour heading southbound and the corresponding northbound to eastbound movement in the PM peak and their effect on traffic operations in the vicinity of the interchange. The Meek Road/Shute Road and Jacobson Road/Groveland Road/Helvetia Road intersection do not meet OHP access spacing standards and have operational concerns due to their proximity to the interchange. A project to address operational and mobility concerns at the interchange, including establishing a westbound to southbound loop ramp, has been identified in the financially constrained *2004 Regional Transportation Plan* (RTP) and has been submitted for inclusion in the functional constrained 2007 RTP by Washington County.

In order to ensure that improvements to the interchange are in place to support industrial development in the Evergreen and Helvetia Concept Plan Areas, the Oregon Department of Transportation, Washington County and the City of Hillsboro will work collaboratively to identify a preferred design for future improvements at the Highway 26 / Shute Road Interchange and attempt to develop a funding strategy (public/private). This work will need to consider the operation of the interchange within the context of the overall transportation system in this section of Hillsboro, including the arterial network that feeds into this and other US 26 interchanges and overcrossings. This joint effort should build upon the results of the transportation evaluation conducted for the Evergreen and Helvetia Concept Plans which identified a series of improvements to the existing transportation network and new transportation facilities necessary to serve future employment growth (see Appendix G).

ODOT, Washington County and Hillsboro will work together to:

- Determine the ultimate configuration of the Highway 26 / Shute Road Interchange;
- Identify incremental improvements to the interchange that can be phased over time;
- Prepare an Interchange Area Management Plan addressing land use strategies for protecting the interchange for its planned function and identifying access spacing and access management requirements;
- Determine the ultimate location for NW Meek Road, NW Jacobson Road and NW Groveland Road as they access NW Shute and NW Helvetia Roads respectively;
- Attempt to develop an implementation strategy for constructing/funding improvements (public/private contributions towards interchange improvements may include developer proportionate share contributions/construction of incremental interchange improvements);
- Develop and adopt an Interchange Area Management Plan, including any necessary updates to transportation system plans and implementing ordinances.

D. Natural Resources Plan

1. Level of Protection

Consistent with the City's Goal 5 provisions of Section 6, Natural Resources, Open Space, Scenic and Historical Sites, of the Hillsboro Comprehensive Plan, significant wetland and riparian/upland wildlife habitat resources in the Evergreen Area must be protected prior to urbanization. Upon annexation of lands with such resources to the City, these resources will be given an appropriate protection level, as prescribed by Section 131A, Significant Natural Resources Overlay (SNRO) District, of the Hillsboro Zoning Ordinance. The City is currently undertaking an inventory and will determine which of the inventoried resources are significant. For the significant resources, the City will conduct an ESSE analysis and will determine the level of protection. Once annexed, the City will add these resources to the mapped areas protected under the SNRO District.

Within the Evergreen Industrial Area, mitigation and enhancement activities will be required to improvement the Waible Creek Tributary wetlands, floodplain, and riparian upland wildlife habitat resources (Riparian Corridor). The overall guiding principle for the Waible

Creek Tributary Riparian Corridor is connectivity of resource types in order to allow wildlife passage between the larger habitat units and genetic flow between plant communities. For developments within the Evergreen Industrial Area that impact significant natural resources, the City may identify and require appropriate mitigation and enhancement measures to be undertaken by such development to improve connectivity and wetland and riparian upland wildlife habitat resource functions and values within, and connected to, the Riparian Corridor.

In addition, some natural resource areas within Evergreen may be considered Habitat Benefit Areas, as defined by the adopted Tualatin Basin Fish & Wildlife Habitat Program. A key element of this program is the encouragement of the use of habitat Friendly Development practices, including Low Impact-Development (LID) techniques, designed to reduce the environmental impacts of new development and remove barriers to their utilization. The intent is to provide flexibility in the land development ordinances to encourage the protection of qualified Habitat Benefit Areas. Habitat-Friendly development techniques, design, and construction practices are included in Section 131B, Habitat Friendly Development, of the Hillsboro Zoning Ordinance.

E. Public Facilities and Services Plan

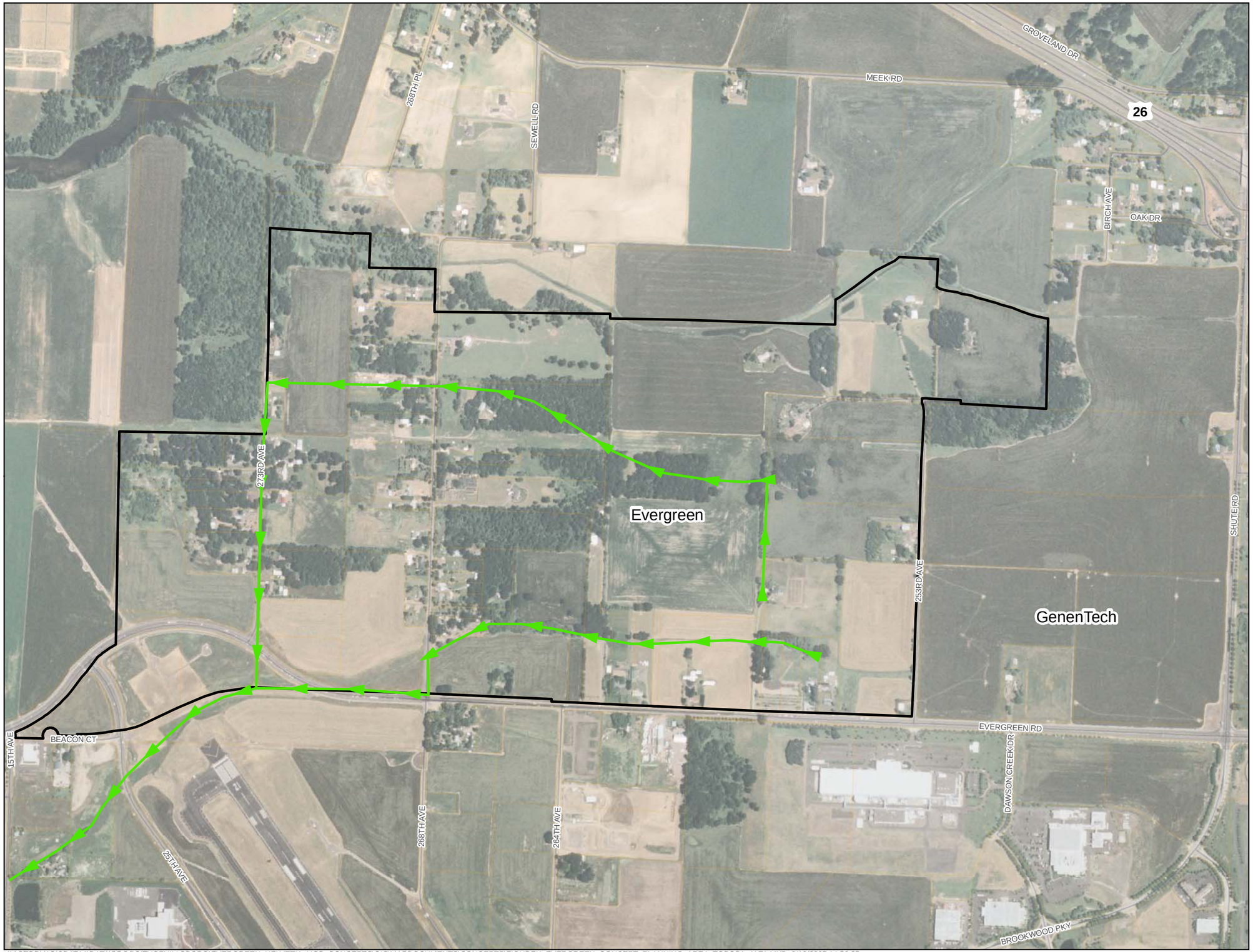
1. Sewer

Appendix H, Draft Sanitary Sewer Trunk Concept Design Evergreen Road Planning Area, provides a complete overview of the existing sanitary services in the planning area, the challenges in sewering the area, and the proposed method of providing future sanitary service. The Evergreen area lies in Washington County, outside and adjacent to the current Clean Water Services (CWS) service area. The area will be brought into both the City's and CWS's service area.

Two alternatives are proposed for providing sanitary service to Evergreen. The first alternative provides for an all-gravity system into the McKay Trunk system. The second alternative is a pump station with discharge to the Dawson Creek system. Pending the findings of a downstream analysis and a detailed design study, parts of both of these alternatives could be combined to provide the optimal alternative.

Figure IV.5
Evergreen Concept Planning Area Sanitary Sewer System Conceptual Alternative One

Evergreen/Helvetia UGB
Concept Plans



LEGEND

- Gravity Pipe
- Evergreen Site (Planning Area = 532.93 ac)
- Roads
- Tax Lots

N

0 800 1,600
Feet

Angelo planning group

CH2MHILL

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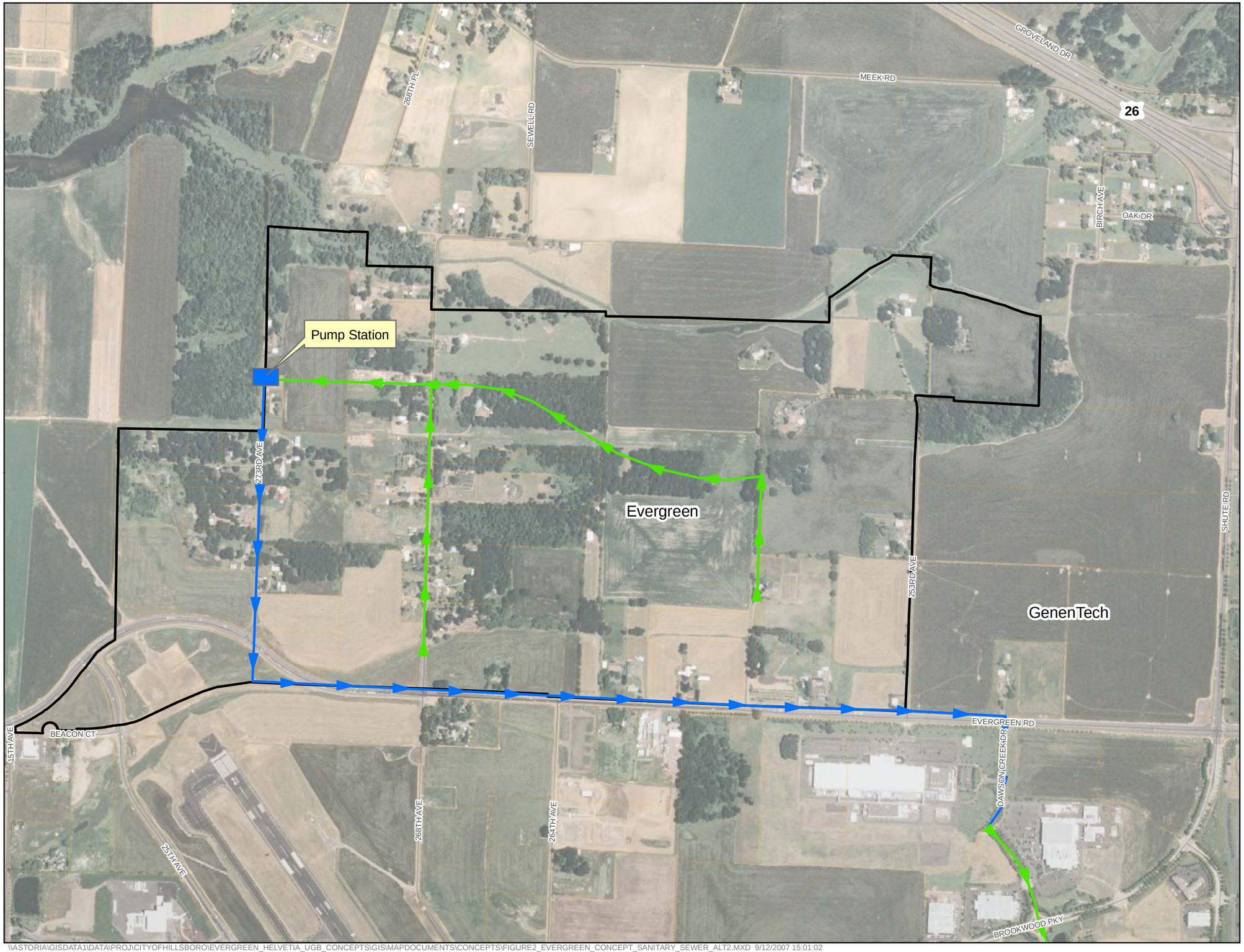

Figure IV.6

Evergreen Concept Planning Area Sanitary Sewer System Conceptual Alternative Two

Evergreen/Helvetia UGB Concept Plans

LEGEND

- Gravity Pipe
- Force Main
- Evergreen Site (Planning Area = 532.93 ac)
- Roads
- Tax Lots

N

0 800 1,600

Feet

Angelo planning group

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Alternative 1: Alternative 1 is an all-gravity connection to the McKay Creek trunk. The gravity alternative provides the benefits of increased reliability and reduced maintenance. There may, however, be downstream capacity limitations of the McKay Creek system. There is limited elevation change between the low point at the northern end of NW 273rd Avenue and the ground elevation at the intersection of NW 273rd Avenue and NW Evergreen Road. However, the invert elevation at the intersection of NW 273rd Ave and NW Evergreen Road is deep enough to allow connection of a gravity pipe at minimum slope; although the very northern edge of the ERPA cannot be served by gravity. (See Figure IV.5, Evergreen Concept Planning Area Sanitary Sewer System Conceptual Alternative One.)

Alternative 2: Alternative 2 is a pump-station alternative. A gravity system can be used to convey flow to the low spot at the northern end of NW 273rd Avenue. At that location a pump station will discharge through a 20-inch forcemain to the Dawson Creek Trunk in NW Dawson Creek Drive. Disadvantages to Alternative 2 include the increased initial cost and long-term maintenance. Advantages include avoidance of potential downstream capacity to accommodate peak flow. (See Figure IV.6, Evergreen Concept Planning Area Sanitary Sewer System Conceptual Alternative Two.)

Project Costs

Planning level cost estimates are given in Table IV-4. Cost estimates for the conceptual sanitary collection system alternatives are based on best professional judgment. Total program cost includes engineering fees equal to 30% of the estimated construction cost. These are costs for main lines only and do not include minor collectors or laterals.

Table IV-4: Sewer Conceptual Construction and Program Costs

Alternative	Total Construction Cost	Total Program Cost
Alternative 1	$2,900,000	$3,700,000
Alternative 2	$5,100,000	$6,700,000

2. Storm

Appendix I, Draft Stormwater Concept Design Evergreen Road Planning Area, reviews the regulatory standards applicable to managing stormwater from future industrial development in Evergreen. Future development will need to meet Clean Water Services (CWS) for conveyance, water quality and detention. If a nexus exists between project permitting within Evergreen and the Federal Endangered Species Act, the project will be also subject to National Marine Fisheries Service (NMFS) consultation and their stormwater management guidelines.

Water quality treatment options are contained in Chapter 4 of CWS's Design and Construction Standards. Low Impact Development (LID) options are specifically addressed in §4.07 of CWS's Design and Construction Standards. Among the acceptable LID options for private systems are: pervious paving, Eco-Roofs/Roof Gardens; Infiltration Planters; Flow through Planters; Sand Filters; and Tree boxes. Acceptable LID options for public systems also include: Street Swales; Vegetated Filter Strips; and Vegetated Infiltration Basins. For any developments less than one acre, if at least 75-percent of the post development impervious area is treated with LID options no additional stormwater management may be required by CWS.

Discharge of piped or overland conveyance should go to Wiable Creek or to the Evergreen Road storm sewer system. The stormwater system within Evergreen Road was originally designed to accommodate runoff from agricultural zoning on the north, not industrial; therefore, a downstream analysis must be performed on the system to determine permissible discharge rates. Outfalls to Wiable Creek should be designed in compliance with §5.07.7 of CWS's Design and Construction Standards. They should be above mean low water level and use energy dissipation. These outfalls may also trigger Clean Water Act permit issues.

3. Water

The average water demand for the approximately 519-acre Evergreen site is estimated to be approximately 5,500 Gallons per day (GPD)/Acre, on a continuous basis, assuming that the

area will be developed primarily with general industry and commercial industry. This results in a total water system average demand of approximately 2.85 Million Gallons per Day (MGD). The peaking factor for this use is estimated to be 1.5 considering there could be irrigation demands in the summer months. This results in a peak water demand of 4.28 MGD.

The Evergreen development site resides within the service area of the City of Hillsboro Water Department. As the water provider, the City has indicated that the additional 5 to 6 MGD of peak demand could be provided to the Evergreen site without the need of any specific public water infrastructure improvements. The City of Hillboro currently has an 18 inch water transmission main located adjacent to the southern boundary of the Evergreen site along NW Evergreen Road. The City has indicated that the development could connect to this 18inch transmission main and extend the private water infrastructure within the site to adequately supply the needed water for general industry applications.

The primary water system infrastructure improvements required for the Evergreen development site are illustrated in Figure IV.7. The improvements primarily consist of water transmission pipelines and 4 interconnections and 4 metering stations with the City of Hillsboro 18 inch water transmission main located along NW Evergreen Road. Water transmission pipelines have been sized with design criteria maintain pipeline velocities less than 5 feet per second. The City of Hillsboro has also requested that two of the transmission mains be upsized to enable the conveyance of water to the north of the development at some point in the future. See Appendix J, Evergreen Water System Concept Planning, for a complete analysis of estimated water demands, water supply sources, private water infrastructure improvements and estimated costs for developing the needed water infrastructure for industrial development in Evergreen.

Project Costs

The estimated construction costs for developing the primary water infrastructure for the Evergreen development is approximately $4.44 M. A detailed breakdown of the cost estimate is presented in Table IV-5, this estimate is considered an order of magnitude estimate with an accuracy of +30%/-50%. In addition to capital improvement costs, the

development will incur System Development Charges (SDCs) from the City of Hillsboro for enabling the City to provide the water supply for the Evergreen site. The SDCs are based on the water usage for the development. Based on an average flow rate of 2.85 MGD and peak flow rate of 4.28 MGD, the total SDCs for this development are estimated to be $31M. The City of Hillsboro SDC calculation worksheet is provided in Attachment A of Appendix J.

Table IV-5: Evergreen Development Water Infrastructure Improvements Order of Magnitude Comparative Construction Cost Estimates

			Materials		Labor				
Item Description	**Quantity**		**Unit**	**Total**	**Unit**	**Total**	**Unit Price**	**Line Total**	**Costing Assumptions**
General Conditions	$511,900								
General Conditions	1	LS	$163,900	$163,900	$177,300	$177,300	$341,200	$341,200	Allow 10% of Total Contract Amount
Bonds/Insurance	1	LS	32,800	32,800	35,500	35,500	68,300	68,300	Allow 2% of Total Contract Amount
Mobilization/Demobilization/Site Facilities	1	LS	49,200	49,200	53,200	53,200	102,400	102,400	Allow 3% of Total Contract Amount
Earthwork	$2,900,000								
Pipe Installed In City Streets--12" dia	10,100	LF	70.00	707,000	80.00	808,000	150.00	1,515,000	Means 06 BCCD 02510 730 2100
Pipe Installed In City Streets--18" dia	6,200	LF	90.00	558,000	110.00	682,000	200.00	1,240,000	Means 06 BCCD 02510 730 2100
Valved Branches in Main Line	10	EA	2,500	25,000	1,000	10,000	3,500	35,000	Allowance
Valves in Main Line	2	EA	3,500	7,000	1,500	3,000	5,000	10,000	Allowance
Connection to Existing Service (8 inch service)	4	EA	24,000	96,000	1,000	4,000	25,000	100,000	Allowance

Subtotal Estimated Construction Cost of Evergreen UGB Industrial Area Water Supply	$3,411,900
+ Contingency @ 30%	1,028,100
Total Estimated Construction Cost of Evergreen UGB Industrial Area Water Supply	**$4,440,000**

The cost estimates shown have been prepared for guidance in project evaluation and implementation from the information available at the time of the estimate. The final costs of the project will depend on actual labor and material costs, competitive market conditions, final project scope, implementation schedule and other variable factors. As a result, the final project costs will vary from the estimates presented herein. Because of this, project feasibility and funding needs must be carefully reviewed prior to making specific financial decisions to help ensure proper project evaluation and adequate funding.

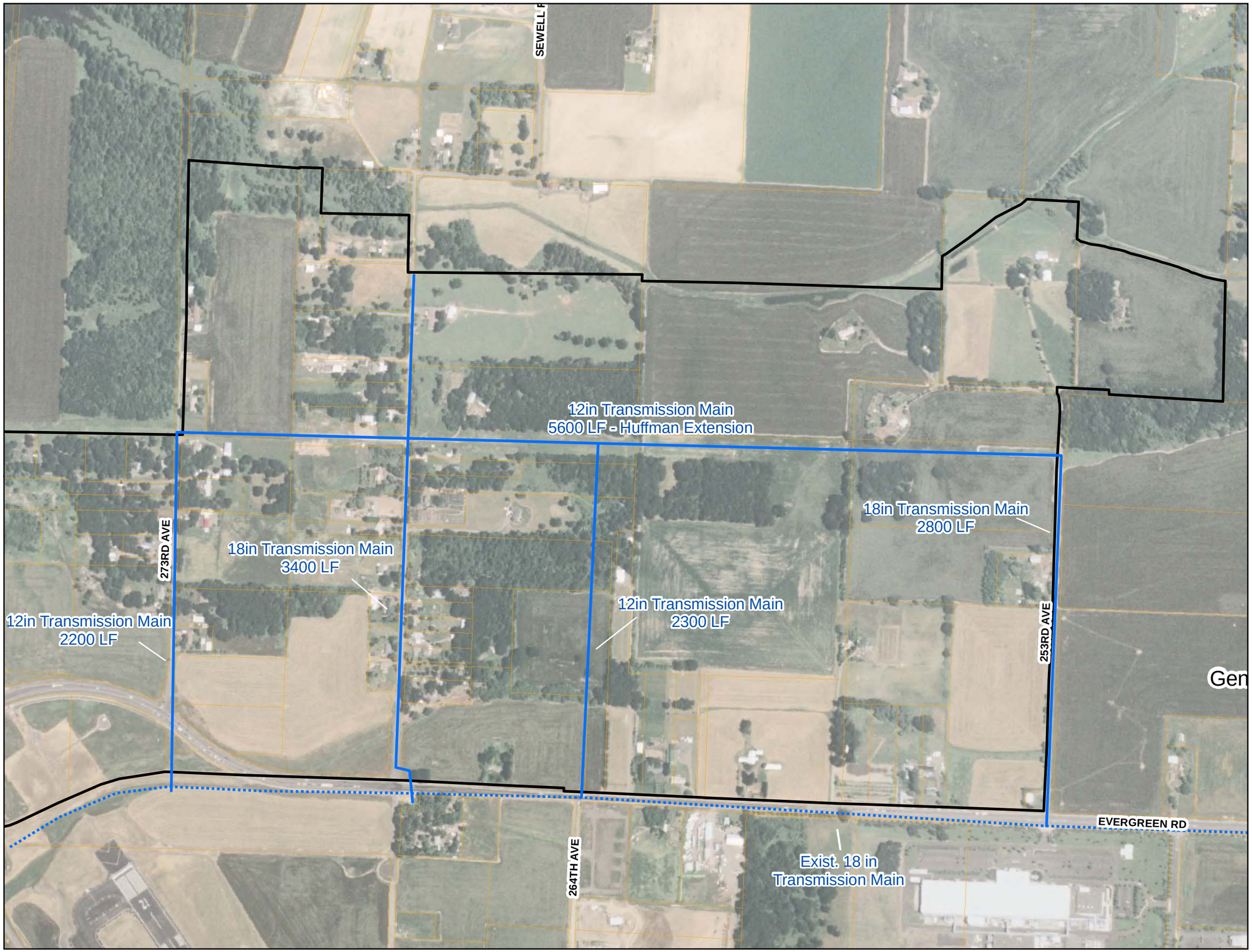

Figure IV.7

Evergreen Site
Water Infrastructure
Improvements

Evergreen/Helvetia UGB
Concept Plans

LEGEND

Tax Lots

Main

Concept Water Main

Existing Water Main

Evergreen Site
(Planning Area =
532.93 ac)

N

0 300 600 1,200
Feet

Angelo planning group

CH2MHILL

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V. Implementation Steps

The Evergreen planning area lies outside of the City of Hillsboro's city limits and is not currently subject to the city's zoning ordinance. Land within the Evergreen area can not urbanize without first being brought into the city limits; upon annexation, parcels within the Evergreen area will be given a city plan designation and urban zoning. In order to implement the Evergreen Concept Plan, the City will need to adopt new Comprehensive Plan policies and Development Code language that addresses future development. It is the recommendation of the Concept Plan that the City adopt a new zone for the Evergreen planning area: The Evergreen Road Special Industrial District (ESID).

A. Comprehensive Plan Amendments

1. Evergreen Area Industrial Plan

The Comprehensive Plan designation to be applied to land within the Evergreen area upon annexation to the City is Industrial (see Figure V.1). A new Comprehensive Plan section, Evergreen Area Industrial Plan, has been drafted to capture the vision for future development in this area, consistent with the Evergreen Concept Plan (see Appendix K). As paraphrased below, policies in this new section include:

- Develop adopt and apply performance-based policy and code measures to guide the development of industrial uses, properties and projects within the Area, while allowing sufficient flexibility and authority to enable the City to respond to changing industrial market trends and opportunities for the Area over time.
- Provide development opportunities within the Evergreen Area for industry uses that fall within any of the preferred industry categories, as specified in the Evergreen Area Development Program, including:
    - High technology sector and related companies and businesses
    - Sustainable industries sector and related businesses and companies
    - Bio-technology, bio-medical, bio-pharmaceutical sector and related businesses and companies

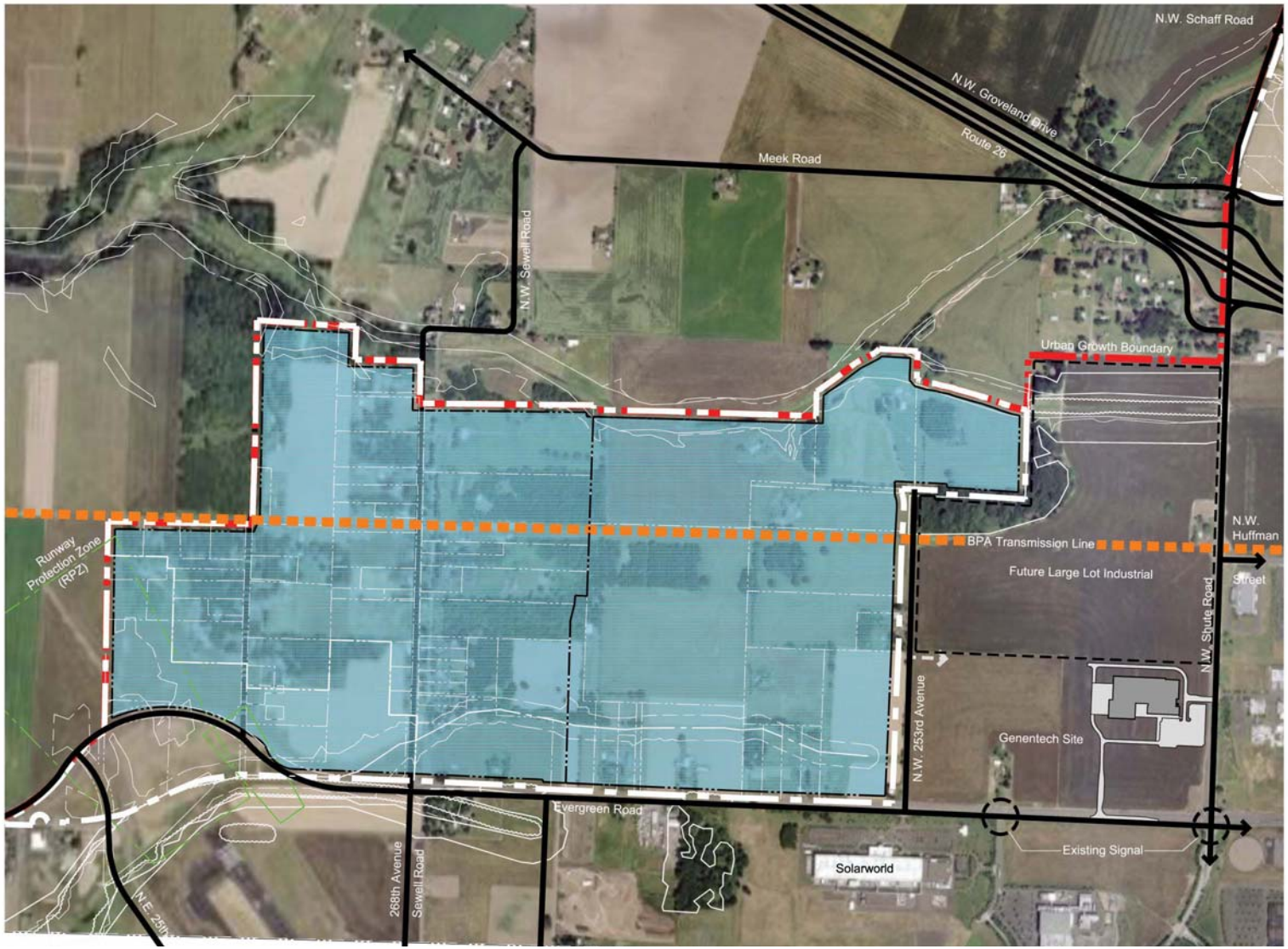
  - Businesses and companies that are incubators, start-ups, spin-offs and research and development firms associated with main industrial sectors
  - Industry suppliers and distribution businesses
  - Limited support commercial services
- Encourage and Facilitate the creation of large industrial sites (parcels 50 – 100 or more acres in size) for large-scale industrial campuses and development projects
- Facilitate the development of smaller, diversified industrial uses and sites (20 – 50 acres in size) - especially smaller-scaled flex-space industrial business parks - that support the main industry sectors encouraged by this Plan.
- Use the land use categories specified in the Evergreen Area Development Program and the Evergreen Conceptual Illustrations (shown in Figures IV.1, IV.2, and IV.3) to guide new industrial development within the Area.
- Provide for aesthetically attractive, well designed industrial uses and sites within every development approved for construction in the Evergreen Industrial Area.
- Develop and apply an Evergreen Road Area Special Industrial District Ordinance that substantially complies with the Metro Urban Growth Boundary (UGB) Conditions of Approval and the Urban Growth Management Functional Plan.

Implementation measures in the new policy section presuppose the development of an Evergreen Special Industrial District (ESID) that includes regulations to govern future development in Evergreen. Approval of proposed land uses and development activities within the Evergreen area will be based on whether or not the proposed use or activity is consistent with the land use categories in the ESID and if the proposal generally achieves the preferred Evergreen Conceptual Illustration.

Figure V.1
Evergreen Comprehensive Plan Designation

Legend

Industrial



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The Comprehensive Plan amendments incorporate an Area Natural Resources Management Plan, Area Public Infrastructure (Water/Sewer Systems) Management Plan, and Area Transportation System Plan, the elements of which have been discussed earlier in this document.

B. Zoning Code Amendments

In order to implement the Evergreen Concept Plan and the proposed Comprehensive Plan policies for the Evergreen Road Special Industrial Site, the city must amend the Zoning Ordinance to include the Evergreen Road Area Special Industrial District (ESID) overlay zone.

1. Evergreen Special Industrial District (ESID)

The Evergreen Special Industrial District (ESID) is a proposed new zoning district to implement the Evergreen Concept Plan and the proposed Comprehensive Plan policies (see Figure V.2). Consistent with proposed comprehensive plan policy in the (new) Evergreen Area Industrial Plan section, the ESID code section contains regulatory language to guide future development in Evergreen (see Appendix L). The ESID zoning map shows two subareas; Subarea A East Evergreen, which encompasses the eastern part of the planning area, and Sub-area B West Evergreen, which contains parcels in the western part of the ESID (see Figure V.2). Subarea A is comparable in size to the area that Metro previously identified as a Regionally Significant Industrial Area (RSIA).

Subarea B of the ESID allows all of the uses detailed in the Development Program. Subarea A, which is intended to provide land for larger industrial users, does not allow Industry Suppliers or Distribution Businesses. Retail and professional services that directly and primarily serve the daily needs of business and employees in the immediate surrounding industrial area are allowed in both ESID Subareas after a specific amount of industrial development has been permitted. Before the City will consider or approve support commercial development in Subarea A, at least one million total square feet of building floor area of industrial development must be permitted; within Subarea B, at least one-half million total square feet of building floor area of industrial development must be permitted.

No more than 10 acres of net developed land may be used for Support Commercial Services in either Subarea A or Subarea B. Such uses may not contain more than 50,000 square feet of total structure or building floor area and no single use in this category may exceed 20,000 square feet.

The minimum lot size in the Sub-area A is 50 acres. This provision is to encourage lot consolidation, as there are currently no parcels 50 acres or larger within Subarea A. Lots larger than 50 acres in size may subdivide as long as the resulting land division creates one lot or parcel of at least 50 acres and the remaining lot(s) created contains at least one parcel of 25 acres of contiguous land. The minimum lot size in Subarea B is 10 acres. Lots larger than 10 acres in size may subdivide as long as the resulting land division creates one lot or parcel of at least 10 acres and the remaining lot(s) created contains at least one parcel of 5 acres of contiguous land. The minimum lot size provision in both Sub-areas is to encourage the retention of larger lots, and lot consolidation, to maintain or create sites attractive to industrial developers. Lots of record that are below the minimum lot size in either Subarea A or B may develop with a use that is listed as permitted in the respective subarea.

C. Metro Compliance

When Metro brought the Evergreen planning area into the UGB the eastern portion of the Evergreen area (234 acres) was designated RSIA land and the remainder of the area (300 acres) was given the designation of Industrial Area. These designations are described in Title 4 of the Urban Growth Management Functional Plan and their intent is to protect a supply of sites for employment uses within the metropolitan region. Title 4 limits the amount of new commercial in the RSIA and Industrial Area designations.[7]

The proposed ESID complies with the intent of Title 4 by limiting commercial in a number of ways. "Support Commercial" is defined as "a clustering within a single development project of support commercial retail uses and professional services that directly and primarily

[7] In RISAs, new buildings for stores, branches, agencies or other outlets for retail uses and services can not occupy more that 3,000 square feet of sales or service area in a single outlet, or multiple outlets that occupy more than 20,000 square feet of sales or service area in a single building or in multiple buildings that are part of the same development project. Retail uses and services in Industrial Areas are limited to 5,000 square feet in a single outlet.

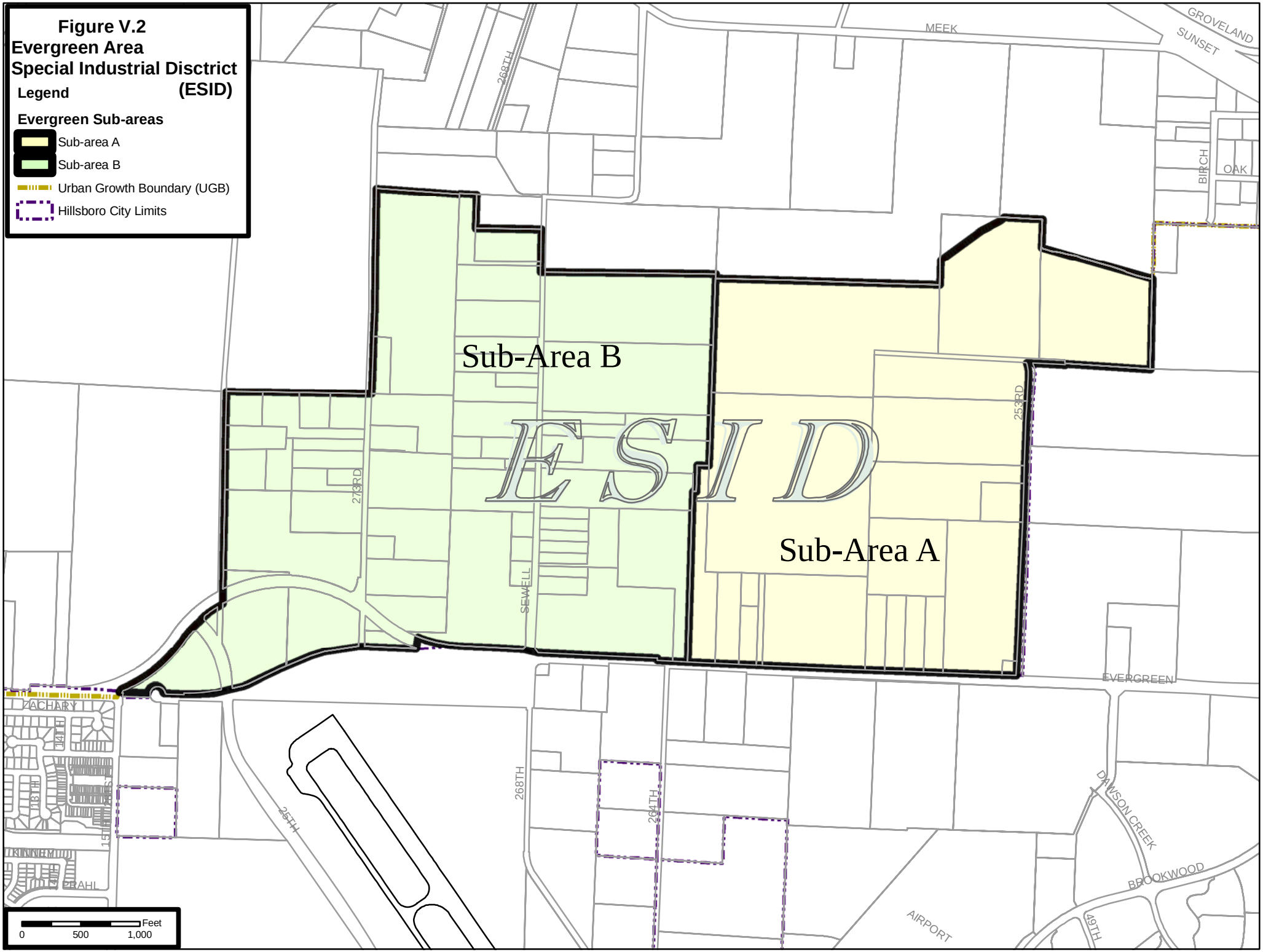
Figure V.2
Evergreen Area
Special Industrial Disctrict
(ESID)
Legend
Evergreen Sub-areas
Sub-area A
Sub-area B
Urban Growth Boundary (UGB)
Hillsboro City Limits
Sub-Area B
ESID
Sub-Area A
MEEK
GROVELAND
SUNSET
BIRCH
OAK
268TH
253RD
273RD
SEWELL
EVERGREEN
ZACHARY
14TH
18TH
15TH
KINNEY
PRAHL
25TH
268TH
264TH
DAWSON CREEK
BROOKWOOD
AIRPORT
49TH
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serve the daily needs of businesses and employees in the immediate surrounding industrial area." Support commercial may be allowed only after a specified amount of industrial development has been given permits (at least one million total square feet of building floor area in Subarea A and at least one-half million total square feet of building floor area in Subarea B). Support Commercial is limited to ten acres in each of the two Subareas and such uses may not contain more than 50,000 square feet of total structure or building floor area. No single use in this category may exceed 20,000 square feet.

The Metro Conditions of Approval associated with Ordinance No. 05-1070A, the action that brought the Evergreen area into the UGB, stated that the city must develop a lot/parcel configuration plan that results in at least one parcel in the east Evergreen area that is 100 acres or larger in size. Each of the Conceptual Illustrations (Figures IV.1, IV.2, and IV.3) shows a configuration of future users that accommodates at least one large, 100 acre+, industrial user. The ESID furthers the region's and the city's goals to provide large industrial sites in the Evergreen area by restricting land division in each Subarea. Lots larger than 50 acres in size in Subarea A may subdivide as long as the resulting land division creates one lot or parcel of at least 50 acres and the remaining lot(s) created contains at least one parcel of 25 acres of contiguous land. Because there are currently no parcels larger than 48 acres in the Evergreen planning area, this code provision may have the effect of encouraging lot consolidation in the eastern portion of the planning area.

D. Annexation Strategy

Property within the Evergreen area can only be developed as urban if it is served by public utilities at an urban service level. In order to receive urban services, property will need to be annexed into the City of Hillsboro. The City of Hillsboro has a passive annexation policy and will not forcibly annex properties within the Evergreen planning area. Past city practice has been to assist property owners in recently urbanized industrial areas with the annexation procedures in order to facilitate industrial growth. City annexation policy requires that property to be annexed must be adjacent to the City of Hillsboro City Limits and within the Urban Growth Boundary.

E. Financing Strategy and Tools

1. Infrastructure Costs

It is assumed that private development will finance all onsite development costs in the Evergreen area (internal roads, onsite utilities, onsite open spaces and trails, etc.) and a portion of offsite development costs. As described in the infrastructure financing analysis (Appendix M), mandatory fees and charges that private developers are assessed at the time of development are expected to generate a surplus of revenues to finance offsite infrastructure costs associated with development in the Evergreen area.

Infrastructure costs related to development at Evergreen will fall into the following categories: Transportation (including storm drainage facilities), Water, and Sanitary Sewer. Detailed cost information for each of these categories can be found in separate technical memorandums: Appendix G (transportation), Appendix H (sanitary sewer), and Appendix J (water).

Existing City financing tools include required system development charges (SDCs) and traffic impact fees (TIF) from new development. SDCs and TIF revenues generated by development in Evergreen can be used to finance offsite improvements, including systemwide improvements. SDCs may also be used to reimburse developers for offsite sanitary sewer infrastructure costs.

Table V-1 illustrates the estimated costs and revenues for all onsite and offsite infrastructure improvements associated with the Evergreen concept plan. These are good faith estimates based on the preliminary Evergreen concept plan.

Table V-1: Summary of Costs and Revenues Associated with Evergreen Development

Infrastructure Type	Costs	Developer Requirements	TIF Revenues	Resulting Balance (Costs - Revenues)
Transportation	$51,611,546	$49,111,546	$8,039,574	-$5,539,574 (surplus)
Water	$4,440,000	$4,400,000	n/a	$0
Sanitary Sewer Alt. 1	$3,700,000	$3,700,000	n/a	$0
Sanitary Sewer Alt. 2	$6,700,000	$6,700,000	n/a	$0

As shown above, revenues generated by private development in the Evergreen area are projected to exceed the combined cost of onsite and offsite infrastructure improvements needed for the Evergreen concept plan by $5.5 million. Therefore, no funding gap is anticipated.

Transportation Costs

The Helvetia and Evergreen Area Future Transportation Conditions Analysis (see Appendix G) identifies transportation infrastructure improvements that build-out of the Evergreen area will require. The projected cost of onsite transportation infrastructure in the Evergreen area is $49 million. An additional $2.5 million in offsite transportation infrastructure costs is needed to finance intersection improvements, including additional turn lanes and a traffic signal, at five locations that will be impacted by development in the Evergreen area.

Transportation Revenues

Development at Evergreen will contribute to transportation funding in two primary ways:

Onsite infrastructure: Developers will construct all onsite transportation infrastructure at their own expense.

TIFs: The City of Hillsboro collects TIFs for all new development, which is assigned to one of five general use categories: residential, business/commercial, office, industrial, or institutional. TIFs are calculated based on the total trips a development is projected to generate. Within each general use category, "unit factors" are assigned to different development types and reflect the magnitude of the impacts the development is anticipated to have on the transportation system. For example, within the industrial use category, warehouses, which generally have a very low job density, will generate fewer trips than industrial parks, which have a higher job density.

For industrial uses, total trips are estimated by multiplying a building's total gross square footage (TGSF) by the appropriate unit factor. The methodology for estimating total trips for most commercial uses is similar, except the unit factor is multiplied by a building's total

gross leasable square footage (TGLSF). For hotels, however, total trips are estimated by multiplying the number of rooms by the hotel unit factor.

Table V-2 shows projected TIF revenues for the Evergreen Area. Assuming a job density of 21.3 employees per acre, development in the Evergreen Area is projected to produce $8.0 million in TIF revenues, which may be used to finance offsite improvements.

Table V-2: Projected TIF Revenues for Evergreen Concept Area[8]

Item	Area (acres)	Building Area (s.f.) / No. of Rooms	GLA (COM Uses)	Description	No. of Units	Total Trips (Gross Bldg s.f. x No. of Units/ 1000)[1/]	Basis of Trip Rate	TIF estimate (Basis of Trip Rate x Total Trips)
Gross area	534.0							
less infrastructure/circulation (16%)	84.0							
Net development area	450.0							
First Sustainable Energy & Environmental Business	70.0	609,840	n/a	Industrial Park	6.97	4,251	$308	$1,309,180
Second sustainable energy & environmental business	45.0	392,040	n/a	Industrial Park	6.97	2,733	$308	$841,616
Biotech Campus	105.0	914,760	n/a	Industrial Park	6.97	6,376	$308	$1,963,770
Industry Suppliers 1	30.0	274,428	n/a	Manufacturing	3.85	1,057	$308	$325,417
Industry Suppliers 2	75.0	686,070	n/a	Manufacturing	3.85	2,641	$308	$813,542
Industrial Business Park 1	28.0	292,723	n/a	Industrial Park	6.97	2,040	$308	$628,406
Industrial Business Park 2	25.0	261,360	n/a	Industrial Park	6.97	1,822	$308	$561,077
Industrial Business Park 3	12.0	125,453	n/a	Industrial Park	6.97	874	$308	$269,317
Industry R & D Parks	40.0	418,176	n/a	Manufacturing	4	1,610	$308	$495,873
Hotel	2.5	200 rooms	n/a	Hotel	8.70	1,740	$81	$140,940
Commercial Node 1	7.5	98,010	40,000	Shopping Center Unter 50000 Gr. SF	94.71	3,788	$81	$306,860
Commercial Node 2	10.0	130,680	50,000	Shopping Center Unter 50000 Gr. SF	94.71	4,736	$81	$383,576
TOTAL	450.0	4,072,860						$8,039,574

[1/] For hotels, total trips calcuation is no. of rooms x no. of units. For shopping centers, total trips calculation is gross leasable area (GLA) x no. of units.

[2/] For hotels, job density calculation is no. of employees per room.

Revenues generated by development in the Evergreen area are expected to exceed the cost of onsite transportation improvements. What is not accounted for in Table V-2 or this analysis is the cost of offsite transportation improvements that will be needed regardless of development occurring in Evergreen.

[8] For the purpose of transportation modeling, assumptions were made about the average employment density and number of jobs projected for the Evergreen concept area at build-out. The development program presented in Table 2 most closely reflects these assumptions.

Water Costs

The Water System Concept Design developed by CH2M Hill (see Appendix J) identifies water system infrastructure improvements that will be required for the Evergreen concept area, which will be served by the City of Hillsboro. The total construction cost estimate for Evergreen water improvements, including a 30 percent contingency, is $4.4 million.

Water Revenues

The water system improvements described above are considered onsite improvements that would be the responsibility of developers. Thus, there will be no public utility obligations to fund water infrastructure at Evergreen.

Development at Evergreen will generate revenues based on SDCs that are levied on development as it occurs. These fees, assessed by the City of Hillsboro, enable the District to build and maintain the internal capacity to serve the Evergreen area. The methodology for determining SDCs is described in CH2M Hill's technical memorandum.

Sanitary Sewer Costs

The Sanitary Sewer Trunk Concept Design developed by CH2M Hill (see Appendix H) proposes two alternatives for providing sanitary service to the Evergreen concept area. The total program cost estimate for Alternative 1, which provides for an all-gravity system in to the McKay Trunk system, is $3.7 Million. The total program cost estimate for Alternative 2, a pump station with discharge to the Dawson Creek system, is $6.7 Million.

Sanitary Sewer Revenues

Based on CH2M Hill's analysis of sanitary sewer infrastructure requirements, it is assumed that private development will bear the total cost of sanitary sewer improvements associated with build-out of the Evergreen area. Specifically, developer requirements will include:

Onsite infrastructure: Developers will be responsible for all onsite infrastructure costs.

Connection fees/SDCs: Clean Water Services (CWS), which will be the sanitary sewer service provider for the Evergreen Area, will assess SDCs to new development to finance connection charges, which may include:

a. Direct connections to the District sewer system;
b. Indirect connections to the District sewer system including, but not limited to, building additions, or expansions, which include sanitary facilities;
c. Change in the use of an existing connection; and
d. Substantial increase(s) in the flow or alteration of the character or sewage to an existing connection.

For industrial uses, connection fees will be calculated as Dwelling Unit Equivalents (DUEs) based on the estimated or actual metered flow in incoming water, or metered effluent. The fees are calibrated to match the expected true cost of any offsite improvements required by the development. Thus, there will be no unmet funding obligation as a result of development at Evergreen.

2. Financing Methods

Despite the fact that no infrastructure financing gap is projected, the City may wish to explore alternative funding sources to buy down the cost of development in order to attract private investment to the Evergreen area or to help pay for other planned, but unfunded, improvements. The City and Washington County, working with Metro and the State, will also need to identify funding sources to pay for offsite transportation costs associated with regional growth. A wide range of funding tools is available to support capital improvements and infrastructure planning in Oregon. Many transportation funding tools are funded via the Oregon Department of transportation (ODOT) through competitive grants that are offered annually or biannually. Local funding tools, such as urban renewal and LIDs, may be used to finance capital improvements within designated geographic areas or special districts.

The following programs and funding tools are some of the most common and most likely to be of use in the Evergreen concept area.

Tax Increment Financing/Urban Renewal

Tax increment financing (TIF) is one of the most powerful public funding tools for revitalization. TIF is a mechanism where public projects are financed by debt borrowed against the future growth of property taxes in a defined urban renewal district. The assessed value of all properties within the district is set at the time the district is first established (the frozen base). As public and private projects enhance property values within the district, the increase in property taxes over the base (the increment) is set aside. Debt is issued, up to a set maximum amount (the maximum indebtedness), to carry out the urban renewal plan and is repaid through the incremental taxes generated within the district. The duration of urban renewal districts is usually 15 to 20 years. When the district is retired, the frozen base is removed and all property taxes in the district return to normal distribution. Because urban renewal is such a useful tool for revitalization and can generate significant amounts of money for infrastructure, it should be strongly considered to help fund projects in the Evergreen Area. As a part of subsequent conceptual plan implementation, the City would need to prepare an urban renewal plan, which would identify specific projects to be funded and the likely funding capacity from tax increment revenues.

Local Improvement District

A Local Improvement District, or LID, is a special assessment district where property owners are assessed a fee to pay for capital improvements such as sidewalks, underground utilities, shared open space, and other features. LIDs are typically petitioned by and must be supported by a majority or supermajority of the affected property owners. Since LIDs are funded by private property owners, they can help share the funding burden in a public-private partnership. Further, since it requires private property owner support, it is a good mechanism to help organize property owners around a common goal. Such a mechanism could be a useful tool to fund shared amenities and infrastructure at Evergreen.

Oregon Pedestrian and Bicycle Program (ODOT)

A range of pedestrian and bicycle improvements will be a part of the Evergreen transportation infrastructure. ODOT provides grants for crosswalks, bike lane striping, and

pedestrian crossing islands that fall within the rights-of-way of streets, roads and highways. Bike/ped grants usually fall between $80,000 and $500,000.

Oregon Transportation Enhancements (TE) Program

Using federal transportation funds, ODOT TE grants are awarded to local governments and other public agencies to support projects that improve communities and enhance the experience of traveling. New sidewalks, bike lanes, and pedestrian amenities such as benches and streetlights are eligible TE projects, as are the restoration of historic railroad stations, bus stations, and bridges. TE awards typically range from $200,000 to $1 million, and local governments must contribute ten percent of the project's cost.

State Transportation Improvement Program

The STIP is Oregon's adopted four-year investment program for major state and regional transportation systems, including interstate, state, and local highways and bridges, public transportation systems, and federal and tribal roads. It covers all major transportation projects for which funding is approved and project implementation is expected to occur during a certain time frame. The STIP includes all major transportation projects and programs in Oregon that are funded with federal dollars. It also includes state-funded projects that relate to the state highway system, and "regionally significant" locally funded projects in metropolitan areas that affect the state's transportation system.

Immediate Opportunity Fund (IOF)

The IOF program is a special program in the STIP administered by the ODOT Financial Services' Economics and Policy Analysis Unit. It was created in 1988 by the Oregon Transportation Commission (OTC) in order to quickly process and fund transportation improvements that would attract or retain jobs. The fund is a collaborative effort between the Oregon Economic and Community Development Department (OECDD) and ODOT. It is intended as quick-response or incentive funding for either targeted business development projects or business district revitalization projects. Projects are either pulled from a city or county's transportation system plan (TSP), or are small projects that are not listed in the TSP and may be added onto other larger projects.

Major Streets Transportation Improvement Program (MSTIP)

Washington County voters approved a third version of the MSTIP in 1995. The MSTIP uses property tax revenue to issue bonds for capital construction of major transportation projects with Countywide benefit. Most of these projects take place on County roads. From FY06-07 through FY11-12, $140 million has been allocated for projects in MSTIP C3.

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Evergreen
concept plan

Existing Conditions Report

Prepared for:
The City of Hillsboro

May 2007

Evergreen Concept Plan Project Team

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I. Introduction

In 2005, the Metro Council added the 534-acre Evergreen Concept Planning Area (Figure I-1) to the Region's Urban Growth Boundary (UGB) to help provide a 20-year industrial land supply within the Portland Region as required by State law.[1] The Evergreen area is now in unincorporated Washington County. The City of Hillsboro has an agreement with Washington County to prepare the industrial area concept plan for future employment growth in Evergreen. Concept plans are required when lands are added to the UGB to ensure that the transition over time from rural to urban uses occurs efficiently and consistent with the identified land needs that justified their inclusion. Washington County is adopting interim land use measures that will limit major land divisions until the concept planning is complete. Ultimately, in order for industrial development to occur in the Evergreen area, this area will need to annex to the City of Hillsboro. The City hired a team of land use planning, transportation, natural resources, real estate and economic development consultants in January 2007 to assist with the development of an Industrial Development Concept Plan for Evergreen. This planning process will culminate in the adoption of amendments to the City of Hillsboro's Comprehensive Plan and Zoning Ordinance that will allow for the future urbanization of the Evergreen area.

Establishing a solid understanding of existing conditions is key to developing an industrial development concept for Evergreen. To this end, the intent of this report is to establish a comprehensive foundation and understanding of existing site and area conditions in the Evergreen concept planning area (Figure I-2). The contents of the report include an analysis of existing physical, policy, and economic characteristics that define the area and an identification of issues that will serve as the basis for developing the industrial design and land use concepts and, ultimately, the Title 11 Concept Plans.[2]

More than a "snap shot" of the existing landscape and regulatory environment, the information compiled in the Existing Conditions Assessment will greatly influence each task that is required to develop the concept plan. Natural resource information, for example, is a baseline for preliminary Goal 5 work to be undertaken later in the project. Economic characteristics included in this report will inform the later work on the economic strengths and opportunities analysis for the area. Informed by the Existing Conditions Assessment, subsequent reports developed for this project will directly influence preliminary designs for the transportation system through the Evergreen area and concepts for the future land use plan.

[1] Ordinance No. 05-1070A

[2] See description of Title 11 under the *Metro* section of this report.

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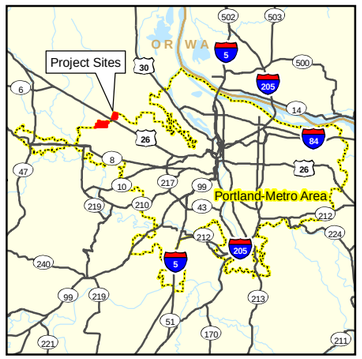
Figure I.1

Project Vicinity

Evergreen/Helvetia UGB
Concept Plans



LEGEND

- Project Sites
- UGB
- Roads
- Tax Lots

N

0 1,500 3,000
Feet

Angelo planning group

CH2MHILL

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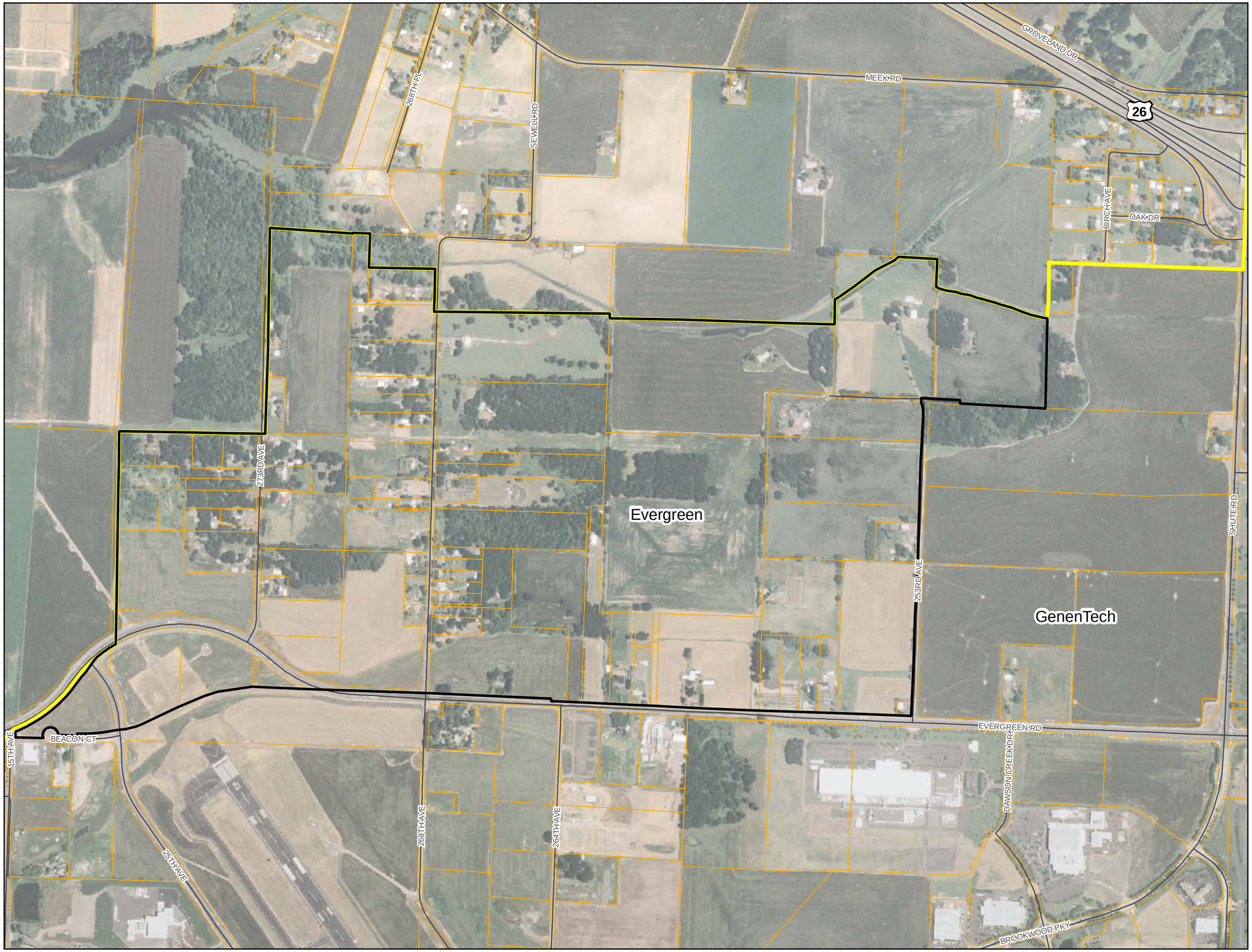
Figure I.2

Evergreen Concept Planning Area

Evergreen/Helvetia UGB
Concept Plans



LEGEND

- Evergreen Site (Planning Area = 532.93 ac)
- UGB
- Roads
- Tax Lots

N

0 800 1,600
Feet

Angelo planning group

CH2MHILL

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II. Site Description

The Evergreen planning area is located to the northwest of downtown Hillsboro. It encompasses 534 acres and lies north of the Hillsboro Airport, south of Highway 26, and west of NW Shute Road and the area that is regulated by the Shute Road UGB Concept Plan.[3] Evergreen Road forms the southern boundary of the planning area.

A. Land Features

The Evergreen concept planning area is characterized by relatively flat land, historically used for farming. Evergreen lies within the Lower McKay Creek streamshed. Waible Gulch, located in the northern portion of the Evergreen area, is a tributary of McKay Creek. The topography is flat to gently rolling, ranging from about 205 feet elevation at NW 253rd Avenue (east) to about 170 feet at the Waible Gulch floodplain (north). The northern portion of the planning area drains to Waible Gulch; the southern portion flows to a ditched tributary of McKay Creek.

B. Land Uses in Study Area

The Evergreen area is a mixture of agricultural-related uses and rural residential uses. Some areas of Evergreen are being actively farmed. Evidence of some livestock grazing (sheep, horses) was noted on a recent field visit within the area and in the vicinity. More recently, the area has attracted suburban residences, in particular in the western portion of the planning area, on lots that access Sewell Road and NW 273rd Avenue. Housing stock in the area includes farm houses, mid-century and later ranch-style residences, and larger new homes (built within the past ten years). The sole commercial use in the area is a nursery located at 5010 NW Sewell Road. This business is located on residentially zoned land. The Hillsboro Airport owns vacant land in the southwestern corner of the study area, a portion of which lies within the runway protection zone.

A notable feature of the built landscape is the Bonneville Power Administration (BPA) high-voltage transmission line that runs in the east-west direction through the north central portion of the Evergreen concept planning area.

C. Surrounding Land Uses

South of the Evergreen area lies industrial land within the Hillsboro city limits. The most notable built structure in this area is a 422,000 square foot plant built in 1998 for the production of silicon chips. Owned by Komatsu Silicon America, this plant was never put into production. It was recently purchased by SolarWorld AG, a manufacturer of solar panels. The other notable land use south of the Evergreen site is the Hillsboro Airport. Owned by the Port of Portland, the Hillsboro Airport's runway is situated northwest to southeast and the runway protection zone extends into the southwest corner of the study area, over land also owned by the Port.

To the east of Evergreen is land recently purchased by Genentech Inc., a biotech company that intends to develop the site with a drug processing and packaging plant. As of March 30,

[3] See Shute Road UGB Concept Plan subsection under *City of Hillsboro* in this report.

2007, development plans for the site had not been finalized. Agricultural land uses dominate the landscape to the north and west of the Evergreen area and this area remains outside of the Urban Growth Boundary.

III. Policy Framework

A. Metro

In 2005 Metro Ordinance No. 05-1070A amended the UGB to include the Evergreen area. Metro's Urban Growth Management Functional Plan provides tools that help meet goals in the 2040 Growth Concept, Metro's long-range growth management plan. The Urban Growth Management Functional Plan is Section 3.07 of the Metro Code and is comprised of 12 titles. Two of the titles, Title 4 and Title 11, are directly applicable to the development of a concept plan for the Evergreen area.

1. Title 4: Industrial and Other Employment Areas

The purpose and intent of Title 4 of the Urban Growth Management Functional Plan[4] is to provide and protect a supply of sites for employment uses within the metropolitan region. This is achieved through limiting the types and scale of non-industrial uses in the following types of specially designated areas: Regionally Significant Industrial Areas (RSIAs), Industrial Areas, and Employment Areas. The eastern portion of the Evergreen area (234 acres) is designated RSIA land and the remainder of the area (300 acres) has the designation of Industrial Area (see Figure III-1). The City of Hillsboro, which will have land use planning authority over this area once it is annexed, must derive specific plan designation and zoning district boundaries for the Evergreen area. If necessary, land use regulations will need to be revised to limit the size and location of new buildings for retail commercial use and retail and professional services to ensure that they serve primarily the needs of workers in the area.

Title 4 limits the amount of new commercial in the RSIA and Industrial Area designations. A requirement to be applied to the RSIA portion of the Evergreen area is that new buildings for stores, branches, agencies or other outlets for retail uses and services can not occupy more that 3,000 square feet of sales or service area in a single outlet, or multiple outlets that occupy more than 20,0000 square feet of sales or service area in a single building or in multiple buildings that are part of the same development project. The Industrial Area designated portion of Evergreen limits retail uses and services to 5,000 square feet in a single outlet.[5]

Land division is also regulated by Title 4. Lots or parcels larger than 50 acres may be divided into smaller lots and parcels pursuant to a master plan approved by the city so long as the resulting division yields at least one lot or parcel of at least 50 acres in size. Lots or parcels 50 acres or larger also may be divided into any number of smaller lots or parcels consistent with the approved master plan, so long as at least 40 percent of the area of the lot or parcel has been developed with industrial uses or uses accessory to industrial use.[6] Exceptions to these restrictions include dividing lots or parcels into smaller lots or parcels to provide for

[4] Urban Growth Management Functional Plan is Section 3.07 of the Metro Code.
[5] An exception to the retail use restrictions are training facilities whose primary purpose is to provide training to meet industrial needs, and uses related to a public use airport.
[6] The Metro Conditions of Approval associated with Ordinance No. 05-1070A, the action that brought the Evergreen area into the UGB, states that the city must develop a lot/parcel configuration plan that results in at least one parcel in the Evergreen area that is 100 acres or larger in size. After reconfigurations, the parcel may be divided pursuant to the provisions of Title 4.

public facilities and services, to protect a natural resource or provide a public amenity, to separate a lot or parcel containing a nonconforming use, or to allow the creation of a lot within a master planned development for financing purposes.[7] The city may also allow the lawful use of buildings, structures, or land existing at the time of the city's adoption of Title 4 plan and code amendments to continue and to expand to add up to 20 percent more floor area and 10 percent more land area.

2. Title 11: Planning for New Urban Areas

Title 11 of the Metro Urban Growth Management Functional Plan guides planning for areas brought into the UGB. "Interim protection" measures in Title 11 include prohibiting local government from approving regulation or zoning map amendments in the area brought into the UGB that allow commercial or industrial uses not allowed under regulations in effect prior to the UGB amendment. Title 11 also restricts any land division or partition that would result in a new parcel that is less than 20 acres in size.

For RSIAs, such as the one in Evergreen, Title 11 restricts local governments from approving any commercial use that is not accessory to industrial uses in the area or approving schools, churches, or other institutional or community serve use intended to serve people who do not work or reside in the area. In this way Title 11 provides interim protection from non-industrial uses until such time local government can amend the local comprehensive plan and land use ordinance to guide growth in the subject area. Title 11 requires that local comprehensive plan amendments addressing land added to the UGB be consistent with all the applicable titles of the Metro Urban Growth Management Functional Plan and implement the Regional Urban Growth Goals and Objectives (RUGGO) and the 2040 Growth Concept. In compliance with Title 11, and the conditions under which the Evergreen area was added to the UGB, the comprehensive plan amendments for Evergreen will need to include:

- Provision for annexation to the City of Hillsboro to ensure that all the required urban services will be available to serve the site.
- Provision for sufficient industrial development for the needs of the area to be developed consistent with the RSIA and Industrial design types. For Evergreen this also means developing a lot/parcel reconfiguration plan that results in at least one parcel that is 100 acres or larger in size.[8]
- A conceptual transportation plan consistent with the Regional Transportation Plan.
- A natural resource protection plan.
- A conceptual public facilities and services plan.
- An urban growth map of the planning area that includes the location of the street and public utilities, natural hazard areas (steep slopes, floodplains, etc.), and general locations for the land use types.

[7] See Title 4 Section 3.07.420(4).

[8] After reconfigurations the parcel may be divided pursuant to the provision of Title 4, Section 3.07.420E (land division in RSIAs)or 3.07.430D (land division in Industrial Areas), whichever is applicable.

3. New Look at Regional Choices

The Metro Council is currently undertaking a process to find collaborative, new, and creative ways to plan for the arrival of a million new residents in the Metro region in the next 25 years. This process has been coined the "New Look at Regional Choices," or "New Look" for short. The Metro Council is working with leaders and practitioners from businesses, governments and other interests to identify new growth management tools and pursue financial investment strategies in order to create a desired vision for how the region will grow.

According to Metro's website, the New Look is generally divided into three broad policy categories:

- Investing in communities – how to steer growth into existing commercial areas and promote vibrant mixed-use centers that use land most efficiently and provide more housing and transportation options for residents.

- The shape of the region – how to manage expansion of the urban growth boundary in a way that protects valuable agricultural land, but also allows for responsible growth in outlying areas.

- The Regional Transportation Plan – how to update the plan to make it financially realistic and support the region's growth management values.

The outcome of the New Look may be recommended changes to state law and local policies that enable the implementation of the agreed upon strategies for managing growth.

4. Regional Transportation Plan

The 2004 Regional Transportation Plan (RTP) lays out the 20-year priorities for road, transit, freight, bicycle and pedestrian improvements. A goal of this planning effort is a more streamlined plan that better advances regional policies, public priorities and local efforts to implement the 2040 Growth Concept. The RTP defines regional transportation policies which all city, county, TriMet, ODOT, and Port of Portland plans must follow. These policies are for all forms of travel including motor vehicle, transit, pedestrian, bicycle and freight. The plan then establishes priority projects for each mode based on the stated policies. The plan is based on forecasts of growth in population, households and jobs as well as future travel patterns and analysis of travel conditions. In identifying priority projects, the plan estimates availability of federal, state and local funding for transportation improvements. Cost estimates for each project are also developed, as well as funding strategies identified.

The list of street network improvements is taken from the Financially Constrained 2004 Regional Transportation Plan. The full list for Washington County includes over 250 projects representing over $2 billion in new improvements; however, we have selected those projects that are relevant to the Evergreen Concept Plan area and listed them in Table III-1.

Table III-1: Selected 2004 Regional Transportation Plan Projects

RTP #	Project Name	Project Location	Project Description
3131	Evergreen Road Improvements	25th Avenue to 253rd Avenue	Widen to five lanes including sidewalks and bike lanes
3147	25th Avenue Improvements	Cornell Road to Evergreen	Widen street to three lanes with bike lanes
3150	Cornell Road System Management	10th Avenue to Multnomah County line	Upgrade traffic controllers and install CCTV cameras and monitoring stations

B. Washington County

1. Washington County Comprehensive Plan

The Rural Natural Resource Element of the Washington County Comprehensive Plan contains goals, policies, and strategies that guide resource conservation and development for lands outside the Regional Urban Growth Boundary. Land within the Evergreen area is designated Exclusive Farm Use (EFU), Agricultural and Forest Land-20 (AF-20), and Agricultural and Forestry-5 (AF-5) (see Figure III.3).[9] It is expected that once the Department of Land Conservation and Development signs the Approval Order for the 2005 Metro UGB expansion, Washington County will amend the Comprehensive Framework Plan for the Urban Area to include the Evergreen area. Similar to the Helvetia planning area, parcels in the Evergreen area are expected to be designated Future Development 20-Acre District (FD-20).[10] Until that time, the existing rural designations in the Evergreen area apply.

Principally, the county's EFU District is intended to conserve agricultural land in accordance with Oregon State Law, Oregon Revised Statute (ORS) Chapter 215 and LCDC Goal 3 (agricultural lands).

Policy 17 of the Rural Natural Resource Element, Agricultural and Forest Land-20, seeks to retain land for small scale and part-time agriculture and forest production. Land within this designation may qualify to be designated "Marginal Land" through a quasi-judicial process.[11] Lands in the Agriculture and Forest-20 Land Use District may be divided into lots of 20 acres or greater, as long as the partition is appropriate for the continuation of the existing commercial agricultural enterprise within the area; the proposed lot area is of sufficient size

[9] Washington County has a "one map" system for land use designations; the zoning within the Evergreen area is the same as listed in the comprehensive plan section.
[10] Washington County Ordinance No. 671, adopted April__, 2007.
[11] The 1983 Regular Session of the Oregon Legislature passed Senate Bill 237, the Marginal Lands Bill. As explained in the Rural Natural Resource Element, this legislation acknowledged that some land may exist which is agricultural land by definition but that has limited production capabilities due to topography, soil classifications, interspersed forested areas, limited irrigation potential, the impact of rural development, etc. The legislation provides the opportunity for lands meeting certain criteria to qualify as "Marginal Land" and take advantage of a lot of record provision for lots created prior to July 1, 1983. This process is an alternative to obtaining a building permit pursuant to the standards of an exclusive farm use district as set forth in ORS Chapter 215.

to support commercial production of food and fiber using accepted farm practices as defined in ORS 215.203(2)(3) (if the partition involves the location of a farm-related dwelling); will not seriously interfere with the preservation of wildlife or fish habitat areas as identified in the Washington County Comprehensive Plan, or interference will be mitigated; and meets any additional criteria as set forth in the County's Community Development Code. It is the county's policy to permit non-farm/non-forest uses only when they are not in conflict with agricultural or forestry activities or as provided for under marginal land provisions.

Agriculture and Forestry -5 is one of the county's Rural Lands designations. Policy states that the intent of the Rural Lands designations is to "recognize existing development and provide lands which allow rural development in areas which are developed and/or committed to development of a rural character." One of the strategies is to "ensure that proposed development will not adversely affect surrounding agricultural and/or forestry activities by requiring that applicants for residential, commercial or industrial uses on land designated for rural development record a waiver of the right to remonstrate against accepted farm or forestry practices on nearby lands."

Policy 28, Airports, states that it is the policy of Washington County "to protect the function and economic viability of existing public use airports, while ensuring public safety and compatibility between airport uses and surrounding land uses for public use airports identified by the Oregon Department of Aviation (DOA)." An implementation strategy regonizes that the Portland-Hillsboro airport is "the major aviation facility in Washington County and an airport of regional significance" and that it will promote its operation by coordinating with the City of Hillsboro to help ensure compatibility with surrounding land uses. While the Portland-Hillsboro Airport is located within the city limits of Hillsboro, the land use and noise impact areas associated with this airport affect the Evergreen area, land that is currently under the jurisdiction of Washington County. The Rural Natural Resource Element states that "planning efforts for the Portland-Hillsboro airport therefore will be coordinated with the City of Hillsboro after the current (2003) master plan update process is complete" (see *Port of Portland* section of this report).

2. Washington County Community Development Code

Article III of Washington County's Community Development Code regulates the Land Use Districts. Section 340 states that the intent of the Exclusive Farm Use District (EFU) is to preserve and maintain commercial agricultural land within the County. Its purpose is to "preserve and maintain agricultural lands for farm use consistent with existing and future needs for agricultural products, forests and open spaces; to conserve and protect scenic resources; to maintain and improve the quality of the air, water and land resources of the County and to establish criteria and standards for farm use and related supportive uses which are deemed appropriate." The county provides the EFU District to meet the Oregon statutory and administrative rule requirements. With few exceptions, uses are limited to agriculture and dwellings that are accessory to this primary use. Schools are permitted on non-high-value farmland, and other uses, such as community centers and parks, may be permitted if it can be demonstrated (through a Type II procedure) that they will not significantly impact or increase the cost of accepted farm or forest practices on surrounding

lands devoted to such use. A Type III procedure is required for such uses as churches, kennels, solid waste disposal sites, or golf courses.[12]

Section 344 provides the land use regulations for the Agriculture and Forest District (AF-20) The AF-20 District provides an exclusive farm use zone that recognizes that certain lands therein may be marginal. The purpose of the District is to allow EFU uses and parcels and, through the provisions of code Section 425 (Designation of Marginal Land), to provide a process and criteria for identifying marginal lands within the District. Uses permitted with a Type I procedure include the alteration, restoration, or replacement of a lawfully established dwelling and accessory uses and structures (Section 430-1). A Type II procedure is required for uses such as dwelling units occupied by relatives of the farm operator, accessory dwellings customarily provided in conjunction with farm use, facilities for processing farm crops, schools, and wineries. In addition, Section 344-8 provides for special uses for lands so identified. Kennels, churches, and armed forces reserve centers require a Type III procedure.

All the uses allowed through the Type I, Type II and Type III procedures are allowed on marginal lands[13] under the same procedures and standards. In addition, through a Type I procedure, a detached dwelling on any size lot or parcel designated marginal lands may be allowed if the lot or parcel was created prior to July 1, 1983.

3. Washington County Transportation System Plan

The Washington County TSP (p. 27, Figure 9) identified a few areas near the study area for additional study:

- US 26 Sunset Highway – east from Cornelius Pass Road
- Jackson School Road – US 26 to Evergreen
- Meek Road – realignment at Shute Road

The following are proposed collectors in the Washington County TSP (Figure 4C):

- NW 264th Avenue / Evergreen Road to Brookwood Parkway between Dawson Creek Drive and Penny Way
- Extension of Century Boulevard south to Jacobson Road to complete connection from West Union Road
- Century Boulevard to NW 229th Avenue (crossing Hwy 26)

Adjacent to the Evergreen Concept Plan site, Evergreen Road is identified as an Urban Bikeway (Figure 13).

[12] See Article II, Procedures, of the Washington County Community Development Code.
[13] Marginal lands are so designated through a Type II procedure, in accordance with Community Development Code Section 425.

C. City of Hillsboro

1. City of Hillsboro Comprehensive Plan

Hillsboro's stated goal for urbanization (Section 2 of the Comprehensive Plan) is "to provide for an orderly and efficient transition of land from rural to urban use through the identification and establishment of areas designed to accommodate the full range of urban uses within the Hillsboro Planning Area." Policies include requiring development to occur according to the availability of urban services and within the context of the Urban Planning Area Agreement between the city and Washington County and encouraging property owners to maintain the present rural use and character of undeveloped or underdeveloped lands within the Hillsboro Planning Area until such land is required and proposed for urban use. It is city policy that land use designations within the Hillsboro Planning Area are designed to accommodate projected commercial and industrial growth and population densities.

An implementation measure applicable to new industrial areas is as follows:

> *(K) In order to protect development opportunities for large lot industrial uses until such time as there is no demonstrated demand or need for such large lots; and to provide opportunity for location of compatible small and medium size industrial uses near such large lot industrial uses; the City may place a Special Industrial District (SID) overlay zone on specific areas designated industrial on the Comprehensive Plan Land Use Map. The Special Industrial District shall limit development in any areas so zoned to primarily larger lot industrial projects.*

Section 10, Economy, of the Comprehensive Plan explains the limitations of industrial expansion within the City of Hillsboro, given historic settlement patterns. This section concludes that if Hillsboro is to become economically less dependent on Portland and other cities, then "sufficient land must be designated industrial in other parts of the Hillsboro Planning Area and sufficient public facilities and services made available to attract industry and allow for the development of efficient industrial land use patterns." It is the city's policy that:

> *(2) Sufficient land shall be designated industrial on the Comprehensive Plan Map to:*
> *(a) Attract and accommodate both labor intensive and land intensive industrial activities.*
> *(b) Provided areas for different types of industrial developments.*
> *(c) Develop a diverse industrial base offering an increasing number of employment opportunities.*
> *(d) Decrease the property tax burden on residential property.*

Other policies related to industrial development include using a variety of implementation measures – such as tax incentives, preferential assessments, and capital improvement programming – to promote and encourage the expansion and establishment of industries and planning for utilities in a manner that supports industry. Specific to the Hillsboro Airport, the city has a policy that land in the vicinity of the airport should be designated for uses which will take advantage of the special services provided by the Port facility (Subsection III.B, Policy 1).

Implementation Measure 1 under Section 10 states that "(t)he Land Use Map shall designate adequate vacant land of various types and sizes for industrial and commercial development." Another implementation measure related to industrial land is as follows:

> *(4) To minimize conflicts between industrial and residential land uses, the City shall require M-P Industrial Park zoning on any Industrial-designated parcel zoned or rezoned following the effective date of this measure, if that parcel is subject to one or both of the following criteria: (a) the parcel is located in a Specially-Regulated Area (SRA); and/or (b) the parcel is located adjacent to an area designated Residential.*

The city's goal of maintaining and improving the quality of the air, water and land resources is found in Section 7, Air, Water and Land Resource Quality. Policies under this section include the city's intention to "design a storm sewer and sanitary sewer master plan and develop implementation measures necessary to assure that a storm sewer and sanitary system are provided to areas designated urban (Policy B)." Other policies address the city's intent to discourage total dependence on the automobile by encouraging and promoting less polluting methods of transportation (Policy A) and requiring industrial and commercial activities to shall operate within all applicable state and federal environmental standards regarding waste and process discharges (Policy D). This section also emphasizes that new development shall be allowed only if urban services such as water, sewer, and streets, are available (Policy G).

Implementation Measures under Section 7 that apply to the Evergreen area pertain to development within the vicinity of the Hillsboro Airport. These measures are as follows:

> *(13) Other than the existing public facility and open space designations, land use designations within the future projected LDN 60 contour contained in the most current adopted Airport Master Plan shall be limited to industrial, commercial and low density residential. (Added by Ord. No. 3344/7-82 and Amended by Ord. No. 5021/4-01.)*
>
> *(14) The location of service facilities such as schools, hospitals, and nursing homes; public assembly; and high-density residential development shall be avoided within the future projected LDN 55 contour contained in the most current adopted Airport Master Plan. (Added by Ord. No. 334417-82, and Amended by Ord. Nos. 3433/12-83 and 5021/4-01.)*
>
> *(15) Medium density residential development shall be avoided within the future projected LDN 60 contour contained in the most current adopted Airport Master Plan. (Added by Ord. No. 3344/7-82 and Amended by Ord. No. 5021/4-01.)*
>
> *(16) Land uses which create high concentrations of people shall be avoided within the aircraft approach zones. (Added by Ord. No. 334417-82.)*
>
> *(17) Land uses approvals within the future projected LDN 60 contour contained in the most current adopted Airport Master Plan shall be conditioned to require hold-harmless clauses, including noise disclosure statements. Land use approvals within the*

future projected LDN 55 contour contained in the most current adopted Airport Master Plan shall be conditioned to require disclosure of potential noise impacts from airport operations. (Added by Ord. No. 3344/7-82 and Amended by Ord. No. 5021/4-01.)

The city's policy to promote and encourage the construction of energy-efficient residential, commercial and industrial structures also applies to industrial development in Evergreen (Section 11, Energy).

Consistent with Statewide Planning Goal 11, Section 12, Public Facilities and Services, includes goals and policies that ensure the orderly and efficient provision of services to urbanizing areas and that future growth is guided and supported by the sufficient and timely provision of public facilities. A general policy applicable to the Evergreen area is as follows:

(A) The extension of a public facility, utility or service outside the urban area shall occur only in conjunction with an expansion of the Urban Growth Boundary and shall be provided at a level consistent with the intended density and designated land use for the area. (Amended by Ord. No. 5102/1-02.)

Implementation Measures under Section 12 include coordination with applicable special districts and government entities. This includes coordination with Washington County, Tualatin Valley Water District (for water), and Clean Water Services (for sewer and storm drainage).

As stated in Section 12, the City completed a Public Facilities Plan (PFP) in 2001 in accordance with Goal 11 and OAR 660-011. The PFP was adopted as a supporting document to the Comprehensive Plan. The PFP includes the following elements:

(1) Interagency Coordination and Decision Making;
(2) Existing Conditions and Future Needs Analysis;
(3) Capital Improvement Project List and Financing Plan; and
(4) Maps that identify the Planned Improvements.

The PFP includes the Public Facilities Plan 20-Yr. Capital Improvement Projects List, which is an estimate of the infrastructure improvements needed to serve planned urban development in the Hillsboro urban growth boundary for the planning period.

2. City of Hillsboro Zoning Ordinance

The Evergreen area lies outside of the City of Hillsboro's city limits and is not subject to the city's zoning ordinance. However, land within the Evergreen area can not urbanize without first being brought into the city limits; upon annexation, parcels within the Evergreen area will be given a city plan designation and urban zoning. The city has two industrial zones: M-2 and M-P (Industrial Park). The city could apply either of these two existing industrial zones to the Evergreen area upon annexation, or could adopt a new industrial zone that better implements the concept plan developed for Evergreen. For the Shute Road concept plan (see *Shute Road UGB Concept Plan* overview in this report), the city applied the M-P Industrial Park zone to the Shute Road Concept Planning area and adopted the Shute Road

Site Special Industrial District (Section 134A), which is described as an overlay zone intended to supplement most of the provisions of the underlying M-P, Industrial Park Zone for the Shute Road Site. The provisions of the District take precedence when they are found to be in conflict with provisions in the underlying M-P zoning.

Uses permitted outright in the M-P zone include manufacturing, wholesale distribution, commercial support services, medical and dental offices/clinics, and office uses. Conditional uses include conference centers, veterinary clinics and hospitals, and colleges and universities. Heavy industrial uses, such as rock crushing, aggregate storage and distribution, and concrete or asphalt patch plants, are not allowed. Commercial support services are permitted and these include banks, restaurants, day care centers, quick print shops, and office supply retailers.

Building height in the M-P zone is restricted to 45 feet, with the exception of high profile industrial buildings,[14] which can be as high as 85 feet. For buildings 45 feet in height or less, the front yard setback is 35 feet and the other yards must be set back a minimum of 25 feet, or 50 feet if abutting a residential zone. High profile industrial buildings are subject to these setback requirements, with the additional setback of one foot for each foot of total structural height, if located adjacent to a residential zone, and one foot for each foot of structural height above 45 feet, if adjacent to commercial or industrial zones. Buildings in the M-P zone may not occupy more than 50% of the lot area.

3. Shute Road UGB Concept Plan

The Shute Road site was added to the Urban Growth Boundary (UGB) by Metro in December 2002. The Metro conditions of approval specific to the site area established the site as a regionally significant industrial area (RISA). The conditions of approval also stipulated that the development of a concept plan result in either one 100-acre parcel or three 50-acre parcels. The site consists of approximately 203 acres and is located at the intersection of Shute Road and Evergreen Road, directly to the east of the Evergreen area. Like Evergreen, the Shute Road site was added to the UGB for the purpose of providing large lots for industrial development.

As is also the case with Evergreen, the city was required to prepare a concept plan prior to industrial development taking place within the Shute Road site. The Shute Road UGB Concept Plan shows how the site can be served by municipal services and the transportation system, addresses natural and historic resources identified on the property, and other Metro Urban Growth Management Functional Plan requirements. The Shute Road UGB Concept Plan was complete July 31, 2003. The Hillsboro Comprehensive Plan and Zoning Ordinance were amended in 2004 to implement the Concept Plan.

The Concept Plan illustrates three concepts that allowed for the development of either one 100-acre parcel or three 50-acre parcels. Each concept allows for the initial development of

[14] High Profile Industrial Building is defined in the code as "(a)n industrial building designed and constructed for manufacturing or warehouse use, characterized by highly specialized mechanical and/or automated equipment requiring structural heights greater than 45 feet."

one 100-acre parcel, while at the same time providing the flexibility such that if a 50-acre parcel was initially established, the remaining land would be sufficient for the provision of either two additional 50-acre parcels or one 100-arce, thereby meeting the Metro conditions of approval for the site. All three concepts extend public infrastructure, including roads, water, sanitary, and storm sewer, through the entire site to serve the development needs of the area. Each concept extends NW Huffman Road through the site from east to west, albeit with different conceptual alignments. All concepts provided for a connection between 253rd Avenue and Dawson Creek Parkway, either by using the existing 253rd/Evergreen/Dawson Creek Parkway intersections, or a new alignment of 253rd with Dawson Creek Parkway.

According to the Concept Plan, the Advisory Committee working on the project selected Concept A as the Preferred Design Concept because of the flexibility and minimal infrastructure requirements. The Advisory Committee chose Concept B as the First Alternative Design Concept. The adopted Comprehensive Plan policy in Section 20, Shute Road Industrial Site, indicates that:

> *(D) Development within the Shute Road Industrial Site shall be generally consistent with the alternative high-technology industrial land planning and design concepts shown in the Preferred Design Concept – Concept "A" or, if applicable, the "Alternative Design Concept – Concept "B" (shown in Figures 20-1 and 20–2, respectively).*

Implementation Measures under Section 20 include the provision that prior to annexation to the city and adoption of urban industrial zoning on properties within the Shute Road Industrial Site, land uses within the site will continue to be governed by the existing Washington County agricultural zoning (III.C) Other measures include the prohibition of new commercial retail uses (III.D) and ensuring that there is compatibility between high-technology industrial uses and supporting uses, and nearby agricultural uses and operations through the city's Development Review process (III.E). The Implementation Measures also provide protection for the Waible Creek tributary riparian corridor and the upland wildlife habitat resource located in the northwest portion of the Site by designating it with "Level 1" ("moderately protect") protection, as prescribed by Hillsboro Zoning Ordinance Section 131A, Significant Natural Resources Overlay District (III.F).

Consistent with the Comprehensive Plan, the city amended the Zoning Ordinance to include the Shute Road Site Special Industrial District (SSID) overlay zone. This overlay zone is intended to supplement the underlying M-P, Industrial Park Zone for the Shute Road Site. The provisions of the District take precedence when there are conflicts between the provisions of the SSID and the underlying M-P zoning.

Land uses within the SSID are limited to:

> *(1) Businesses engaged in high-technology product manufacturing;*[15]

[15] As defined in Section 134A, C.(1) . A "high-technology product manufacturing" use means and includes any high technology enterprise engaged in the business of manufacturing high-technology-related products, either as the main on-site activity or in conjunction with on-site experimental product research, testing or prototype production; or, any other high-technology industrial use that needs to use a dependable and

(2) Businesses and other land uses that support high-technology product manufacturing; and

(3) Commercial office uses that are accessory to and in the same building containing businesses engaged in high-technology product manufacturing or businesses and other land uses that support high-technology product manufacturing.

Provisions in the code clarify that the required 100-acre or 50-acre lots may be reduced in size to accommodate necessary transportation infrastructure or natural resources that restrict development (Section 134A, D.(2).

Development within the SSID is subject to review and approval by the Planning Director in accordance with the procedures prescribed in Section 133, Development Review, of the Zoning Ordinance. The Planning Director may approve any developments that accomplishes the large-acreage requirements (Section 134A,D.2(a)) in accordance with the purpose of the District.

4. City of Hillsboro Transportation System Plan

The 2004 City of Hillsboro Transportation System Plan (TSP) Update lists a number of projects in the study area that were based on future forecasts that most likely did not include the Evergreen or Helvetia Concept Plan sites. The projects listed in Table III-2 will be reviewed and modified, as needed, through this planning process.

uninterruptible supply of specialized dual-feed electric power or nitrogen gas in order to engage in the manufacture of its products.

Table III-2: City of Hillsboro TSP Priority Projects

Section	Project
Pedestrian Master Plan Priority Projects (Table 1-1)	NW Century Blvd from Bennett St to Wagon Way (part of the roadway extension of Century Blvd to West Union Rd)
	NE Jackson School Rd from Roghan St to Evergreen Rd
	NW Shute Rd from Evergreen Rd to Hwy 26
Bicycle Master Plan Priority Projects (Table 1-2)	NW Century Blvd from Bennett St to Wagon Way (part of the roadway extension of Century Blvd to West Union Rd)
	NW Glencoe Rd from Jackson St to Evergreen Rd
	NE Jackson School Rd from Grant St to Evergreen Rd
	NW Shute Rd from Evergreen Rd to Hwy 26
	Bethany Pond Trail from Cornelius Pass Rd to Rock Creek Blvd (multi-use trail)
Highest Priority Motor Vehicle Projects (Table 1-3)	Evergreen: 25th to 253rd – widen to 5 lanes
	Cornell: 185th to 25th – interconnect traffic signals
	Huffman Street – extend west of Shute Rd to 253rd Ave
	253rd Avenue – improvements north of Evergreen Rd; add southbound right turn lane
	Dawson Creek Drive – Realign to connect with 253rd Ave
Study Intersection Projects (Table 1-4)	253rd Ave/Evergreen Rd – install traffic signal
	Shute Rd/Evergreen Rd – add 2nd EB left turn lane, EB and WB right turn lanes
	Evergreen Pkwy/229th Avenue – add NB/SB right turn lanes, protected-permitted N/S signal, protected E/W signal
	Evergreen Pkwy/Cornelius Pass Rd – add 2nd left turn lane on NB/SB/EB approaches, EB and WB right turn lanes, protected E/W signal
	Shute Rd/US 26 EB ramps – install traffic signal, construct interchange improvements
	Shute Rd/US 26 WB ramps – add SB through lane, construct interchange improvements
	Cornell Rd/Brookwood Pkwy – add SB right turn lane

In addition to the priority projects listed above, the Hillsboro TSP (Figure 1-8) also shows planned traffic signals at the intersections of Shute Road/Huffman Street and Helvetia Road/Jacobson Road (realigned).

A few of the proposed collectors shown in the TSP maps (Figure 1-9) are not included in priority project lists, but may be important to the development of the Evergreen Concept Plan. Those proposed collectors are:

- NW 264th Avenue / Evergreen Road to Brookwood Parkway between Dawson Creek Drive and Penny Way
- Extension of Century Boulevard south to Jacobson Road to complete connection from West Union Road
- Realigned Meek Road

Planned sidewalks (Figure 1-2) and bike lanes (Figure 1-3) are shown in the TSP adjacent to the Evergreen Concept Plan site along Evergreen Road, NW 253rd Avenue, and Huffman Street.

D. Port of Portland

1. Hillsboro Airport Master Plan

The Hillsboro Airport is located southwest of the Evergreen project site and a portion of the airport property is included within the Evergreen site boundary. Compatibility between airport activities and surrounding uses will be relevant in the development of the Evergreen Concept Plan.

The 2005 Hillsboro Airport Master Plan was developed in order to assess the airport's existing and future capabilities relative to future aviation demand forecasts. The goal of the Master Plan was to provide guidelines and recommendations for airport maintenance, growth, and compatibility with the surrounding community. Hillsboro Airport is defined as a reliever airport for Portland International Airport (PDX) and is intended to preserve capacity at PDX by offering an alternative for general aviation aircraft. In addition, the Oregon Aviation Plan identifies the Hillsboro Airport as a Category 2 Airport. A Category 2 Airport is one which can "accommodate corporate aviation activity, including business jets, helicopters, and other general aviation activities." Commercial airline and air cargo activities are not provided at the Hillsboro Airport.

Based on projected growth in aircraft operations at Hillsboro Airport, the Master Plan Concept calls for several enhancement and expansion projects within the 20-year planning horizon. Those projects include an additional runway for small general aviation aircraft, increased capacity on several taxiways, increased runway length, and development of additional landside facilities such as aircraft hangars, terminal buildings, and vehicle parking areas. Some of the planned improvements are located on the portion of airport property that is within the Evergreen project site. See the Master Plan Concept in Figure III-3.

The Airport Master Plan addresses land use compatibility by reference to the updated Airport Compatibility Study, which was conducted after completion of the Master Plan. The Compatibility Study is a stand-alone document and is reviewed below.

2. Hillsboro Airport Compatibility Study Update

The Airport Compatibility Study Update (November 2005) was prepared in order to re-examine noise management efforts and land use policies that were established in the 1993 Hillsboro Airport Compatibility Study. The updated Compatibility Study identifies several possible measures, policies, and procedures that could be implemented to improve future compatibility. Chapter Four of the Compatibility Study contains recommendations for moderating noise impacts and improving land use compatibility with existing and future surrounding development.

Recommendations that are relevant to the Evergreen concept planning process can be found in the Land Use Management Element of Chapter Four and are summarized below. Generally, most of the recommended actions are projected to occur between 2006 and 2010.

- The Study identifies the 55 day-night noise level (DNL) contour area, which is established as a tool for noise management. Noise-sensitive land uses should not occur within the DNL contour. The Study recommends that the 55 DNL contour be mapped and considered in future land use decisions by both the City of Hillsboro and Washington County. This would require that both jurisdictions independently adopt amendments to their respective comprehensive plans. The 55 DNL contour extends well into the Evergreen project site. See the contour map in Figure III-4.

- Hillsboro and Washington County should adopt the elements required by OAR 660-013-0040 into their respective Transportation System Plans (TSP). OAR 660-013-0040 contains aviation facility planning requirements for local governments. The required elements include language for minimizing land use compatibility issues through the use of design, alternative locations and conditions of approval. Local governments are also required to adopt maps identifying compatibility zones, runway protection zones, noise impact boundaries, and other significant airport-related boundaries.

- Coordination agreements should be established between the Port of Portland, Metro, the City of Hillsboro, and Washington County to identify responsibilities for implementing compatibility measures. The agreements would also require that airport compatibility issues be addressed during the UGB expansion process.

- The Study recommends that Hillsboro and Washington County adopt special project review criteria to address airport land use compatibility needs when reviewing future project proposals within the airport vicinity. These review criteria would apply to proposed development on the portions of the Evergreen project site that overlap with the airport study area (the Airport Compatibility Overlay Zone).

- Future compatible land use designations should be determined for areas of Washington County north of Evergreen Road. These land use designations will be applied to the land as part of the UGB expansion process. Over ninety percent of departures from the Hillsboro Airport occur to the northwest or northeast of the airport, which directly overlaps with portions of the Evergreen project site.

- An Airport Safety and Compatibility Overlay Zone for the Hillsboro Airport should be created and adopted by the City of Hillsboro and Washington County to allow certain restrictions on development within that zone. The Study recommends that both jurisdictions amend their development regulations to establish noise disclosure requirements and over-flight

easements in order to meet the compatibility requirements set forth in the Compatibility Overlay Zone.

- The City of Hillsboro and Washington County should expand and strengthen their existing height restrictions for objects near the airport. The Federal Flight Administration (FFA) recommends height restrictions that extend at least two miles from runway ends and helipad surfaces. This distance would likely extend beyond the Airport Safety and Compatibility Overlay Zone. The study recommends that the jurisdictions use the Airport Airspace Drawing included in the 2005 Airport Layout Plan as the basis for establishing additional height restrictions surrounding the airport.

- The Port of Portland will consider acquiring aviation easements as needed to protect airport operations and maintain trees in compliance with height limitations. The Port currently owns most of the property within the 65 DNL contour, but may require additional easements in the future. This action will be implemented as needed.

The Aviation Operational Management Element of Chapter Four contains recommendations for airport operation measures that aim to minimize noise conflicts and further support land use compatibility. Many of the recommendations in this section pertain to specific runway and aircraft uses. Those that are relevant to the Evergreen Concept Plan are included below.

- The Port of Portland will continue its policy of limiting unnecessary over-flight below 1,000 feet above ground level for the urban areas surrounding the airport. This recommendation is part of the existing "Fly Friendly" program and encourages pilots to maintain an altitude of at least 1,000 feet above the highest obstacle in the path of the aircraft.

- The Port of Portland will maintain its current schedule for helicopter training activity in accordance with the 2004 Memorandum of Understanding that established patterns and scheduling for helicopter training programs. This policy prioritizes helicopter flight patterns that encompass compatible land uses and avoid underlying residences. In addition, the Study recommends that the Port of Portland develop helicopter arrival and departure procedures that minimize noise impacts to non-compatible uses surrounding the airport.

- The Port of Portland will continue to monitor noise compliance and to track, analyze, and respond to noise complaints. The Port plans to establish a standing advisory committee of citizens and tenants to regularly review and discuss airport issues with Port staff. The Study also recommends that the Port create a public outreach program to educate the general public about noise abatement and airport compatibility.

E. State of Oregon

1. Environmental Assessment

In 2006, the Oregon Department of Environmental Quality published a guidance document for environmental assessment of formerly used agricultural lands that have been converted, or that are likely to be converted, to residential, school, commercial, or industrial use. The document, entitled *Guidance for Evaluating Residual Pesticides on Lands Formerly Used for Agricultural Production*, is directed at DEQ staff conducting or overseeing site assessments on former agricultural lands planned for non-agricultural use to determine the potential human health and environmental effects of pesticides and associated metals.[16] The guidance document applies to former agricultural land that was ever under cultivation, as well as to fallow, former agricultural land that has not been disturbed beyond normal disking and plowing practices. The document is used for guidance; it is not a regulatory document and does not contain requirements of obligations.

The document includes the definition of pesticide, a description of the physical properties of pesticides, and identifies the types and residues found in Oregon. It includes steps to take to evaluate historical pesticide usage and sampling strategies at agricultural sites.

The type of appropriate remedial actions at these sites depends partly on the types of reuse anticipated. The guidance document has two sampling schemes, one for residential/school reuse and a second for industrial/commercial reuse. The document includes "default sampling schemes" that correspond to the two use types, with information such as the size and number of samples to be taken according to the size of the area captured in tabular format.

The final section of the document gives some information about risk screening in DEQ's Cleanup Program:

> *Risk-based decision making for all types of contaminated sites involves evaluating current and reasonably likely future risks that site contamination poses to human health and the environment, and using that information to develop the best combination of cleanup and site-management actions that will reduce risks to acceptable levels. Contaminants found above background levels are compared to PRGs [Preliminary Remediation Goals] and DEQ's risk-based concentrations (RBCs) to evaluate whether these contaminants pose unacceptable risks to current or future site users, construction and/or excavation workers, or surrounding properties.*

This section notes that, in addition to the potential human health risks, pesticides may also affect the ecology. Evaluation of pesticides on agricultural lands that have been, or are likely to be, converted to other uses generally will not be required to an evaluation of ecological risk unless the site's redevelopment includes ponds,

[16] See Hazardous Substance Remedial Action Rules, OAR 340-122-0010 through 0115 and ORS Chapter 465.

wetlands, or other significant natural habitat. In such cases, a Level 1 Scoping Assessment will need to be prepared.[17]

2. Industrial Site Certification Steps

Oregon Governor Ted Kulongoski signed Executive Order 03–02 on February 20, 2003. The Executive Order had two major components, the creation of an Industrial Lands Task Force, charged with evaluating the state's short-term and long-term industrial lands supply, and the development of the "Shovel Ready Industrial Sites Initiative." The Shovel Ready Industrial Sites Initiative directed the Governor's Economic Revitalization Team (GERT) to work in partnership with the Oregon Economic Community Development Department (OECDD) to, among other things, develop an Industrial Site Certification Process.

State certification documents and assembles information needed by a business that is considering acquisition and use of an industrial site. A certified site meets specific, market-driven criteria based on the standards of real estate professionals and of the industries that would develop and operate at these locations. Each site receives a consistent level of review and analysis of existing conditions pertinent to development, such as wetlands, contamination, listed species, cultural resources, land use regulation, suitability for building, and the availability and capacity of transportation facilities, water, sewer, electrical power and telecommunications. Site certification can be used as a marketing tool and adds value to certain locations by making their utilization less expensive and risky for the prospective employer. Certification also entails a commitment of state and local governments to facilitate the site development. Certified sites are ready for construction within six months or less after being chosen for development. See the Economic Community Development Department website (http://www.econ.state.or.us/IC.htm) for more information regarding industrial site certification.

3. Sunset Highway Interchange Study

The Sunset Highway Interchange Study was completed in August 1998 for US 26 between 185th Avenue and Glencoe Road. The study used future volumes for 2015 to identify future deficiencies and develop alternatives for each interchange. The recommended alternative for the Shute Road interchange included constructing a westbound to southbound loop ramp as well as incorporating the intersection of Helvetia Road/Jacobson Road into the interchange ramp intersection via a roundabout or to realign Jacobson Road north of the interchange. It should be noted that the priority project list contained in the 2004 Hillsboro TSP update includes the realignment option.

4. Cornelius Pass Road/Highway 26 Interchange Area Management Plan

Pursuant to an Intergovernmental Agreement (IGA) between Washington County and ODOT, an interchange area management plan (IAMP) was required for improvements to the Cornelius Pass Road/Highway 26 interchange facility. The interchange improvements were necessary in order to alleviate congestion and extensive vehicle queuing on the interchange ramps during peak hours. The stated objectives of the 2003 Cornelius Pass Road IAMP are to protect the function of the interchange, provide safe and efficient

[17] For additional information about the risk-screening process in Oregon, see DEQ's web page on Human Health Risk Assessments: http://www.deq.state.or.us/wmc/cleanup/hh-intro.htm.

operations on US 26 and Cornelius Pass Road, and ensure ODOT involvement in future land use decisions that could affect the function of the interchange.

Section 6 of the IAMP contains action items to improve and maintain interchange operations. These items include roadway improvements, access management, traffic control devices, and land use actions. Those that may be relevant to the Evergreen concept planning area are summarized below.

- Washington County and the City of Hillsboro will coordinate with ODOT in the evaluation of any land use actions that would affect the function of the US 26/Cornelius Pass Road interchange facility.

- Cornelius Pass Road is classified as a five-lane arterial. Any change to that classification would require a plan amendment. A funding plan would also be required for the provision of any additional improvements to the interchange necessitated by adding capacity to Cornelius Pass Road.

The Cornelius Pass Road interchange is located approximately 1.4 miles east of the Shute Road/US 26 interchange, which is the primary interchange serving the Evergreen site. While the IAMP planning area only incorporates land within a half-mile of the interchange, land use actions within the Evergreen area could potentially impact the interchange. The IAMP contains the following language that pertained to the Shute Road UGB expansion area, but that may also be relevant to the Evergreen site:

> *"While most of the land Metro considered for inclusion in the UGB is located far away from the IAMP planning area, Metro did include approximately 200 acres located near the intersection of Shute Avenue and Evergreen Road. Should that area be added to the UGB and developed, traffic volumes at the Shute Avenue/Helvetia Road Interchange would increase, which may in turn encourage some traffic to use the Cornelius Pass Road Interchange."*

In order to implement the IAMP, the plan was adopted as an amendment to the Portland-Cannon Beach Junction (US 26) Corridor Plan by the Oregon Transportation Commission. Metro, Washington County, and the City of Hillsboro adopted resolutions of support for the IAMP. In addition, the City of Hillsboro amended its Transportation System Plan to include specific reference to the Cornelius Pass Road IAMP. No amendments to the Washington County Comprehensive Plan were necessary.

5. Jackson School Road Interchange Area Management Plan

State law requires that an interchange area management plan (IAMP) be prepared and adopted prior to construction of a new interchange on a state highway. The Jackson School Road IAMP (February 2004) was developed in response to this requirement for a new interchange at US Highway 26 and Jackson School Road in rural Washington County. The primary purpose for the interchange project was to improve safety conditions by replacing the un-signalized, at-grade intersection with a grade-separated interchange facility. The new interchange was designed to provide adequate capacity and safe operations through the 20-year planning horizon.

The IAMP serves as a management tool to protect the function of the interchange facility by ensuring that future land use decisions do not result in unplanned traffic demand. This is implemented through plan policies and code language amendments that regulate access and land use decisions and coordination in the vicinity of the interchange. The planning process for the IAMP takes into consideration future growth in the nearby urban areas. Section 6 of the IAMP contains a list of action items that will be used to maintain the function of the interchange. Those that may be relevant to the Evergreen concept planning area are summarized below.

- Washington County will coordinate with ODOT in the evaluation of any action (such as a comprehensive plan amendment) that would affect the function of the Jackson School Road Interchange.

- Jackson School Road is designated as a two-lane arterial. Any action that would result in a change of roadway designation will require a funding plan for the provision of improvements to the interchange facility.

- Metro and the City of Hillsboro will coordinate with ODOT in the analysis of future UGB expansions or annexations that could affect the function of the Jackson School Road, Glencoe Road, or Shute Road interchange facilities.

The Evergreen planning area is located approximately two miles east of the Jackson School Road interchange and is therefore outside the IAMP planning area. At the time the IAMP was prepared, Metro was in the process of considering a UGB amendment to include "200 acres for industrial uses near Shute Road and Evergreen Road." The IAMP states that this area, which now includes the Evergreen concept planning area, will most likely be served by the existing Shute Road interchange with Highway 26. The IAMP also states that the Shute Road interchange should be improved to accommodate urban traffic and future growth in Hillsboro.

The IAMP was adopted by Washington County as an amendment to their Transportation System Plan, and by the Oregon Transportation Commission. The Cities of Hillsboro and North Plains each adopted a Resolution of Support for the IAMP.

R L I S
REGIONAL LAND INFORMATION SYSTEM

Figure III.1
Evergreen Concept Planning Area

Ordinance 05-1070
Exhibit A-1

Evergreen

- Industrial Land
- RSIA Land
- Resource Land
- Exception Land
- UGB

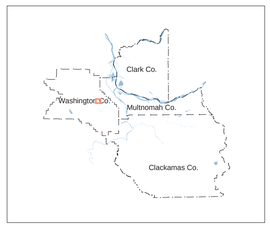
Total Acres = 550

Exception Land = 213 ac.
Resource Land = 337 ac.

Gross Buildable Acres = 416

Deduction for Future Streets = 95 ac.

Net Buildable Acres = 321



Location Map

METRO
METRO DATA RESOURCE CENTER
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Project Date: Aug 31, 2005 Plot time: Nov 16, 2005 J:\hal\proj\05217evergreen.mxd

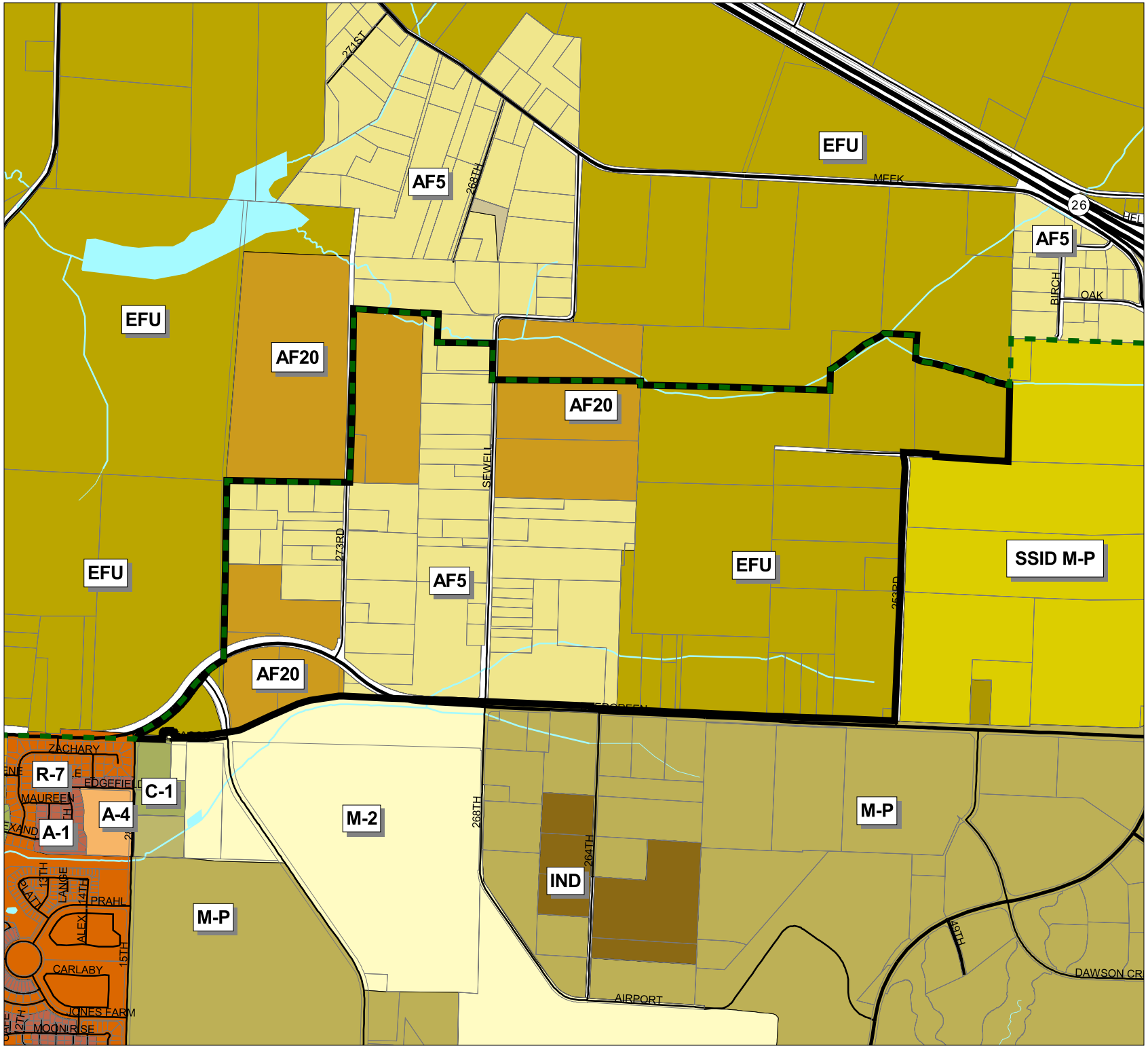


Figure III.2
Evergreen Concept Planning Area Zoning

LEGEND

- Evergreen Concept Planning Area
- UGB
- Tax Lots
- Stream

Streets

- Freeways
- Arterials
- Minor Streets

Washington County Zoning

- AF5 Ag Forestry 5 ac
- AF20 Ag Forestry 20 ac
- EFU Exclusive Farm Use
- IND Industrial

City of Hillsboro Zoning

- R-7 Residential
- A-1 Duplex Residential
- A-4 Multi-family Residential
- C-1 General Commercial
- M-2 Industrial
- M-P Industrial Park
- SSID M-P Shute Road Special Ind Dist Industrial Park

N

500 0 500 Feet

Angelo Planning Group

Source: RLIS and CH2M Hill
Prepared March 27, 2007

03MP01-ES4-9/22/05

LEGEND

- Existing Airport Property Line
- Ultimate Airport Property Line
- Potential Property Acquisition
- Ultimate Pavement
- Existing Runway Visibility Zone
- Ultimate Runway Visibility Zone
- Object Free Area (OFA)
- Runway Safety Area (RSA)
- Obstacle Free Zone (OFZ)
- Precision Obstacle Free Zone (POFZ)
- 35' Building Restriction Line (BRL)
- 20' BRL
- Glideslope Critical Area
- Localizer Critical Area
- Runway Protection Zone (RPZ)

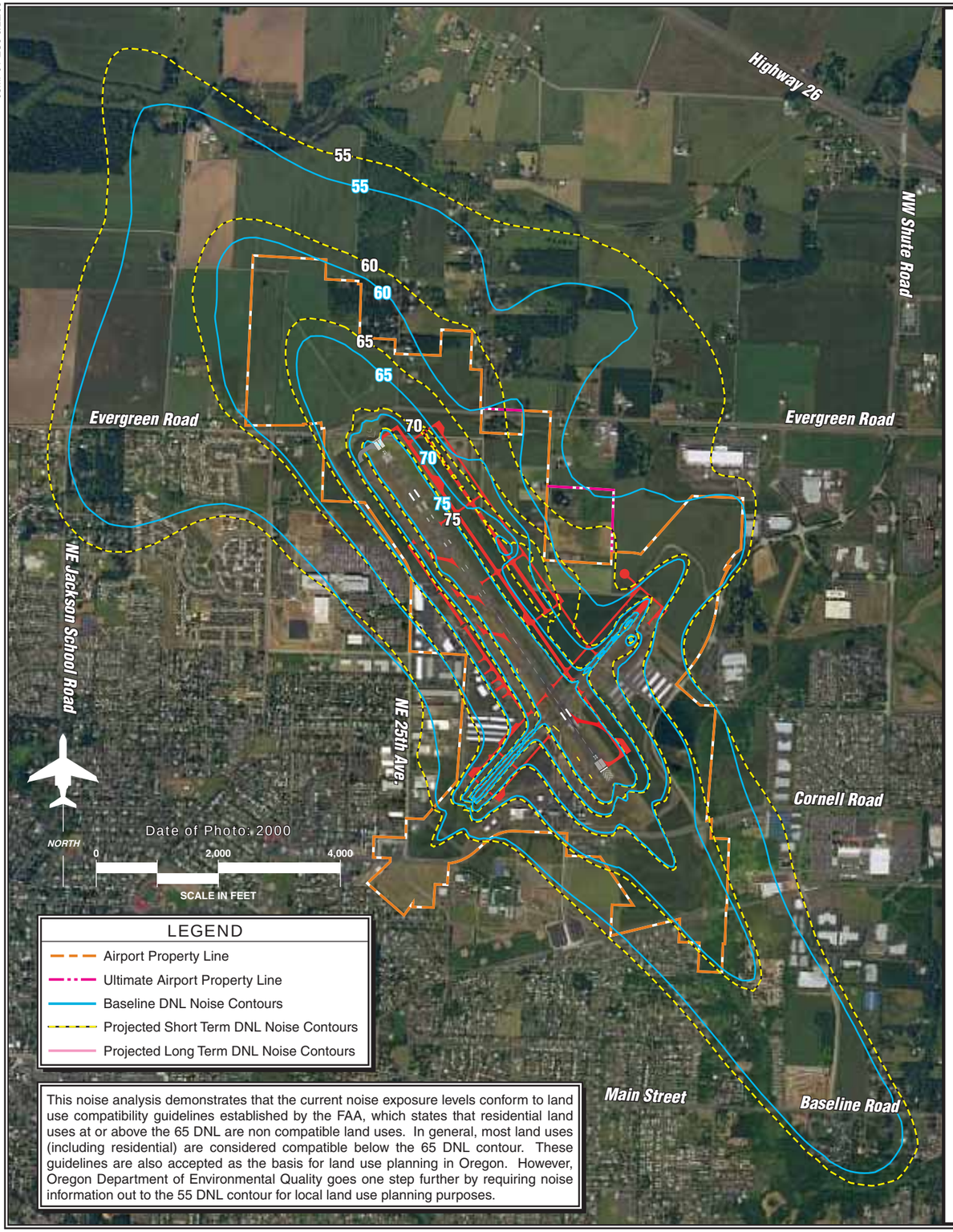
NOTE: A detailed traffic assessment of surrounding facilities has not been completed. The future Evergreen Road to Brookwood Parkway alignment is generalized. This alignment may change. The road would be constructed with local resources and not by the Port.

Future City-Owned Collector Road (Alignment Generalized)
Brookwood Parkway
151' Extension
235' Shift
386'
Proposed Training Helipad
Proposed Runway 12L-30R (3,600' x 60')
240'
Existing Charlie Pad
RUNWAY 2-20 (4,049' x 100')
Ultimate (4,200' x 100')
400'
RUNWAY 12-30 (6,600' x 150')
300'
700'
Evergreen Road
N.E. 25th Ave.
Cornell Road
Max Station
Fairplex
390'
495'
240'
NORTH
0
1,000
SCALE IN FEET

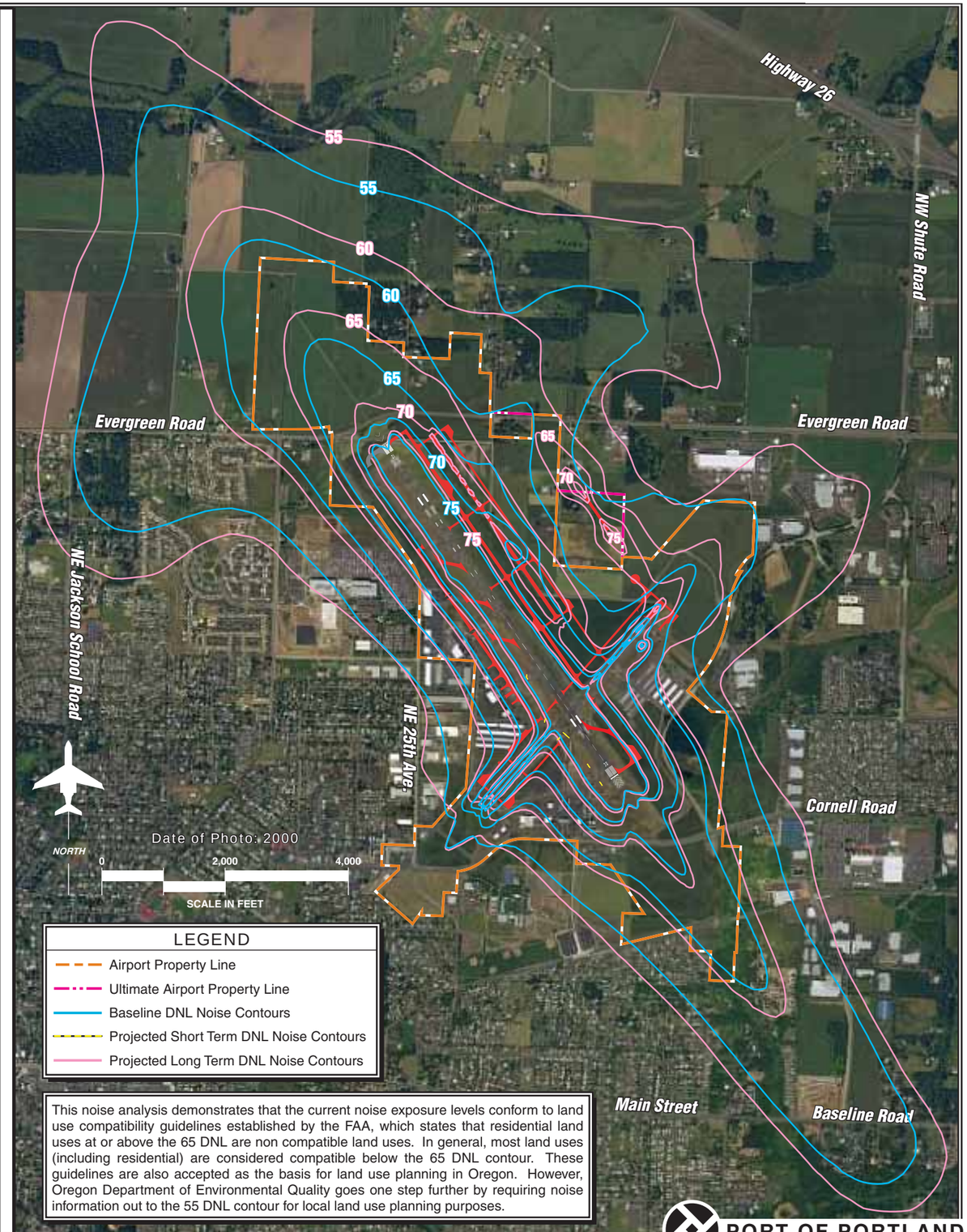
PORT OF PORTLAND

Exhibit ES-4
MASTER PLAN CONCEPT
AIRSIDE

03MP01-ES6-9/22/05



This noise analysis demonstrates that the current noise exposure levels conform to land use compatibility guidelines established by the FAA, which states that residential land uses at or above the 65 DNL are non compatible land uses. In general, most land uses (including residential) are considered compatible below the 65 DNL contour. These guidelines are also accepted as the basis for land use planning in Oregon. However, Oregon Department of Environmental Quality goes one step further by requiring noise information out to the 55 DNL contour for local land use planning purposes.



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PORT OF PORTLAND

Exhibit ES-6

EXISTING, PROJECTED SHORT TERM, & PROJECTED LONG TERM NOISE EXPOSURE CONTOURS

IV. Economic Characteristics

A. Property Ownership Patterns

The purpose of this section is to identify ownership and development patterns in the Evergreen Area in order to inform future planning and development decisions. When evaluating an area's development potential, it is important to identify larger sites, in particular large, vacant sites, because they will be easier to develop upfront.

As shown in Table IV-1, vacant lands comprise an estimated 40 percent (205 acres) of property in the Evergreen Area. Sixty percent (314 acres) of property is improved, primarily with single-family residences and farm structures that occupy only a limited portion of the total lot area. Approximately 25 percent of improved properties are small- to medium-size lots under 10 acres, whereas 35 percent of improved properties are larger lots of 10 acres or more.

Table IV-1: Evergreen Area Development Patterns

	Total Acres	% of Total
Total	519[1/]	100%
Total Improved	314	60%
Small to Medium Lot - Limited Development	129	25%
Large Lot - Limited Development	184	35%
Vacant	205	40%

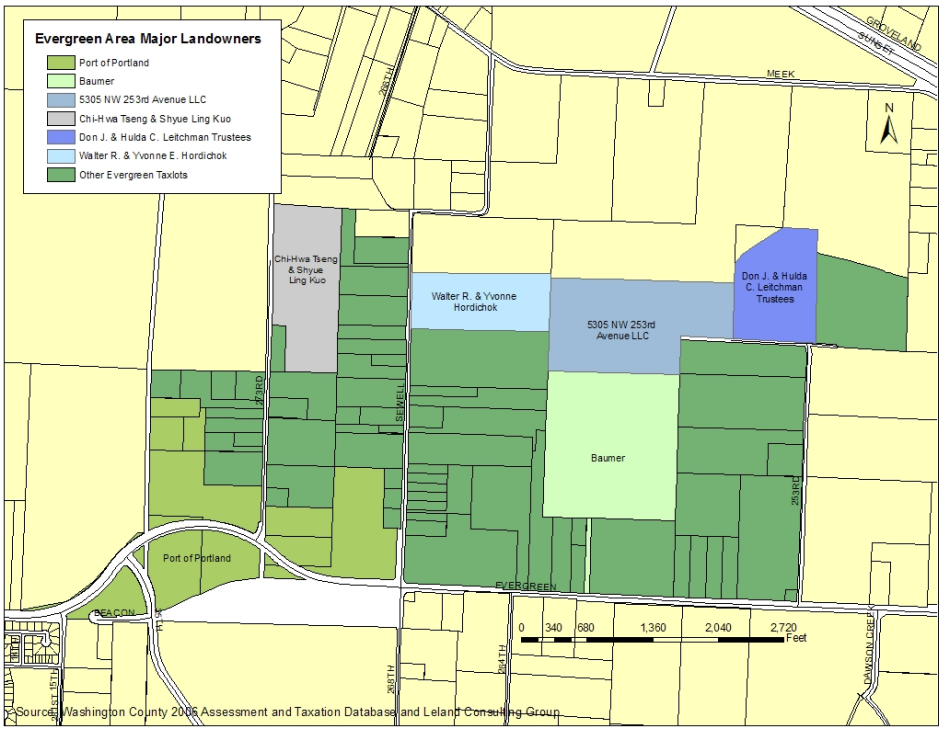
[1/] Does not include an estimated 15 acres of public right-of-way.

Source: Washington County 2006 Assessment and Taxation database and Leland Consulting Group.

There are 60 landowners in the Evergreen Area. An estimated 371 acres (71 percent) of property in the Evergreen Area is owned by 16 property owners with 10 or more acres of land (see Appendix A).

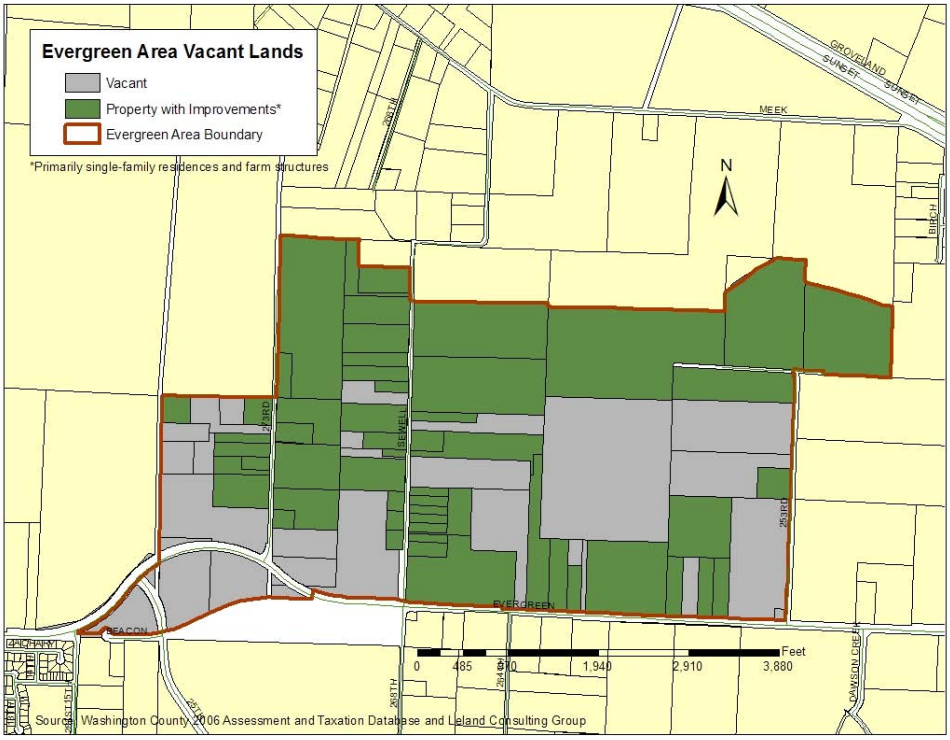
Major landowners in the Evergreen concept planning area are identified in Figure IV.1. The largest landowner, the Port of Portland, owns an estimated 70 acres of vacant land in the southwestern portion of the Area. Given the close proximity of Port property to Evergreen Airport, it may be subject to height and density limitations and other restrictions that limit its development potential. During the implementation phase of the Evergreen Area planning process, the presence of a major public landholder such as the Port is a potential asset. A map of vacant lands in the Evergreen concept planning area is provided in Figure IV.2.

Figure IV.1: Evergreen Area Major Landowners



Source: Washington County 2006 Assessment and Taxation Database and Leland Consulting Group.

Figure IV.2: Evergreen Area Vacant Lands



Source: Washington County 2006 Assessment and Taxation Database and Leland Consulting Group.

Findings:

- Most large sites in the Evergreen concept planning area are concentrated in the northern and eastern parts of the Area.

- The greatest share of vacant property is concentrated in the southwestern and central parts of the Area.

- While there are several large landowners in the area, including the Port of Portland, Patricia Baumer, and the 5303 NW 253rd Avenue LLC, the majority of property is owned by landowners with small to medium-size holdings under twenty acres. Given the Area's fractured ownership, acquiring and assembling sites suitable for desired industrial and employment uses will require considerable financial resources, political will and time.

B. Demographics

This section provides an overview of key demographic characteristics of communities that will be impacted by future development in the Evergreen and Helvetia Areas, including population and employment data. Assuming both Areas will be developed as industrial or employment lands in the future, the majority of workers will commute from Hillsboro, Washington County and other locations within the Portland Metropolitan Statistical Area

(MSA). For statistical purposes, the Portland MSA is comprised of Clackamas, Columbia, Multnomah, Washington, and Yamhill Counties in Oregon as well as Clark and Skamania Counties in Washington.

1. Population and Household Characteristics

Population and Households

According to population estimates produced by ESRI Business Analyst based on 2000 Census of Population and Housing data, an estimated 352 persons and 125 households lived in the Evergreen and Helvetia Areas in 2006. Approximately 79 households and nearly two thirds of the population (224 persons) reside in the Helvetia Area, which contains a densely populated mobile home park. With an estimated 46 households and 128 persons in 2006, the Evergreen Area has a smaller residential population than the Helvetia Area.

Table IV-2 identifies 2000 Census population figures and 2006 population estimates for Hillsboro, Washington County and the 6-County Portland Metropolitan Statistical Area, which includes Clackamas, Columbia, Multnomah, Washington, and Yamhill Counties in Oregon and Clark County, Washington.

Table IV-2: Population Growth, 2000 to 2006

Geography	Census 2000	2006 Estimate	Percent Change 2000-2006
City of Hillsboro, OR	70,186	84,445	20.3%
Washington County, OR	445,342	500,585	12.4%
Portland MSA	1,927,881	2,121,910	10.1%

Source: U.S. Bureau of the Census, 2000 Census of Population and Housing, Portland State University 2006 Population Estimates for Oregon Cities and Counties, State of Washington Office of Financial Management 2006 Population Estimates for Washington Cities and Counties and Leland Consulting Group.

While all three geographies experienced significant growth between 2000 and 2006, Hillsboro's population increase was markedly higher than Washington County's and twice that of the 6-County Metropolitan Area. Relative to other cities such as Portland and Gresham, Hillsboro has experienced a disproportionate share of the Metro Area's employment growth in recent years. Hillsboro's robust population growth reflects the fact that it is more than a bedroom community to Portland and is establishing its own unique identity as a place to live and work.

Table IV-3 identifies Metro 2005 and 2030 Household Estimates for Washington County and the Portland Metro Region, which includes Clackamas, Multnomah and Washington Counties in Oregon and Clark County, Washington.

Table IV-3: Metro 2005 and 2030 Employment Estimates

	2005 Estimate	2030 Estimate	Absolute Change	Percent Change
Washington County	189,925	272,998	83,073	44%
Portland Metro Region	824,955	1,207,876	382,921	46%

Source: Metro and Leland Consulting Group.

Between 2005 and 2030, total households in Washington County and the Portland Metro Region are projected to increase by 44 percent and 46 percent respectively. During this time, the number of households in the region is projected to exceed 1.2 million. Given that household growth in Washington County is anticipated to grow in proportion to the region's household growth, there is likely to be a significant demand for new employment opportunities within the County.

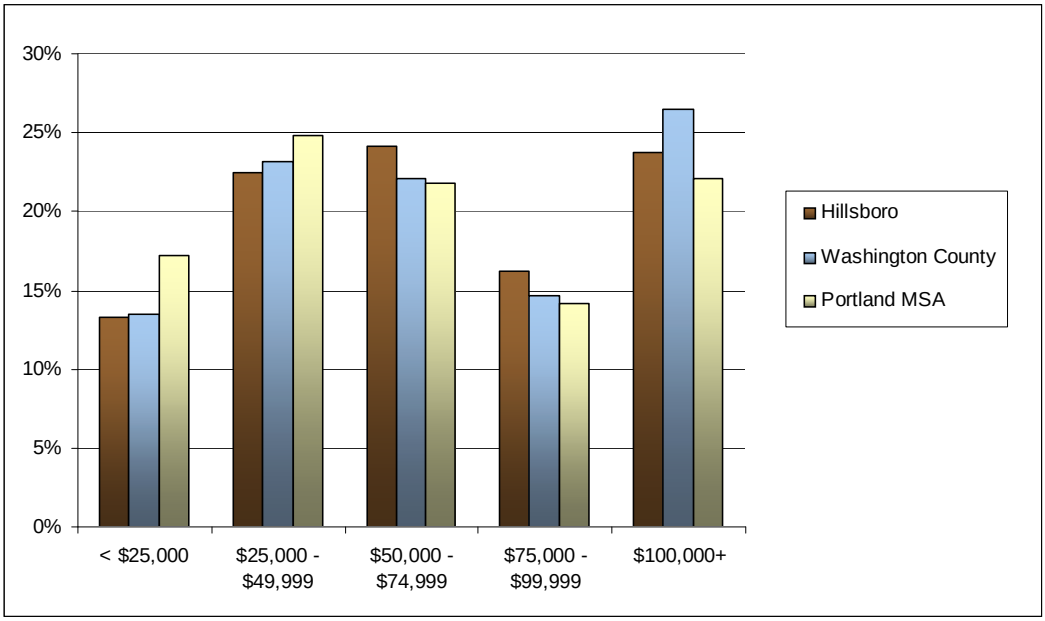
Income

There is a strong correlation between household income and the education and skill levels of workers. For example, the percentage of the adult population with a bachelor's degree or higher is likely to be higher in cities with a high percentage of upper-middle class and upper income households than cities with a predominantly low-income or blue-collar base. Further, more affluent communities are likely to have a high percentage of management- and executive-level workers, which correlates with a strong demand for executive housing.

As shown in Figure IV.3, at 24 percent and 27 percent respectively, Hillsboro and Washington County boast a higher percentage of upper-income households earning $100,000 or more than the Portland Metro Region, where 22 percent of households earned $100,000 or more in 2006. Accordingly, it is not surprising that the percentage of low-income households earning less than $25,000 in Hillsboro (13 percent) and Washington County (14 percent) was notably less than in the Portland MSA, where 17 percent of residents earned less than $25,000 in 2006.

In 2006 the median household income in Hillsboro and Washington County was about $5,500 higher than the median household income for the Portland Metro Area (see Table IV-4.)

Figure IV.3: 2006 Households by Income



Source: U.S. Bureau of the Census, 2000 Census of Population and Housing, ESRI forecasts for 2006 and Leland Consulting Group.

Table IV-4: Household Income Characteristics

	Hillsboro	Washington County	Portland MSA
Median Household Income	$64,318	$64,273	$58,563
Average Household Income	$75,853	$82,579	$75,305
Per Capita Income	$27,300	$31,288	$29,240

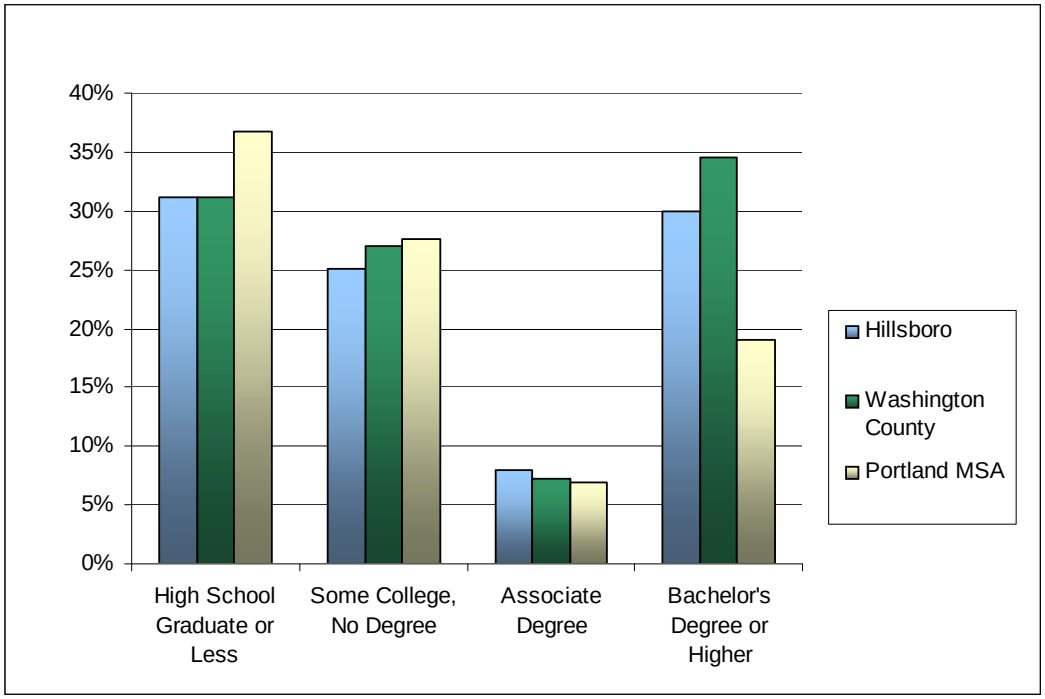
Source: U.S. Bureau of the Census, 2000 Census of Population and Housing, ESRI forecasts for 2006 and Leland Consulting Group.

Educational Attainment

As described above, there is a strong correlation between education and income. Communities with a high level of educational attainment are more likely to attract industries that require advanced training and education than communities with a relatively limited pool of college graduates.

Figure IV.4 below shows the distribution of the population age 25 and older by educational attainment in 2000. Relative to the Portland MSA, where only 29 percent of the population earned a Bachelor's Degree or higher, a greater percentage of the population in Washington County (35 percent) and the City of Hillsboro (30 percent) earned a four-year college degree. This shows that there is an available, well-educated workforce in Hillsboro and Washington County, which makes these places a desirable location for high-tech employers that require a high degree of education, specialized training and management experience.

Figure IV.4: 2000 Educational Attainment



Source: U.S. Bureau of the Census, 2000 Census of Population and Housing and Leland Consulting Group.

Commute to Work

As the Portland MSA's population increases and the urban growth boundary expands to accommodate growth in households and employment, an increasing number of workers are faced with longer commutes to work, including commutes outside their county or state of residence.

In 2000, as shown in Table IV-5, 81 percent of Hillsboro residents age 16 and over worked inside their state and county of residence compared to just 62 percent in Washington County and 72 percent in the Portland MSA. The diversity of employment opportunities in Hillsboro and the relative affordability of housing compared to other cities in the region, such as Portland and Lake Oswego, are factors that likely contribute to its appeal as a place to live and work. Further, as described in the section on population trends, as Hillsboro puts in place the infrastructure and amenities necessary to create a livable community with a unique identity and sense of place, more households are settling there.

Table IV-5: Workers 16+ by Place of Work

	Hillsboro		Washington County		Portland MSA	
	2000 Number	Percent of Total	1990 Number	Percent of Total	1990 Number	Percent of Total
Total	35,797	100.00%	161,994	100.00%	743,796	100.00%
Worked in State of Residence	35,343	98.73%	158,899	98.09%	690,802	92.88%
Worked in County of Residence	28,673	81.13%	98,258	61.84%	496,239	71.84%
Worked outside County of Residence	6,670	18.87%	60,641	38.16%	194,563	28.16%
Worked outside State of Residence	454	1.27%	3,095	1.80%	52,994	7.12%

Source: U.S. Bureau of the Census, 2000 Census of Population and Housing and Leland Consulting Group.

2. Employment Trends

Covered Employment

Table IV-6 below shows 2005 private sector covered employment in Hillsboro, Washington County and the 6-County Portland Metropolitan Area as tabulated by the Oregon Employment Department and the Washington State Employment Security Department. Covered employment refers to a job in which the employer is required by law to report to the state employment department and pay a payroll tax. This tax is used to pay unemployment benefits. A few jobs, such as outside commission sales, real estate sales, certain non-profit organizations, and churches are not covered by unemployment insurance. Covered employment can also include work for local, state, tribal, federal government, military service, or work in another state.

Table IV-7 shows Hillsboro's top 5 industry sectors by total payroll. Table IV-8 shows 2005 covered employment for industrial uses at the 3-Digit NAICS classification level.

Table IV-6: 2005 Covered Employment Summary

Geography	Units	Annual Ave. Employment	Total Payroll ($)
Hillsboro	2,521	52,381	3,087,298,655
Washington County	16,054	221,707	10,487,260,858
Portland Metropolitan Area[1/]	69,253	869,827	35,330,617,929

Source: Oregon Employment Department, Washington State Employment Security Department and Leland Consulting Group.

[1/] Includes Clackamas, Columbia, Multnomah, Washington, and Yamhill Counties in Oregon and Clark County, Washington.

Table IV-7: 2005 Covered Employment by 2-Digit NAICS

Rank	2-Digit NAICS	Description	Units	Annual Ave. Employment	% of Total Payroll
1	31-33	Manufacturing	230	20,999	61%
2	44-45	Retail Trade	324	5,929	5%
3	62	Health Care & Social Assistance	245	3,938	5%
4	51	Information	50	1,475	4%
5	23	Construction	259	2,350	4%
		All Other Industry Sectors	1,457	18,502	21%

Source: Oregon Employment Department, Washington State Employment Security Department and Leland Consulting Group

Table IV-8: 2005 Covered Employment, Industrial Uses by 3-Digit NAICS

3-Digit NAICS	Description	City of Hillsboro Units	City of Hillsboro Annual Avg. Employment	City of Hillsboro % of Total Payroll	Washington County Units	Washington County Annual Avg. Employment	Washington County % of Total Payroll	Portland Metropolitan Area Units	Portland Metropolitan Area Annual Avg. Employment	Portland Metropolitan Area % of Total Payroll
	Construction									
236	Construction of buildings	55	465	1%	579	3,178	2%	2,629	12,800	2%
237	Heavy and civil engineering construction	16	128	0%	105	1,494	1%	504	6,040	1%
238	Specialty trade contractors	188	1,757	2%	1,140	9,533	4%	5,062	38,343	5%
	Manufacturing									
311	Food manufacturing	4	103	0%	40	1,606	1%	265	8,597	1%
312	Beverage and tobacco product manufacturing	n/a	n/a	n/a	15	203	0%	84	1,374	0%
313	Textile mills	n/a	n/a	n/a	1	(c)	(c)	14	333	0%
314	Textile product mills	1	(c)	(c)	9	70	0%	64	767	0%
315	Apparel manufacturing	2	25	0%	13	79	0%	54	590	0%
316	Leather and allied product manufacturing	n/a	n/a	n/a	3	14	0%	18	434	0%
321	Wood product manufacturing	3	69	0%	36	1,676	1%	158	5,594	1%
322	Paper manufacturing	1	(c)	(c)	13	791	0%	54	6,108	1%
323	Printing and related support activities	15	193	0%	69	992	0%	337	5,311	1%
324	Petroleum and coal products manufacturing	n/a	n/a	n/a	n/a	n/a	n/a	12	385	0%
325	Chemical manufacturing	7	71	0%	22	239	0%	123	1,982	0%
326	Plastics and rubber products manufacturing	5	52	0%	37	2,047	1%	138	4,963	1%
327	Nonmetallic mineral product manufacturing	6	279	0%	25	762	0%	131	3,445	0%
331	Primary metal manufacturing	n/a	n/a	n/a	4	61	0%	47	5,894	1%
332	Fabricated metal product manufacturing	42	680	1%	162	2,977	1%	649	12,373	2%
333	Machinery manufacturing	14	866	2%	73	3,595	2%	242	8,238	1%
334	Computer and electronic product manufact	87	17,446	56%	179	26,689	23%	287	36,146	9%
335	Electrical equipment and appliance mfg.	7	222	0%	22	819	0%	51	1,764	0%
336	Transportation equipment manufacturing	4	46	0%	18	484	0%	138	8,954	1%
337	Furniture and related product manufacturing	12	396	0%	54	1,768	1%	269	4,402	0%
339	Miscellaneous manufacturing	20	531	1%	90	1,394	1%	382	5,862	1%
	Wholesale Trade									
423	Merchant wholesalers, durable goods	96	1,405	3%	568	7,983	5%	2,031	26,980	5%
424	Merchant wholesalers, nondurable goods	16	139	0%	149	8,022	7%	897	21,881	4%
425	Electronic markets and agents and broker	84	331	1%	939	2,562	2%	2,991	7,803	2%
	Transportation, warehousing and utilities									
221	Utilities	1	(c)	(c)	6	202	0%	65	2,266	1%
481	Air transportation	11	97	0%	13	98	0%	53	3,671	0%
483	Water transportation	n/a	n/a	n/a	1	20	0%	9	145	0%
484	Truck transportation	20	139	0%	123	1,394	1%	764	11,003	1%
485	Transit and ground passenger transportation	3	12	0%	20	442	0%	115	2,489	0%
486		n/a	n/a	n/a	n/a	n/a	n/a	1	8	0%
487	Scenic and sightseeing transportation	n/a	n/a	n/a	3	6	0%	11	343	0%
488	Support activities for transportation	16	245	0%	64	666	0%	411	5,710	1%
491	Postal servicee	n/a	n/a	n/a	n/a	n/a	n/a	5	52	0%
492	Couriers and messengers	2	20	0%	26	1,138	0%	127	4,806	1%
493	Warehousing and storage	3	2	0%	16	260	0%	131	4,100	1%
	Information									
511	Publishing industries, except Internet	26	1,045	4%	172	3,477	3%	531	9,010	2%
512	Motion picture and sound recording industries	3	81	0%	27	290	0%	186	1,826	0%
515	Broadcasting, except Internet	2	23	0%	5	230	0%	49	1,822	0%
516	Internet publishing and broadcasting	n/a	n/a	n/a	11	35	0%	39	119	0%
517	Telecommunications	13	285	1%	71	1,850	1%	258	7,042	1%
518	ISPs, search portals, and data processing	5	39	0%	61	842	0%	209	3,205	1%
519	Other information services	1	(c)	(c)	5	116	0%	16	191	0%

Source: Oregon Employment Department, Washington State Employment Security Department and Leland Consulting Group.

In 2005, as shown in Table IV-7, Hillsboro's average annual covered employment was 52,381, approximately 24 percent of average annual employment in Washington County and 6 percent of average annual employment in the Portland Metro Area. As shown in Table IV-8, employment in the Manufacturing industry sector accounted for an estimated 61 percent of Hillsboro's covered payroll ($1.9 billion) in 2005. The industry sector with the second highest annual payroll, Retail Trade, accounted for only 5 percent of gross payroll receipts ($147 million).

Among industry sectors where industrial uses are predominant, including the Construction, Manufacturing, Wholesale Trade, Transportation, Warehousing and Utilities, and Information industries, payroll in three industry sub sectors exceeded $100 million within the City of Hillsboro (see Table IV-9). Hillsboro's industrial economy is fueled by companies such as Intel and Sun Microsystems that specialize in computer and electronic product manufacturing (NAICS 334). In 2005, this industry sub sector consisted of 87 firms with an average annual employment of 17,446 and a total payroll of $1.7 billion or 56 percent of Hillsboro's total annual payroll. Within the wholesale trade sector, merchant wholesalers specializing in durable goods (NAICS 423) employed an average of 1,405 persons with a total payroll of around $101 million or 4 percent of Hillsboro's total annual payroll. Within

the Information sector, publishing industries employed an average of 1,045 persons with a total payroll of around $110 million or 3 percent of Hillsboro's total annual payroll.

Metro Employment Estimates

Table IV-9 below shows Metro 2005 and 2030 employment estimates for Washington County and the Portland Metro Region.

Table IV-9: Metro 2005 and 2030 Employment Estimates

	2005 Estimate	2030 Estimate	Absolute Change	Percent Change
Washington County	269,660	450,970	181,310	67%
Portland Metro Region	1,075,877	1,758,330	682,452	63%

Source: Metro and Leland Consulting Group.

Between 2005 and 2030, Washington County and the 4-County Metro Area are projected to experience significant job growth. A disproportionate share of employment growth is anticipated to occur in the service sector, particularly in Washington County, where the number of service jobs is projected to increase by 126 percent.

Major Employers

Currently, as shown in Table IV-10, 18 companies employing 200 or more workers are located within the City of Hillsboro. In addition to several large, high-tech manufacturing employers, major healthcare facilities and customer service call centers are located in Hillsboro.

Table IV-10: Hillsboro Major Employers

Employer	Business Product/Service	Employees
Intel	Semiconductor integrated circuits	15,500
Wells Fargo	Customer Service Call Center	1,700
Tuality Health Care	Healthcare	1,200
ConvergysCorporation	Customer service call center	544
Sun Microsystems	Computer electronics & support systems	530
Credence Systems Corp	Provider of design-to-test solutions for the global semiconductor industry	480
Triquint Semiconductor Inc	Supplies high performance modules and components for the communications industry.	400
RadiSys Corporation	Provider of advanced embedded solutions used in commercial, enterprise, and serivce provider systems markets.	411
FEI Company	Focused ion and electron-beam technologies deliver 3D characterization, analysis and modification capabilities with resolution down to the sub-Angstrom level.	375
Masterbrand Cabinets Inc.	Custom cabinets	365
Lattice Semiconductor Corporation	Designs, develops and markets high performance programmable logic devices, or PLDs, and related software.	356
Epson Portland Inc	Ink cartridge manufacturing	350
ACS Inc	Business process and information technology services provider	332
Planar Systems Inc	Flat panel display provider for the industrial, medical, commercial, and consumer markets	265
Corillian Corp	Provides highly scalable and secure Internet banking applications	270
Tokyo Electron America	Sales & Service for semiconductor equipment	220
Integrated Device Technology Inc	Semiconductor devices	200
V W Credit Inc	Customer Service Call Center	200

Source: City of Hillsboro Economic Development Department and Leland Consulting Group.

C. Real Estate Market Conditions and Factors

1. Industrial Market

According to interviewed real estate professionals, sales of industrial land in the Sunset Corridor have been slow. Currently, industrial land is selling for around $6.00 per square foot. Aside from Genentech's recent purchase of approximately 80 acres of land adjacent to the Evergreen Area and SolarWorld's acquisition of the old Komatsu facility, there have been relatively few land transactions.

The majority of existing industrial users on the Westside are within the high-tech cluster. However, investments by companies such as Genentech and SolarWorld, both of which will open new facilities in Hillsboro during the next couple of years, have increased interest and speculation with regard to the City's potential to attract biosciences and sustainable industries firms. Local real estate and economic development experts generally agree that the Evergreen and Helvetia Areas are most likely to accommodate growth in the high-tech and semiconductor industries and sustainable industries. Distribution and Logistics facilities are unlikely to locate to the Areas because they are not close enough to a major freeway and there are more suitable locations in the region for these facilities.

Table IV-11 below shows vacancy, absorption and average rental rates in the Portland metro area by industrial market sector, as reported by Colliers International. The Evergreen and Helvetia Areas are located in the Westside market sector and the Beaverton/Hillsboro sub-market.

Table IV-11: Vacancy, Absorption and New Construction by Industrial Market Sector

	Inventory (SF)	Vacant SF	4Q Vacancy	2006 Absorption	Average Annual Rental Rate
Central	9,976,388	1,237,318	12.4%	207,196	$6.90
Westside	55,810,084	5,441,750	9.8%	1,264,704	$6.55
North/Northeast	40,872,513	2,829,584	6.9%	2,183,318	$4.67
Southeast	16,573,547	1,687,726	10.2%	432,366	$4.51
Clark County	13,075,220	921,594	7.0%	384,936	$5.08
Outlying	15,535,621	2,440,668	15.7%	(284,009)	$6.38
Total Metro	151,843,373	14,558,640	9.6%	4,188,511	$5.85

Source: Colliers International 4th Quarter Portland Industrial Market Report and Leland Consulting Group.

Detailed industrial statistics for the Westside Market Sector are shown in Table IV-12.

Table IV-12: Westside Industrial Sub-Market Characteristics

Sub-market	Buildings	Inventory (SF)	Total Vacant SF	4Q 2006 Vacancy	2006 Absorption	Average Annual Rental Rate	Average Sales Price Per SF
NW/Guilds Lake	186	8,887,221	363,044	4.1%	20,702	$4.48	n/a
Beaverton/Hillsboro	447	26,745,882	3,690,585	13.8%	98,213	$7.18	$49.04
I-5 South	424	20,176,981	1,388,121	6.9%	1,145,789	$5.40	$68.74
Westside Total	**1,057**	**55,810,084**	**5,441,750**	**9.8%**	**1,264,704**	**$6.55**	**$62.03**

Source: Colliers International 4th Quarter Portland Industrial Market Report and Leland Consulting Group.

Findings:

- At 13.8 percent, the fourth quarter vacancy rate in the Beaverton/Hillsboro sub-market was significantly higher than the overall vacancy rate for the Westside (9.8 percent) and the metro area, which had an overall vacancy rate of 9.6 percent.
- However, despite its higher vacancy rate, the Beaverton/Hillsboro sub-market achieved the highest average annual rental rates on the Westside - $7.18 per square foot compared to $6.55 per square foot for all Westside sub-markets. Further, the Beaverton/Hillsboro submarket achieved a higher average annual rent than the metro area as a whole, where the average rental rate was $5.85 in 2006.
- Total net annual absorption of industrial space in the metro area was 4,188,511 square feet in 2006. An estimated 1.3 million square feet of industrial space, or 30 percent of the metro area's total net annual absorption, was absorbed on the Westside.

2. Office Market

Table IV-13 below shows 2006 general office statistics for the Portland Office Market published by Colliers International. The Portland Office Market consists of six sub-markets. The Westside sub-market encompasses office development in several areas, including Highway 217, Washington Square, the southwest portion of the Portland metro area, Sylvan and the Sunset Corridor, where the Evergreen and Helvetia Areas are located.

Table IV-13: 2006 Office Statistics, Portland Office Market

	Inventory (SF)	Vacancy	2006 Absorption	Average Quoted Rent
All Classes	**62,142,717**	**11.7%**	**721,722**	**$18.61**
Central City	27,283,524	11.3%	394,027	$18.87
Suburban	34,859,524	11.9%	327,695	$18.42

Source: Colliers International 4th Quarter Portland Office Market Report and Leland Consulting Group.

Detailed office statistics for the Westside sub-market are shown in Table IV-14 below.

Table IV-14: Westside Submarket Office Statistics

	Buildings	Inventory (SF)	2006 Vacancy	2006 Absorption	Average Annual Rental Rate	Average Sales Price Per SF
Class A	46	6,563,849	7.9%	(21,415)	$19.70	n/a
Class B	176	6,725,893	16.5%	147,167	$16.98	$189.78
Class C	69	1,541,943	13.6%	58,191	$14.62	$222.37
Westside Total	**291**	**14,831,685**	**12.4%**	**183,943**	**$17.48**	**$198.37**

Source: Colliers International 4th Quarter Portland Office Market Report and Leland Consulting Group.

Findings:

- At 12.4 percent, the 2006 vacancy rate for all classes of office space in the Westside sub-market was only slightly higher than the fourth quarter vacancy rate for the metro area (11.9 percent). In recent years, office vacancy on the Westside and, in

particular, in the Sunset Corridor, has decreased as the market gradually recovers from the economic recession that occurred in the early 2000s.

- An estimated 25 percent of the metro area's total net annual absorption of office space occurred in the Westside sub-market in 2006.
- At $17.48 per square foot, the average annual rent for office space in the Westside sub-market was nearly a dollar less than the average quoted per square foot rent for the broader suburban market ($18.42) in 2006.

V. Public Infrastructure

A. Sanitary Sewer System

There is currently an existing sanitary sewer conveyance network consisting of 10-inch, 12-inch, and 18-inch lines adjacent to the south side of the Evergreen concept planning area (see Figure V.1). Based on previous findings documented in a study performed by Group Mackenzie, it appears this sewer may be able to service the southern quarter of the Evergreen area, although, further investigation will be required to determine existing sewer capacity. No sanitary sewer service mains have been identified along the north, west, and east borders of the planning area. It is anticipated that a new sanitary sewer conveyance network will be required to service the Evergreen concept planning area.

Clean Water Services is the public utility responsible for providing wastewater and stormwater services in the Tualatin River Watershed. The primary regulatory driver for sanitary sewer is Clean Water Services and their Design and Construction Standards. These standards regulate the design, conveyance, and installation of sanitary sewer within the Washington County UGB. The current standards were published in March 2004; however, these are currently in the revision process. These revisions have been in process for nearly a year and the public comment process closed in March 2007. The adoption date for the revised standards is anticipated for summer of 2007. Prior to their adoption, the draft revisions will be used during the Evergreen concept planning for evaluating future development requirements.

B. Water System

There is currently a water distribution network adjacent to the east and south side of the Evergreen concept planning area (see Figure V.2). There are two service mains along NW Evergreen Road. One main is an 18-inch City of Hillsboro water line ad the other is the 66-inch high-pressure transmission water line owned by the Joint Water Commission.[18] Based on previous findings documented in a study performed by Group Mackenzie, the 66-inch high-pressure water line is not available for connecting into and providing direct service to the Evergreen area. It does, however, provide a large volume of water and adequate pressure to support the existing 18-inch water line along Evergreen Road and future distribution networks. According to the City of Hillsboro, the 18-inch water line has adequate flow and pressure to service the project area. No water distribution service mains have been identified along north, east, and west borders of the Evergreen concept planning area.

The primary regulatory driver for the water distribution network is the City of Hillsboro Water Department and their Engineering and Construction Standards. These standards

[18] The Joint Water Commission (JWC) consists of TVWD and the cities of Hillsboro, Beaverton, Forest Grove and Tigard. The JWC owns a 60 million gallon per day (MGD) treatment plant and a 20 million gallon reservoir. TVWD owns 10 MGD of treatment capacity. See http://www.tvwd.org/pdf/fact_sheets/jwc_fact_sheet.pdf.

regulate the design and installation of water distribution within the City of Hillsboro Water District. The current standards were published in the year 2005.

C. Stormwater System

This section reviews the stormwater conditions in the Evergreen concept planning area. The Evergreen area is flat to gently sloping and populated primarily with hydrologic group C and D soils. These soils have relatively low rates of infiltration and high runoff potential, particularly when wet. Average annual precipitation is on the order of 40 inches per year, with the majority of precipitation falling during the winter months.

There is currently no stormwater conveyance system within the Evergreen planning area, with the exception of a storm system in the eastern section of Evergreen Road (see Figure V.3). In general, the eastern section of Evergreen is curb and gutter and served by an enclosed storm system. The western section of Evergreen Road is drained by roadside ditches. The storm system within Evergreen Road should have limited capacity to accept drainage from the Evergreen Road Planning Area. The original system design should have included capacity for flow from the proximal areas of the Evergreen Road Planning Area based on their zoned use at the time of design, which was agricultural.

The primary regulatory driver for stormwater management is Clean Water Services and their Design and Construction Standards. These standards regulate the conveyance, detention and water quality treatment of stormwater with the Washington County UGB. The current standards were published in March 2004; however, these are currently in the revision process. These revisions have been in process for nearly a year and the public comment process closed in March, 2007. The adoption date for the revised standards is anticipated for summer of 2007. Therefore, the draft revisions are the appropriate standards through which future development requirements should be evaluated. The draft standards require stormwater quality treatment for all impervious area created by the development, whether it is new or re-developed impervious area. Stormwater treatment is required for the first 0.36-inchs of precipitation over a 4-hour period.

The draft standards also allow the use of Low Impact Development (LID) techniques in concert with traditional quality and quantity control methods. LID techniques can be used to provide quality treatment and reduce the requirements for quantity control. The inclusion of LID techniques in the Design and Construction Standards are new to the draft standards and are not included in the current standards.

Quantity control, or detention, is required when there is an identified downstream deficiency. The discharger can either be required to improve the downstream conveyance system to eliminate the downstream deficiency or provide detention to prevent an increase in peak runoff rates for the 2, 10, and 25-year discharges. There is currently extensive flooding of Waible Gulch in the Evergreen area; therefore, it is reasonable to assume that quantity control will be required for the creation of new impervious area.

The draft standards require stormwater conveyance for the 25-year build-out flow. All public storm systems components that are located in private rights-of-way will require

easements granted to Clean Water Services. This is inclusive of pipes and management facilities.

A potential additional regulatory factor for stormwater design in the Evergreen Road Planning Area is the Endangered Species Act. If a federal nexus exists in the permitting of any development within the Evergreen concept planning area, stormwater management guidelines promulgated by the National Marine Fisheries Service (NMFS) could be required. These guidelines could potentially increase the requirements for stormwater management. NMFS guidelines specify water quality treatment for 72-percent of the 2-year, 24-hour storm, or 1.80-inches in 24 hours. Detention is to be provided for half of the 2-year, 24-hour event through the 50-year, 24-hour event. Providing facilities to meet these standards will require greater commitment of area for resources than those required under the Clean Water Services standards.

D. Private Utilities

1. Portland General Electric

Electric power is supplied to the planning area by Portland General Electric (PGE). PGE is planning to build a technology enhanced substation on approximately 10 acres within the Evergreen concept planning area. The substation is expected to be located west of NW Sewell Road and north of existing BPA right-of-way. This substation will be configured in a manner similar to PGE's existing Sunset substation which is located at 235th and Evergreen.[19] Both high tech and general service customers will be served from this substation.

The station design will include:

- Ring bus configuration expandable to breaker and one-half bus configuration
- A minimum of two 115kV transmission lines with a maximum buildout of four 115kV lines
- Distribution Transformers ranging from 50 MVA to 70 MVA
- 13kV or 25kV metalclad distribution switchgear
- Underground and overhead distribution systems
- Substation Integration system for control and monitoring of substation components
- Power Quality metering system

PGE is currently considering two areas for the routing of the two 115kV transmission lines that will initially serve the substation. One of the areas under consideration is in the vicinity of the existing BPA right-of-way, through the northern half of the concept planning area; the second area includes Sewell Road, Meek Road and Highway 26.

[19] April 19, 2007 Memo from PGE System Planning Department regarding Evergreen UGB Expansion Area Vision.

2. NW Natural Gas

NW Natural Gas is the natural gas provider to the planning area.

3. Communications

Communications companies serving the area include Qwest and Verizon (telephone) and Comcast (digital phone, cable and broadband services).

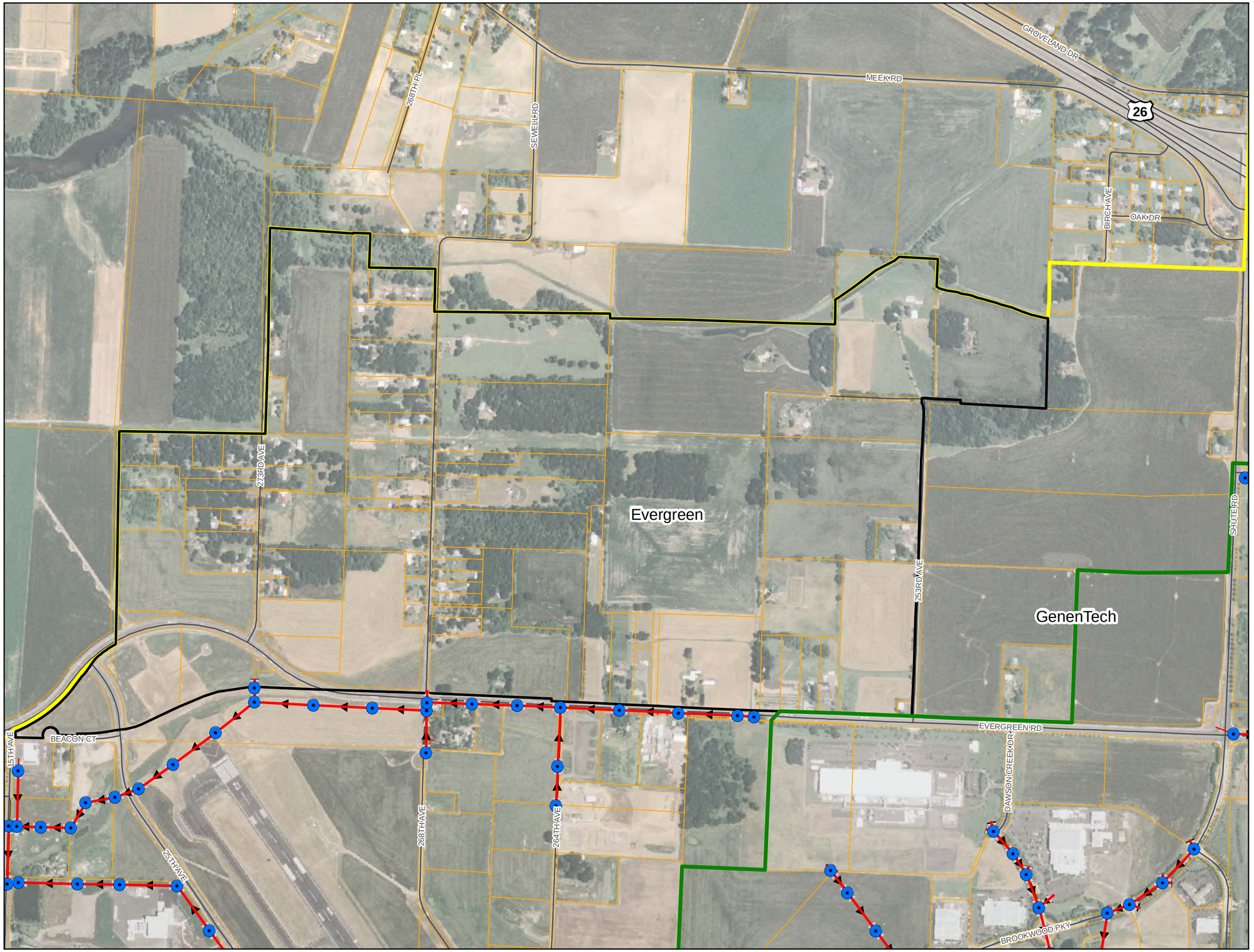
4. Bonneville Power Administration

A Bonneville Power Administration (BPA) high-voltage transmission line is located within the Evergreen concept planning area (see Figure V.4). The high-voltage transmission line runs in the east-west direction through the north central portion of the Evergreen area. The routing is approximately 1000 feet south of the northern border of the area. The transmission line falls within a public utility easement and, therefore, development within and adjacent to the transmission line must be in accordance with BPA criteria and standards. Criteria pertaining to vertical and horizontal clearances, acceptable structures that may fall within the easement, and construction within the easement will restrict development in this area.

Figure V.1

Sanitary Utilities from the City of Hillsboro

Evergreen UGB Concept Plan



LEGEND

- Evergreen Site (Planning Area = 532.93 ac)
- UGB
- Roads
- Tax Lots

City of Hillsboro Sanitary Utilities

- Manhole
- Cleanout
- Pump Station
- Gravity Mainline
- Stub Out
- Forces
- Dry Line
- Abandoned Mainline
- Lateral
- Sanitary Plant Boundary

N

0 800 1,600

Feet

Angelo planning group

CH2MHILL

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Water Utilities Legend

- Abandoned Domestic Meter
- Active Domestic Meter
- Abandoned Irrigation Meter
- Active Irrigation Meter
- Sampling Stations
- Interconnect
- Hydrant
- Fitting
- Active Access Vaults
- Active PRV Valve
- Active Transmission A/R Valve
- Abandoned Valve
- Abandoned Cathodic Test Station
- Active Cathodic Test Station
- Active Mainline Valve, Found
- Active Mainline Valve, Not Found
- Abandoned Mainline Valve
- Active Blow Off Assembly Valve, Found
- Active Air Relief Valve, Found
- Active Transmission A/R Valve, Found
- Active Transmission B/O Valve, Found
- Active Transmission Valve, Found
- Active Backflow Device
- Abandoned BAckflow Device
- Abandoned Hydrant Main
- Active Hydrant Main
- Abandoned Mainline
- Active Mainline
- Active Transmission Subline
- Active Transmission Main
- Domestic Service Lateral
- Abandoned Domestic Service Lateral
- Fire Service Lateral
- Abandoned Fire Service Lateral
- Irrigation Service Lateral
- Abandoned Irrigation Service Lateral

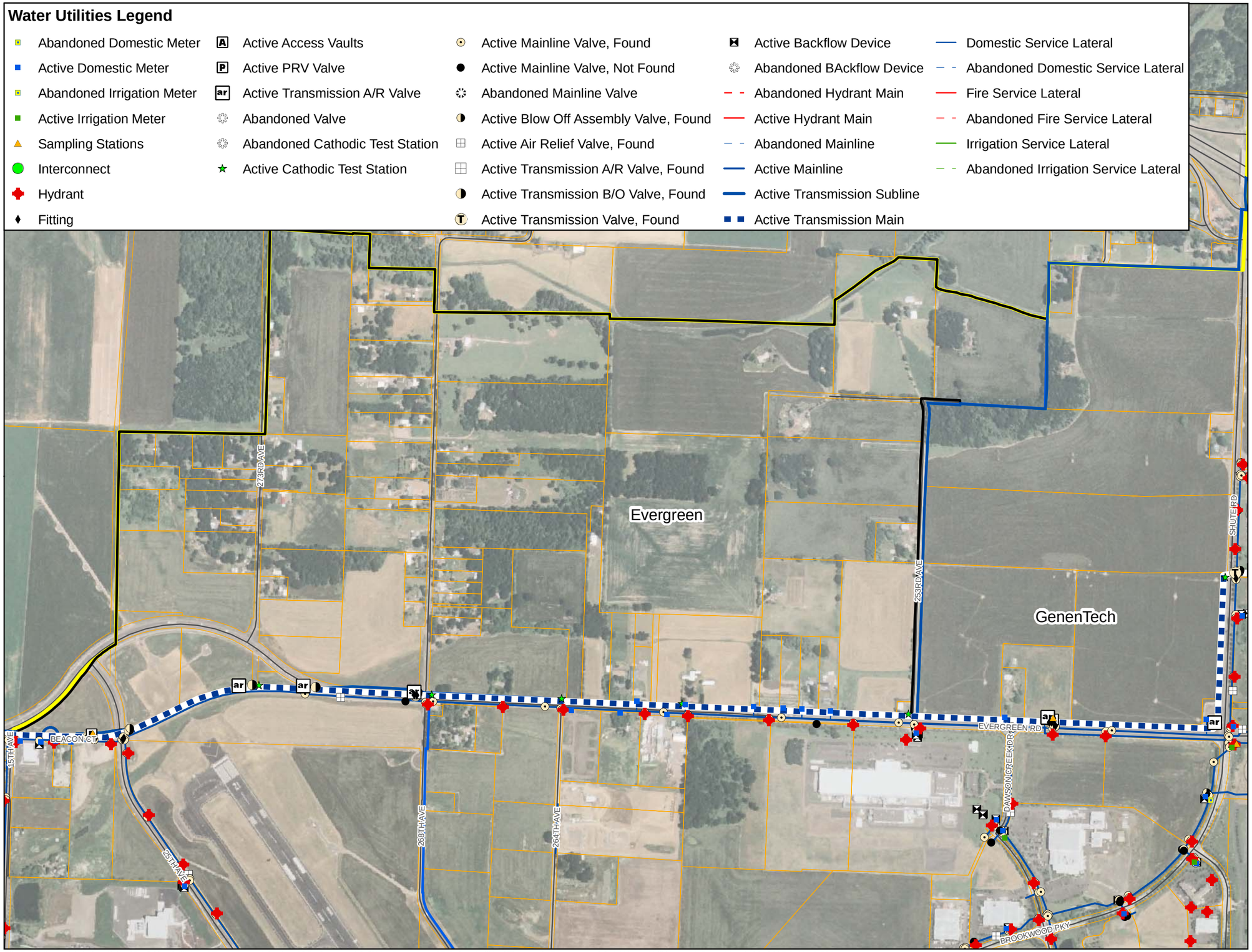

Figure V.2

Water Utilities from the City of Hillsboro

Evergreen UGB Concept Plan

LEGEND

- Evergreen Site (Planning Area = 532.93 ac)
- UGB
- Roads
- Tax Lots
- Water Service Territory
- High Pressure
- Water District

N

0 800 1,600

Feet

Angelo planning group

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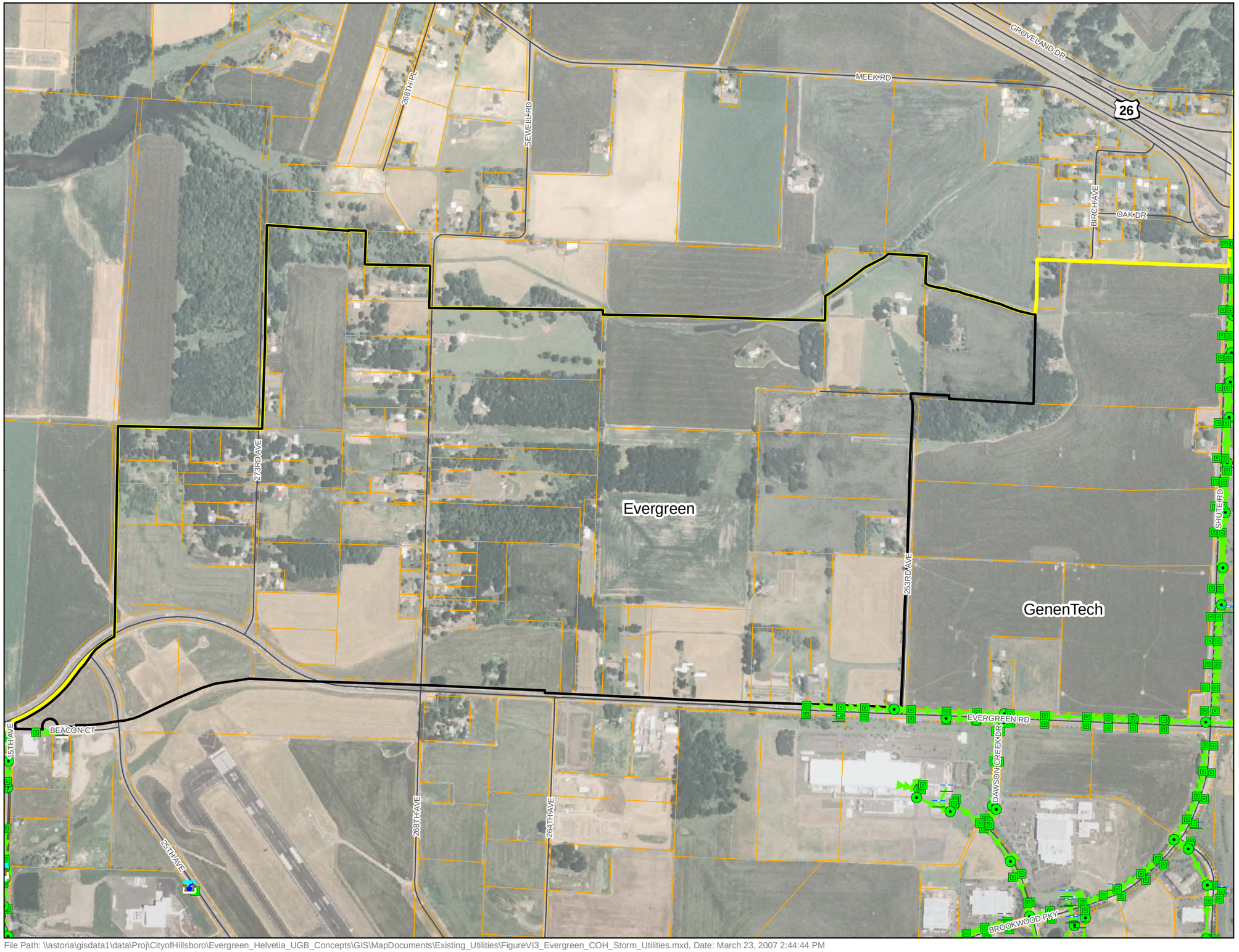
Figure V.3

Stormwater Utilities from the City of Hillsboro

Evergreen UGB Concept Plan



LEGEND

- Evergreen Site (Planning Area = 532.93 ac)
- UGB
- Roads
- Tax Lots

City of Hillsboro Stormwater Utilities

- Manhole
- Catch Basin
- Cleanout
- Inlet
- OF
- Water Quality Facility
- Active Mainline
- Abandoned Mainline
- Private Active Mainline
- Structure Lateral
- Service Lateral
- Private Lateral

N

0 800 1,600

Feet

Angelo planning group

CH2MHILL

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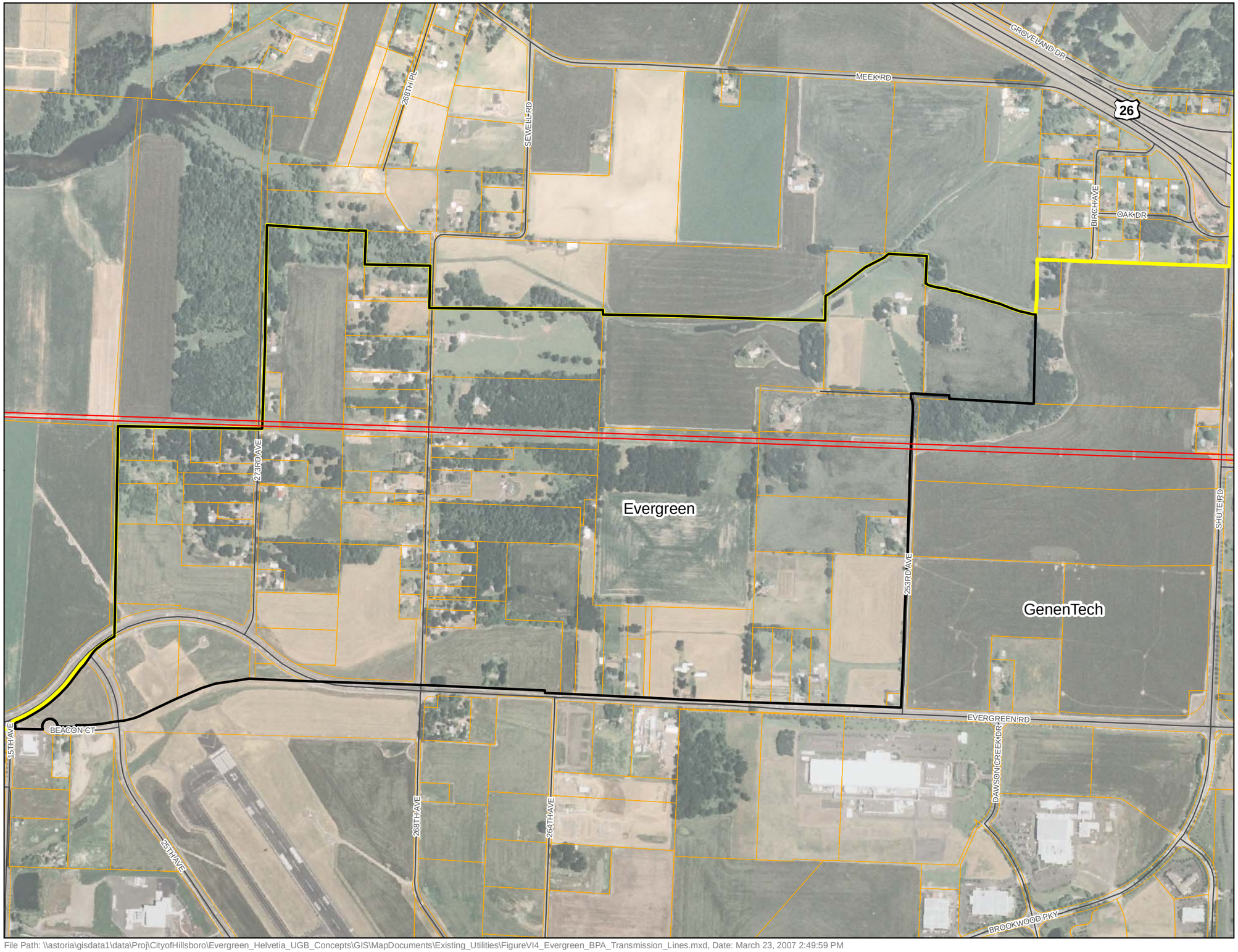

Figure V.4

BPA Transmission Lines

Evergreen UGB Concept Plan

LEGEND

- BPA Transmission Line
- Evergreen Site (Planning Area = 532.93 ac)
- UGB
- Roads
- Tax Lots

N

0 800 1,600

Feet

Angelo planning group

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VI. Public Facilities

A. Parks

There are currently no public parks or designated public open spaces within the Evergreen planning area. Glencoe Creek Park is the closest recreation area, located approximately one mile southeast of the concept planning area. The City of Hillsboro Parks and Recreation District will serve this area once land is incorporated into the city, after annexation.

B. Schools

The Evergreen area is within the Hillsboro School District. There are no public school facilities within the Evergreen planning area. This area is within the West Union Elementary School, Evergreen Middle School, and Liberty High School service boundaries.

C. Fire

There are currently no public service facilities within the Evergreen planning area. Through an intergovernmental agreement with Washington County, the City of Hillsboro's Fire and Rescue serves the area. The nearest fire station is the Ronler Acres Fire Station, Station 3, located at 4455 NW 229th Avenue. Staffed by a 9-person company, Station 3 serves Hillsboro's high-tech area and is equipped to handle associated hazardous materials emergencies.[20]

D. Police

There are currently no public service facilities within the Evergreen planning area. Through an intergovernmental agreement with Washington County, the City of Hillsboro's Police Department serves the Evergreen area.

[20] See Hillsboro Fire and Rescue, http://www.ci.hillsboro.or.us/Fire/103.aspx

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VII. Natural Resources

The following overview provides a guide to natural resources planning in the Evergreen concept planning area. Figure VII.1 provides an orientation to the significant natural resources in the vicinity of the Evergreen area. The focus of this section is on generalized natural features and related regulatory information. The information is intended as an initial overview based upon published information and does not reflect observations from site survey. Natural features characterizations could change as supplemental data and field information become available. For a more complete preliminary list of natural features in the Evergreen area and the regulatory framework applicable to concept planning in Evergreen see Appendix B, *Natural Resources Report.*

A. Natural Features

Defining the natural landscape in the Evergreen area is the Lower McKay Creek streamshed. The major stream in the Evergreen area is Waible Gulch, a tributary of McKay Creek. The topography is flat to gently rolling, ranging from about 205 feet elevation at NW 253rd Avenue (east) to about 170 feet at the Waible Gulch floodplain (north). The flow of water and energy is generally from east to west; the northern portion of the planning area flows directly to Waible Gulch; the southern portion flows to a ditched tributary of McKay Creek. Natural features and environmental constraints identified in the 534-acre Evergreen planning area include riparian corridors, wetlands, floodplains, groundwater resources, and natural areas.

1. Groundwater Hydrology

Currently, most rainfall infiltrates the soil mantle. The amount of impervious surface area is relatively low. Surface runoff mostly occurs during storms, and then only at low elevations. Infiltrated water enters a dynamic soil storage zone that meters out the steady downslope movement of water. The amount of water stored in soil affects the volume and duration of flow discharged to surface waters.

Shallow groundwater is present at varying soil depths, and varies by season and rainfall. Agricultural and rural-residential land uses probably altered groundwater quantity and quality through ditching and field tiling.

Currently, there is no local groundwater program. In the Tualatin Basin, the general hydrogeologic units consist of the Lower Sedimentary Unit, which overlies the Columbia River Basalt and the Basement Confining units (USGS 2005). (See Appendix B for characteristics of hydrogeologic units.)

2. Soils

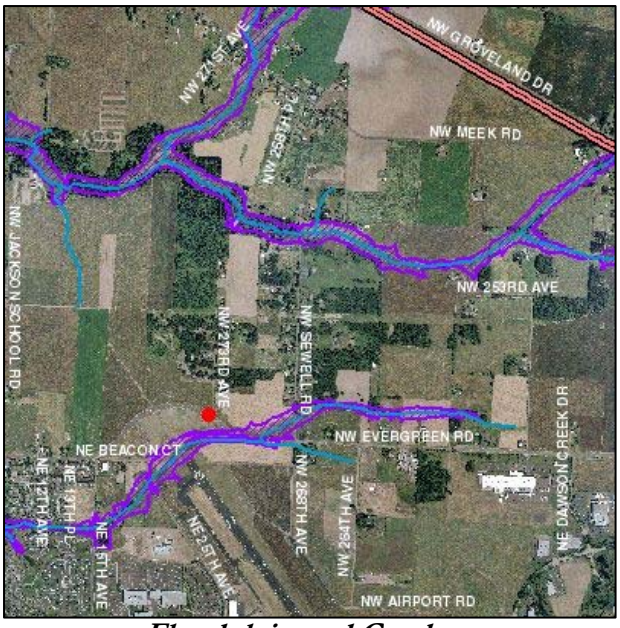
The presence and distribution of soil types at the planning area suggest that lands are best suited to certain uses, or limited by slope steepness, erosion hazard, or other factors. According to the Soil Survey of Washington County, soil types range from silt loam and silty clay loam along lowland drainages to silt loam on adjacent higher areas; correspondingly, lowlands are characterized by frequent flooding, low productivity, and severe limitation for

building site development; uplands have no flooding, high productivity, and moderate to severe limitations for building site development.

- Lowland soil along Waible Gulch is primarily Verboort silty clay loam;
- Soils at floodplains adjacent to Waible Gulch are Aloha, Dayton, or Woodburn silt loams; Dayton silt loam is a hydric soil;
- Lowland soils along the tributary to McKay Creek are primarily Cove silty clay loam and Dayton silt loam; both are hydric soils;
- Soils on upland areas adjacent to the McKay Creek tributary are Amity and Woodburn silt loams;
- Steep slopes:
  - No surfaces with greater than 25% slope are found within the planning area (Figure VII.4)
- Erosion hazard is:
  - Moderate to slight at Woodburn silt loam
  - Slight at all other soil units in the planning area

3. Floodplain

This section reviews the floodplains in the Evergreen Road Planning Area. The Evergreen area is flat to gently sloping and populated primarily with hydrologic group C and D soils. These soils have relatively low rates of infiltration and high runoff potential, particularly when wet. Average annual precipitation is on the order of 40-inches per year, with the majority of precipitation falling during the winter months.



Floodplain and Creeks

The major stream in the Evergreen area is Waible Gulch a tributary of McKay Creek. Waible Gulch runs east to west near the north side of the planning area. It is mapped as a FEMA Zone A floodplain. A Zone A floodplain is an approximate area of flooding during the 1-percent or 100-yerar annual recurrence event. This area is not included in the detailed floodplain study and no base flood (100-year) elevations or flood hazard factors have been determined. Clean Water Services' "Watershed 2000" study predicts that 100-year flows in the McKay Creek area over the next 40 years will increase by 0.6-percent. To determine the actual extent of the Wiable Gulch floodplain in the planning area a hydrologic and hydraulic analysis would be required prior to any design work.


Waible Gulch looking east from Sewell Road

An additional drainage flows east to west along the south side of the Evergreen Road Planning Area. This drainage crosses Evergreen Road near the north edge of the Hillsboro Airport. It is designated a FEMA Zone A floodplain near its crossing of Evergreen Road. The exact extent of the FEMA designation is unclear due to the relocation of Evergreen Road to the north following the creation of the Flood Insurance Maps.

Clean Water Services standards, both current and proposed (see Section V., Public Infrastructure, Sanitary Sewer System and Stormwater System subsections in this report), require no net fill within a FEMA floodplain. To determine the actual extent of the floodplain in the planning area a hydrologic and hydraulic analysis would be required prior to any design work. The flows and extent of flooding in Wiable Gulch and the southerly drainage should be determined through hydrologic and hydraulic analysis prior development.

B. Regulatory Framework

1. Washington County Comprehensive Plan

Washington County has identified significant natural resources in the planning area. These area show on its Rural/Natural Resources Plan Significant Natural Resources plan (mapped natural features are approximate, subject to refinement of boundaries through site assessment) (see Figure VII.2) and include the following:

- Water Area and Wetlands & Fish and Wildlife Habitat—Water areas and wetlands (i.e., 100-year floodplain, drainage hazard areas, and ponds) that are also fish and wildlife habitat:
- Waible Gulch, including its floodplain and riparian corridor along the northern boundary of the planning area;
- The tributary to McKay Creek is identified as a river feature with no associated riparian, wetland, or habitat areas;
- No other natural features are identified on the county's resources map.

2. Clean Water Services

Clean Water Services, in partnership with local jurisdictions and the watershed community, manages the surface water system of the urban portion of the Tualatin River Basin. The *Healthy Streams Action Plan* identifies policy and program refinements, as well as surface water

and stormwater projects to be funded through CWS' capital improvement program to improve water quality, water quantity management, and aquatic species habitat. The Healthy Streams Plan articulates the latest scientific information related to watershed and stream management, and identifies and prioritizes projects and activities that could be implemented to further improve regional water resources management. For example, the plan proposes three types of stream health improvement projects in the Lower McKay Creek Watershed:

- Flow Restoration project at McKay Creek near Glencoe and Zion Church Road
- Community Tree Planting Challenge projects along Waible Gulch and tributaries
- Four Culvert and Weir Retrofit projects at Waible Gulch and tributaries

The Healthy Streams' *Environmental Data and Analysis* describe current baseline environmental conditions in the watershed. The socioeconomic and scientific data and analysis were used to develop the recommendations in the Action Plan. Detailed methodology, data, and maps are available through the Healthy Streams Plan's electronic Appendices and Internet links provided in the text, all of which is too extensive to be covered in this technical memorandum. Environmental conditions highlighted by the plan are:

- **Lower McKay Creek:** This creek contains high gradient headwaters and low gradient valley bottom stream types. The upper watershed to the headwaters is relatively undisturbed and in good health, where the Effective Impervious Area is only about 0-10%. The lower watershed is more disturbed and in moderately good health. The Effective Impervious Area varies, but is as high as 40% in some areas. Stream flow is relatively healthy with few deficiencies caused by water diversions (typically as low as 0-4 cubic feet per second total diversions). Tree canopy along the creek is high in the upper reaches of the watershed and moderate to high in the lower reaches. Streambed material is typically clay/silt throughout most of the system with areas of bedrock and gravel/cobble in a tributary at North Plains. Large woody debris is deficient in the upper reaches of the watershed, but plentiful in the lower reaches. McKay Creek is used by cutthroat trout for spawning and rearing in the upper reaches and for rearing and migration in the lower reaches; consequently, the fish management priority is for cutthroat trout. The priorities for stormwater management are for both quantity and quality. Base flow management is a high priority for the watershed.

- **Waible Gulch:** This creek contains high gradient headwaters, low gradient headwaters, and low gradient valley bottom types. Stream flow is relatively healthy with few deficiencies caused by water diversions (typically as low as 0-4 cubic feet per second total diversions). Although Effective Impervious area is very low (0-10%), agricultural practices have affected stream quality. Stream quality in the lower watershed and most tributaries is moderately good. Stream quality in upper watershed is moderate. Tree canopy along the creek is variable, with low to very low coverage. Streambed material is typically clay/silt from headwaters to confluence

with McKay Creek. Large woody debris is deficient at most stream reaches in the watershed. The lower reach of Waible Gulch is used by cutthroat trout for rearing and migration; consequently, the fish management priority is for cutthroat trout. The priorities for stormwater management are for both quantity and quality. Base flow management is a high priority for this watershed.

The *Sensitive Areas and Vegetated Corridors* program, the District's stormwater management program, intends to improve water quality, protect fish habitat and manage drainage by operating and maintaining the stormwater conveyance system, establishing design and construction standards, regulating activities that can impact the watershed and enhancing streams and floodplains. The program regulates development activities in water quality sensitive areas, and in vegetated corridors along waters and wetlands, such as these features in the Evergreen planning area:

- Water Quality Sensitive Areas include Waible Gulch and the tributary to McKay Creek; existing and created wetlands, ponds, and instream impoundments
- Vegetated Corridors include variable-width buffers adjacent to Sensitive Areas that protect the water quality functions of the water quality Sensitive Area
- Mapped Vegetated Corridors are only estimates. Exact determinations are made at sites at the time of development through the requirements of Clean Water Services' Design and Construction Standards and the city Development Code. Corridors may be adjusted based on slope, stream size, and status, or site conditions.

3. Tualatin Basin Fish and Wildlife Program

The Tualatin Basin Goal 5 Program is the result of a cooperative effort among Metro, Washington County, CWS, and cities in the Tualatin River Basin to develop a watershed approach that improves urban fish and wildlife habitat. The program is based upon an inventory of regionally significant Goal 5 fish and wildlife habitat conducted by Metro (see Figure VII.3). The basin program was adopted by the specially-formed Tualatin Basin Natural Resources Coordinating Committee in April 2005, by Metro in September 2005, and is pending acknowledgment by LCDL based on a decision made in October 2006. Local jurisdictions are currently in the process of implementing initial program compliance efforts.

The program is non-traditional in the sense that it is based upon cooperative proactive efforts, incentives, and investment rather than on regulation of natural resources areas. Nonetheless, there is a regulatory aspect to the efforts which focuses on allowing and encouraging habitat-friendly development practices and low impact development techniques. The Basin program recognizes that fish and wildlife habitat in riparian resource areas is potentially affected by activities that impact water quality, and that these activities can occur anywhere in the watershed—not just in identified resource areas. The program therefore describes three general categories of land that may occur in the planning area (subject to field delineation) and described below.

- Strictly Limit (SL) is applied to areas where existing protection and conservation measures are already in place which restrict development, consistent with Clean

Water Services' standards for Vegetated Corridors (generally 50 feet or wider buffers along streams and 125-foot buffers along the Tualatin River, with requirements for enhancement of degraded conditions).

- Moderately Limit (ML) is applied to Class I and II Riparian resource areas identified in Metro's Goal 5 inventory which fall beyond Vegetated Corridor buffers. For such natural areas, conservation and restoration area encouraged, and the revenue tools the Basin has at its disposal will be directed to help make such conservation and restoration happen. These revenue tools include a $95 million investment with the Partners' plan to spend on stream system improvements over the next 20 years, under the guidance of Clean Water Services' Healthy Streams Plan. Program efforts applicable to the SL and ML areas are intended to protect and improve critical core urban habitat areas throughout the basin.

- Lightly Limit (LL) is applied to all other classes of habitat resource identified in Metro's inventory. Protection efforts for LL resource areas are discretionary, primarily relying upon incentives to encourage property owners and developers to preserve and improve conditions in these areas. This can be achieved in a variety of ways, some of which may yet be determined through concept planning for new urban areas. The LL designation also applies to non-resource areas within the basin, in effect including the entire urban watershed. For these areas, low-impact development practices are encouraged through education and incentives. The program recognizes new urban areas as an opportunity to explore a mores comprehensive approach to mitigating environmental impacts of stormwater.

4. City of Hillsboro

As of May 2, 2006, the City of Hillsboro had not annexed the Evergreen planning area nor revised its Significant Natural Resources Overlay District map to include the planning area. On January 5, 2007, the City of Hillsboro proposed text amendments to the Hillsboro Comprehensive Plan (HCP), Zoning & Subdivision Ordinances (ZOA and SOA) related to implementation of the Tualatin Basin Fish & Wildlife Program to comply with Metro Urban Growth Management Functional Plan, Title 13: Nature in Neighborhoods.

There are no additional regulations being proposed for the Tualatin Basin Program. The regulatory component of the Program consists of existing CWS Design & Construction standards/vegetated corridor requirements applicable to proposed development and redevelopment activities within and adjacent to areas designated as Water Quality Sensitive Areas (see subsection 2, Clean Water Services, above). The Program is intended to convey a benefit to the developer in exchange for the use of habitat-friendly development practices. It is not intended to increase development restrictions. Use of the habitat friendly development standards would be at the option of the developer/property owner.

The Tualatin Basin Program encourages the use of environmentally sensitive site design and construction practices throughout the watershed in order to reduce the impact of new development on fish and wildlife habitat in the basin, and to aid in improving environmental health. These design and construction practices include a variety of techniques known

collectively as Habitat Friendly Development. A subset of Habitat Friendly Development is Low Impact Development (LID) which includes methods of reducing stormwater runoff and the overloading of storm sewers through the integration of open space and pervious surfaces into new development or existing development through retrofitting.

The Tualatin Basin Goal 5 Program Report recognizes that most jurisdictions in the Basin will need to remove barriers in their existing regulations in order to allow for a Habitat Friendly/LID approach to meeting stormwater management requirements. The proposed HCP, ZOA, and SOA amendments will fulfill Hillsboro's obligation under the Tualatin Basin Natural Resources Coordinating Committee's Intergovernmental Agreement with Metro to remove barriers to utilization of LID techniques and to encourage and facilitate the use of other habitat-friendly development practices.

5. National Wetland Inventory

The National Wetlands Inventory for the Hillsboro, Oregon quadrangle, as mapped by the USDI Fish and Wildlife Service (USFWS), indicates that potential wetland features are associated with the Waible Gulch drainage along the northern boundary of the Evergreen planning area:

- Most of the channel of Waible Gulch is identified as a *palustrine emergent seasonally flooded excavated* (PEMCx) wetland;
- Smaller portions of the channel of Waible Gulch are identified as a *palustrine forested temporarily flooded* (PFOA) and *palustrine forested seasonally flooded* (PFOC) wetlands;
- An instream impoundment is identified as a *palustrine unconsolidated bottom semipermanently flooded excavated* (PUBFx) wetland;
- Two other wetland features are identified adjacent to Waible Gulch:
  - A *palustrine aquatic bed semipermanently flooded excavated* (PABFx) wetland is identified in the northwestern corner of the planning area:
  - A *palustrine unconsolidated bottom semipermanently flooded excavated* (PUBFx) wetland is identified in the northwestern portion of the planning area.

6. Federally and State Listed Species

The USFWS list of *Federally Listed Threatened, Endangered, Proposed, Candidate Species and Species of Concern Which May Occur in Washington County* identifies 16 listed, proposed, or candidate species that may occur in the City of Hillsboro. Of those 16 species, five animals and six plants have the potential to occur in the vicinity of the Evergreen concept planning area:

Birds

Bald eagle	T
Yellow-billed cuckoo	C
Streaked horned lark	C

Fish	
Steelhead (upper Willamette River)	T
Amphibians & Reptiles	
Oregon spotted frog	C
Plants	
Golden Indian paintbrush	T
Willamette daisy	E
Howellia	T
Bradshaw's lomatium	E
Kincaid's lupine	T
Nelson's checker mallow	T

E = Endangered
T = Threatened
C = Candidate

The Oregon Natural Heritage Information Center (ORNHIC) lists two records of state- or federally-listed species in the vicinity of the planning area. These records indicate that Oregon Department of Fish and Wildlife fisheries biologists determined that steelhead (Upper Willamette River ESU, winter run) - federally listed as Threatened - previously were undocumented, but should be considered as potentially occurring in the Tualatin River and its tributaries, and in McKay Creek and its tributaries.

The ORHNIC database contains no other records of federal or state listed species within two miles of the Evergreen planning area.

7. Permitting Requirements

The following is a preliminary list of potential environmental permitting requirements for implementing the Evergreen concept plan, and reflects potential federal, state, and local requirements. The environmental considerations identified in this regulatory list should be considered preliminary; actual environmental effects and regulatory requirements will become better known after finalizing the plan and refining the natural features and their boundaries. Some permitting requirements may yet be identified, and others may be eliminated during plan development. The affected jurisdictions recommend pre-application meetings to refine possible permit requirements.

In some cases, permitting requirements are presumed at this conceptual level of project development, although uncertainty exists. Some regulated activities and requirements may only be fully understood after development plans are set because construction methods vary. Mitigation measures during construction can reduce environmental effects that cannot be avoided or minimized through engineering design. All of the regulations require some form of compensation for resources that would be impacted.

- **Federal**
  - Clean Water Act—for disturbances to waters and wetlands; also, effects on water quality

- Endangered Species Act/Magnuson-Stevens Act—for effects on listed threatened or endangered species, their habitats, and fisheries (e.g., steelhead trout)
- National Historic Preservation Act—for effects on cultural and historic resources

- **Oregon**
  - Oregon Wetland Removal/Fill Law—for disturbances to waters and wetlands
  - Fish Passage Rule—for passage by native migratory fish

- **Clean Water Services District**
  - Design and Construction Standards & Service Provider Letters (SPL)—for impacts to vegetated corridors
  - Site Development Permit—for erosion control and water quality protection

- **Washington County/City of Hillsboro**
  - Development Permit—for impacts to Significant Natural and Cultural Resources, including wildlife habitat, floodplains, and drainage hazard areas

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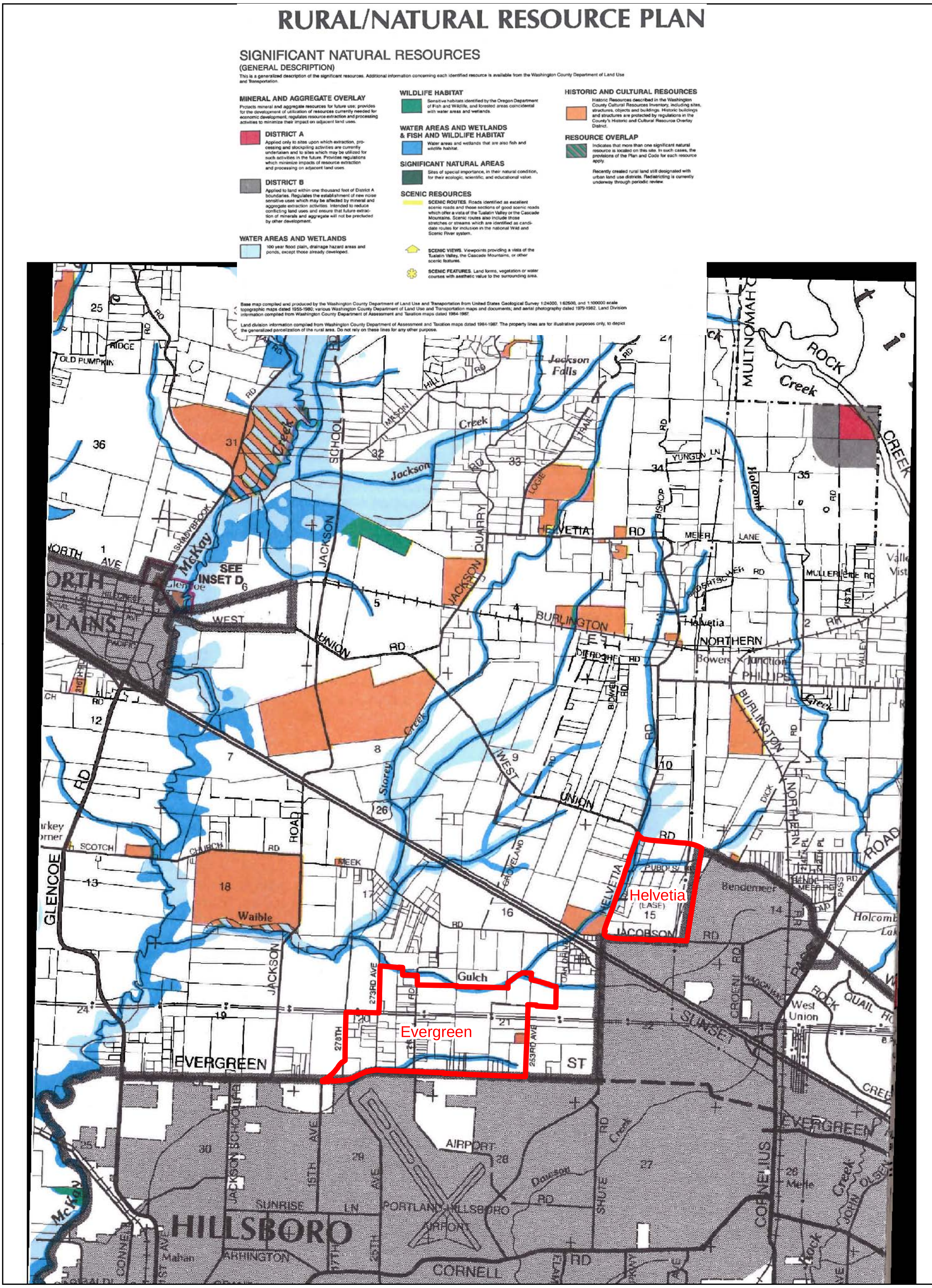


LEGEND

Project Sites

N

0 3,500 7,000
Feet

Figure VII.1

Broad Scale Natural Resources Study Area

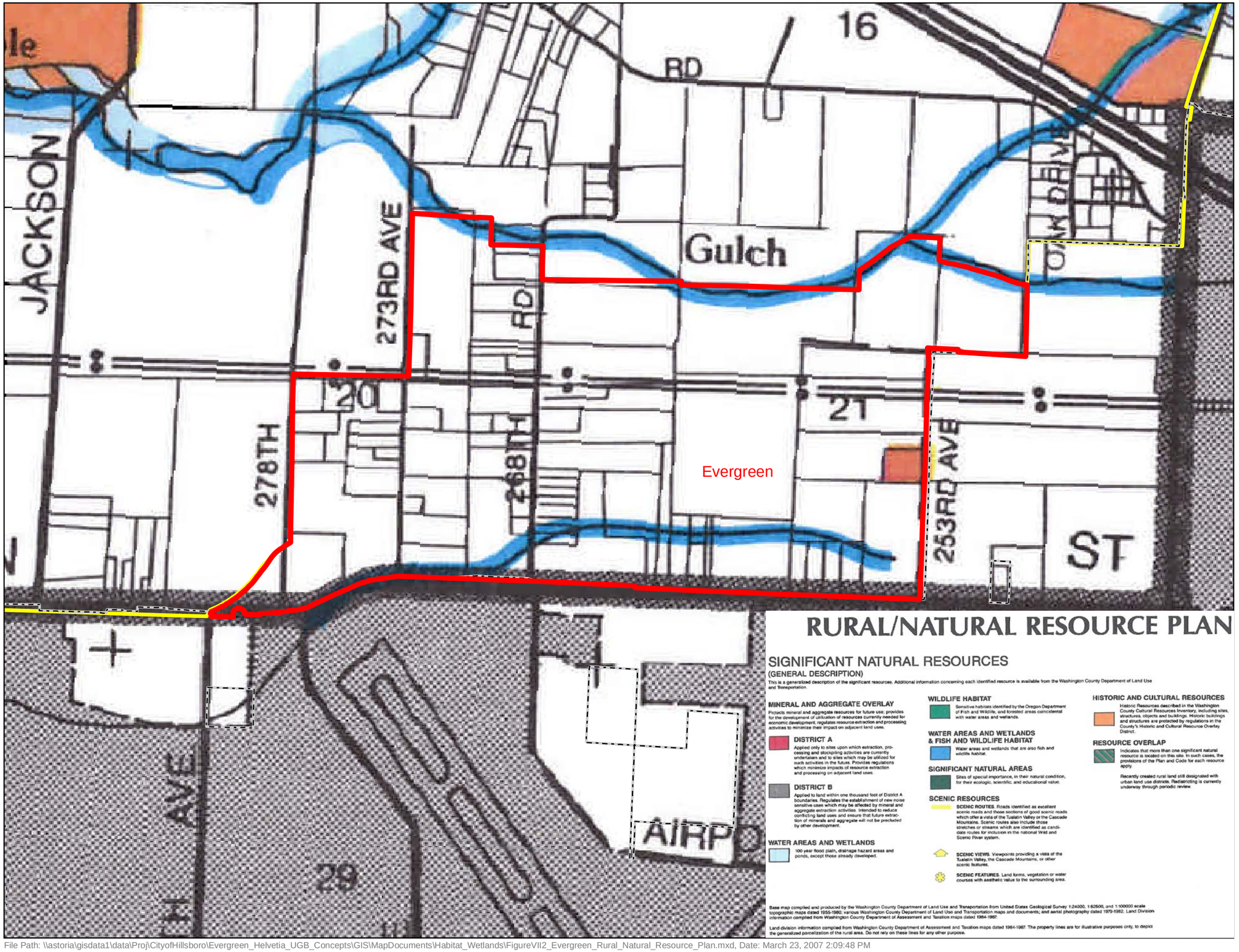
Evergreen/Helvetia
UGB Concept Plan

CH2MHILL

Figure VII.2

Significant Natural Resources, Rural/Natural Resource Plan Element, Washington County Comprehensive Plan

Evergreen UGB Concept Plan



LEGEND

- Evergreen Site (Planning Area = 532.93 ac)
- Hillsboro City Limits
- Hillsboro UGB

N

0 1,000 2,000

Feet

Angelo planning group

CH2MHILL

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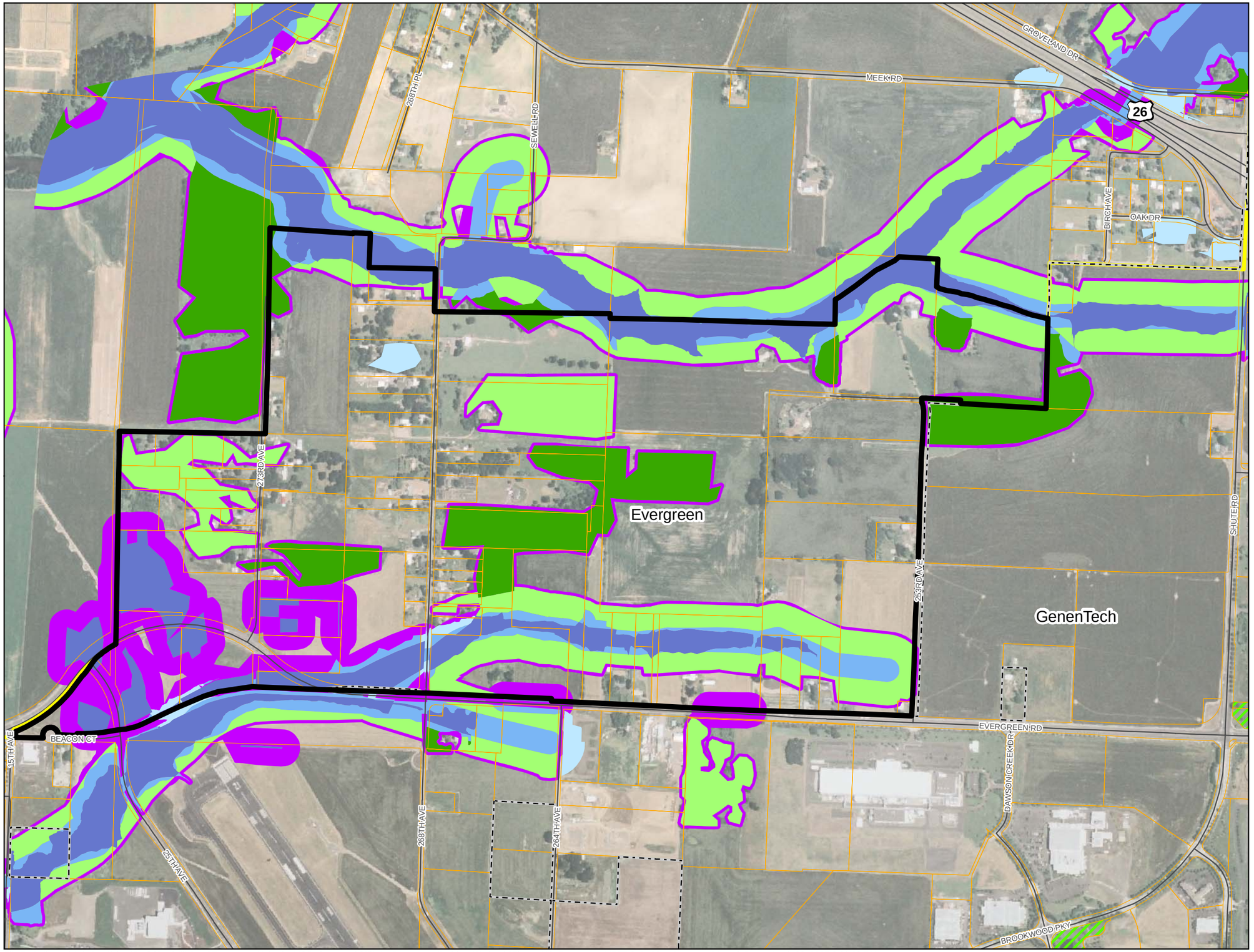

Figure VII.3

METRO Regionally Significant Habitat Inventory (2004)

Evergreen UGB Concept Plan

LEGEND

- Evergreen Site (Planning Area = 532.93 ac)
- Hillsboro City Limits
- Hillsboro UGB
- Roads
- Tax Lots
- Parks

METRO Goal 5 NIN

- Class I Riparian
- Class II Riparian
- Class III Riparian
- Class B Habitat
- Class C Habitat
- Impact Area

N

0 800 1,600

Feet

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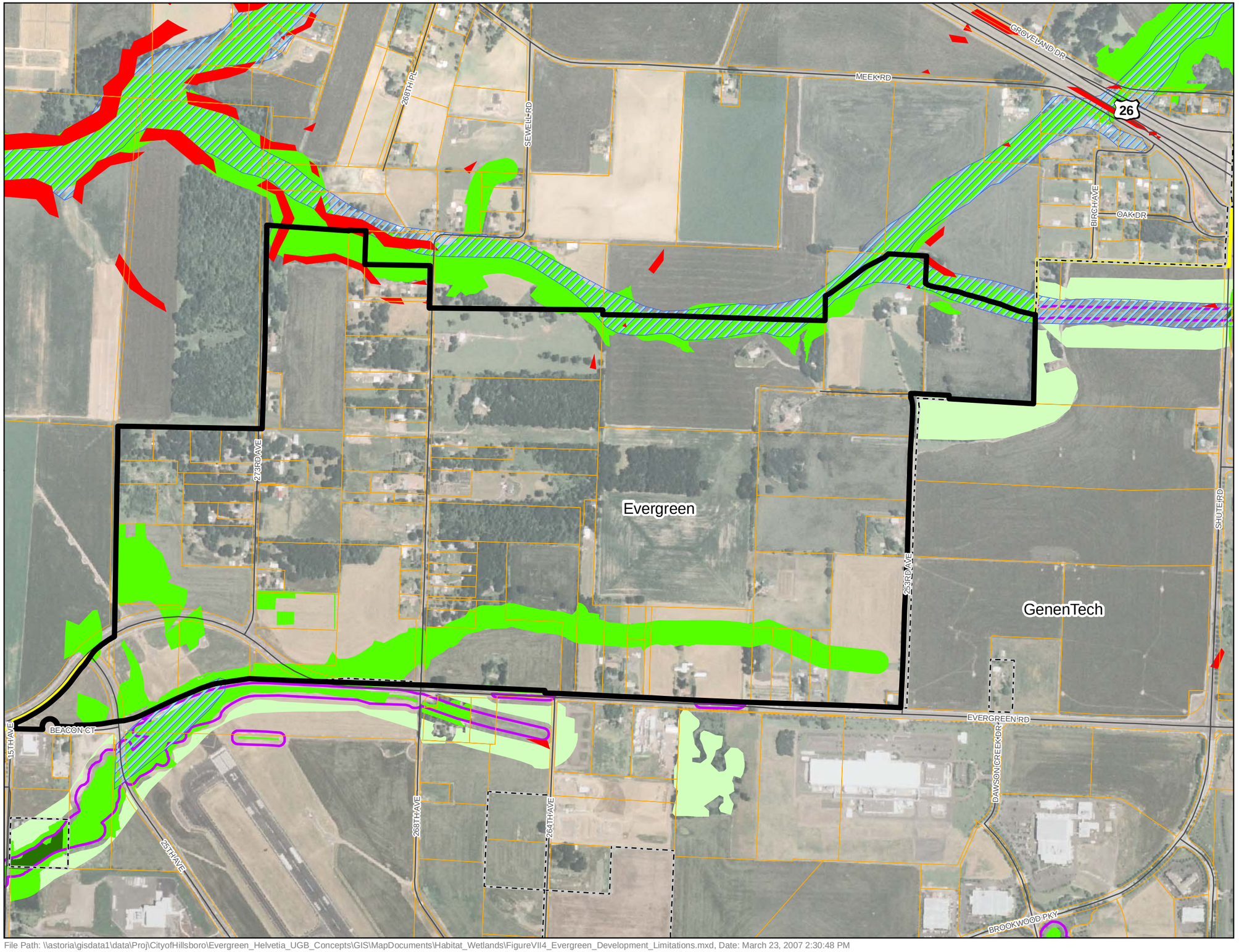
Figure VII.4

Steep Slopes and Development Limitations

Evergreen UGB Concept Plan



LEGEND

- Evergreen Site (Planning Area = 532.93 ac)
- Hillsboro City Limits
- Hillsboro UGB
- Roads
- Tax Lots
- >= 25% Slope
- 100-year FEMA Floodplain
- Vegetated Corridor
- Strictly Limit
- Moderately Limit
- Lightly Limit

N

0 800 1,600

Feet

Angelo planning group

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VIII. Cultural Resources

A file search was conducted at the Oregon State Historic Preservation Office to identify previously recorded historic sites or resources within the Evergreen concept planning area. General Land Office (GLO) maps were examined for the area to identify early Donation Land Claims. Additional research was conducted at the Washington County Historical Museum and the Oregon Historical Society. The following information is not based on intensive surface or archaeological field surveys of the area. (See Appendix C for the complete *Cultural Resources Report.*)

The Evergreen concept planning area contains portions of the Edward Constable Donation Land Claim (DLC), the Henry Sewell DLC, and the William Baldra DLC (General Land Office 1862) (Figure VIII.1).

Edward Constable was born in 1817 in Kenton County, Kentucky. He married his wife Priscella in 1836. The Constables were the first known settlers in the area, emigrating from Kentucky in about 1843 and settling their claim of 637 acres in 1847 (Bourke and DeBats 1995). Henry Sewell was born in 1819 in England. He settled his Washington County DLC in 1849. William Baldra was born in Suffolk County England in 1810. He arrived in Oregon in 1839 and settled his Washington County DLC in 1848(Genealogical Forum of Portland 1957).

The Evergreen concept planning area contains one historic residence, the John W. Shute House, and is adjacent to two other notable historic sites or locations:

John W. Shute House

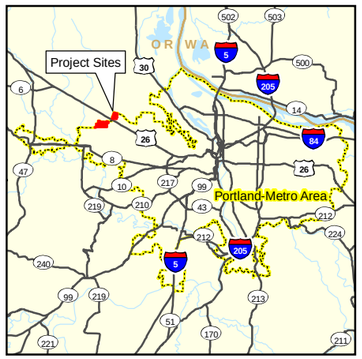
- **John W. Shute House**. Edward and Priscella Constable had a daughter Elizabeth that married John W. Shute. Shute was a laborer on the nearby James Chambers farm (Census 1860). John Shute later became a prominent member of the community as the president of the First National Bank in Hillsboro and the J.W. Shute Bank. The Constables gave their daughter and Shute some land on which to build a house in 1890. The house they built, listed on the Washington County Historic Inventory, still stands at 4825 N.W. 253rd Avenue. The house is significant in its association with an early influential and prominent local figure.

- **Methodist Meeting House.** On the southeast portion of the Edward Constable DLC (opposite the Shute house across NW 253rd Avenue), the Constables allowed construction of the Methodist Meeting House in 1844. The Methodist Meeting House is locally significant as one of the first churches in the area. Initially used for religious camp meetings, the log structure was subsequently the meeting house for a variety of church denominations. It has also been reported that an old graveyard, containing Edward Constable's brother and four of Joseph Meek's children was located near the meeting house (Goldman 1985). The Meeting House was dismantled in 1868 (Mooberry and Jensen 1865). Currently, the previous location of the Meeting House is an agricultural field. The building no longer stands but a sparse historic archaeological site has been recorded nearby that may represent archaeological deposits associated with the Methodist Meeting House.

- **Sewell Clay Works**. Sewell Clay Works, located in the southeast corner of the intersection of 268th Avenue and Evergreen Road, was begun by James H. Sewell, son of English-born pioneers Henry and Mary Ann Sewell. The works began as a manufacturing facility for drainage tile needed on the Sewell farm. By 1893, the North Pacific Clay Works as it was then named, was the largest tile manufacturer in the state and served a national clientele (Washington County Cultural Resource Inventory 1983).

Figure VIII.1
Historic Areas Near Project Sites

Evergreen/Helvetia UGB Concept Plan



LEGEND

- Cultural Sites of Interest
- Alexander Zachary DLC
- D.T. Lennox DLC
- Edward Constable DLC
- Henry Sewell DLC
- William Baldra DLC
- Project Sites
- UGB
- Roads
- Tax Lots

N

0 1,500 3,000
Feet

Angelo planning group

CH2MHILL

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IX. Transportation

This section provides a review of existing transportation conditions for the Evergreen Conceptual Design Plan. An analysis of how the transportation system performs today was made to establish a baseline for later evaluation of the impact of the proposed industrial development. This information is compared to identified performance or design standards, as appropriate, and any elements that are found to be deficient are identified. A discussion of the existing pedestrian, bicycle and transit facilities is also included.

The following study intersections, as shown on Figure IX.1 were chosen for the Evergreen Concept Plan area:

- NW Evergreen Road / NW Glencoe Road
- NW Evergreen Road / NE Jackson School Road
- NW Evergreen Road / NW Jackson School Road
- NW Evergreen Road / NE 25th Avenue
- NW Evergreen Road / NW Sewell Road
- NW Evergreen Road / Shute Road
- NW Evergreen Parkway / NW 229th Avenue
- NW Evergreen Parkway / NW Cornelius Pass Road
- NW Jackson School Road / Hwy 26 WB Ramps
- NW Jackson School Road / Hwy 26 EB Ramps
- NW Jackson School Road / NW Meek Road
- NW Shute Road / Hwy 26 WB Ramps
- NW Shute Road / Hwy 26 EB Ramps
- NW Shute Road / NW Huffman Street
- NE Brookwood Parkway / NE Shute Road
- NE Brookwood Parkway / NE Cornell Road
- NE Brookwood Parkway / E Main Street-W Baseline Road

At each location, traffic data was gathered and analyzed to evaluate current conditions and performance for all modes of travel. Additional data was collected for other aspects of the transportation system including built facilities as described by Metro GIS data, and reported traffic volumes on state and county facilities. The following sections describe the characteristics, usage, and performance of the study intersections in the City of Hillsboro and Washington County.

A. Existing Street Network

Inventories were conducted to determine characteristics of major roadways in the study area. Data collected included intersection geometry, traffic controls and turn movement counts, as shown on Figures IX.2a and IX.2b. Twelve of the seventeen study intersections are controlled by traffic signals. The other five intersections at Evergreen Road/Sewell Road, Jackson School Road/Hwy 26 WB ramps, Jackson School Road/Hwy 26 EB ramps, Jackson School Road/Meek Road and Shute Road/Huffman Street are stop-controlled on the minor street approaches.

For each roadway, jurisdiction, functional classification by various agencies, and the approximate average daily traffic (ADT) were recorded in Table IX-1. Intersection control types at study intersections are shown on Figures IX.2a and IX.2b.

Table IX-1: Existing Roadway Jurisdiction, Functional Classification and Characteristics

Roadway	*Jurisdiction*	*Motor Vehicle Functional Class*			*Approximate ADT*
		ODOT	*Washington County*	*City of Hillsboro*	
Hwy 26 west of Shute Rd	ODOT	Rural Principal Arterial	Freeway	Freeway	40,800
Hwy 26 east of Shute Rd	ODOT	Urban Principal Arterial – Freeway	Freeway	Freeway	56,300
Evergreen Rd	County	N/A	Arterial	Arterial	12,770
Evergreen Pkwy	County	N/A	Arterial	Arterial	12,920
Cornell Rd	County	N/A	Arterial	Arterial	31,080
NE 25th Ave	City	N/A	Arterial	Arterial	7,390
E Main St	County	N/A	Arterial	Arterial	14,320
W Baseline Rd	County	N/A	Arterial	Arterial	10,430
Shute Rd	County	N/A	Arterial	Arterial	30,600
Brookwood Pkwy	County	N/A	Arterial	Arterial	14,140
Cornelius Pass Rd	County	N/A	Arterial	Arterial	27,410
Glencoe Rd	County	N/A	Arterial	Arterial	6,690
NW Jackson School Rd	County	N/A	Arterial	N/A	5,620
NE Jackson School Rd	County	N/A	Collector	Collector	6,140
Huffman St	City	N/A	Collector	Collector	1,350
Meek Rd	County	N/A	Collector	N/A	340
NW 229th Ave	City	N/A	Collector	Collector	10,380
Sewell Rd	County	N/A	Local Street	N/A	N/D

Notes: ADT obtained from published ODOT, Washington County, and City of Hillsboro data.
N/A = Not Applicable
N/D = No Data Available

Level of service (LOS) and volume to capacity (v/c) ratios are both used as measures of effectiveness for intersection operation. LOS is similar to a "report card" rating based upon average vehicle delay. Level of service A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. Level of service D and E are progressively worse peak hour operating conditions. Level of service F represents conditions where average vehicle delay exceeds 80 seconds per vehicle entering a signalized intersection and demand has exceeded capacity. This condition is typically evident in long queues and delays. Unsignalized intersections provide levels of service for major and minor street turning movements. For this reason, LOS E and even LOS F can occur for a specific turning movement; however, the majority of traffic may not be delayed (in cases where major street traffic is not required to stop). LOS E or F conditions at unsignalized intersections generally provide a basis to study intersections further to determine availability of acceptable gaps, safety and traffic signal warrants.

A volume to capacity ratio (v/c) is the peak hour traffic volume at an intersection divided by the maximum volume that intersection can handle. For example, when a v/c is 0.80, peak hour traffic is using 80 percent of the intersection capacity. If traffic volumes exceed capacity, queues will form and will lengthen until demand subsides below the available capacity. When the v/c approaches 1.0, intersection operation becomes unstable and small disruptions can cause traffic flow to break down.

Level of service, delay and volume to capacity ratios are used as measures of effectiveness for study intersection performance. Washington County's target performance standard for the study intersections is a maximum volume-to-capacity (V/C) ratio of 0.9. The ODOT operating performance standard requires facilities such as US 26 that are inside an Urban Growth Boundary and within the Portland Metropolitan Region to operate below the maximum v/c of 0.99.

The PM peak hour intersection volumes were used to determine the existing study intersection operating conditions based on the 2000 Highway Capacity Manual methodology for signalized and unsignalized intersections. Traffic volumes and level of service calculations can be found in Appendix D. Table IX-2 summarizes the existing weekday PM peak hour intersection operation at study intersections.

Most of the study intersections currently operate within the performance standards during the PM peak hour with the exception of four of the signalized intersections that are operating near capacity and exceeding Washington County standards with v/c ratios greater than 0.9. The greatest delay at an unsignalized intersection is experienced at Jackson School Road/Hwy 26 WB ramps where over 400 vehicles make a westbound left turn from the stop-controlled approach, more than four times the volume of any other movement at the intersection.

Table IX-2: Weekday PM Peak Hour Intersection Level of Service

Intersection	LOS	Average Delay (sec)	Volume/ Capacity (v/c)
Signalized Intersections			
Evergreen Rd/Glencoe Rd	C	20.9	0.80
Evergreen Rd/NE Jackson School Rd	B	19.9	0.73
Evergreen Rd/NW Jackson School Rd	C	21.4	0.83
Evergreen Rd/NE 25th Ave	B	18.9	0.62
Evergreen Rd/Shute Rd	D	35.0	0.73
Evergreen Pkwy/NW 229th Ave	E	40.8	**0.98**
Evergreen Pkwy/Cornelius Pass Rd	D	54.2	**0.97**
Shute Rd/Hwy 26 WB Ramps	C	20.4	0.72
Shute Rd/Hwy 26 EB Ramps	A	7.7	0.64
Brookwood Pkwy/NE Shute Rd	B	13.0	0.41
Brookwood Pkwy/Cornell Rd	E	70.3	**0.91**
Brookwood Pkwy/E Main St-W Baseline Rd	D	54.3	**0.95**
Unsignalized Intersections			
Evergreen Rd/Sewell Rd	B/**F**	0.8	0.01/0.27
Jackson School Rd/Hwy 26 WB Ramps	A/C	13.5	0.04/0.66
Jackson School Rd/Hwy 26 EB Ramps	A/B	0.8	0.03/0.08
Jackson School Rd/Meek Rd	A/B	0.4	0.02/0.05
Shute Rd/Huffman St	C/D	1.3	0.03/0.36

Notes: *Deficiencies are indicated in **bold**.*
LOS = Level of service
Delay = Average vehicle delay in the peak hour for entire intersection in seconds.
Unsignalized Intersection Operations:
A/A = Major street turn LOS / Minor street turn LOS
#/# = Major street turn v/c / Minor street turn v/c

B. Access Management

Proper roadway access spacing is important to maintain operating characteristics and safety. The Washington County access management standards, as defined in Section 501-8.5 of the Washington County Development Code, call for minimum distances between access points on the same side of the roadway.

Access onto Evergreen Road will be limited to the county spacing standards, which restricts full access to no closer than 600 feet on an arterial facility. Intersection access will be sized appropriately to serve the peak period volumes and queues that are expected on the site at build-out. Internal collectors proposed will be subject to a minimum driveway spacing of 100 feet.

C. Freight

Efficient truck movement plays a vital role in the economical movement of raw materials and finished products. The designation of through truck routes provides for this efficient movement while at the same time maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system. ODOT identifies US 26 as a state

freight route and Washington County identifies arterial roadways as county freight routes within the study area as shown on Figure IX.3.

Truck (heavy vehicle) volumes were collected as part of the intersection turn movement counts and were used in motor vehicle operations calculations. Truck volumes and percentages at the study intersections are shown on Figure IX.3. The highest truck volumes for the study area are generally found along north-south routes or intersections where two arterials meet.

D. Pedestrian and Bicycle Network

Narrow sidewalks exist along many of the study area roadways with gaps occurring mostly where there are vacant properties or properties outside the city limits of Hillsboro. A sidewalk inventory from Metro GIS data is shown on Figure IX.4.

In the study area, bike lanes are provided on many of the arterial roadways within the city limits of Hillsboro. There are no bike lanes provided outside city limits. A bicycle facility inventory from Metro GIS data is shown on Figure IX.5.

Pedestrian and bicycle volumes at the study intersections were counted between during the PM peak periods. The weather on the days of the counts was cloudy to partly cloudy with precipitation under 0.01 inches and high temperatures in the low 50s. The peak hour volumes indicate the relative differences in pedestrian and bicycle demand at study intersections. Although the study area vehicular evening peak hour typically occurs between 4:00 and 6:00 PM, intersections located near schools and other activity centers may experience higher pedestrian and bicycle volumes earlier in the day. Pedestrian and bicycle volumes at each study intersection are shown in Table IX-3.

Table IX-3: PM Peak Hour Pedestrian and Bicycle Volumes at Study Intersections

Intersection	Pedestrian Volume		Bicycle Volume	
	North-South	East-West	North-South	East-West
Evergreen Rd/Glencoe Rd	1	0	2	1
Evergreen Rd/NE Jackson School Rd	6	0	0	1
Evergreen Rd/NW Jackson School Rd	1	2	0	2
Evergreen Rd/NE 25th Ave	0	0	0	0
Evergreen Rd/Sewell Rd	0	0	0	0
Evergreen Rd/Shute Rd	1	0	0	2
Evergreen Pkwy/NW 229th Ave	4	1	0	0
Evergreen Pkwy/Cornelius Pass Rd	1	9	1	1
Jackson School Rd/Hwy 26 WB Ramps	0	0	0	0
Jackson School Rd/Hwy 26 EB Ramps	0	0	0	0
Jackson School Rd/Meek Rd	0	0	0	0
Shute Rd/Hwy 26 WB Ramps	0	0	3	0
Shute Rd/Hwy 26 EB Ramps	0	0	3	0
Shute Rd/Huffman St	0	0	2	0
Brookwood Pkwy/NE Shute Rd	0	0	0	2
Brookwood Pkwy/Cornell Rd	3	1	0	0
Brookwood Pkwy/E Main St-W Baseline Rd	5	2	0	0

E. Public Transit

Transit service is provided in the study area by the Tri County Metropolitan Transportation District of Oregon (TriMet), which provides transit service for the Portland Metro area including the counties of Clackamas, Multnomah and Washington. Route 46 connects the Hillsboro Transit Center to the Hillsboro airport. Route 47 travels along Baseline Road, NW 229th Avenue, and Evergreen Parkway, connecting the Hillsboro Transit Center to the Willow Creek/SW 185th Ave Transit Center. Route 48 travels along Cornell Road and 185th Avenue, connecting the Hillsboro Transit Center to the Willow Creek/SW 185th Ave Transit Center. All three bus routes connect to MAX stops. The MAX Blue Line travels east-west through the metro area from Hillsboro to Gresham via downtown Portland. The existing transit routes and stop locations are shown on Figure IX.6. Current TriMet level of service within the study area is summarized in Table IX-4.

Table IX-4: Transit Service Route Weekday Peak Period Level of Service

Transit Route	Average Headways (minutes)			Level of Service Based on Time between Buses		
	AM	Midday	PM	AM	Midday	PM
MAX blue line inbound	9	15	15	A	C	C
MAX blue line outbound	14	15	15	B	C	C
#46 to Hillsboro TC	52	41	44	E	E	E
#46 to Airport	62	42	44	F	E	E
#47 to Hillsboro TC	31	45	31	E	E	E
#47 to 185th Ave TC	30	53	30	E	E	E
#48 to Hillsboro TC	30	30	30	E	E	E
#48 to 185th Ave TC	30	30	30	E	E	E

Note: AM Period = 6:00-08:30 AM, Midday Period = 8:30 AM-4:00 PM, PM Period = 4:00-6:00 PM
Level of Service for transit service based on headway: less than 10 minutes = LOS A;
10-14 minutes = LOS B; 14-19 minutes = LOS C; 20-29 minutes = LOS D; 30-60 minutes = LOS E;
And greater than 60 minutes = LOS F.

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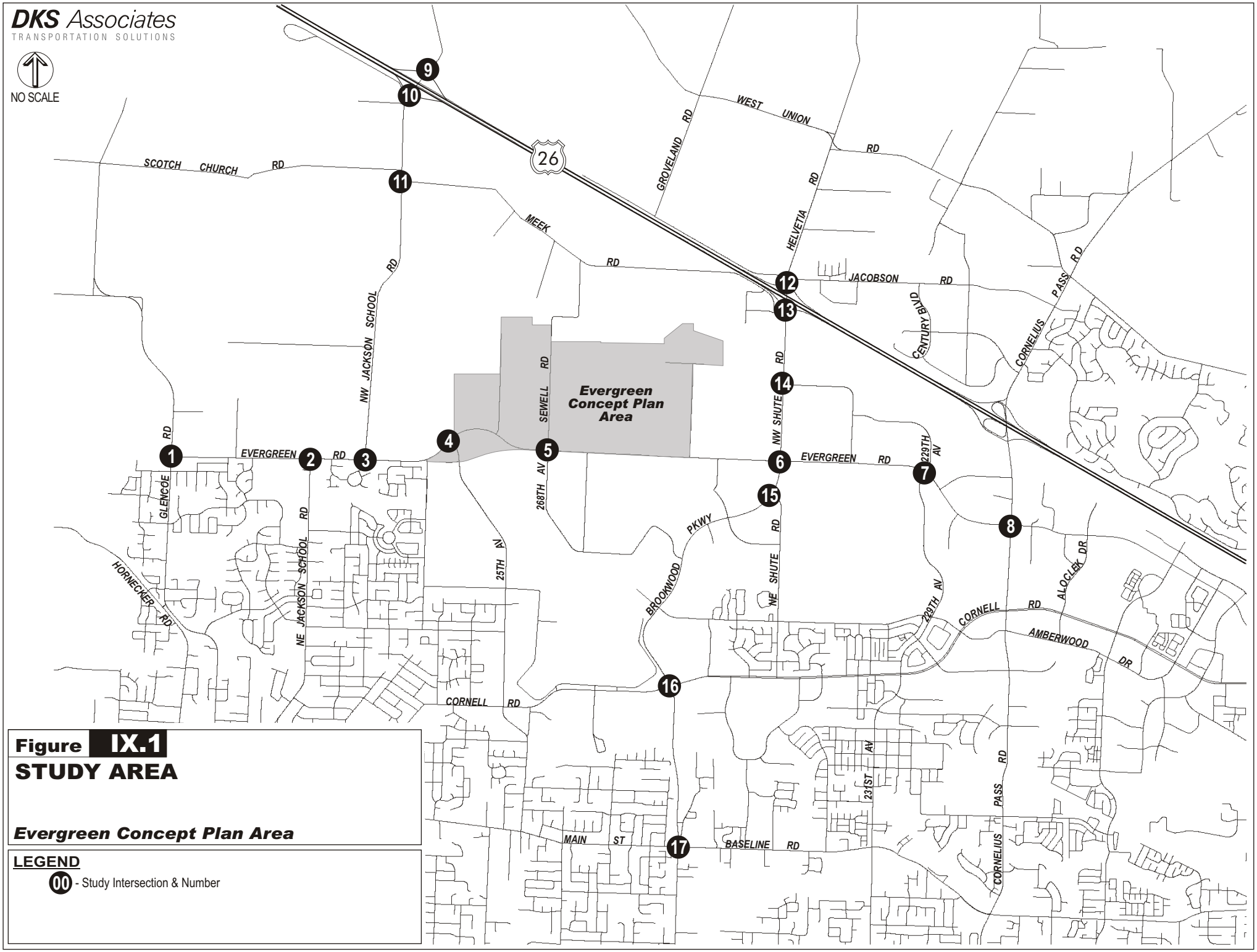
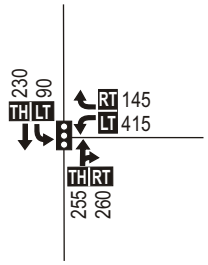
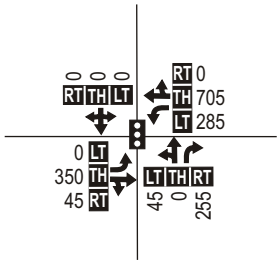

DKS Associates
TRANSPORTATION SOLUTIONS
NO SCALE
Evergreen Concept Plan Area
SCOTCH CHURCH RD
MEEK RD
WEST UNION RD
GROVELAND RD
HELVETIA RD
JACOBSON RD
CENTURY BLVD
CORNELIUS PASS RD
NW JACKSON SCHOOL RD
SEWELL RD
NW SHUTE RD
EVERGREEN RD
268TH AV
229TH AV
GLENCOE RD
NE JACKSON SCHOOL RD
HORNECKER RD
25TH AV
BROOKWOOD PKWY
NE SHUTE RD
CORNELL RD
ALOCLEK DR
AMBERWOOD DR
MAIN ST
BASELINE RD
231ST AV
CORNELIUS PASS RD
26
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Figure IX.1
STUDY AREA
Evergreen Concept Plan Area
LEGEND
00 - Study Intersection & Number

1 Evergreen Rd/Glencoe Rd



2 Evergreen Rd/NE Jackson School Rd



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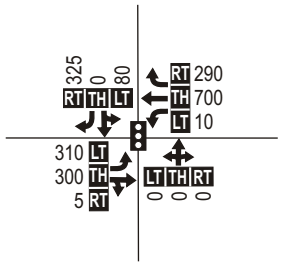
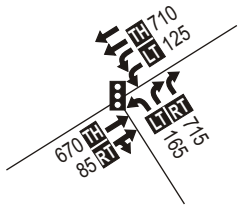
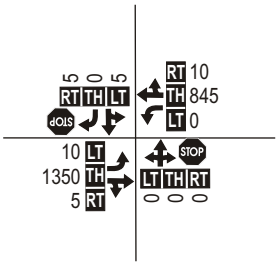


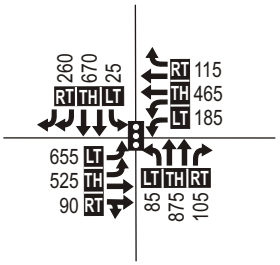
4 Evergreen Rd/NE 25th Av



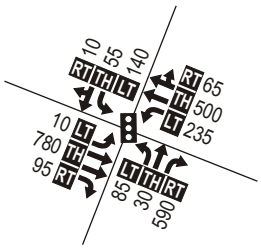
5 Evergreen Rd/Sewell Rd



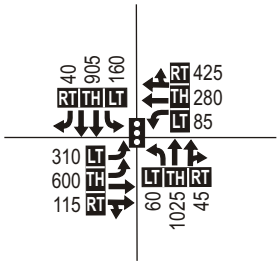
6 Shute Rd/Evergreen Rd



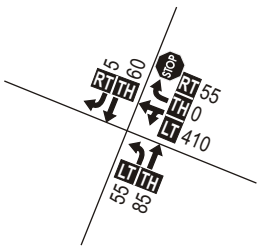
7 Evergreen Pkwy/NW 229th Av



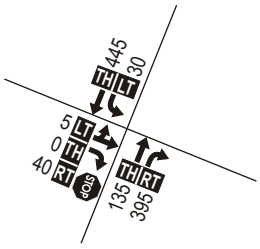
8 Evergreen Pkwy/Cornelius Pass Rd



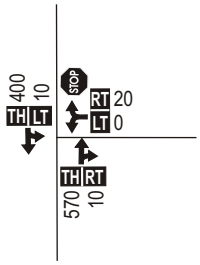
9 Jackson School Rd/ Hwy 26 WB Ramp

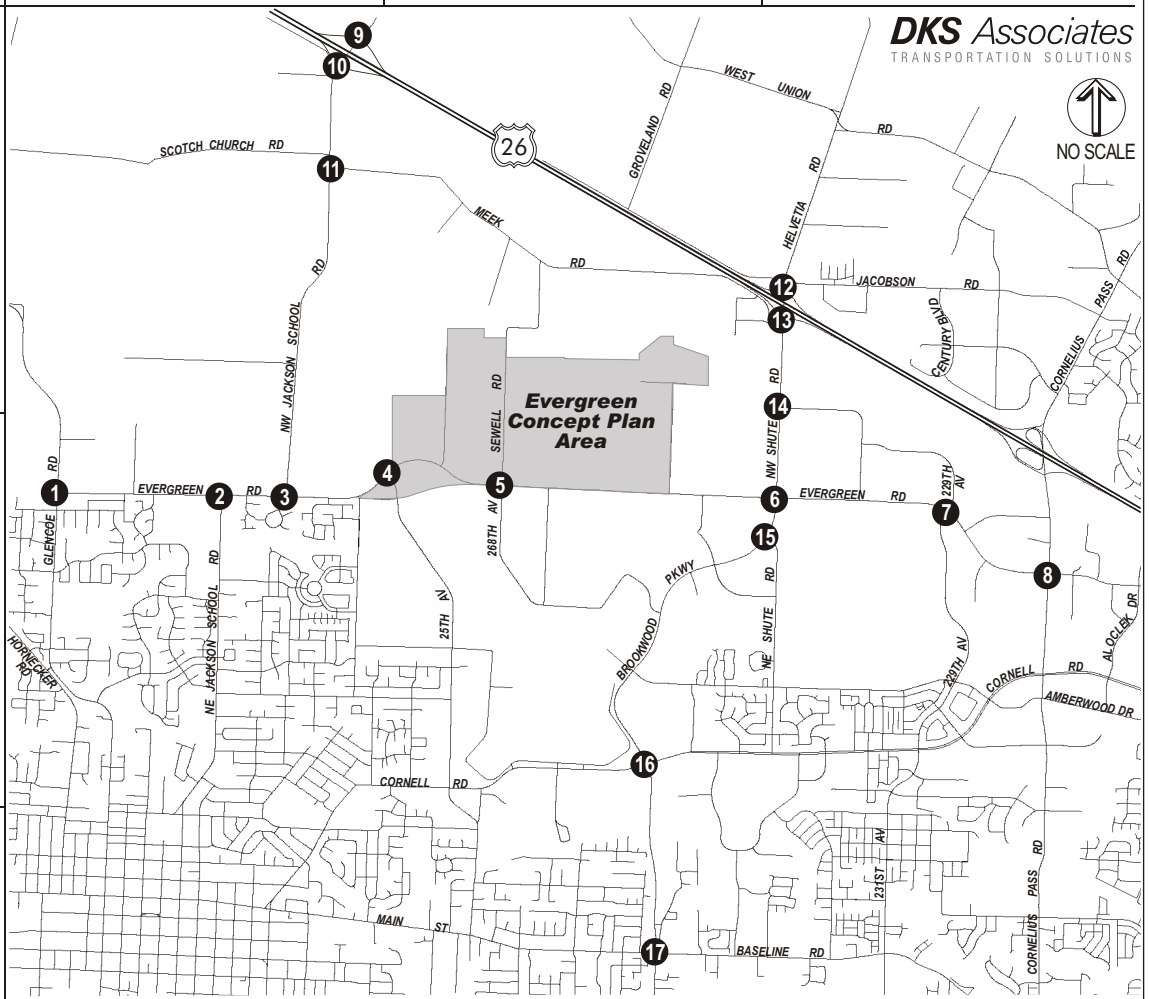


10 Jackson School Rd/ Hwy 26 EB Ramp



11 Jackson School Rd/Meek Rd





LEGEND

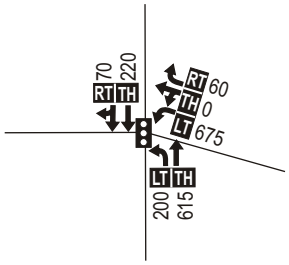
- 0 - Study Intersection & Number
- ← - Lane Configuration
- AM (PM) - Peak Hour Traffic Volume
- LT TH RT - Volume Turn Movement (Left•Thru•Right)
- Traffic Signal
- STOP - Stop Sign

Figure IX.2a

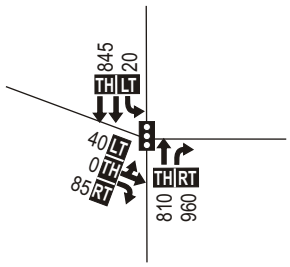
EXISTING CONDITIONS

Evergreen Concept Plan Area

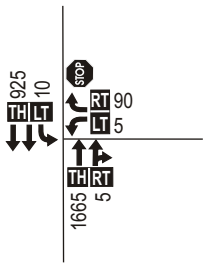
12 Shute Rd/Hwy 26 WB Ramps



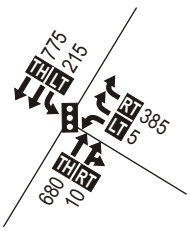
13 Shute Rd/Hwy 26 EB Ramps



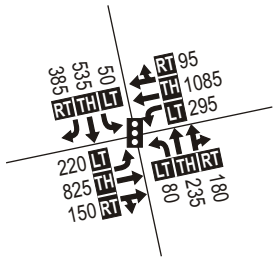
14 Shute Rd/Huffman St



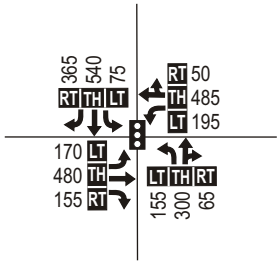
15 Brookwood Pkwy/NE Shute Rd

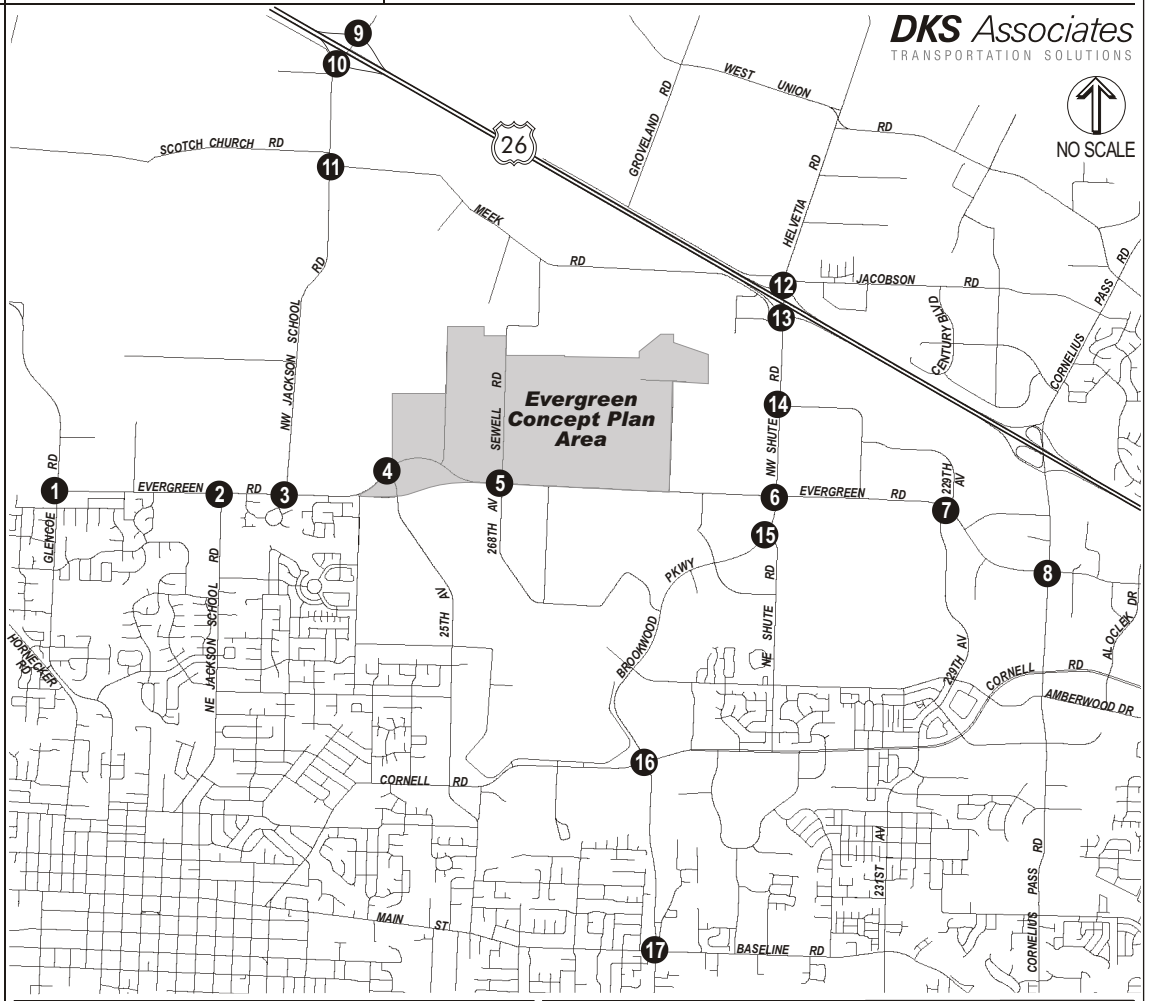


16 Brookwood Pkwy/Cornell Rd



17 Brookwood Pkwy/ Main St-Baseline Rd





LEGEND

0 - Study Intersection & Number
- Lane Configuration
AM (PM) - Peak Hour Traffic Volume
LT TH RT - Volume Turn Movement
Left • Thru • Right
- Traffic Signal
STOP - Stop Sign

Figure IX.2b

EXISTING CONDITIONS

Evergreen Concept Plan Area

Figure IX.3: Freight Routes

Evergreen Concept Plan Area

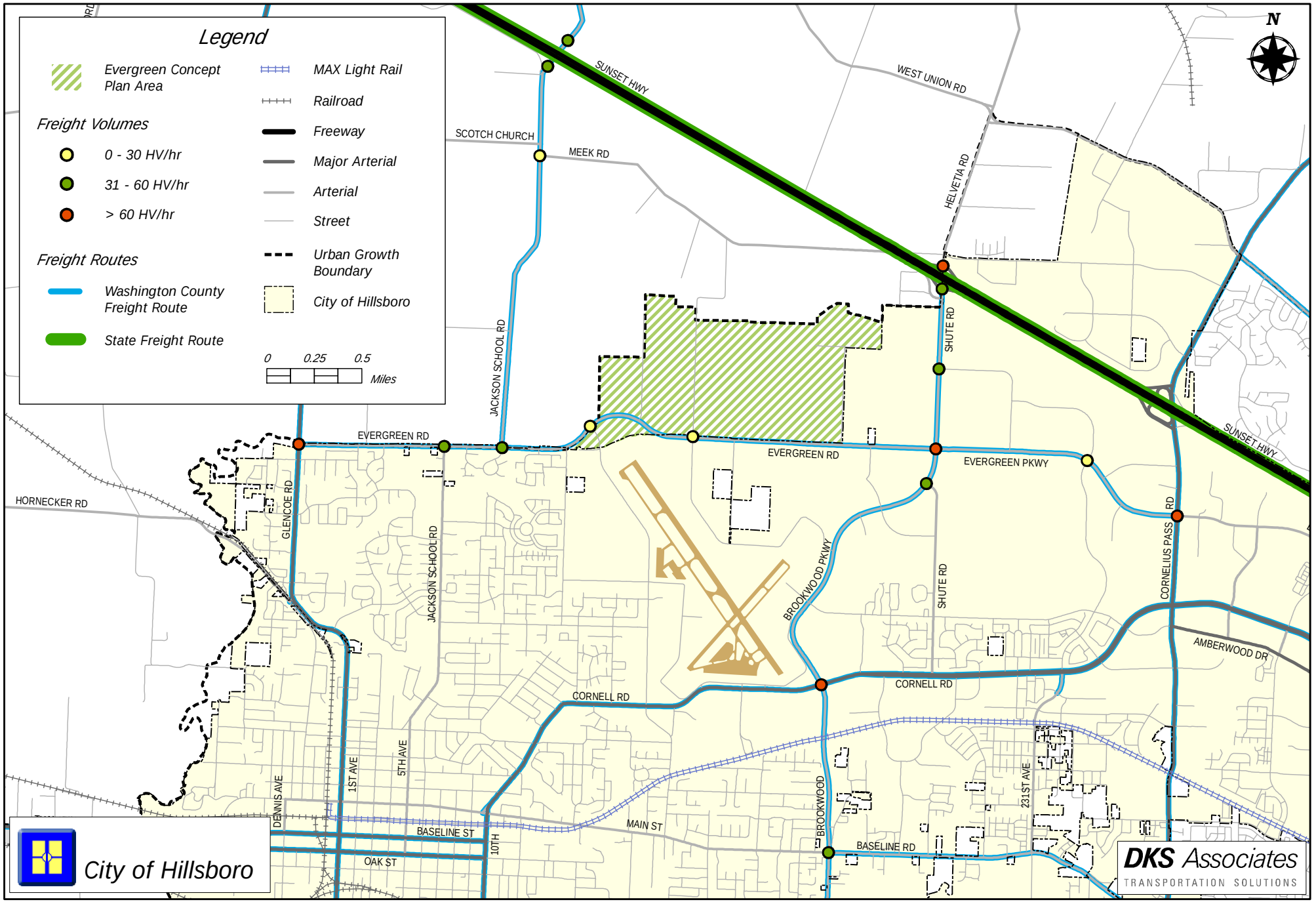


Figure IX.4: Sidewalk Inventory

Evergreen Concept Plan Area

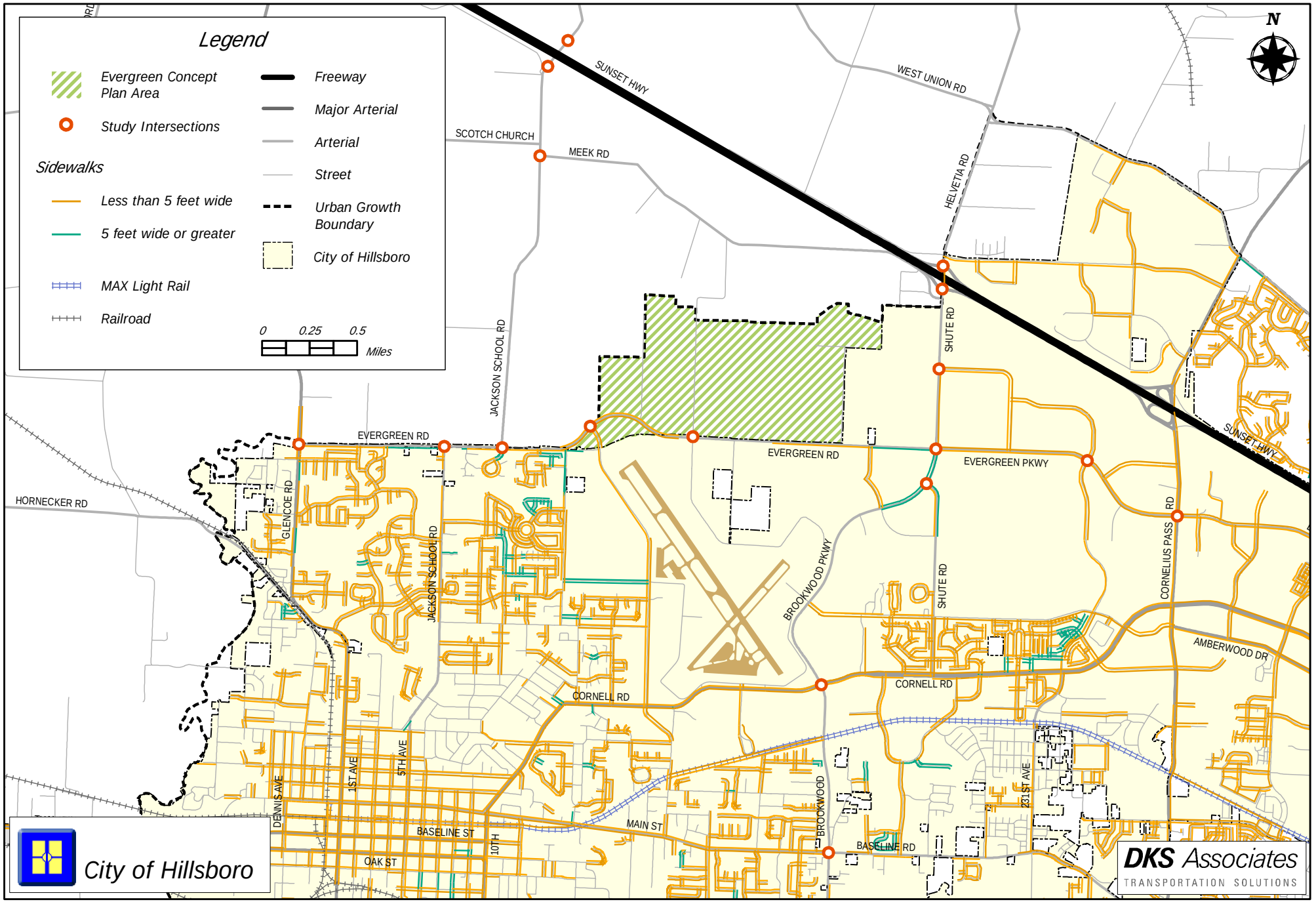


Figure IX.5: Bicycle Inventory

Evergreen Concept Plan Area

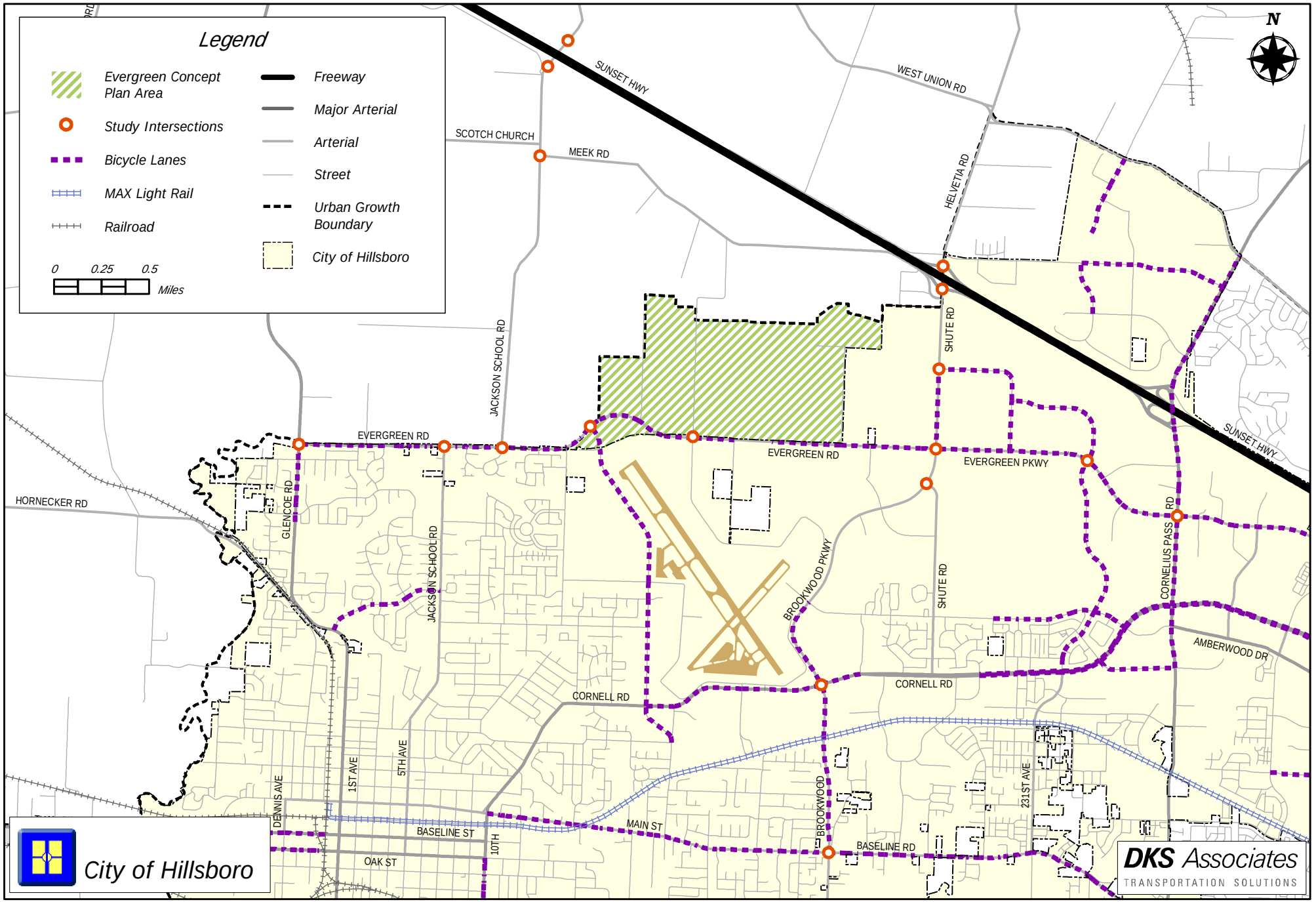
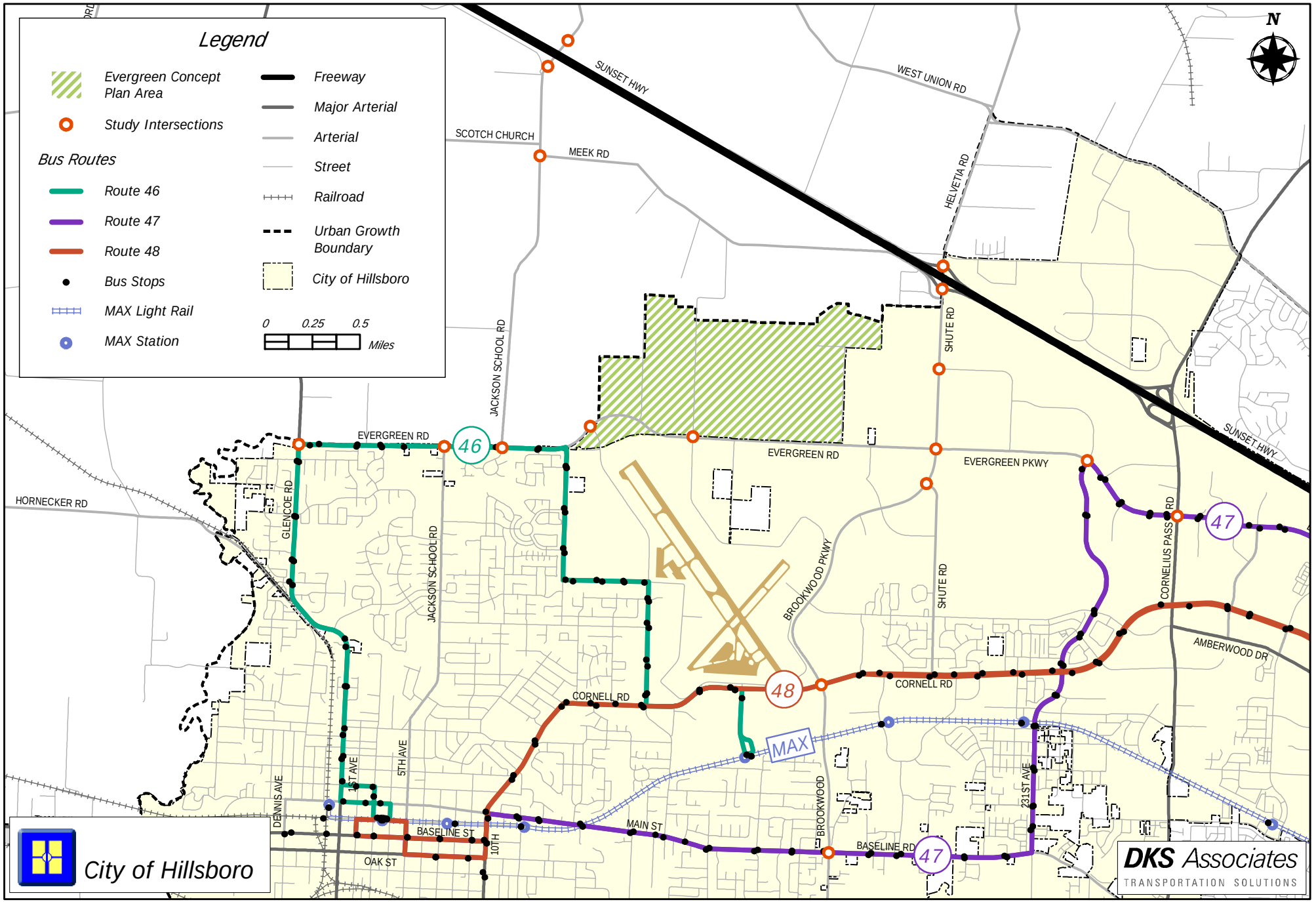


Figure IX.6: Existing Transit Facilities

Evergreen Concept Plan Area



Appendix A

Evergreen Area Landowners

Appendix A

Evergreen Area Landowners

Evergreen Area Landowners with 10+ Acres

Owner Name	Total Acres	Total Lots
5305 NW 253rd Avenue LLC	37.61	1
Mark Warren Acuff	10.37	2
Patricia Baumer	48.82	2
Michael J. and Marilyn S. Bickler	10.14	1
David L. Emmons	19.55	1
Thomas W. III and Mary C. Gregg	18.73	1
Walter R and Yvonne E. Hordichok	19.64	1
Christopher M. Hunter	16.44	1
Don J and Hulda E Leichtman Trustees	21.11	1
James Ross Lewis and Jerald Leland Et. Al Lewis	15.94	1
Thomas and Christina Melitis	11.15	1
Donald Bruce Patchett	15.66	1
Addie Jean Payne, Nancy A. Hinsch and Richard Theodore Olson	18.38	1
Port of Portland	70.19	9
Glenn Nikolas Tri	11.59	1
Chi-Hwa Tsang and Shue Ling Kuo	25.75	1
Total	371.07	26
Percent of Total Acres in Evergreen Area	71.48%	-

Source: Washington County 2006 Assessment and Taxation database and Leland Consulting Group.

Appendix B

Natural Resources Report

Appendix B

Natural Resources

Purpose of this Technical Memorandum

This technical memorandum presents an overview of broad- and fine-scale natural features at the Evergreen Concept Plan Area and vicinity. This overview will guide natural resources planning, as well as infrastructure and land use layout, during the concept planning process. This memorandum is intended as an initial overview based upon published information—the data do not reflect observations from site survey. The focus here is on generalized natural features and related regulatory information. Natural features characterizations could change as supplemental data and field information become available.

Four natural features and environmental constraints were identified in the undeveloped 534-acre Evergreen planning area:

- Riparian corridors, including water and riparian areas and fish habitat
- Wetlands
- Groundwater resources
- Natural areas

Continued on next page

Broad-Scale Natural Features

Broad-Scale Natural Features Study Area

The broad-scale study area provides the landscape context for site-level concept planning, and suggests linkages between the Evergreen planning area and surrounding natural communities and habitats.

The broad-scale study area for identifying natural features around the Evergreen planning area is the Lower McKay Creek streamshed, known as Metro Regional Site 6 (see Figure VII.1). The streamshed encompasses six Tualatin Basin Partners Local Sites:

- #19 (Dairy Creek)
- #32 (Glencoe Swale)
- #45 (McKay Creek)
- #55 (Storey Creek)
- #66 (Waible Gulch)

Landscape Overview

Important landscape characteristics of the broad-scale study area:

- The Lower McKay Creek streamshed is located in low hills and valley terraces of the Tualatin subbasin;
- Topography is generally flat to gently sloping;
- Scenic views of the horizon extend south to the Chehalem Mountains, north to the Tualatin Mountains, and west to the Coast Range;
- Annual precipitation is 40 to 60 inches;
- The flow of water and energy is generally southward, toward the Tualatin River;
- 100-year floodplains (mapped by FEMA) are associated with the McKay Creek and Waible Gulch floodplains, but Washington County drainage hazard areas extend up lesser creeks and their tributaries; floodplains have been modified by drainage, realignment of waterways, and road crossings; other than the creeks, surface water typically exists as created ponds for agriculture or water supply;
- Ground is underlain by the Woodburn-Quatama-Willamette soil association—very deep, moderately well drained—and well drained—nearly level to moderately steep silt loams and loams;
- Land use is primarily agricultural and rural-residential;
- Predominantly agricultural habitats support a moderate diversity of wildlife; woodlots and wetlands provide forage and nesting habitats, and riparian areas provide movement corridors for aquatic and terrestrial wildlife

Continued on next page

Washington County Comprehensive Plan

Although the Evergreen planning area has been brought into the City of Hillsboro's Urban Growth Boundary (UBG), the following natural features of the broad-scale study area are identified on the Washington County Rural/Natural Resource Plan Significant Natural Resources map (mapped natural features are approximate, subject to refinement of boundaries during development permitting) (see Figure VII.2):

- Water Area and Wetlands & Fish and Wildlife Habitat—Water areas and wetlands (i.e., 100-year floodplain, drainage hazard areas, and ponds) that are also fish and wildlife habitat:
  - McKay Creek, including its floodplain and riparian corridor
  - Tributaries to McKay Creek, including their floodplains and riparian corridor
  - Waible Gulch, including its floodplain and riparian corridor
  - Tributaries to Waible Gulch including their floodplains and riparian corridors
- Water Area and Wetlands—100-year floodplain, drainage hazard areas, and ponds, except those already developed:
  - Located in the floodplains of Waible Gulch and McKay Creek, and many of their tributaries
- No other natural features are identified on the resources map

Metro Natural Areas Bond Measure: Measure 26-80

Metro Council's proposed $227.4 million package is designed to preserve natural areas and protect rivers, streams and creeks at the regional, local and neighborhood level. The bond measure was subject to popular vote last November, and passed. One area, near the concept plan area, has been identified by Metro as a target for purchase, subject to a willing seller program (Figure VII .3):

- McKay Creek in the vicinity of its confluence with Dairy Creek—A major tributary of Dairy Creek, McKay Creek and its tributaries are under development pressure as urban growth expands throughout the watershed. The creeks converge at the interface of farmland and the urban growth boundary, forming broad wetlands accessible to a rapidly urbanizing area. Metro believes that protecting the riparian areas and associated wetlands in the confluence area will contribute significantly to improved water quality in these major tributaries of the Tualatin River.

Continued on next page

Tualatin Basin Existing Environmental Health Report

- The relative environmental health of the Lower McKay Creek streamshed was described by the Tualatin Basin Existing Environmental Health Report Steering Committee as:

Criterion	Assessment
Effective Impervious Area [EIA]	Fair to Good
Stream Flow	Fair
Aquatic Habitat	Poor
Geomorphology	Low Gradient
Riparian Vegetation	Fair
Water Quality	Fair to Poor
Wildlife Habitat	Fair
Overall Environmental Health	Fair

Clean Water Services Healthy Streams Plan

Clean Water Services, in partnership with local jurisdictions and the watershed community, manages the surface water system of the urban portion of the Tualatin River Basin. The *Healthy Streams Action Plan* identifies policy and program refinements, as well as surface water and stormwater projects to be funded through CWS' capital improvement program to improve water quality, water quantity management, and aquatic species habitat. The Healthy Streams Plan articulates the latest scientific information related to watershed and stream management, and identifies and prioritizes projects and activities that could be implemented to further improve regional water resources management. For example, the plan proposes three types of stream health improvement projects in the Lower McKay Creek Watershed:

- Flow Restoration project at McKay Creek near Glencoe and Zion Church Road
- Community Tree Planting Challenge projects along Waible Gulch and tributaries
- Four Culvert and Weir Retrofit projects at Waible Gulch and tributaries

The Healthy Streams' *Environmental Data and Analysis* describe current baseline environmental conditions in the watershed. The socioeconomic and scientific data and analysis were used to develop the recommendations in the Action Plan. Detailed methodology, data, and maps are available through the Healthy Streams Plan's electronic Appendices and Internet links provided in the text, all of which is too extensive to be covered in this technical memorandum. Environmental conditions highlighted by the plan are:

Lower McKay Creek: This creek contains high gradient headwaters and low gradient valley bottom stream types. The upper watershed to the headwaters is relatively undisturbed and in good health, where the Effective

Impervious Area is only about 0-10%. The lower watershed is more disturbed and in moderately good health. The Effective Impervious Area varies, but is as high as 40% in some areas. Stream flow is relatively healthy with few deficiencies caused by water diversions (typically as low as 0-4 cubic feet per second total diversions). Tree canopy along the creek is high in the upper reaches of the watershed and moderate to high in the lower reaches. Streambed material is typically clay/silt throughout most of the system with areas of bedrock and gravel/cobble in a tributary at North Plains. Large woody debris is deficient in the upper reaches of the watershed, but plentiful in the lower reaches. McKay Creek is used by cutthroat trout for spawning and rearing in the upper reaches and for rearing and migration in the lower reaches; consequently, the fish management priority is for cutthroat trout. The priorities for stormwater management are for both quantity and quality. Base flow management is a high priority for the watershed.

Waible Gulch: This creek contains high gradient headwaters, low gradient headwaters, and low gradient valley bottom types. Stream flow is relatively healthy with few deficiencies caused by water diversions (typically as low as 0-4 cubic feet per second total diversions). Although Effective Impervious area is very low (0-10%), agricultural practices have affected stream quality. Stream quality in the lower watershed and most tributaries is moderately good. Stream quality in upper watershed is moderate. Tree canopy along the creek is variable, with low to very low coverage. Streambed material is typically clay/silt from headwaters to confluence with McKay Creek. Large woody debris is deficient at most stream reaches in the watershed. The lower reach of Waible Gulch is used by cutthroat trout for rearing and migration; consequently, the fish management priority is for cutthroat trout. The priorities for stormwater management are for both quantity and quality. Base flow management is a high priority for this watershed.

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Groundwater Hydrology

- Currently, most rainfall infiltrates the soil mantle. The amount of impervious surface area is relatively low. Surface runoff mostly occurs during storms, and then only at low elevations. Infiltrated water enters a dynamic soil storage zone that meters out the steady downslope movement of water. The amount of water stored in soil affects the volume and duration of flow discharged to surface waters.
- Shallow groundwater is present at varying soil depths, and varies by season and rainfall. Agricultural and rural-residential land uses probably altered groundwater quantity and quality through ditching and field tiling.
- Currently, there is no local groundwater program. In the Tualatin Basin, the general hydrogeologic units consist of the Lower Sedimentary Unit, which overlies the Columbia River Basalt and the Basement Confining units (USGS 2005).

  1. The Lower Sedimentary Unit includes unconsolidated, nonmarine, basin-fill sediments. The predominantly fine-grained formation has an aggregate maximum thickness of about 1,400 feet. Discontinuous beds of silty sand with minor gravel, deposited by low-gradient meandering streams, are common in the upper part of the formation, but become less common with depth.
  2. The Columbia River Basalt Unit consists of a series of flood-basalt lavas. The altitude of the upper surface of the basalt is about -1,200 feet in the center of the Tualatin Basin. The unit generally ranges from 200 to 1,000 feet in thickness, and is characterized by thin, often permeable, interflow zones separated by thick, low permeability flow interiors. Interflow zones include the top of one flow, the base of an overlying flow, and intervening sediments where permeability and porosity are enhanced. Permeable interflow zones vary considerably in thickness and extent. Permeable interflow zones probably comprise less than 10 percent of the total flow thickness and the porosity of these zones is probably less than 25 percent. Therefore, bulk porosity of the Columbia River Basalt Unit probably averages less than 3 percent and perhaps as little as 1 percent. Well yields in the Columbia River Basalt Unit are moderate to high. Most high-capacity wells are open to multiple interflow zones. Large-diameter irrigation and public-supply wells commonly produce more than 250 gal/min (gallons per minute) and some are capable of 1,000 gal/min; smaller diameter domestic wells are generally capable of producing 20 gal/min.
  3. The Basement Confining Unit is composed of rocks in which most of the primary porosity has been destroyed by secondary mineralization. The Basement Confining Unit is characterized by low permeability, low porosity, and low well yield. Well yields are commonly less than 5 gal/min, and the unit is generally able to provide sufficient water for domestic uses only.

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Natural Features of the Evergreen Concept Plan Area

Evergreen Concept Planning Area

- The Evergreen Concept Plan Area is south of Oregon Highway 26 (Sunset Highway), north from Evergreen Road to Waible Gulch, and west from NW 253rd Avenue to approximately NW 278th Avenue. The 534-acre Evergreen expansion area is located at Township 1 North, Range 2 West, Sections 20 and 21 (Figure VII .1). It lies within the City of Hillsboro's UGB.

Concept Plan Area Overview

Landscape characteristics of the Evergreen planning area:

- Topography is flat to gently rolling, ranging from about 205 feet elevation at NW 253rd Avenue (east) to about 170 feet at the Waible Gulch floodplain (north)
- Flow of water and energy is generally from east to west; the northern portion of the planning area flows directly to Waible Gulch; the southern portion flows to a ditched tributary of McKay Creek

Soil Survey of Washington County

The presence and distribution of soil types at the planning area suggest that lands are best suited to certain uses, or limited by slope steepness, erosion hazard, or other factors. Soil types range from silt loam and silty clay loam along lowland drainages to silt loam on adjacent higher areas; correspondingly, lowlands are characterized by frequent flooding, low productivity, and severe limitation for building site development; uplands have no flooding, high productivity, and moderate to severe limitations for building site development.

- Lowland soil along Waible Gulch is primarily Verboort silty clay loam;
- Soils at floodplains adjacent to Waible Gulch are Aloha, Dayton, or Woodburn silt loams; Dayton silt loam is a hydric soil;
- Lowland soils along the tributary to McKay Creek are primarily Cove silty clay loam and Dayton silt loam; both are hydric soils;
- Soils on upland areas adjacent to the McKay Creek tributary are Amity and Woodburn silt loams;
- Steep slopes:
  - No surfaces with greater than 25% slope are found within the planning area (Figure VII.4)
- Erosion hazard is:
  - Moderate to slight at Woodburn silt loam
  - Slight at all other soil units in the planning area

Continued on next page

Washington County Comprehensive Plan

Washington County has identified significant natural resources in the planning area. These area show on its Rural/Natural Resources Plan Significant Natural Resources plan (mapped natural features are approximate, subject to refinement of boundaries through site assessment) (see Figure VII.2) and include the following:

- Water Area and Wetlands & Fish and Wildlife Habitat—Water areas and wetlands (i.e., 100-year floodplain, drainage hazard areas, and ponds) that are also fish and wildlife habitat:
  - Waible Gulch, including its floodplain and riparian corridor along the northern boundary of the planning area;
- The tributary to McKay Creek is identified as a river feature with no associated riparian, wetland, or habitat areas;
- No other natural features are identified on the county's resources map.

Clean Water Services' Sensitive Areas and Vegetated Corridors

The District's stormwater management program intends to improve water quality, protect fish habitat and manage drainage by operating and maintaining the stormwater conveyance system, establishing design and construction standards, regulating activities that can impact the watershed and enhancing streams and floodplains. The program regulates development activities in water quality sensitive areas, and in vegetated corridors along waters and wetlands, such as these features in the Evergreen planning area:

- Water Quality Sensitive Areas include Waible Gulch and the tributary to McKay Creek; existing and created wetlands, ponds, and instream impoundments
- Vegetated Corridors include variable-width buffers adjacent to Sensitive Areas that protect the water quality functions of the water quality Sensitive Area
- Mapped Vegetated Corridors are only estimates. Exact determinations are made at sites at the time of development through the requirements of Clean Water Services' Design and Construction Standards and the city Development Code. Corridors may be adjusted based on slope, stream size, and status, or site conditions.

Continued on next page

National Wetlands Inventory

The National Wetlands Inventory for the Hillsboro, Oregon quadrangle—mapped by the USDI Fish and Wildlife Service (USFWS)—indicates that potential wetland features are associated with the Waible Gulch drainage along the northern boundary of the Evergreen planning area:

- Most of the channel of Waible Gulch is identified as a *palustrine emergent seasonally flooded excavated* (PEMCx) wetland;
- Smaller portions of the channel of Waible Gulch are identified as a *palustrine forested temporarily flooded* (PFOA) and *palustrine forested seasonally flooded* (PFOC) wetlands;
- An instream impoundment is identified as a *palustrine unconsolidated bottom semipermanently flooded excavated* (PUBFx) wetland;
- Two other wetland features are identified adjacent to Waible Gulch:
  - A *palustrine aquatic bed semipermanently flooded excavated*(PABFx) wetland is identified in the northwestern corner of the planning area;
  - A *palustrine unconsolidated bottom semipermanently flooded excavated* (PUBFx) wetland is identified in the northwestern portion of the planning area.

Federally Listed T&E Species

The USFWS list of *Federally Listed Threatened, Endangered, Proposed, Candidate Species and Species of Concern Which May Occur in Washington County* identifies 16 listed, proposed, or candidate species that may occur in the City of Hillsboro. Of those 16 species, five animals and six plants have the potential to occur in the vicinity of the Evergreen planning area:

Birds	
Bald eagle	T
Yellow-billed cuckoo	C
Streaked horned lark	C
Fish	
Steelhead (upper Willamette River)	T
Amphibians & Reptiles	
Oregon spotted frog	C
Plants	
Golden Indian paintbrush	T
Willamette daisy	E
Howellia	T
Bradshaw's lomatium	E
Kincaid's lupine	T
Nelson's checker mallow	T

E = Endangered
T = Threatened
C = Candidate

Continued on next page

Oregon Natural Heritage Information Center

The Oregon Natural Heritage Information Center (ORNHIC) lists two records of state- or federally-listed species in the vicinity of the planning area. These records indicate that Oregon Department of Fish and Wildlife fisheries biologists determined that steelhead (Upper Willamette River ESU, winter run)—federally listed as Threatened—previously were undocumented, but should be considered as potentially occurring in the Tualatin River and its tributaries, and in McKay Creek and its tributaries.

The ORHNIC database contains no other records of federal or state listed species within two miles of the Evergreen planning area.

Continued on next page

Regulatory and Planning Constraints Imposed by Natural Features

Regulatory Constraints

The following is a preliminary list of potential environmental permitting requirements for implementing the Evergreen Concept Plan, and reflects potential federal, state, and local requirements.

The environmental considerations identified in this regulatory list should be considered preliminary; actual environmental effects and regulatory requirements will become better known after finalizing the plan and refining the natural features and their boundaries. Some permitting requirements may yet be identified, and others may be eliminated during plan development. The affected jurisdictions recommend pre-application meetings to refine possible permit requirements.

In some cases, permitting requirements are presumed at this conceptual level of project development, although uncertainty exists. Some regulated activities and requirements may only be fully understood after development plans are set because construction methods vary. Mitigation measures during construction can reduce environmental effects that cannot be avoided or minimized through engineering design. All of the regulations require some form of compensation for resources that would be impacted.

Federal

- Clean Water Act—for disturbances to waters and wetlands; also, effects on water quality
- Endangered Species Act/Magnuson-Stevens Act—for effects on listed threatened or endangered species, their habitats, and fisheries (e.g., steelhead trout)
- National Historic Preservation Act—for effects on cultural and historic resources

Oregon

- Oregon Wetland Removal/Fill Law—for disturbances to waters and wetlands
- Fish Passage Rule—for passage by native migratory fish

Clean Water Services District

- Design and Construction Standards & Service Provider Letters (SPL)—for impacts to vegetated corridors
- Site Development Permit—for erosion control and water quality protection

Washington County/City of Hillsboro

- Development Permit—for impacts to Significant Natural and Cultural Resources, including wildlife habitat, floodplains, and drainage hazard areas

Continued on next page

Tualatin Basin Fish and Wildlife Program

The Tualatin Basin Goal 5 Program is the result of a cooperative effort among Metro, Washington County, CWS, and cities in the Tualatin River Basin to develop a watershed approach that improves urban fish and wildlife habitat. The program is based upon an inventory of regionally significant Goal 5 fish and wildlife habitat conducted by Metro. The basin program was adopted by the specially-formed Tualatin Basin Natural Resources Coordinating Committee in April 2005, by Metro in September 2005, and is pending acknowledgment by LCDL based on a decision made in October 2006. Local jurisdictions are currently in the process of implementing initial program compliance efforts.

The program is non-traditional in the sense that it is based upon cooperative proactive efforts, incentives, and investment rather than on regulation of natural resources areas. Nonetheless, there is a regulatory aspect to the efforts which focuses on allowing and encouraging habitat-friendly development practices and low impact development techniques. The Basin program recognizes that fish and wildlife habitat in riparian resource areas is potentially affected by activities that impact water quality, and that these activities can occur anywhere in the watershed—not just in identified resource areas. The program therefore describes three general categories of land that may occur in the planning area (subject to field delineation) and described below.

- Strictly Limit (SL) is applied to areas where existing protection and conservation measures are already in place which restrict development, consistent with Clean Water Services' standards for Vegetated Corridors (generally 50 feet or wider buffers along streams and 125-foot buffers along the Tualatin River, with requirements for enhancement of degraded conditions).
- Moderately Limit (ML) is applied to Class I and II Riparian resource areas identified in Metro's Goal 5 inventory which fall beyond Vegetated Corridor buffers. For such natural areas, conservation and restoration area encouraged, and the revenue tools the Basin has at its disposal will be directed to help make such conservation and restoration happen. These revenue tools include a $95 million investment with the Partners' plan to spend on stream system improvements over the next 20 years, under the guidance of Clean Water Services' Healthy Streams Plan. Program efforts applicable to the SL and ML areas are intended to protect and improve critical core urban habitat areas throughout the basin.
- Lightly Limit (LL) is applied to all other classes of habitat resource identified in Metro's inventory. Protection efforts for LL resource areas

Continued on next page

are discretionary, primarily relying upon incentives to encourage property owners and developers to preserve and improve conditions in these areas. This can be achieved in a variety of ways, some of which may yet be determined through concept planning for new urban areas.

The LL designation also applies to non-resource areas within the basin, in effect including the entire urban watershed. For these areas, low-impact development practices are encouraged through education and incentives. The program recognizes new urban areas as an opportunity to explore a mores comprehensive approach to mitigating environmental impacts of stormwater.

Continued on next page

City of Hillsboro

As of May 2, 2006, the City of Hillsboro had not annexed the Evergreen planning area nor revised its Significant Natural Resources Overlay District map to include the planning area.

On January 5, 2007, the City of Hillsboro proposed text amendments to the Hillsboro Comprehensive Plan (HCP), Zoning & Subdivision Ordinances (ZOA and SOA) related to implementation of the Tualatin Basin Fish & Wildlife Program to comply with Metro Urban Growth Management Functional Plan, Title 13: Nature in Neighborhoods.

There are no additional regulations being proposed for the Tualatin Basin Program. The regulatory component of the Program consists of existing CWS Design & Construction standards/vegetated corridor requirements applicable to proposed development and redevelopment activities within and adjacent to areas designated as Water Quality Sensitive Areas. The Program is intended to convey a benefit to the developer in exchange for the use of habitat-friendly development practices. It is not intended to increase development restrictions. Use of the habitat friendly development standards would be at the option of the developer/property owner.

The Tualatin Basin Program encourages the use of environmentally sensitive site design and construction practices throughout the watershed in order to reduce the impact of new development on fish and wildlife habitat in the basin, and to aid in improving environmental health. These design and construction practices include a variety of techniques known collectively as Habitat Friendly Development. A subset of Habitat Friendly Development is Low Impact Development (LID) which includes methods of reducing stormwater runoff and the overloading of storm sewers through the integration of open space and pervious surfaces into new development or existing development through retrofitting.

The Tualatin Basin Goal 5 Program Report recognizes that most jurisdictions in the Basin will need to remove barriers in their existing regulations in order to allow for a Habitat Friendly/LID approach to meeting stormwater management requirements. The proposed HCP, ZOA, and SOA amendments will fulfill Hillsboro's obligation under the Tualatin Basin Natural Resources Coordinating Committee's Intergovernmental Agreement with Metro to remove barriers to utilization of LID techniques and to encourage and facilitate the use of other habitat-friendly development practices.

Continued on next page

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Appendix C

Cultural Resources Report

Appendix C

Cultural Resources

Introduction

The Evergreen and Helvetia Road planning areas are located northeast of downtown Hillsboro, Oregon (Figure VIII.1). A file search was conducted at the Oregon State Historic Preservation Office to identify previously recorded sites or resources. General Land Office (GLO) maps were examined for the area to identify early Donation Land Claims. Additional research was conducted at the Washington County Historical Museum and the Oregon Historical Society. No intensive surface or archaeological field surveys were conducted for this assessment.

Evergreen Parcel *Figure VIII.1*

The Evergreen parcel contains portions of the Edward Constable Donation Land Claim (DLC), the Henry Sewell DLC, and the William Baldra DLC (General Land Office 1862)(Figure 1).

Edward Constable was born in 1817 in Kenton County, Kentucky. He married his wife Priscella in 1836. The Constables were the first known settlers in the area, emigrating from Kentucky in about 1843 and settling their claim of 637 acres in 1847 (Bourke and DeBats 1995). Henry Sewell was born in 1819 in England. He settled his Washington County DLC in 1849. William Baldra was born in Suffolk County England in 1810. He arrived in Oregon in 1839 and settled his Washington County DLC in 1848(Genealogical Forum of Portland 1957).

The Evergreen parcel contains, or is adjacent to three notable historic sites or locations:

John W. Shute House – Edward and Priscella Constable had a daughter Elizabeth that married John W. Shute. Shute was a laborer on the nearby James Chambers farm (Census 1860). John Shute later became a prominent member of the community as the president of the First National Bank in Hillsboro and the J.W. Shute Bank. The Constables gave their daughter and Shute some land on which they build a house in 1890. The house they built, listed on the Washington County Historic Inventory, still stands at 4825 N.W. 253rd Avenue. The house is significant in its association with an early influential and prominent local figure.

Methodist Meeting House - On the southeast portion of the Edward Constable DLC (opposite the Shute house across NW 253rd Ave.), the Constables allowed construction of the Methodist Meeting House in 1844. The Methodist Meeting House is locally significant as one of the first churches in the area. Initially used for religious camp meetings, the log structure was subsequently the meeting house for a variety of church denominations. It has also been reported that an old graveyard, containing Edward Constable's brother and four of Joseph Meek's children was located near the meeting house (Goldman 1985). The Meeting House was dismantled in 1868 (Mooberry and Jensen 1865). Currently, the previous location of the Meeting House is an agricultural field. The building no longer stands but a

sparse historic archaeological site has been recorded nearby that may represent archaeological deposits associated with the Methodist Meeting House.

Sewell Clay Works – Sewell Clay Works, located in the southeast corner of the intersection of 268th Avenue and Evergreen Road, was begun by James H. Sewell, son of English-born pioneers Henry and Mary Ann Sewell. The works began as a manufacturing facility for drainage tile needed on the Sewell farm. By 1893, the North Pacific Clay Works as it was then named, was the largest tile manufacturer in the state and served a national clientele (Washington County Cultural Resource Inventory 1983).

Summary and Recommendations

Little of the parcel has been subject to cultural resource surveys. Located directly adjacent to the Evergreen parcel is the former location of the Sewell Clay Works, a significant historic site relating to the early economic development of Washington County. Although the site is located south of Evergreen Road (south of the parcel boundary), it provides an opportunity for and interpretive sign highlighting its local and regional significance. The John W. Shute house on N.W. 253rd Avenue represents the only currently known significant historic site within the boundaries of the Evergreen parcel. Across N.W. 253rd Avenue from the Shute house is the former location of the Methodist Meeting House, another locally significant historic property, though, the structure is no longer extant. Both of these properties were part of the Constable Donation Land Claim and have direct ties to Edward Constable. These two properties provide a good opportunity for an interpretive sign or kiosk, similar to that at the Five Oaks Meeting Place, highlighting their significance in the economic, social, and cultural development of Washington County.

Figure 2: John W. Shute House

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Washington County Cultural Resource Inventory

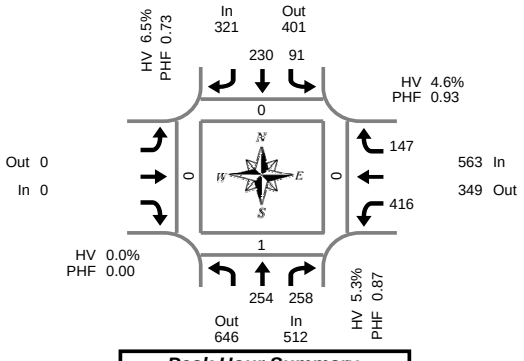
1983 Sewell Clay Works Site Record. Form on file at the Washington County Museum.

Appendix D

Traffic Volumes and Level of Service Calculations

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:20 PM to 5:20 PM

NW Glencoe Rd & NW Evergreen Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Glencoe Rd				Southbound NW Glencoe Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	14	19	0		3	18		0				0	39		15	0	108	0	0	0	0
4:05 PM	19	23	0		7	20		0				0	28		5	0	102	0	0	2	0
4:10 PM	23	23	0		1	20		0				0	22		12	0	101	0	0	0	0
4:15 PM	18	19	0		11	29		0				0	24		15	0	116	0	0	0	0
4:20 PM	14	24	0		13	33		0				0	42		8	0	134	0	0	0	0
4:25 PM	17	24	0		14	25		2				0	28		10	0	118	0	0	0	0
4:30 PM	28	18	0		10	15		0				0	41		6	0	118	0	0	0	0
4:35 PM	15	20	0		6	17		0				0	32		15	0	105	0	0	0	0
4:40 PM	23	26	0		7	20		0				0	37		15	0	128	0	1	0	0
4:45 PM	16	21	0		4	29		0				0	43		10	0	123	0	0	0	0
4:50 PM	29	18	0		7	16		0				0	34		11	0	115	0	0	0	0
4:55 PM	13	20	0		5	18		0				0	36		8	0	100	0	0	0	0
5:00 PM	21	18	0		4	17		0				0	21		17	0	98	0	0	0	0
5:05 PM	30	24	0		8	10		0				0	23		16	0	111	0	0	0	0
5:10 PM	26	26	0		7	16		0				0	39		15	1	129	0	0	0	0
5:15 PM	22	19	0		6	14		0				0	40		16	0	117	0	0	0	0
5:20 PM	21	17	0		8	17		0				0	35		17	0	115	0	0	0	0
5:25 PM	30	27	0		6	16		0				0	39		10	0	128	0	0	0	0
5:30 PM	20	21	0		7	14		0				0	29		19	0	110	0	0	0	0
5:35 PM	21	15	0		5	13		0				0	40		17	0	111	0	0	0	0
5:40 PM	13	24	0		7	15		0				0	25		11	0	95	0	3	0	0
5:45 PM	24	16	0		6	19		0				0	28		11	0	104	0	0	0	0
5:50 PM	19	16	0		11	17		0				0	25		9	0	97	0	0	0	0
5:55 PM	16	33	0		9	13		0				0	25		7	0	103	0	0	0	0
Total Survey	492	511	0		172	441		2				0	775		295	1	2,686	0	4	2	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Glencoe Rd				Southbound NW Glencoe Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	56	65	0		11	58		0				0	89		32	0	311	0	0	2	0
4:15 PM	49	67	0		38	87		2				0	94		33	0	368	0	0	0	0
4:30 PM	66	64	0		23	52		0				0	110		36	0	351	0	1	0	0
4:45 PM	58	59	0		16	63		0				0	113		29	0	338	0	0	0	0
5:00 PM	77	68	0		19	43		0				0	83		48	1	338	0	0	0	0
5:15 PM	73	63	0		20	47		0				0	114		43	0	360	0	0	0	0
5:30 PM	54	60	0		19	42		0				0	94		47	0	316	0	3	0	0
5:45 PM	59	65	0		26	49		0				0	78		27	0	304	0	0	0	0
Total Survey	492	511	0		172	441		2				0	775		295	1	2,686	0	4	2	0

Peak Hour Summary
4:20 PM to 5:20 PM

By Approach	Northbound NW Glencoe Rd				Southbound NW Glencoe Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	512	646	1,158	0	321	401	722	2	0	0	0	0	563	349	912	1	1,396	0	1	0	0
%HV	5.3%				6.5%				0.0%				4.6%				5.3%				
PHF	0.87				0.73				0.00				0.93				0.94				

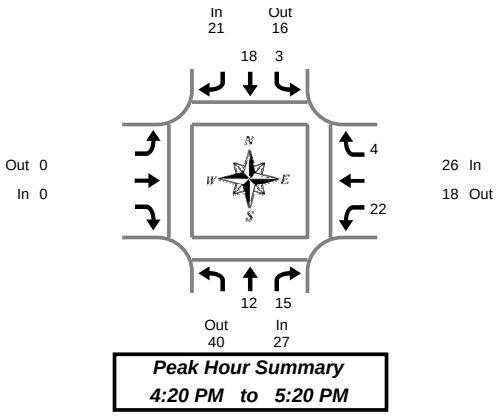
By Movement	Northbound NW Glencoe Rd				Southbound NW Glencoe Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total
	T	R	Total		L	T		Total				Total	L		R	Total	
Volume	254	258	512		91	230		321				0	416		147	563	1,396
%HV	NA	4.7%	5.8%	5.3%	3.3%	7.8%	NA	6.5%	NA	NA	NA	0.0%	5.3%	NA	2.7%	4.6%	5.3%
PHF		0.81	0.93	0.87	0.61	0.79		0.73				0.00	0.91		0.77	0.93	0.94

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Glencoe Rd				Southbound NW Glencoe Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	229	255	0		88	260		2				0	406		130	0	1,368	0	1	2	0
4:15 PM	250	258	0		96	245		2				0	400		146	1	1,395	0	1	0	0
4:30 PM	274	254	0		78	205		0				0	420		156	1	1,387	0	1	0	0
4:45 PM	262	250	0		74	195		0				0	404		167	1	1,352	0	3	0	0
5:00 PM	263	256	0		84	181		0				0	369		165	1	1,318	0	3	0	0

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:20 PM to 5:20 PM

NW Glencoe Rd & NW Evergreen Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Glencoe Rd				Southbound NW Glencoe Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		1	1	2	1	3		4				0	1		1	2	8
4:05 PM		0	1	1	1	3		4				0	2		0	2	7
4:10 PM		2	1	3	0	1		1				0	3		1	4	8
4:15 PM		0	0	0	0	0		0				0	2		0	2	2
4:20 PM		0	1	1	1	6		7				0	5		0	5	13
4:25 PM		0	2	2	0	0		0				0	1		0	1	3
4:30 PM		3	0	3	0	1		1				0	5		0	5	9
4:35 PM		0	3	3	2	3		5				0	2		0	2	10
4:40 PM		1	3	4	0	2		2				0	2		1	3	9
4:45 PM		0	1	1	0	2		2				0	2		1	3	6
4:50 PM		3	0	3	0	0		0				0	2		0	2	5
4:55 PM		1	0	1	0	0		0				0	2		0	2	3
5:00 PM		0	1	1	0	2		2				0	0		0	0	3
5:05 PM		2	0	2	0	1		1				0	1		1	2	5
5:10 PM		2	3	5	0	0		0				0	0		0	0	5
5:15 PM		0	1	1	0	1		1				0	0		1	1	3
5:20 PM		0	0	0	1	1		2				0	0		0	0	2
5:25 PM		3	0	3	0	3		3				0	0		0	0	6
5:30 PM		2	0	2	0	1		1				0	2		0	2	5
5:35 PM		1	0	1	0	1		1				0	1		0	1	3
5:40 PM		0	1	1	0	0		0				0	2		0	2	3
5:45 PM		1	1	2	0	2		2				0	2		0	2	6
5:50 PM		1	0	1	0	0		0				0	1		0	1	2
5:55 PM		0	0	0	1	0		1				0	2		0	2	3
Total Survey		23	20	43	7	33		40				0	40		6	46	129

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Glencoe Rd				Southbound NW Glencoe Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		3	3	6	2	7		9				0	6		2	8	23
4:15 PM		0	3	3	1	6		7				0	8		0	8	18
4:30 PM		4	6	10	2	6		8				0	9		1	10	28
4:45 PM		4	1	5	0	2		2				0	6		1	7	14
5:00 PM		4	4	8	0	3		3				0	1		1	2	13
5:15 PM		3	1	4	1	5		6				0	0		1	1	11
5:30 PM		3	1	4	0	2		2				0	5		0	5	11
5:45 PM		2	1	3	1	2		3				0	5		0	5	11
Total Survey		23	20	43	7	33		40				0	40		6	46	129

Heavy Vehicle Peak Hour Summary
4:20 PM to 5:20 PM

By Approach	Northbound NW Glencoe Rd			Southbound NW Glencoe Rd			Eastbound NW Evergreen Rd			Westbound NW Evergreen Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	27	40	67	21	16	37	0	0	0	26	18	44	74
PHF	0.68			0.58			0.00			0.59			0.66

By Movement	Northbound NW Glencoe Rd				Southbound NW Glencoe Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		12	15	27	3	18		21				0	22		4	26	74
PHF		0.75	0.54	0.68	0.38	0.64		0.58				0.00	0.50		0.50	0.59	0.66

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

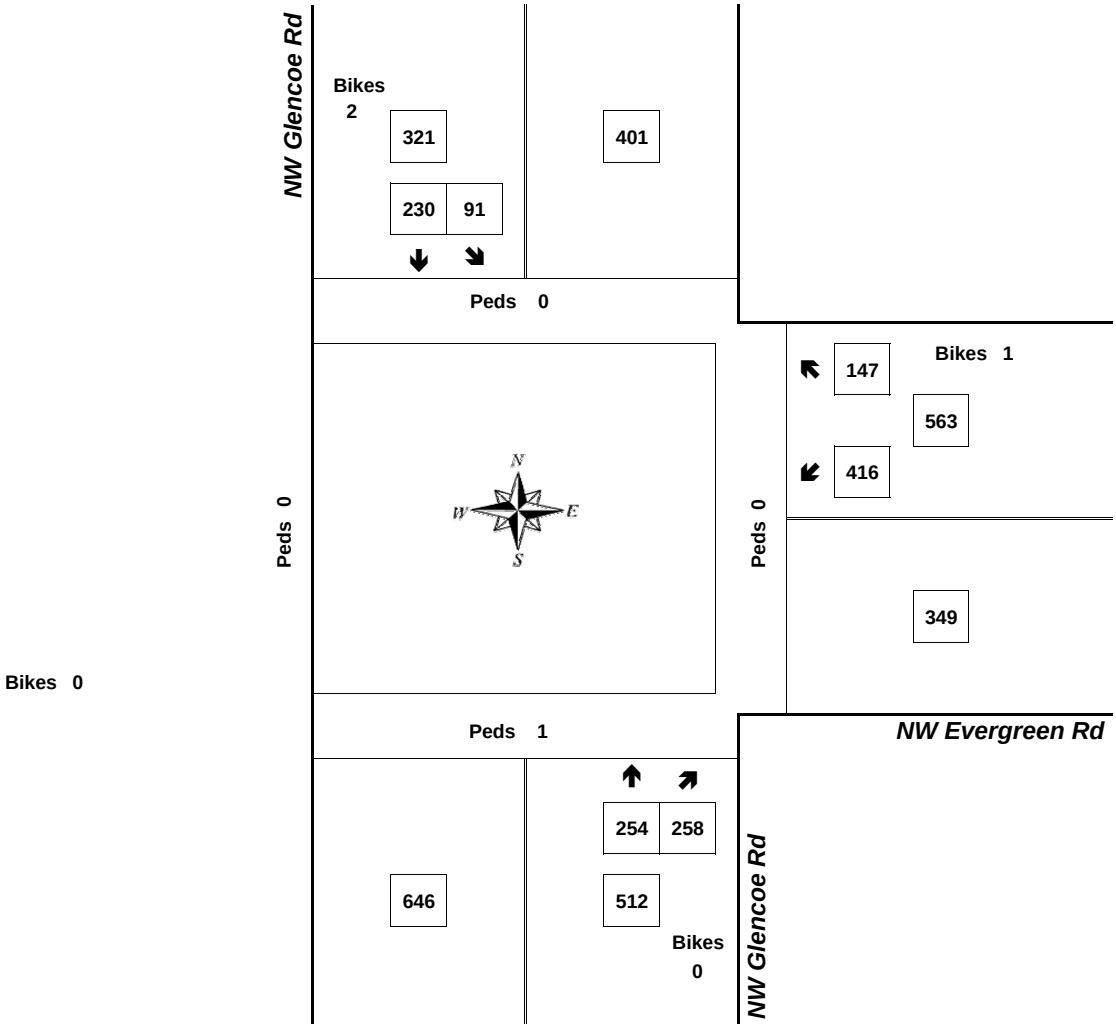
Interval Start Time	Northbound NW Glencoe Rd				Southbound NW Glencoe Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		11	13	24	5	21		26				0	29		4	33	83
4:15 PM		12	14	26	3	17		20				0	24		3	27	73
4:30 PM		15	12	27	3	16		19				0	16		4	20	66
4:45 PM		14	7	21	1	12		13				0	12		3	15	49
5:00 PM		12	7	19	2	12		14				0	11		2	13	46

Peak Hour Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740

NW Glencoe Rd & NW Evergreen Rd

4:20 PM to 5:20 PM
Wednesday, March 21, 2007

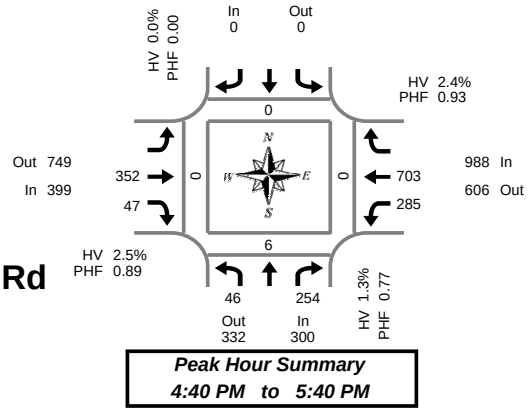


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.93	4.6%	563
NB	0.87	5.3%	512
SB	0.73	6.5%	321
Intersection	0.94	5.3%	1,396

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

Clay Carney
(503) 833-2740



NE Jackson School Rd & NW Evergreen Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:40 PM to 5:40 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Jackson School Rd				Southbound NE Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
4:00 PM	1		15	0				0	30	4	0	36	53		0		139	0	0	0	0
4:05 PM	5		13	0				0	36	1	0	18	45		0		118	0	0	0	0
4:10 PM	0		15	0				0	24	2	0	17	40		0		98	0	0	0	0
4:15 PM	4		20	0				0	38	5	0	15	46		0		128	0	0	0	0
4:20 PM	2		19	0				0	40	4	0	26	49		0		140	0	0	0	0
4:25 PM	2		18	0				0	38	10	0	18	55		0		141	0	1	0	0
4:30 PM	7		11	0				0	27	7	0	26	47		0		125	0	0	0	0
4:35 PM	4		17	0				0	26	6	0	15	54		0		122	0	0	0	0
4:40 PM	2		23	0				0	32	4	0	31	69		1		161	0	1	0	0
4:45 PM	5		24	0				0	24	4	0	24	57		0		138	0	0	0	0
4:50 PM	2		25	0				0	33	1	0	21	52		0		134	0	1	0	0
4:55 PM	2		9	0				0	24	3	0	24	49		0		111	0	0	0	0
5:00 PM	1		14	0				0	21	6	0	30	44		0		116	0	2	0	0
5:05 PM	5		31	0				0	40	0	0	19	45		0		140	0	0	0	0
5:10 PM	8		34	0				0	32	4	0	26	68		0		172	0	0	0	0
5:15 PM	3		17	0				0	26	3	0	18	70		0		137	0	0	0	0
5:20 PM	5		30	0				0	27	3	0	23	60		0		148	0	1	0	0
5:25 PM	7		18	0				0	36	4	0	23	66		0		154	0	1	0	0
5:30 PM	6		18	0				0	27	13	0	23	62		0		149	0	0	0	0
5:35 PM	0		11	0				0	30	2	0	23	61		0		127	0	0	0	0
5:40 PM	3		17	0				0	35	7	0	21	47		0		130	0	0	0	0
5:45 PM	3		18	0				0	33	7	0	23	57		0		141	0	1	0	0
5:50 PM	4		17	0				0	21	8	0	33	37		0		120	0	1	0	0
5:55 PM	0		17	0				0	42	6	0	27	42		0		134	0	0	0	0
Total Survey	81		451	0				0	742	114	0	560	1,275		1		3,223	0	9	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Jackson School Rd				Southbound NE Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
4:00 PM	6		43	0				0	90	7	0	71	138		0		355	0	0	0	0
4:15 PM	8		57	0				0	116	19	0	59	150		0		409	0	1	0	0
4:30 PM	13		51	0				0	85	17	0	72	170		1		408	0	1	0	0
4:45 PM	9		58	0				0	81	8	0	69	158		0		383	0	1	0	0
5:00 PM	14		79	0				0	93	10	0	75	157		0		428	0	2	0	0
5:15 PM	15		65	0				0	89	10	0	64	196		0		439	0	2	0	0
5:30 PM	9		46	0				0	92	22	0	67	170		0		406	0	0	0	0
5:45 PM	7		52	0				0	96	21	0	83	136		0		395	0	2	0	0
Total Survey	81		451	0				0	742	114	0	560	1,275		1		3,223	0	9	0	0

Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound NE Jackson School Rd				Southbound NE Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	300	332	632	0	0	0	0	0	399	749	1,148	0	988	606	1,594	1	1,687	0	6	0	0
%HV	1.3%				0.0%				2.5%				2.4%				2.3%				
PHF	0.77				0.00				0.89				0.93				0.92				

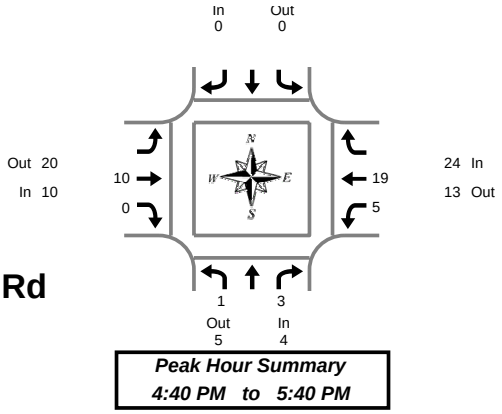
By Movement	Northbound NE Jackson School Rd				Southbound NE Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total
	L		R	Total				Total		T	R	Total	L	T		Total	
Volume	46		254	300				0		352	47	399	285	703		988	1,687
%HV	2.2%	NA	1.2%	1.3%	NA	NA	NA	0.0%	NA	2.8%	0.0%	2.5%	1.8%	2.7%	NA	2.4%	2.3%
PHF	0.64		0.77	0.77				0.00		0.90	0.59	0.89	0.94	0.89		0.93	0.92

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Jackson School Rd				Southbound NE Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
4:00 PM	36		209	0				0	372	51	0	271	616		1		1,555	0	3	0	0
4:15 PM	44		245	0				0	375	54	0	275	635		1		1,628	0	5	0	0
4:30 PM	51		253	0				0	348	45	0	280	681		1		1,658	0	6	0	0
4:45 PM	47		248	0				0	355	50	0	275	681		0		1,656	0	5	0	0
5:00 PM	45		242	0				0	370	63	0	289	659		0		1,668	0	6	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



NE Jackson School Rd & NW Evergreen Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:40 PM to 5:40 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Jackson School Rd				Southbound NE Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L		R	Total				Total	T	R	Total	L	T		Total		
4:00 PM	0		0	0				0	3	0	3	2	4		6		9
4:05 PM	0		0	0				0	2	0	2	1	3		4		6
4:10 PM	0		1	1				0	1	0	1	0	4		4		6
4:15 PM	0		0	0				0	2	0	2	1	1		2		4
4:20 PM	0		0	0				0	2	0	2	0	4		4		6
4:25 PM	0		0	0				0	1	1	2	0	3		3		5
4:30 PM	0		0	0				0	0	0	0	0	3		3		3
4:35 PM	0		0	0				0	3	1	4	0	2		2		6
4:40 PM	0		0	0				0	2	0	2	0	4		4		6
4:45 PM	0		0	0				0	2	0	2	3	2		5		7
4:50 PM	0		1	1				0	0	0	0	0	1		1		2
4:55 PM	0		0	0				0	0	0	0	1	2		3		3
5:00 PM	0		1	1				0	0	0	0	0	0		0		1
5:05 PM	0		0	0				0	1	0	1	0	2		2		3
5:10 PM	0		0	0				0	3	0	3	0	0		0		3
5:15 PM	0		1	1				0	0	0	0	0	2		2		3
5:20 PM	0		0	0				0	1	0	1	0	0		0		1
5:25 PM	1		0	1				0	0	0	0	0	1		1		2
5:30 PM	0		0	0				0	0	0	0	1	1		2		2
5:35 PM	0		0	0				0	1	0	1	0	4		4		5
5:40 PM	0		0	0				0	1	0	1	1	2		3		4
5:45 PM	0		1	1				0	1	0	1	0	3		3		5
5:50 PM	0		0	0				0	0	0	0	1	1		2		2
5:55 PM	0		0	0				0	1	0	1	0	0		0		1
Total Survey	1		5	6				0	27	2	29	11	49		60		95

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Jackson School Rd				Southbound NE Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L		R	Total				Total	T	R	Total	L	T		Total		
4:00 PM	0		1	1				0	6	0	6	3	11		14		21
4:15 PM	0		0	0				0	5	1	6	1	8		9		15
4:30 PM	0		0	0				0	5	1	6	0	9		9		15
4:45 PM	0		1	1				0	2	0	2	4	5		9		12
5:00 PM	0		1	1				0	4	0	4	0	2		2		7
5:15 PM	1		1	2				0	1	0	1	0	3		3		6
5:30 PM	0		0	0				0	2	0	2	2	7		9		11
5:45 PM	0		1	1				0	2	0	2	1	4		5		8
Total Survey	1		5	6				0	27	2	29	11	49		60		95

Heavy Vehicle Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound NE Jackson School Rd			Southbound NE Jackson School Rd			Eastbound NW Evergreen Rd			Westbound NW Evergreen Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	4	5	9	0	0	0	10	20	30	24	13	37	38
PHF	0.50			0.00			0.63			0.60			0.63

By Movement	Northbound NE Jackson School Rd				Southbound NE Jackson School Rd				Eastbound NW Evergreen Rd			Westbound NW Evergreen Rd				Total
	L		R	Total				Total	T	R	Total	L	T		Total	
Volume	1		3	4				0	10	0	10	5	19		24	38
PHF	0.25		0.38	0.50				0.00	0.63	0.00	0.63	0.31	0.68		0.60	0.63

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

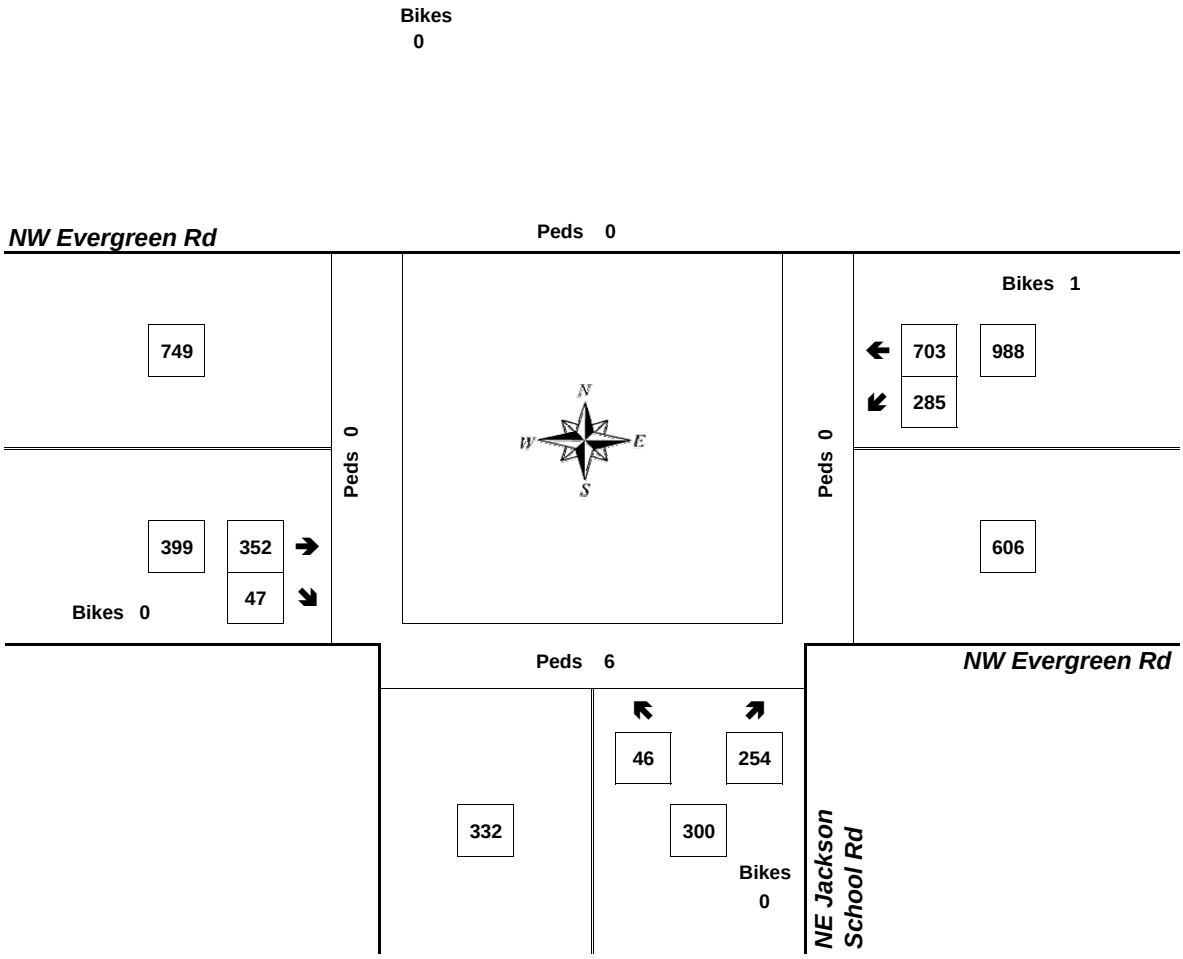
Interval Start Time	Northbound NE Jackson School Rd				Southbound NE Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L		R	Total				Total	T	R	Total	L	T		Total		
4:00 PM	0		2	2				0	18	2	20	8	33		41		63
4:15 PM	0		2	2				0	16	2	18	5	24		29		49
4:30 PM	1		3	4				0	12	1	13	4	19		23		40
4:45 PM	1		3	4				0	9	0	9	6	17		23		36
5:00 PM	1		3	4				0	9	0	9	3	16		19		32

Peak Hour Summary

Clay Carney
(503) 833-2740

NE Jackson School Rd & NW Evergreen Rd

4:40 PM to 5:40 PM
Wednesday, March 21, 2007

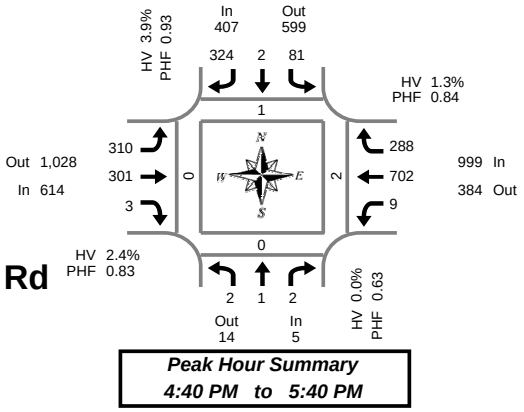


Approach	PHF	HV%	Volume
EB	0.89	2.5%	399
WB	0.93	2.4%	988
NB	0.77	1.3%	300
SB	0.00	0.0%	0
Intersection	0.92	2.3%	1,687

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

Clay Carney
(503) 833-2740



NW Jackson School Rd & NW Evergreen Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:40 PM to 5:40 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	0	1	0	12	0	40	0	20	31	0	0	0	42	10	0	156	0	0	0	0
4:05 PM	0	0	0	0	3	1	21	0	16	18	1	0	0	35	11	0	106	0	0	0	0
4:10 PM	0	0	0	0	7	0	15	0	32	28	0	0	1	33	16	0	132	0	0	0	0
4:15 PM	0	0	1	0	9	0	26	0	21	30	0	0	0	43	7	0	137	0	0	0	0
4:20 PM	0	0	0	0	14	0	30	1	23	33	0	0	2	43	18	0	163	0	0	1	0
4:25 PM	1	0	0	0	15	0	24	0	29	26	0	0	0	52	12	0	159	0	0	0	0
4:30 PM	0	0	0	0	8	0	27	0	17	28	0	0	0	44	12	0	136	1	0	0	0
4:35 PM	0	0	1	0	8	0	31	0	23	21	0	0	1	48	12	0	145	0	0	0	0
4:40 PM	1	0	0	0	10	0	28	0	21	20	1	0	1	69	19	0	170	0	0	0	0
4:45 PM	0	0	0	0	9	0	29	0	30	24	0	0	0	52	23	0	167	0	0	0	0
4:50 PM	1	0	0	0	8	0	25	0	35	28	0	0	1	51	16	0	165	0	0	0	0
4:55 PM	0	0	0	0	7	0	25	0	17	25	0	0	1	42	21	1	138	0	0	0	0
5:00 PM	0	0	0	0	7	0	30	0	7	17	0	0	3	54	15	0	133	0	0	0	0
5:05 PM	0	1	0	0	6	0	21	0	34	29	0	0	0	41	19	0	151	0	0	0	0
5:10 PM	0	0	0	0	5	0	33	0	33	31	0	0	0	68	22	0	192	0	0	0	0
5:15 PM	0	0	1	0	5	2	22	0	32	26	1	0	2	68	26	0	185	0	0	1	0
5:20 PM	0	0	1	0	4	0	38	0	31	25	0	0	1	54	40	0	194	0	0	0	0
5:25 PM	0	0	0	0	7	0	27	0	25	26	1	0	0	68	33	0	187	1	0	0	0
5:30 PM	0	0	0	0	7	0	21	0	26	26	0	0	0	73	30	0	183	0	0	0	0
5:35 PM	0	0	0	0	6	0	25	0	19	24	0	1	0	62	24	0	160	0	0	1	0
5:40 PM	0	0	0	0	16	0	18	0	13	30	0	0	0	55	14	0	146	0	0	0	0
5:45 PM	0	0	0	0	6	0	26	0	28	30	0	0	2	47	15	0	154	0	0	0	0
5:50 PM	1	1	1	0	8	2	26	0	13	27	0	0	1	46	10	0	136	0	0	0	0
5:55 PM	2	0	0	0	7	0	22	0	30	31	0	0	0	48	18	0	158	0	0	0	0
Total Survey	6	2	6	0	194	5	630	1	575	634	4	1	16	1,238	443	1	3,753	2	0	3	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	0	1	0	22	1	76	0	68	77	1	0	1	110	37	0	394	0	0	0	0
4:15 PM	1	0	1	0	38	0	80	1	73	89	0	0	2	138	37	0	459	0	0	1	0
4:30 PM	1	0	1	0	26	0	86	0	61	69	1	0	2	161	43	0	451	1	0	0	0
4:45 PM	1	0	0	0	24	0	79	0	82	77	0	0	2	145	60	1	470	0	0	0	0
5:00 PM	0	1	0	0	18	0	84	0	74	77	0	0	3	163	56	0	476	0	0	0	0
5:15 PM	0	0	2	0	16	2	87	0	88	77	2	0	3	190	99	0	566	1	0	1	0
5:30 PM	0	0	0	0	29	0	64	0	58	80	0	1	0	190	68	0	489	0	0	1	0
5:45 PM	3	1	1	0	21	2	74	0	71	88	0	0	3	141	43	0	448	0	0	0	0
Total Survey	6	2	6	0	194	5	630	1	575	634	4	1	16	1,238	443	1	3,753	2	0	3	0

Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	5	14	19	0	407	599	1,006	0	614	1,028	1,642	1	999	384	1,383	1	2,025	1	0	2	0
%HV	0.0%				3.9%				2.4%				1.3%				2.2%				
PHF	0.63				0.93				0.83				0.84				0.89				

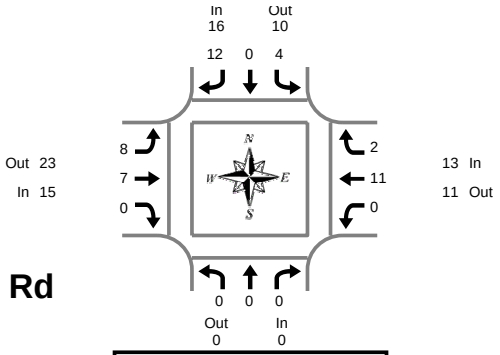
By Movement	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	2	1	2	5	81	2	324	407	310	301	3	614	9	702	288	999	2,025
%HV	0.0%	0.0%	0.0%	0.0%	4.9%	0.0%	3.7%	3.9%	2.6%	2.3%	0.0%	2.4%	0.0%	1.6%	0.7%	1.3%	2.2%
PHF	0.25	0.25	0.25	0.63	0.75	0.25	0.87	0.93	0.78	0.88	0.38	0.83	0.45	0.86	0.70	0.84	0.89

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	3	0	3	0	110	1	321	1	284	312	2	0	7	554	177	1	1,774	1	0	1	0
4:15 PM	3	1	2	0	106	0	329	1	290	312	1	0	9	607	196	1	1,856	1	0	1	0
4:30 PM	2	1	3	0	84	2	336	0	305	300	3	0	10	659	258	1	1,963	2	0	1	0
4:45 PM	1	1	2	0	87	2	314	0	302	311	2	1	8	688	283	1	2,001	1	0	2	0
5:00 PM	3	2	3	0	84	4	309	0	291	322	2	1	9	684	266	0	1,979	1	0	2	0

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



NW Jackson School Rd & NW Evergreen Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:40 PM to 5:40 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	0	0	1	0	2	3	0	3	0	3	0	5	0	5	11
4:05 PM	0	0	0	0	0	0	2	2	0	0	1	1	0	3	0	3	6
4:10 PM	0	0	0	0	0	0	3	3	1	0	0	1	0	1	1	2	6
4:15 PM	0	0	0	0	1	0	1	2	2	2	0	4	0	1	0	1	7
4:20 PM	0	0	0	0	1	0	4	5	1	0	0	1	0	1	0	1	7
4:25 PM	0	0	0	0	5	0	1	6	1	1	0	2	0	0	0	0	8
4:30 PM	0	0	0	0	2	0	2	4	0	0	0	0	0	1	0	1	5
4:35 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	2	1	3	4
4:40 PM	0	0	0	0	2	0	3	5	3	2	0	5	0	1	0	1	11
4:45 PM	0	0	0	0	0	0	2	2	0	0	0	0	0	1	0	1	3
4:50 PM	0	0	0	0	0	0	0	0	2	1	0	3	0	1	0	1	4
4:55 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	2	3
5:00 PM	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	2
5:05 PM	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	2
5:10 PM	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4	4
5:20 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
5:25 PM	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	3	3	0	0	0	0	0	2	0	2	5
5:35 PM	0	0	0	0	0	0	1	1	0	1	0	1	0	2	0	2	4
5:40 PM	0	0	0	0	1	0	0	1	1	0	0	1	0	2	0	2	4
5:45 PM	0	0	0	0	0	0	2	2	0	1	0	1	0	0	0	0	3
5:50 PM	0	0	0	0	0	0	3	3	1	1	0	2	0	1	0	1	6
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	0	0	0	15	0	33	48	15	15	1	31	0	28	4	32	111

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	0	0	1	0	7	8	1	3	1	5	0	9	1	10	23
4:15 PM	0	0	0	0	7	0	6	13	4	3	0	7	0	2	0	2	22
4:30 PM	0	0	0	0	4	0	6	10	3	2	0	5	0	4	1	5	20
4:45 PM	0	0	0	0	0	0	3	3	2	1	0	3	0	3	1	4	10
5:00 PM	0	0	0	0	1	0	1	2	3	2	0	5	0	0	0	0	7
5:15 PM	0	0	0	0	1	0	1	2	0	1	0	1	0	3	1	4	7
5:30 PM	0	0	0	0	1	0	4	5	1	1	0	2	0	6	0	6	13
5:45 PM	0	0	0	0	0	0	5	5	1	2	0	3	0	1	0	1	9
Total Survey	0	0	0	0	15	0	33	48	15	15	1	31	0	28	4	32	111

Heavy Vehicle Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound NW Jackson School Rd			Southbound NW Jackson School Rd			Eastbound NW Evergreen Rd			Westbound NW Evergreen Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	0	0	0	16	10	26	15	23	38	13	11	24	44
PHF	0.00			0.57			0.47			0.81			0.61

By Movement	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	0	0	0	4	0	12	16	8	7	0	15	0	11	2	13	44
PHF	0.00	0.00	0.00	0.00	0.50	0.00	0.60	0.57	0.40	0.58	0.00	0.47	0.00	0.69	0.50	0.81	0.61

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

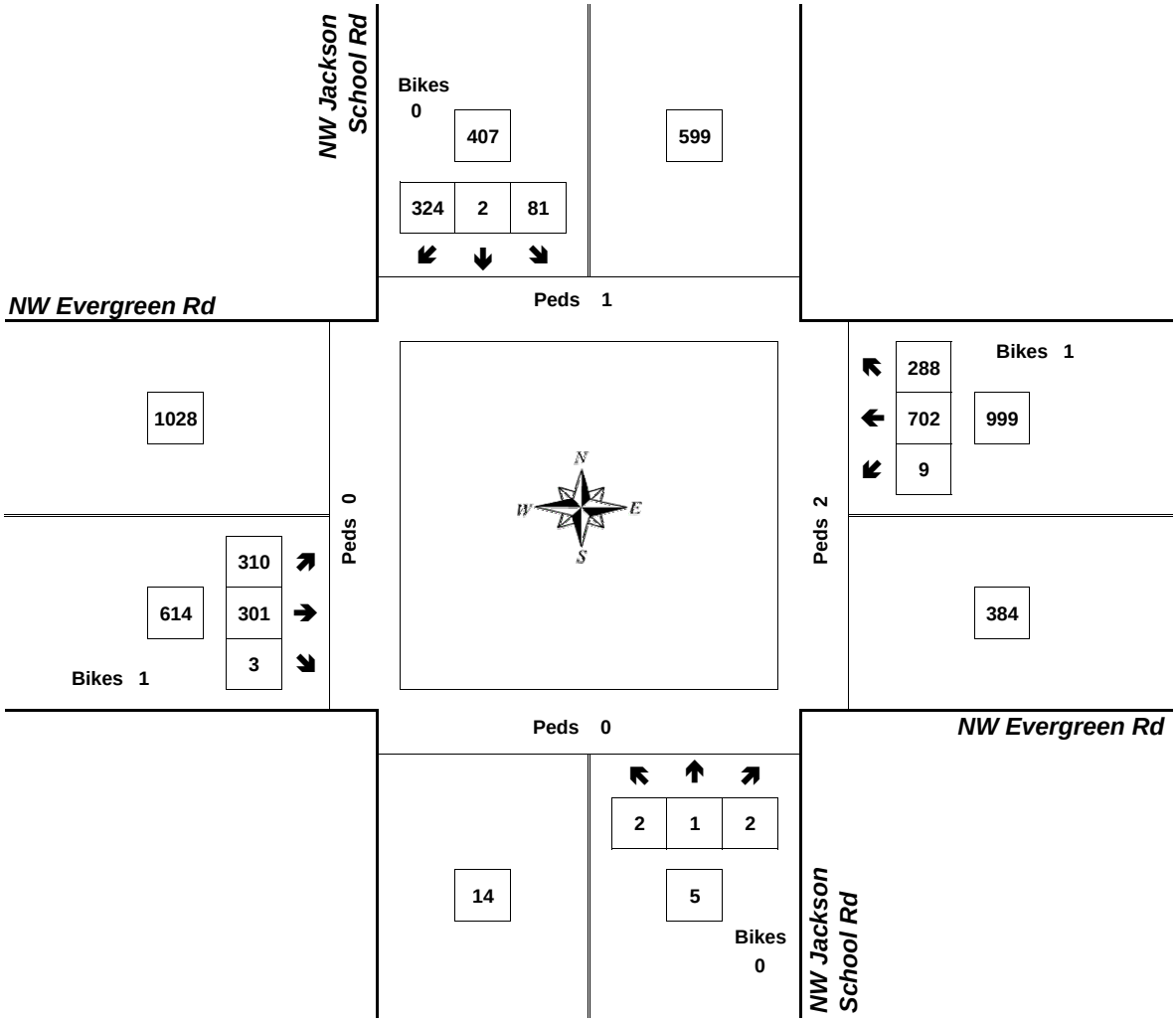
Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	0	0	12	0	22	34	10	9	1	20	0	18	3	21	75
4:15 PM	0	0	0	0	12	0	16	28	12	8	0	20	0	9	2	11	59
4:30 PM	0	0	0	0	6	0	11	17	8	6	0	14	0	10	3	13	44
4:45 PM	0	0	0	0	3	0	9	12	6	5	0	11	0	12	2	14	37
5:00 PM	0	0	0	0	3	0	11	14	5	6	0	11	0	10	1	11	36

Peak Hour Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740

NW Jackson School Rd & NW Evergreen Rd

4:40 PM to 5:40 PM
Wednesday, March 21, 2007

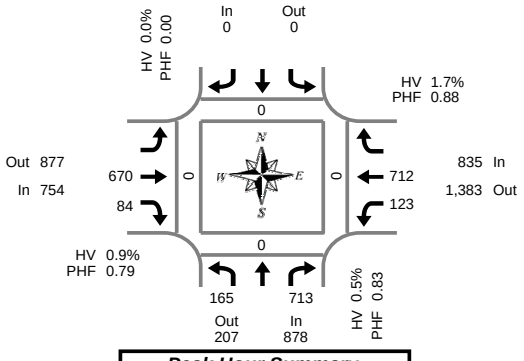


Approach	PHF	HV%	Volume
EB	0.83	2.4%	614
WB	0.84	1.3%	999
NB	0.63	0.0%	5
SB	0.93	3.9%	407
Intersection	0.89	2.2%	2,025

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

Clay Carney
(503) 833-2740



NE 25th Ave & NW Evergreen Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:55 PM to 5:55 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 25th Ave				Southbound NE 25th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
4:00 PM	12		17	0				0	31	13	0	12	45		0	130		0	0	0	0
4:05 PM	9		21	0				0	28	6	0	17	42		0	123		0	0	0	0
4:10 PM	9		34	0				0	36	9	0	10	47		0	145		0	0	0	0
4:15 PM	8		20	0				0	30	10	0	19	51		0	138		0	0	0	0
4:20 PM	7		22	0				0	40	9	0	10	66		0	154		0	0	0	0
4:25 PM	9		24	0				0	39	8	0	13	44		0	137		0	0	0	0
4:30 PM	10		31	0				0	48	11	0	14	57		0	171		0	0	0	0
4:35 PM	11		28	0				0	42	8	0	7	54		0	150		0	0	0	0
4:40 PM	17		32	0				0	36	6	0	10	70		0	171		0	0	0	0
4:45 PM	10		32	0				0	49	6	0	10	52		0	159		0	0	0	0
4:50 PM	17		35	0				0	55	10	0	18	59		0	194		0	0	0	0
4:55 PM	12		50	0				0	44	7	0	12	54		0	179		0	0	0	0
5:00 PM	14		55	0				0	41	4	0	9	54		0	177		0	0	0	0
5:05 PM	7		51	0				0	50	4	0	11	45		0	168		0	0	0	0
5:10 PM	21		57	0				0	45	10	0	9	71		0	213		0	0	0	0
5:15 PM	9		76	0				0	84	8	0	9	43		0	229		0	0	0	0
5:20 PM	29		58	0				0	65	5	0	8	72		0	237		0	0	0	0
5:25 PM	7		65	0				0	68	8	0	11	67		0	226		0	0	0	0
5:30 PM	15		78	0				0	56	3	0	6	72		0	230		0	0	0	0
5:35 PM	24		75	0				0	54	8	0	6	54		0	221		0	0	0	0
5:40 PM	12		54	0				0	48	5	0	20	72		0	211		0	0	0	0
5:45 PM	7		51	0				0	54	11	0	11	45		0	179		0	0	0	0
5:50 PM	8		43	0				0	61	11	0	11	63		0	197		0	0	0	0
5:55 PM	15		39	0				0	50	8	0	7	50		0	169		0	0	0	0
Total Survey	299		1,048	0				0	1,154	188	0	270	1,349		0	4,308		0	0	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 25th Ave				Southbound NE 25th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
4:00 PM	30		72	0				0	95	28	0	39	134		0	398		0	0	0	0
4:15 PM	24		66	0				0	109	27	0	42	161		0	429		0	0	0	0
4:30 PM	38		91	0				0	126	25	0	31	181		0	492		0	0	0	0
4:45 PM	39		117	0				0	148	23	0	40	165		0	532		0	0	0	0
5:00 PM	42		163	0				0	136	18	0	29	170		0	558		0	0	0	0
5:15 PM	45		199	0				0	217	21	0	28	182		0	692		0	0	0	0
5:30 PM	51		207	0				0	158	16	0	32	198		0	662		0	0	0	0
5:45 PM	30		133	0				0	165	30	0	29	158		0	545		0	0	0	0
Total Survey	299		1,048	0				0	1,154	188	0	270	1,349		0	4,308		0	0	0	0

Peak Hour Summary
4:55 PM to 5:55 PM

By Approach	Northbound NE 25th Ave				Southbound NE 25th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	878	207	1,085	0	0	0	0	0	754	877	1,631	0	835	1,383	2,218	0	2,467	0	0	0	0
%HV	0.5%				0.0%				0.9%				1.7%				1.0%				
PHF	0.83				0.00				0.79				0.88				0.89				

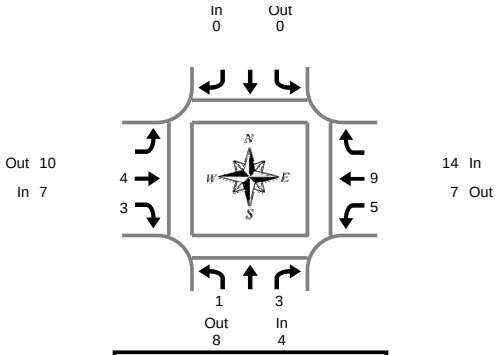
By Movement	Northbound NE 25th Ave				Southbound NE 25th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total
	L		R	Total				Total		T	R	Total	L	T		Total	
Volume	165		713	878				0		670	84	754	123	712		835	2,467
%HV	0.6%	NA	0.4%	0.5%	NA	NA	NA	0.0%	NA	0.6%	3.6%	0.9%	4.1%	1.3%	NA	1.7%	1.0%
PHF	0.70		0.82	0.83				0.00		0.77	0.78	0.79	0.73	0.84		0.88	0.89

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 25th Ave				Southbound NE 25th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
4:00 PM	131		346	0				0	478	103	0	152	641		0	1,851		0	0	0	0
4:15 PM	143		437	0				0	519	93	0	142	677		0	2,011		0	0	0	0
4:30 PM	164		570	0				0	627	87	0	128	698		0	2,274		0	0	0	0
4:45 PM	177		686	0				0	659	78	0	129	715		0	2,444		0	0	0	0
5:00 PM	168		702	0				0	676	85	0	118	708		0	2,457		0	0	0	0

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



NE 25th Ave & NW Evergreen Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:55 PM to 5:55 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 25th Ave				Southbound NE 25th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L		R	Total				Total	T	R	Total		L	T		Total	
4:00 PM	1		3	4				0	1	1	2		0	3		3	9
4:05 PM	0		0	0				0	0	0	0		0	1		1	1
4:10 PM	1		0	1				0	1	0	1		0	1		1	3
4:15 PM	0		0	0				0	2	1	3		1	1		2	5
4:20 PM	0		0	0				0	2	0	2		1	1		2	4
4:25 PM	0		0	0				0	2	1	3		1	0		1	4
4:30 PM	0		0	0				0	3	0	3		1	1		2	5
4:35 PM	0		0	0				0	1	0	1		0	2		2	3
4:40 PM	2		2	4				0	0	0	0		0	2		2	6
4:45 PM	0		2	2				0	1	0	1		2	0		2	5
4:50 PM	1		0	1				0	1	0	1		0	1		1	3
4:55 PM	0		0	0				0	0	0	0		0	0		0	0
5:00 PM	0		0	0				0	0	0	0		1	0		1	1
5:05 PM	0		0	0				0	0	1	1		2	0		2	3
5:10 PM	0		0	0				0	1	0	1		0	1		1	2
5:15 PM	0		0	0				0	1	0	1		0	1		1	2
5:20 PM	1		0	1				0	0	0	0		0	0		0	1
5:25 PM	0		1	1				0	1	0	1		0	1		1	3
5:30 PM	0		0	0				0	0	0	0		0	2		2	2
5:35 PM	0		2	2				0	0	1	1		0	2		2	5
5:40 PM	0		0	0				0	0	0	0		0	1		1	1
5:45 PM	0		0	0				0	0	1	1		1	1		2	3
5:50 PM	0		0	0				0	1	0	1		1	0		1	2
5:55 PM	0		0	0				0	0	0	0		0	0		0	0
Total Survey	6		10	16				0	18	6	24		11	22		33	73

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 25th Ave				Southbound NE 25th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L		R	Total				Total	T	R	Total		L	T		Total	
4:00 PM	2		3	5				0	2	1	3		0	5		5	13
4:15 PM	0		0	0				0	6	2	8		3	2		5	13
4:30 PM	2		2	4				0	4	0	4		1	5		6	14
4:45 PM	1		2	3				0	2	0	2		2	1		3	8
5:00 PM	0		0	0				0	1	1	2		3	1		4	6
5:15 PM	1		1	2				0	2	0	2		0	2		2	6
5:30 PM	0		2	2				0	0	1	1		0	5		5	8
5:45 PM	0		0	0				0	1	1	2		2	1		3	5
Total Survey	6		10	16				0	18	6	24		11	22		33	73

Heavy Vehicle Peak Hour Summary
4:55 PM to 5:55 PM

By Approach	Northbound NE 25th Ave			Southbound NE 25th Ave			Eastbound NW Evergreen Rd			Westbound NW Evergreen Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	4	8	12	0	0	0	7	10	17	14	7	21	25
PHF	0.33			0.00			0.58			0.70			0.63

By Movement	Northbound NE 25th Ave				Southbound NE 25th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total
	L		R	Total				Total	T	R	Total		L	T		Total	
Volume	1		3	4				0	4	3	7		5	9		14	25
PHF	0.25		0.25	0.33				0.00	0.50	0.38	0.58		0.42	0.45		0.70	0.63

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

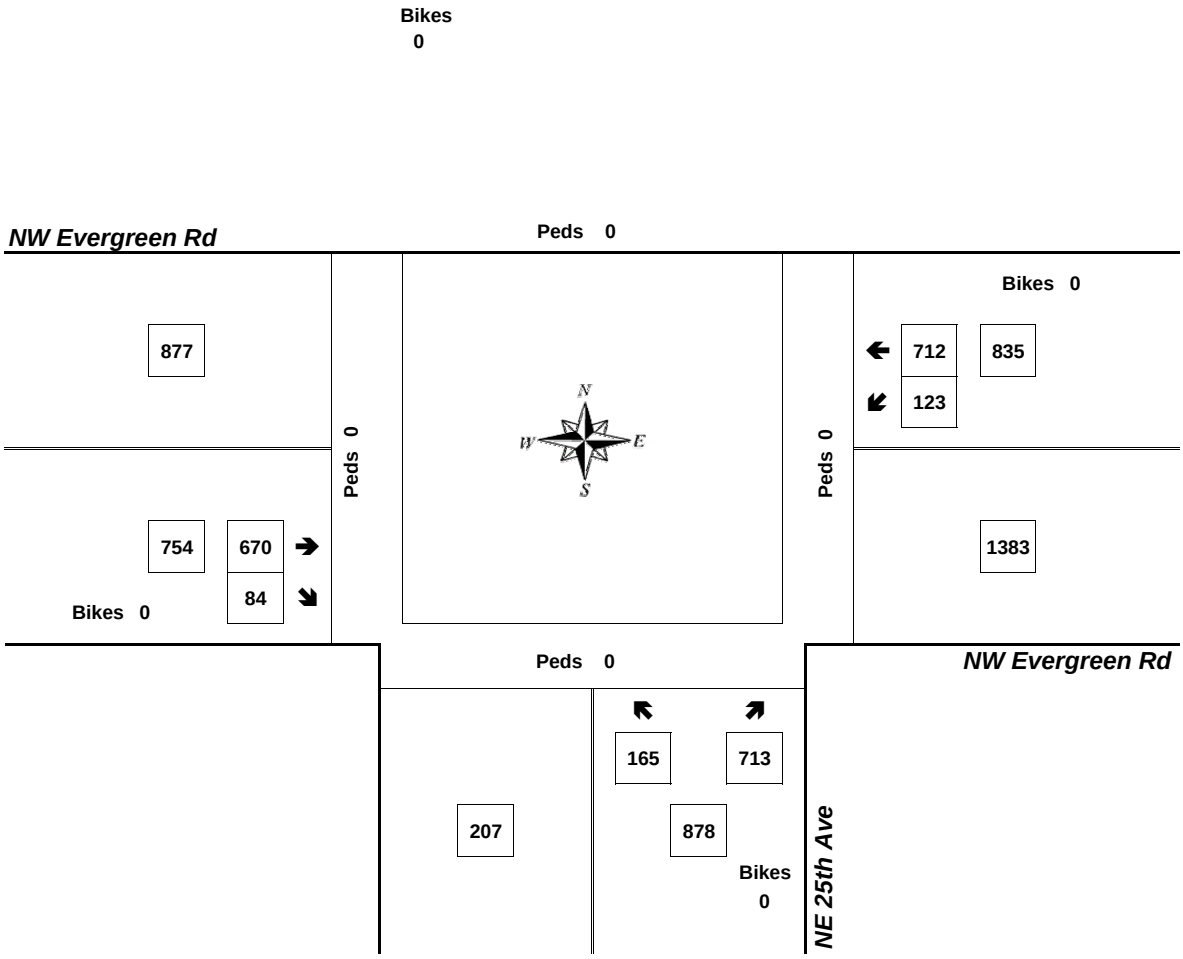
Interval Start Time	Northbound NE 25th Ave				Southbound NE 25th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L		R	Total				Total	T	R	Total		L	T		Total	
4:00 PM	5		7	12				0	14	3	17		6	13		19	48
4:15 PM	3		4	7				0	13	3	16		9	9		18	41
4:30 PM	4		5	9				0	9	1	10		6	9		15	34
4:45 PM	2		5	7				0	5	2	7		5	9		14	28
5:00 PM	1		3	4				0	4	3	7		5	9		14	25

Peak Hour Summary

Clay Carney
(503) 833-2740

NE 25th Ave & NW Evergreen Rd

4:55 PM to 5:55 PM
Wednesday, March 21, 2007

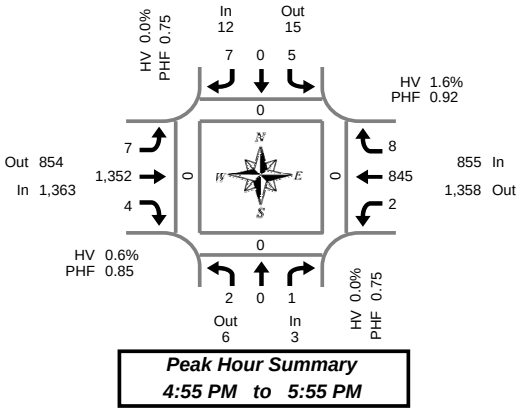


Approach	PHF	HV%	Volume
EB	0.79	0.9%	754
WB	0.88	1.7%	835
NB	0.83	0.5%	878
SB	0.00	0.0%	0
Intersection	0.89	1.0%	2,467

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
4:55 PM to 5:55 PM

NW Sewell Rd & NW Evergreen Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Sewell Rd				Southbound NW Sewell Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	0	0	0	0	0	0	0	1	56	0	0	0	59	1	0	117	0	0	0	0
4:05 PM	0	0	0	0	2	0	0	0	0	50	0	0	0	57	0	0	109	0	0	0	0
4:10 PM	1	0	0	0	1	0	2	0	1	68	0	0	1	55	0	0	129	0	0	0	0
4:15 PM	0	0	0	0	1	0	1	0	0	46	2	0	1	76	0	0	127	0	0	0	0
4:20 PM	0	0	0	0	1	0	0	0	0	65	0	0	0	57	0	0	123	0	0	0	0
4:25 PM	0	0	0	0	0	0	2	0	1	73	0	0	0	66	3	0	145	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	2	67	0	0	0	59	0	0	128	0	0	0	0
4:35 PM	0	0	0	0	1	0	0	0	0	67	0	0	0	71	0	0	139	0	0	0	0
4:40 PM	1	0	2	0	0	0	0	0	1	70	0	0	0	84	0	0	158	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	1	85	0	0	1	82	1	0	170	0	0	0	0
4:50 PM	0	0	1	0	0	0	0	0	1	81	1	0	1	56	0	0	141	0	0	0	0
4:55 PM	1	0	0	0	1	0	1	0	1	92	0	0	0	64	1	0	161	0	0	0	0
5:00 PM	0	0	0	0	1	0	0	0	1	98	0	0	1	63	1	0	165	0	0	0	0
5:05 PM	0	0	0	0	0	0	1	0	1	99	0	0	0	68	0	0	169	0	0	0	0
5:10 PM	0	0	0	0	0	0	1	0	0	117	2	0	0	72	1	0	193	0	0	0	0
5:15 PM	0	0	0	0	1	0	0	0	0	156	0	0	0	70	2	0	229	0	0	0	0
5:20 PM	0	0	0	0	0	0	1	0	0	115	0	0	0	71	0	0	187	0	0	0	0
5:25 PM	0	0	0	0	0	0	0	0	2	126	0	0	0	78	1	0	207	0	0	0	0
5:30 PM	0	0	1	0	1	0	2	0	0	133	0	0	0	70	1	0	208	0	0	0	0
5:35 PM	0	0	0	0	0	0	0	0	2	116	0	0	0	82	1	0	201	0	0	0	0
5:40 PM	0	0	0	0	1	0	0	0	0	93	1	0	0	66	0	0	161	0	0	0	0
5:45 PM	1	0	0	0	0	0	0	0	0	98	1	0	1	75	0	0	176	0	0	0	0
5:50 PM	0	0	0	0	0	0	1	0	0	109	0	0	0	66	0	0	176	0	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	1	77	0	0	0	59	2	0	139	0	0	0	0
Total Survey	4	0	4	0	11	0	12	0	16	2,157	7	0	6	1,626	15	0	3,858	0	0	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Sewell Rd				Southbound NW Sewell Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	1	0	0	0	3	0	2	0	2	174	0	0	1	171	1	0	355	0	0	0	0
4:15 PM	0	0	0	0	2	0	3	0	1	184	2	0	1	199	3	0	395	0	0	0	0
4:30 PM	1	0	2	0	1	0	0	0	3	204	0	0	0	214	0	0	425	0	0	0	0
4:45 PM	1	0	1	0	1	0	1	0	3	258	1	0	2	202	2	0	472	0	0	0	0
5:00 PM	0	0	0	0	1	0	2	0	2	314	2	0	1	203	2	0	527	0	0	0	0
5:15 PM	0	0	0	0	1	0	1	0	2	397	0	0	0	219	3	0	623	0	0	0	0
5:30 PM	0	0	1	0	2	0	2	0	2	342	1	0	0	218	2	0	570	0	0	0	0
5:45 PM	1	0	0	0	0	0	1	0	1	284	1	0	1	200	2	0	491	0	0	0	0
Total Survey	4	0	4	0	11	0	12	0	16	2,157	7	0	6	1,626	15	0	3,858	0	0	0	0

Peak Hour Summary
4:55 PM to 5:55 PM

By Approach	Northbound NW Sewell Rd				Southbound NW Sewell Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	3	6	9	0	12	15	27	0	1,363	854	2,217	0	855	1,358	2,213	0	2,233	0	0	0	0
%HV	0.0%				0.0%				0.6%				1.6%				1.0%				
PHF	0.75				0.75				0.85				0.92				0.90				

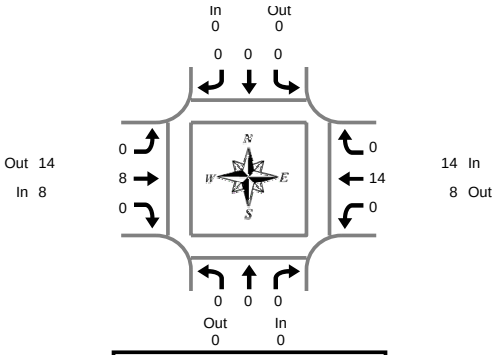
By Movement	Northbound NW Sewell Rd				Southbound NW Sewell Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	2	0	1	3	5	0	7	12	7	1,352	4	1,363	2	845	8	855	2,233
%HV	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%	0.6%	0.0%	1.7%	0.0%	1.6%	1.0%
PHF	0.50	0.00	0.25	0.75	0.63	0.00	0.58	0.75	0.44	0.85	0.50	0.85	0.50	0.92	0.67	0.92	0.90

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Sewell Rd				Southbound NW Sewell Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	3	0	3	0	7	0	6	0	9	820	3	0	4	786	6	0	1,647	0	0	0	0
4:15 PM	2	0	3	0	5	0	6	0	9	960	5	0	4	818	7	0	1,819	0	0	0	0
4:30 PM	2	0	3	0	4	0	4	0	10	1,173	3	0	3	838	7	0	2,047	0	0	0	0
4:45 PM	1	0	2	0	5	0	6	0	9	1,311	4	0	3	842	9	0	2,192	0	0	0	0
5:00 PM	1	0	1	0	4	0	6	0	7	1,337	4	0	2	840	9	0	2,211	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



NW Sewell Rd & NW Evergreen Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:55 PM to 5:55 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Sewell Rd				Southbound NW Sewell Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	4	0	4	0	2	0	2	6
4:05 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
4:10 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
4:15 PM	0	0	0	0	0	0	0	0	0	4	0	4	0	2	0	2	6
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
4:25 PM	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	4
4:30 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
4:40 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4
4:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4
4:50 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5:05 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:25 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1	3
5:35 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5:50 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	0	0	0	0	0	0	0	0	29	0	29	0	32	0	32	61

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Sewell Rd				Southbound NW Sewell Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	6	0	6	0	5	0	5	11
4:15 PM	0	0	0	0	0	0	0	0	0	8	0	8	0	5	0	5	13
4:30 PM	0	0	0	0	0	0	0	0	0	4	0	4	0	6	0	6	10
4:45 PM	0	0	0	0	0	0	0	0	0	3	0	3	0	2	0	2	5
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	4	0	4	5
5:15 PM	0	0	0	0	0	0	0	0	0	3	0	3	0	2	0	2	5
5:30 PM	0	0	0	0	0	0	0	0	0	3	0	3	0	5	0	5	8
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	3	4
Total Survey	0	0	0	0	0	0	0	0	0	29	0	29	0	32	0	32	61

Heavy Vehicle Peak Hour Summary
4:55 PM to 5:55 PM

By Approach	Northbound NW Sewell Rd			Southbound NW Sewell Rd			Eastbound NW Evergreen Rd			Westbound NW Evergreen Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	0	0	0	0	0	0	8	14	22	14	8	22	22
PHF	0.00			0.00			0.40			0.70			0.69

By Movement	Northbound NW Sewell Rd				Southbound NW Sewell Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	0	0	0	0	0	0	0	0	8	0	8	0	14	0	14	22
PHF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.40	0.00	0.70	0.00	0.70	0.69

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

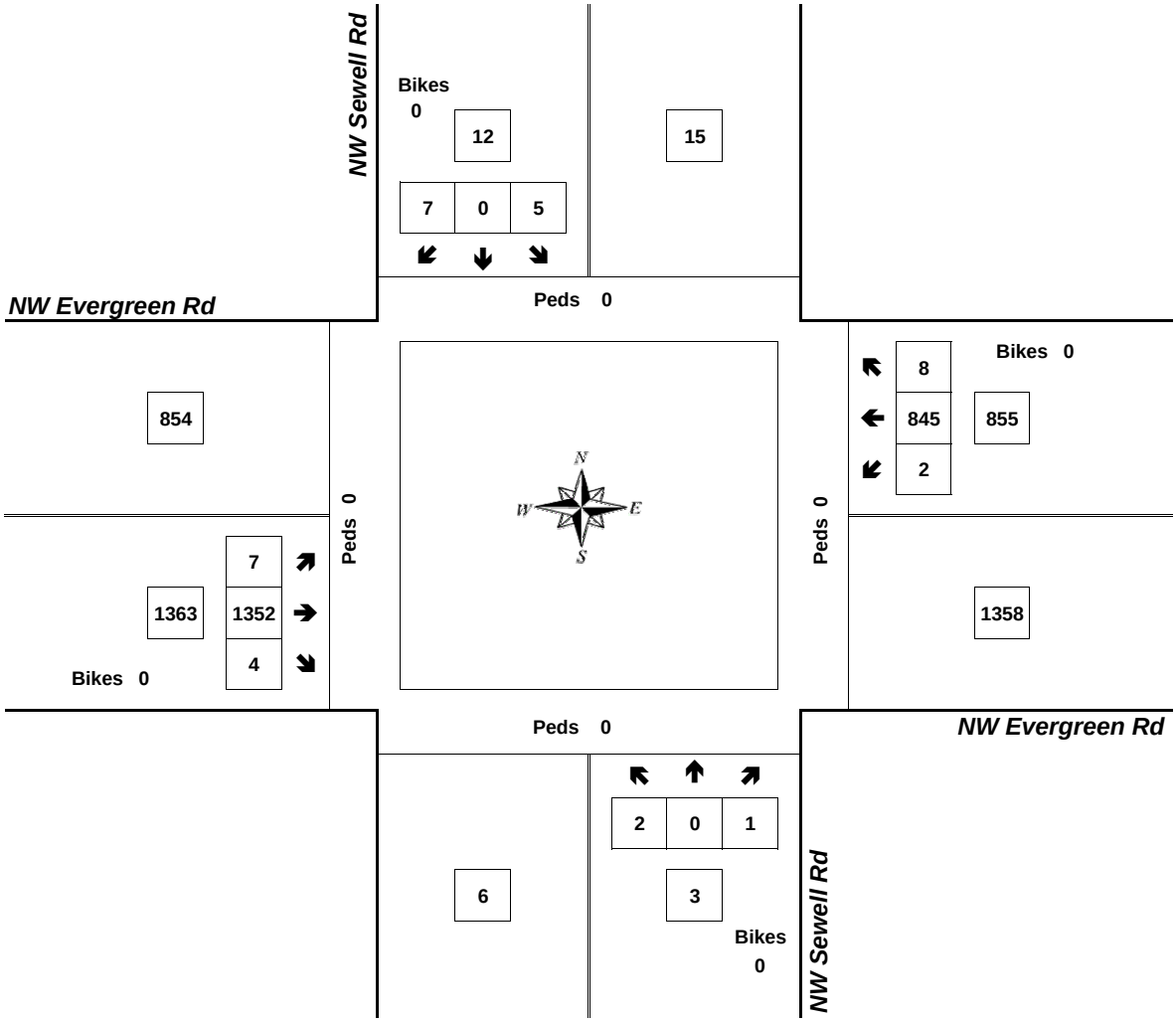
Interval Start Time	Northbound NW Sewell Rd				Southbound NW Sewell Rd				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	21	0	21	0	18	0	18	39
4:15 PM	0	0	0	0	0	0	0	0	0	16	0	16	0	17	0	17	33
4:30 PM	0	0	0	0	0	0	0	0	0	11	0	11	0	14	0	14	25
4:45 PM	0	0	0	0	0	0	0	0	0	10	0	10	0	13	0	13	23
5:00 PM	0	0	0	0	0	0	0	0	0	8	0	8	0	14	0	14	22

Peak Hour Summary

Clay Carney
(503) 833-2740

NW Sewell Rd & NW Evergreen Rd

4:55 PM to 5:55 PM
Wednesday, March 21, 2007

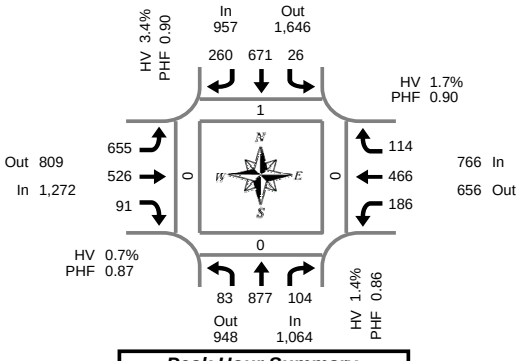


Approach	PHF	HV%	Volume
EB	0.85	0.6%	1,363
WB	0.92	1.6%	855
NB	0.75	0.0%	3
SB	0.75	0.0%	12
Intersection	0.90	1.0%	2,233

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

Clay Carney
(503) 833-2740



NW Shute Rd & NW Evergreen Pkwy

Thursday, March 15, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
5:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	6	38	9	0	2	25	15	0	17	28	7	0	7	45	6	0	205	0	0	0	0
4:05 PM	11	58	8	0	2	75	21	0	16	16	6	0	21	29	2	0	265	0	0	0	0
4:10 PM	5	56	7	0	0	65	16	0	55	23	5	0	22	29	2	0	285	0	0	0	0
4:15 PM	4	50	6	0	1	58	26	0	42	38	6	0	9	34	9	0	283	0	0	0	0
4:20 PM	7	74	12	0	3	56	24	0	25	23	1	0	13	33	5	0	276	0	0	0	0
4:25 PM	15	65	11	0	1	56	22	0	38	28	8	0	11	16	16	0	287	0	0	0	0
4:30 PM	1	64	10	0	4	61	22	2	22	19	4	0	9	28	6	0	250	0	0	0	0
4:35 PM	9	66	11	0	1	75	27	0	30	24	11	0	17	40	5	0	316	0	0	0	1
4:40 PM	11	48	16	0	5	67	23	0	42	31	6	0	15	56	6	0	326	0	0	0	0
4:45 PM	6	57	15	0	4	84	18	0	51	26	2	0	13	29	3	1	308	0	0	0	0
4:50 PM	5	53	10	0	2	72	19	0	43	39	5	0	15	24	3	0	290	0	0	0	0
4:55 PM	6	62	12	0	0	59	22	0	36	43	9	0	14	43	7	0	313	0	0	0	0
5:00 PM	9	50	11	0	2	69	23	0	31	33	5	0	19	40	10	0	302	0	0	0	0
5:05 PM	9	73	9	0	2	70	19	0	63	42	9	0	18	41	11	0	366	0	0	0	0
5:10 PM	7	88	6	0	3	63	15	0	60	49	5	0	15	45	12	0	368	0	0	0	0
5:15 PM	8	90	9	0	4	54	19	0	65	52	4	0	13	41	14	0	373	0	0	0	0
5:20 PM	3	90	7	0	2	57	16	0	47	49	12	1	10	47	15	0	355	0	0	0	0
5:25 PM	6	68	12	0	2	45	21	0	77	54	4	0	18	38	9	0	354	0	0	0	0
5:30 PM	8	77	7	0	4	54	23	0	48	37	8	0	22	41	11	0	340	0	0	0	0
5:35 PM	10	81	7	0	1	47	30	0	58	31	9	0	13	37	11	0	335	0	0	0	0
5:40 PM	6	65	7	0	0	47	19	0	63	44	11	0	23	36	5	1	326	0	0	0	0
5:45 PM	3	66	9	0	0	53	24	0	61	42	8	0	15	32	4	0	317	0	0	0	0
5:50 PM	6	57	10	0	2	50	27	0	35	63	9	0	8	39	3	0	309	1	0	0	0
5:55 PM	8	72	10	0	4	62	24	0	47	30	7	0	12	29	9	0	314	0	0	0	0
Total Survey	169	1,568	231	0	51	1,424	515	2	1,072	864	161	1	352	872	184	2	7,463	1	0	0	1

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	22	152	24	0	4	165	52	0	88	67	18	0	50	103	10	0	755	0	0	0	0
4:15 PM	26	189	29	0	5	170	72	0	105	89	15	0	33	83	30	0	846	0	0	0	0
4:30 PM	21	178	37	0	10	203	72	2	94	74	21	0	41	124	17	0	892	0	0	0	1
4:45 PM	17	172	37	0	6	215	59	0	130	108	16	0	42	96	13	1	911	0	0	0	0
5:00 PM	25	211	26	0	7	202	57	0	154	124	19	0	52	126	33	0	1,036	0	0	0	0
5:15 PM	17	248	28	0	8	156	56	0	189	155	20	1	41	126	38	0	1,082	0	0	0	0
5:30 PM	24	223	21	0	5	148	72	0	169	112	28	0	58	114	27	1	1,001	0	0	0	0
5:45 PM	17	195	29	0	6	165	75	0	143	135	24	0	35	100	16	0	940	1	0	0	0
Total Survey	169	1,568	231	0	51	1,424	515	2	1,072	864	161	1	352	872	184	2	7,463	1	0	0	1

Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,064	948	2,012	0	957	1,646	2,603	0	1,272	809	2,081	1	766	656	1,422	1	4,059	1	0	0	0
%HV	1.4%				3.4%				0.7%				1.7%				1.7%				
PHF	0.86				0.90				0.87				0.90				0.92				

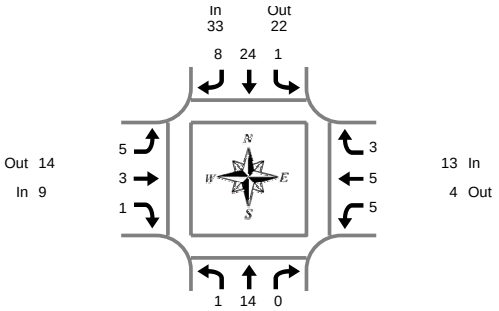
By Movement	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	83	877	104	1,064	26	671	260	957	655	526	91	1,272	186	466	114	766	4,059
%HV	1.2%	1.6%	0.0%	1.4%	3.8%	3.6%	3.1%	3.4%	0.8%	0.6%	1.1%	0.7%	2.7%	1.1%	2.6%	1.7%	1.7%
PHF	0.83	0.82	0.90	0.86	0.72	0.83	0.87	0.90	0.87	0.85	0.81	0.87	0.80	0.88	0.70	0.90	0.92

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	86	691	127	0	25	753	255	2	417	338	70	0	166	406	70	1	3,404	0	0	0	1
4:15 PM	89	750	129	0	28	790	260	2	483	395	71	0	168	429	93	1	3,685	0	0	0	1
4:30 PM	80	809	128	0	31	776	244	2	567	461	76	1	176	472	101	1	3,921	0	0	0	1
4:45 PM	83	854	112	0	26	721	244	0	642	499	83	1	193	462	111	2	4,030	0	0	0	0
5:00 PM	83	877	104	0	26	671	260	0	655	526	91	1	186	466	114	1	4,059	1	0	0	0

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



NW Shute Rd & NW Evergreen Pkwy

Thursday, March 15, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
5:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	5	0	5	0	3	1	4	0	0	0	0	0	1	1	2	11
4:05 PM	0	2	0	2	0	4	1	5	2	1	0	3	1	1	0	2	12
4:10 PM	0	3	0	3	0	3	0	3	1	3	0	4	0	1	0	1	11
4:15 PM	1	0	0	1	0	2	0	2	0	0	1	1	0	1	0	1	5
4:20 PM	0	4	2	6	0	4	1	5	0	0	0	0	0	2	0	2	13
4:25 PM	0	1	0	1	0	3	0	3	1	1	0	2	0	1	0	1	7
4:30 PM	0	3	0	3	0	4	2	6	0	0	0	0	1	1	1	3	12
4:35 PM	0	4	0	4	0	1	0	1	0	0	0	0	0	1	0	1	6
4:40 PM	0	3	0	3	0	1	1	2	3	1	0	4	0	0	0	0	9
4:45 PM	0	1	2	3	0	2	2	4	1	1	0	2	0	0	1	1	10
4:50 PM	0	1	0	1	0	4	0	4	1	1	0	2	0	1	0	1	8
4:55 PM	0	2	0	2	0	2	0	2	0	1	0	1	0	0	1	1	6
5:00 PM	0	2	0	2	0	4	1	5	0	0	0	0	1	2	0	3	10
5:05 PM	0	0	0	0	0	4	0	4	0	0	1	1	1	0	1	2	7
5:10 PM	0	1	0	1	0	3	0	3	0	0	0	0	1	0	0	1	5
5:15 PM	0	1	0	1	1	1	1	3	0	1	0	1	1	0	0	1	6
5:20 PM	1	0	0	1	0	3	1	4	1	0	0	1	0	0	0	0	6
5:25 PM	0	0	0	0	0	2	0	2	1	0	0	1	1	2	0	3	6
5:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	2
5:35 PM	0	2	0	2	0	1	1	2	1	0	0	1	0	1	0	1	6
5:40 PM	0	2	0	2	0	2	2	4	0	1	0	1	0	0	0	0	7
5:45 PM	0	1	0	1	0	2	1	3	2	0	0	2	0	0	0	0	6
5:50 PM	0	2	0	2	0	0	1	1	0	1	0	1	0	0	0	0	4
5:55 PM	0	3	0	3	0	1	0	1	0	0	0	0	0	0	1	1	5
Total Survey	2	43	4	49	1	57	16	74	14	12	2	28	7	15	7	29	180

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	10	0	10	0	10	2	12	3	4	0	7	1	3	1	5	34
4:15 PM	1	5	2	8	0	9	1	10	1	1	1	3	0	4	0	4	25
4:30 PM	0	10	0	10	0	6	3	9	3	1	0	4	1	2	1	4	27
4:45 PM	0	4	2	6	0	8	2	10	2	3	0	5	0	1	2	3	24
5:00 PM	0	3	0	3	0	11	1	12	0	0	1	1	3	2	1	6	22
5:15 PM	1	1	0	2	1	6	2	9	2	1	0	3	2	2	0	4	18
5:30 PM	0	4	0	4	0	4	3	7	1	1	0	2	0	1	1	2	15
5:45 PM	0	6	0	6	0	3	2	5	2	1	0	3	0	0	1	1	15
Total Survey	2	43	4	49	1	57	16	74	14	12	2	28	7	15	7	29	180

Heavy Vehicle Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound NW Shute Rd			Southbound NW Shute Rd			Eastbound NW Evergreen Pkwy			Westbound NW Evergreen Pkwy			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	15	30	45	33	22	55	9	14	23	13	4	17	70
PHF	0.63			0.69			0.56			0.54			0.80

By Movement	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	14	0	15	1	24	8	33	5	3	1	9	5	5	3	13	70
PHF	0.25	0.58	0.00	0.63	0.25	0.55	0.50	0.69	0.42	0.38	0.25	0.56	0.42	0.42	0.75	0.54	0.80

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

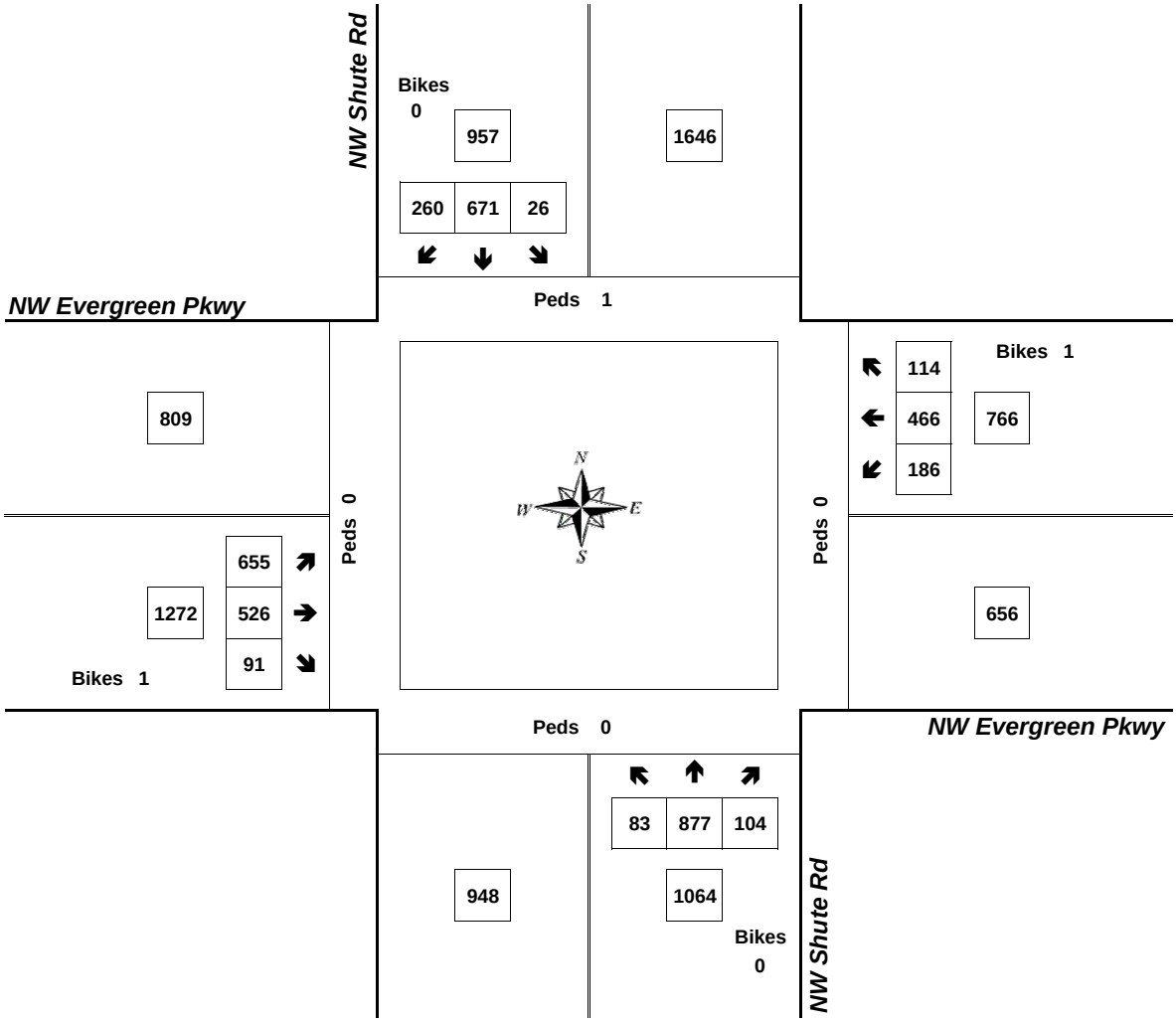
Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	29	4	34	0	33	8	41	9	9	1	19	2	10	4	16	110
4:15 PM	1	22	4	27	0	34	7	41	6	5	2	13	4	9	4	17	98
4:30 PM	1	18	2	21	1	31	8	40	7	5	1	13	6	7	4	17	91
4:45 PM	1	12	2	15	1	29	8	38	5	5	1	11	5	6	4	15	79
5:00 PM	1	14	0	15	1	24	8	33	5	3	1	9	5	5	3	13	70

Peak Hour Summary

Clay Carney
(503) 833-2740

NW Shute Rd & NW Evergreen Pkwy

5:00 PM to 6:00 PM
Thursday, March 15, 2007

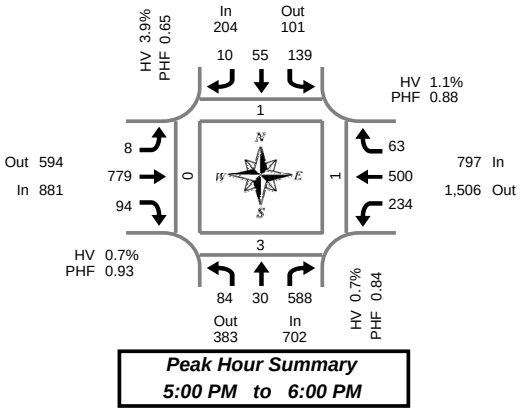


Approach	PHF	HV%	Volume
EB	0.87	0.7%	1,272
WB	0.90	1.7%	766
NB	0.86	1.4%	1,064
SB	0.90	3.4%	957
Intersection	0.92	1.7%	4,059

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
5:00 PM to 6:00 PM

NW 229th Ave & NW Evergreen Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW 229th Ave				Southbound NW 229th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	5	5	27	0	11	0	0	0	1	42	6	0	5	42	5	0	149	0	1	0	0
4:05 PM	4	4	21	0	28	11	2	0	1	40	7	0	12	37	6	0	173	1	0	0	0
4:10 PM	6	3	25	0	15	6	1	0	0	48	3	0	17	48	6	0	178	0	0	0	0
4:15 PM	8	2	28	0	9	6	0	0	2	55	7	0	12	16	5	0	150	0	0	0	0
4:20 PM	4	0	30	0	9	3	1	0	1	47	8	0	19	44	6	0	172	0	0	0	0
4:25 PM	4	3	35	0	8	4	1	0	0	66	7	0	9	38	6	0	181	0	0	1	0
4:30 PM	9	1	25	0	11	2	0	0	1	61	6	0	11	31	3	0	161	0	0	0	0
4:35 PM	5	2	29	0	23	4	0	0	0	58	2	0	10	68	12	0	213	0	0	0	0
4:40 PM	6	2	45	0	14	4	0	0	1	47	2	0	16	42	8	0	187	0	0	0	0
4:45 PM	1	6	40	0	9	4	1	0	0	39	9	0	16	47	9	0	181	0	0	0	0
4:50 PM	4	4	36	0	16	0	0	0	1	43	5	0	18	42	10	0	179	0	0	0	0
4:55 PM	6	2	48	0	9	2	0	0	0	68	4	0	8	51	4	0	202	0	0	1	0
5:00 PM	2	3	45	0	11	6	1	0	0	71	10	0	14	40	4	0	207	0	1	0	0
5:05 PM	9	3	34	0	28	8	3	0	2	65	7	0	17	45	4	0	225	1	0	0	0
5:10 PM	2	2	55	0	12	9	1	0	1	72	10	0	10	45	6	0	225	0	0	0	0
5:15 PM	12	0	61	0	10	4	2	0	1	63	4	0	17	32	5	0	211	0	0	0	0
5:20 PM	8	3	67	0	11	5	0	0	1	55	12	0	21	42	8	0	233	0	1	0	0
5:25 PM	7	5	40	0	5	2	0	0	0	81	13	0	23	39	3	0	218	0	0	0	0
5:30 PM	12	2	49	0	10	4	1	0	1	60	3	0	10	38	4	0	194	0	0	0	0
5:35 PM	5	2	48	0	22	5	0	0	0	65	12	0	27	54	1	0	241	0	0	0	0
5:40 PM	10	4	64	0	17	3	1	0	2	56	14	0	25	45	6	0	247	0	0	0	0
5:45 PM	4	1	31	0	6	2	0	0	0	49	4	0	27	37	5	0	166	0	0	0	0
5:50 PM	4	2	42	0	3	2	1	0	0	77	0	0	21	52	8	0	212	0	1	1	0
5:55 PM	9	3	52	0	4	5	0	0	0	65	5	0	22	31	9	0	205	0	0	0	0
Total Survey	146	64	977	0	301	101	16	0	16	1,393	160	0	387	1,006	143	0	4,710	2	4	3	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW 229th Ave				Southbound NW 229th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	15	12	73	0	54	17	3	0	2	130	16	0	34	127	17	0	500	1	1	0	0
4:15 PM	16	5	93	0	26	13	2	0	3	168	22	0	40	98	17	0	503	0	0	1	0
4:30 PM	20	5	99	0	48	10	0	0	2	166	10	0	37	141	23	0	561	0	0	0	0
4:45 PM	11	12	124	0	34	6	1	0	1	150	18	0	42	140	23	0	562	0	0	1	0
5:00 PM	13	8	134	0	51	23	5	0	3	208	27	0	41	130	14	0	657	1	1	0	0
5:15 PM	27	8	168	0	26	11	2	0	2	199	29	0	61	113	16	0	662	0	1	0	0
5:30 PM	27	8	161	0	49	12	2	0	3	181	29	0	62	137	11	0	682	0	0	0	0
5:45 PM	17	6	125	0	13	9	1	0	0	191	9	0	70	120	22	0	583	0	1	1	0
Total Survey	146	64	977	0	301	101	16	0	16	1,393	160	0	387	1,006	143	0	4,710	2	4	3	0

Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound NW 229th Ave				Southbound NW 229th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	702	383	1,085	0	204	101	305	0	881	594	1,475	0	797	1,506	2,303	0	2,584	1	3	1	0
%HV	0.7%				3.9%				0.7%				1.1%				1.1%				
PHF	0.84				0.65				0.93				0.88				0.95				

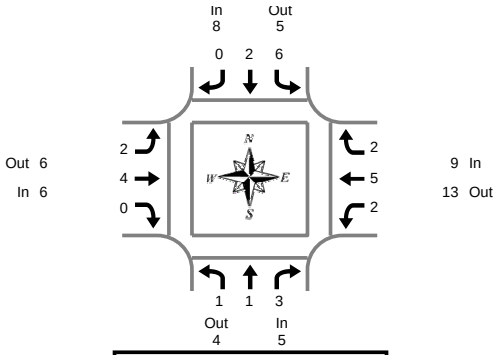
By Movement	Northbound NW 229th Ave				Southbound NW 229th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	84	30	588	702	139	55	10	204	8	779	94	881	234	500	63	797	2,584
%HV	1.2%	3.3%	0.5%	0.7%	4.3%	3.6%	0.0%	3.9%	25.0%	0.5%	0.0%	0.7%	0.9%	1.0%	3.2%	1.1%	1.1%
PHF	0.78	0.75	0.80	0.84	0.68	0.60	0.42	0.65	0.50	0.94	0.78	0.93	0.74	0.91	0.72	0.88	0.95

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW 229th Ave				Southbound NW 229th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	62	34	389	0	162	46	6	0	8	614	66	0	153	506	80	0	2,126	1	1	2	0
4:15 PM	60	30	450	0	159	52	8	0	9	692	77	0	160	509	77	0	2,283	1	1	2	0
4:30 PM	71	33	525	0	159	50	8	0	8	723	84	0	181	524	76	0	2,442	1	2	1	0
4:45 PM	78	36	587	0	160	52	10	0	9	738	103	0	206	520	64	0	2,563	1	2	1	0
5:00 PM	84	30	588	0	139	55	10	0	8	779	94	0	234	500	63	0	2,584	1	3	1	0

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



NW 229th Ave & NW Evergreen Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
5:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW 229th Ave				Southbound NW 229th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	1	1	1	0	0	1	0	0	0	0	0	1	1	2	4
4:05 PM	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	2
4:10 PM	0	0	0	0	1	0	0	1	0	1	0	1	0	1	0	1	3
4:15 PM	0	0	0	0	1	2	0	3	0	3	0	3	1	0	0	1	7
4:20 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1	3
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
4:30 PM	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	2
4:35 PM	0	0	1	1	0	0	0	0	0	1	0	1	0	1	0	1	3
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	1	0	0	0	0	0	0	0	0	2	1	0	3	4
4:50 PM	0	0	2	2	0	0	0	0	0	1	0	1	0	0	1	1	4
4:55 PM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
5:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:05 PM	0	0	1	1	2	0	0	2	0	1	0	1	0	0	0	0	4
5:10 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
5:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	1	0	1	2	3
5:20 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	1	0	0	0	0	1	0	0	1	0	3	1	4	6
5:35 PM	0	0	0	0	3	0	0	3	0	0	0	0	0	1	0	1	4
5:40 PM	0	0	1	1	0	0	0	0	1	1	0	2	0	0	0	0	3
5:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1	1	0	2	3
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:55 PM	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
Total Survey	1	2	8	11	11	4	0	15	2	16	0	18	5	10	5	20	64

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW 229th Ave				Southbound NW 229th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	1	1	3	0	0	3	0	2	0	2	0	2	1	3	9
4:15 PM	0	0	0	0	1	2	0	3	0	5	0	5	1	1	1	3	11
4:30 PM	0	0	1	1	1	0	0	1	0	2	0	2	0	1	0	1	5
4:45 PM	0	1	3	4	0	0	0	0	0	3	0	3	2	1	1	4	11
5:00 PM	0	1	1	2	2	0	0	2	0	2	0	2	0	0	0	0	6
5:15 PM	0	0	0	0	1	0	0	1	0	1	0	1	1	0	1	2	4
5:30 PM	0	0	2	2	3	0	0	3	2	1	0	3	0	4	1	5	13
5:45 PM	1	0	0	1	0	2	0	2	0	0	0	0	1	1	0	2	5
Total Survey	1	2	8	11	11	4	0	15	2	16	0	18	5	10	5	20	64

Heavy Vehicle Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound NW 229th Ave			Southbound NW 229th Ave			Eastbound NW Evergreen Rd			Westbound NW Evergreen Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	5	4	9	8	5	13	6	6	12	9	13	22	28
PHF	0.63			0.50			0.50			0.45			0.54

By Movement	Northbound NW 229th Ave				Southbound NW 229th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	1	3	5	6	2	0	8	2	4	0	6	2	5	2	9	28
PHF	0.25	0.25	0.38	0.63	0.50	0.25	0.00	0.50	0.25	0.50	0.00	0.50	0.50	0.31	0.50	0.45	0.54

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

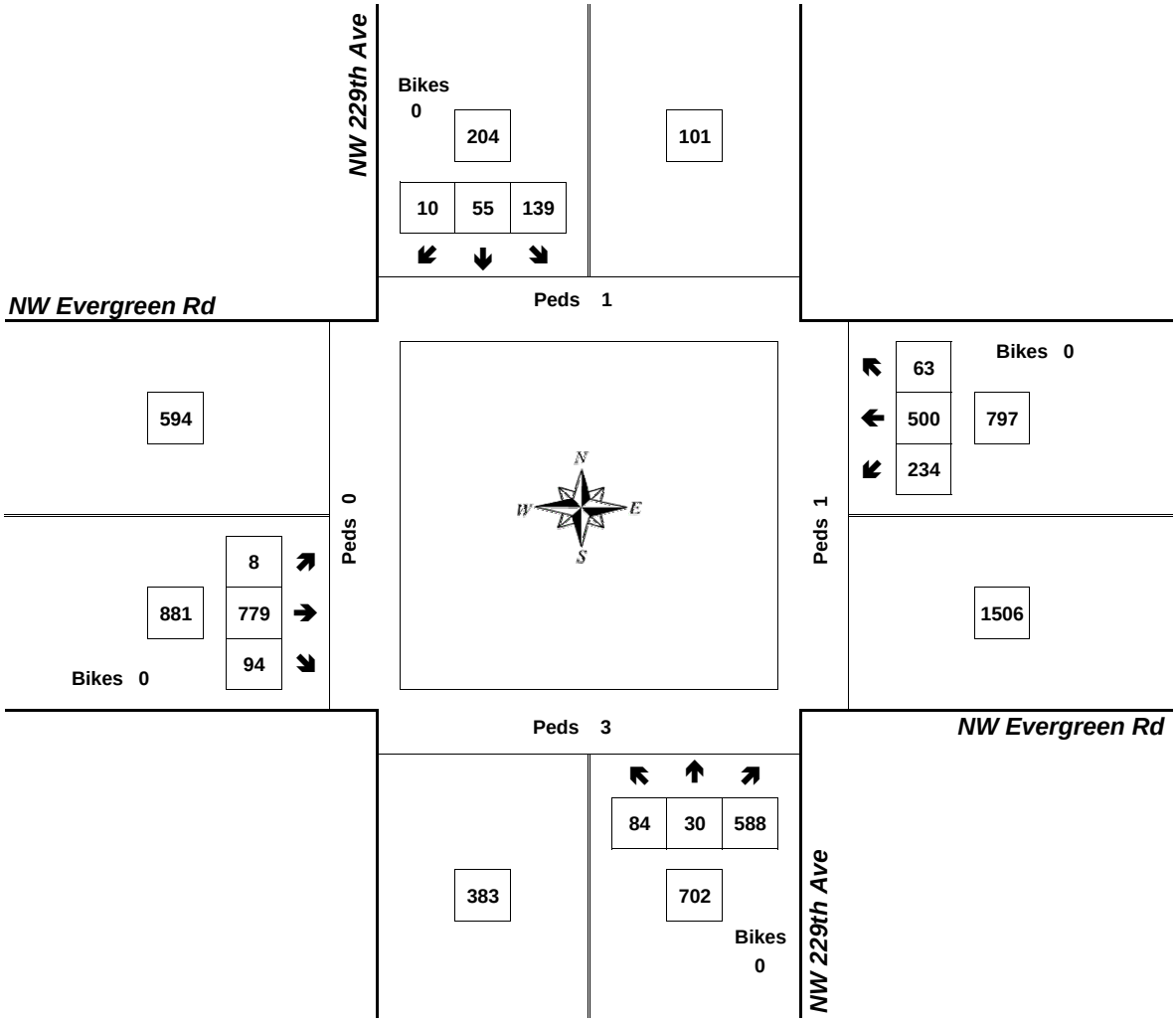
Interval Start Time	Northbound NW 229th Ave				Southbound NW 229th Ave				Eastbound NW Evergreen Rd				Westbound NW Evergreen Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	1	5	6	5	2	0	7	0	12	0	12	3	5	3	11	36
4:15 PM	0	2	5	7	4	2	0	6	0	12	0	12	3	3	2	8	33
4:30 PM	0	2	5	7	4	0	0	4	0	8	0	8	3	2	2	7	26
4:45 PM	0	2	6	8	6	0	0	6	2	7	0	9	3	5	3	11	34
5:00 PM	1	1	3	5	6	2	0	8	2	4	0	6	2	5	2	9	28

Peak Hour Summary

Clay Carney
(503) 833-2740

NW 229th Ave & NW Evergreen Rd

5:00 PM to 6:00 PM
Wednesday, March 21, 2007

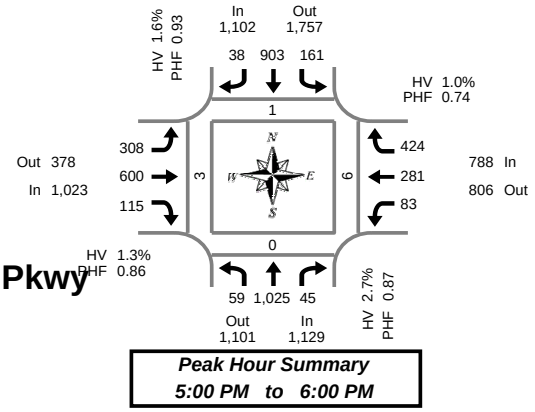


Approach	PHF	HV%	Volume
EB	0.93	0.7%	881
WB	0.88	1.1%	797
NB	0.84	0.7%	702
SB	0.65	3.9%	204
Intersection	0.95	1.1%	2,584

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

Clay Carney
(503) 833-2740



NW Cornelius Pass Rd & NW Evergreen Pkwy

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
5:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Cornelius Pass Rd				Southbound NW Cornelius Pass Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	8	56	1	0	14	83	1	0	7	24	7	0	7	21	23	0	252	0	0	0	0
4:05 PM	5	86	2	0	11	78	3	0	8	28	8	0	5	22	23	0	279	0	0	0	0
4:10 PM	4	80	5	0	4	73	2	0	13	42	11	0	9	33	31	0	307	0	0	0	0
4:15 PM	2	89	3	0	11	79	3	0	17	26	11	0	8	11	22	0	282	0	0	0	0
4:20 PM	2	75	5	0	14	73	5	0	12	15	4	0	4	33	24	0	266	0	0	0	0
4:25 PM	5	66	2	0	5	53	2	1	23	40	6	0	3	31	31	0	267	0	0	0	0
4:30 PM	9	93	1	0	17	106	3	0	25	31	3	0	13	9	17	0	327	0	0	0	0
4:35 PM	6	64	2	0	16	67	0	0	16	52	10	0	18	48	45	0	344	0	0	0	0
4:40 PM	5	69	6	0	20	96	1	0	19	21	8	0	3	22	46	0	316	0	0	0	0
4:45 PM	5	81	8	0	12	76	3	0	19	30	4	0	8	33	33	0	312	0	0	0	0
4:50 PM	4	66	5	0	22	71	1	0	11	32	7	0	5	20	25	0	269	0	0	2	0
4:55 PM	2	59	2	0	14	54	3	0	15	41	6	0	7	32	31	0	266	0	0	0	0
5:00 PM	11	83	6	0	13	86	4	0	24	37	3	0	5	13	38	0	323	0	0	0	0
5:05 PM	2	74	2	0	13	81	2	0	37	47	14	0	15	32	44	0	363	0	0	0	0
5:10 PM	6	86	7	0	9	50	5	1	24	72	19	0	8	41	48	0	375	0	0	0	0
5:15 PM	7	91	4	0	21	92	2	0	36	47	3	0	8	27	42	0	380	0	0	0	0
5:20 PM	0	115	7	0	16	98	3	0	31	39	12	0	6	22	42	0	391	0	0	0	2
5:25 PM	6	65	4	0	9	53	1	0	27	76	14	0	8	19	34	0	316	0	0	0	0
5:30 PM	2	98	2	0	13	82	1	0	25	29	8	0	7	11	24	0	302	0	0	6	1
5:35 PM	2	84	1	0	21	89	4	0	34	62	11	0	4	31	39	1	382	1	0	0	0
5:40 PM	3	80	3	0	14	54	4	0	24	62	12	0	6	17	30	0	309	0	0	0	0
5:45 PM	4	97	1	0	11	74	1	0	20	33	8	0	8	14	24	0	295	0	0	0	0
5:50 PM	10	70	6	0	8	65	6	0	14	40	5	0	5	24	28	0	281	0	0	0	0
5:55 PM	6	82	2	0	13	79	5	0	12	56	6	0	3	30	31	0	325	0	0	0	0
Total Survey	116	1,909	87	0	321	1,812	65	2	493	982	200	0	173	596	775	1	7,529	1	0	8	3

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Cornelius Pass Rd				Southbound NW Cornelius Pass Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	17	222	8	0	29	234	6	0	28	94	26	0	21	76	77	0	838	0	0	0	0
4:15 PM	9	230	10	0	30	205	10	1	52	81	21	0	15	75	77	0	815	0	0	0	0
4:30 PM	20	226	9	0	53	269	4	0	60	104	21	0	34	79	108	0	987	0	0	0	0
4:45 PM	11	206	15	0	48	201	7	0	45	103	17	0	20	85	89	0	847	0	0	2	0
5:00 PM	19	243	15	0	35	217	11	1	85	156	36	0	28	86	130	0	1,061	0	0	0	0
5:15 PM	13	271	15	0	46	243	6	0	94	162	29	0	22	68	118	0	1,087	0	0	0	2
5:30 PM	7	262	6	0	48	225	9	0	83	153	31	0	17	59	93	1	993	1	0	6	1
5:45 PM	20	249	9	0	32	218	12	0	46	129	19	0	16	68	83	0	901	0	0	0	0
Total Survey	116	1,909	87	0	321	1,812	65	2	493	982	200	0	173	596	775	1	7,529	1	0	8	3

Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound NW Cornelius Pass Rd				Southbound NW Cornelius Pass Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	1,129	1,101	2,230	0	1,102	1,757	2,859	1	1,023	378	1,401	0	788	806	1,594	1	4,042
%HV	2.7%				1.6%				1.3%				1.0%				1.7%
PHF	0.87				0.93				0.86				0.74				0.88

Pedestrians Crosswalk			
North	South	East	West
1	0	6	3

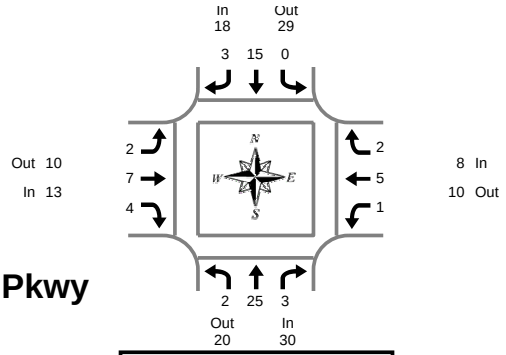
By Movement	Northbound NW Cornelius Pass Rd				Southbound NW Cornelius Pass Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	59	1,025	45	1,129	161	903	38	1,102	308	600	115	1,023	83	281	424	788	4,042
%HV	3.4%	2.4%	6.7%	2.7%	0.0%	1.7%	7.9%	1.6%	0.6%	1.2%	3.5%	1.3%	1.2%	1.8%	0.5%	1.0%	1.7%
PHF	0.74	0.88	0.63	0.87	0.84	0.93	0.79	0.93	0.79	0.90	0.80	0.86	0.67	0.70	0.79	0.74	0.88

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Cornelius Pass Rd				Southbound NW Cornelius Pass Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	57	884	42	0	160	909	27	1	185	382	85	0	90	315	351	0	3,487	0	0	2	0
4:15 PM	59	905	49	0	166	892	32	2	242	444	95	0	97	325	404	0	3,710	0	0	2	0
4:30 PM	63	946	54	0	182	930	28	1	284	525	103	0	104	318	445	0	3,982	0	0	2	2
4:45 PM	50	982	51	0	177	886	33	1	307	574	113	0	87	298	430	1	3,988	1	0	8	3
5:00 PM	59	1,025	45	0	161	903	38	1	308	600	115	0	83	281	424	1	4,042	1	0	6	3

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



NW Cornelius Pass Rd & NW Evergreen Pkwy

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
5:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Cornelius Pass Rd				Southbound NW Cornelius Pass Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	3	7	0	10	0	4	0	4	0	0	1	1	0	0	1	1	16
4:05 PM	0	3	0	3	1	3	0	4	0	1	0	1	0	0	2	2	10
4:10 PM	0	2	0	2	0	5	1	6	0	0	1	1	0	0	0	0	9
4:15 PM	0	6	0	6	1	4	0	5	1	0	0	1	0	1	0	1	13
4:20 PM	0	4	1	5	1	2	0	3	0	0	1	1	0	0	1	1	10
4:25 PM	1	6	0	7	0	0	0	0	2	1	0	3	0	0	0	0	10
4:30 PM	1	4	0	5	0	6	0	6	0	0	0	0	0	0	0	0	11
4:35 PM	0	6	0	6	2	2	0	4	0	0	0	0	0	1	0	1	11
4:40 PM	0	2	0	2	0	3	0	3	1	0	0	1	0	0	0	0	6
4:45 PM	0	1	0	1	0	2	1	3	0	0	0	0	0	1	1	2	6
4:50 PM	1	1	0	2	0	1	0	1	0	0	1	1	0	0	3	3	7
4:55 PM	0	1	0	1	0	6	0	6	2	0	1	3	0	0	0	0	10
5:00 PM	0	3	1	4	0	2	0	2	0	0	0	0	0	0	0	0	6
5:05 PM	1	1	0	2	0	1	0	1	0	0	1	1	0	0	1	1	5
5:10 PM	0	4	0	4	0	1	0	1	2	1	2	5	0	2	0	2	12
5:15 PM	0	1	0	1	0	1	0	1	0	0	1	1	1	1	0	2	5
5:20 PM	0	1	1	2	0	2	0	2	0	0	0	0	0	0	0	0	4
5:25 PM	0	4	0	4	0	1	0	1	0	0	0	0	0	0	0	0	5
5:30 PM	1	5	0	6	0	2	1	3	0	2	0	2	0	1	0	1	12
5:35 PM	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	2
5:40 PM	0	3	0	3	0	1	0	1	0	4	0	4	0	0	0	0	8
5:45 PM	0	2	0	2	0	1	0	1	0	0	0	0	0	1	0	1	4
5:50 PM	0	0	1	1	0	1	1	2	0	0	0	0	0	0	1	1	4
5:55 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
Total Survey	8	68	4	80	5	53	5	63	8	9	9	26	1	8	10	19	188

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Cornelius Pass Rd				Southbound NW Cornelius Pass Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	3	12	0	15	1	12	1	14	0	1	2	3	0	0	3	3	35
4:15 PM	1	16	1	18	2	6	0	8	3	1	1	5	0	1	1	2	33
4:30 PM	1	12	0	13	2	11	0	13	1	0	0	1	0	1	0	1	28
4:45 PM	1	3	0	4	0	9	1	10	2	0	2	4	0	1	4	5	23
5:00 PM	1	8	1	10	0	4	0	4	2	1	3	6	0	2	1	3	23
5:15 PM	0	6	1	7	0	4	0	4	0	0	1	1	1	1	0	2	14
5:30 PM	1	8	0	9	0	4	2	6	0	6	0	6	0	1	0	1	22
5:45 PM	0	3	1	4	0	3	1	4	0	0	0	0	0	1	1	2	10
Total Survey	8	68	4	80	5	53	5	63	8	9	9	26	1	8	10	19	188

Heavy Vehicle Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound NW Cornelius Pass Rd			Southbound NW Cornelius Pass Rd			Eastbound NW Evergreen Pkwy			Westbound NW Evergreen Pkwy			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	30	20	50	18	29	47	13	10	23	8	10	18	69
PHF	0.63			0.75			0.46			0.40			0.75

By Movement	Northbound NW Cornelius Pass Rd				Southbound NW Cornelius Pass Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	2	25	3	30	0	15	3	18	2	7	4	13	1	5	2	8	69
PHF	0.50	0.63	0.75	0.63	0.00	0.75	0.38	0.75	0.25	0.29	0.25	0.46	0.25	0.42	0.50	0.40	0.75

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

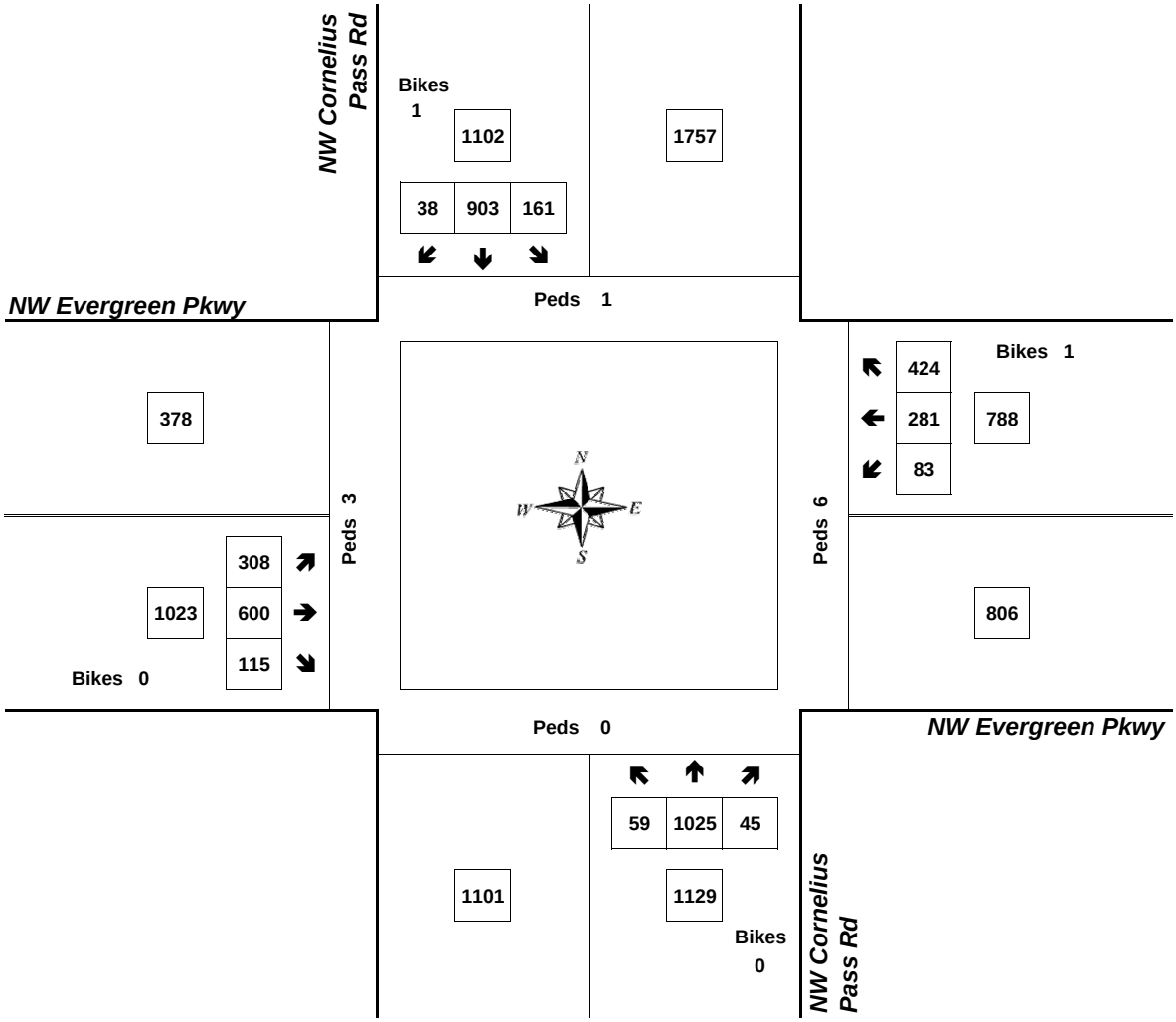
Interval Start Time	Northbound NW Cornelius Pass Rd				Southbound NW Cornelius Pass Rd				Eastbound NW Evergreen Pkwy				Westbound NW Evergreen Pkwy				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	6	43	1	50	5	38	2	45	6	2	5	13	0	3	8	11	119
4:15 PM	4	39	2	45	4	30	1	35	8	2	6	16	0	5	6	11	107
4:30 PM	3	29	2	34	2	28	1	31	5	1	6	12	1	5	5	11	88
4:45 PM	3	25	2	30	0	21	3	24	4	7	6	17	1	5	5	11	82
5:00 PM	2	25	3	30	0	15	3	18	2	7	4	13	1	5	2	8	69

Peak Hour Summary

Clay Carney
(503) 833-2740

NW Cornelius Pass Rd & NW Evergreen Pkwy

5:00 PM to 6:00 PM
Wednesday, March 21, 2007

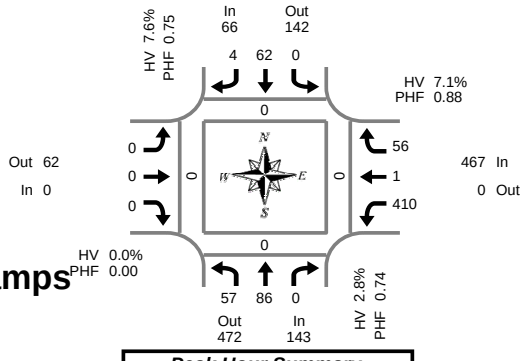


Approach	PHF	HV%	Volume
EB	0.86	1.3%	1,023
WB	0.74	1.0%	788
NB	0.87	2.7%	1,129
SB	0.93	1.6%	1,102
Intersection	0.88	1.7%	4,042

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



NW Jackson School Rd & Hwy 26 WB Ramps

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:40 PM to 5:40 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	5	4	0	0	0	4	1	0	0	0	0	0	30	0	3	0	47	0	0	0	0
4:05 PM	4	5	0	0	0	3	1	0	0	0	0	0	30	0	3	0	46	0	0	0	0
4:10 PM	6	4	0	0	0	9	0	0	0	0	0	0	26	0	6	0	51	0	0	0	0
4:15 PM	3	2	0	0	0	16	0	0	0	0	0	0	28	1	2	0	52	0	0	0	0
4:20 PM	6	7	0	0	0	6	2	0	0	0	0	0	38	0	5	0	64	0	0	0	0
4:25 PM	5	3	0	0	0	11	0	0	0	0	0	0	34	0	3	0	56	0	0	0	0
4:30 PM	6	8	0	0	0	8	0	0	0	0	0	0	34	0	3	0	59	0	0	0	0
4:35 PM	6	4	0	0	0	12	0	0	0	0	0	0	30	0	5	0	57	0	0	0	0
4:40 PM	3	6	0	0	0	5	0	0	0	0	0	0	29	0	1	0	44	0	0	0	0
4:45 PM	9	9	0	0	0	2	0	0	0	0	0	0	45	0	3	0	68	0	0	0	0
4:50 PM	5	8	0	0	0	5	0	0	0	0	0	0	33	0	2	0	53	0	0	0	0
4:55 PM	5	12	0	0	0	3	1	0	0	0	0	0	33	0	2	0	56	0	0	0	0
5:00 PM	3	8	0	0	0	6	0	0	0	0	0	0	31	0	3	0	51	0	0	0	0
5:05 PM	1	6	0	0	0	2	0	0	0	0	0	0	38	0	3	0	50	0	0	0	0
5:10 PM	5	6	0	0	0	7	0	0	0	0	0	0	29	0	7	0	54	0	0	0	0
5:15 PM	6	5	0	0	0	4	2	0	0	0	0	0	37	0	2	0	56	0	0	0	0
5:20 PM	5	7	0	0	0	6	1	0	0	0	0	0	35	0	5	0	59	0	0	0	0
5:25 PM	6	7	0	0	0	6	0	0	0	0	0	0	39	1	3	0	62	0	0	0	0
5:30 PM	5	6	0	0	0	4	0	0	0	0	0	0	34	0	15	0	64	0	0	0	0
5:35 PM	4	6	0	0	0	12	0	0	0	0	0	0	27	0	10	0	59	0	0	0	0
5:40 PM	2	3	0	0	0	7	1	0	0	0	0	0	29	0	2	0	44	0	0	0	0
5:45 PM	7	3	0	0	0	7	0	0	0	0	0	0	37	1	4	0	59	0	0	0	0
5:50 PM	2	6	0	0	0	2	1	0	0	0	0	0	40	0	4	0	55	0	0	0	0
5:55 PM	2	1	0	0	0	4	0	0	0	0	0	0	40	0	2	0	49	0	0	0	0
Total Survey	111	136	0	0	0	151	10	0	0	0	0	0	806	3	98	0	1,315	0	0	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	15	13	0	0	0	16	2	0	0	0	0	0	86	0	12	0	144	0	0	0	0
4:15 PM	14	12	0	0	0	33	2	0	0	0	0	0	100	1	10	0	172	0	0	0	0
4:30 PM	15	18	0	0	0	25	0	0	0	0	0	0	93	0	9	0	160	0	0	0	0
4:45 PM	19	29	0	0	0	10	1	0	0	0	0	0	111	0	7	0	177	0	0	0	0
5:00 PM	9	20	0	0	0	15	0	0	0	0	0	0	98	0	13	0	155	0	0	0	0
5:15 PM	17	19	0	0	0	16	3	0	0	0	0	0	111	1	10	0	177	0	0	0	0
5:30 PM	11	15	0	0	0	23	1	0	0	0	0	0	90	0	27	0	167	0	0	0	0
5:45 PM	11	10	0	0	0	13	1	0	0	0	0	0	117	1	10	0	163	0	0	0	0
Total Survey	111	136	0	0	0	151	10	0	0	0	0	0	806	3	98	0	1,315	0	0	0	0

Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	143	472	615	0	66	142	208	0	0	62	62	0	467	0	467	0	676	0	0	0	0
%HV	2.8%				7.6%				0.0%				7.1%				6.2%				
PHF	0.74				0.75				0.00				0.88				0.91				

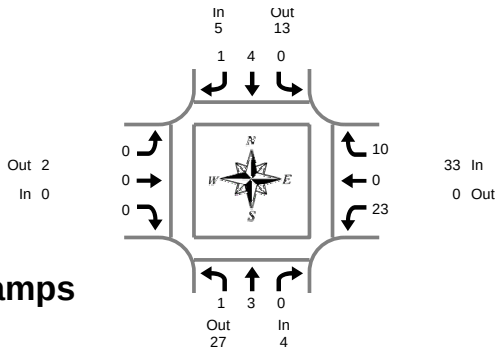
By Movement	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	57	86	0	143	0	62	4	66	0	0	0	0	410	1	56	467	676
%HV	1.8%	3.5%	0.0%	2.8%	0.0%	6.5%	25.0%	7.6%	0.0%	0.0%	0.0%	0.0%	5.6%	0.0%	17.9%	7.1%	6.2%
PHF	0.75	0.74	0.00	0.74	0.00	0.70	0.33	0.75	0.00	0.00	0.00	0.00	0.92	0.25	0.50	0.88	0.91

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	63	72	0	0	0	84	5	0	0	0	0	0	390	1	38	0	653	0	0	0	0
4:15 PM	57	79	0	0	0	83	3	0	0	0	0	0	402	1	39	0	664	0	0	0	0
4:30 PM	60	86	0	0	0	66	4	0	0	0	0	0	413	1	39	0	669	0	0	0	0
4:45 PM	56	83	0	0	0	64	5	0	0	0	0	0	410	1	57	0	676	0	0	0	0
5:00 PM	48	64	0	0	0	67	5	0	0	0	0	0	416	2	60	0	662	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



NW Jackson School Rd & Hwy 26 WB Ramps

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:40 PM to 5:40 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	1	0	1	0	0	1	1	0	0	0	0	1	0	0	1	3
4:05 PM	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	2	3
4:10 PM	0	0	0	0	0	1	0	1	0	0	0	0	3	0	1	4	5
4:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	2	0	1	3	4
4:20 PM	0	1	0	1	0	0	0	0	0	0	0	0	2	0	3	5	6
4:25 PM	0	0	0	0	0	1	0	1	0	0	0	0	4	0	0	4	5
4:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
4:35 PM	0	0	0	0	0	1	0	1	0	0	0	0	3	0	2	5	6
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	4	4
4:50 PM	0	0	0	0	0	1	0	1	0	0	0	0	4	0	1	5	6
4:55 PM	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	2	3
5:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	2	0	1	3	4
5:05 PM	0	0	0	0	0	1	0	1	0	0	0	0	3	0	0	3	4
5:10 PM	0	0	0	0	0	1	0	1	0	0	0	0	1	0	2	3	4
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
5:20 PM	0	1	0	1	0	0	1	1	0	0	0	0	1	0	1	2	4
5:25 PM	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3	3
5:35 PM	0	1	0	1	0	0	0	0	0	0	0	0	1	0	2	3	4
5:40 PM	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	1	2
5:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	2	0	0	2	3
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Total Survey	2	6	0	8	0	9	3	12	0	0	0	0	46	0	19	65	85

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	1	0	2	0	1	1	2	0	0	0	0	5	0	2	7	11
4:15 PM	0	1	0	1	0	2	0	2	0	0	0	0	8	0	4	12	15
4:30 PM	0	1	0	1	0	1	0	1	0	0	0	0	6	0	2	8	10
4:45 PM	1	0	0	1	0	1	0	1	0	0	0	0	8	0	3	11	13
5:00 PM	0	1	0	1	0	2	0	2	0	0	0	0	6	0	3	9	12
5:15 PM	0	1	0	1	0	1	1	2	0	0	0	0	4	0	1	5	8
5:30 PM	0	1	0	1	0	0	1	1	0	0	0	0	4	0	3	7	9
5:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	5	0	1	6	7
Total Survey	2	6	0	8	0	9	3	12	0	0	0	0	46	0	19	65	85

Heavy Vehicle Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound NW Jackson School Rd			Southbound NW Jackson School Rd			Eastbound Hwy 26 WB Ramps			Westbound Hwy 26 WB Ramps			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	4	27	31	5	13	18	0	2	2	33	0	33	42
PHF	0.50			0.63			0.00			0.75			0.81

By Movement	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	3	0	4	0	4	1	5	0	0	0	0	23	0	10	33	42
PHF	0.25	0.75	0.00	0.50	0.00	0.50	0.25	0.63	0.00	0.00	0.00	0.00	0.64	0.00	0.83	0.75	0.81

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

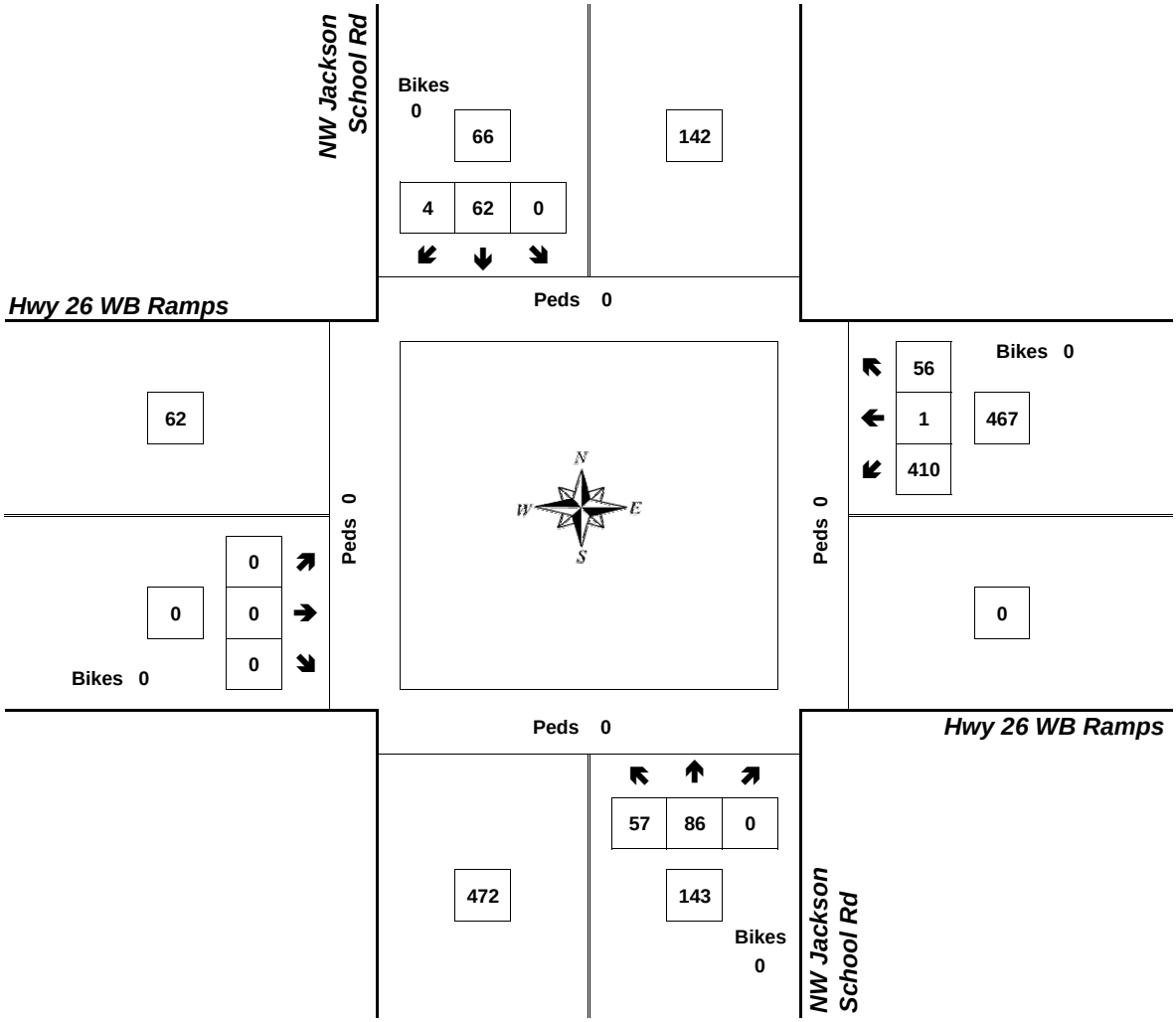
Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	2	3	0	5	0	5	1	6	0	0	0	0	27	0	11	38	49
4:15 PM	1	3	0	4	0	6	0	6	0	0	0	0	28	0	12	40	50
4:30 PM	1	3	0	4	0	5	1	6	0	0	0	0	24	0	9	33	43
4:45 PM	1	3	0	4	0	4	2	6	0	0	0	0	22	0	10	32	42
5:00 PM	0	3	0	3	0	4	2	6	0	0	0	0	19	0	8	27	36

Peak Hour Summary

Clay Carney
(503) 833-2740

NW Jackson School Rd & Hwy 26 WB Ramps

4:40 PM to 5:40 PM
Wednesday, March 21, 2007

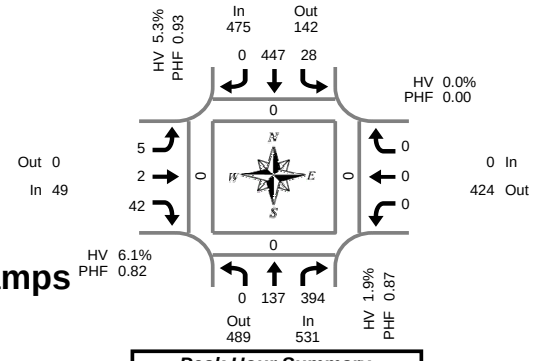


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.88	7.1%	467
NB	0.74	2.8%	143
SB	0.75	7.6%	66
Intersection	0.91	6.2%	676

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

Clay Carney
(503) 833-2740



NW Jackson School Rd & Hwy 26 EB Ramps

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:45 PM to 5:45 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	9	28	0	1	33	0	0	0	1	2	0	0	0	0	0	74	0	0	0	0
4:05 PM	0	8	20	0	0	32	0	0	1	0	3	0	0	0	0	0	64	0	0	0	0
4:10 PM	0	10	25	0	2	34	0	0	0	0	5	0	0	0	0	0	76	0	0	0	0
4:15 PM	0	8	33	0	2	42	0	0	0	0	1	0	0	0	0	0	86	0	0	0	0
4:20 PM	0	9	34	0	1	41	0	0	1	0	3	0	0	0	0	0	89	0	0	0	0
4:25 PM	0	8	26	0	2	39	0	0	1	0	4	0	0	0	0	0	80	0	0	0	0
4:30 PM	0	13	25	0	2	34	0	0	0	0	5	0	0	0	0	0	79	0	0	0	0
4:35 PM	0	9	28	0	0	41	0	0	0	0	3	0	0	0	0	0	81	0	0	0	0
4:40 PM	0	9	24	0	1	33	0	0	1	0	2	0	0	0	0	0	70	0	0	0	0
4:45 PM	0	16	43	0	3	43	0	0	0	0	6	0	0	0	0	0	111	0	0	0	0
4:50 PM	0	13	32	0	1	38	0	0	0	1	2	0	0	0	0	0	87	0	0	0	0
4:55 PM	0	18	30	0	5	31	0	0	1	0	3	0	0	0	0	0	88	0	0	0	0
5:00 PM	0	7	29	0	2	35	0	0	1	0	3	0	0	0	0	0	77	0	0	0	0
5:05 PM	0	3	31	0	2	38	0	0	0	0	4	0	0	0	0	0	78	0	0	0	0
5:10 PM	0	15	42	0	0	36	0	0	2	0	2	0	0	0	0	0	97	0	0	0	0
5:15 PM	0	11	36	0	4	39	0	0	0	1	3	0	0	0	0	0	94	0	0	0	0
5:20 PM	0	11	23	0	1	43	0	0	0	0	1	0	0	0	0	0	79	0	0	0	0
5:25 PM	0	17	36	0	2	39	0	0	1	0	3	0	0	0	0	0	98	0	0	0	0
5:30 PM	0	12	31	0	5	33	0	0	0	0	4	0	0	0	0	0	85	0	0	0	0
5:35 PM	0	9	30	0	1	37	0	0	0	0	5	0	0	0	0	0	82	0	0	0	0
5:40 PM	0	5	31	0	2	35	0	0	0	0	6	0	0	0	0	0	79	0	0	0	0
5:45 PM	0	10	29	0	3	41	0	0	1	0	1	0	0	0	0	0	85	0	0	0	0
5:50 PM	0	7	36	0	1	41	0	0	1	0	5	0	0	0	0	0	91	0	0	0	0
5:55 PM	0	3	32	0	2	41	0	0	0	0	3	0	0	0	0	0	81	0	0	0	0
Total Survey	0	240	734	0	45	899	0	0	11	3	79	0	0	0	0	0	2,011	0	0	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	27	73	0	3	99	0	0	1	1	10	0	0	0	0	0	214	0	0	0	0
4:15 PM	0	25	93	0	5	122	0	0	2	0	8	0	0	0	0	0	255	0	0	0	0
4:30 PM	0	31	77	0	3	108	0	0	1	0	10	0	0	0	0	0	230	0	0	0	0
4:45 PM	0	47	105	0	9	112	0	0	1	1	11	0	0	0	0	0	286	0	0	0	0
5:00 PM	0	25	102	0	4	109	0	0	3	0	9	0	0	0	0	0	252	0	0	0	0
5:15 PM	0	39	95	0	7	121	0	0	1	1	7	0	0	0	0	0	271	0	0	0	0
5:30 PM	0	26	92	0	8	105	0	0	0	0	15	0	0	0	0	0	246	0	0	0	0
5:45 PM	0	20	97	0	6	123	0	0	2	0	9	0	0	0	0	0	257	0	0	0	0
Total Survey	0	240	734	0	45	899	0	0	11	3	79	0	0	0	0	0	2,011	0	0	0	0

Peak Hour Summary
4:45 PM to 5:45 PM

By Approach	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	531	489	1,020	0	475	142	617	0	49	0	49	0	0	424	424	0	1,055	0	0	0	0
%HV	1.9%				5.3%				6.1%				0.0%				3.6%				
PHF	0.87				0.93				0.82				0.00				0.92				

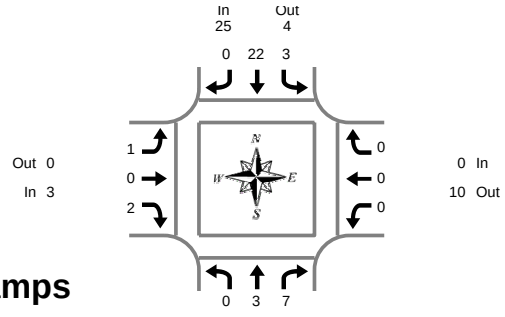
By Movement	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	137	394	531	28	447	0	475	5	2	42	49	0	0	0	0	1,055
%HV	0.0%	2.2%	1.8%	1.9%	10.7%	4.9%	0.0%	5.3%	20.0%	0.0%	4.8%	6.1%	0.0%	0.0%	0.0%	0.0%	3.6%
PHF	0.00	0.73	0.90	0.87	0.78	0.92	0.00	0.93	0.42	0.50	0.70	0.82	0.00	0.00	0.00	0.00	0.92

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	130	348	0	20	441	0	0	5	2	39	0	0	0	0	0	985	0	0	0	0
4:15 PM	0	128	377	0	21	451	0	0	7	1	38	0	0	0	0	0	1,023	0	0	0	0
4:30 PM	0	142	379	0	23	450	0	0	6	2	37	0	0	0	0	0	1,039	0	0	0	0
4:45 PM	0	137	394	0	28	447	0	0	5	2	42	0	0	0	0	0	1,055	0	0	0	0
5:00 PM	0	110	386	0	25	458	0	0	6	1	40	0	0	0	0	0	1,026	0	0	0	0

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



NW Jackson School Rd & Hwy 26 EB Ramps

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:45 PM to 5:45 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
4:05 PM	0	1	1	2	0	1	0	1	0	0	0	0	0	0	0	0	3
4:10 PM	0	0	1	1	0	4	0	4	0	0	1	1	0	0	0	0	6
4:15 PM	0	1	2	3	1	2	0	3	0	0	0	0	0	0	0	0	6
4:20 PM	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0	3
4:25 PM	0	0	1	1	1	4	0	5	1	0	0	1	0	0	0	0	7
4:30 PM	0	1	2	3	0	1	0	1	0	0	0	0	0	0	0	0	4
4:35 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	4
4:40 PM	0	0	2	2	0	2	0	2	0	0	0	0	0	0	0	0	4
4:45 PM	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	3
4:50 PM	0	0	1	1	0	5	0	5	0	0	0	0	0	0	0	0	6
4:55 PM	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	2
5:00 PM	0	1	1	2	1	1	0	2	0	0	0	0	0	0	0	0	4
5:05 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	4
5:10 PM	0	0	0	0	0	2	0	2	1	0	0	1	0	0	0	0	3
5:15 PM	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	3
5:20 PM	0	1	0	1	0	2	0	2	0	0	0	0	0	0	0	0	3
5:25 PM	0	0	2	2	0	1	0	1	0	0	1	1	0	0	0	0	4
5:30 PM	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	2
5:35 PM	0	1	1	2	0	1	0	1	0	0	0	0	0	0	0	0	3
5:40 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	1	1	0	3	0	3	0	0	0	0	0	0	0	0	4
5:50 PM	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0	3
5:55 PM	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
Total Survey	0	7	18	25	5	49	0	54	2	0	5	7	0	0	0	0	86

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	2	2	4	0	6	0	6	0	0	1	1	0	0	0	0	11
4:15 PM	0	1	3	4	2	8	0	10	1	0	1	2	0	0	0	0	16
4:30 PM	0	1	4	5	0	7	0	7	0	0	0	0	0	0	0	0	12
4:45 PM	0	0	2	2	0	8	0	8	0	0	1	1	0	0	0	0	11
5:00 PM	0	1	1	2	1	7	0	8	1	0	0	1	0	0	0	0	11
5:15 PM	0	1	3	4	0	5	0	5	0	0	1	1	0	0	0	0	10
5:30 PM	0	1	1	2	2	2	0	4	0	0	0	0	0	0	0	0	6
5:45 PM	0	0	2	2	0	6	0	6	0	0	1	1	0	0	0	0	9
Total Survey	0	7	18	25	5	49	0	54	2	0	5	7	0	0	0	0	86

Heavy Vehicle Peak Hour Summary
4:45 PM to 5:45 PM

By Approach	Northbound NW Jackson School Rd			Southbound NW Jackson School Rd			Eastbound Hwy 26 EB Ramps			Westbound Hwy 26 EB Ramps			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	10	24	34	25	4	29	3	0	3	0	10	10	38
PHF	0.63			0.78			0.75			0.00			0.79

By Movement	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	3	7	10	3	22	0	25	1	0	2	3	0	0	0	0	38
PHF	0.00	0.75	0.58	0.63	0.38	0.69	0.00	0.78	0.25	0.00	0.50	0.75	0.00	0.00	0.00	0.00	0.79

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

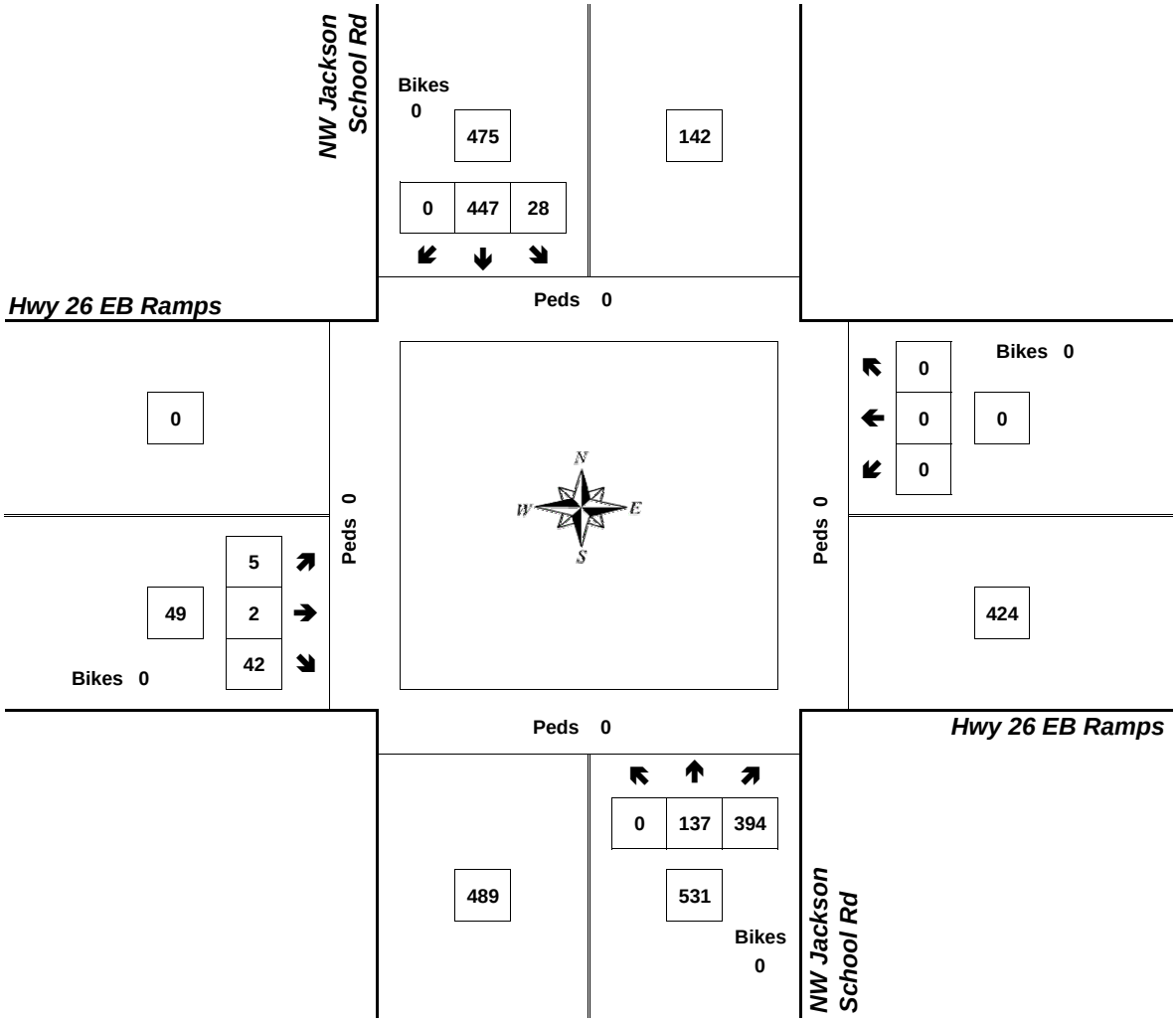
Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	4	11	15	2	29	0	31	1	0	3	4	0	0	0	0	50
4:15 PM	0	3	10	13	3	30	0	33	2	0	2	4	0	0	0	0	50
4:30 PM	0	3	10	13	1	27	0	28	1	0	2	3	0	0	0	0	44
4:45 PM	0	3	7	10	3	22	0	25	1	0	2	3	0	0	0	0	38
5:00 PM	0	3	7	10	3	20	0	23	1	0	2	3	0	0	0	0	36

Peak Hour Summary

Clay Carney
(503) 833-2740

NW Jackson School Rd & Hwy 26 EB Ramps

4:45 PM to 5:45 PM
Wednesday, March 21, 2007

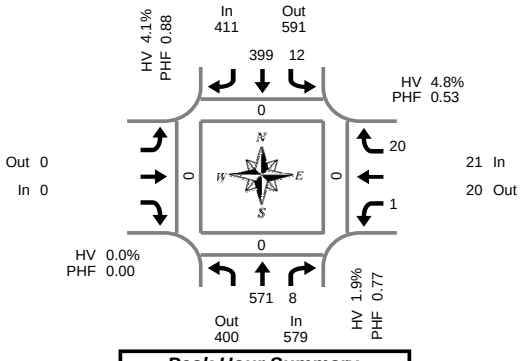


Approach	PHF	HV%	Volume
EB	0.82	6.1%	49
WB	0.00	0.0%	0
NB	0.87	1.9%	531
SB	0.93	5.3%	475
Intersection	0.92	3.6%	1,055

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



NW Jackson School Rd & NW Meek Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:35 PM to 5:35 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Meek Rd				Westbound NW Meek Rd				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	26	0	0		0	39		0				0	1		2	0	68	0	0	0	0
4:05 PM	26	0	0		1	26		0				0	0		0	0	53	0	0	0	0
4:10 PM	33	0	0		1	31		0				0	0		2	0	67	0	0	0	0
4:15 PM	37	0	0		1	47		0				0	0		0	0	85	0	0	0	0
4:20 PM	31	0	0		0	44		0				0	0		3	0	78	0	0	0	0
4:25 PM	44	1	0		0	36		0				0	0		0	0	81	0	0	0	0
4:30 PM	28	0	0		1	35		0				0	0		1	0	65	0	0	0	0
4:35 PM	30	1	0		1	37		0				0	1		3	0	73	0	0	0	0
4:40 PM	36	0	0		0	35		0				0	0		6	0	77	0	0	0	0
4:45 PM	53	1	0		0	31		0				0	0		0	0	85	0	0	0	0
4:50 PM	38	1	0		0	28		0				0	0		0	0	67	0	0	0	0
4:55 PM	47	1	0		0	32		0				0	0		2	0	82	0	0	0	0
5:00 PM	30	0	0		1	36		0				0	0		0	0	67	0	0	0	0
5:05 PM	45	0	0		0	30		0				0	0		0	0	75	0	0	0	0
5:10 PM	54	0	0		7	30		0				0	0		3	0	94	0	0	0	0
5:15 PM	65	1	0		2	36		0				0	0		0	0	104	0	0	0	0
5:20 PM	63	2	0		0	42		0				0	0		1	0	108	0	0	0	0
5:25 PM	56	0	0		0	32		0				0	0		3	0	91	0	0	0	0
5:30 PM	54	1	0		1	30		0				0	0		2	0	88	0	0	0	0
5:35 PM	37	0	0		1	23		0				0	1		1	0	63	0	0	0	0
5:40 PM	34	0	0		0	34		0				0	1		1	0	70	0	0	0	0
5:45 PM	37	0	0		1	35		0				0	0		0	0	73	0	0	0	0
5:50 PM	45	0	0		1	32		0				0	0		3	0	81	0	0	0	0
5:55 PM	42	0	0		0	29		0				0	0		3	0	74	0	0	0	0
Total Survey	991	9	0		19	810		0				0	4		36	0	1,869	0	0	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Meek Rd				Westbound NW Meek Rd				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	85	0	0		2	96		0				0	1		4	0	188	0	0	0	0
4:15 PM	112	1	0		1	127		0				0	0		3	0	244	0	0	0	0
4:30 PM	94	1	0		2	107		0				0	1		10	0	215	0	0	0	0
4:45 PM	138	3	0		0	91		0				0	0		2	0	234	0	0	0	0
5:00 PM	129	0	0		8	96		0				0	0		3	0	236	0	0	0	0
5:15 PM	184	3	0		2	110		0				0	0		4	0	303	0	0	0	0
5:30 PM	125	1	0		2	87		0				0	2		4	0	221	0	0	0	0
5:45 PM	124	0	0		2	96		0				0	0		6	0	228	0	0	0	0
Total Survey	991	9	0		19	810		0				0	4		36	0	1,869	0	0	0	0

Peak Hour Summary
4:35 PM to 5:35 PM

By Approach	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Meek Rd				Westbound NW Meek Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	579	400	979	0	411	591	1,002	0	0	0	0	0	21	20	41	0	1,011	0	0	0	0
%HV	1.9%				4.1%				0.0%				4.8%				2.9%				
PHF	0.77				0.88				0.00				0.53				0.83				

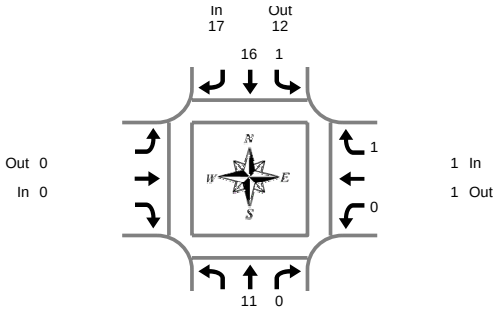
By Movement	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Meek Rd				Westbound NW Meek Rd				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		571	8	579	12	399		411				0	1		20	21	1,011
%HV	NA	1.9%	0.0%	1.9%	8.3%	4.0%	NA	4.1%	NA	NA	NA	0.0%	0.0%	NA	5.0%	4.8%	2.9%
PHF		0.78	0.67	0.77	0.33	0.91		0.88				0.00	0.25		0.56	0.53	0.83

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Meek Rd				Westbound NW Meek Rd				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	429	5	0		5	421		0				0	2		19	0	881	0	0	0	0
4:15 PM	473	5	0		11	421		0				0	1		18	0	929	0	0	0	0
4:30 PM	545	7	0		12	404		0				0	1		19	0	988	0	0	0	0
4:45 PM	576	7	0		12	384		0				0	2		13	0	994	0	0	0	0
5:00 PM	562	4	0		14	389		0				0	2		17	0	988	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



NW Jackson School Rd & NW Meek Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:35 PM to 5:35 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Meek Rd				Westbound NW Meek Rd				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		0	0	0	0	2		2				0	1		0	1	3
4:05 PM		0	0	0	0	1		1				0	0		0	0	1
4:10 PM		1	0	1	0	4		4				0	0		0	0	5
4:15 PM		2	0	2	0	4		4				0	0		0	0	6
4:20 PM		1	0	1	0	5		5				0	0		0	0	6
4:25 PM		1	0	1	0	7		7				0	0		0	0	8
4:30 PM		1	0	1	0	1		1				0	0		0	0	2
4:35 PM		0	0	0	0	2		2				0	0		0	0	2
4:40 PM		3	0	3	0	4		4				0	0		1	1	8
4:45 PM		1	0	1	0	1		1				0	0		0	0	2
4:50 PM		2	0	2	0	1		1				0	0		0	0	3
4:55 PM		0	0	0	0	2		2				0	0		0	0	2
5:00 PM		2	0	2	0	1		1				0	0		0	0	3
5:05 PM		0	0	0	0	0		0				0	0		0	0	0
5:10 PM		0	0	0	0	0		0				0	0		0	0	0
5:15 PM		2	0	2	0	1		1				0	0		0	0	3
5:20 PM		1	0	1	0	0		0				0	0		0	0	1
5:25 PM		0	0	0	0	2		2				0	0		0	0	2
5:30 PM		0	0	0	1	2		3				0	0		0	0	3
5:35 PM		1	0	1	0	1		1				0	0		0	0	2
5:40 PM		0	0	0	0	1		1				0	0		0	0	1
5:45 PM		1	0	1	0	2		2				0	0		0	0	3
5:50 PM		1	0	1	0	2		2				0	0		0	0	3
5:55 PM		0	0	0	0	0		0				0	0		0	0	0
Total Survey		20	0	20	1	46		47				0	1		1	2	69

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Meek Rd				Westbound NW Meek Rd				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		1	0	1	0	7		7				0	1		0	1	9
4:15 PM		4	0	4	0	16		16				0	0		0	0	20
4:30 PM		4	0	4	0	7		7				0	0		1	1	12
4:45 PM		3	0	3	0	4		4				0	0		0	0	7
5:00 PM		2	0	2	0	1		1				0	0		0	0	3
5:15 PM		3	0	3	0	3		3				0	0		0	0	6
5:30 PM		1	0	1	1	4		5				0	0		0	0	6
5:45 PM		2	0	2	0	4		4				0	0		0	0	6
Total Survey		20	0	20	1	46		47				0	1		1	2	69

Heavy Vehicle Peak Hour Summary
4:35 PM to 5:35 PM

By Approach	Northbound NW Jackson School Rd			Southbound NW Jackson School Rd			Eastbound NW Meek Rd			Westbound NW Meek Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	11	16	27	17	12	29	0	0	0	1	1	2	29
PHF	0.46			0.61			0.00			0.25			0.56

By Movement	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Meek Rd				Westbound NW Meek Rd				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		11	0	11	1	16		17				0	0		1	1	29
PHF		0.46	0.00	0.46	0.25	0.57		0.61				0.00	0.00		0.25	0.25	0.56

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

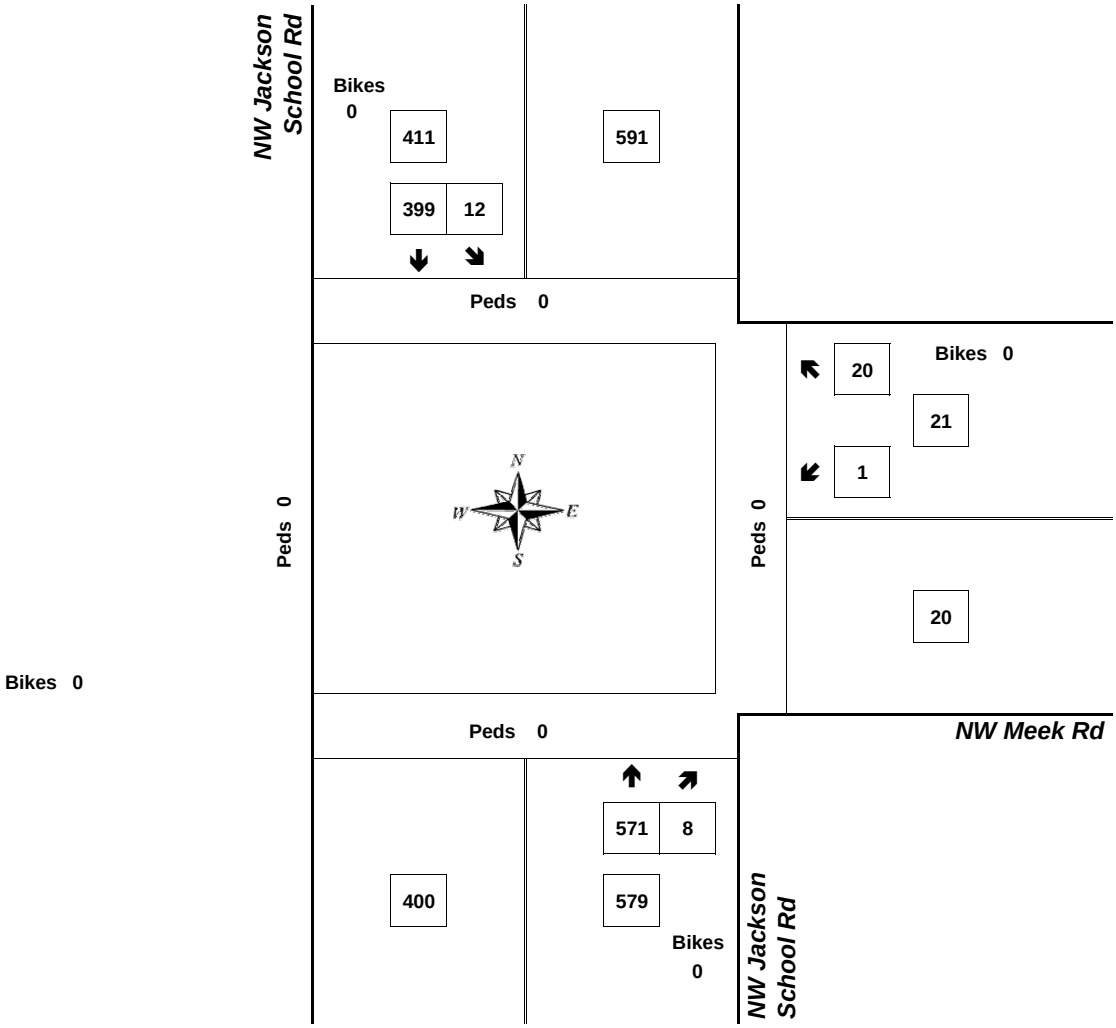
Interval Start Time	Northbound NW Jackson School Rd				Southbound NW Jackson School Rd				Eastbound NW Meek Rd				Westbound NW Meek Rd				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		12	0	12	0	34		34				0	1		1	2	48
4:15 PM		13	0	13	0	28		28				0	0		1	1	42
4:30 PM		12	0	12	0	15		15				0	0		1	1	28
4:45 PM		9	0	9	1	12		13				0	0		0	0	22
5:00 PM		8	0	8	1	12		13				0	0		0	0	21

Peak Hour Summary

Clay Carney
(503) 833-2740

NW Jackson School Rd & NW Meek Rd

4:35 PM to 5:35 PM
Wednesday, March 21, 2007

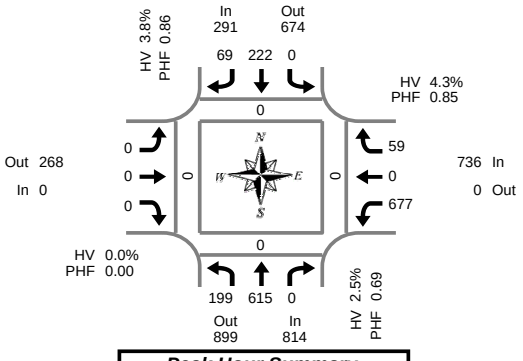


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.53	4.8%	21
NB	0.77	1.9%	579
SB	0.88	4.1%	411
Intersection	0.83	2.9%	1,011

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:40 PM to 5:40 PM

NW Shute Rd & Hwy 26 WB Ramps

Thursday, March 15, 2007
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	15	23	0	0	0	32	6	0	0	0	0	0	52	0	3	0	131	0	0	0	0
4:05 PM	18	22	0	0	0	27	5	0	0	0	0	0	56	0	6	0	134	0	0	0	0
4:10 PM	14	37	0	0	0	26	3	0	0	0	0	0	56	0	4	0	140	0	0	0	0
4:15 PM	21	41	0	0	0	21	3	0	0	0	0	0	65	0	3	0	154	0	0	0	0
4:20 PM	11	29	0	0	0	29	3	0	0	0	0	0	55	0	8	0	135	0	0	0	0
4:25 PM	17	37	0	0	0	20	2	0	0	0	0	0	43	0	3	0	122	0	0	0	0
4:30 PM	13	34	0	0	0	19	8	0	0	0	0	0	71	0	5	0	150	0	0	0	0
4:35 PM	14	18	0	0	0	26	6	0	0	0	0	0	73	0	3	0	140	0	0	0	0
4:40 PM	14	40	0	0	0	21	6	2	0	0	0	0	64	0	8	0	153	0	0	0	0
4:45 PM	9	41	0	0	0	23	5	0	0	0	0	0	58	0	7	0	143	0	0	0	0
4:50 PM	10	26	0	0	0	22	8	0	0	0	0	0	76	0	4	0	146	0	0	0	0
4:55 PM	12	34	0	0	0	11	10	0	0	0	0	0	55	0	8	0	130	0	0	0	0
5:00 PM	16	28	0	0	0	16	6	0	0	0	0	0	63	0	3	0	132	0	0	0	0
5:05 PM	20	46	0	1	0	17	6	0	0	0	0	0	71	0	3	0	163	0	0	0	0
5:10 PM	27	67	0	0	0	17	5	0	0	0	0	0	52	0	4	0	172	0	0	0	0
5:15 PM	25	81	0	0	0	15	2	0	0	0	0	0	56	0	4	0	183	0	0	0	0
5:20 PM	27	66	0	0	0	22	7	0	0	0	0	0	39	0	3	0	164	0	0	0	0
5:25 PM	11	64	0	0	0	18	3	0	0	0	0	0	50	0	7	0	153	0	0	0	0
5:30 PM	14	66	0	0	0	23	4	0	0	0	0	0	45	0	3	0	155	0	0	0	0
5:35 PM	14	56	0	0	0	17	7	0	0	0	0	0	48	0	5	0	147	0	0	0	0
5:40 PM	14	41	0	0	0	20	6	0	0	0	0	0	58	0	5	0	144	0	0	0	0
5:45 PM	25	31	0	0	0	13	2	0	0	0	0	0	48	0	8	0	127	0	0	0	0
5:50 PM	17	47	0	0	0	22	1	0	0	0	0	0	59	0	3	0	149	0	0	0	0
5:55 PM	13	38	0	0	0	23	3	0	0	0	0	0	44	0	2	0	123	0	0	0	0
Total Survey	391	1,013	0	1	0	500	117	2	0	0	0	0	1,357	0	112	0	3,490	0	0	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	47	82	0	0	0	85	14	0	0	0	0	0	164	0	13	0	405	0	0	0	0
4:15 PM	49	107	0	0	0	70	8	0	0	0	0	0	163	0	14	0	411	0	0	0	0
4:30 PM	41	92	0	0	0	66	20	2	0	0	0	0	208	0	16	0	443	0	0	0	0
4:45 PM	31	101	0	0	0	56	23	0	0	0	0	0	189	0	19	0	419	0	0	0	0
5:00 PM	63	141	0	1	0	50	17	0	0	0	0	0	186	0	10	0	467	0	0	0	0
5:15 PM	63	211	0	0	0	55	12	0	0	0	0	0	145	0	14	0	500	0	0	0	0
5:30 PM	42	163	0	0	0	60	17	0	0	0	0	0	151	0	13	0	446	0	0	0	0
5:45 PM	55	116	0	0	0	58	6	0	0	0	0	0	151	0	13	0	399	0	0	0	0
Total Survey	391	1,013	0	1	0	500	117	2	0	0	0	0	1,357	0	112	0	3,490	0	0	0	0

Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	814	899	1,713	1	291	674	965	2	0	268	268	0	736	0	736	0	1,841	0	0	0	0
%HV	2.5%				3.8%				0.0%				4.3%				3.4%				
PHF	0.69				0.86				0.00				0.85				0.89				

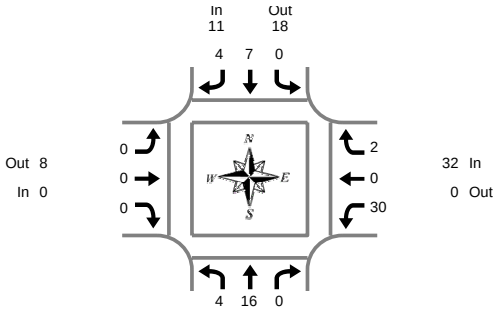
By Movement	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	199	615	0	814	0	222	69	291	0	0	0	0	677	0	59	736	1,841
%HV	2.0%	2.6%	0.0%	2.5%	0.0%	3.2%	5.8%	3.8%	0.0%	0.0%	0.0%	0.0%	4.4%	0.0%	3.4%	4.3%	3.4%
PHF	0.63	0.72	0.00	0.69	0.00	0.84	0.72	0.86	0.00	0.00	0.00	0.00	0.85	0.00	0.78	0.85	0.89

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	168	382	0	0	0	277	65	2	0	0	0	0	724	0	62	0	1,678	0	0	0	0
4:15 PM	184	441	0	1	0	242	68	2	0	0	0	0	746	0	59	0	1,740	0	0	0	0
4:30 PM	198	545	0	1	0	227	72	2	0	0	0	0	728	0	59	0	1,829	0	0	0	0
4:45 PM	199	616	0	1	0	221	69	0	0	0	0	0	671	0	56	0	1,832	0	0	0	0
5:00 PM	223	631	0	1	0	223	52	0	0	0	0	0	633	0	50	0	1,812	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



NW Shute Rd & Hwy 26 WB Ramps

Thursday, March 15, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:40 PM to 5:40 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	1	0	2	0	4	0	4	0	0	0	0	2	0	0	2	8
4:05 PM	0	2	0	2	0	0	0	0	0	0	0	0	1	0	0	1	3
4:10 PM	0	1	0	1	0	2	0	2	0	0	0	0	2	0	0	2	5
4:15 PM	0	1	0	1	0	1	1	2	0	0	0	0	4	0	0	4	7
4:20 PM	1	3	0	4	0	1	0	1	0	0	0	0	3	0	1	4	9
4:25 PM	1	2	0	3	0	2	0	2	0	0	0	0	0	0	0	0	5
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	5	0	1	6	6
4:35 PM	0	2	0	2	0	1	0	1	0	0	0	0	2	0	0	2	5
4:40 PM	0	6	0	6	0	1	0	1	0	0	0	0	3	0	0	3	10
4:45 PM	1	1	0	2	0	1	0	1	0	0	0	0	4	0	0	4	7
4:50 PM	0	2	0	2	0	1	0	1	0	0	0	0	3	0	1	4	7
4:55 PM	1	3	0	4	0	0	3	3	0	0	0	0	1	0	1	2	9
5:00 PM	1	0	0	1	0	1	0	1	0	0	0	0	3	0	0	3	5
5:05 PM	0	1	0	1	0	1	0	1	0	0	0	0	3	0	0	3	5
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5
5:15 PM	0	0	0	0	0	1	1	2	0	0	0	0	2	0	0	2	4
5:20 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
5:30 PM	1	0	0	1	0	1	0	1	0	0	0	0	1	0	0	1	3
5:35 PM	0	1	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
5:45 PM	1	1	0	2	0	0	0	0	0	0	0	0	2	0	1	3	5
5:50 PM	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
5:55 PM	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Survey	10	30	0	40	0	18	5	23	0	0	0	0	55	0	5	60	123

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	4	0	5	0	6	0	6	0	0	0	0	5	0	0	5	16
4:15 PM	2	6	0	8	0	4	1	5	0	0	0	0	7	0	1	8	21
4:30 PM	0	8	0	8	0	2	0	2	0	0	0	0	10	0	1	11	21
4:45 PM	2	6	0	8	0	2	3	5	0	0	0	0	8	0	2	10	23
5:00 PM	1	1	0	2	0	2	0	2	0	0	0	0	11	0	0	11	15
5:15 PM	0	2	0	2	0	1	1	2	0	0	0	0	5	0	0	5	9
5:30 PM	1	1	0	2	0	1	0	1	0	0	0	0	6	0	0	6	9
5:45 PM	3	2	0	5	0	0	0	0	0	0	0	0	3	0	1	4	9
Total Survey	10	30	0	40	0	18	5	23	0	0	0	0	55	0	5	60	123

Heavy Vehicle Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound NW Shute Rd			Southbound NW Shute Rd			Eastbound Hwy 26 WB Ramps			Westbound Hwy 26 WB Ramps			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	20	37	57	11	18	29	0	8	8	32	0	32	63
PHF	0.50			0.55			0.00			0.73			0.66

By Movement	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	4	16	0	20	0	7	4	11	0	0	0	0	30	0	2	32	63
PHF	0.50	0.44	0.00	0.50	0.00	0.58	0.33	0.55	0.00	0.00	0.00	0.00	0.68	0.00	0.25	0.73	0.66

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

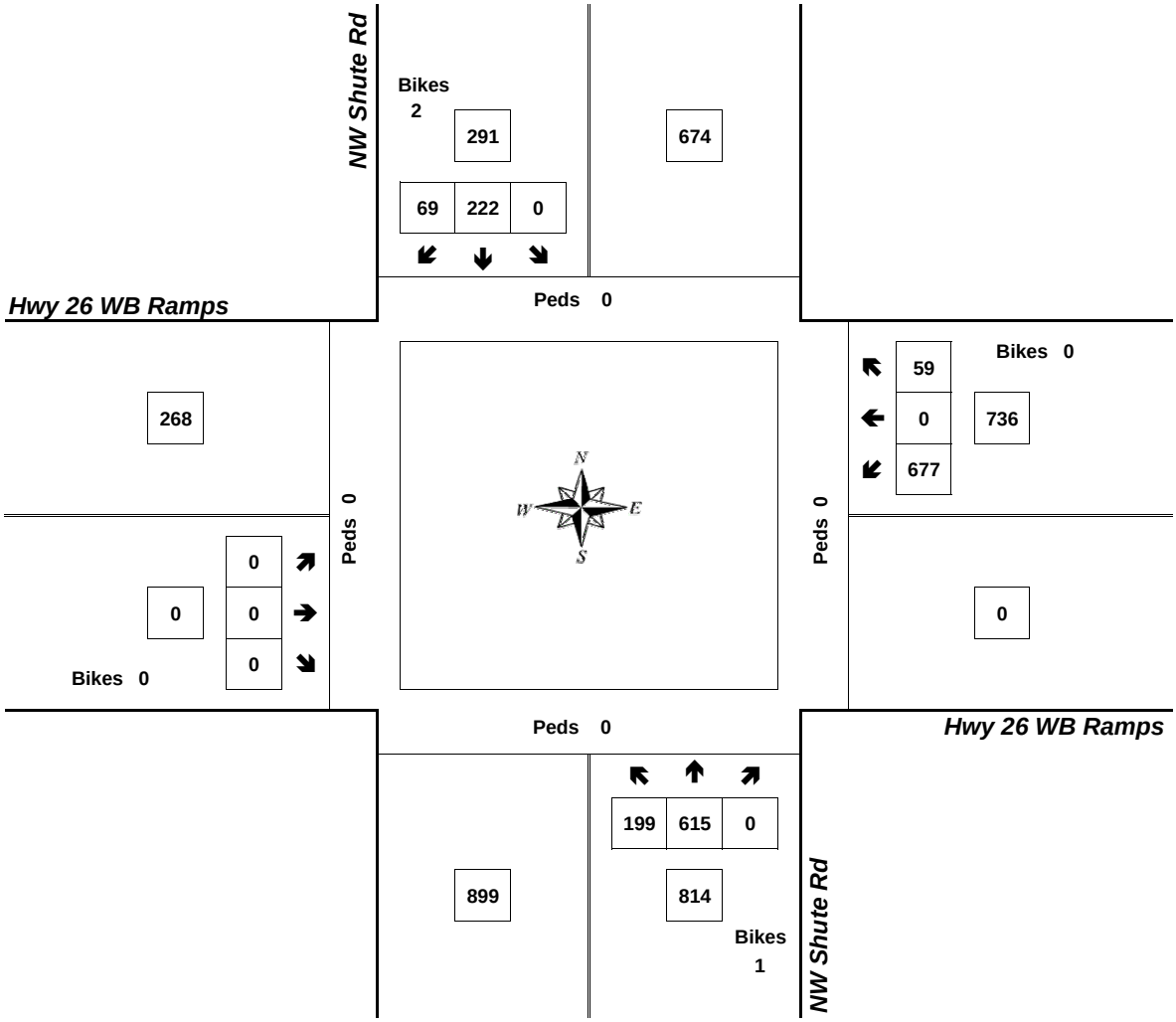
Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 WB Ramps				Westbound Hwy 26 WB Ramps				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	5	24	0	29	0	14	4	18	0	0	0	0	30	0	4	34	81
4:15 PM	5	21	0	26	0	10	4	14	0	0	0	0	36	0	4	40	80
4:30 PM	3	17	0	20	0	7	4	11	0	0	0	0	34	0	3	37	68
4:45 PM	4	10	0	14	0	6	4	10	0	0	0	0	30	0	2	32	56
5:00 PM	5	6	0	11	0	4	1	5	0	0	0	0	25	0	1	26	42

Peak Hour Summary

Clay Carney
(503) 833-2740

NW Shute Rd & Hwy 26 WB Ramps

4:40 PM to 5:40 PM
Thursday, March 15, 2007

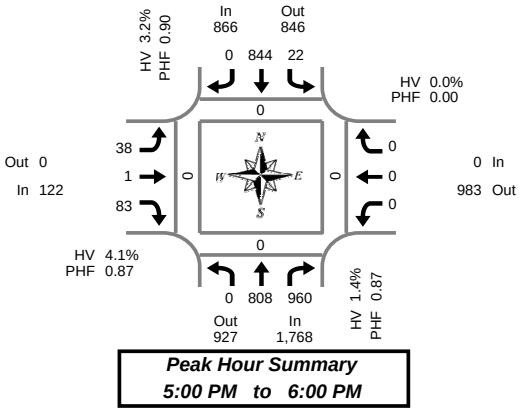


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.85	4.3%	736
NB	0.69	2.5%	814
SB	0.86	3.8%	291
Intersection	0.89	3.4%	1,841

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
5:00 PM to 6:00 PM

NW Shute Rd & Hwy 26 EB Ramps

Thursday, March 15, 2007
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	34	57	0	4	74	0	0	3	0	8	0	0	0	0	0	180	0	0	1	0
4:05 PM	0	36	67	0	4	80	0	0	2	0	4	0	0	0	0	0	193	0	0	0	0
4:10 PM	0	47	49	0	1	84	0	0	1	0	6	0	0	0	0	0	188	0	0	0	0
4:15 PM	0	52	67	0	2	78	0	0	2	0	5	0	0	0	0	0	206	0	0	0	0
4:20 PM	0	43	55	0	8	64	0	0	4	0	5	0	0	0	0	0	179	0	0	0	0
4:25 PM	0	48	75	0	2	62	0	0	1	0	9	0	0	0	0	0	197	0	0	0	0
4:30 PM	0	44	65	0	2	84	0	0	2	0	6	0	0	0	0	0	203	0	0	0	0
4:35 PM	0	42	59	0	2	94	0	0	1	0	9	0	0	0	0	0	207	0	0	0	0
4:40 PM	0	41	61	0	3	81	0	2	6	0	10	0	0	0	0	0	202	0	0	0	1
4:45 PM	0	52	62	0	4	79	0	0	1	0	9	0	0	0	0	0	207	0	0	0	0
4:50 PM	0	32	49	0	7	87	0	0	3	0	5	0	0	0	0	0	183	0	0	0	0
4:55 PM	0	46	63	0	2	68	0	0	3	0	5	0	0	0	0	0	187	0	0	0	1
5:00 PM	0	61	58	0	3	75	0	0	2	0	10	0	0	0	0	0	209	0	0	0	0
5:05 PM	0	74	80	1	0	81	0	0	2	0	8	0	0	0	0	0	245	0	0	0	0
5:10 PM	0	74	84	0	1	81	0	0	1	0	8	0	0	0	0	0	249	0	0	0	0
5:15 PM	0	87	75	0	2	67	0	0	4	0	9	0	0	0	0	0	244	0	0	0	0
5:20 PM	0	84	84	0	2	59	0	0	7	1	4	0	0	0	0	0	241	0	0	0	0
5:25 PM	0	88	89	0	2	60	0	0	4	0	6	0	0	0	0	0	249	0	0	0	0
5:30 PM	0	65	91	0	0	70	0	0	2	0	11	0	0	0	0	0	239	0	0	0	0
5:35 PM	0	61	85	0	1	72	0	0	4	0	6	0	0	0	0	0	229	0	0	0	0
5:40 PM	0	63	94	0	3	65	0	0	2	0	2	0	0	0	0	0	229	0	0	0	0
5:45 PM	0	48	69	0	5	65	0	0	4	0	3	0	0	0	0	0	194	0	0	0	0
5:50 PM	0	51	76	0	1	77	0	0	4	0	5	0	0	0	0	0	214	0	0	0	0
5:55 PM	0	52	75	0	2	72	0	0	2	0	11	0	0	0	0	0	214	0	0	0	0
Total Survey	0	1,325	1,689	1	63	1,779	0	2	67	1	164	0	0	0	0	0	5,088	0	0	1	2

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	117	173	0	9	238	0	0	6	0	18	0	0	0	0	0	561	0	0	1	0
4:15 PM	0	143	197	0	12	204	0	0	7	0	19	0	0	0	0	0	582	0	0	0	0
4:30 PM	0	127	185	0	7	259	0	2	9	0	25	0	0	0	0	0	612	0	0	0	1
4:45 PM	0	130	174	0	13	234	0	0	7	0	19	0	0	0	0	0	577	0	0	0	1
5:00 PM	0	209	222	1	4	237	0	0	5	0	26	0	0	0	0	0	703	0	0	0	0
5:15 PM	0	259	248	0	6	186	0	0	15	1	19	0	0	0	0	0	734	0	0	0	0
5:30 PM	0	189	270	0	4	207	0	0	8	0	19	0	0	0	0	0	697	0	0	0	0
5:45 PM	0	151	220	0	8	214	0	0	10	0	19	0	0	0	0	0	622	0	0	0	0
Total Survey	0	1,325	1,689	1	63	1,779	0	2	67	1	164	0	0	0	0	0	5,088	0	0	1	2

Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,768	927	2,695	1	866	846	1,712	0	122	0	122	0	0	983	983	0	2,756	0	0	0	0
%HV	1.4%				3.2%				4.1%				0.0%				2.1%				
PHF	0.87				0.90				0.87				0.00				0.93				

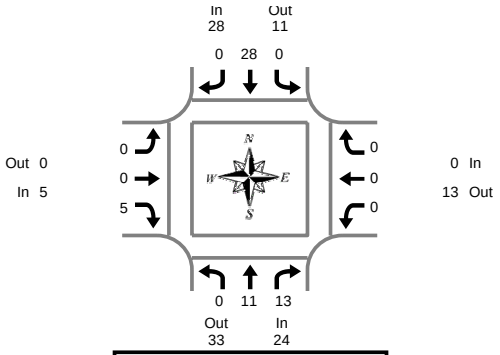
By Movement	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	808	960	1,768	22	844	0	866	38	1	83	122	0	0	0	0	2,756
%HV	0.0%	1.4%	1.4%	1.4%	0.0%	3.3%	0.0%	3.2%	0.0%	0.0%	6.0%	4.1%	0.0%	0.0%	0.0%	0.0%	2.1%
PHF	0.00	0.78	0.89	0.87	0.61	0.89	0.00	0.90	0.63	0.25	0.80	0.87	0.00	0.00	0.00	0.00	0.93

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	517	729	0	41	935	0	2	29	0	81	0	0	0	0	0	2,332	0	0	1	2
4:15 PM	0	609	778	1	36	934	0	2	28	0	89	0	0	0	0	0	2,474	0	0	0	2
4:30 PM	0	725	829	1	30	916	0	2	36	1	89	0	0	0	0	0	2,626	0	0	0	2
4:45 PM	0	787	914	1	27	864	0	0	35	1	83	0	0	0	0	0	2,711	0	0	0	1
5:00 PM	0	808	960	1	22	844	0	0	38	1	83	0	0	0	0	0	2,756	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



NW Shute Rd & Hwy 26 EB Ramps

Thursday, March 15, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
5:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	3	3	6	0	6	0	6	0	0	2	2	0	0	0	0	14
4:05 PM	0	2	2	4	0	3	0	3	0	0	0	0	0	0	0	0	7
4:10 PM	0	0	1	1	0	4	0	4	0	0	0	0	0	0	0	0	5
4:15 PM	0	3	5	8	1	3	0	4	0	0	0	0	0	0	0	0	12
4:20 PM	0	3	1	4	0	3	0	3	1	0	2	3	0	0	0	0	10
4:25 PM	0	2	1	3	0	1	0	1	0	0	0	0	0	0	0	0	4
4:30 PM	0	1	2	3	0	5	0	5	0	0	1	1	0	0	0	0	9
4:35 PM	0	2	1	3	1	2	0	3	1	0	0	1	0	0	0	0	7
4:40 PM	0	4	4	8	0	4	0	4	0	0	0	0	0	0	0	0	12
4:45 PM	0	1	2	3	2	5	0	7	1	0	0	1	0	0	0	0	11
4:50 PM	0	0	3	3	0	3	0	3	1	0	3	4	0	0	0	0	10
4:55 PM	0	4	3	7	0	1	0	1	0	0	0	0	0	0	0	0	8
5:00 PM	0	1	0	1	0	3	0	3	0	0	0	0	0	0	0	0	4
5:05 PM	0	1	0	1	0	4	0	4	0	0	0	0	0	0	0	0	5
5:10 PM	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	5
5:15 PM	0	0	0	0	0	3	0	3	0	0	2	2	0	0	0	0	5
5:20 PM	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	0	3
5:25 PM	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0	3
5:30 PM	0	0	2	2	0	3	0	3	0	0	0	0	0	0	0	0	5
5:35 PM	0	1	3	4	0	2	0	2	0	0	0	0	0	0	0	0	6
5:40 PM	0	2	1	3	0	3	0	3	0	0	0	0	0	0	0	0	6
5:45 PM	0	2	2	4	0	2	0	2	0	0	0	0	0	0	0	0	6
5:50 PM	0	1	3	4	0	0	0	0	0	0	0	0	0	0	0	0	4
5:55 PM	0	2	2	4	0	0	0	0	0	0	1	1	0	0	0	0	5
Total Survey	0	36	41	77	4	68	0	72	4	0	13	17	0	0	0	0	166

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	5	6	11	0	13	0	13	0	0	2	2	0	0	0	0	26
4:15 PM	0	8	7	15	1	7	0	8	1	0	2	3	0	0	0	0	26
4:30 PM	0	7	7	14	1	11	0	12	1	0	1	2	0	0	0	0	28
4:45 PM	0	5	8	13	2	9	0	11	2	0	3	5	0	0	0	0	29
5:00 PM	0	2	0	2	0	12	0	12	0	0	0	0	0	0	0	0	14
5:15 PM	0	1	0	1	0	6	0	6	0	0	4	4	0	0	0	0	11
5:30 PM	0	3	6	9	0	8	0	8	0	0	0	0	0	0	0	0	17
5:45 PM	0	5	7	12	0	2	0	2	0	0	1	1	0	0	0	0	15
Total Survey	0	36	41	77	4	68	0	72	4	0	13	17	0	0	0	0	166

Heavy Vehicle Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound NW Shute Rd			Southbound NW Shute Rd			Eastbound Hwy 26 EB Ramps			Westbound Hwy 26 EB Ramps			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	24	33	57	28	11	39	5	0	5	0	13	13	57
PHF	0.50			0.58			0.31			0.00			0.79

By Movement	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	11	13	24	0	28	0	28	0	0	5	5	0	0	0	0	57
PHF	0.00	0.55	0.46	0.50	0.00	0.58	0.00	0.58	0.00	0.00	0.31	0.31	0.00	0.00	0.00	0.00	0.79

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

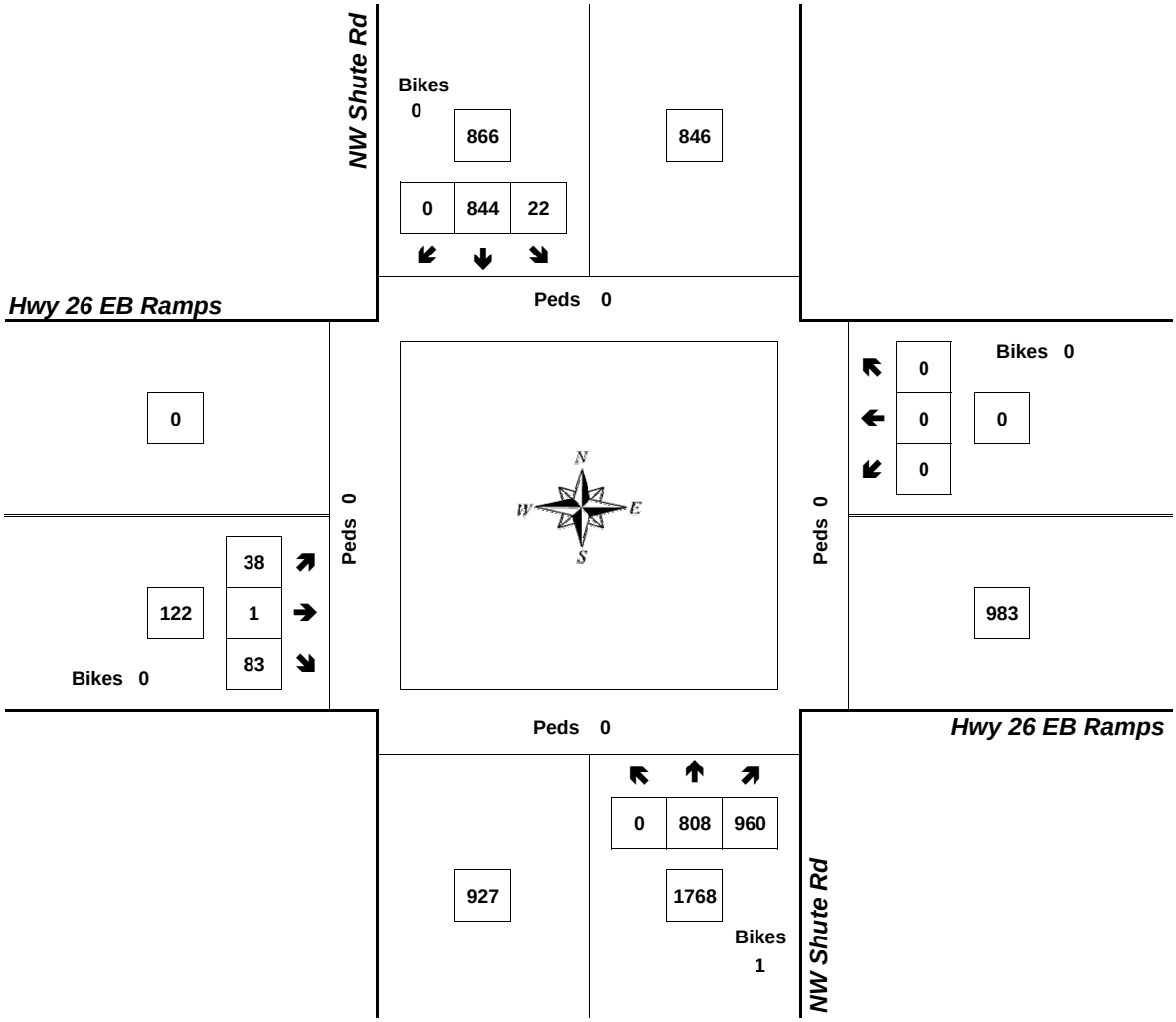
Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound Hwy 26 EB Ramps				Westbound Hwy 26 EB Ramps				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	25	28	53	4	40	0	44	4	0	8	12	0	0	0	0	109
4:15 PM	0	22	22	44	4	39	0	43	4	0	6	10	0	0	0	0	97
4:30 PM	0	15	15	30	3	38	0	41	3	0	8	11	0	0	0	0	82
4:45 PM	0	11	14	25	2	35	0	37	2	0	7	9	0	0	0	0	71
5:00 PM	0	11	13	24	0	28	0	28	0	0	5	5	0	0	0	0	57

Peak Hour Summary

Clay Carney
(503) 833-2740

NW Shute Rd & Hwy 26 EB Ramps

5:00 PM to 6:00 PM
Thursday, March 15, 2007

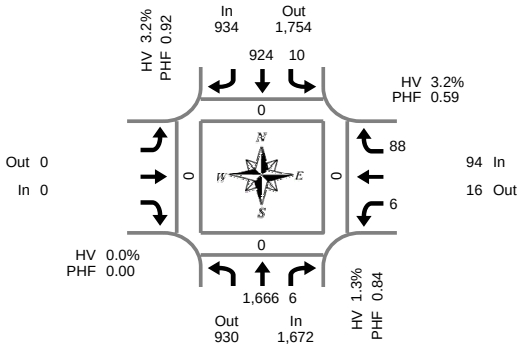


Approach	PHF	HV%	Volume
EB	0.87	4.1%	122
WB	0.00	0.0%	0
NB	0.87	1.4%	1,768
SB	0.90	3.2%	866
Intersection	0.93	2.1%	2,756

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
5:00 PM to 6:00 PM

NW Shute Rd & NW Huffman St

Thursday, March 15, 2007
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Huffman St				Westbound NW Huffman St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	97	2	0		2	80		0				0	1		8	0	190	0	0	0	0
4:05 PM	78	1	0		2	82		0				0	2		17	0	182	0	0	0	0
4:10 PM	106	1	0		1	87		0				0	0		10	0	205	0	0	0	0
4:15 PM	103	0	0		4	77		0				0	1		6	0	191	0	0	0	0
4:20 PM	100	0	0		1	73		0				0	0		8	0	182	0	0	0	0
4:25 PM	113	3	0		3	81		0				0	2		10	0	212	0	0	0	0
4:30 PM	92	0	0		2	91		0				0	1		10	0	196	0	0	0	0
4:35 PM	98	0	0		1	97		2				0	0		8	0	204	0	0	0	0
4:40 PM	108	0	0		0	103		0				0	1		7	0	219	0	0	0	0
4:45 PM	102	0	0		1	99		0				0	0		4	0	206	0	0	0	0
4:50 PM	72	1	0		1	84		0				0	0		3	0	161	0	0	0	0
4:55 PM	104	3	0		1	72		0				0	0		7	0	187	0	0	0	0
5:00 PM	88	0	0		1	88		0				0	1		3	0	181	0	0	0	0
5:05 PM	132	0	0		1	89		0				0	0		17	0	239	0	0	0	0
5:10 PM	165	2	0		1	74		0				0	2		12	0	256	0	0	0	0
5:15 PM	162	0	0		0	80		0				0	1		8	0	251	0	0	0	0
5:20 PM	148	1	0		2	70		0				0	1		4	0	226	0	0	0	0
5:25 PM	182	2	0		1	61		0				0	0		11	0	257	0	0	0	0
5:30 PM	125	0	0		1	76		0				0	1		4	0	207	0	0	0	0
5:35 PM	152	0	0		1	83		0				0	0		9	0	245	0	0	0	0
5:40 PM	143	0	0		0	73		0				0	0		5	0	221	0	0	0	0
5:45 PM	116	1	0		1	59		0				0	0		5	0	182	0	0	0	0
5:50 PM	129	0	0		1	88		0				0	0		6	0	224	0	0	0	0
5:55 PM	124	0	0		0	83		0				0	0		4	0	211	0	0	0	0
Total Survey	2,839	17	0		29	1,950		2				0	14		186	0	5,035	0	0	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Huffman St				Westbound NW Huffman St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	281	4	0		5	249		0				0	3		35	0	577	0	0	0	0
4:15 PM	316	3	0		8	231		0				0	3		24	0	585	0	0	0	0
4:30 PM	298	0	0		3	291		2				0	2		25	0	619	0	0	0	0
4:45 PM	278	4	0		3	255		0				0	0		14	0	554	0	0	0	0
5:00 PM	385	2	0		3	251		0				0	3		32	0	676	0	0	0	0
5:15 PM	492	3	0		3	211		0				0	2		23	0	734	0	0	0	0
5:30 PM	420	0	0		2	232		0				0	1		18	0	673	0	0	0	0
5:45 PM	369	1	0		2	230		0				0	0		15	0	617	0	0	0	0
Total Survey	2,839	17	0		29	1,950		2				0	14		186	0	5,035	0	0	0	0

Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Huffman St				Westbound NW Huffman St				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,672	930	2,602	0	934	1,754	2,688	0	0	0	0	0	94	16	110	0	2,700	0	0	0	0
%HV	1.3%				3.2%				0.0%				3.2%				2.0%				
PHF	0.84				0.92				0.00				0.59				0.90				

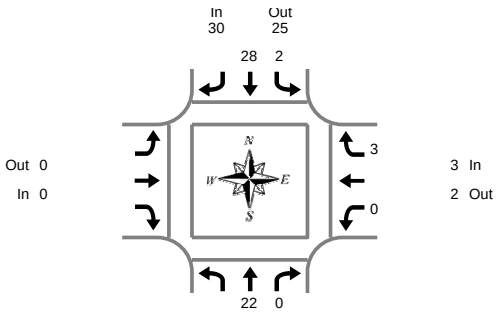
By Movement	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Huffman St				Westbound NW Huffman St				Total
	T	R	Total		L	T		Total				Total	L		R	Total	
Volume	1,666	6	1,672		10	924		934				0	6		88	94	2,700
%HV	NA	1.3%	0.0%	1.3%	20.0%	3.0%	NA	3.2%	NA	NA	NA	0.0%	0.0%	NA	3.4%	3.2%	2.0%
PHF		0.85	0.50	0.84	0.63	0.92		0.92				0.00	0.38		0.59	0.59	0.90

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Huffman St				Westbound NW Huffman St				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	1,173	11	0		19	1,026		2				0	8		98	0	2,335	0	0	0	0
4:15 PM	1,277	9	0		17	1,028		2				0	8		95	0	2,434	0	0	0	0
4:30 PM	1,453	9	0		12	1,008		2				0	7		94	0	2,583	0	0	0	0
4:45 PM	1,575	9	0		11	949		0				0	6		87	0	2,637	0	0	0	0
5:00 PM	1,666	6	0		10	924		0				0	6		88	0	2,700	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



NW Shute Rd & NW Huffman St

Thursday, March 15, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
5:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Huffman St				Westbound NW Huffman St				Interval Total
	T	R	Total		L	T		Total				Total	L		R	Total	
4:00 PM	6	0	6		0	7		7				0	0		0	0	13
4:05 PM	4	0	4		0	3		3				0	0		1	1	8
4:10 PM	4	0	4		1	2		3				0	0		0	0	7
4:15 PM	0	0	0		1	4		5				0	0		1	1	6
4:20 PM	3	0	3		0	4		4				0	0		1	1	8
4:25 PM	3	1	4		1	3		4				0	1		0	1	9
4:30 PM	3	0	3		1	4		5				0	0		0	0	8
4:35 PM	3	0	3		0	3		3				0	0		0	0	6
4:40 PM	8	0	8		0	2		2				0	0		2	2	12
4:45 PM	1	0	1		0	6		6				0	0		2	2	9
4:50 PM	1	0	1		1	4		5				0	0		0	0	6
4:55 PM	5	1	6		0	1		1				0	0		2	2	9
5:00 PM	3	0	3		0	5		5				0	0		0	0	8
5:05 PM	0	0	0		0	3		3				0	0		0	0	3
5:10 PM	0	0	0		0	4		4				0	0		0	0	4
5:15 PM	1	0	1		0	4		4				0	0		0	0	5
5:20 PM	1	0	1		0	1		1				0	0		0	0	2
5:25 PM	2	0	2		1	1		2				0	0		0	0	4
5:30 PM	0	0	0		1	1		2				0	0		0	0	2
5:35 PM	4	0	4		0	3		3				0	0		0	0	7
5:40 PM	2	0	2		0	3		3				0	0		1	1	6
5:45 PM	2	0	2		0	1		1				0	0		1	1	4
5:50 PM	3	0	3		0	1		1				0	0		0	0	4
5:55 PM	4	0	4		0	1		1				0	0		1	1	6
Total Survey	63	2	65		7	71		78				0	1		12	13	156

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Huffman St				Westbound NW Huffman St				Interval Total
	T	R	Total		L	T		Total				Total	L		R	Total	
4:00 PM	14	0	14		1	12		13				0	0		1	1	28
4:15 PM	6	1	7		2	11		13				0	1		2	3	23
4:30 PM	14	0	14		1	9		10				0	0		2	2	26
4:45 PM	7	1	8		1	11		12				0	0		4	4	24
5:00 PM	3	0	3		0	12		12				0	0		0	0	15
5:15 PM	4	0	4		1	6		7				0	0		0	0	11
5:30 PM	6	0	6		1	7		8				0	0		1	1	15
5:45 PM	9	0	9		0	3		3				0	0		2	2	14
Total Survey	63	2	65		7	71		78				0	1		12	13	156

Heavy Vehicle Peak Hour Summary
5:00 PM to 6:00 PM

By Approach	Northbound NW Shute Rd			Southbound NW Shute Rd			Eastbound NW Huffman St			Westbound NW Huffman St			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	22	28	50	30	25	55	0	0	0	3	2	5	55
PHF	0.61			0.63			0.00			0.38			0.81

By Movement	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Huffman St				Westbound NW Huffman St				Total
	T	R	Total		L	T		Total				Total	L		R	Total	
Volume	22	0	22		2	28		30				0	0		3	3	55
PHF	0.61	0.00	0.61		0.25	0.58		0.63				0.00	0.00		0.38	0.38	0.81

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

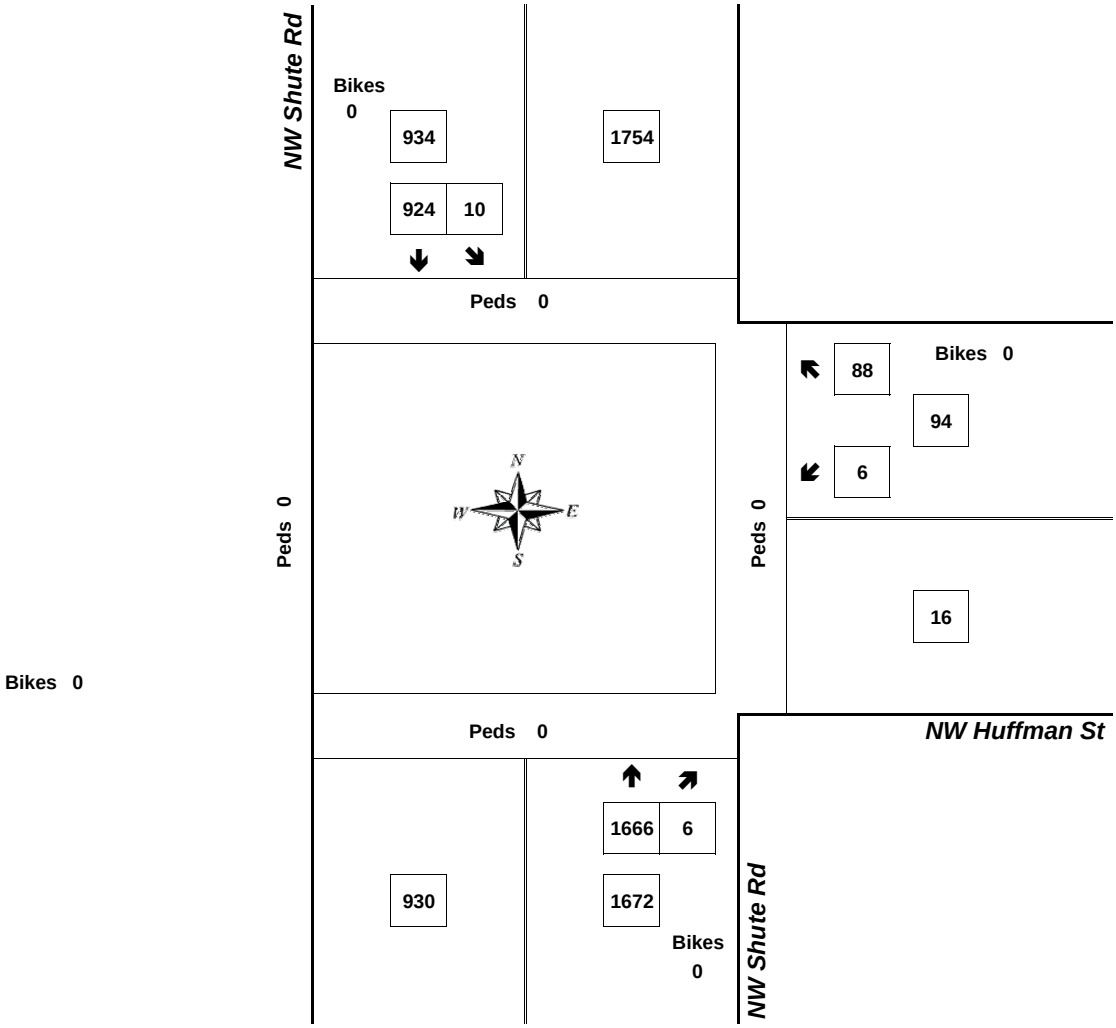
Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NW Huffman St				Westbound NW Huffman St				Interval Total
	T	R	Total		L	T		Total				Total	L		R	Total	
4:00 PM	41	2	43		5	43		48				0	1		9	10	101
4:15 PM	30	2	32		4	43		47				0	1		8	9	88
4:30 PM	28	1	29		3	38		41				0	0		6	6	76
4:45 PM	20	1	21		3	36		39				0	0		5	5	65
5:00 PM	22	0	22		2	28		30				0	0		3	3	55

Peak Hour Summary

Clay Carney
(503) 833-2740

NW Shute Rd & NW Huffman St

5:00 PM to 6:00 PM
Thursday, March 15, 2007

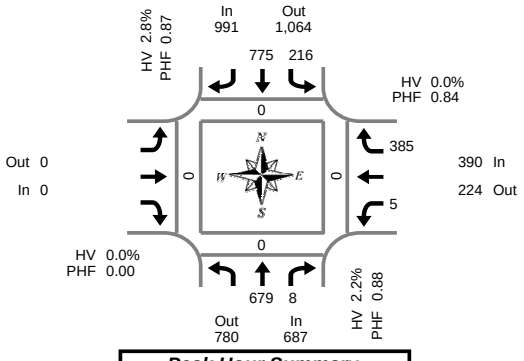


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.59	3.2%	94
NB	0.84	1.3%	1,672
SB	0.92	3.2%	934
Intersection	0.90	2.0%	2,700

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:55 PM to 5:55 PM

NW Shute Rd & NE Shute Rd

Thursday, March 2007
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NE Shute Rd				Westbound NE Shute Rd				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	39	1	0		16	49		0				0	1		35	0	141	0	0	0	0
4:05 PM	52	1	0		13	79		0				0	0		24	0	169	0	0	0	0
4:10 PM	42	0	0		24	69		0				0	1		27	0	163	0	0	0	0
4:15 PM	42	0	0		13	58		0				0	0		23	0	136	0	0	0	0
4:20 PM	50	2	0		11	53		0				0	0		36	0	152	0	0	0	0
4:25 PM	64	3	0		11	59		0				0	2		31	0	170	0	0	0	0
4:30 PM	45	0	0		8	62		0				0	2		24	0	141	0	0	0	0
4:35 PM	52	2	0		15	82		0				0	2		30	0	183	0	0	0	0
4:40 PM	56	0	0		22	60		0				0	0		25	1	163	0	0	0	0
4:45 PM	41	1	0		13	89		0				0	0		24	0	168	0	0	0	0
4:50 PM	50	0	0		4	59		0				0	0		17	0	130	0	0	0	0
4:55 PM	53	0	0		19	66		0				0	0		20	0	158	0	0	0	0
5:00 PM	35	2	0		18	66		0				0	0		25	0	146	0	0	0	0
5:05 PM	62	1	0		21	79		0				0	0		29	0	192	0	0	0	0
5:10 PM	57	1	0		17	84		0				0	0		40	0	199	0	0	0	0
5:15 PM	62	0	0		19	58		0				0	2		37	0	178	0	0	0	0
5:20 PM	73	1	0		20	63		0				0	1		36	0	194	0	0	0	0
5:25 PM	59	0	0		21	55		0				0	1		37	0	173	0	0	0	0
5:30 PM	45	2	0		17	56		0				0	1		40	1	161	0	0	0	0
5:35 PM	71	0	0		16	64		0				0	0		26	0	177	0	0	0	0
5:40 PM	47	1	0		14	65		0				0	0		34	0	161	0	0	0	0
5:45 PM	55	0	0		19	57		0				0	0		31	0	162	0	0	0	0
5:50 PM	60	0	0		15	62		0				0	0		30	0	167	0	0	0	0
5:55 PM	46	0	0		12	62		0				0	1		22	0	143	0	0	0	0
Total Survey	1,258	18	0		378	1,556		0				0	14		703	2	3,927	0	0	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NE Shute Rd				Westbound NE Shute Rd				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	133	2	0		53	197		0				0	2		86	0	473	0	0	0	0
4:15 PM	156	5	0		35	170		0				0	2		90	0	458	0	0	0	0
4:30 PM	153	2	0		45	204		0				0	4		79	1	487	0	0	0	0
4:45 PM	144	1	0		36	214		0				0	0		61	0	456	0	0	0	0
5:00 PM	154	4	0		56	229		0				0	0		94	0	537	0	0	0	0
5:15 PM	194	1	0		60	176		0				0	4		110	0	545	0	0	0	0
5:30 PM	163	3	0		47	185		0				0	1		100	1	499	0	0	0	0
5:45 PM	161	0	0		46	181		0				0	1		83	0	472	0	0	0	0
Total Survey	1,258	18	0		378	1,556		0				0	14		703	2	3,927	0	0	0	0

Peak Hour Summary
4:55 PM to 5:55 PM

By Approach	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NE Shute Rd				Westbound NE Shute Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	687	780	1,467	0	991	1,064	2,055	0	0	0	0	0	390	224	614	1	2,068	0	0	0	0
%HV	2.2%				2.8%				0.0%				0.0%				2.1%				
PHF	0.88				0.87				0.00				0.84				0.91				

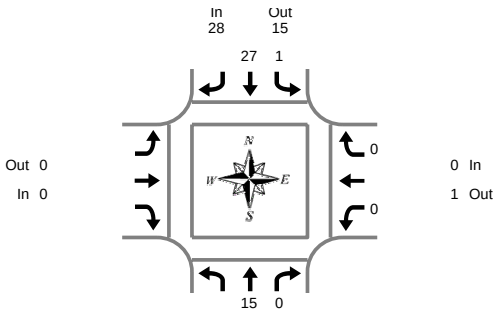
By Movement	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NE Shute Rd				Westbound NE Shute Rd				Total
	T	R	Total		L	T		Total				Total	L		R	Total	
Volume	679	8	687		216	775		991				0	5		385	390	2,068
%HV	NA	2.2%	0.0%	2.2%	0.5%	3.5%	NA	2.8%	NA	NA	NA	0.0%	0.0%	NA	0.0%	0.0%	2.1%
PHF		0.88	0.50	0.88	0.90	0.85		0.87				0.00	0.31		0.85	0.84	0.91

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NE Shute Rd				Westbound NE Shute Rd				Interval Total	Pedestrians Crosswalk			
	T	R	Bikes		L	T		Bikes				Bikes	L		R	Bikes		North	South	East	West
4:00 PM	586	10	0		169	785		0				0	8		316	1	1,874	0	0	0	0
4:15 PM	607	12	0		172	817		0				0	6		324	1	1,938	0	0	0	0
4:30 PM	645	8	0		197	823		0				0	8		344	1	2,025	0	0	0	0
4:45 PM	655	9	0		199	804		0				0	5		365	1	2,037	0	0	0	0
5:00 PM	672	8	0		209	771		0				0	6		387	1	2,053	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
4:55 PM to 5:55 PM

NW Shute Rd & NE Shute Rd

Thursday, March 15, 2007
4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NE Shute Rd				Westbound NE Shute Rd				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		3	0	3	1	2		3				0	0		1	1	7
4:05 PM		2	0	2	1	4		5				0	0		0	0	7
4:10 PM		3	0	3	0	3		3				0	0		1	1	7
4:15 PM		1	0	1	1	2		3				0	0		1	1	5
4:20 PM		4	0	4	1	3		4				0	0		0	0	8
4:25 PM		2	0	2	0	3		3				0	0		0	0	5
4:30 PM		2	0	2	0	6		6				0	0		1	1	9
4:35 PM		2	0	2	0	0		0				0	0		2	2	4
4:40 PM		3	0	3	0	0		0				0	0		0	0	3
4:45 PM		1	0	1	0	4		4				0	0		1	1	6
4:50 PM		3	0	3	0	5		5				0	0		0	0	8
4:55 PM		1	0	1	0	0		0				0	0		0	0	1
5:00 PM		2	0	2	0	4		4				0	0		0	0	6
5:05 PM		0	0	0	1	6		7				0	0		0	0	7
5:10 PM		0	0	0	0	3		3				0	0		0	0	3
5:15 PM		1	0	1	0	3		3				0	0		0	0	4
5:20 PM		2	0	2	0	2		2				0	0		0	0	4
5:25 PM		1	0	1	0	3		3				0	0		0	0	4
5:30 PM		0	0	0	0	1		1				0	0		0	0	1
5:35 PM		2	0	2	0	3		3				0	0		0	0	5
5:40 PM		2	0	2	0	0		0				0	0		0	0	2
5:45 PM		2	0	2	0	1		1				0	0		0	0	3
5:50 PM		2	0	2	0	1		1				0	0		0	0	3
5:55 PM		2	0	2	0	1		1				0	0		0	0	3
Total Survey		43	0	43	5	60		65				0	0		7	7	115

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NE Shute Rd				Westbound NE Shute Rd				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		8	0	8	2	9		11				0	0		2	2	21
4:15 PM		7	0	7	2	8		10				0	0		1	1	18
4:30 PM		7	0	7	0	6		6				0	0		3	3	16
4:45 PM		5	0	5	0	9		9				0	0		1	1	15
5:00 PM		2	0	2	1	13		14				0	0		0	0	16
5:15 PM		4	0	4	0	8		8				0	0		0	0	12
5:30 PM		4	0	4	0	4		4				0	0		0	0	8
5:45 PM		6	0	6	0	3		3				0	0		0	0	9
Total Survey		43	0	43	5	60		65				0	0		7	7	115

Heavy Vehicle Peak Hour Summary
4:55 PM to 5:55 PM

By Approach	Northbound NW Shute Rd			Southbound NW Shute Rd			Eastbound NE Shute Rd			Westbound NE Shute Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	15	27	42	28	15	43	0	0	0	0	1	1	43
PHF	0.63			0.50			0.00			0.00			0.67

By Movement	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NE Shute Rd				Westbound NE Shute Rd				Total
		T	R	Total	L	T		Total				Total	L		R	Total	
Volume		15	0	15	1	27		28				0	0		0	0	43
PHF		0.63	0.00	0.63	0.25	0.52		0.50				0.00	0.00		0.00	0.00	0.67

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

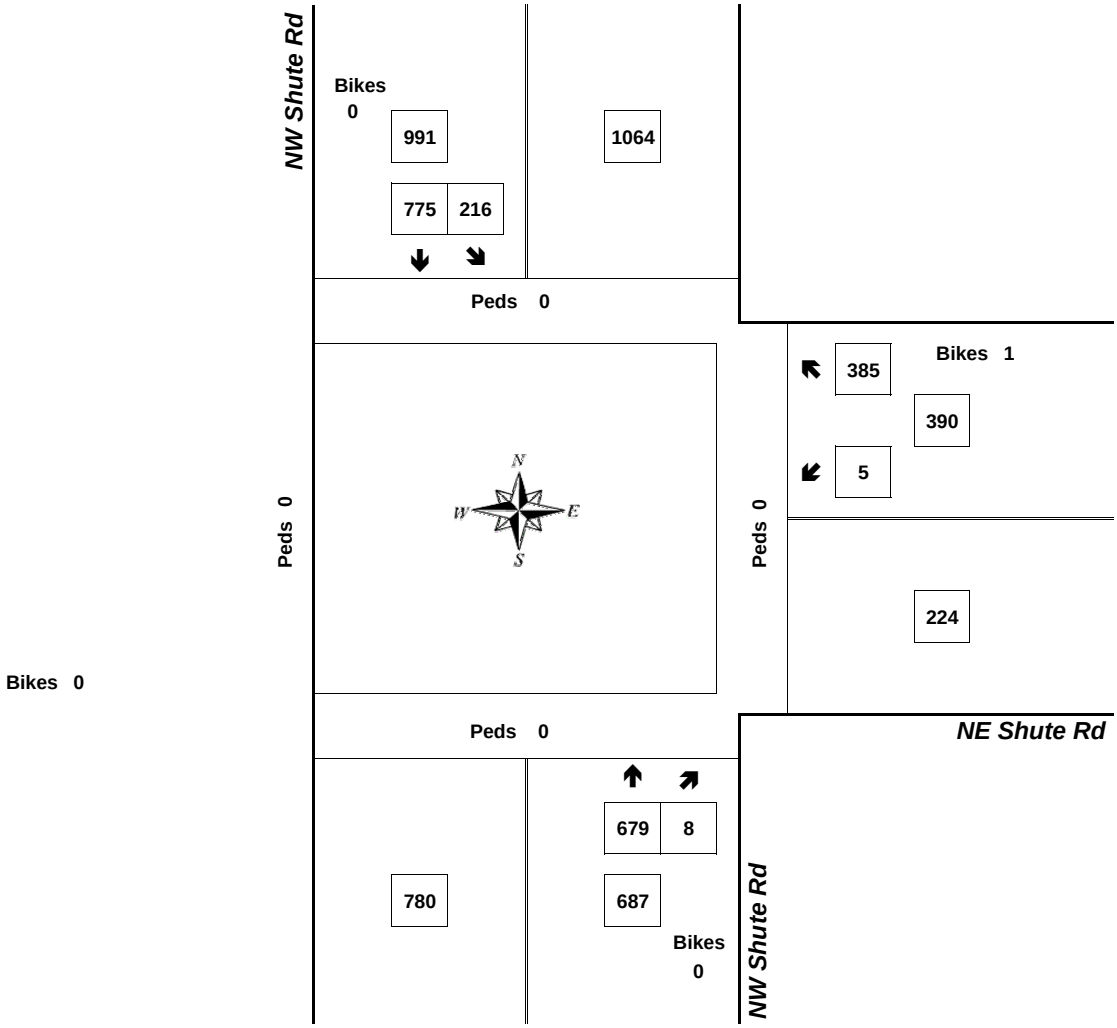
Interval Start Time	Northbound NW Shute Rd				Southbound NW Shute Rd				Eastbound NE Shute Rd				Westbound NE Shute Rd				Interval Total
		T	R	Total	L	T		Total				Total	L		R	Total	
4:00 PM		27	0	27	4	32		36				0	0		7	7	70
4:15 PM		21	0	21	3	36		39				0	0		5	5	65
4:30 PM		18	0	18	1	36		37				0	0		4	4	59
4:45 PM		15	0	15	1	34		35				0	0		1	1	51
5:00 PM		16	0	16	1	28		29				0	0		0	0	45

Peak Hour Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740

NW Shute Rd & NE Shute Rd

4:55 PM to 5:55 PM
Thursday, March 15, 2007

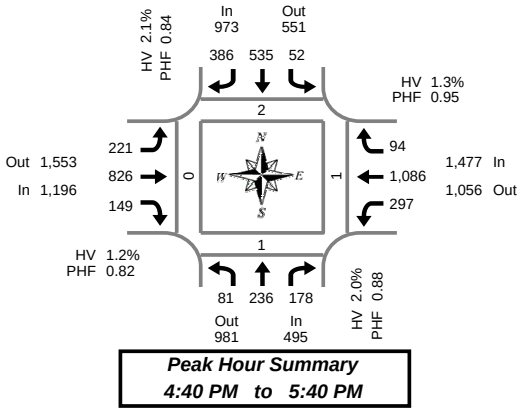


Approach	PHF	HV%	Volume
EB	0.00	0.0%	0
WB	0.84	0.0%	390
NB	0.88	2.2%	687
SB	0.87	2.8%	991
Intersection	0.91	2.1%	2,068

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
4:40 PM to 5:40 PM

NE Brookwood Pkwy & NE Cornell Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound NE Cornell Rd				Westbound NE Cornell Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	8	5	15	0	3	25	14	0	16	69	11	0	9	90	2	0	267	0	0	0	0
4:05 PM	6	15	11	0	9	54	43	0	20	52	8	0	21	57	3	0	299	0	0	0	0
4:10 PM	6	17	13	0	2	37	32	0	17	65	12	0	31	78	6	0	316	0	0	0	0
4:15 PM	10	23	14	0	2	29	18	0	12	88	8	0	18	94	13	0	329	0	0	0	0
4:20 PM	8	24	14	0	7	41	34	0	13	55	2	0	34	78	6	0	316	0	0	0	0
4:25 PM	1	20	10	0	3	40	38	0	16	50	6	0	30	109	8	0	331	0	0	0	0
4:30 PM	8	18	14	0	11	29	26	0	17	85	7	0	13	89	8	0	325	1	0	0	0
4:35 PM	8	18	19	0	3	49	36	0	10	56	5	0	33	65	9	0	311	0	1	1	0
4:40 PM	3	23	11	0	4	37	35	0	25	77	16	0	29	105	13	0	378	0	0	0	0
4:45 PM	9	15	11	0	3	37	37	0	14	81	15	0	19	106	9	0	356	0	0	0	0
4:50 PM	11	15	22	0	4	51	34	0	25	45	6	0	27	52	9	0	301	1	1	0	0
4:55 PM	1	17	13	0	3	39	24	0	17	52	8	0	30	99	12	0	315	1	0	0	0
5:00 PM	10	23	10	0	3	48	20	0	16	64	12	0	13	94	8	0	321	0	0	0	0
5:05 PM	10	21	31	0	8	50	33	0	12	38	5	0	24	73	4	0	309	0	0	0	0
5:10 PM	6	12	17	0	5	39	37	0	15	86	14	0	34	118	6	0	389	0	0	0	0
5:15 PM	5	16	13	0	1	51	53	0	13	78	32	0	14	68	3	0	347	0	0	0	0
5:20 PM	8	26	10	0	10	60	34	0	10	49	6	0	33	74	12	0	332	0	0	0	0
5:25 PM	3	16	16	0	7	33	27	0	28	98	15	0	34	97	8	0	382	0	0	0	0
5:30 PM	5	31	14	0	2	55	24	0	17	84	10	0	17	105	6	0	370	0	0	1	0
5:35 PM	10	21	10	0	2	35	28	0	29	74	10	0	23	95	4	0	341	0	0	0	0
5:40 PM	8	20	13	0	6	44	19	0	23	64	8	0	21	49	10	0	285	0	0	0	0
5:45 PM	9	15	10	0	5	35	44	0	24	64	17	0	19	116	7	0	365	1	0	0	0
5:50 PM	9	19	12	0	2	26	26	0	18	71	11	0	20	81	7	0	302	0	0	0	0
5:55 PM	8	30	22	0	6	53	45	0	14	45	9	0	23	73	4	0	332	1	0	0	0
Total Survey	170	460	345	0	111	997	761	0	421	1,590	253	0	569	2,065	177	0	7,919	5	2	2	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound NE Cornell Rd				Westbound NE Cornell Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	20	37	39	0	14	116	89	0	53	186	31	0	61	225	11	0	882	0	0	0	0
4:15 PM	19	67	38	0	12	110	90	0	41	193	16	0	82	281	27	0	976	0	0	0	0
4:30 PM	19	59	44	0	18	115	97	0	52	218	28	0	75	259	30	0	1,014	1	1	1	0
4:45 PM	21	47	46	0	10	127	95	0	56	178	29	0	76	257	30	0	972	2	1	0	0
5:00 PM	26	56	58	0	16	137	90	0	43	188	31	0	71	285	18	0	1,019	0	0	0	0
5:15 PM	16	58	39	0	18	144	114	0	51	225	53	0	81	239	23	0	1,061	0	0	0	0
5:30 PM	23	72	37	0	10	134	71	0	69	222	28	0	61	249	20	0	996	0	0	1	0
5:45 PM	26	64	44	0	13	114	115	0	56	180	37	0	62	270	18	0	999	2	0	0	0
Total Survey	170	460	345	0	111	997	761	0	421	1,590	253	0	569	2,065	177	0	7,919	5	2	2	0

Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound NE Cornell Rd				Westbound NE Cornell Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	495	981	1,476	0	973	551	1,524	0	1,196	1,553	2,749	0	1,477	1,056	2,533	0	4,141	2	1	1	0
%HV	2.0%				2.1%				1.2%				1.3%				1.5%				
PHF	0.88				0.84				0.82				0.95				0.95				

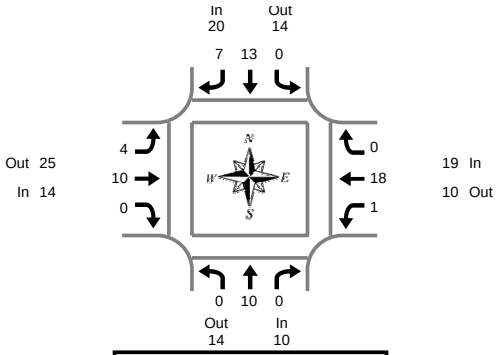
By Movement	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound NE Cornell Rd				Westbound NE Cornell Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	81	236	178	495	52	535	386	973	221	826	149	1,196	297	1,086	94	1,477	4,141
%HV	0.0%	4.2%	0.0%	2.0%	0.0%	2.4%	1.8%	2.1%	1.8%	1.2%	0.0%	1.2%	0.3%	1.7%	0.0%	1.3%	1.5%
PHF	0.78	0.81	0.73	0.88	0.68	0.89	0.78	0.84	0.75	0.81	0.70	0.82	0.88	0.91	0.76	0.95	0.95

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound NE Cornell Rd				Westbound NE Cornell Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	79	210	167	0	54	468	371	0	202	775	104	0	294	1,022	98	0	3,844	3	2	1	0
4:15 PM	85	229	186	0	56	489	372	0	192	777	104	0	304	1,082	105	0	3,981	3	2	1	0
4:30 PM	82	220	187	0	62	523	396	0	202	809	141	0	303	1,040	101	0	4,066	3	2	1	0
4:45 PM	86	233	180	0	54	542	370	0	219	813	141	0	289	1,030	91	0	4,048	2	1	1	0
5:00 PM	91	250	178	0	57	529	390	0	219	815	149	0	275	1,043	79	0	4,075	2	0	1	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



NE Brookwood Pkwy & NE Cornell Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:40 PM to 5:40 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound NE Cornell Rd				Westbound NE Cornell Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	1	0	2	0	1	0	1	0	4	1	5	0	3	0	3	11
4:05 PM	1	2	0	3	0	0	0	0	1	2	0	3	1	0	0	1	7
4:10 PM	1	2	0	3	0	0	1	1	1	2	1	4	0	3	2	5	13
4:15 PM	0	0	0	0	0	0	0	0	0	3	0	3	0	2	0	2	5
4:20 PM	0	0	1	1	0	1	0	1	1	1	0	2	0	0	0	0	4
4:25 PM	0	3	0	3	0	0	0	0	1	1	0	2	0	1	0	1	6
4:30 PM	0	1	0	1	0	0	1	1	0	3	0	3	0	1	1	2	7
4:35 PM	0	0	0	0	0	0	2	2	0	2	0	2	0	0	0	0	4
4:40 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	3	0	3	4
4:45 PM	0	1	0	1	0	2	0	2	0	0	0	0	0	0	0	0	3
4:50 PM	0	0	0	0	0	1	1	2	0	2	0	2	0	0	0	0	4
4:55 PM	0	1	0	1	0	2	0	2	0	0	0	0	1	3	0	4	7
5:00 PM	0	0	0	0	0	2	1	3	0	2	0	2	0	0	0	0	5
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
5:10 PM	0	0	0	0	0	1	0	1	1	1	0	2	0	1	0	1	4
5:15 PM	0	1	0	1	0	1	1	2	0	1	0	1	0	0	0	0	4
5:20 PM	0	3	0	3	0	2	1	3	0	0	0	0	0	0	0	0	6
5:25 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	2	0	2	4
5:30 PM	0	1	0	1	0	1	1	2	1	3	0	4	0	6	0	6	13
5:35 PM	0	2	0	2	0	0	1	1	2	1	0	3	0	1	0	1	7
5:40 PM	0	2	0	2	0	1	0	1	2	0	0	2	1	0	0	1	6
5:45 PM	2	0	0	2	0	0	0	0	0	0	0	0	0	4	0	4	6
5:50 PM	0	0	0	0	1	0	0	1	2	0	0	2	0	0	1	1	4
5:55 PM	0	0	0	0	0	1	1	2	0	0	0	0	0	2	0	2	4
Total Survey	5	21	1	27	1	17	12	30	12	28	2	42	3	34	4	41	140

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound NE Cornell Rd				Westbound NE Cornell Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	3	5	0	8	0	1	1	2	2	8	2	12	1	6	2	9	31
4:15 PM	0	3	1	4	0	1	0	1	2	5	0	7	0	3	0	3	15
4:30 PM	0	1	0	1	0	0	4	4	0	5	0	5	0	4	1	5	15
4:45 PM	0	2	0	2	0	5	1	6	0	2	0	2	1	3	0	4	14
5:00 PM	0	0	0	0	0	3	1	4	1	3	0	4	0	3	0	3	11
5:15 PM	0	5	0	5	0	4	2	6	0	1	0	1	0	2	0	2	14
5:30 PM	0	5	0	5	0	2	2	4	5	4	0	9	1	7	0	8	26
5:45 PM	2	0	0	2	1	1	1	3	2	0	0	2	0	6	1	7	14
Total Survey	5	21	1	27	1	17	12	30	12	28	2	42	3	34	4	41	140

Heavy Vehicle Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound NE Brookwood Pkwy			Southbound NE Brookwood Pkwy			Eastbound NE Cornell Rd			Westbound NE Cornell Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	10	14	24	20	14	34	14	25	39	19	10	29	63
PHF	0.50			0.71			0.50			0.53			0.66

By Movement	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound NE Cornell Rd				Westbound NE Cornell Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	10	0	10	0	13	7	20	4	10	0	14	1	18	0	19	63
PHF	0.00	0.50	0.00	0.50	0.00	0.65	0.88	0.71	0.33	0.63	0.00	0.50	0.25	0.50	0.00	0.53	0.66

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

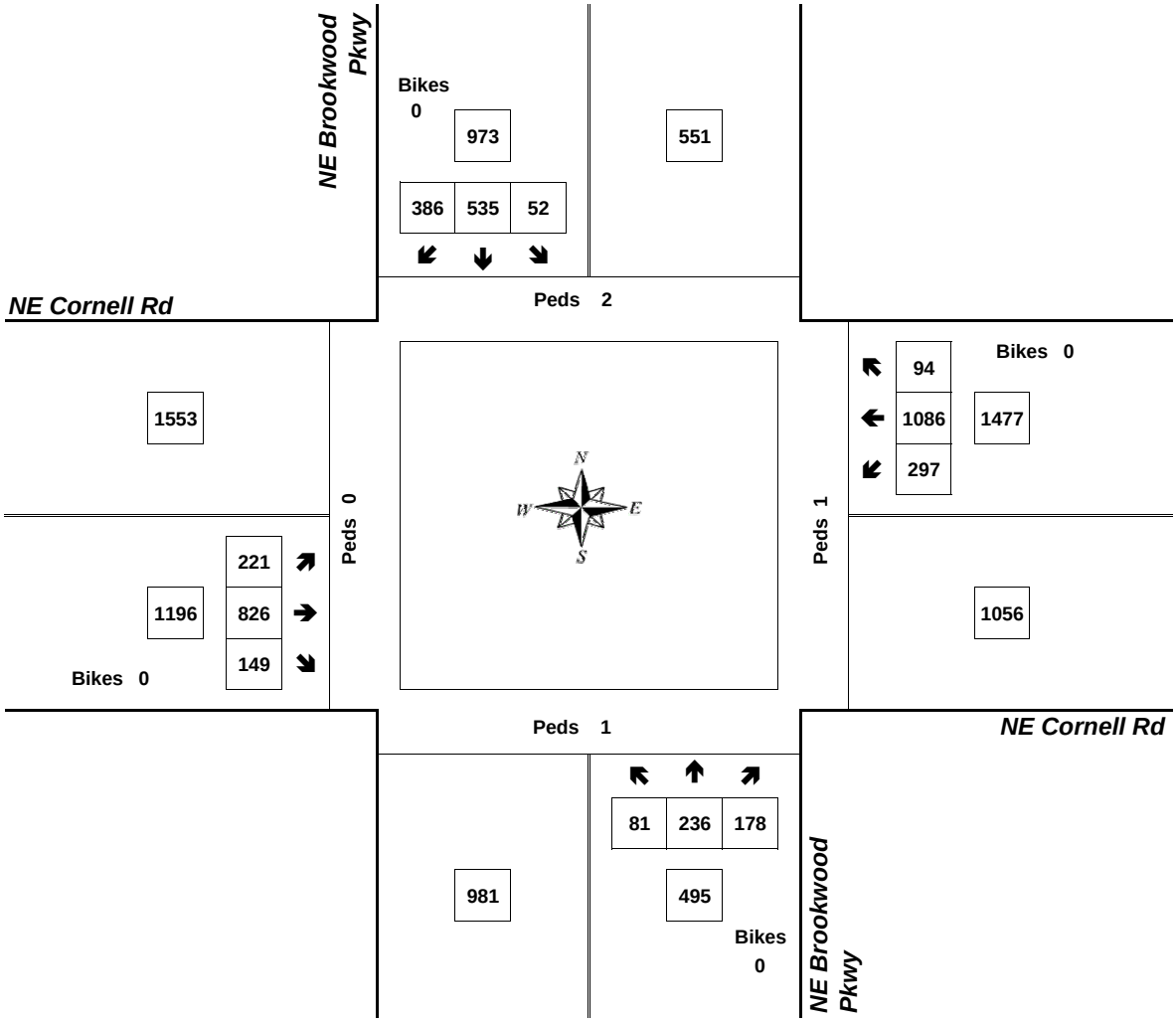
Interval Start Time	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound NE Cornell Rd				Westbound NE Cornell Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	3	11	1	15	0	7	6	13	4	20	2	26	2	16	3	21	75
4:15 PM	0	6	1	7	0	9	6	15	3	15	0	18	1	13	1	15	55
4:30 PM	0	8	0	8	0	12	8	20	1	11	0	12	1	12	1	14	54
4:45 PM	0	12	0	12	0	14	6	20	6	10	0	16	2	15	0	17	65
5:00 PM	2	10	0	12	1	10	6	17	8	8	0	16	1	18	1	20	65

Peak Hour Summary

Clay Carney
(503) 833-2740

NE Brookwood Pkwy & NE Cornell Rd

4:40 PM to 5:40 PM
Wednesday, March 21, 2007

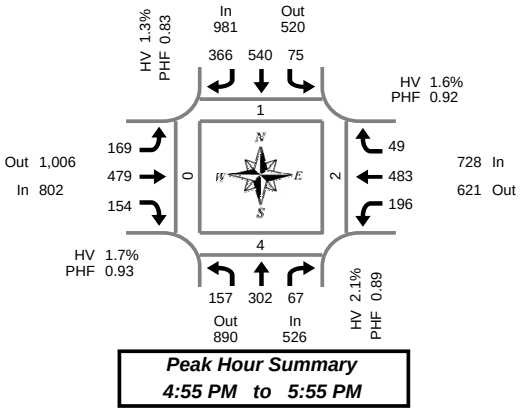


Approach	PHF	HV%	Volume
EB	0.82	1.2%	1,196
WB	0.95	1.3%	1,477
NB	0.88	2.0%	495
SB	0.84	2.1%	973
Intersection	0.95	1.5%	4,141

Count Period: 4:00 PM to 6:00 PM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:55 PM to 5:55 PM

NE Brookwood Pkwy & W Baseline Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound W Baseline Rd				Westbound W Baseline Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	14	22	3	0	4	31	17	0	12	22	10	0	13	27	3	0	178	0	0	0	0
4:05 PM	15	41	5	0	8	41	26	0	4	23	12	0	11	34	2	0	222	0	1	0	0
4:10 PM	8	19	3	0	0	19	33	0	13	38	16	0	17	45	3	0	214	2	0	0	0
4:15 PM	11	18	9	0	4	37	30	0	11	17	10	0	9	33	6	0	195	0	0	0	0
4:20 PM	14	14	4	0	2	36	28	0	18	38	18	0	10	37	5	0	224	0	0	0	0
4:25 PM	14	18	4	0	3	40	28	0	14	24	10	0	9	32	5	0	201	1	0	0	0
4:30 PM	6	28	6	0	3	31	21	0	9	47	8	0	13	46	4	0	222	1	1	0	0
4:35 PM	16	22	8	0	2	37	42	0	11	32	13	0	16	37	4	0	240	0	0	0	0
4:40 PM	8	19	5	0	5	37	29	0	10	47	21	0	20	41	4	0	246	0	2	0	0
4:45 PM	11	37	12	0	6	39	31	0	14	34	10	0	14	31	6	0	245	0	0	0	0
4:50 PM	7	10	4	0	5	47	25	0	11	49	19	0	12	50	5	0	244	0	0	0	0
4:55 PM	15	24	11	0	4	34	39	0	15	30	13	0	15	29	6	0	235	0	0	0	0
5:00 PM	8	36	3	0	2	49	33	0	18	36	12	0	14	49	6	0	266	0	0	0	0
5:05 PM	17	30	3	0	7	43	32	0	20	33	11	0	18	34	3	0	251	0	0	0	0
5:10 PM	14	25	5	0	5	41	27	0	18	50	12	0	19	53	2	0	271	0	0	0	0
5:15 PM	15	15	5	0	6	57	43	0	7	35	16	0	14	35	4	0	252	0	0	0	0
5:20 PM	6	12	6	0	7	45	40	0	11	53	13	0	16	46	6	0	261	0	0	0	0
5:25 PM	11	36	5	0	9	58	32	0	9	40	9	0	7	31	5	0	252	1	0	0	0
5:30 PM	11	22	2	0	7	36	27	0	17	44	13	0	25	41	2	0	247	0	0	0	0
5:35 PM	9	24	8	0	5	54	26	0	10	41	8	0	18	45	2	0	250	0	0	0	0
5:40 PM	18	21	10	0	10	48	26	0	12	36	18	0	16	34	5	0	254	0	0	0	0
5:45 PM	12	21	5	0	7	36	14	0	15	53	13	0	20	52	3	0	251	0	4	2	0
5:50 PM	21	36	4	0	6	39	27	0	17	28	16	0	14	34	5	0	247	0	0	0	0
5:55 PM	14	20	11	0	2	25	27	0	16	33	16	0	15	49	6	0	234	0	1	0	0
Total Survey	295	570	141	0	119	960	703	0	312	883	317	0	355	945	102	0	5,702	5	9	2	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound W Baseline Rd				Westbound W Baseline Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	37	82	11	0	12	91	76	0	29	83	38	0	41	106	8	0	614	2	1	0	0
4:15 PM	39	50	17	0	9	113	86	0	43	79	38	0	28	102	16	0	620	1	0	0	0
4:30 PM	30	69	19	0	10	105	92	0	30	126	42	0	49	124	12	0	708	1	3	0	0
4:45 PM	33	71	27	0	15	120	95	0	40	113	42	0	41	110	17	0	724	0	0	0	0
5:00 PM	39	91	11	0	14	133	92	0	56	119	35	0	51	136	11	0	788	0	0	0	0
5:15 PM	32	63	16	0	22	160	115	0	27	128	38	0	37	112	15	0	765	1	0	0	0
5:30 PM	38	67	20	0	22	138	79	0	39	121	39	0	59	120	9	0	751	0	0	0	0
5:45 PM	47	77	20	0	15	100	68	0	48	114	45	0	49	135	14	0	732	0	5	2	0
Total Survey	295	570	141	0	119	960	703	0	312	883	317	0	355	945	102	0	5,702	5	9	2	0

Peak Hour Summary
4:55 PM to 5:55 PM

By Approach	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound W Baseline Rd				Westbound W Baseline Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	526	890	1,416	0	981	520	1,501	0	802	1,006	1,808	0	728	621	1,349	0	3,037	1	4	2	0
%HV	2.1%				1.3%				1.7%				1.6%				1.6%				
PHF	0.89				0.83				0.93				0.92				0.96				

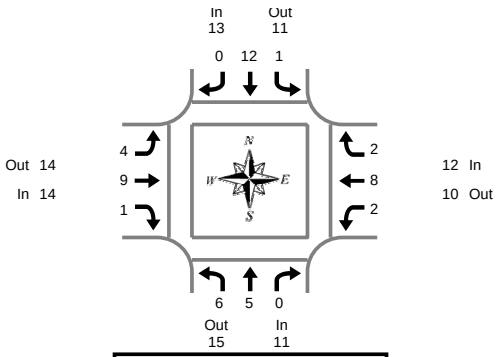
By Movement	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound W Baseline Rd				Westbound W Baseline Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	157	302	67	526	75	540	366	981	169	479	154	802	196	483	49	728	3,037
%HV	3.8%	1.7%	0.0%	2.1%	1.3%	2.2%	0.0%	1.3%	2.4%	1.9%	0.6%	1.7%	1.0%	1.7%	4.1%	1.6%	1.6%
PHF	0.77	0.83	0.73	0.89	0.82	0.84	0.80	0.83	0.75	0.87	0.82	0.93	0.83	0.89	0.82	0.92	0.96

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound W Baseline Rd				Westbound W Baseline Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	139	272	74	0	46	429	349	0	142	401	160	0	159	442	53	0	2,666	4	4	0	0
4:15 PM	141	281	74	0	48	471	365	0	169	437	157	0	169	472	56	0	2,840	2	3	0	0
4:30 PM	134	294	73	0	61	518	394	0	153	486	157	0	178	482	55	0	2,985	2	3	0	0
4:45 PM	142	292	74	0	73	551	381	0	162	481	154	0	188	478	52	0	3,028	1	0	0	0
5:00 PM	156	298	67	0	73	531	354	0	170	482	157	0	196	503	49	0	3,036	1	5	2	0

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



NE Brookwood Pkwy & W Baseline Rd

Wednesday, March 21, 2007
4:00 PM to 6:00 PM

Peak Hour Summary
4:55 PM to 5:55 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound W Baseline Rd				Westbound W Baseline Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	2	3	0	5	0	1	0	1	0	0	1	1	0	3	1	4	11
4:05 PM	1	2	0	3	1	1	1	3	1	1	0	2	0	1	0	1	9
4:10 PM	0	2	0	2	0	1	0	1	0	0	1	1	0	2	0	2	6
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
4:20 PM	1	1	0	2	0	0	1	1	1	2	0	3	1	0	0	1	7
4:25 PM	0	0	0	0	0	0	0	0	1	1	0	2	0	1	0	1	3
4:30 PM	0	0	0	0	0	0	0	0	0	1	1	2	0	1	0	1	3
4:35 PM	1	1	0	2	0	0	0	0	0	1	0	1	0	1	0	1	4
4:40 PM	1	0	0	1	0	1	0	1	0	2	0	2	0	0	0	0	4
4:45 PM	0	1	0	1	0	1	0	1	0	0	1	1	0	0	0	0	3
4:50 PM	1	0	0	1	0	2	0	2	0	2	1	3	0	2	0	2	8
4:55 PM	2	0	0	2	0	2	0	2	1	1	0	2	0	0	0	0	6
5:00 PM	0	0	0	0	0	3	0	3	0	2	0	2	1	3	0	4	9
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:10 PM	1	0	0	1	0	0	0	0	0	1	0	1	1	0	0	1	3
5:15 PM	0	1	0	1	0	1	0	1	1	1	0	2	0	0	0	0	4
5:20 PM	0	0	0	0	0	1	0	1	1	0	0	1	0	2	0	2	4
5:25 PM	1	2	0	3	0	2	0	2	0	2	0	2	0	1	0	1	8
5:30 PM	0	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	2
5:35 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
5:40 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	1	2	3	5
5:45 PM	0	0	0	0	0	1	0	1	0	1	1	2	0	1	0	1	4
5:50 PM	2	0	0	2	1	0	0	1	0	0	0	0	0	0	0	0	3
5:55 PM	1	1	1	3	0	0	0	0	1	3	0	4	0	1	0	1	8
Total Survey	14	16	1	31	2	19	2	23	8	22	6	36	4	22	3	29	119

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound W Baseline Rd				Westbound W Baseline Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	3	7	0	10	1	3	1	5	1	1	2	4	0	6	1	7	26
4:15 PM	1	1	0	2	0	0	1	1	2	3	0	5	2	3	0	5	13
4:30 PM	2	1	0	3	0	1	0	1	0	4	1	5	0	2	0	2	11
4:45 PM	3	1	0	4	0	5	0	5	1	3	2	6	0	2	0	2	17
5:00 PM	1	0	0	1	0	3	0	3	0	3	0	3	2	3	0	5	12
5:15 PM	1	3	0	4	0	4	0	4	2	3	0	5	0	3	0	3	16
5:30 PM	0	2	0	2	0	2	0	2	1	1	0	2	0	1	2	3	9
5:45 PM	3	1	1	5	1	1	0	2	1	4	1	6	0	2	0	2	15
Total Survey	14	16	1	31	2	19	2	23	8	22	6	36	4	22	3	29	119

Heavy Vehicle Peak Hour Summary
4:55 PM to 5:55 PM

By Approach	Northbound NE Brookwood Pkwy			Southbound NE Brookwood Pkwy			Eastbound W Baseline Rd			Westbound W Baseline Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	11	15	26	13	11	24	14	14	28	12	10	22	50
PHF	0.69			0.65			0.70			0.60			0.78

By Movement	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound W Baseline Rd				Westbound W Baseline Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	6	5	0	11	1	12	0	13	4	9	1	14	2	8	2	12	50
PHF	0.75	0.42	0.00	0.69	0.25	0.60	0.00	0.65	0.50	0.75	0.25	0.70	0.25	0.67	0.25	0.60	0.78

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

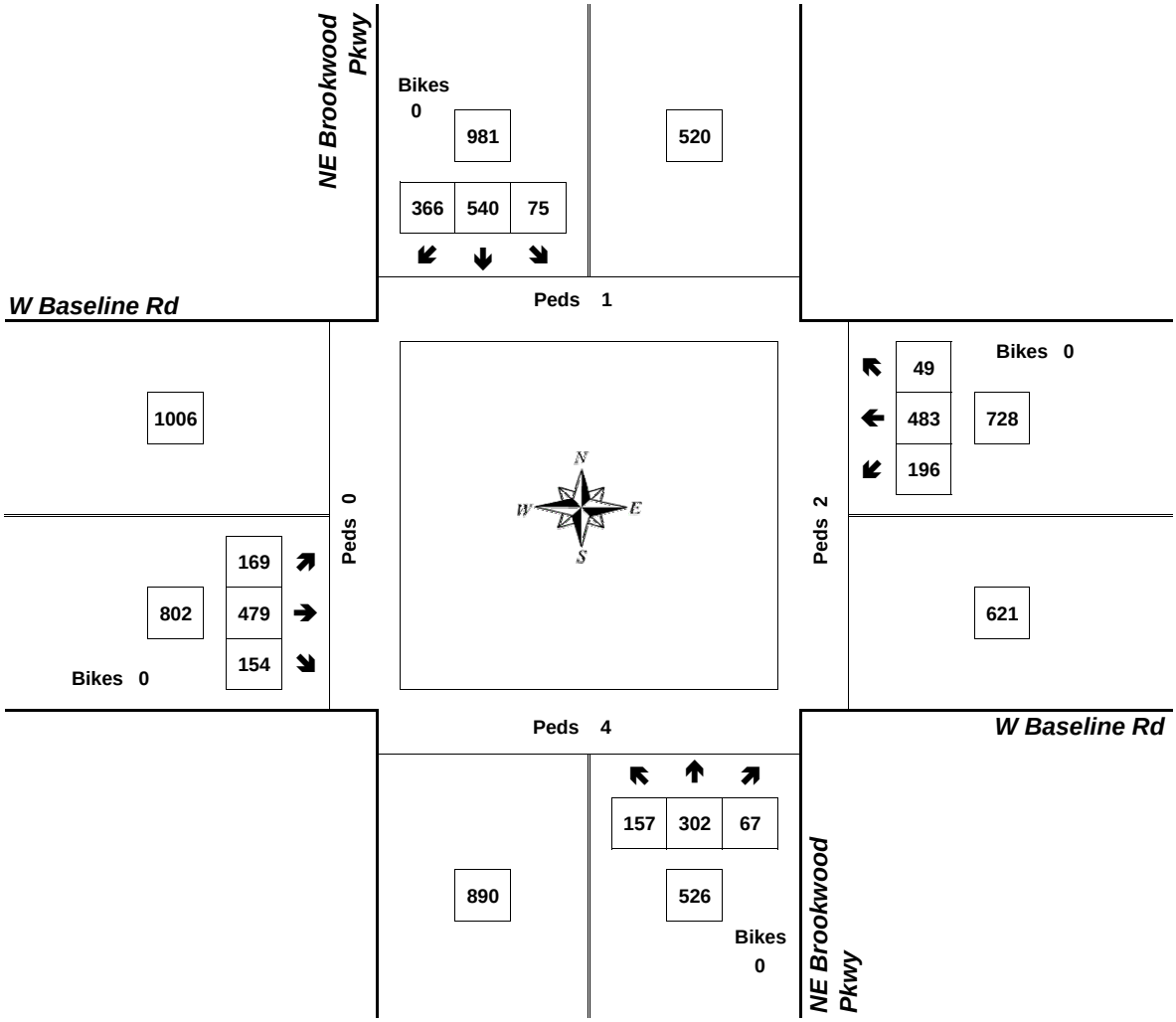
Interval Start Time	Northbound NE Brookwood Pkwy				Southbound NE Brookwood Pkwy				Eastbound W Baseline Rd				Westbound W Baseline Rd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	9	10	0	19	1	9	2	12	4	11	5	20	2	13	1	16	67
4:15 PM	7	3	0	10	0	9	1	10	3	13	3	19	4	10	0	14	53
4:30 PM	7	5	0	12	0	13	0	13	3	13	3	19	2	10	0	12	56
4:45 PM	5	6	0	11	0	14	0	14	4	10	2	16	2	9	2	13	54
5:00 PM	5	6	1	12	1	10	0	11	4	11	1	16	2	9	2	13	52

Peak Hour Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740

NE Brookwood Pkwy & W Baseline Rd

4:55 PM to 5:55 PM
Wednesday, March 21, 2007



Approach	PHF	HV%	Volume
EB	0.93	1.7%	802
WB	0.92	1.6%	728
NB	0.89	2.1%	526
SB	0.83	1.3%	981
Intersection	0.96	1.6%	3,037

Count Period: 4:00 PM to 6:00 PM

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Scenario Report

Scenario:	Existing PM Peak
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 NW Glencoe Rd/NW Evergreen Rd	C	20.9	0.798	C	20.9	0.798	+ 0.000 D/V
# 2 NE Jackson School Rd/NW Evergr	B	19.9	0.734	B	19.9	0.734	+ 0.000 D/V
# 3 NW Jackson School Rd/NW Evergr	C	21.4	0.834	C	21.4	0.834	+ 0.000 D/V
# 4 NE 25th Ave/NW Evergreen Rd	B	18.9	0.619	B	18.9	0.619	+ 0.000 D/V
# 5 NW Sewell Rd/NW Evergreen Rd	F	149.4	0.000	F	149.4	0.000	+ 0.000 D/V
# 6 NW SHute Rd/NW Evergreen Pkwy	D	35.0	0.729	D	35.0	0.729	+ 0.000 D/V
# 7 NW 229th Ave/NW Evergreen Rd	E	40.8	0.981	E	40.8	0.981	+ 0.000 D/V
# 8 NW Cornelius Pass Rd/NW Evergr	D	54.2	0.974	D	54.2	0.974	+ 0.000 D/V
# 9 NW Jackson School Rd/Hwy 26 WB	C	18.6	0.000	C	18.6	0.000	+ 0.000 D/V
# 10 NW Jackson School Rd/Hwy 26 EB	B	12.7	0.000	B	12.7	0.000	+ 0.000 D/V
# 11 NW Jackson School Rd/NW Meek R	B	14.1	0.000	B	14.1	0.000	+ 0.000 D/V
# 16 NW Shute Rd/Hwy 26 WB Ramp	C	20.4	0.716	C	20.4	0.716	+ 0.000 D/V
# 17 NW Shute Rd/Hwy 26 EB Ramp	A	7.7	0.643	A	7.7	0.643	+ 0.000 D/V
# 18 NW Shute/NW Huffman St	D	34.5	0.000	D	34.5	0.000	+ 0.000 D/V
# 19 NW Shute Rd/NE Shute Rd	B	13.0	0.407	B	13.0	0.407	+ 0.000 D/V
# 20 NE Brookwood Pkwy/NE Cornell R	E	70.3	0.914	E	70.3	0.914	+ 0.000 D/V
# 21 NE Brookwood Pkwy/W Baseline R	D	54.3	0.953	D	54.3	0.953	+ 0.000 D/V

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 NW Glencoe Rd/NW Evergreen Rd

Cycle (sec):	50	Critical Vol./Cap.(X):	0.798
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	20.9
Optimal Cycle:	58	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0 1	0	1	0 0	0	0	0 0	1	0	0 1
Volume Module:												
Base Vol:	0	254	258	91	230	0	0	0	0	416	0	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	254	258	91	230	0	0	0	0	416	0	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	270	274	97	245	0	0	0	0	443	0	156
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	270	274	97	245	0	0	0	0	443	0	156
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	270	274	97	245	0	0	0	0	443	0	156
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.93	0.93	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.85
Lanes:	0.00	0.50	0.50	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	878	892	1805	1900	0	0	0	0	1805	0	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.31	0.31	0.05	0.13	0.00	0.00	0.00	0.00	0.25	0.00	0.10
Crit Moves:		****		****						****		
Green/Cycle:	0.00	0.39	0.39	0.07	0.45	0.00	0.00	0.00	0.00	0.31	0.00	0.31
Volume/Cap:	0.00	0.80	0.80	0.80	0.28	0.00	0.00	0.00	0.00	0.80	0.00	0.32
Delay/Veh:	0.0	20.2	20.2	52.8	8.8	0.0	0.0	0.0	0.0	23.9	0.0	13.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	20.2	20.2	52.8	8.8	0.0	0.0	0.0	0.0	23.9	0.0	13.6
LOS by Move:	A	C	C	D	A	A	A	A	A	C	A	B
HCM2kAvgQ:	0	10	10	4	3	0	0	0	0	9	0	2

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 NE Jackson School Rd/NW Evergreen Rd

Cycle (sec):	60	Critical Vol./Cap.(X):	0.734
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	19.9
Optimal Cycle:	55	Level Of Service:	B

Street Name: Jackson School - driveway

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0	0 1	0	0	1! 0	0	1	0 0	1	0	0 1
Volume Module:												
Base Vol:	46	0	254	0	0	0	0	352	47	285	703	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	0	254	0	0	0	0	352	47	285	703	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	50	0	276	0	0	0	0	383	51	310	764	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	0	276	0	0	0	0	383	51	310	764	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	50	0	276	0	0	0	0	383	51	310	764	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.76	1.00	0.84	1.00	1.00	1.00	1.00	0.95	0.95	0.93	0.98	1.00
Lanes:	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.88	0.12	1.00	1.00	0.00
Final Sat.:	1439	0	1599	0	1900	0	1900	1598	213	1769	1862	0
Capacity Analysis Module:												
Vol/Sat:	0.03	0.00	0.17	0.00	0.00	0.00	0.00	0.24	0.24	0.18	0.41	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.24	0.00	0.24	0.00	0.00	0.00	0.00	0.33	0.33	0.24	0.56	0.00
Volume/Cap:	0.15	0.00	0.73	0.00	0.00	0.00	0.00	0.73	0.73	0.73	0.73	0.00
Delay/Veh:	18.4	0.0	28.5	0.0	0.0	0.0	0.0	22.7	22.7	27.6	12.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.4	0.0	28.5	0.0	0.0	0.0	0.0	22.7	22.7	27.6	12.2	0.0
LOS by Move:	B	A	C	A	A	A	A	C	C	C	B	A
HCM2kAvgQ:	1	0	7	0	0	0	0	9	9	7	12	0

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 NW Jackson School Rd/NW Evergreen Rd

Cycle (sec): 60 Critical Vol./Cap.(X): 0.834
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 21.4
Optimal Cycle: 69 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0	1	1	0	1 0	1	0	1
Volume Module:												
Base Vol:	2	1	2	81	2	324	310	301	3	9	702	288
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	1	2	81	2	324	310	301	3	9	702	288
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	2	1	2	91	2	364	348	338	3	10	789	324
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	1	2	91	2	364	348	338	3	10	789	324
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	1	2	91	2	364	348	338	3	10	789	324
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.78	0.78	0.78	0.96	0.96	0.82	0.93	0.98	0.98	0.94	0.99	0.84
Lanes:	0.40	0.20	0.40	0.98	0.02	1.00	1.00	0.99	0.01	1.00	1.00	1.00
Final Sat.:	591	296	591	1777	44	1554	1769	1842	18	1787	1881	1599
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.05	0.23	0.20	0.18	0.18	0.01	0.42	0.20
Crit Moves:					****		****				****	
Green/Cycle:	0.06	0.06	0.06	0.06	0.06	0.30	0.24	0.72	0.72	0.02	0.50	0.50
Volume/Cap:	0.06	0.06	0.06	0.83	0.83	0.79	0.83	0.26	0.26	0.26	0.83	0.40
Delay/Veh:	26.8	26.8	26.8	67.0	67.0	28.1	35.3	3.1	3.1	32.3	19.3	9.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.8	26.8	26.8	67.0	67.0	28.1	35.3	3.1	3.1	32.3	19.3	9.6
LOS by Move:	C	C	C	E	E	C	D	A	A	C	B	A
HCM2kAvgQ:	0	0	0	4	4	9	9	2	2	0	15	4

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 NE 25th Ave/NW Evergreen Rd

Cycle (sec): 80 Critical Vol./Cap.(X): 0.619
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 18.9
Optimal Cycle: 48 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 0 2	0	0	0 0	0	0	1 1 0	2	0	2 0 0
Volume Module:												
Base Vol:	165	0	713	0	0	0	0	670	84	123	712	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	0	713	0	0	0	0	670	84	123	712	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	185	0	801	0	0	0	0	753	94	138	800	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	185	0	801	0	0	0	0	753	94	138	800	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	185	0	801	0	0	0	0	753	94	138	800	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	1.00	0.74	1.00	1.00	1.00	1.00	0.92	0.92	0.90	0.93	1.00
Lanes:	1.00	0.00	2.00	0.00	0.00	0.00	0.00	1.78	0.22	2.00	2.00	0.00
Final Sat.:	1787	0	2814	0	0	0	0	3122	391	3432	3538	0
Capacity Analysis Module:												
Vol/Sat:	0.10	0.00	0.28	0.00	0.00	0.00	0.00	0.24	0.24	0.04	0.23	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.40	0.00	0.46	0.00	0.00	0.00	0.00	0.39	0.39	0.07	0.45	0.00
Volume/Cap:	0.26	0.00	0.62	0.00	0.00	0.00	0.00	0.62	0.62	0.62	0.50	0.00
Delay/Veh:	16.5	0.0	17.2	0.0	0.0	0.0	0.0	20.5	20.5	41.6	15.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.5	0.0	17.2	0.0	0.0	0.0	0.0	20.5	20.5	41.6	15.6	0.0
LOS by Move:	B	A	B	A	A	A	A	C	C	D	B	A
HCM2kAvgQ:	3	0	9	0	0	0	0	10	10	3	8	0

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 NW Sewell Rd/NW Evergreen Rd

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: F[149.4]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0	1 0	0 1	1	0 0	1 0	1	0 0	1 0
Volume Module:												
Base Vol:	2	0	1	5	0	7	7	1352	4	2	845	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	0	1	5	0	7	7	1352	4	2	845	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	2	0	1	6	0	8	8	1502	4	2	939	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	0	1	6	0	8	8	1502	4	2	939	9
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	2472	2472	1504	2468	2470	943	948	xxxx	xxxxx	1507	xxxx	xxxxx
Potent Cap.:	21	30	151	21	31	321	733	xxxx	xxxxx	450	xxxx	xxxxx
Move Cap.:	20	30	151	20	30	321	733	xxxx	xxxxx	450	xxxx	xxxxx
Volume/Cap:	0.11	0.00	0.01	0.27	0.00	0.02	0.01	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.1	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	16.5	10.0	xxxx	xxxxx	13.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	C	A	*	*	B	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	28	xxxxx	20	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	0.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	149	xxxxx	236.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	F	*	*	*	*	*	*	*	*
ApproachDel:	149.4			108.3			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 NW SHute Rd/NW Evergreen Pkwy

Cycle (sec): 110 Critical Vol./Cap.(X): 0.729
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 35.0
Optimal Cycle: 75 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2	0 1	1 0	2	0 2	2 0	1	1 0	2 0	2	0 1
Volume Module:												
Base Vol:	83	877	104	26	671	260	655	526	91	186	466	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	877	104	26	671	260	655	526	91	186	466	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	90	953	113	28	729	283	712	572	99	202	507	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	953	113	28	729	283	712	572	99	202	507	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	953	113	28	729	283	712	572	99	202	507	124
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	0.95	0.75	0.92	0.93	0.93	0.92	0.95	0.85
Lanes:	1.00	2.00	1.00	1.00	2.00	2.00	2.00	1.71	0.29	2.00	2.00	1.00
Final Sat.:	1805	3610	1615	1805	3610	2842	3502	3010	521	3502	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.05	0.26	0.07	0.02	0.20	0.10	0.20	0.19	0.19	0.06	0.14	0.08
Crit Moves:		****		****			****				****	
Green/Cycle:	0.08	0.36	0.36	0.02	0.31	0.59	0.28	0.36	0.36	0.11	0.19	0.19
Volume/Cap:	0.66	0.73	0.19	0.73	0.66	0.17	0.73	0.53	0.53	0.53	0.73	0.40
Delay/Veh:	60.5	32.5	24.2	104.7	34.5	10.5	38.7	28.1	28.1	47.6	45.7	39.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.5	32.5	24.2	104.7	34.5	10.5	38.7	28.1	28.1	47.6	45.7	39.7
LOS by Move:	E	C	C	F	C	B	D	C	C	D	D	D
HCM2kAvgQ:	4	16	3	2	12	2	13	10	10	4	10	4

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
1994 HCM Operations Method (Base Volume Alternative)

Intersection #7 NW 229th Ave/NW Evergreen Rd

Cycle (sec): 110 Critical Vol./Cap.(X): 0.981
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 40.8
Optimal Cycle: 175 Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	0 1	1	0 0	1 0	1	0 2	0 1	1	0 1	1 0
Volume Module:												
Base Vol:	84	30	588	139	55	10	8	779	94	234	500	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	30	588	139	55	10	8	779	94	234	500	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	88	32	619	146	58	11	8	820	99	246	526	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	32	619	146	58	11	8	820	99	246	526	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.00	1.00	1.05	1.05
FinalVolume:	88	32	619	146	58	11	8	861	99	246	553	70
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	0.99	0.84	0.91	0.94	0.94	0.94	0.99	0.84	0.94	0.97	0.97
Lanes:	1.00	1.00	1.00	1.00	0.85	0.15	1.00	2.00	1.00	1.00	1.78	0.22
Final Sat.:	1787	1881	1599	1736	1515	275	1787	3762	1599	1787	3275	413
Capacity Analysis Module:												
Vol/Sat:	0.05	0.02	0.39	0.08	0.04	0.04	0.00	0.23	0.06	0.14	0.17	0.17
Crit Moves:			****	****				****		****		
Green/Cycle:	0.27	0.39	0.39	0.09	0.21	0.21	0.01	0.23	0.23	0.14	0.36	0.36
Volume/Cap:	0.18	0.04	0.98	0.98	0.18	0.18	0.46	0.98	0.27	0.98	0.46	0.46
Delay/Veh:	19.9	13.2	44.5	83.3	23.1	23.1	46.1	46.3	22.4	68.9	17.5	17.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.9	13.2	44.5	83.3	23.1	23.1	46.1	46.3	22.4	68.9	17.5	17.5
DesignQueue:	4	1	25	8	3	3	1	21	5	13	13	13

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 NW Cornelius Pass Rd/NW Evergreen Pkwy

Cycle (sec): 125 Critical Vol./Cap.(X): 0.974
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 54.2
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 2	0 1	2	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	59	1025	45	161	903	38	308	600	115	83	281	424
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	59	1025	45	161	903	38	308	600	115	83	281	424
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	67	1165	51	183	1026	43	350	682	131	94	319	482
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	1165	51	183	1026	43	350	682	131	94	319	482
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	67	1165	51	183	1026	43	350	682	131	94	319	482
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.92	0.92	0.93	0.93	0.83	0.91	0.92	0.92	0.94	0.86	0.86
Lanes:	1.00	1.92	0.08	1.00	2.00	1.00	2.00	1.68	0.32	1.00	1.00	1.00
Final Sat.:	1753	3338	147	1769	3538	1583	3467	2927	561	1787	1626	1626
Capacity Analysis Module:												
Vol/Sat:	0.04	0.35	0.35	0.10	0.29	0.03	0.10	0.23	0.23	0.05	0.20	0.30
Crit Moves:		****		****			****					****
Green/Cycle:	0.05	0.36	0.36	0.11	0.41	0.41	0.10	0.33	0.33	0.08	0.30	0.30
Volume/Cap:	0.71	0.97	0.97	0.97	0.71	0.07	0.97	0.70	0.70	0.70	0.65	0.97
Delay/Veh:	79.8	59.1	59.1	113.7	32.3	22.4	96.4	38.3	38.3	71.6	38.9	68.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.8	59.1	59.1	113.7	32.3	22.4	96.4	38.3	38.3	71.6	38.9	68.1
LOS by Move:	E	E	E	F	C	C	F	D	D	E	D	E
HCM2kAvgQ:	4	30	30	11	18	1	11	15	15	5	12	25

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

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Intersection #9 NW Jackson School Rd/Hwy 26 WB Ramp

****

Average Delay (sec/veh): 13.5 Worst Case Level Of Service: C[18.6]

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0	1 0	0	0 0	1 0	1	0 0	0 0	0	0 1	0 0	1
Volume Module:												
Base Vol:	57	86	0	0	62	4	0	0	0	410	1	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	57	86	0	0	62	4	0	0	0	410	1	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	63	95	0	0	68	4	0	0	0	451	1	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	63	95	0	0	68	4	0	0	0	451	1	62
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	73	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	290	292	95
Potent Cap.:	1540	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	705	622	968
Move Cap.:	1540	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	683	597	968
Volume/Cap:	0.04	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.66	0.00	0.06
Level Of Service Module:												
2Way95thQ:	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.2
Control Del:	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	9.0
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	A
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	683	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	5.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	20.0	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	C	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			18.6		
ApproachLOS:	*			*			*			C		

****

Note: Queue reported is the number of cars per lane.

****

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #10 NW Jackson School Rd/Hwy 26 EB Ramp

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Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B[12.7]

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1	0 1	1 0	1	0 0	0 1	0	1	0 0	0	0 0
Volume Module:												
Base Vol:	0	137	394	28	447	0	5	2	42	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	137	394	28	447	0	5	2	42	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	149	428	30	486	0	5	2	46	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	149	428	30	486	0	5	2	46	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	577	xxxx	xxxxx	910	1124	486	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	1006	xxxx	xxxxx	307	207	585	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	1006	xxxx	xxxxx	300	201	585	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.03	xxxx	xxxx	0.02	0.01	0.08	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	0.3	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	11.7	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	B	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	263	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	19.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	C	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			12.7			xxxxxx		
ApproachLOS:	*			*			B			*		

****

Note: Queue reported is the number of cars per lane.

****

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 NW Jackson School Rd/NW Meek Rd

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[14.1]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	1 0	0 1	0	0 0	0 0	0	0 0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	571	8	12	399	0	0	0	0	1	0	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	571	8	12	399	0	0	0	0	1	0	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
PHF Volume:	0	688	10	14	481	0	0	0	0	1	0	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	688	10	14	481	0	0	0	0	1	0	24
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	698	xxxx	xxxxx	xxxx	xxxx	xxxxx	1202	1202	693
Potent Cap.:	xxxx	xxxx	xxxxx	908	xxxx	xxxxx	xxxx	xxxx	xxxxx	206	186	447
Move Cap.:	xxxx	xxxx	xxxxx	908	xxxx	xxxxx	xxxx	xxxx	xxxxx	203	183	447
Volume/Cap:	xxxx	xxxx	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	0.00	0.05
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	423	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	14.1	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			14.1		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 NW Shute Rd/Hwy 26 WB Ramp

Cycle (sec): 70 Critical Vol./Cap.(X): 0.716
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 20.4
Optimal Cycle: 56 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	0 0	0 0	1	1 0	0 0	0	0 0	1	1 0	1
Volume Module:												
Base Vol:	199	615	0	0	222	69	0	0	0	677	0	59
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	615	0	0	222	69	0	0	0	677	0	59
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	224	691	0	0	249	78	0	0	0	761	0	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	224	691	0	0	249	78	0	0	0	761	0	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	224	691	0	0	249	78	0	0	0	761	0	66
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	1.00	1.00	0.88	0.88	1.00	1.00	1.00	0.92	1.00	0.82
Lanes:	1.00	1.00	0.00	0.00	1.53	0.47	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	1753	1845	0	0	2554	794	0	0	0	3480	0	1554
Capacity Analysis Module:												
Vol/Sat:	0.13	0.37	0.00	0.00	0.10	0.10	0.00	0.00	0.00	0.22	0.00	0.04
Crit Moves:		****		****						****		
Green/Cycle:	0.30	0.52	0.00	0.00	0.23	0.23	0.00	0.00	0.00	0.31	0.00	0.31
Volume/Cap:	0.43	0.72	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.72	0.00	0.14
Delay/Veh:	20.4	15.3	0.0	0.0	23.6	23.6	0.0	0.0	0.0	24.0	0.0	17.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.4	15.3	0.0	0.0	23.6	23.6	0.0	0.0	0.0	24.0	0.0	17.8
LOS by Move:	C	B	A	A	C	C	A	A	A	C	A	B
HCM2kAvgQ:	4	13	0	0	4	4	0	0	0	9	0	1

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 NW Shute Rd/Hwy 26 EB Ramp

Cycle (sec): 70 Critical Vol./Cap.(X): 0.643
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 7.7
Optimal Cycle: 49 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	0 1	1	0 2	0 0	0	1 0	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	808	960	22	844	0	38	1	83	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	808	960	22	844	0	38	1	83	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.00	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	869	0	24	908	0	41	1	89	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	869	0	24	908	0	41	1	89	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	869	0	24	908	0	41	1	89	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	0.99	1.00	0.92	0.92	1.00	0.92	0.92	0.82	1.00	1.00	1.00
Lanes:	0.00	1.00	1.00	1.00	2.00	0.00	0.97	0.03	1.00	0.00	0.00	0.00
Final Sat.:	0	1881	1900	1753	3505	0	1697	45	1554	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.46	0.00	0.01	0.26	0.00	0.02	0.02	0.06	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.72	0.00	0.02	0.74	0.00	0.09	0.09	0.09	0.00	0.00	0.00
Volume/Cap:	0.00	0.64	0.00	0.64	0.35	0.00	0.27	0.27	0.64	0.00	0.00	0.00
Delay/Veh:	0.0	6.2	0.0	66.9	3.3	0.0	30.7	30.7	40.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	6.2	0.0	66.9	3.3	0.0	30.7	30.7	40.7	0.0	0.0	0.0
LOS by Move:	A	A	A	E	A	A	C	C	D	A	A	A
HCM2kAvgQ:	0	11	0	2	4	0	1	1	3	0	0	0

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #18 NW Shute/NW Huffman St

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: D[34.5]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	1666	6	10	924	0	0	0	0	6	0	88
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1666	6	10	924	0	0	0	0	6	0	88
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	1851	7	11	1027	0	0	0	0	7	0	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1851	7	11	1027	0	0	0	0	7	0	98
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1858	xxxx	xxxxx	xxxx	xxxx	xxxxx	2390	xxxx	929
Potent Cap.:	xxxx	xxxx	xxxxx	330	xxxx	xxxxx	xxxx	xxxx	xxxxx	29	xxxx	273
Move Cap.:	xxxx	xxxx	xxxxx	330	xxxx	xxxxx	xxxx	xxxx	xxxxx	28	xxxx	273
Volume/Cap:	xxxx	xxxx	xxxx	0.03	xxxx	xxxx	xxxx	xxxx	xxxx	0.24	xxxx	0.36
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.7	xxxx	1.6
Control Del:	xxxxx	xxxx	xxxxx	16.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	168.0	xxxx	25.3
LOS by Move:	*	*	*	C	*	*	*	*	*	F	*	D
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			34.5		
ApproachLOS:	*			*			*			D		

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

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Intersection #19 NW Shute Rd/NE Shute Rd

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Cycle (sec): 100 Critical Vol./Cap.(X): 0.407
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 13.0
Optimal Cycle: 36 Level Of Service: B

****

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Ovl			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	1	1 0	1	0	2	0 0	0	0	0	0 0	1	0	0	0 2
Volume Module:																
Base Vol:	0	679		8	216	775		0	0		0	0	5		0	385
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	0	679		8	216	775		0	0		0	0	5		0	385
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.91	0.91		0.91	0.91	0.91		0.91	0.91		0.91	0.91	0.91		0.91	0.91
PHF Volume:	0	746		9	237	852		0	0		0	0	5		0	423
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Reduced Vol:	0	746		9	237	852		0	0		0	0	5		0	423
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	0	746		9	237	852		0	0		0	0	5		0	423
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900		1900	1900	1900		1900	1900
Adjustment:	1.00	0.95		0.95	0.95	1.00		1.00	1.00		1.00	0.95	1.00		0.75	
Lanes:	0.00	1.98		0.02	1.00	2.00		0.00	0.00		0.00	1.00	0.00		2.00	
Final Sat.:	0	3561		42	1805	3610		0	0		0	1805	0		2842	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.21		0.21	0.13	0.24		0.00	0.00		0.00	0.00	0.00		0.15	
Crit Moves:		****			****										****	
Green/Cycle:	0.00	0.51		0.51	0.32	0.84		0.00	0.00		0.00	0.04	0.00		0.37	
Volume/Cap:	0.00	0.41		0.41	0.41	0.28		0.00	0.00		0.00	0.07	0.00		0.41	
Delay/Veh:	0.0	15.1		15.1	26.9	1.8		0.0	0.0		0.0	46.4	0.0		23.9	
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	
AdjDel/Veh:	0.0	15.1		15.1	26.9	1.8		0.0	0.0		0.0	46.4	0.0		23.9	
LOS by Move:	A	B		B	C	A		A	A		A	D	A		C	
HCM2kAvgQ:	0	7		7	6	3		0	0		0	0	0		6	

****

Note: Queue reported is the number of cars per lane.

****

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

****

Intersection #20 NE Brookwood Pkwy/NE Cornell Rd

****

Cycle (sec): 180 Critical Vol./Cap.(X): 0.914
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 70.3
Optimal Cycle: 170 Level Of Service: E

****

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	1 0	1	0	1	0 1	1	0	1	1 0	1	0	1	1 0
Volume Module:																
Base Vol:	81	236		178	52	535		386	221	826		149	297	1086		94
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	81	236		178	52	535		386	221	826		149	297	1086		94
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95
PHF Volume:	85	248		187	55	563		406	233	869		157	313	1143		99
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	85	248		187	55	563		406	233	869		157	313	1143		99
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	85	248		187	55	563		406	233	869		157	313	1143		99
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.93	0.87		0.87	0.93	0.98		0.83	0.94	0.92		0.92	0.94	0.93		0.93
Lanes:	1.00	1.14		0.86	1.00	1.00		1.00	1.00	1.69		0.31	1.00	1.84		0.16
Final Sat.:	1769	1888		1424	1769	1862		1583	1787	2958		534	1787	3250		281
Capacity Analysis Module:																
Vol/Sat:	0.05	0.13		0.13	0.03	0.30		0.26	0.13	0.29		0.29	0.17	0.35		0.35
Crit Moves:	****					****			****					****		
Green/Cycle:	0.05	0.31		0.31	0.07	0.33		0.33	0.14	0.33		0.33	0.20	0.38		0.38
Volume/Cap:	0.91	0.42		0.42	0.42	0.91		0.78	0.91	0.89		0.89	0.89	0.91		0.91
Delay/Veh:	150.4	49.5		49.5	82.0	75.9		61.4	110.4	65.9		65.9	93.4	62.2		62.2
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	150.4	49.5		49.5	82.0	75.9		61.4	110.4	65.9		65.9	93.4	62.2		62.2
LOS by Move:	F	D		D	F	E		E	F	E		E	F	E		E
HCM2kAvgQ:	7	10		10	3	33		21	16	31		31	19	37		37

****

Note: Queue reported is the number of cars per lane.

****

Evergreen Conceptual Design Plan
PM Peak Hour
Existing Conditions (2007)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #21 NE Brookwood Pkwy/W Baseline Rd

Cycle (sec):	95	Critical Vol./Cap.(X):	0.953
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	54.3
Optimal Cycle:	137	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	1 0	1	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	157	302	67	75	540	366	169	479	154	196	483	49
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	302	67	75	540	366	169	479	154	196	483	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	164	315	70	78	563	381	176	499	160	204	503	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	164	315	70	78	563	381	176	499	160	204	503	51
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	164	315	70	78	563	381	176	499	160	204	503	51
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.95	0.95	0.94	0.99	0.84	0.93	0.98	0.83	0.93	0.97	0.97
Lanes:	1.00	0.82	0.18	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.09
Final Sat.:	1769	1483	329	1787	1881	1599	1769	1862	1583	1769	1667	169
Capacity Analysis Module:												
Vol/Sat:	0.09	0.21	0.21	0.04	0.30	0.24	0.10	0.27	0.10	0.12	0.30	0.30
Crit Moves:	****				****		****				****	
Green/Cycle:	0.10	0.34	0.34	0.07	0.31	0.31	0.10	0.29	0.29	0.13	0.32	0.32
Volume/Cap:	0.95	0.62	0.62	0.62	0.95	0.76	0.95	0.91	0.34	0.91	0.95	0.95
Delay/Veh:	97.6	28.2	28.2	52.3	57.8	36.1	94.9	51.7	26.8	77.6	57.9	57.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	97.6	28.2	28.2	52.3	57.8	36.1	94.9	51.7	26.8	77.6	57.9	57.9
LOS by Move:	F	C	C	D	E	D	F	D	C	E	E	E
HCM2kAvgQ:	8	10	10	3	21	12	9	18	4	9	21	21

Note: Queue reported is the number of cars per lane.

Appendix A

Existing Conditions Report

Appendix B

Metro Ordinance No. 05-1070A

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF AMENDING THE METRO URBAN GROWTH BOUNDARY TO INCREASE CAPACITY TO ACCOMMODATE GROWTH IN INDUSTRIAL EMPLOYMENT ~~IN RESPONSE~~ AND TO RESPOND TO REMAND ORDERS FROM THE LAND CONSERVATION AND DEVELOPMENT COMMISSION	)	ORDINANCE NO. 05-1070A Introduced by the Metro Council

WHEREAS, the Metro Council added capacity to the regional urban growth boundary ("UGB") to accommodate growth ~~in industrial employment~~ employment and housing by Ordinances No. 02-969B (For the Purpose of Amending the Urban Growth Boundary, the Regional Framework Plan and the Metro Code in Order to Increase the Capacity of the Boundary to Accommodate Population Growth to the Year 2022), No. 02-983B (For the Purpose of Amending the Urban Growth Boundary to Add Land for a Specific Type of Industry Near Specialized Facilities North of Hillsboro), No. 02-990A (For the Purpose of Amending the Urban Growth Boundary to Add Land in Study Areas 47 and 48, Tigard Sand and Gravel Site) and No. 04-1040B (For the Purpose of Amending the Metro Urban Growth Boundary, the Regional Framework Plan and the Metro Code to Increase the Capacity of the Boundary to Accommodate Growth in Industrial Employment); and

WHEREAS, on July 22, 2005, LCDC issued its "Partial Approval and Remand Order 05-WKTASK-001673" that approved most of the Council's decisions in Ordinance No. 04-1040B, but returned the matter to the Council for completion of several tasks; and

WHEREAS, on October 31, 2005, LCDC issued its "Partial Approval and Remand Order 05-WKTASK-001688" that approved most of the Council's decisions in Ordinance No. 02-969B, but returned the matter to the Council for reconsideration of inclusion of two areas in the UGB to provide capacity for housing; and

WHEREAS, the Council completed the analysis and evaluation required by LCDC's order; and

WHEREAS, the Council consulted its Metropolitan Policy Advisory Committee and the 25 cities and three counties of the metropolitan region and considered comments and suggestions prior to making this decision; and

WHEREAS, the Council may seek voter approval of a mechanism that would make properties included within the UGB subject to an assessment in order to capture a portion of the increase in value caused by inclusion in the UGB for purposes of completing comprehensive planning necessary to urbanize the properties; and

WHEREAS, prior to making this decision, the Council sent individual mailed notification to the owners and neighbors of properties considered for inclusion in the UGB, held a public hearing on November 10, 2005, and considered the public comment; now therefore,

THE METRO COUNCIL ORDAINS AS FOLLOWS:

1. The Metro UGB is amended to include those lands shown on the package of maps Exhibit "A", with the designated 2040 Growth Concept design type, subject to the conditions set forth in Exhibit "B". Exhibits "A" and "B" are attached and incorporated into this ordinance by this reference.

2. The Metro UGB is amended to exclude the portions of Study Areas 37 and 94 that were added to the UGB by Ordinance No. 02-969B to provide capacity for housing, and to exclude a portion of the Cornelius Study Area that was added to the UGB by Ordinance No. 04-1040B, both shown on the package of maps Exhibit "A."

23. The *2002-2022 Urban Growth Report: An Employment Land Need Analysis*, adopted by Ordinance No. 02-969B on December 5, 2002, and revised on June 24, 2004, is further revised and attached and incorporated into this ordinance as Exhibit "C".

34. The Findings of Fact and Conclusions of Law in Exhibit "D", attached and incorporated into this ordinance, explain how this ordinance complies with state law, the Regional Framework Plan and the Metro Code.

ADOPTED by the Metro Council this 17th day of November, 2005.

GODKÄND · APPROVED METRO COUNCIL HUVUDSTADSRÅD METRO COUNCIL

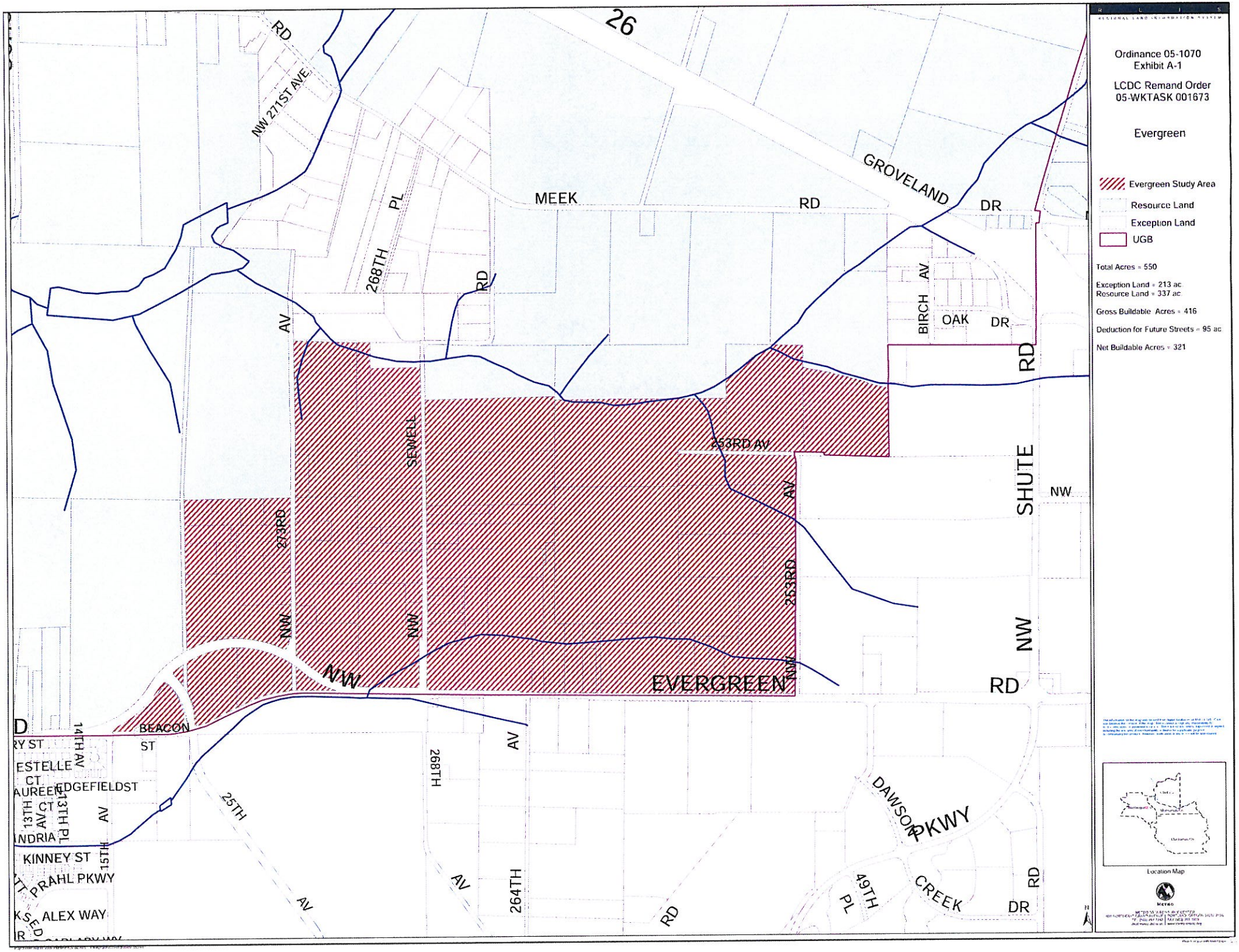
David Bragdon, Council President

Attest: Approved as to form:

Christina Billington, Recording Secretary

Daniel B. Cooper, Metro Attorney

m:\attorney\confidential\7.2.1.3.14\05-1070A.red.005
OMA/RPB/kvw (11/14/05)


Ordinance 05-1070
Exhibit A-1
LCDC Remand Order
05-WKTASK 001673
Evergreen
Evergreen Study Area
Resource Land
Exception Land
UGB
Total Acres = 550
Exception Land = 213 ac
Resource Land = 337 ac
Gross Buildable Acres = 416
Deduction for Future Streets = 95 ac
Net Buildable Acres = 321
Location Map
26
MEEK RD
GROVELAND DR
NW 271ST AVE
268TH PL
268TH RD
AV
BIRCH AV
OAK DR
RD
SEWELL
253RD AV
SHUTE RD
NW
273RD
NW
NW
NW
EVERGREEN
253RD AV
NW
RD
BEACON ST
14TH AV
ESTELLE CT
EDGEFIELDST
13TH AV CT
13TH PL
AV
15TH
KINNEY ST
PRAHL PKWY
ALEX WAY
25TH AV
268TH AV
264TH AV
RD
DAWSON PKWY
49TH PL
CREEK DR
RD

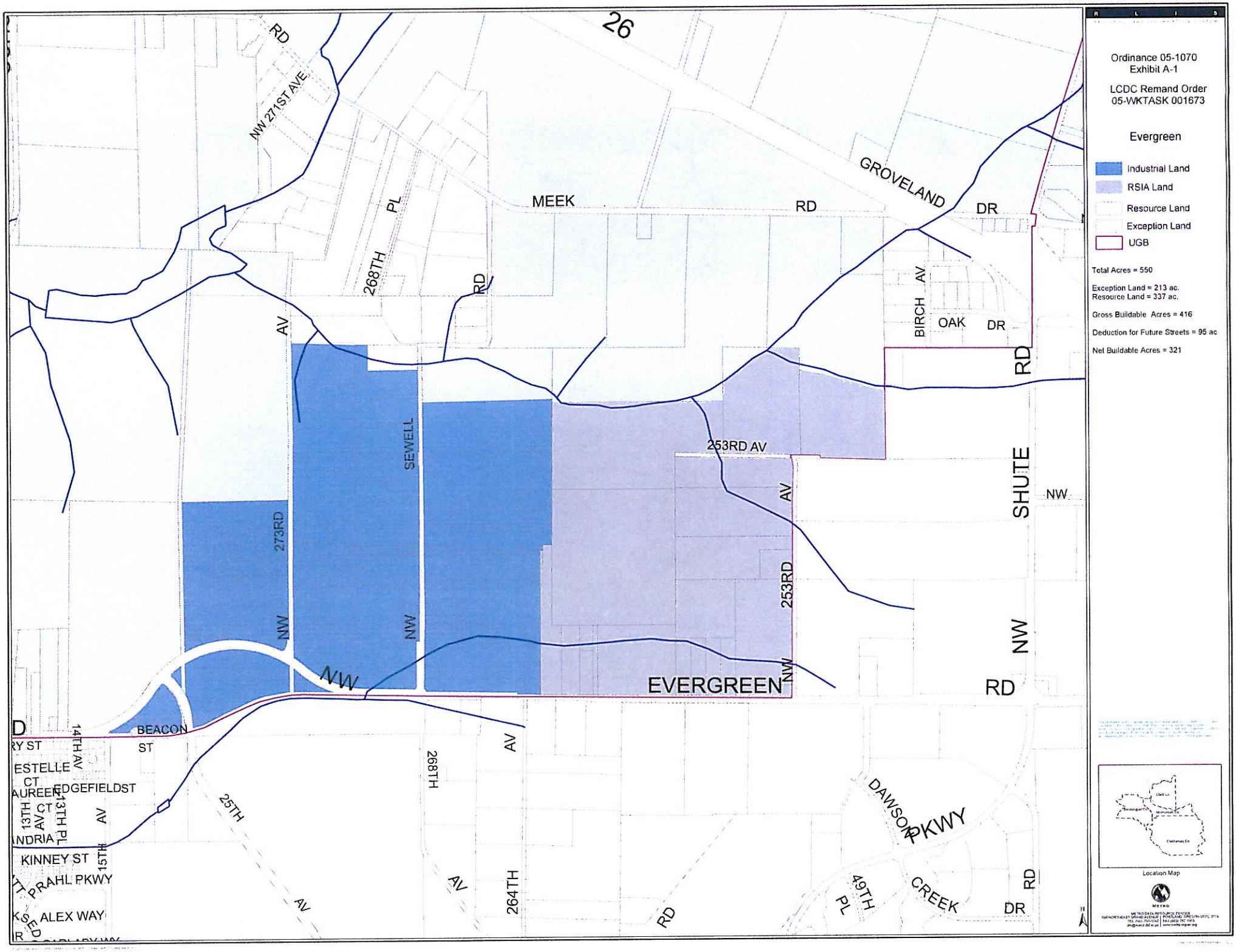

Ordinance 05-1070
Exhibit A-1
LCDC Remand Order
05-WKTASK 001673
Evergreen
Industrial Land
RSIA Land
Resource Land
Exception Land
UGB
Total Acres = 550
Exception Land = 213 ac.
Resource Land = 337 ac.
Gross Buildable Acres = 416
Deduction for Future Streets = 95 ac
Net Buildable Acres = 321
Location Map
METRO
26
MEEK
RD
GROVELAND
DR
NW 271ST AVE
268TH
PL
AV
BIRCH
OAK
DR
SEWELL
253RD AV
SHUTE
NW
RD
273RD
253RD
EVERGREEN
BEACON
ST
ESTELLE
CT
EDGEFIELDST
KINNEY ST
PRAHL PKWY
ALEX WAY
25TH
264TH
DAWSON
PKWY
49TH
CREEK

Exhibit B to Ordinance No. 05-1070A
Conditions of Approval

A. Evergreen Area

1. The City of Hillsboro, in coordination with Washington County and Metro, shall complete the planning required by Metro Code Title 11, Urban Growth Management Functional Plan ("UGMFP"), section 3.07.1120 ("Title 11 Planning") for the Evergreen area shown on Exhibit "A" to this ordinance. The city shall ensure that planning for the Evergreen area is coordinated with planning for the Helvetia area added to the UGB by Ordinance No. 04-1040B. The city or county shall complete Title 11 planning within ___ years after the effective date of this ordinance.

2. The city shall apply the 2040 Growth Concept design types shown on Exhibit "A" of this ordinance to the planning required by Title 11 for the study area.

3. The city shall apply the interim protection standards in Metro Code Title 11, UGMFP, section 3.07.1110, to the Evergreen area until the effective date of the comprehensive plan provisions and land use regulations are adopted to implement Title 11.

4. The city shall adopt provisions – such as setbacks, buffers and designated lanes for movement of slow-moving farm machinery – in its land use regulations to enhance compatibility between industrial uses in the Evergreen area and agricultural practices on adjacent land outside the UGB that is zoned for farm or forest use.

5. In the course of Title 11 planning, the city shall comply with the Regional Framework Plan, as implemented by Title 13 ("Nature in Neighborhoods") of the UGMFP for the protection of fish and wildlife habitat in the Evergreen area.

6. In the course of Title 11 planning, the city shall develop a lot/parcel reconfiguration plan that results in at least one parcel in the Evergreen area that is 100 acres or larger in size. After reconfigurations, the parcel may be divided pursuant to the provision to the provision of section 3.07.420E or 3.07.430D, whichever is applicable.

B. Cornelius Area

1. The City of Cornelius, in coordination with Washington County and Metro, shall complete the planning required by Metro Code Title 11, UGFMP, section 3.07.1120 ("Title 11 Planning") for the Cornelius area shown on Exhibit "A" to this ordinance. The city or county shall complete Title 11 planning within ___ years after the effective date of this ordinance.

2. The city shall apply the 2040 Growth Concept design types shown on Exhibit "A" of this ordinance to the planning required by Title 11 for the study area.

3. The city shall apply the interim protection standards in Metro Code Title 11, UGMFP, section 3.07.1110, to the Cornelius area until the effective date of the comprehensive plan provisions and land use regulations are adopted to implement Title 11.

4. The city shall adopt provisions – such as setbacks, buffers and designated lanes for movement of slow-moving farm machinery – in its land use regulations to enhance compatibility between industrial uses in the Cornelius area and agricultural practices on adjacent land outside the UGB that is zoned for farm or forest use.

5. In the course of Title 11 planning, the city shall comply with the Regional Framework Plan, as implemented by Title 13 ("Nature in Neighborhoods") of the UGMFP for the protection of fish and wildlife habitat in the Cornelius area.

C. Terminal 6 Area

1. The City of Portland shall complete the planning required by Metro Code Title 11, UGMFP, section 3.07.1120 ("Title 11 Planning") for the Terminal 6 area shown on Exhibit "A" to this ordinance. The city shall complete Title 11 planning within two years after the effective date of this ordinance.

2. The city shall apply the 2040 Growth Concept design type shown on Exhibit "A" of this ordinance to the planning required by Title 11 for the area.

Appendix C

Summary of Stakeholder/Community Outreach Activities

Stakeholder Involvement and Outreach
Summary of Activities
Drafted November 1, 2007

Property owners and other interested parties in the Evergreen Concept Planning Area were encouraged to participate in the planning process. The public involvement program consisted of Evergreen Stakeholder Advisory Group meetings and an open house meeting. The meetings were open to all property owners and interested parties in the planning area. The following summarizes all of the public involvement activities for the Evergreen Concept Planning Process.

Stakeholder Survey/Questionnaire

The public involvement activities were informed by a survey of property owners. In mid-February 2007, a project introduction letter, a stakeholder survey, and a planning area map were sent to each of the 61 property owners in the Evergreen and Helvetia Concept Plan Areas. The letter also invited property owners to attend the first stakeholder meeting for their plan area, where a summary of the survey responses was presented. For the Evergreen area, 26 surveys were received out of a total of 61 mailed. The following is a summary of the responses.

The following responses give background on those who returned the Evergreen Area surveys:

- UGB Expansion: 16 knew of UGB expansion, 5 was not sure about outcome of UGB expansion, 5 did not know about UGB expansion
- Ownership: 12 owned for over 20 years, 6 owned for 11-20 years, 2 owned for 6-10 years, 5 owned for 1-5 years
- Current use: 17 owner-occupied, 1 renter-occupied, 13 agricultural uses, 4 business, 4 vacant

The Evergreen Area respondents identified the following as issues to address during planning:

- Property impacts – Minimize impact on existing residential, especially those not interested in moving
- Property values
- Transportation – New road connections / access / improvements / Truck entrance to Hwy 26 , traffic—speeds, volumes, congestion
- Access to services - power, water, sewer
- Stormwater/drainage
- Zone types / what types of businesses allowed - 24 hour? Restrictions?
- Compatibility with airport – helicopter path, airshow
- Environment – noise, natural areas, habitat, ground water protection, parks
- Coordination with property owners – open communication, keep informed, provide meditation between businesses and property owners,
    - Develop realistic plans and schedule

- Cost to current owners – taxes, sewer hook-ups
- Relocation assistance
- History of area
- Safety for residents

The Evergreen Area respondents offered the following suggestions to guide future growth:

- Coordinate with airport
  - Consider airport overlay zone / Compatibility with airport
  - Get commitment from Port on expansion to develop a realistic plan
- Provide property owners info on pros/cons of annexation
- Offer transition incentives for small parcels
- Vacant land first
- Keep property owners informed and involved in process
- Improvements – Widen Evergreen Rd from 25th to 253rd, street lights on Evergreen Rd, water & sewer infrastructure, traffic control, road improvements
- Environmental — Protect Waible Creek, greenspace, drainage, air quality
- Marketing of property
  - Will residents be involved in marketing plan?
  - Aggressively advertise to big companies (auto, semiconductor, chemical, computer)
  - Not all high-tech companies

Evergreen Stakeholder Advisory Group (ESAG) Meeting #1 – 3/15/07

The first ESAG meeting was held on March 15, 2007 from 6:00 to 8:00 p.m. at the Hillsboro Civic Center. The purpose of the meeting was to introduce the project, including history and context, outline the process, and identify project-related stakeholder issues, concerns, and objectives. The sign-in sheets document 32 attendees, but several attendees did not register. Wink Brooks of City of Hillsboro introduced the project and Frank Angelo of Angelo Planning Group gave a presentation on the planning effort. Vaughn Brown of JLA discussed the purpose and role of the ESAG group and shared the results of the property owner questionnaire.

The presentation covered:

- Purpose of the meeting
- Role of the ESAG
- Planning area
- Planning context
- Planning objectives
- Schedule, including stakeholder involvement
- Results of the stakeholder survey/questionnaire

Meeting materials included:

- Handouts of the presentation
- Purpose and role of the ESAG
- Hillsboro Zoning Ordinance No. 1945 – M-P Industrial Park Zone Map for reference

Participants asked questions and commented on the information presented. The following summarizes questions, responses to common questions, issues, and concerns heard at the meeting:

- Discussion about passive annexation and what that means. If properties do not wish to annex, they do not have to.
- Properties can be sold currently with current County zoning; they will not be rezoned industrial until property is voluntarily annexed into City of Hillsboro
- Properties not likely to annex piecemeal (i.e. smaller current residential properties on Sewell), because there would be more expense in adding urban infrastructure to develop. The area will likely develop from the east to the west over a longer period of time.
- Properties must be annexed to be able to benefit from any urban infrastructure added to the area.
- Who will pay for the infrastructure? New development. The concept plan will look at the costs and alternatives for adding infrastructure.
- Will the City be purchasing right-of-way or easements? If needed, the City would likely acquire from the property owner who is developing or the City would need to purchase at fair market value.
- Will Metro have a windfall tax? There is not one now.
- Port of Portland is working on an overlay zone and will coordinate with this planning.
- If land is donated to Ducks Unlimited, will that affect the plan? No, you can do anything with your land that is currently allowed by the County.
- There are some water corridors and environmental features in this area.
- Can the uses be expanded beyond industrial uses? There is a Title IV expectations that must be met. If we feel there are additional uses that should be considered, we can go back to Metro.
- What will be developed in the 100 acre requirement? Likely something equivalent to the developments that have occurred to the east.
- Concerns about current traffic and transportation. There are already safety concerns at Sewell/Evergreen and 253rd/Evergreen. It is difficult to access Evergreen from driveways and roads.
- Concern about helicopter noise. The noise may also affect future uses.
- Where is future housing going to be developed? There are residential uses planned for North Bethany and South Hillsboro.
- Need to consider Bonneville Power lines in planning.
- What are estimated building heights? May be adverse affects on helicopter patterns.
- Concern about air pollution.

Evergreen Stakeholder Advisory Group (ESAG) Meeting #2 and Open House – 4/17/07

The second ESAG meeting was held on April 17, 2007 from 6:00 to 8:00 p.m. at the Evergreen Christian Center Multipurpose Room. The meeting was held jointly with a public open house. The meeting was advertised by a project newsletter sent to all Evergreen planning area property owners, as well as surrounding property owners. The purpose of the meeting was to review the existing conditions, which would be the basis for the planning. The sign-in sheets document 37 attendees. The format of the meeting was an open house with a presentation, including question

and answer session. Pat Ribellia of City of Hillsboro introduced the project and Frank Angelo of Angelo Planning Group gave a presentation on the existing conditions. Shuki Einstein of CH2M Hill presented information on economics findings, and Carl Springer of DKS presented on the transportation existing conditions.

The presentation covered:

- Project update
- Background and goals
- Existing conditions

Meeting materials included:

- Handouts of the presentation

Participants asked questions and commented on the information presented. The following is a summary of issues from the written comments received at the meeting:

- There are discrepancies in the flood plains area.
- Recent pollution in Waible Creek
- Evergreen should not be an Industrial Area
- Area should not have been brought into the UGB.
- This is a neighborhood—homes have been here for 30-40 years.
- Need a pedestrian/bike path through that area.
- Need this area for food/agricultural production.
- Need a greenbelt between the city and Hwy 26.
- Developers should provide all the infrastructure improvements, as well as donate land for a park or school.
- Many people live on wells—should be testing of these wells now (before construction starts) and in the future.
- Who is tracking changing water table?
- How does a small group of neighbors give input now for what they want in the future?
- Add a goal for preserving/enhancing values for existing property owners.
- Hillsboro Airport overlay zones will impact some properties; make sure there is early visibility of these restrictions.
- Concern about how Meek Road will be impacted—use Evergreen for access to new development.
- Concern about differences in land values between residential and industrial.

Evergreen Stakeholder Advisory Group (ESAG) Meeting #3 – 7/26/07

The third ESAG meeting was held on July 26, 2007 from 6:00 to 8:00 p.m. at the Hillsboro Civic Center. All property owners and previously interested parties were invited to attend. The purpose of the meeting was to review the development concepts and illustrations. The sign-in sheets document 24 attendees. Pat Ribellia of City of Hillsboro gave a brief update and introduction and Frank Angelo of Angelo Planning Group presented the concepts.

The presentation covered:

- Project update

- Overview of concepts
- Evergreen Development Program
- Evergreen Conceptual Illustrations

Meeting materials included:
- Handouts of the presentation

Participants asked questions and commented on the information presented. The following summarizes questions, responses to common questions, issues, and concerns heard at the meeting:
- Can residences get full City services if still in County? No. New services will be developed by new development that will be annexed into the City.
- Concern about current performance of Hwy 26/Shute Road interchange.
- Who is promoting the area for industrial development? The State is currently getting inquiries.
- What are sustainable industries?
- Do you know if Metro will support some commercial uses?
- How will quality of life for residents be affected?
- If land banking occurs, can the developer sell the property?
- Can you define terms for the anticipated development types?
- Where will the 100 acre site be?
- Is Metro flexible, especially about the 100 acre site?
- Where will these employees live?
- Farmland is being divided up and lost.
- How will stormwater be addressed? There will need to be much coordination with Clean Water Services during implementation of any development.
- Is BPA bringing in more power to the area? They are looking for a site for another substation.
- Since Evergreen was widened, Creek volume has gone down.
- For properties less than 20 acres, there might need to be flexibility in types of uses.

Evergreen Stakeholder Advisory Group (ESAG) Meeting #4 – 10/18/07

The fourth and final ESAG meeting was held on October 18, 2007 from 6:00 to 8:00 p.m. at the Hillsboro Civic Center. All property owners and previously interested parties were invited to attend. The purpose of the meeting was to review the final development concepts and illustrations that would be forwarded to the Planning Commission and Council. The sign-in sheets document 27 attendees. Pat Ribellia of City of Hillsboro gave a brief update and introduction and Frank Angelo of Angelo Planning Group presented the concepts and development proposals.

The presentation covered:
- Project update
- Evergreen Development Program
- Evergreen Conceptual Illustrations
- Implementation (Policy and Code language)

Meeting materials included:

- Handouts of the presentation
- Copies of the resolutions to amend the City's Comprehensive Plan and Zoning ordinance (2 documents)

Participants asked questions and commented on the information presented. The following summarizes questions, responses to common questions, issues, and concerns heard at the meeting:

- Concerns about why industrial is being allowed in the area
- Discussion about the commercial stipulations and how commercial development would be regulated.
- Concern that smaller properties are at a disadvantage.
- Discussion about fees to annex to the City. Pat said they could jointly annex to save money.
- Discussion on how long annexation process takes
- Could site plan review and annexation happen simultaneously?
- Clarification on voluntary annexation.
- Clarifications on how properties can be sold as current use; must disclose what would happen if they annexed. Legal existing businesses can annex as non-conforming, but may not be able to expand.
- How do enterprise zones work? Could this area be an enterprise zone?
- Developers pay for new sewer and water lines. Other can access for a fee when they annex.
- Which agency will have jurisdiction over Evergreen Road? County would like to have jurisdiction over arterials, like Evergreen Road. The City would have jurisdiction over the local streets.
- Discussion about the airport and how it has been involved. For Concept B, the airport would like a provision that industrial uses are aware and compatible with the airport, i.e. not too many bird attracting water retention facilities, noise attenuation, and building height restrictions. Several asked about whether the Port wanted to buy more property in the area and develop it themselves.
- Discussion about stormwater retention, pervious pavement, etc. These issues would be looked at during design review.
- Is there a possibility of the BPA lines being removed? The City has a grant from the State to study whether moving the lines is feasible.
- Will all concepts be included or just one? The Planning Commission can decide if they would like to keep all 3 concepts or have a preferred alternative.

Other Meetings

East End Property Owner Meetings – Three meetings were held with property owners on the east end of the planning area regarding an inquiry from a large industrial user. These meetings were held in the spring of 2007 on April 16, May 1, and May 22. The meetings focused on the property owners' wiliness to consider future opportunities involving the purchasing of their property.

Meek Road neighbors – In conjunction with the Evergreen concept planning, a meeting was held on September 20, 2007 to discuss future urban reserve planning that may impact Meek Road property owners. Those in attendance expressed their desire to include the Meek Road properties in future UBG expansions.

Appendix D

Stakeholder Advisory Group Meeting Presentations

Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1

Agenda
Thursday, March 15, 2007
6:00pm – 8:00pm

I. Welcome (6:00pm)	Wink Brooks / Frank Angelo
II. Introductions & Meeting Purpose (6:15pm)	Vaughn Brown
III. Evergreen Concept Plan Context (6:30pm)	Frank Angelo
IV. Planning Process & Schedule (6:50pm)	Frank Angelo
V. Issues Identification (7:15pm)	Vaughn Brown
VI. Next Steps (7:50pm)	Frank Angelo

Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1

Stakeholder Advisory Group Meeting #1

Meeting Purpose

- Provide project context, history and process.
- Identify project-related community and property owner issues, concerns and objectives.

Results

- Community awareness and understanding of project history, context, objectives and planning process.
- Feedback from key community and property owner re: project-related issues, concerns and objectives.

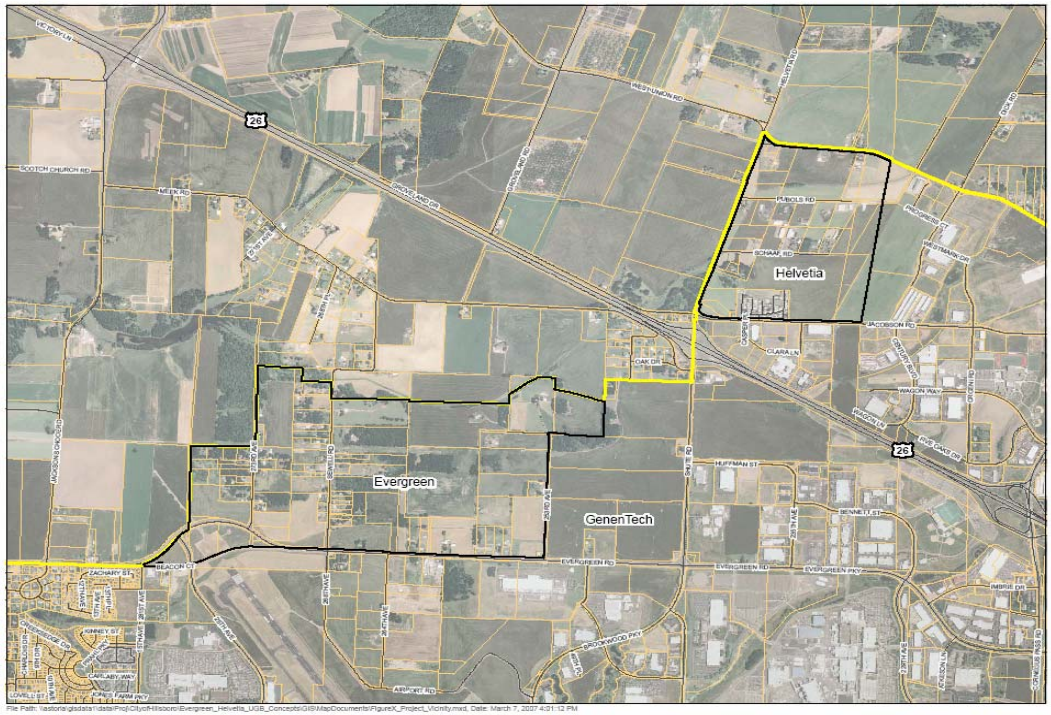
Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1

The ESAG is an advisory body whose role is to:

- Become informed about and offer feedback on community needs and concerns, technical analysis, alternative plan concepts, and related concept plan elements.
- Provide feedback during advisory group discussions and through written feedback forms at open houses.
- Serve as liaison to interested and impacted community members by sharing information about the opportunities and challenges presented by the transition process.

Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1

Evergreen and Helvetia Road Concept Planning Areas



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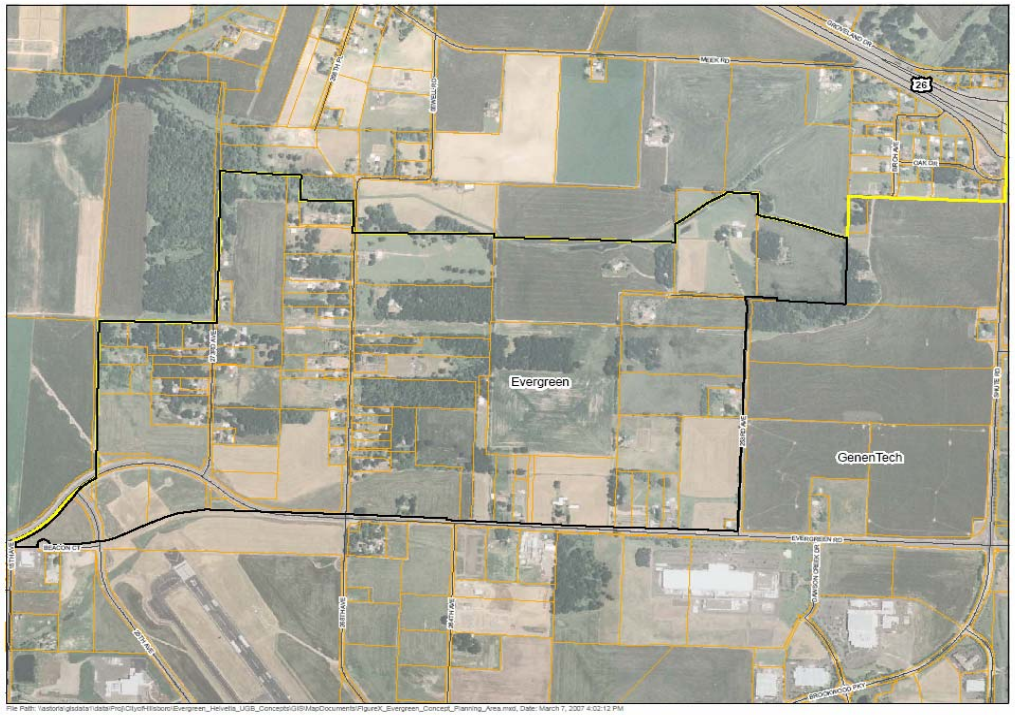
Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1

Evergreen Concept Planning Area



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Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1

Evergreen Planning Area Context

- The Evergreen Area has 534 acres and 61 property owners.
- Area added to Metro Urban Growth Boundary (UGB) in 2005.
- Metro UGB Action requires industrial use/development within the Area to accommodate regional industrial land needs.

Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1

Evergreen Planning Area Context

- Evergreen Area must accommodate one 100-acre industrial site per Metro's UGB decision.
- Per a Washington County-Hillsboro Intergovernmental Agreement:
  - Hillsboro must prepare an Industrial Concept Plan for the Area for Metro approval and inclusion into the Hillsboro Comprehensive Plan.
  - Assume land use planning and regulation authority over properties in the Area upon their voluntary annexation to the City.
- Washington County required by Metro UGB decision to adopt "interim land use measures" to protect premature urban development in the Area before Concept Plan approval.

Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1

Concept Planning Objectives

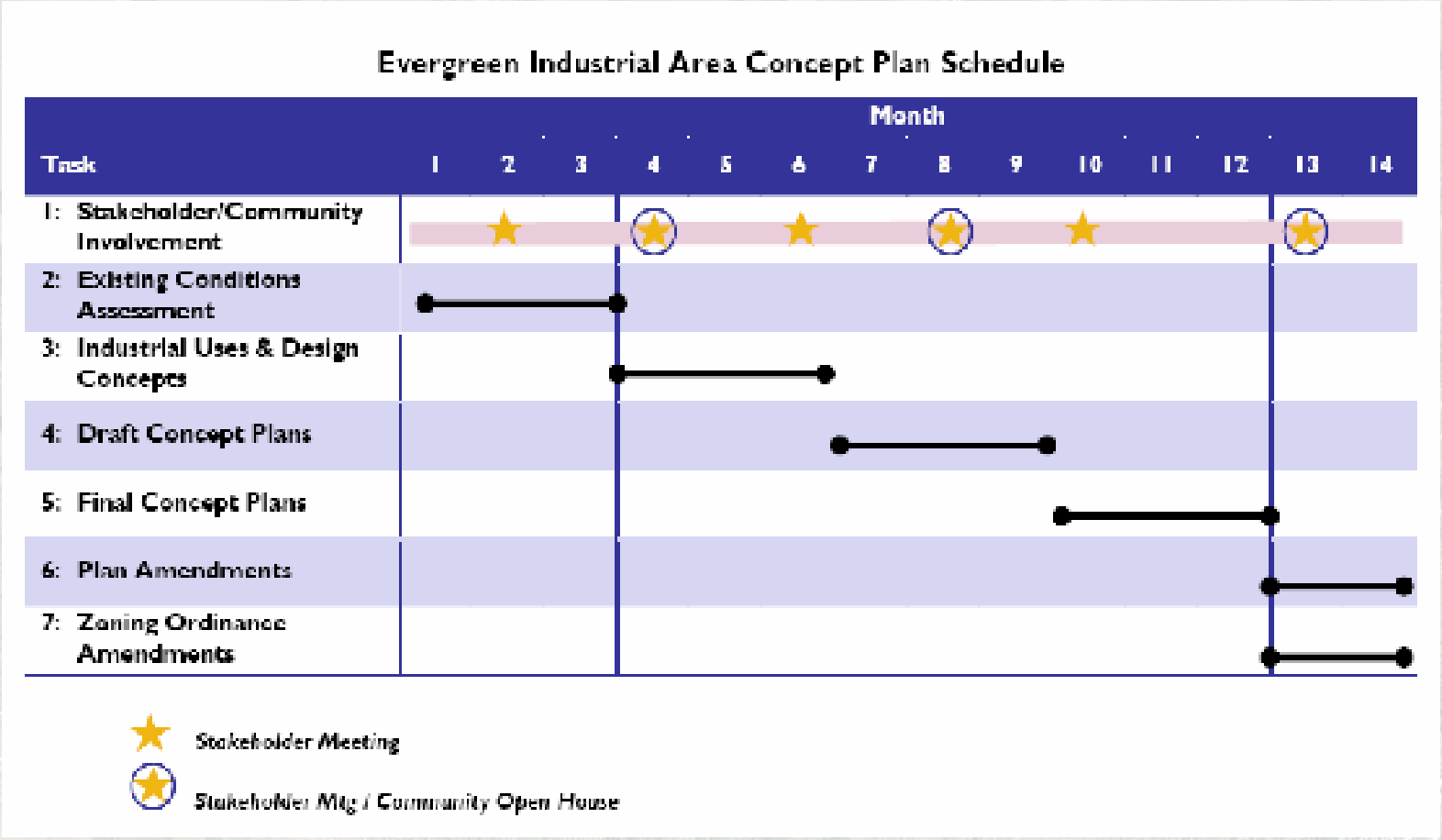
- Provide opportunities for involvement of stakeholders and property owners to help shape the development and design concepts and implementation steps;
- Comply with Metro's Title 11 Concept Planning requirements and Industrial UGB conditions of approval;
- Recommend industrial land uses and development design concepts for the area;
- Integrate the Shute Road Concept Plan with the Evergreen Road Concept Plan;

Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1

Concept Planning Objectives

- Plan and design public sewer, water, roads and other public infrastructure and utilities needed to enable and support Area industrial development;
- Prescribe industrial development concepts that respond to and capture market feasibility, strengths, opportunities as well as recognize Area industrial development market limitations; and
- Prepare and carry out Concept Plan implementation steps including City comprehensive plan and zoning ordinances, Area annexation strategies and Area industrial development management plans and tools as required by the Metro UGB decision.

Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1



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Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1

Stakeholder Involvement & Community Awareness / Input Program

Meeting	Month 1	2	3	4	5	6	7	8	9	10	11	12	13	14
ESAG Mtg 1 / Open House		★												
HSAG Mtg 1 / Open House		★												
ESAG Meeting 2				★										
HSAG Meeting 2				★										
ESAG Meeting 3						★								
HSAG Meeting 3						★								
ESAG Mtg 4 / Open House								★						
HSAG Mtg 4 / Open House								★						
ESAG Meeting 5										★				
HSAG Meeting 5										★				
ESAG Mtg 6 / Open House													★	
HSAG Mtg 6 / Open House													★	
Project Newsletters	●						●					●		
CPO-8 Briefings				8							8			

★ *Stakeholder Meeting*

★ *Stakeholder Mtg / Community Open House*

8 *CPO-8 Project Briefings*

● *Stakeholder Newsletter*

ESAG = Evergreen Stakeholder Advisory Group
HSAG = Helvetia Stakeholder Advisory Group

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Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1

- Summary of Questionnaire Results
  - 26 responses from property owners (61 total mailed)
    - UGB Expansion
      - » 16 knew of UGB expansion
      - » 5 was not sure about outcome of UGB expansion
      - » 5 did not know about UGB expansion
    - Ownership
      - » 12 owned for over 20 years
      - » 6 owned for 11-20 years
      - » 2 owned for 6-10 years
      - » 5 owned for 1-5 years
    - Current use
      - » 17 owner-occupied
      - » 1 renter-occupied
      - » 13 agricultural uses
      - » 4 business
      - » 4 vacant

Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1

- Issues to address (identified by questionnaire respondents):
  - **Property impacts** – Minimize impact on existing residential, especially those not interested in moving
  - **Property values**
  - **Transportation** – New road connections / access / improvements / Truck entrance to Hwy 26 , traffic—speeds, volumes, congestion
  - **Access to services** - power, water, sewer
  - **Stormwater/drainage**
  - **Zone types / what types of businesses allowed** - 24 hour? Restrictions?
  - **Compatibility with airport** – helicopter path, airshow
  - **Environment** – noise, natural areas, habitat, ground water protection, parks
  - **Coordination with property owners** – open communication, keep informed, provide meditation between businesses and property owners,
  - **Develop realistic plans and schedule**
  - **Cost to current owners** – taxes, sewer hook-ups
  - **Relocation assistance**
  - **History of area**
  - **Safety for residents**

Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1

- Suggestions to guide future growth (given by questionnaire respondents):
  - **Coordinate with airport**
    - Consider airport overlay zone / Compatibility with airport
    - Get commitment from Port on expansion to develop a realistic plan
  - **Provide property owners info on pros/cons of annexation**
  - **Offer transition incentives for small parcels**
  - **Vacant land first**
  - **Keep property owners informed and involved in process**
  - **Improvements** – Widen Evergreen Rd from 25th to 253rd, street lights on Evergreen Rd, water & sewer infrastructure, traffic control, road improvements
  - **Environmental** — Protect Waible Creek, greenspace, drainage, air quality
  - **Marketing of property**
    - Will residents be involved in marketing plan?
    - Aggressively advertise to big companies (auto, semiconductor, chemical, computer)
    - Not all high-tech companies

Evergreen Concept Plan
Stakeholder Advisory Group Meeting #1

Next Steps

Stakeholder Advisory Group Meeting #2 & Community Open House #1
Tuesday, April 17 – Evergreen Christian Center

- Meeting Purpose
  Present and discuss analysis of existing conditions. Present and discuss initial findings on economic conditions/market strengths.

- Results
  Understanding and validation of existing conditions and physical opportunities and constraints. Understanding of market conditions and factors that will shape the concept plans.

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Open House Agenda

Tuesday, April 17, 2007 **6:00 pm – 8:00 pm**

I.	Open House (6:00 pm to 6:50pm)	
II.	Welcome & Project Update (7:00pm)	Pat Ribellia
III.	Project Background & Goals (7:10 pm)	Frank Angelo
IV.	Existing Conditions (7:15 pm)	
	• Economics	Frank Angelo
	• Public Infrastructure	Shuki Einstein
	• Natural & Cultural Resources	Shuki Einstein
	• Transportation	Carl Springer
V.	Questions & Answers (7:45 pm)	All
VI.	Next Steps (7:55 pm)	Frank Angelo

Evergreen concept plan

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Project Background

- The Evergreen Area has 534 acres and 61 property owners.
- The Evergreen Area was added to the Metro Urban Growth Boundary (UGB) in 2005.
- Metro UGB Action requires industrial use/development within the Area to accommodate regional industrial land needs.
- Evergreen Area must accommodate one 100-acre industrial site per Metro's UGB decision.

Project Background

- Per a Washington County-Hillsboro Intergovernmental Agreement:
  - Hillsboro must prepare an Industrial Concept Plan for the Area for Metro approval and inclusion into the Hillsboro Comprehensive Plan.
  - Assume land use planning / regulation authority over properties in the Area upon their voluntary annexation to the City.
- Washington County required by Metro UGB decision to adopt “interim land use measures” to protect premature urban development in the Area before Concept Plan approval.

Evergreen concept plan

Project Goals

Develop an Evergreen Concept Plan that:

- Creates area-wide economic opportunities and value;
- Integrates area industrial uses with the Hillsboro Industrial Sanctuary;
- Provides adequate infrastructure to support industrial development; and
- Promotes community awareness and stakeholder involvement

Concept Planning Outcomes

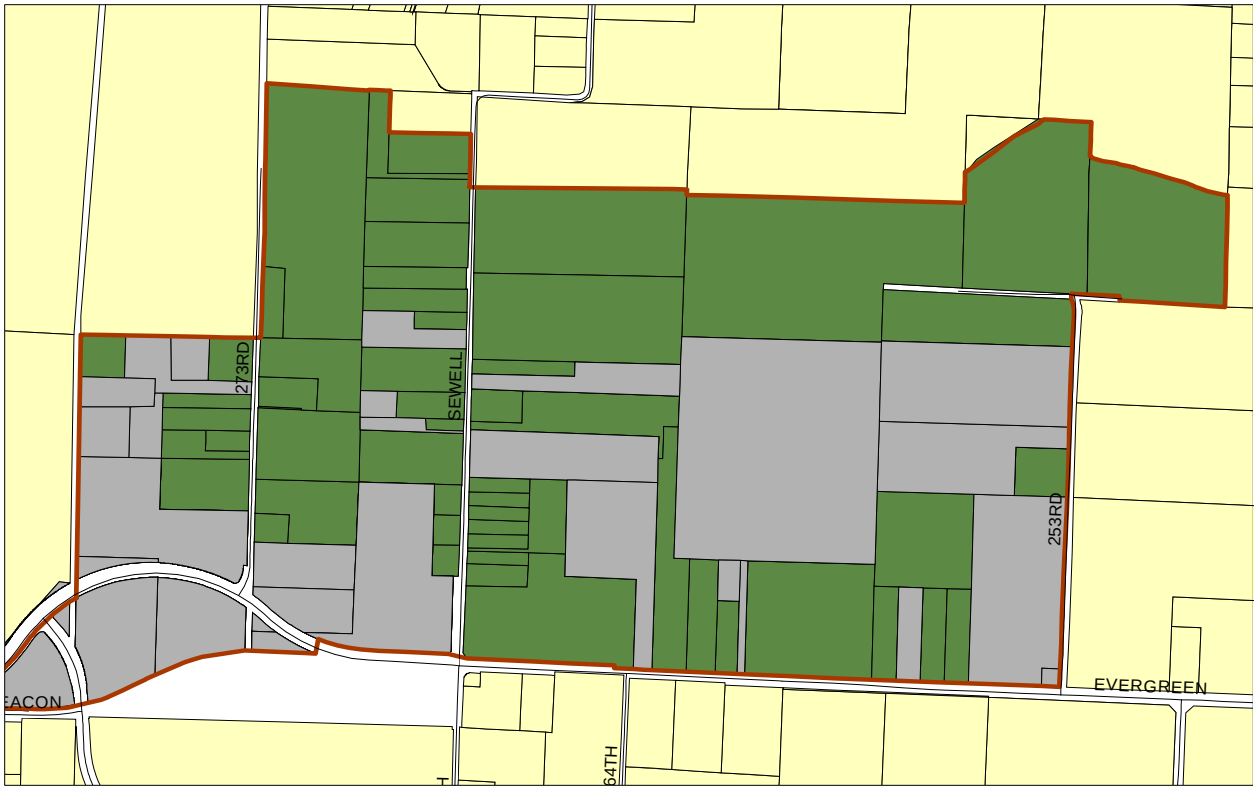
- Involvement by stakeholders and property owners to help shape the development and design concepts and implementation steps;
- Compliance with Metro's Title 11 Concept Planning requirements and Industrial UGB conditions of approval;
- Recommendations for industrial land uses and development design concepts for the Area;
- Determination of public sewer, water, roads and other public infrastructure and utilities needed to enable and support Area industrial development;

Concept Planning Outcomes

- Industrial development concepts that respond to and capture market feasibility, strengths, and opportunities; and
- Evergreen Concept Plan implementation steps including:
    - City of Hillsboro comprehensive plan and zoning ordinances amendments;
    - Area annexation strategies; and
    - Area industrial development management plans, strategies and tools.

Property Patterns

- 40% completely vacant
- Most of remainder has few improvements
- 16 largest parcels comprise 71% of area



Vacant Property with Improvements

Evergreen concept plan

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Economic Characteristics

Households	2005	2030	Growth
Washington County	189,925	272,998	44%
Portland region	824,955	1,207,876	46%

Employment	2005	2030	Growth
Washington County	269,660	450,970	67%
Portland region	1,075,877	1,758,330	63%

- Washington County is growing
- Jobs will grow faster than population
- 24% of jobs in Washington County are in Hillsboro

Infrastructure

Public

Sanitary

Water

Storm Water

Power BPA

Private

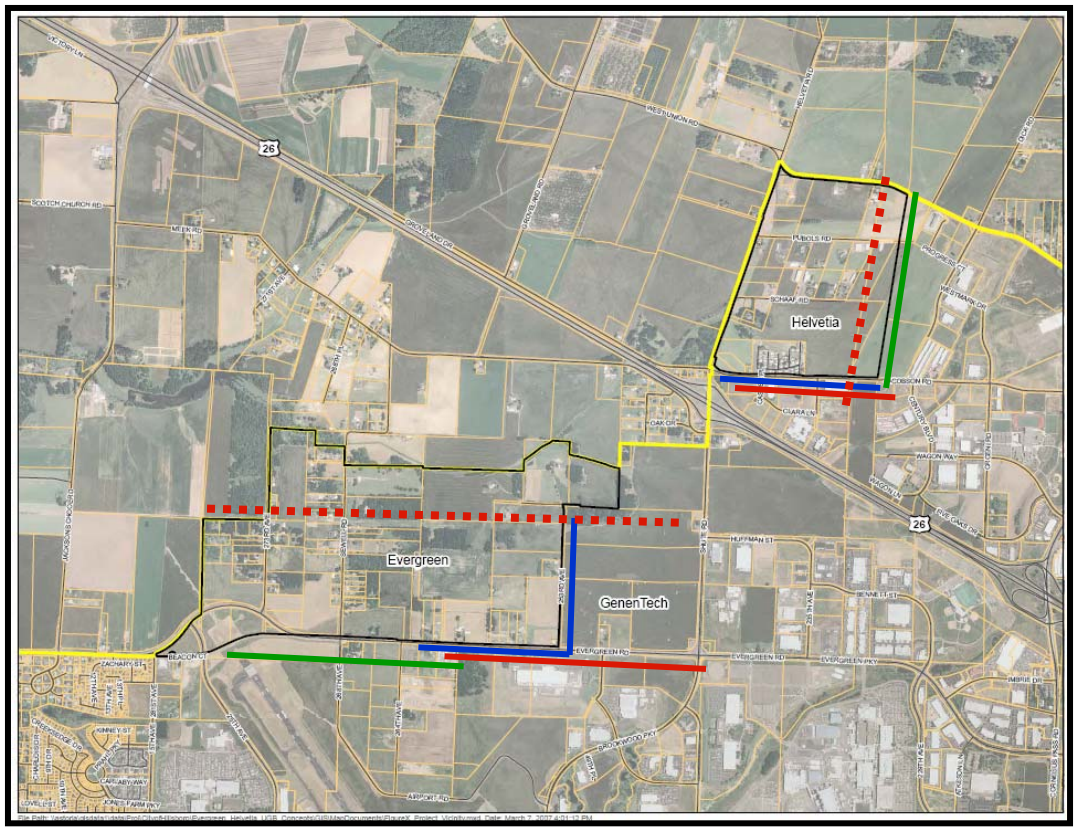
Power - PGE

Natural Gas - NW Natural

Tele-Com - Qwest

- Comcast

- Verizon



Evergreen & Helvetia Concept Planning

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Natural Resources

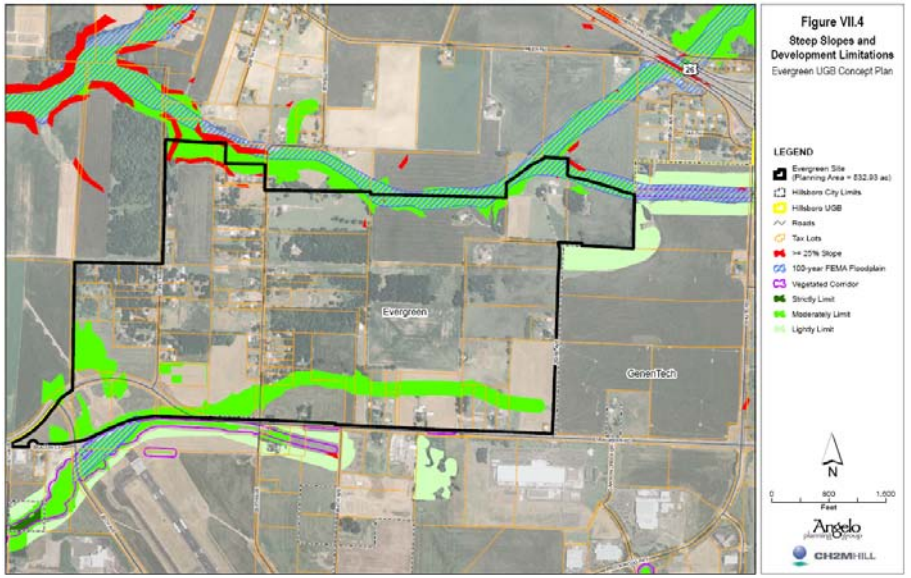
Broad Scale Natural Resource Plan

Significant Habitat Inventory (2004)
Metro Goal 5

Parks
Class I,II,III, Riparian
Class B, C Habitat
Impact Area

Development Limitations

> = 25%Slope
100 Year Flood Plain
Vegetated Corridor
Limit Level (Strict, Moderate, Light)



Evergreen concept plan

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Cultural Resources

John W. Shute House

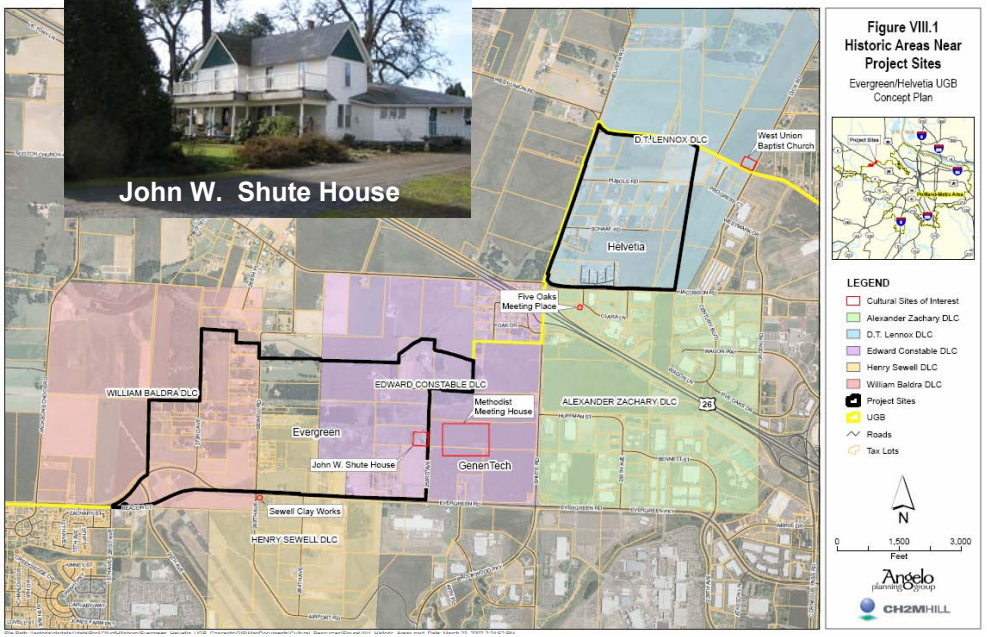
Built 1890;
listed on the Washington County Historic Inventory.
The house is significant in its association with an early influential and prominent local figure.

Methodist Meeting House

1844. One of the first churches in the area.
The building no longer stands.
Historic archaeological site has been recorded.

Sewell Clay Works

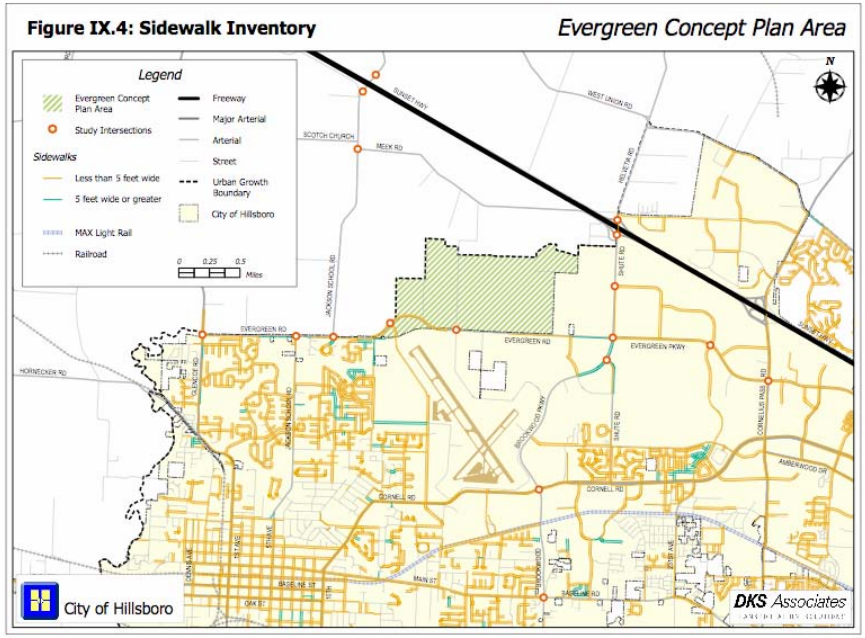
1893, the North Pacific Clay Works was
largest tile manufacturer in the state Washington County.
Cultural Resource Inventory 1983.



Evergreen concept plan

CITY OF HILLSBORO

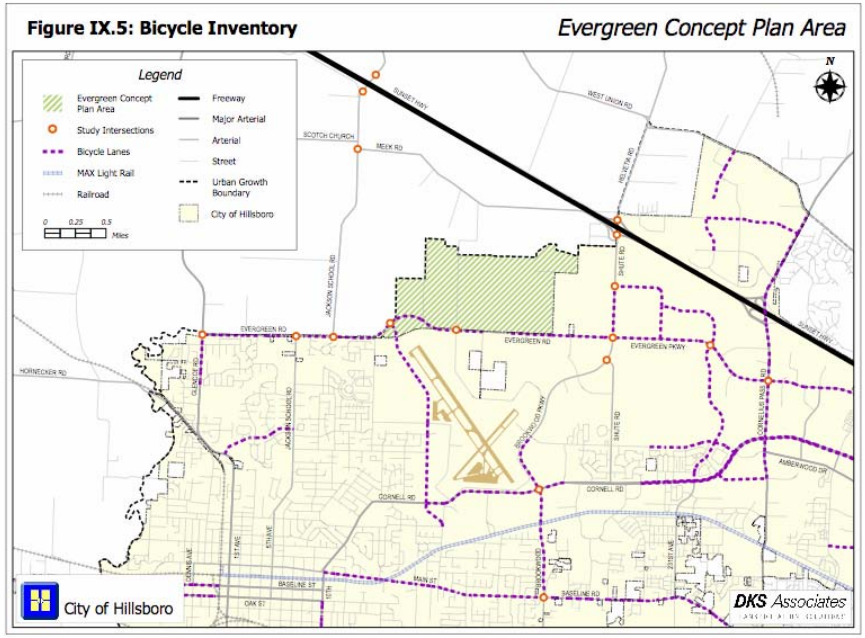
Pedestrian System Information



- Sidewalks available on fronting arterial streets.
- Limited crossing points.
- Future system north of Evergreen needed.
- Connections to trails.

Evergreen concept plan

Bicycle System Information

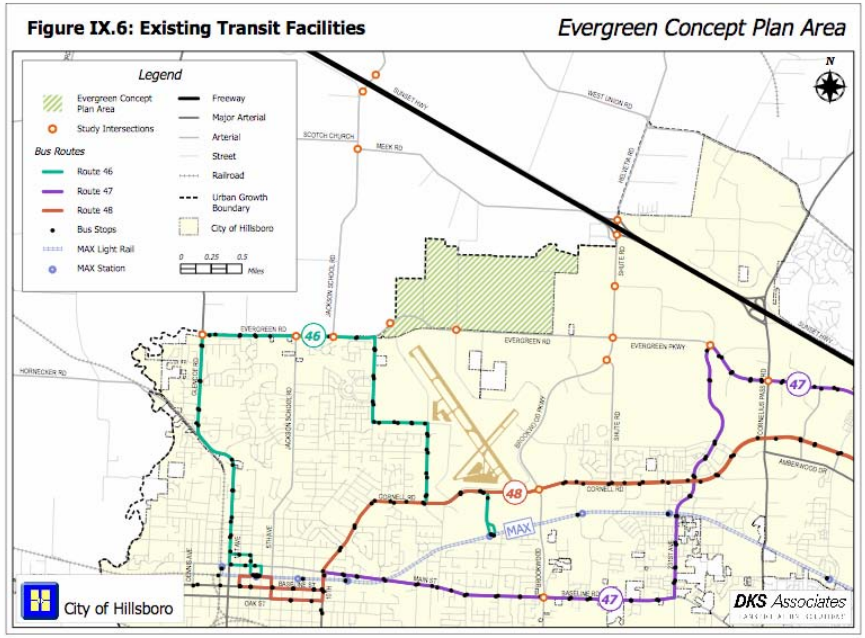


- Bike lanes available on Evergreen.
- Discontinuities on Shute Road.
- Very limited connections north of US 26.

Evergreen concept plan

CITY OF HILLSBORO

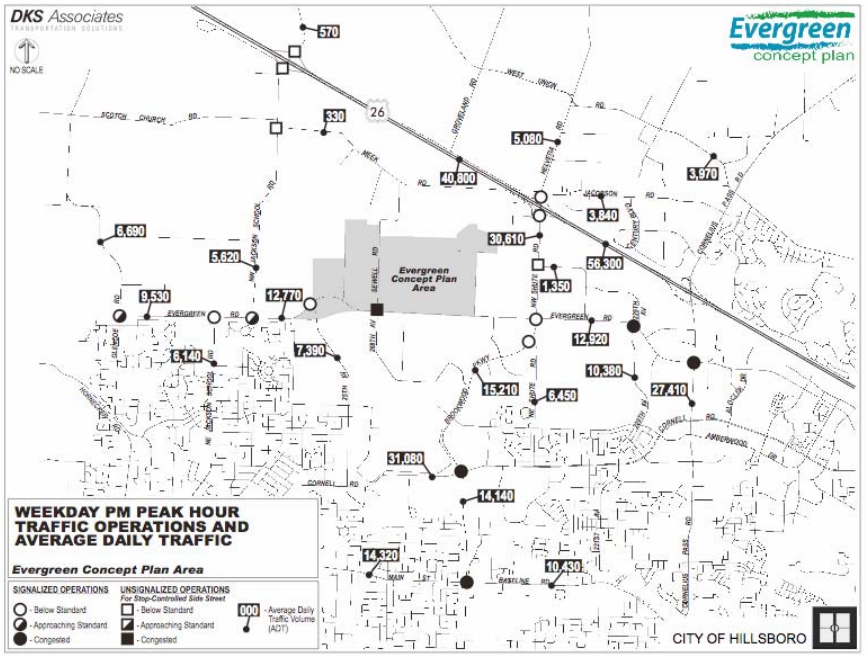
Transit System Information



- No bus routes within convenient walking distance for most of site.
- Connections to downtown / MAX line via Route 46, limited service.

Evergreen concept plan

Roadway System Information

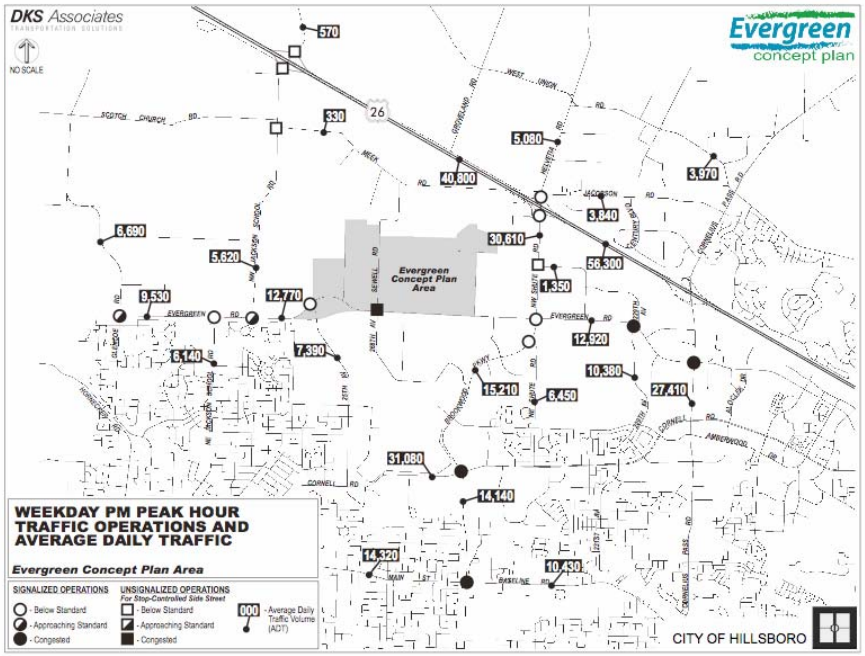


- US 26 carries 40,000 to 56,000 vehicles daily.
- Roughly 30,000 vehicles daily on Shute Road north of Evegreen Road.
- Evergreen Road carries about 12,000 vehicles daily.

Evergreen concept plan

CITY OF HILLSBORO

Roadway System Conditions



- Most intersections operate within standards during peak hours.
- Approaching capacity at Evergreen / Jackson School and Evergreen / Glencoe.
- Access from Sewell-268th onto Evergreen Road difficult during peak hours.
- Several locations heavily congested.

Evergreen concept plan

CITY OF HILLSBORO

Planned Road Improvements

- Evergreen Road - widen to 5-lanes from 25th to 253rd Avenue (city TSP and RTP).
- Huffman Street - extend west of Shute Road to 253rd Avenue (city TSP).
- Intersection capacity added at:
  - Evergreen Ave. / 253rd Ave.
  - Evergreen Ave. / Shute Road
  - Shute Road / US 26 EB Ramps
  - Shute Road / US 26 WB Ramps

Next Steps

- Finalize Evergreen Existing Conditions Report
- Develop draft industrial development concepts for Evergreen, including conceptual transportation, natural resources protection, and public facilities and services plans.
- Conduct Stakeholder Advisory Group Meeting #3 (Early Summer 2007)
- Conduct Open House #2 (Summer 2007)

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Evergreen concept plan

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Stakeholder Advisory Committee Agenda

SAC Meeting #3
Thursday, July 26, 2007
6:00 pm – 8:00 pm

1.	Project Update	Pat Ribellia
2.	Overview of Concepts	Frank Angelo
3.	Evergreen Development Program	Frank Angelo
4.	Evergreen Conceptual Illustrations	Frank Angelo
5.	Next Steps & Discussion	All

Evergreen concept plan

CITY OF HILLSBORO

Project Update

- A potential large (200 acre) solar industrial use evaluated a site in the Evergreen planning area but chose a site in Asia. The Evergreen site was the last North American site eliminated from consideration.
- Inquiries and discussions with potential users are occurring for industrial sites in the Evergreen, Shute and Helvetia Road planning areas.
- Natural resource assessment is on-going and close to completion.
- Concept planning process has emphasized a flexible approach to attract more diverse types of industrial users in the future.
- Evergreen Concept Plan project schedule continues towards end-of-year completion.

Overview of Concepts

Ideas for Evergreen

Industries of Today, Tomorrow and Future

- Silicon, Solar, Medical, Pharmaceutical, Sustainable Energy

Land/Building Needs

- Large Campus (100-200 acres), Medium Campus (50-75 acres), Office/Flex/Research & Development Space, Single and Multiple User Campuses

Other Components

- Suppliers, Distribution, Support Services, Commercial Services

Key Industrial Development Strengths

- Oregon Tax Structure – Strategic Investment Program, Single Sales Factor, Enterprise Zones
- Skilled Workforce in technology
- Technology Clusters
- Available and relatively inexpensive power
- Proximity to California and Washington – same time zone
- Hillsboro track record of success on project delivery
- Quality of life factors for employees

Key Development Assumptions

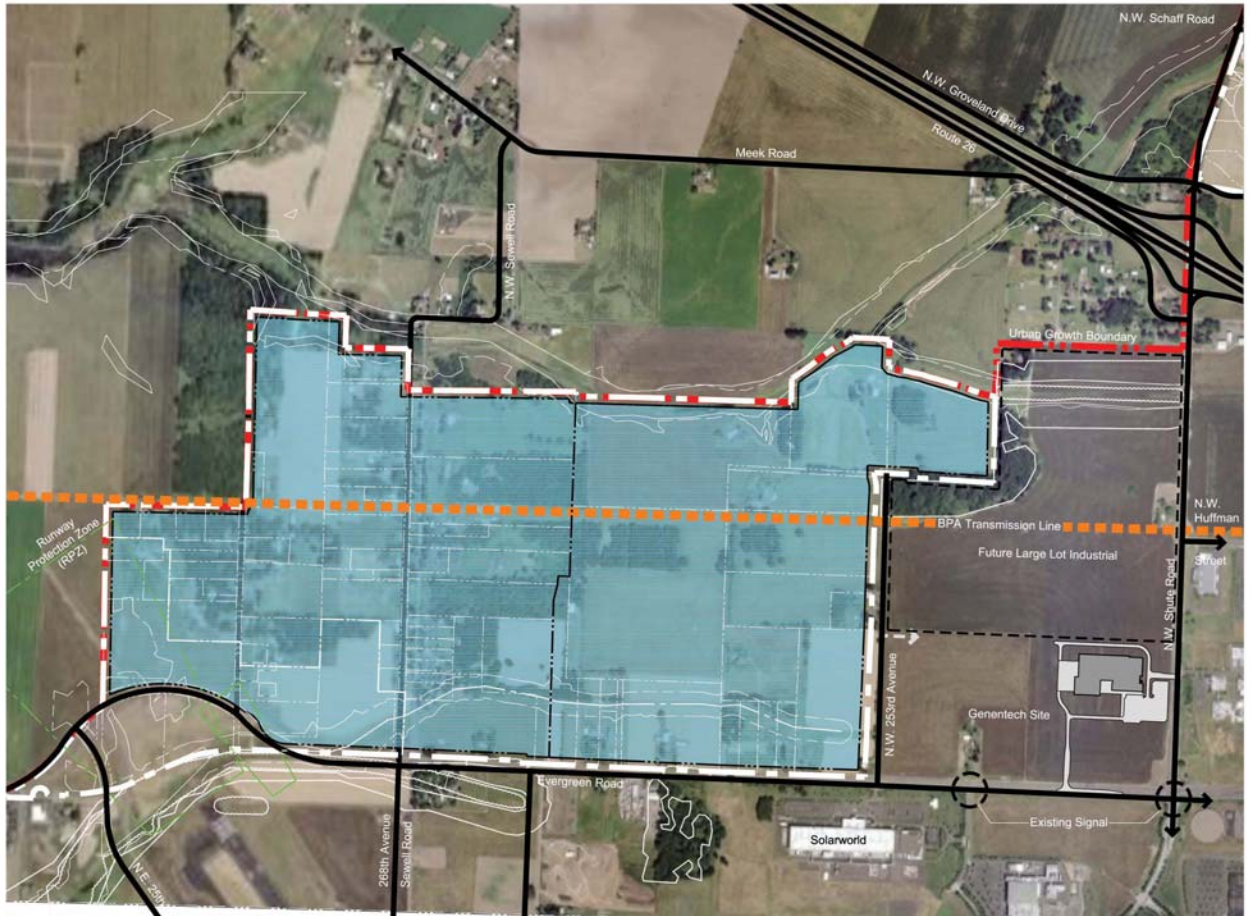
- Planning horizon for development is 2030.
- “Land banking” will occur as industrial development on larger campuses builds out in phases.
- Job densities will range from 18 to 22 employees per acre.
- Employment by 2030 will range from 7,350 to 8,000 jobs in the Evergreen planning area.
- Development in Evergreen will likely begin in the eastern portion of the planning area and move west.
- Industrial development will precede any supporting services development.

Development Types

Anticipated Development Types in Evergreen Planning Area:

- Sustainable, Environmental, Energy Industries – (70 to 200 acres)
- Biotech Campus (35 to 50 acres)
- Supplier Parcels (10 to 20 acres)
- Developer Parcels (20 to 40 acres)
- Research and Development Parcels (20 to 30 acres)
- Distribution Parcels (20 to 40 acres)
- Commercial Service Centers (5 to 20 acres)

Evergreen Comprehensive Plan Designation



Legend

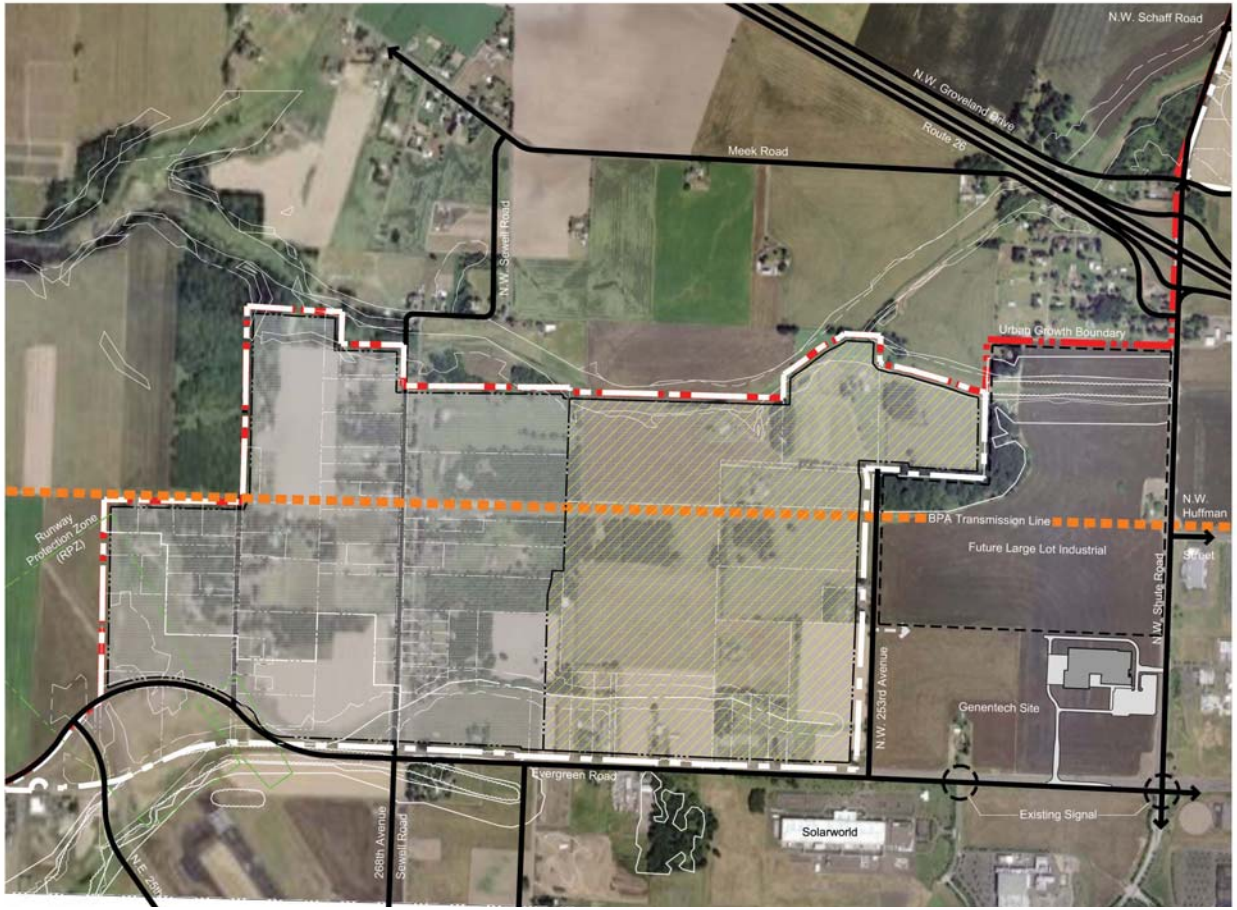
Industrial

Evergreen concept plan

CITY OF HILLSBORO

Evergreen Zoning

- Industrial Park Zone – M-P
- Evergreen Road Site Special Industrial District Overlay (RSIA)



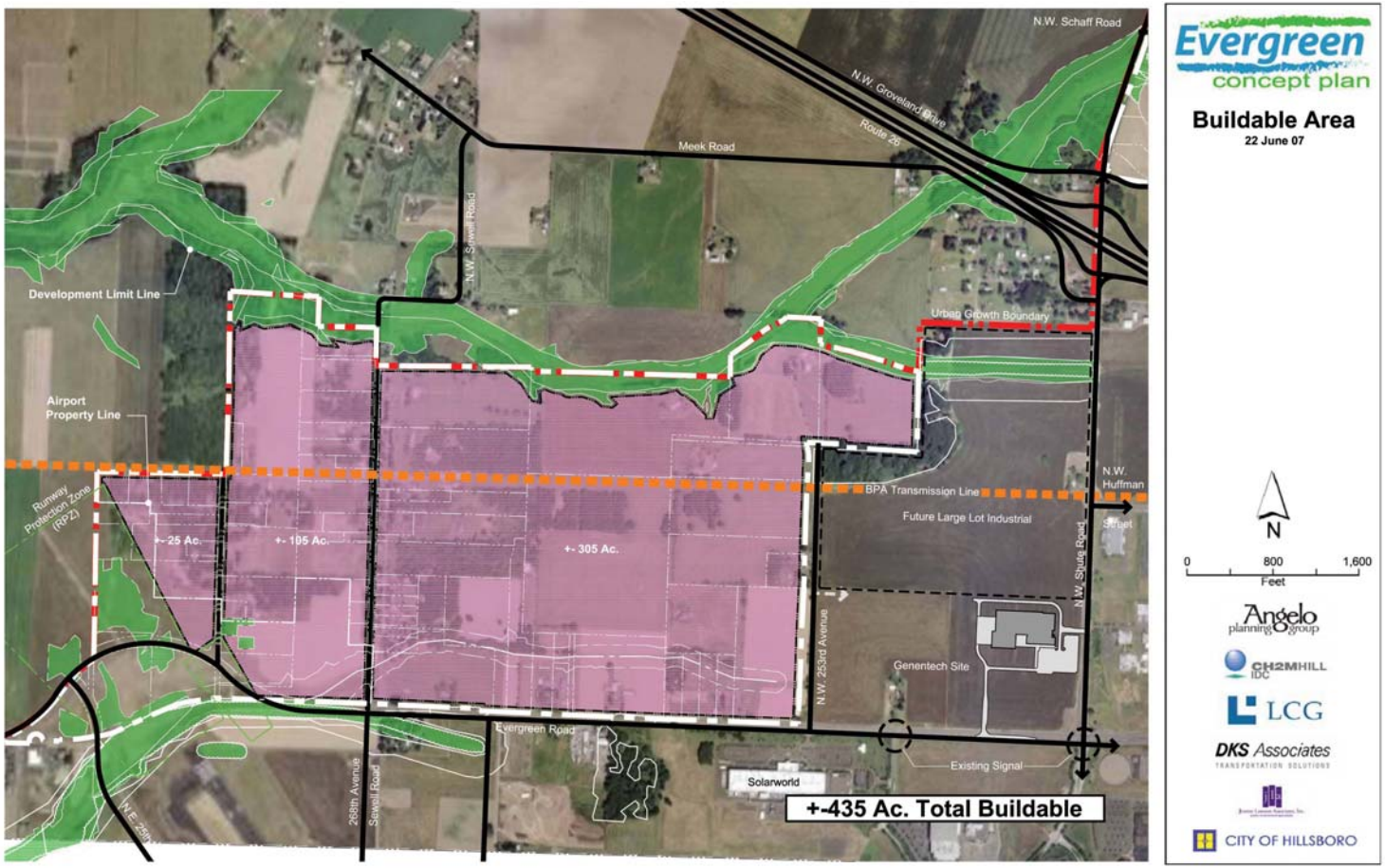
Legend

- **M-P Industrial Park Zone**
- **Evergreen Road Site Special Industrial District Overlay (RSIA)**

Evergreen concept plan

CITY OF HILLSBORO

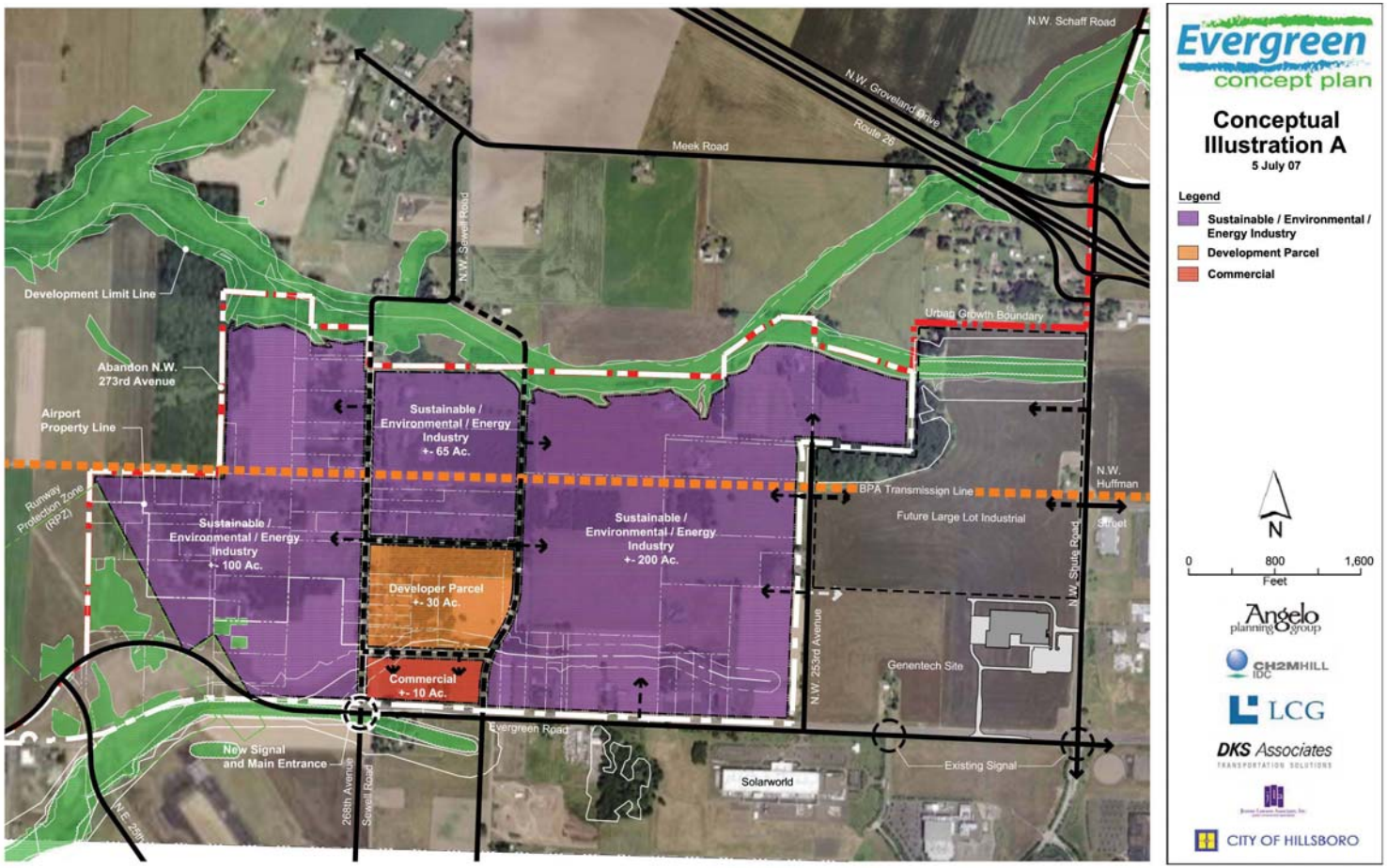
Evergreen Buildable Area



Evergreen
concept plan

CITY OF HILLSBORO

Evergreen Conceptual Illustration A



Evergreen concept plan

Conceptual Illustration A

5 July 07

Legend

- Sustainable / Environmental / Energy Industry
- Development Parcel
- Commercial

N

0 800 1,600

Feet

Angelo planning group

CH2MHILL IDC

LCG

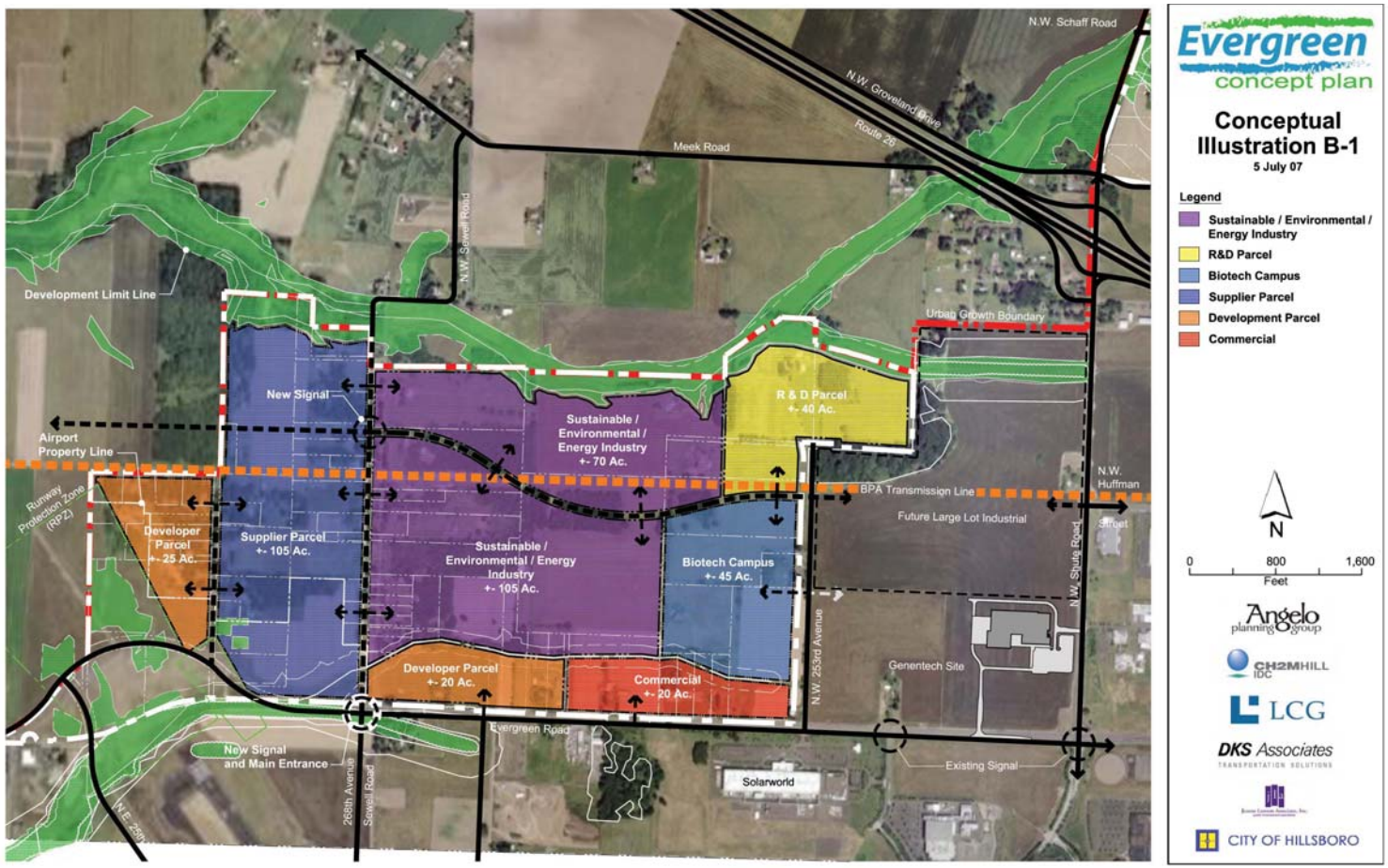
DKS Associates TRANSPORTATION SOLUTIONS

CITY OF HILLSBORO

Evergreen concept plan

CITY OF HILLSBORO

Evergreen Conceptual Illustration B-1



Evergreen
concept plan

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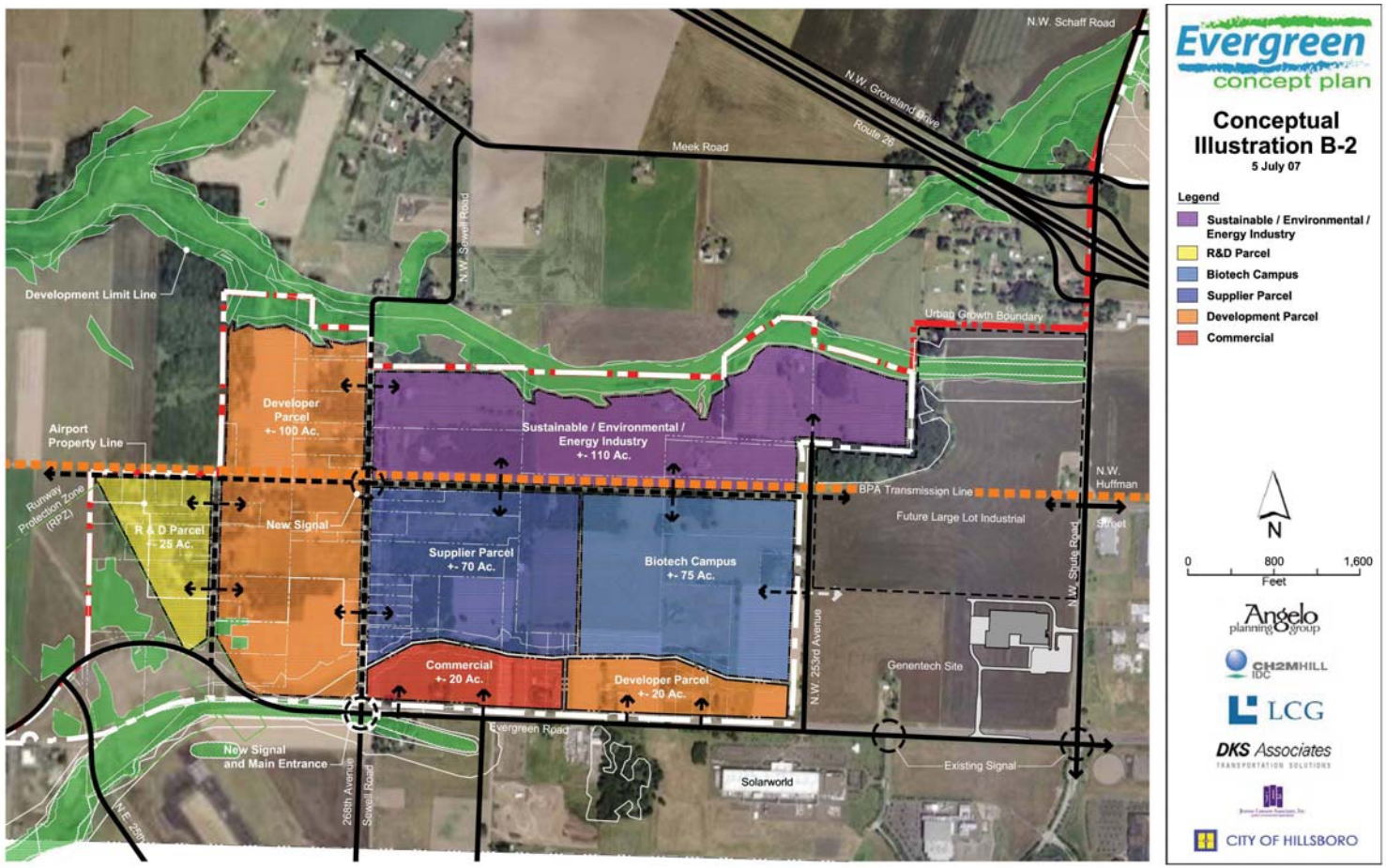
Evergreen Conceptual Illustration B-2



Evergreen concept plan

CITY OF HILLSBORO

Evergreen Concept Plan Issues

- 100 acre site
- Commercial Uses
- Traffic Circulation
- Shute Road Interchange
- Resource Protections
- BPA Powerline
- Future UGB Expansions / Urban Reserve Areas
- Other Issues?

Evergreen Concept Plan Elements

- Industrial urban growth diagram
- Conceptual transportation plan
- Natural resource protection plan
- Conceptual facilities and services plan
- Annexation strategy
- Comprehensive Plan / Zoning Code / Ordinances

Next Steps

- Hillsboro City Council / Planning Commission Project Briefing – August 2nd
- Project Team Prepares:
  - Evergreen Concept Plan Recommendation
  - Public Facilities Recommendations and Preliminary Cost Estimates
  - Draft Comprehensive Plan and Zoning Ordinance Implementation Recommendations
- Stakeholder Meeting and Community Open House - September
- Hillsboro Planning Commission and City Council Public Hearings – October / November

Discussion

Project Contacts

Project Website: www.evergreen-helvetia.org

Patrick Ribellia: City of Hillsboro
503.681.6481
patrickr@ci.hillsboro.or.us

Frank Angelo: Angelo Planning Group
503.227.3664
fangelo@angeloplanning.com

Evergreen concept plan

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Stakeholder Advisory Group Agenda

Evergreen SAG Meeting #4
Thursday, October 18, 2007
6:00 pm – 8:00 pm

1. Project Update & Status
2. Evergreen Development Program
3. Evergreen Conceptual Illustrations
4. Implementation (Policy and Code Language)
5. Next Steps & Discussion

Evergreen concept plan

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Project Update & Status

- Planning Commission Work Session – September 12th
- Metro Council Work Session – October 16th
- Final Evergreen Stakeholder/Community Meeting – October 18th
- Planning Commission Hearing/Action – November 14th
- City Council Hearing/Action – December 4th
- City Council Hearing/Action – December 18th — If Necessary

Project Update & Status

- Draft Evergreen Concept Plan is complete and includes:
  - Natural resource assessment, public utilities (water, sewer, stormwater) plans and transportation plan elements.
- Minor amendments have been made to the (3) Conceptual Illustrations previously presented.
- Resolutions to amend the City's Comprehensive Plan and Zoning Ordinance have been filed.
- Evergreen Concept Plan project schedule continues towards end-of-year completion, with adoption scheduled for December 2007.
- Inquiries and discussions with potential users continue to occur for industrial sites in the Evergreen, Shute and Helvetia Road planning areas.

Evergreen Planning Goals

Develop an Evergreen Concept Plan that:

- Is stakeholder/community-driven and industrial market-responsive
- Creates area-wide economic opportunities and value by;
  - Integrating area industrial uses with the Hillsboro Industrial Sanctuary;
  - Diversifying the city's industrial base;
  - Providing adequate infrastructure to support industrial development; and
  - Promoting community awareness and stakeholder involvement

Development Program

Anticipated Development Types in Evergreen include:

- Sustainable Energy and Environmental Businesses
- Biotech Campus
- Industrial Incubators, Start-ups and Spin-offs Business Parks
- Industry Research & Development (R&D) Parks
- Industry Suppliers
- Distribution Businesses
- Support Commercial Services

Sustainable Energy and Environmental Businesses

Evergreen concept plan

Biotech Campus

Evergreen concept plan

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Campus Development

Industrial Incubators, Start-ups and Spin-offs
Business Parks

Evergreen concept plan

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Industry Research and Development (R&D) Parks

Evergreen concept plan

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Industry Suppliers

Distribution Businesses

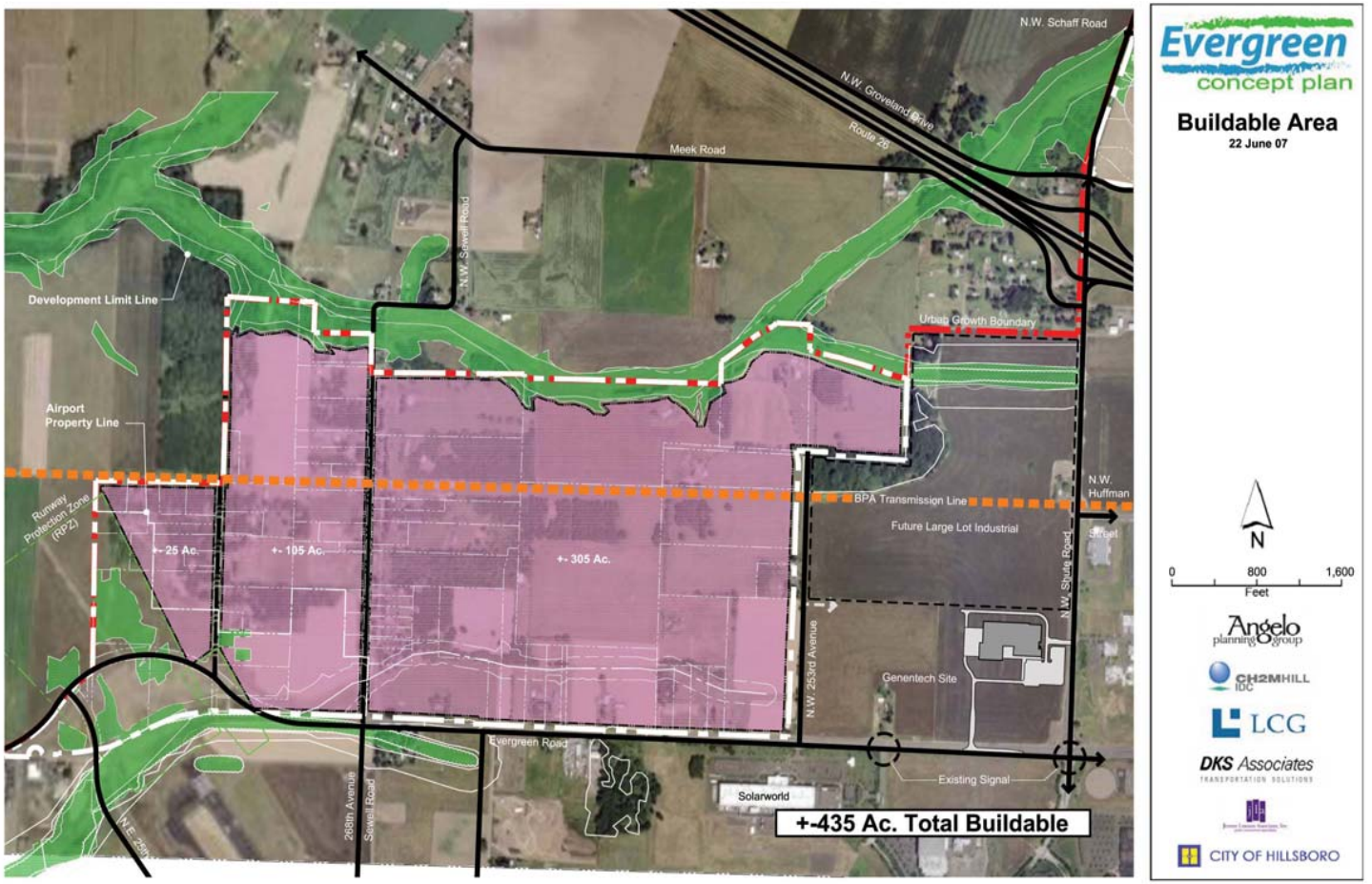
Support Commercial Services

Evergreen concept plan

Key Development Assumptions

- Planning horizon for development is 2030.
- “Land banking” will occur as industrial development on larger campuses builds out in phases.
- Job densities will range from 18 to 22 employees per acre.
- Employment by 2030 will range from 7,350 to 8,000 jobs in the Evergreen planning area.
- Development in Evergreen will likely begin in the eastern portion of the planning area and move west.
- Industrial development will precede any supporting services development.

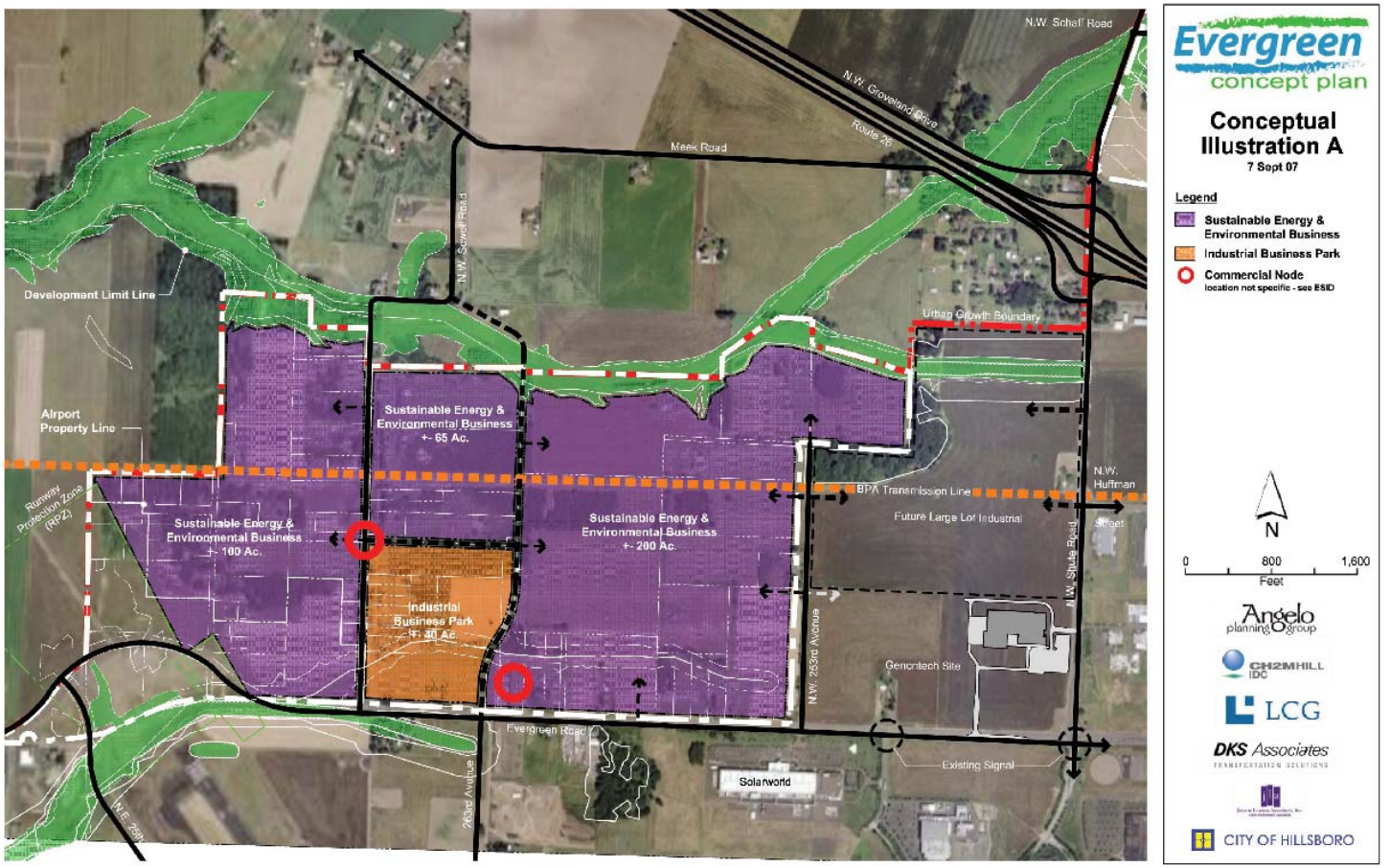
Evergreen Buildable Area



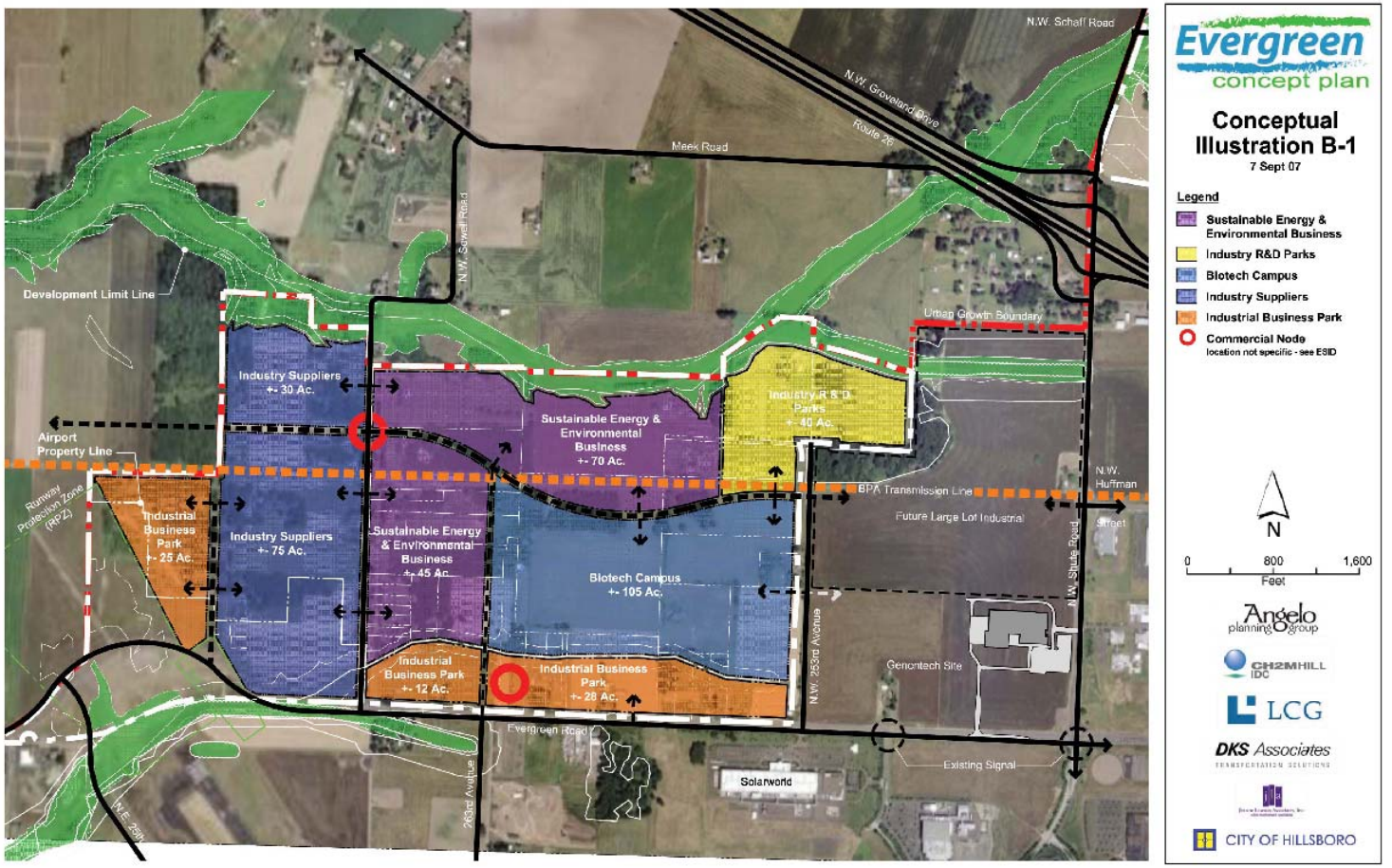
Evergreen
concept plan

CITY OF HILLSBORO

Evergreen Conceptual Illustration A

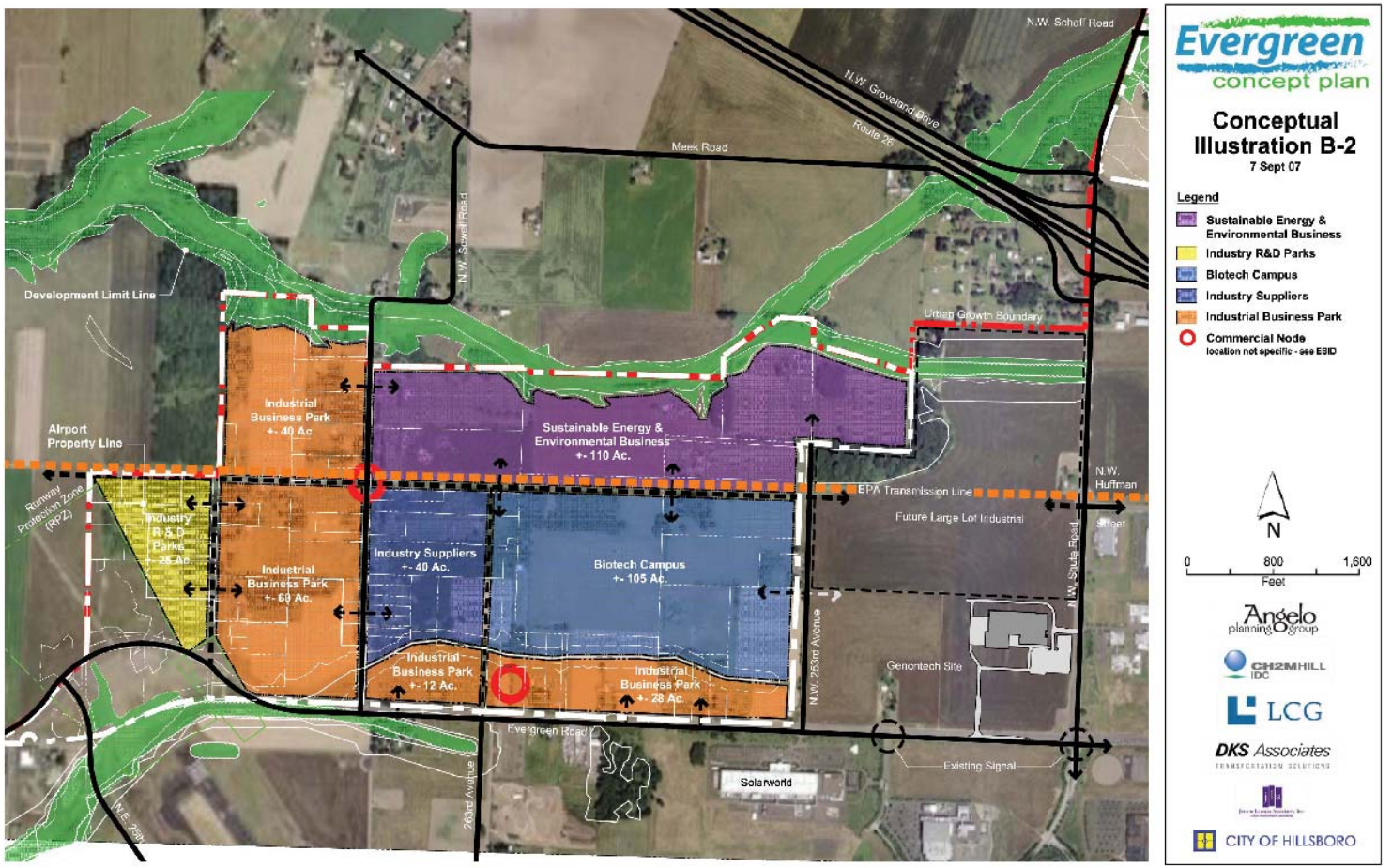


Evergreen Conceptual Illustration B-1



Evergreen
concept plan

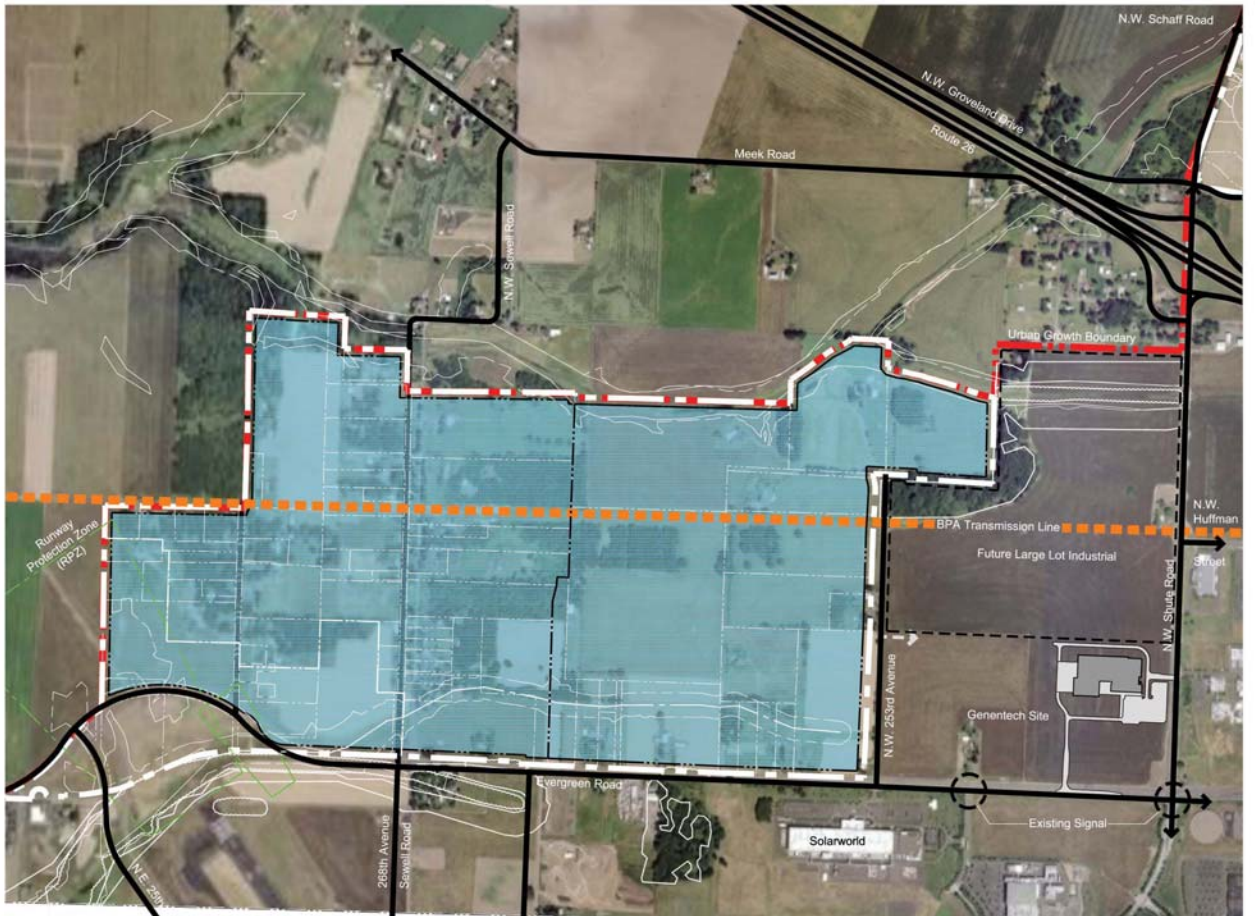
Evergreen Conceptual Illustration B-2



Evergreen concept plan

CITY OF HILLSBORO

Evergreen Comprehensive Plan Designation



Legend

Industrial

Evergreen concept plan

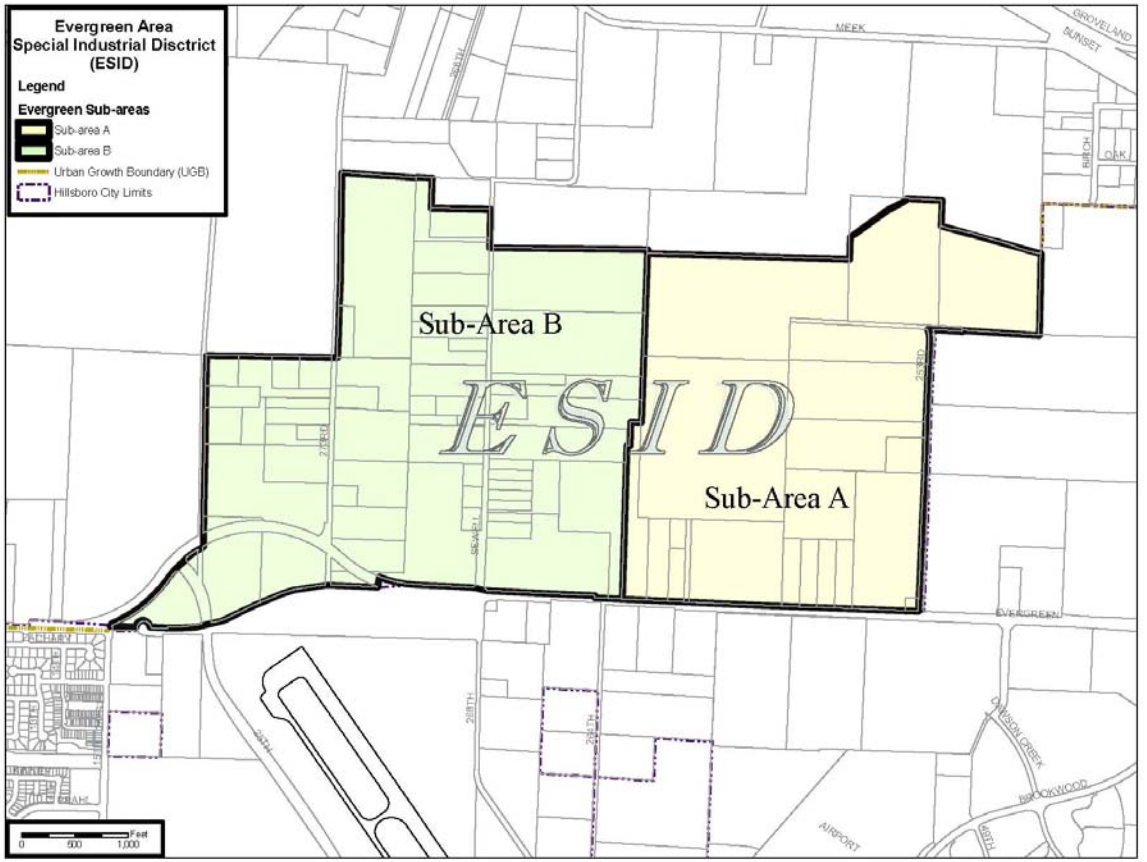
CITY OF HILLSBORO

Hillsboro Comprehensive Plan

Amend Hillsboro Comprehensive Plan Policies to:

- Add Evergreen Industrial Area Plan Section.
- Enable “Performance-Based” Comprehensive Plan and Zoning Implementation provisions to guide future industrial development.
- Provide sufficient flexibility and authority to insure regulatory responsiveness to changing industrial market trends and opportunities for the Area over time.
- Include:
  - Area Natural Resources Management Plan
  - Area Public Infrastructure (Water/Sewer Systems) Management Plan
  - Area Transportation System Plan

Evergreen Zoning



Evergreen concept plan

CITY OF HILLSBORO

Hillsboro Zoning Ordinance

Amend Hillsboro Zoning Ordinance to create:
<u>Evergreen Area Special Industrial District (ESID)</u>

East Evergreen (Sub-Area A):

- Lot Size
  - 50 acre minimum lot size
  - Lot of record smaller than 50 acres may contain any use approved for Sub-Area A
  - Future subdivision of properties allowed as long as one 50 acre lot is created and remaining lot(s) contain one parcel of 25 acres

Hillsboro Zoning Ordinance

East Evergreen (Sub-Area A) continued:

- Permitted Development Types
  - (1) Sustainable, Environmental, and Energy Businesses
  - (2) Biotech Campus
  - (3) Industry Research & Development (R&D) Parks
  - (4) Industrial Incubators, Start-ups and Spin-offs Business Parks
  - (5) Support Commercial Service
  - (6) Transportation Facilities
  - (7) Public Service or utility uses or facilities
  - (8) Other uses as determined by the Planning Director (properties < 25 acres) or Planning Commission (properties ≥ 25 acres)

Hillsboro Zoning Ordinance

East Evergreen (Sub-Area A) continued:

- Support Commercial Services
  - One support commercial site after 1million square feet of industrial
  - Support Commercial area limited to 10 acres
  - Support Commercial “cluster” limited to 50,000 square feet total building area: 20,000 square feet floor area limit for any “cluster” tenant use
  - Support commercial retail uses and professional services are intended to directly and primarily serve the daily commerce needs of businesses and employees in the immediate surrounding industrial area

Hillsboro Zoning Ordinance

- West Evergreen (Sub-Area B):
  - Lot Size
    - 10 acre minimum lot size
    - Lot of record smaller than 10 acres may contain any use approved for Sub-Area B
    - Future subdivision of properties allowed as long as one 10 acre lot is created and remaining lot(s) contain one parcel of 5 acres

Hillsboro Zoning Ordinance

West Evergreen (Sub-Area B) continued:

- Permitted Development Types
  - (1) Sustainable, Environmental, and Energy Businesses
  - (2) Biotech Campus
  - (3) Industry Research & Development (R&D) Parks
  - (4) Industrial Incubators, Start-ups and Spin-offs Business Parks
  - (5) *Distribution Businesses*
  - *(6)* *Industry Suppliers*
  - (7) Support Commercial Service
  - (8) Transportation Facilities
  - (9) Public Service or utility uses or facilities
  - (10) Other uses as determined by the Planning Director (properties < 25 acres) or Planning Commission (properties ≥ 25 acres)

Hillsboro Zoning Ordinance

West Evergreen (Sub-Area B) continued:

- Support Commercial Services
  - One support commercial site after 500,000 square feet of industrial
  - Support Commercial area limited to 10 acres
  - Support Commercial “cluster” limited to 50,000 square feet total building area: 20,000 square feet floor area limit for any “cluster” tenant use
  - Support commercial retail uses and professional services are intended to directly and primarily serve the daily commerce needs of businesses and employees in the immediate surrounding industrial area

Next Steps/Discussion

- Planning Commission Hearing/Action – November 14th
- City Council Hearing/Action – December 4th
- City Council Hearing/Action – December 18th—If Necessary
- Voluntary Annexation

Project Contacts:

Project Website: www.evergreen-helvetia.org

Patrick Ribellia: City of Hillsboro
503.681.6481
patrickr@ci.hillsboro.or.us

Frank Angelo: Angelo Planning Group
503.227.3664
fangelo@angeloplanning.com

Evergreen concept plan

CITY OF HILLSBORO

Appendix E

Economic Trends Workshop Summary

Economic Trends Workshop

Monday, February 26, 2007
8:15 am - 4:30 pm

Hillsboro Civic Center Auditorium

Sponsored by:

City of Hillsboro

Angelo planning group

Economic Trends Workshop

Since the early 1990s the City of Hillsboro has attracted industrial businesses to the City and Portland Region and expanded traded and local business sectors' economic productivity and opportunities throughout the community.

The growth in Hillsboro of a high technology industry cluster, anchored and led by the multiple Intel campuses and driven also by good business access to a large, highly trained and available technology workforce in the community, have made Hillsboro a competitive location for high tech companies seeking U.S. business locations.

The recent decision by Genentech, Inc. to locate a medical products facility in the Shute Road Area demonstrates Hillsboro's competitive high tech location advantage. Much more importantly, it raises an opportunity for Hillsboro (and the Portland Region) to expand its industrial base significantly into the bio-medical field and to attract other established and start-up bio-tech companies.

The Tanasbourne Town Center/AmberGlen area is emerging as a successful concentration of mixed-use activity and employment center in the Greater Portland region.

These achievements came about, in part, through City-Regional collaboration assuring suitable industrial land is available, public services and infrastructure are accessible, private/public partnerships are established and the regulatory environment provides certainty to the community and businesses.

Upcoming concept planning of the Evergreen and Helvetia Industrial Areas (almost 800 acres) coupled with the availability of much of the Shute Road Industrial Area (100 plus undeveloped acres) requires continuing that collaboration. More important, it provides a timely opportunity to evaluate and define (or refine) the direction of future industrial growth within the City and our Industrial Sanctuary (now roughly 2600 acres in size) which contains a major economic engine of the Portland Region and State.

This Economic Trends Workshop will examine future economic opportunities Hillsboro may have and the state, regional and local economic, land use and infrastructure policies and actions needed to take advantage of these opportunities.

Agenda

8:15 am – 8:30 am.....I. WELCOME & INTRODUCTIONS
Mayor Tom Hughes

8:30 am – 10:30 am.....II. PANEL #1
National Trends and Local Growth In Established And Emerging Traded Sector Industry Clusters

10:30 am – 10:45 am .....BREAK

10:45 am – 12:15 pm ..... III. PANEL #2
Industrial Start-Ups, Incubators And Spin-Offs - Potential Traded Sector Growth Segments In Washington County

12:15 pm – 12:45 pm .....LUNCH BREAK

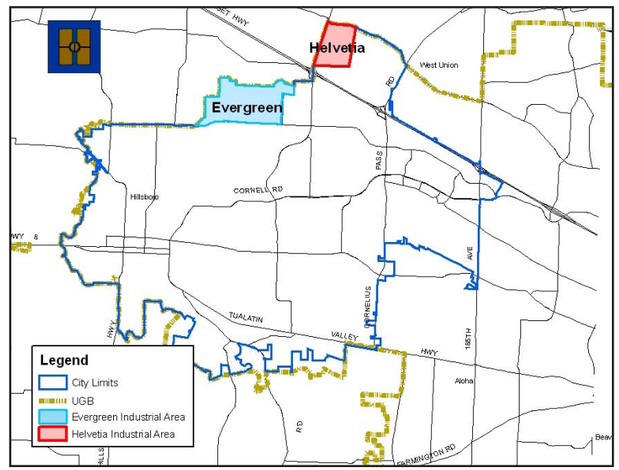
12:45 pm – 2:15 pm ..... IV. ROUNDTABLE FORUM
Thoughts, Perspectives and Predictions: Future Trends And Direction Of Established and Emerging Industry Clusters In Oregon And Washington County

2:15 pm – 2:30 pm ..... BREAK

2:30 pm – 4:00 pm ..... V. PANEL #3
Defining Industrial Development Concepts, Opportunities & Strategies For The Evergreen And Helvetia Areas

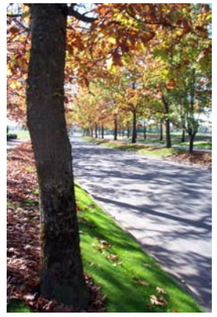
4:00 pm – 4:15 pm ..... VI. Wrap-up
Mayor Tom Hughes

Session details on reverse



II. PANEL #1: National Trends and Local Growth In Established And Emerging Traded Sector Industry Clusters

What are the national trends in the following established and emerging traded sector industry clusters? How may these trends impact Oregon, Washington County and Hillsboro? Each panelist will be asked their views about these trends and best recruitment practices, economic and locational strengths and weaknesses, and future growth potential for the following established and potentially emerging traded sector industry clusters:



- High Technology (including software, silicon/ semiconductors, open display technology & systems, electronic and computer equipment, material suppliers, information and design services, communication products)
- Nanotechnology
- Environmental Technology
- Bio-medical Research & Devices
- Nano-science and Micro-technology
- Distribution & Logistics

Panelists (facilitated by **Larry Pederson -** Hillsboro Economic Development**):**

- **Joe Cortright**, - Impresa, Inc.
- **Roy Williams** - Oklahoma Chamber of Commerce
- **Bo Carson -** North Carolina Research Triangle
- **Carol Coletta** - CEOs for Cities Chicago

Discussion Topics:

- What factors and conditions contribute to successful as well as poor economic performance of these clusters? Which cities or regions outside Oregon would Hillsboro have to compete with to attract businesses in these clusters, and how can Hillsboro distinguish itself as a desirable location for these businesses?
- Which regions around the country serve as good models for Hillsboro for a strategy to grow and expand its existing and nascent industry clusters?
- Among these established or emerging industry clusters what is the "Next Big Thing"? Which of the following "community ingredients" must be in place to attract each?
    - Adequate, accessible, skilled work force,
    - Research/educational facilities,
    - Investment capital/financing,
    - Available and suitable land and land prices,
    - Housing (executive and worker),
    - Community "quality of life" factors
    - Competitive business taxation policies,
    - Manageable public land use development policies and regulations,
    - Public / private partnerships,
    - Other variables/factors.
- How have these clusters matured or evolved in other regions? For each industry cluster, what conditions or ingredients are needed to "upgrade" the industry cluster and maximize its growth potential? At what stage of maturity is Hillsboro in these clusters?

III. PANEL #2: Industrial Start-Ups, Incubators And Spin-Offs - Potential Traded Sector Growth Segments In Washington County

Oregon's high tech industry expanded in large part due to the many spin-offs and related businesses that grew out of a handful of major companies. Recognizing this phenomenon, this panel will discuss how Hillsboro can best lay the foundation for continued growth of startups, spin-offs, and expansions arising from its targeted industry clusters.

Panelists (facilitated by **Larry Pederson,** Hillsboro Economic Development**):**

- **Bob Repine** – OECDD
- **Allen Ally** - Governor's Economic Advisor, Chair, Pixelworks, Inc.*
- **Bo Carson -** North Carolina Research Triangle
- **Daniel J. Sweeney -** Chief Operating Office, MathStar (Hillsboro start-up company)
- **Joe Cortright** - Impresa, Inc.
- **Linda Westin -** Oregon Entreprenuers Forum

Discussion Topics:

- What are the defining features that distinguish business "start ups," "spin-offs" and "incubators"? Do these emerging business types have distinctive and common business development needs and requirements? What are they, particularly those relating to land use and development?
- What factors, conditions or demands need to exist within any of the established industry clusters covered in Panel #1 to spur the formation of new business start-ups, spin-offs and incubators in that cluster?
- What role do smaller businesses (i.e. start-ups, spin-offs and incubators) play in maintaining the economic health and viability of established industry clusters? What state, regional and local conditions, policies, and practices must be in place to increase competitiveness in recruiting and nurturing new business start-ups, spin-offs and incubators in each of the established and emerging industry clusters covered in the Panel #1 Session?
- Is Washington County today a good location and/or environment for emerging new businesses? How well do conditions in the state, region, and county, including local development and recruitment policies and practices, compete with other parts of the country identified during Panel #1 discussions?

IV. ROUNDTABLE FORUM: Thoughts, Perspectives and Predictions: Future Trends And Direction Of Established and Emerging Industry Clusters In Oregon And Washington County

Roundtable Participants (facilitated by **Larry Pederson,** Hillsboro Economic Development**):**

- **Mayor Tom Hughes** and **Metro Councilor Kathryn Harrington** Co-host, facilitate & moderate Roundtable Discussion.
- **Carol Coletta -** CEOs for Cities
  Ten (10) Trends in Ten Minutes: A quick overview of industry/business trends taking place in some U.S. cities and communities.
- **Wally Van Valkenberg** - Stoel Rives LLP
  What do the Oregon Innovation Plan, Oregon Inc. and the Innovation Council envision regarding the expansion or growth of emerging industry clusters in Oregon and Washington County such as Bio-medical research and devices, Nano-science and Micro-technology?
- **Jill Eiland** - Government Affairs, Intel Inc.
  From the perspective of its industry anchor and flagship, what things can the Oregon, and especially Washington County, governments do to help "significantly upgrade" the high technology cluster and spur industry innovation as recommended by Harvard Professor Dr. Michael Porter at the 2007 Oregon Business Summit?
- **Barry Starkman or Todd Kaufman**, Genentech, Inc. *
  Does Oregon, and particularly Washington County, have enough of the following eight (8) ingredients experts say are needed to build the "critical mass" necessary to cultivate and nurture a strong and unique bio-technology/ bio-medical industry cluster in Washington County (and Oregon): 1) engaged universities with active leadership, 2) entrepreneurial cultures with intensive networking across sectors and industries, 3) access to, or available investment capital, to cover all stages of the bio-tech business cycle, 4) discretionary public and/or private research and development funding, 5) a sufficient workforce and available labor pool, 6) access to specialized facilities and equipment, 7) supportive business, tax and regulatory policies, and 8) patience and long-term perspective?

V. PANEL #3: Defining Industrial Development Concepts, Opportunities & Strategies For The Evergreen And Helvetia Areas

The Evergreen/Helvetia Concept Plan Development Panel will "drill-down" into the information, insights and various conclusions drawn from preceding Panels and Roundtable discussions. Panelists will explore growth possibilities within the Evergreen and Helvetia Areas for businesses within the established and emerging traded sector industry clusters covered in preceding Panel Sessions. Panelists will also be asked how to capitalize upon development opportunities and remove development constraints presented by current public policies and existing conditions specific to each area. Participants will be invited to participate in the discussion.

This interactive work session will be led by the Development Panel with members of the audience.

Panelists:

- **Dick Sheehy** - CH2M/IDC Architects. (Panel moderator)
- **Pam Baker** – Colliers International
- **David Leland** – Leland Consulting
- **Larry Pederson** – City of Hillsboro Economic Development
- **Roy Williams** - Oklahoma Chamber of Commerce
- **Wink Brooks -** Planning Director, City of Hillsboro

Discussion Topics:

- What kinds of industrial businesses and activities should be the primary focus of land use/development concepts developed for the Evergreen & Helvetia Industrial Concept Plans planning process?
- Describe development opportunities and constraints in the two areas that will inform the formation of industrial development concepts for each area. Specifically, are there regulatory issues that may positively or negatively impact the concept planning process? Suggest measures that should be taken to capitalize upon identified opportunities and remove constraints.
- Identify the "community ingredients" discussed in the first panel that will most shape the concept plans for Evergreen & Helvetia.
- Discuss the public infrastructure requirements that need to be addressed in the concept planning process.
- Discuss the "residential element" of the concept plans (i.e. how to address existing rural residential enclaves within both areas as they convert to industrial use).
- Discuss the regulatory component of the concept planning process (i.e. provide initial guidance on how the concept plans should be translated into City Comprehensive Plan and Zoning Ordinance requirements).

* To be confirmed

CITY OF HILLSBORO

February 15, 2007

For nearly two decades a "Hillsboro Industrial Land Sanctuary" (about 1600 acres) has been the home to Intel and other semiconductor and electronic businesses within Oregon's "Silicon Forest". Recently, Metro added about a thousand rural acres to its UGB for Industrial use next to that sanctuary within the Shute, Evergreen and Helvetia Areas. The City of Hillsboro must now prepare and adopt industrial development concept plans for these recent land additions to Oregon's high tech cluster.

A first step in that planning process is outlined in the enclosed *Evergreen/Helvetia Economic Trends Workshop* Program scheduled for Monday, February 26th at the Hillsboro Civic Center in downtown Hillsboro. Its objective is to identify potential types of businesses that are part of established, as well as emerging, Oregon industry clusters that might suitably locate and succeed within any of the three planning Areas. The *Workshop* program questions will cover various topics about the specific Oregon clusters.

We invite you (and a select list of 60-70 other potential public and business sector "stakeholders" in this Project) to attend and participate in this one-day *Workshop*. We think the business of your company or agency will relate to, or be impacted in some way, by new industrial development in any of the three areas. We hope the *Workshop* will provide a glimpse of what's happening within and outside Oregon in our established and emerging technology-related industry clusters and growth opportunities for particular types of new and existing businesses within each cluster.

As potential "stakeholders" in some of the issues to be covered in *Workshop* discussions, we will encourage invitees to chime in on panel discussions that are relevant to their particular business or public responsibilities. *Workshop* findings, conclusions and ideas will inform the formation of planned industrial land uses and design concepts for a combined Evergreen-Shute Industrial Area and for the Helvetia Industrial Area.

Please join us if you can. A light lunch will be provided for panelists and invitees who confirm their attendance by Thursday, February 22nd by contacting Sheril Brown at 503-681-6139 or sherilb@ci.hillsboro.or.us.

Please contact Patrick A. Ribellia, the manager for this City project, at 503-681-6481 or patrickr@ci.hillsboro.or.us if you have any questions or need additional information about the Workshop. I truly hope you can join us. Thank you for considering this invitation.

Sincerely,

CITY OF HILLSBORO

Tom Hughes

Tom Hughes
Mayor

Enclosure: *Economic Trends Workshop Brochure*

150 East Main Street, Hillsboro, Oregon 97123 - 503/681-6219 - FAX 503/681-6232

EVERGREEN & HELVETIA
Project Memorandum

TO: Evergreen and Helvetia Project Team

FROM: Chris Zahas, Leland Consulting Group
Dave Leland, Leland Consulting Group
Tina Mosca, Leland Consulting Group

DATE: 20 March 2007

SUBJECT: Observations: February 26th Economic Trends Workshop
Project Number: 4692

On Monday February 26, 2007, the City of Hillsboro hosted an Economic Trends Workshop at the Hillsboro Civic Center Auditorium. The Workshop consisted of three panels and a roundtable forum, where experts from the Portland metro region and around the country discussed economic and industry trends from both a local and national perspective. In addition to exploring the economic trends and emerging industry clusters in Washington County, the workshop was intended to inform the upcoming concept planning of the Evergreen and Helvetia Industrial Areas, which comprise nearly 1,000 acres inside the Urban Growth Boundary.

This memo summarizes many of the key findings and themes from the workshop, organized by broad topic categories.

Workforce

On the issue of workforce, two principal themes emerged:

- Baby boomers are retiring and cities must create strategies to bridge the workforce gap resulting from the significant loss of seasoned, educated professionals.
- Metropolitan areas that want to be leaders in the New Economy must create a place that is attractive to young, creative talent.

Several panelists suggested that the biggest workforce problem that metropolitan areas will contend with is the brain drain resulting from the retirement of the baby boom generation. Although many "retired" boomers will continue to participate in the workforce in an alternative capacity (as consultants, founders of business spin-offs, members of corporation board of directors, etc.), cities must find a way to fill the significant gap resulting from the departure of this experienced, educated demographic from the workforce.

Joe Cortright, principal of Impresa, Inc., discussed how metropolitan areas faced with a shortage of skilled, educated workers can remain competitive in the New Economy. He asserted that today's economy is driven by ideas and creativity whereas, in the past, local and regional economies were largely infrastructure dependent and resource-driven. In a nutshell, Cortright's research suggests: "Ideas drive economies; Talent creates ideas; and Quality of life attracts talent." Creative talent will locate to metropolitan areas such as Portland, which offers a high degree of livability and amenities that are attractive to the young, college-educated demographic. According to Cortright's research, Portland ranks high amongst cities that have a high and disproportionately strong attraction to the class of young entrepreneurs and scientists needed to drive the technology industry. Between 1990 and 2000, the Portland Metropolitan Area's 25- to 35-year-old population increased by 30 percent.

Carol Coletta, CEO of CEOs for Cities, summarized the major demographic, lifestyle and choice trends occurring in the United States with regard to the technology industries. She echoed many of the concepts introduced by Joe Cortright, suggesting that cities that want to maintain and build strong economies must create a place that is attractive to young talent, foster connections among individuals and communities as well as businesses and industry, develop competitive strategies built on distinctiveness and differences in consumer behavior and attitudes, and focus on innovation and the ability to take advantage of unexpected opportunities.

Site Planning and Economic Development Strategy

One of the central themes echoed by panelists throughout the day was the importance of maintaining a flexible approach to site planning and development activities. Given the dynamic nature of industry and the global marketplace, industry representatives and economic development professionals, including Genentech's Barry Starkman, the North Carolina Research Triangle's Bo Carson, and Roy Williams of the Oklahoma Chamber of Commerce, emphasized the importance of creating an economic development strategy that is adaptable and responsive to change. By focusing too narrowly, some cities unintentionally eliminate market opportunities. Engaging existing players (e.g., Intel and Genentech) in the site planning process will help ensure that their needs are not jeopardized.

Speaking to the potential demand for the Evergreen and Helvetia Areas, Pam Baker of Colliers International cautioned that there are over 400 acres of land available in the marketplace today that the Evergreen and Helvetia sites would compete with. Therefore, making the sites "ready" for development by providing adequate infrastructure and utilities, establishing an understanding between the City and land owners about the sites' potential, and ensuring that land owners are willing to sell will help improve the marketability of the site.

Among the key factors that influenced both MathStar's and Genentech's decision to locate in Hillsboro is Oregon's single sales factor for corporate excise/income taxes,

which is based 100 percent on sales within the state versus the amount of corporate sales, payroll, and property within the state.[1] When asked how the City should approach planning for the Evergreen and Helvetia Areas, Barry advised that the City maintain a "campus-type environment" similar to Intel's Ronler Acres campus. Other industry experts suggested that Hillsboro's strong high-tech workforce, affordable housing and quality of life influenced their location decision. Accordingly, as it plans for the future development of the Evergreen Helvetia Areas, the City must take steps to sustain the quality of life that currently attracts employers and workers to the area.

Dave Leland pointed out that negotiating the purchase of properties in the Evergreen and Helvetia Areas will pose a significant challenge to the City. Given current ownership patterns, the City will need to facilitate deals with multiple, fragmented landowners. At this time, neither the City nor Metro nor any other public agencies have the funds to acquire the land. In addition to steep land acquisition costs, the cost of extending infrastructure and utilities to the sites and constructing off-site improvements will be significant. In light of these fiscal and policy challenges, the City may want to consider attracting a major developer into the property as early as possible to acquire it, assist with the development plan, and become the primary implementer of the project.

Target Industries

Genentech's recent purchase of a 100-acre site adjacent to the Evergreen site, where it will construct a new facility that will employ as many as 300 workers by 2009, has increased dialogue around the Evergreen and Helvetia sites' potential to attract biosciences companies. Despite local policymakers and public leaders cautious optimism about Hillsboro's prospects of capturing a piece of the biosciences industry, Joe Cortright advised that Portland is unlikely to attract biosciences employers. Compared to Boston, Philadelphia, the North Carolina Research Triangle area, and a handful of other cities and regions with existing biotech hubs, Portland does not have the critical mass of higher education research institutions and currently receives only a fraction of federal funding available for biosciences research.

Joe suggested that Hillsboro and the Portland region would be better off focusing economic planning efforts on the emerging Sustainable/Environmental Industries cluster, including businesses such as SolarWorld. Coincidentally, during the same week that the Economic Trends Workshop was convened, SolarWorld announced its plans to invest nearly $400 million to expand and develop its new facility, which it recently acquired from the Komatsu Group, and shift its solar crystallization activities from Vancouver to Hillsboro.

[1] *According to a fact sheet on the cost of doing business in Oregon published by the Oregon Economic and Community Development Department, the single sales factor is very advantageous to new/expanding manufacturers and companies that export value-added goods or services outside of Oregon to customers where the corporation is otherwise subject to income taxation.*

Economic Development from a Regional Perspective

Moving forward, partnerships and collaboration will be essential to the success of economic development efforts undertaken by the City of Hillsboro and the Portland Metro region. Following a regional, collaborative approach to the delivery of services versus an approach where local jurisdictions compete against each other will help strengthen the economic position of metropolitan areas. Cities and regions must determine their competitive advantages and develop a "regional mindset" where industry, government and academia collaborate and maintain a high level of responsiveness and flexibility. Pursuing economic development strategies that are too rigid or narrow in scope makes it difficult to adapt to change.

Appendix F

Evergreen Development Programs

Evergreen & Helvetia
Concept Planning

MEMORANDUM

Date:	October 15, 2007
To:	Evergreen / Helvetia Concept Plans Project Team
From:	Chris Zahas, Leland Consulting Group
Re:	Concept Plans Development Program

Introduction

A development program is a narrative and quantitative description of how a property or area should be developed. The programs for Evergreen and Helvetia serve as guides for the consultant team, made up of land planners, architects, traffic engineers, and others, who have responsibility for translating this narrative program into a physical land use, transportation, utility, and amenities plan. The development program describes an overall identity for the project areas including image and attributes to be implemented, how the properties best position to capture the optimum market opportunity, the "brand" for the area, and how the plan unfolds over time. The overall objective is to capture target markets, maintain economically viable conditions, and strengthen prospects for financial success while addressing Metro's and Hillsboro's goals for job creation and place making. This all creates a positive, long-term identity for the community.

The development programs for Evergreen and Helvetia respond to a series of "Big Ideas" that describe the general type of development that the community desires and that is likely to be achieved. Serving as objectives for the planning effort, these Big Ideas become benchmarks against which concept alternatives can be evaluated.

Big Ideas

The Evergreen and Helvetia planning areas are likely to develop in different ways from one another. The "Big Ideas" listed below largely apply to Evergreen, which will serve as the primary employment district between the two areas. However, we expect that the types of growth envisioned at Evergreen will require supporting industrial services and will generate new businesses that cannot be accommodated within the Evergreen boundaries. Helvetia will be a likely location for these support and spin-off businesses. Therefore, while we expect that the character of Helvetia will be different from Evergreen, the growth of the two districts will be closely synchronized.

The Big Ideas that will drive employment growth in Hillsboro, and Evergreen in particular, are described below:

Category	Users	Land/Building
Industry of Today (what we've already got)	Silicon (Intel, solar, display panels)	Large campuses (200 acres, 100 acres, etc.)
Industry of Tomorrow (what Hillsboro is beginning to see)	Medical, pharma, bio (Genentech, OHSU), sustainable energy	Medium campuses (75 acres)
Industry of the Future (what Hillsboro could get someday)	Medical (biochips, merging of industries of today/tomorrow)	Office/flex/R&D space, medium to large single-user campuses
Other components		
Services to support all three paradigms	Software companies, suppliers	Leased space in industrial parks or 10-20 acre single-user sites
Commercial service center	Hotel, bank, food	5 to 10 acres

The ability for Evergreen and Helvetia to actually capture the above industries is driven by Hillsboro's strengths, which have helped it succeed in the past and will continue to attract business in the future. Key among these strengths are:

1. Oregon tax structure and incentives – The Strategic Investment Program, Enterprise Zones, and Oregon's single sales factor for taxes are big incentives and have helped keep and attract companies such as Intel and Genentech.
2. Skilled workforce in silicon and technology – The pool of skilled workers in the technology and silicon industries makes it an attractive location for new industries such as solar that require similar skill sets.
3. Clusters – Most industries flourish when they are near their competitors and related industries. Oregon's high technology clusters keep it attractive for additional growth.
4. Power – Relatively cheap and reliable power from PGE and the BPA is extremely important for many technology manufacturing industries and is something that not all regions in the country can offer.
5. Close to California & Seattle – Hillsboro is within the same time zone as Seattle and California, which makes it convenient for companies whose headquarters are in those locations. Further, Hillsboro is less than two hours by plane from either location, making it even more attractive for expansion.
6. Schedule – Hillsboro has a long track record, probably the strongest in the state, of delivering land and entitlements on short timelines.
7. Quality of life – Oregon's reputed quality of life consistently ranks as a key factor for both employee and business location.

Assumptions

The development programs include a variety of assumptions about the market, the landscape, and implementation:

- The development horizon for the program is the year 2030. This is a different timeline than some other Hillsboro planning documents, including the June 2007 draft housing demand analysis.
- Considerable "land banking" is expected, particularly for large campus users. This has the effect of reducing job density in early years, as land is taken off the market but is left vacant in anticipation of future growth by the property owner.
- Industrial development loses relatively less land to infrastructure and circulation than other land uses due to the larger sizes of parcels. Programs with greater levels of parcelization have lower efficiency rates.
- The floor area ratios (FARs) range from 0.20 to 0.24 for industrial uses and go up to 0.30 for the commercial service centers. Employment density averages two employees per 1,000 square feet of building, with lower densities on distribution parcels (Helvetia only) and slightly higher densities on developer parcels and commercial service centers.[1]
- Job densities will be higher at Evergreen than at Helvetia. More distribution and lower intensity employment will take place at Helvetia.
- Campus development in Hillsboro (e.g., Intel) actually has fairly low employment densities. For example, Intel's Ronler Acres has an average employment density of only 13.8 employees per acre (partially due to land banking for future growth).
- Evergreen is expected to develop at the east end of the study area first, expanding westward over time.
- The development concepts assume eventual urbanization (either as employment, residential, or a town center) to the north of Evergreen, between Waible Gulch and Highway 26.

Development Types

The programs for Evergreen and Helvetia include combinations of development types and parcel sizes. The development types (not all of which appear in each program) are described below:

Sustainable, Environmental and Energy Businesses (50 to 100+ acres): These sites provide locations for major corporate and manufacturing campuses for global companies in the sustainable, environmental, and energy industries. The variety of sizes allows for a range of product development (vertically integrated) as well as supporting corporate office and R&D functions. Potential industries could include those related to solar and silicon manufacturing, wind energy, high technology, and biotechnology.

Biotech Campus (35 to 50+ acres): A biotech campus would provide a medium-sized parcel for a business that would be directly related to Hillsboro's emerging biotech industry.

Industry Suppliers (10 to 20+ acres): Industry supplier parcels provide sites for businesses that provide materials and services in support of the larger industrial users in Evergreen and

[1] FAR of 0.20 and employment density of two employees per 1,000 square feet of building gathered from Metro's *1999 Employment Lands Study*, using averages for the Hillsboro employment subsector. Some of these densities were increased in this analysis to account for a maturing of the Hillsboro market.

elsewhere in Hillsboro. These could include both manufacturers as well as distributors of products that are used in the manufacture of products at other companies. Potential users could include suppliers of test equipment, uniforms and linens, lab supplies, sub-components and circuit boards, and packaging materials.

Industrial Incubators, Start-ups, and Spin-offs Business Parks (12 to 40 acres): These sites would be developed by commercial developers and leased in multi-tenant business and industrial parks. Leased park space is needed for smaller and emerging companies that do not have the capital or desire to be owners or for those that are in a growth mode and want the flexibility to move in the future. Industrial business parks typically have a unifying brand and image, which is controlled by a set of CC&Rs. Some industrial business parks may have a focus on raw industrial space, while others may be more focused on flex buildings that combine office and industrial space. Based on interviews with developers, sites of between 20 and 40 acres are preferred.

Industry Research and Development (R&D) Parks (20 to 30 acres): Similar to the above, industry R&D parks provide flexible development space (either as a single user or multi-tenant) for supporting businesses and spin-offs from Hillsboro's core and emerging technology industries.

Distribution Businesses (10 to 70 acres): Helvetia's location near Highway 26 may make it attractive to warehouse/distribution businesses that have a focus on Washington County. Distributors that have a wider focus will likely choose sites along I-5 instead. Any distributor parcels in Helvetia could easily be reclassified as supplier or developer parcels since the parcel size is the same.

Support Commercial Services (5 to 10 acres): Support commercial services are a key component of most employment centers. A commercial service center provides needed daily services for employees (food, banking, convenience goods) and is an amenity that attracts employers to the area. By locating the service center where it will be within walking distance to many employees (yet remaining visible to drive-by traffic), it can also reduce midday traffic trips.

Evergreen Development Programs

The development program for the Evergreen area will provide large parcels to accommodate campuses for Fortune 500 companies and global leaders in cutting-edge industries such as high technology, sustainable and environmental energy, biotech, biomedical, and even industries that have not been invented yet. Supporting these anchor uses at Evergreen will be a range of development sites and smaller campuses to provide space for flex uses, research and development companies, incubator businesses, suppliers, spin-off companies, and other businesses that have a direct connection to the large campus users at Evergreen and in the surrounding area. In order to provide needed amenities for businesses and employees, as well as to reduce trips outside the area, one or two small commercial service centers will also be provided to accommodate uses such as hotels, banks, restaurants, and limited retail.

A unique development program has been prepared for each of the three Alternative Concepts for the Evergreen Concept Plan:

Evergreen Concept A

Evergreen Concept A	Area (acres)	Building Area (s.f.)	FAR	Job Density (empl. per 1,000 s.f.)	Jobs	Jobs per Net Acre
Gross area	534.0					
less infrastructure/circulation (22%)	109.0					
Net development area	425.0					
First Sustainable Energy & Environmental Business	200.0	1,742,400	0.20	2.0	3,485	
Second Sustainable Energy & Environmental Business	100.0	871,200	0.20	2.0	1,742	
Third Sustainable Energy & Environmental Business	65.0	566,280	0.20	2.0	1,133	
Industrial Business Park	40.0	418,176	0.24	2.5	1,045	
Commercial Node (2@ 10 each)	20.0	261,360	0.30	2.5	653	
TOTAL	425.0	3,859,416			8,059	19.0

Evergreen Concept B-1

Item	Area (acres)	Building Area (s.f.)	FAR	Job Density (empl. per 1,000 s.f.)	Jobs	Jobs per Net Acre
Gross area	534.0					
less infrastructure/circulation (16%)	84.0					
Net development area	450.0					
First Sustainable Energy & Environmental Business	70.0	609,840	0.20	2.0	1,220	
Second Sustainable Energy & Environmental Business	45.0	392,040	0.20	2.0	784	
Biotech Campus	105.0	914,760	0.20	2.0	1,830	
Industry Suppliers 1	30.0	274,428	0.21	2.2	604	
Industry Suppliers 2	75.0	686,070	0.21	2.2	1,509	
Industrial Business Park 1	28.0	292,723	0.24	2.5	732	
Industrial Business Park 2	25.0	261,360	0.24	2.5	653	
Industrial Business Park 3	12.0	125,453	0.24	2.5	314	
Industry R & D Parks	40.0	418,176	0.24	2.5	1,045	
Commercial Node (2@ 10 each)	20.0	261,360	0.30	2.5	653	
TOTAL	450.0	4,236,210			9,344	20.8

Evergreen Concept B-2

Item	Area (acres)	Building Area (s.f.)	FAR	Job Density (empl. per 1,000 s.f.)	Jobs	Jobs per Net Acre
Gross area	534.0					
less infrastructure/circulation (18%)	94.0					
Net development area	440.0					
Sustainable Energy & Environmental Business	110.0	958,320	0.20	2.0	1,917	
Biotech Campus	105.0	914,760	0.20	2.0	1,830	
Industry Suppliers	40.0	365,904	0.21	2.2	805	
Industrial Business Park 1	60.0	627,264	0.24	2.5	1,568	
Industrial Business Park 2	40.0	418,176	0.24	2.5	1,045	
Industrial Business Park 3	28.0	292,723	0.24	2.5	732	
Industrial Business Park 4	12.0	125,453	0.24	2.5	314	
Industry R & D Parks	25.0	261,360	0.24	2.5	653	
Commercial Node (2@ 10 each)	20.0	261,360	0.30	2.5	653	
TOTAL	440.0	4,225,320			9,517	21.6

Helvetia Development Program

Unlike Evergreen, Helvetia is expected to be home to more local and regional companies. However, these businesses are expected to provide services and supplies that serve industry at Evergreen in addition to the greater Portland area. For that reason, development at Helvetia is expected to take place at the same time as Evergreen. Helvetia has relatively few options for internal circulation, thus the greatest variable to a development program is the size of parcels. Since the circulation will be relatively fixed, and parcel lines can be moved relatively easily, only a single concept plan was developed for Helvetia. Within that concept, a range of potential use mixes is possible, as expressed in the following table.

Helvetia Concept A

Item	Area (acres)	Building Area (s.f.)	FAR	Job Density (empl. per 1,000 s.f.)	Jobs	Jobs per Net Acre
Gross area	249.0					
less BPA easement	40.0					
less infrastructure/circulation (21%)	52.0					
Net development area	157.0					
Distribution Business 1	70.0	731,808	0.24	0.5	366	5
Distribution Business 2	17.0	177,725	0.24	0.5	89	5
Distribution Business 3	10.0	104,544	0.24	0.5	52	5
Industrial Business Park (2 @ 30 ac.)	60.0	627,264	0.24	2.5	1,568	26
TOTAL	157.0	1,641,341			2,075	13

Appendix G

Transportation Forecasting Documentation

DKS Associates
TRANSPORTATION SOLUTIONS

Memorandum

Draft

TO:	Frank Angelo, Angelo Planning		
FROM:	Carl Springer, P.E., Garth Appanaitis		
DATE:	October 15, 2007		
SUBJECT:	**Helvetia and Evergreen Areas Future Transportation Conditions Analysis**	P/A No.	P07004-000

The future transportation conditions within the Helvetia and Evergreen Concept Plan area were evaluated to identify how well planned infrastructure can serve these areas, and to identify any additional off-site transportation improvements that would be needed to comply with local performance standards. Traffic forecasts were made for the year 2030, consistent with latest available tools, and an evaluation of traffic operation conditions was done for two cases:

- *2030 without additional development within the two concept plan areas*
- *2030 with full development of the two plan areas, based on the latest land use and site plan concepts*

The 2030 land use and travel forecasts include 10 more years of growth than was previously considered in the most recent Transportation System Plans adopted by Washington County and the City of Hillsboro. Most importantly, these additional 10 years of growth, per the current comprehensive plans, will likely require additional improvements regardless of any development in the concept plan areas. System improvements were divided into two groups, those required to support background development up to 2030, and the added increment of capacity needed to serve the Concept Plan areas. Planning level cost estimates were prepared for transportation improvements identified in this analysis.

Traffic Forecasting

Travel forecasts were prepared using the land use and transportation data contained in the Metro 2030 model with Financially Constrained network improvements. There are many on-going planning studies within Washington County area that could influence the outcome of this study. The land use assumptions within the Evergreen and Helvetia Concept Plan areas were determined by the project team, using employment densities from similar developments in the county. Land use assumptions for the two scenarios are listed in Table 1 for each of these areas.

Table 1: 2030 Land Use Assumptions

Development Area	Regional Traffic Analysis Zones	2030 Without New Development in Concept Plan Areas	2030 With Full Development in Concept Plan Areas
Evergreen Road Concept Plan	1237, 1246, 1249	73 households 1673 employees	0 households 9,268 employees
Helvetia Road Concept Plan	1240	80 households 993 employees	0 households 3,426 employees
Source: Leland Consulting Employment levels within the Concept Plan areas assumed 17.3 employees per acre and 21.3 employees per acres, as recommended by Leland Consulting,			

Other pending growth areas that may influence transportation conditions within this study area include South Hillsboro, Downtown Hillsboro, North Bethany, and the Amberglen area. Metro's current baseline land use allocations for these areas were used in this study without any modifications. No changes were made for two reasons:

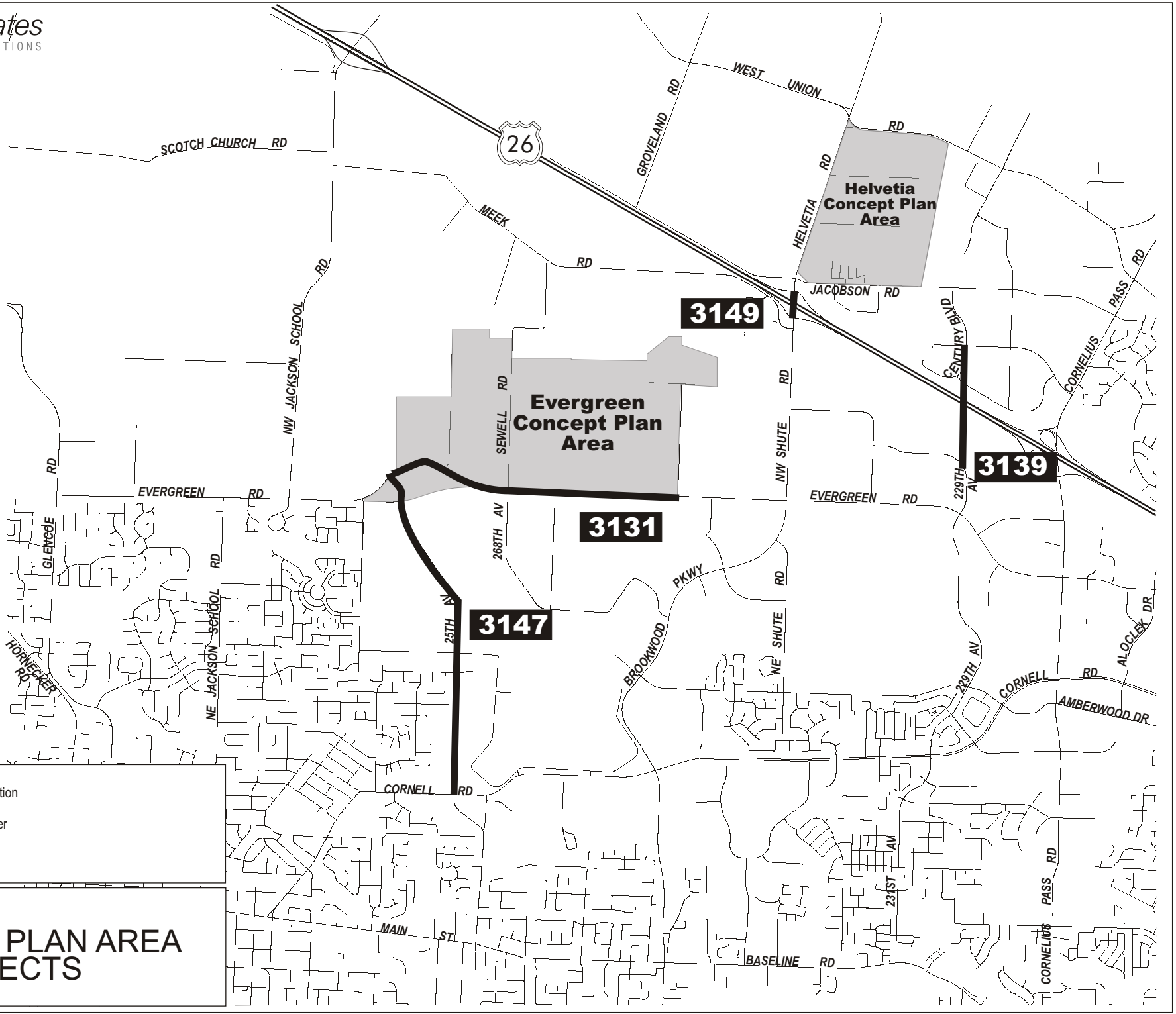
1) the Transportation Planning Rule, section 060, requires that a pending Comprehensive Plan change consider only existing Comprehensive Plan uses, aside from the subject site, and is not required to also consider other amendments that are under study but have not been formally adopted.

2) Our review of the other four development areas within the 2030 land use allocations made in the Metro forecasts showed that all but one of them is roughly similar to the development levels currently under study.

Specifically, North Bethany already has about 5,000 households assumed, South Hillsboro has about 5,500 households and downtown Hillsboro has about same units and employment levels, just re-arranged in different sectors of the downtown. Only the Amberglen area seemed to be significantly underestimated, relative to current plans being considered.

DKS Associates
TRANSPORTATION SOLUTIONS

NO SCALE



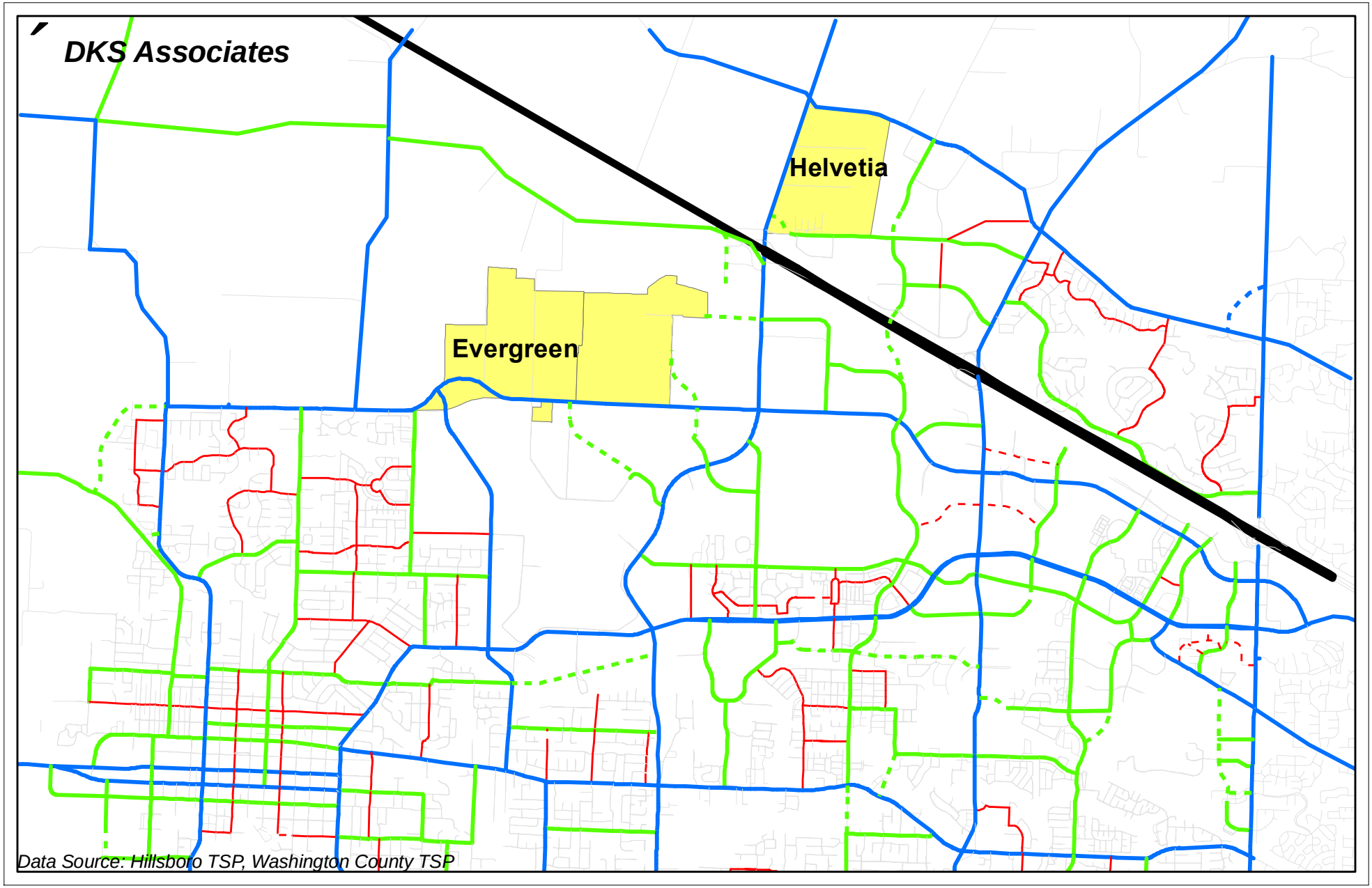
LEGEND

- RTP Project Location

XX - RTP Project Number

Figure 1

CONCEPT PLAN AREA RTP PROJECTS



LEGEND

Functional Class

- Freeway
- Arterial
- Future Arterial
- Collector
- Future Collector
- Neighborhood Route
- Future Neighborhood Route
- Local
- Project Area

0 4,000 8,000 Feet

SCALE: 1" = 4000'

FIGURE 2
Roadway Functional Class

Transportation Network Improvements

The projects assumed to be constructed from the Regional Transportation Plan list by 2030 included those listed in Table 2A below. These projects are referred to as "Financially Constrained", since they have been identified by the responsible lead agency as a priority, and they have been included in the adopted Federal Regional Transportation Plan list, as of 2004.

Table 2A: 2030 Financially Constrained RTP Projects within Study Area

2004 RTP Project No.	Project Location	Description of Improvement	Estimated Construction Cost (2004)
3149	Shute Road / US 26 Interchange	Relocate westbound on-ramp to construct westbound to southbound loop ramp and widen overcrossing to accommodate additional southbound through lane	$29.3 Million*
3131	Evergreen Road 25th Avenue to 253rd Avenue	Widen to five lanes including sidewalks and bike lanes	$4.7 Million
3139	US 26 Overcrossing - Sunset IA NW Bennett Avenue to NW Wagon Way	Construct two-lane new overcrossing with sidewalks and bike lanes to better connect areas north and south of US 26	$6.6 Million
3147	25th Avenue Improvements Cornell Road to Evergreen	Widen street to three lanes with bike lanes	$2.5 Million

** Revised cost based on current RTP update for project 10600. Prior cost estimate was $6.3 million.*

Metro is currently updating this list (see Table 2B, next page). One of the key improvement projects within the study area is the Shute Road interchange at US 26. This project has been expanded to include re-aligned frontage roads on the north side of the highway, and has a new cost estimated at $29 million (2007 dollars). This project is currently on the 100% funded list of the RTP update project list. Figure 1 shows the location of the RTP projects that were included. Figure 2 shows the functional class of facilities in the area.

The Regional Transportation Plan is being updated now, and the list of regional projects in the area has changed since the previous effort. Table 2B lists the project contained in the most current RTP list, which is referred to as 100% funded list of projects. There are three projects of note in Table 2B. The Evergreen Road widening along the project frontage is listed (portions of #10597, 10814) and the Huffman Road extension west of Shute Road (#10821). To further clarify, the list of projects in Table 2B were not necessarily included in the 2030 forecasts used in this analysis, but represent a more current list of projects for the study area.

Table 2B: 2035 Financially Constrained Federal RTP Projects within Study Area

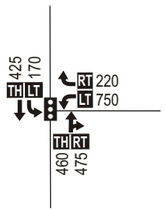
2007 RTP Project No.	Project Location	Extent	Description	Estimated Construction Cost (2007)
10597	Evergreen Improvements	253rd to Sewell	Widen to 5 lanes with bike lanes and sidewalks.	$11,242,000
10600	Hwy26 / Shute Interchange	Interchange	Add westbound to southbound loop ramp, additional northbound through lane and relocate Jacobsen intersection.	$29,272,000
10814	Evergreen Improvements	25th to Sewell	Widen to 5 lanes with bike lanes and sidewalks.	$4,000,000
10818	231st/Century	Baseline to Lois	Bridge and 3 lanes with bike lanes and sidewalks	$26,248,000
10819	231st/Century	Baseline to Dogwood	Widen to 3 lanes with bike lanes and sidewalks	$6,800,000
10821	Huffman	Shute to West UGB/Sewell	Build 3 lane with bike lanes and sidewalks	$9,280,000
10822	253rd	Evergreen to North UGB	Build 3 lane with bike lanes and sidewalks	$6,162,000
10831	Century Blvd.	Bennett to West Union Rd.	Extend 2/3 lane with US 26 Overpass, connect existing segments	$12,920,000
10836	Evergreen Rd.	Glencoe to 25th	Widen to 5 lanes with bike lanes and sidewalks.	$5,440,000
10839	Century Blvd. (234th)	Alexander to South UGB	Extend 3 lane road with bike lanes/sidewalks	$11,636,000

Travel Forecasting Adjustments

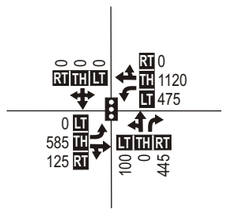
The increment in traffic volume growth between the 2030 models and 2005 base model was applied to existing intersection traffic counts using NCHRP 255 methodology to produce future volume projections for the No Build and Concept Plan scenarios. The resulting volumes for the 2030 PM Peak Hour No Build and 2030 PM Peak Hour Concept Plan scenarios are shown in Figures 3 and 4, respectively.

Traffic forecasts were made for both the Evergreen Road and Helvetia Road concept plans sites concurrently. That is the full development of both sites was assumed for the purposes of this analysis.

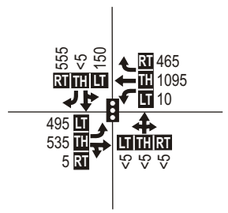
1 Evergreen Rd/Glencoe Rd



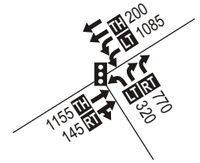
2 Evergreen Rd/NE Jackson School Rd



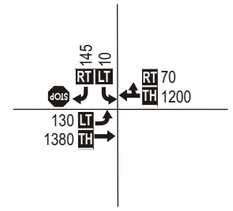
3 Evergreen Rd/NWJackson School Rd



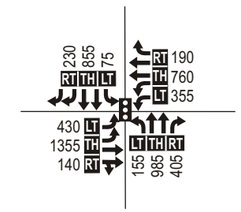
4 Evergreen Rd/NE 25th Av



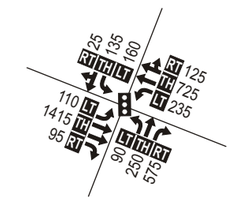
5 Evergreen Rd/Sewell Rd



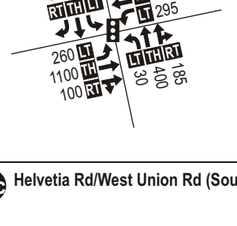
6 Shute Rd/Evergreen Rd



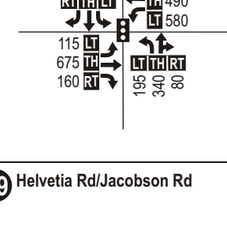
7 Evergreen Pkwy/NW 229th Av



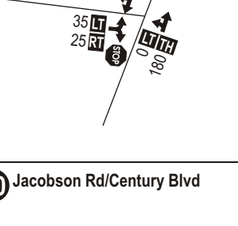
8 Evergreen Pkwy/Cornelius Pass Rd



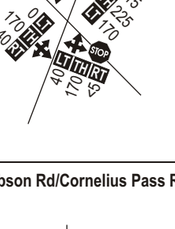
9 Jackson School Rd/ Hwy 26 WB Ramp



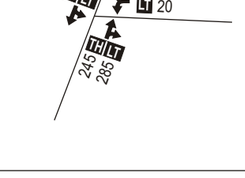
10 Jackson School Rd/ Hwy 26 EB Ramp



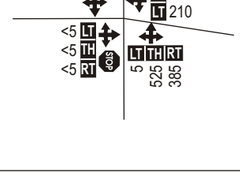
11 Jackson School Rd/Meek Rd



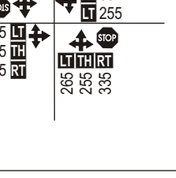
12 Shute Rd/Hwy 26 WB Ramps



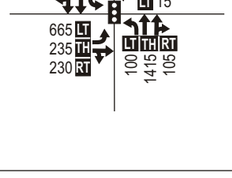
13 Shute Rd/Hwy 26 EB Ramps



14 Shute Rd/Huffman St



15 Brookwood Pkwy/NE Shute Rd

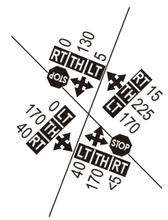


16 Brookwood Pkwy/Cornell Rd

17 Brookwood Pkwy/ Main St-Baseline Rd

18a Helvetia Rd/West Union Rd (North)

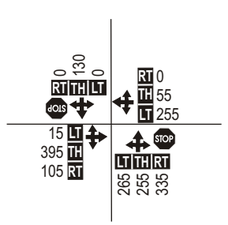
18b Helvetia Rd/West Union Rd



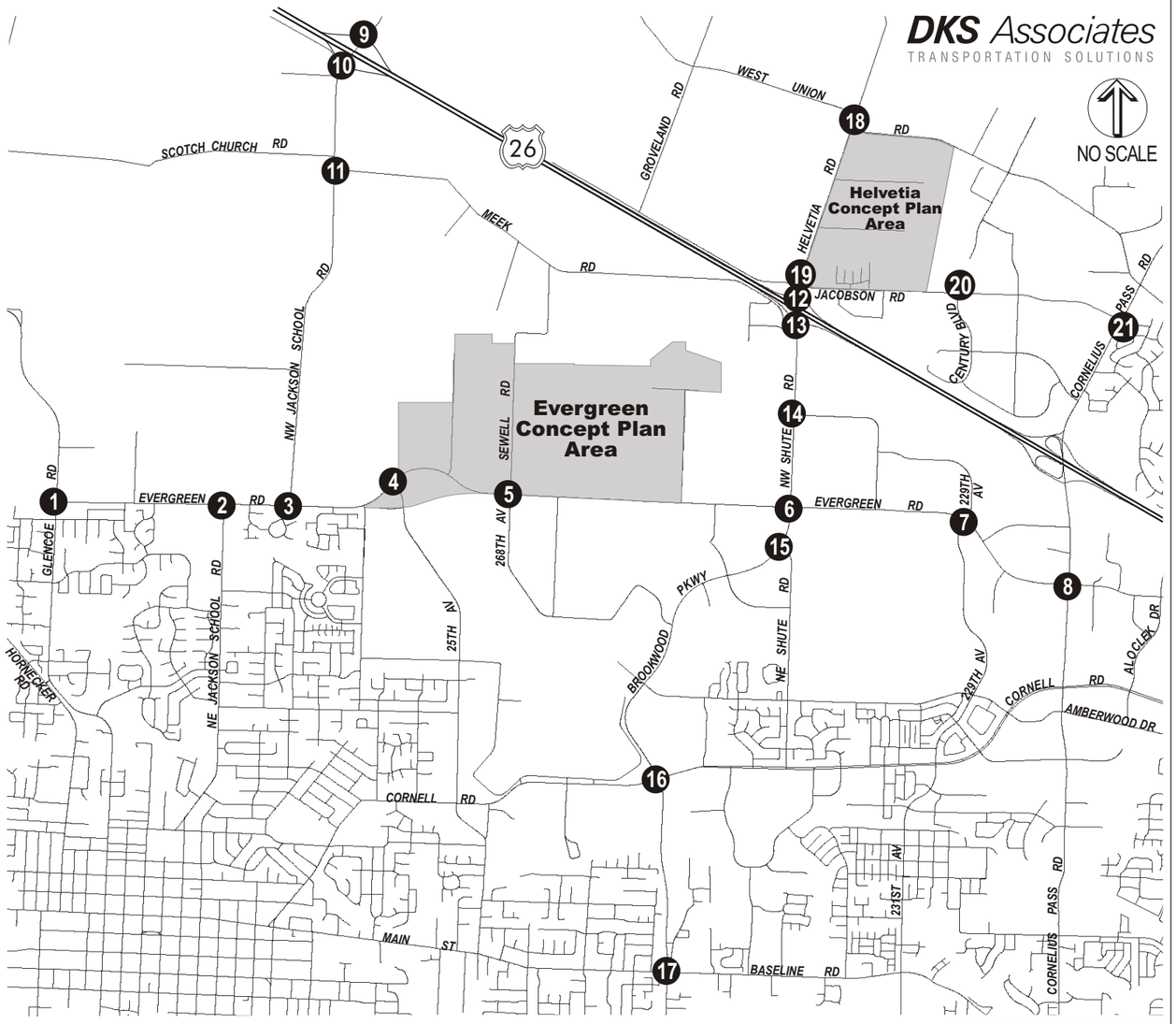
18c Helvetia Rd/West Union Rd (South)

19 Helvetia Rd/Jacobson Rd

20 Jacobson Rd/Century Blvd



21 Jacobson Rd/Cornelius Pass Rd



LEGEND

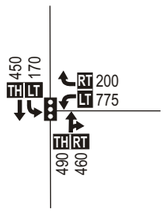
- 0 - Study Intersection & Number
- ← - Lane Configuration
- ## - Peak Hour Traffic Volume
- LT TH RT - Volume Turn Movement (Left•Thru•Right)
- Traffic Signal
- STOP - Stop Sign

Figure 3

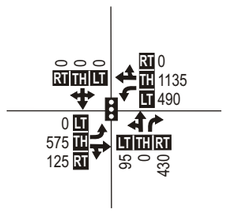
2030 NO BUILD PM PEAK HOUR INTERSECTION VOLUME

Evergreen / Helvetia Concept Plan Area

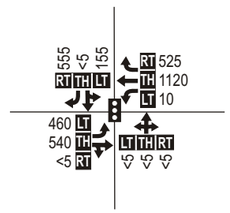
1 Evergreen Rd/Glencoe Rd



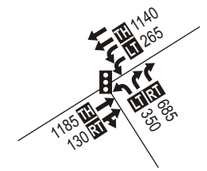
2 Evergreen Rd/NE Jackson School Rd



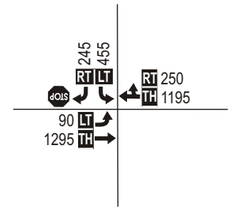
3 Evergreen Rd/NW Jackson School Rd



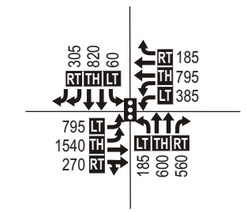
4 Evergreen Rd/NE 25th Av



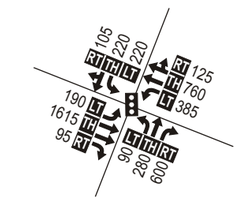
5 Evergreen Rd/Sewell Rd



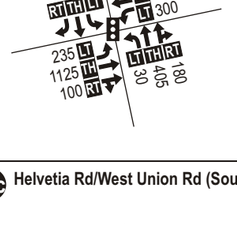
6 Shute Rd/Evergreen Rd



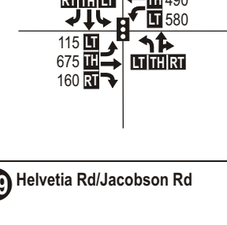
7 Evergreen Pkwy/NW 229th Av



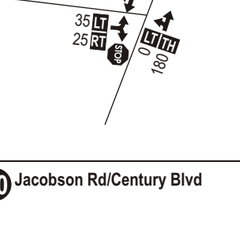
8 Evergreen Pkwy/Cornelius Pass Rd



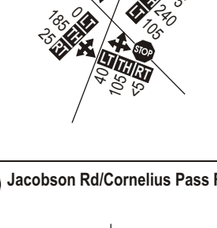
9 Jackson School Rd/ Hwy 26 WB Ramp



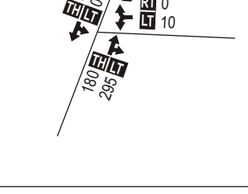
10 Jackson School Rd/ Hwy 26 EB Ramp



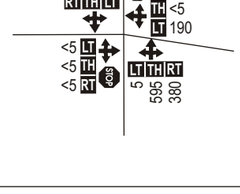
11 Jackson School Rd/Meek Rd



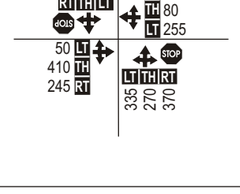
12 Shute Rd/Hwy 26 WB Ramps



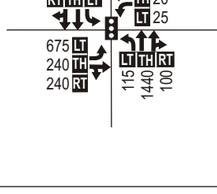
13 Shute Rd/Hwy 26 EB Ramps



14 Shute Rd/Huffman St



15 Brookwood Pkwy/NE Shute Rd



16 Brookwood Pkwy/Cornell Rd

17 Brookwood Pkwy/ Main St-Baseline Rd

18a Helvetia Rd/West Union Rd (North)

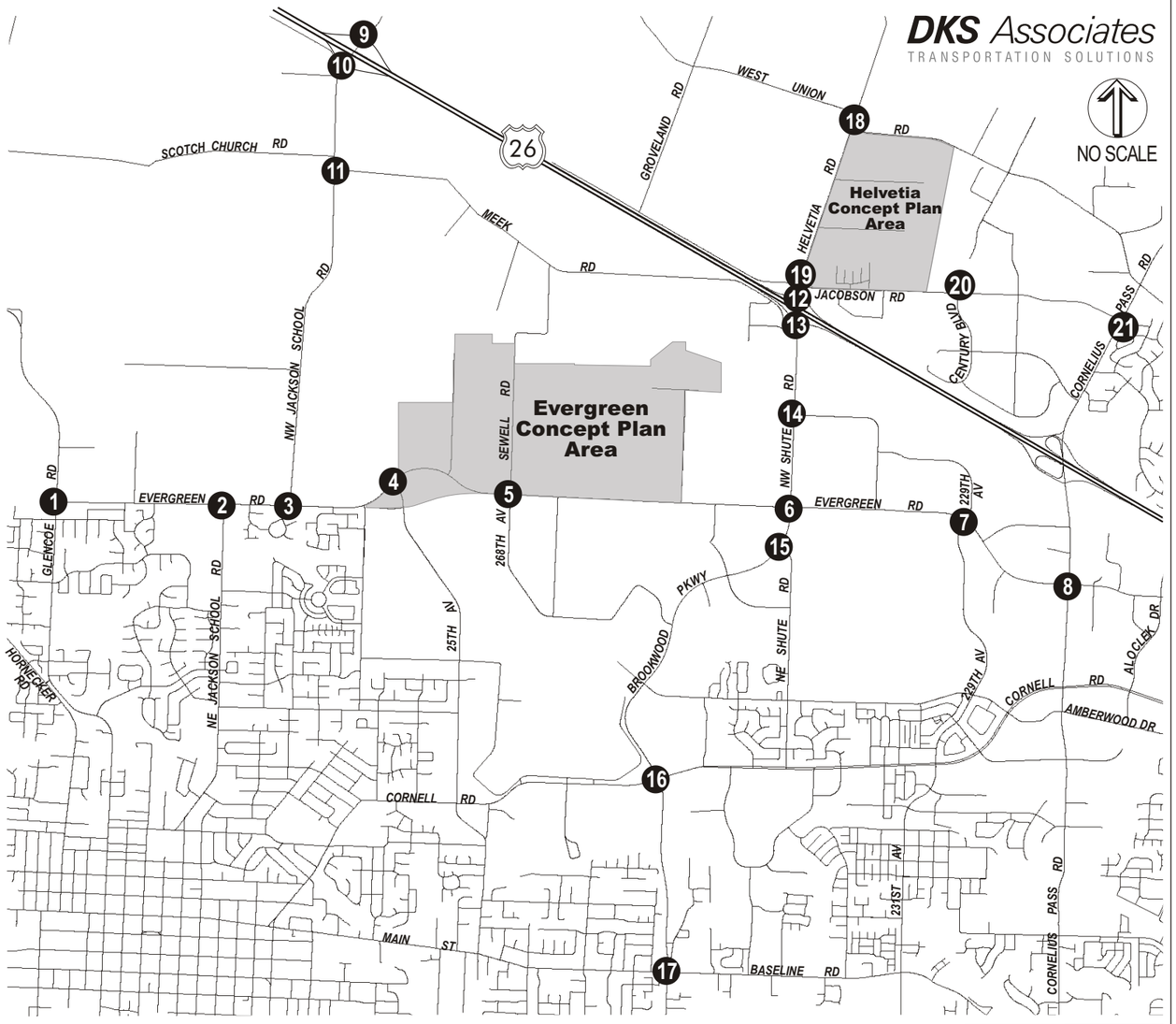
18b Helvetia Rd/West Union Rd

18c Helvetia Rd/West Union Rd (South)

19 Helvetia Rd/Jacobson Rd

20 Jacobson Rd/Century Blvd

21 Jacobson Rd/Cornelius Pass Rd



LEGEND

- 0 - Study Intersection & Number
- ← - Lane Configuration
- *AM (PM)* - Peak Hour Traffic Volume
- LT TH RT - Volume Turn Movement (Left•Thru•Right)
- Traffic Signal
- STOP - Stop Sign

Figure 4

2030 CONCEPT PLAN PM PEAK HOUR INTERSECTION VOLUME

Evergreen/Helvetia Concept Plan Area

Transportation System Impacts

Traffic volume alone indicates neither the ability of the street network to carry additional traffic nor the quality of service provided by the street facilities. For this reason, performance measures have been developed to correlate traffic volume data to traffic performance at intersections. Intersections are the controlling bottlenecks of traffic flow, and the ability of a roadway system to carry traffic efficiently is nearly always diminished in their vicinity.

Washington County and the City of Hillsboro measure roadway performance using level of service (LOS) [1]. An intersection's LOS is similar to a "report card" rating, based on average vehicle delay. Highway Capacity Manual[2] (HCM) methodology was used to determine the 2030 PM peak hour intersections operations of the study intersections. Levels of Service A, B and C indicate conditions where vehicles move freely. Levels of service D and E are progressively worse. For signalized intersections, LOS F represents conditions where the average delay for all vehicles through the intersection exceeds 80 seconds per vehicle, generally indicated by long queues and delays. Under this operating condition, delay is highly variable, and it is difficult to estimate average delay accurately because congestion often extends into and is affected by adjacent intersections. Descriptions of levels of service for signalized and unsignalized intersections are contained in the appendix.

Table 3: Minimum Performance Standards

Jurisdiction	Location	Minimum Acceptable Performance Standard (Volume to Capacity Ratio or Level of Service)
ODOT	General Metro Area	0.99
	Rural Area	not applicable
	Town Center Area	1.10
Washington County	General Urban Area	0.90
	Rural Area	0.90
	Town Center Area	0.99
Hillsboro	All	LOS D

Sources:
Washington County Engrossed Ordinance No. 588, Exhibit 8, Table 5: Washington County Motor Vehicle Performance Measures, October 9, 2002.
Oregon Highway Plan, Maximum Volume to Capacity Ratios Inside Portland Metro Area, Table 7, p. 84, 1999.
Note:
Where capacity improvements are required to mitigate conditions back to acceptable levels on ODOT facilities, the minimum design standards are based on Oregon Highway Design Manual standards, which are lower than the above values.

The minimum transportation performance standards within the study area summarized in Table 3 show a range of acceptable conditions depending on location and facility jurisdiction. The City of Hillsboro has a performance standard of LOS D or better and Washington County has a performance standard of LOS E or better for the peak hour of

[1] Washington County also considers v/c ratio as an intersection performance standard.
[2] *2000 Highway Capacity Manual*, Transportation Research Board, 2003.

traffic. Washington County also requires that intersections operate with a volume-to-capacity (V/C) ratio of 0.90 or better. This ratio indicates what portion of available capacity at an intersection is being utilized. The performance standard for ODOT facilities is a Volume-to-Capacity ratio of 0.99, which is just below being at full capacity. Signalized intersections that require mitigation have a performance standard of 0.75 as provided in the Highway Design Manual. Study intersections were analyzed with and without the addition of project traffic for the 2030 PM peak hour.

Transportation Findings

The transportation findings were developed for the two forecast scenarios. The first section, 2030 No Build Scenario, discusses the 2030 conditions under current zoning, which does not includes significant employment density. The second section, 2030 Concept Plan Scenario, presents the incremental impacts of higher employment levels.

2030 No Build Scenario

The 21 study intersections were analyzed without the addition of project traffic for the 2030 PM peak hour to determine the transportation system improvements that would be required if buildout of the Concept Plan did not occur. Table 4 lists the 2030 PM peak hour intersection performance of the study intersections without the addition of project traffic (2030 No Build). Seventeen of the study intersections would require mitigation in order to meet performance standards. These improvements would be triggered by other growth in the area without the assumed Concept Plan development. These findings indicate that transportation improvements in the area are needed in addition to what was projected in the Washington County and Hillsboro TSPs. The additional improvements account for traffic growth projected to the year 2030, ten years beyond the 2020 TSP projections. Only four study intersections would not require mitigation due to background traffic growth.

Since most of the study intersections would not meet performance standards under the No Build scenario, a number of transportation mitigations would be needed without the Concept Plan. Most of the mitigations are focused on adding capacity at major intersections. A few would involve substantial expansion to existing roadways, and should be considered as part of the Transportation System Plan update for the city. Specifically, the Evergreen Road corridor between Shute Road and Cornelius Pass Road far exceeds planned capacity by 2030. The city will need to consider alternative routes that can add capacity, or expansion of the existing roadway to provide sufficient throughput during peak hours. Alternatively, the city may opt for more aggressive transportation demand management solutions to reduce peak hour demands. For the purpose of this study, it was assumed that expanding the Evergreen Road corridor would be one possible method to meet this need, even though the city would need to officially support this decision at a later time, or select another option.

The transportation mitigation that would be required to meet performance standards for the No Build scenario are listed in Table 5. Projects that are listed in City of Hillsboro TSP, Washington County TSP, MSTIP and RTP are noted. Figure 5 indicates the location of these projects.

Table 4: 2030 PM Peak Hour Intersection Operation Comparison

Intersection	Performance Standard	2030 No Build			2030 with Helvetia and Evergreen Concept Plans		
		Delay	LOS	V/C	Delay	LOS	V/C
ODOT Signalized Intersection Control							
Hwy 26 WB Ramp/NW Shute Rd	v/c = 0.99	26.3	C	0.88	35.1	D	0.96
Hwy 26 EB Ramp/NW Shute Rd	v/c = 0.99	50.3	D	>1.0	>80.0	F	>1.0
ODOT Unsignalized Intersection Control							
Hwy 26 WB Ramp/NW Jackson School Rd	v/c = 0.99	>50.0	A/F	>1.0	>50.0	A/F	>1.0
Hwy 26 EB Ramp/NW Jackson School Rd	v/c = 0.99	47.0	C/E	0.45	44.5	C/E	0.45
Washington County Signalized Intersection Control							
NW Evergreen Rd/NE 25th Ave	LOS E, v/c = 0.90	24.8	C	0.87	24.9	C	0.87
Washington County Unsignalized Intersection Control							
NW Jackson School Rd/NW Meek Rd	LOS E, v/c = 0.90	>50.0	B/F	0.54	>50.0	B/F	0.86
NW Helvetia Rd/NW West Union Rd*	LOS E, v/c = 0.90	37.3	E	0.95	26.5	D	0.84
City of Hillsboro Signalized Intersection Control							
NW Evergreen Rd/NW Glencoe Rd	LOS D	>80.0	F	>1.0	>80.0	F	>1.0
NW Evergreen Rd/NE Jackson School Rd	LOS D	>80.0	F	>1.0	>80.0	F	>1.0
NW Evergreen Rd/NW Jackson School Rd	LOS D	>80.0	F	>1.0	>80.0	F	>1.0
NW Evergreen Pkwy/NE Shute Rd	LOS D	>80.0	F	>1.0	>80.0	F	>1.0
NW Evergreen Rd/NW 229th Ave	LOS D	>80.0	F	>1.0	>80.0	F	>1.0
NW Evergreen Rd/NW Cornelius Pass Rd	LOS D	>80.0	F	>1.0	>80.0	F	>1.0
NW Shute Rd/NE Shute Rd	LOS D	16.9	B	0.76	17.4	B	0.79
NE Brookwood Pkwy/NE Cornell Rd	LOS D	>80.0	F	>1.0	>80.0	F	>1.0
NE Brookwood Pkwy/W Baseline Rd	LOS D	>80.0	F	>1.0	>80.0	F	>1.0
NW Cornelius Pass Rd/NW Jacobson Rd	LOS D	>80.0	F	>1.0	>80.0	F	>1.0
City of Hillsboro Unsignalized Intersection Control							
NW Evergreen Rd/NW Sewell Rd	LOS D	>50.0	B/F	>1.0	>50.0	C/F	>1.0
NW Helvetia Rd/NW Jacobson Rd	LOS D	>50.0	B/F	>1.0	>50.0	B/F	>1.0
NW Shute Rd/NW Huffman St	LOS D	>50.0	C/F	>1.0	>50.0	C/F	>1.0
NW Jacobson Rd/NW Century Blvd	LOS D	>50.0	A/F	>1.0	>50.0	B/F	>1.0

Note:

Shaded values denote that performance standard is exceeded
LOS – Level of Service of signalized intersection, and for major/minorstreet of unsignalized intersection
Delay – Average delay for signalized intersection, and critical movement of unsignalized intersection
V/C – Volume/Capacity Ratio

* *Volume shift and interaction of vehicles would improve operations at intersection*

Table 5: Transportation Mitigations for 2030 No Build Conditions (Without Concept Plans)

	Location	Improvement Item	Planned Project?
1	NW Glencoe Rd/ NW Evergreen Rd	Add a northbound right turn lane	NEW
		Add a northbound right turn overlap	NEW
		Add second westbound left turn lane	NEW
		Add additional southbound receiving lane on Glencoe south of intersection to Milne for dual westbound left turn	NEW
2	NE Jackson School Rd/ NW Evergreen Rd	Add a northbound right turn overlap phase	NEW
3	Evergreen Road	Widen to 5 lane section from NE 253rd-Glencoe *(TSP project)*	Hillsboro TSP
4	New East-West Carrying Capacity	New roadway (or expanded existing roadway) to relieve traffic on Evergreen at Shute Road and Cornelius Pass (*Needs to be considered in TSP update)*	NEW
5	NW Shute Rd/ NW Evergreen Pkwy	Add northbound right turn overlap phase	NEW
6	NW 229th Ave/ NW Evergreen Rd	Add a northbound right turn overlap phase	NEW
		Add a southbound right turn lane	Hillsboro TSP
		Add second northbound right turn lane	NEW
7	NW Jackson School Rd/ NW Meek Rd	Add a single lane roundabout	NEW
8	NW Jackson School Rd/ Hwy 26 WB Ramp	Add a traffic signal	NEW
		Add a second westbound left turn lane	NEW
		Add a second southbound receiving lane on Jackson School south of the intersection	NEW
9	NW Cornelius Pass Rd/ NW Evergreen Pkwy	Add an eastbound right turn lane	Hillsboro TSP
		Add a northbound right turn lane	
		Add second northbound left turn lane	Hillsboro TSP
		Add second southbound left turn lane	Hillsboro TSP
		Add second westbound left turn lane	Hillsboro TSP
		Add westbound right turn lane	Hillsboro TSP
		Add second westbound right turn and overlap	NEW
10	NW Helvetia Rd/ NW Jacobson Rd	Add a traffic signal	NEW
		Add a northbound right turn lane	NEW

	Location	Improvement Item	Planned Project?
11	NW Shute Rd/ Hwy 26 WB Ramp	Add a single lane roundabout	Draft RTP
		Widen structure over Hwy 26 for additional northbound lane (modification to current RTP project)	NEW
12	NW Shute Rd/ Hwy 26 EB Ramp	Add second northbound through lane	NEW
13	NW Shute Rd/ HW Huffman St	Remove trees in median and install two-way left turn lane.	NEW
		Install traffic signal controls.	*Built by Others*
14	NE Brookwood Pkwy/ NE Cornell Rd	Add second eastbound left turn lane	NEW
		Add second westbound left turn lane	NEW
		Add westbound right turn lane	NEW
		Add southbound through lane	NEW
15	NE Brookwood Pkwy/ W Baseline Rd	Restripe to add second eastbound through lane (five lane section east of intersection as TSP project)	NEW
		Add second southbound through lane	NEW
		Add southbound receiving lane south of intersection	NEW
		Add second westbound left turn lane	NEW
16	NW Jacobson Rd/NW Century Blvd	Add a traffic signal	NEW
		Add northbound right turn lane	NEW
		Add northbound right turn overlap phase	NEW
		Add southbound left turn lane	NEW
17	NW Cornelius Pass Rd/ NW Jacobson Rd	Add second eastbound left turn lane	NEW

Implementing the transportation mitigations listed in Table 5 would allow most of the study intersections to meet performance standards for the 2030 PM No Build scenario with one exception:

- *Evergreen Rd/Sewell Rd*

This location does not meet peak hour signal warrants without the inclusion of project traffic on the minor approach. It is expected that adding traffic signal controls would provide sufficient capacity to serve peak hour conditions.

2030 Concept Plan Scenario

The mitigations needed to serve 2030 No Build scenario will provide adequate peak hour service at 16 of the 21 intersections, even with the addition of traffic generated by the Evergreen and Helvetia Concept Plans. Table 6 lists the 2030 PM peak hour performance of study intersections with the addition of project traffic (2030 Concept Plan), assuming all of the improvement listed in Table 5 have already been applied. Notably, this includes a wider section of Evergreen Road between Shute Road and Cornelius Pass Road than is provided in the TSP. Additional mitigations for the 5 locations shaded in Table 6 are identified below.

The forecasted volumes with the Concept Plan scenario cause peak hour conditions to drop below standards at Evergreen Road at Shute Road and Evergreen Road at Cornelius Pass Road. The forecasted demands would require more through capacity east-west than can be provided with the conventional 5-lane cross-section. As mentioned previously, the decision to expand the existing roadway would need to be made through the city's Transportation System Plan update process, however, for the purposes of this study, it was assumed that added capacity was in place to serve No Build forecasts.

The intersection of NW Cornelius Pass Rd/NW Evergreen Rd would meet performance standards for 2030 No Build conditions with the improvements listed in Table 6. However, the intersection would not meet City of Hillsboro performance standards with the addition of Concept Plan traffic. The additional traffic would account for an increase of approximately 400 vehicles (6% of the total entering volume) at the intersection during the PM peak hour. The intersection would be "built-out" with the improvements listed in Table 6, and additional strategies would need to be considered to address capacity issues.

Potential strategies for the Evergreen Road corridor could include the following:

- Additional east-west facility to relieve traffic volumes on Evergreen Road
- Transportation Demand Management (TDM) program for large employers
- Additional through capacity to Cornelius Pass Road

The City of Hillsboro should focus on solutions for this corridor to serve planned growth that is consistent with the established goals of the Transportation System Plan. Further study is required to identify the best alternative for this location.

Another circulation option was considered for access to the Evergreen Road site to reduce the concept plan traffic loads on Evergreen Road at Sewell Road and Evergreen Road at Shute Road. This would involve a new street connection to Shute Road north of Huffman Road that would provide access to the Evergreen Road site, and the already approved Shute Road Concept Plan site. The new connection allow for a potential re-alignment of Meek Road so that access onto Shute Road could be provided at better safer than under current conditions. This new connection would reduce turning vehicle volumes at the noted intersections, but, upon further review, it was found that these movements are not critical elements to the forecasted heavy congestion. Specifically, the critical movements at Evergreen Road and Shute Road is the westbound left-turn movements versus the heavy eastbound through movement (1500 vehicles per hour). The added connection to Shute

Road north of Huffman Road would relive the opposite approach, the eastbound left-turn, which is not critically congested. So, even though the added connectivity would benefit on-site circulation options, it would not work to alleviate the forecasted severe congestion at Evergreen Road and Shute Road.

Table 6: 2030 PM Peak Hour Intersection Operations with No Build Mitigations

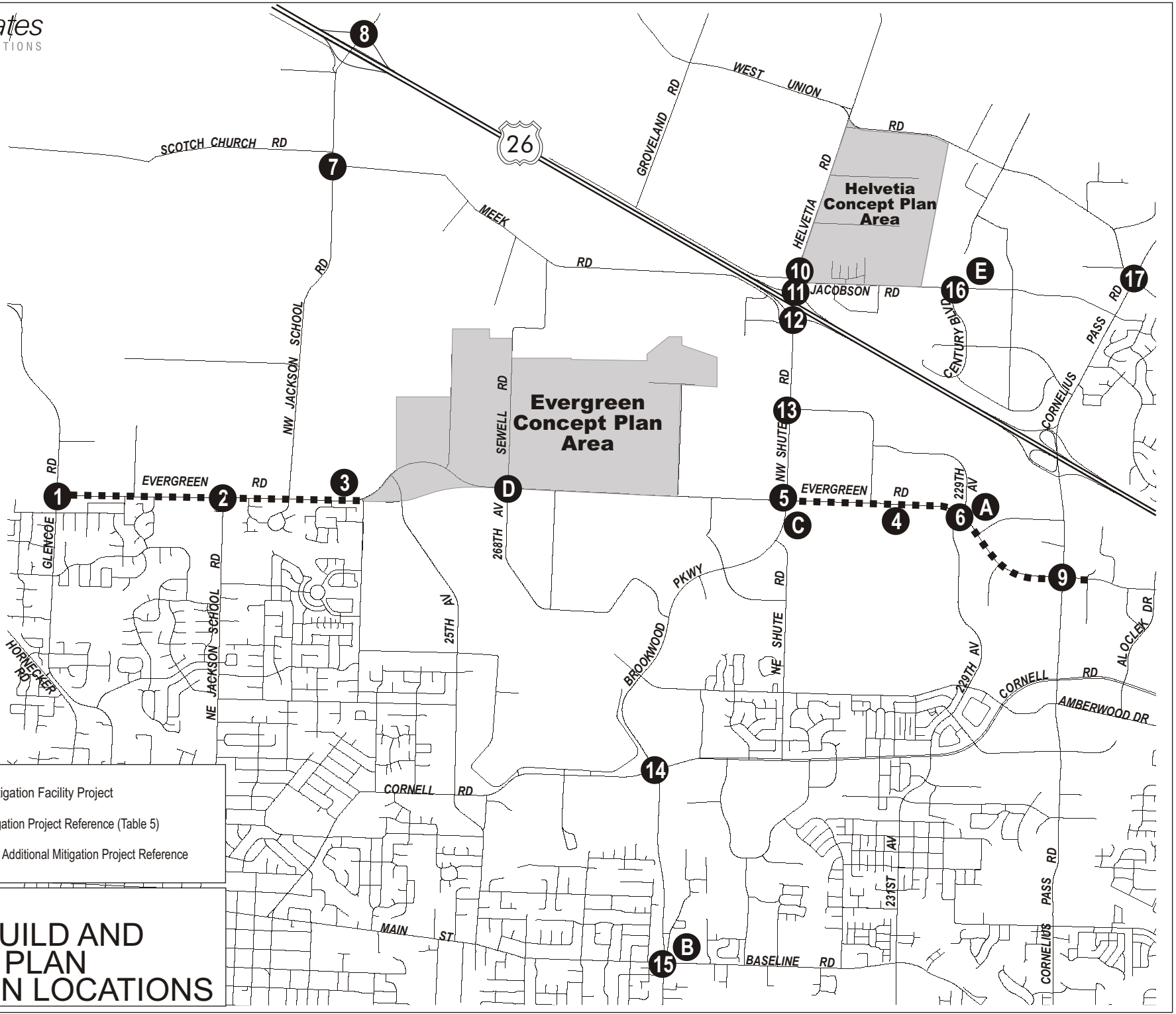
Intersection	Performance Standard	2030 No Build (With Mitigations in Table 5)			2030 Concept Plan (With Mitigations in Table 5)		
		Delay	LOS	V/C	Delay	LOS	V/C
ODOT Signalized Intersection Control							
Hwy 26 EB Ramp/NW Shute Rd	v/c = 0.99	15.7	B	0.58	23.4	C	0.77
Hwy 26 WB Ramp/NW Jackson School Rd	v/c = 0.99	24.3	C	0.65	23.1	C	0.62
ODOT Roundabout Intersection Control							
Hwy 26 WB Ramp/NW Shute Rd	v/c = 0.99	0.7	A	0.68	2.3	A	0.76
Washington County Roundabout Intersection Control							
NW Jackson School Rd/NW Meek Rd	LOS E v/c = 0.99	5.8	A	0.67	6.1	A	0.70
City of Hillsboro Signalized Intersection Control							
NW Evergreen Rd/NW Glencoe Rd	LOS D	22.1	C	0.71	22.8	C	0.74
NW Evergreen Rd/NE Jackson School Rd	LOS D	16.7	B	0.71	17.4	B	0.73
NW Evergreen Rd/NW Jackson School Rd	LOS D	36.5	D	0.93	37.5	D	0.95
NW Evergreen Pkwy/NE Shute Rd	LOS D	50.7	D	0.95	55.7	E	0.99
NW Evergreen Rd/NW 229th Ave	LOS D	49.0	D	0.96	67.4	E	>1.0
NW Evergreen Rd/NW Cornelius Pass Rd	LOS D	51.1	D	0.96	62.6	E	>1.0
NE Brookwood Pkwy/NE Cornell Rd	LOS D	51.7	D	0.97	52.5	D	0.98
NE Brookwood Pkwy/W Baseline Rd	LOS D	43.2	D	0.85	56.3	E	0.92
NW Cornelius Pass Rd/NW Jacobson Rd	LOS D	41.6	D	0.94	44.9	D	0.96
NW Helvetia Rd/NW Jacobson Rd	LOS D	17.6	B	0.80	19.2	B	0.84
NW Jacobson Rd/NW Century Blvd	LOS D	42.5	D	0.84	>0.80	F	>1.0
City of Hillsboro Unsignalized Intersection Control							
NW Evergreen Rd/NW Sewell Rd	LOS D	>50.0	B/F	0.40	>50.0	C/F	0.41
NW Shute Rd/NW Huffman St	LOS D	9.3	A	0.75	34.2	C	0.88

Note:

Shaded values denote that performance standard is exceeded
LOS – Level of Service of signalized intersection, and for major/minor street of unsignalized intersection
Delay – Average delay for signalized intersection, and critical movement of unsignalized intersection
V/C – Volume/Capacity Ratio

DKS Associates
TRANSPORTATION SOLUTIONS

NO SCALE



LEGEND

- ■■ - 2030 No Build Mitigation Facility Project
- 1 - 2030 No Build Mitigation Project Reference (Table 5)
- A - 2030 Concept Plan Additional Mitigation Project Reference (Tables 7, 8)

Figure 5

2030 NO BUILD AND CONCEPT PLAN MITIGATION LOCATIONS

Recommended Mitigation Measures

As listed in Table 6, five intersections would require additional mitigation with Concept Plan traffic levels in order to meet performance standards. Potential strategies for NW Cornelius Pass Rd/NW Evergreen Rd were previously discussed. The other locations are:

- NW 229th Avenue/NW Evergreen Road
- NW Schute Road/NW Evergreen Road
- NW Brookwood Parkway/W Baseline Road
- NW Jacobson Road/NW Century Boulevard

In addition to these four locations, one location would fail to meet performance standards under the 2030 No Build scenarios would require a traffic signal. This location is:

- NW Evergreen Road/NW Sewell Road

The additional mitigation required at these locations (assuming mitigation triggered by the No Build scenario is built) in order to meet performance standards is listed in Table 7 and Table 8 for the Evergreen and Helvetia areas, respectively. These improvements are limited to additional turn pockets at the intersections. This type of mitigation would cost approximately $375,000 to $750,000 per location. This planning-level estimate includes potential right of way costs.

Table 7: Additional 2030 Transportation Improvements Needed for Evergreen Concept Plan

	Location	Improvement Item	Planning Cost + ROW*
A	NW 229th Ave/NW Evergreen Rd	Add second northbound left turn lane	$750,000
		Add second southbound left turn lane	$750,000
B	NW Brookwood Pkwy/W Baseline Rd	Add a southbound right turn lane	$375,000
C	NW Shute Rd/NW Evergreen Rd	Add eastbound right turn lane	$375,000
D	NW Sewell Rd/NW Evergreen Rd	Add a traffic signal	$250,000
		TOTAL COST	**$2,500,000**

*Notes: *Assumes additional 50% to project costs for Right of Way.*

Table 8: Additional 2030 Transportation Improvements Needed for Helvetia Concept Plan

	Location	Improvement Item	Planning Cost + ROW*
E	NW Jacobson Rd/NW Century Blvd	Add an eastbound right turn lane	$375,000
		TOTAL COST	**$375,000**

*Notes: *Assumes additional 50% to project costs for Right of Way*

The resulting intersection operations for the 2030 PM Peak Hour Concept Plan scenario with and without these mitigations are listed in Table 9.

Table 9: 2030 PM Peak Hour Concept Plan Intersection Operations

Intersection	Performance Standard	2030 Concept Plan (Without Concept Plan Mitigations)			2030 Concept Plan (With Concept Plan Mitigations)		
		Delay	LOS	V/C	Delay	LOS	V/C
City of Hillsboro Signalized Intersection Control							
NW Evergreen Rd/NW 229th Ave	LOS D	67.4	E	>1.0	52.3	D	0.99
NE Brookwood Pkwy/W Baseline Rd	LOS D	56.3	E	0.92	52.7	D	0.89
NW Jacobson Rd/NW Century Blvd	LOS D	>0.80	F	>1.0	43.2	D	0.91
NW Evergreen Rd/NW Shute Rd	LOS D	55.7	E	0.99	48.2	D	0.92
NW Sewell Rd/NW Evergreen Rd	LOS D	>50.0	C/F	0.41	38.4	D	0.94

Note: *Shaded values denote that performance standard is exceeded*

LOS – Level of Service of signalized intersection, and for major/minor street of unsignalized intersection
Delay – Average delay for signalized intersection, and critical movement of unsignalized intersection
V/C – Volume/Capacity Ratio

Site Circulation and Access Improvements

Each concept plan site identified new street networks that connect to existing public streets along the frontage. Access spacing standards on Washington County arterials require a minimum separation of 600 feet between adjoining intersections, and recommend one-quarter mile between traffic signals. ODOT has separate access spacing requirements in proximity to the interchange with US 26; specifically, the influence area of the interchange extends 1,320 feet from the nearside ramp terminal, and no new full access intersection should be constructed within that area.

The street improvements associated with the Evergreen Road and Helvetia Road site were evaluated to determine preliminary engineering cost estimates. Most of these improvements are on-site collector roads, and the half-street improvements to the fronting arterial streets. The methodology and unit costs applied to developed these cost estimates were reviewed with Washington County Engineering staff.

Evergreen Road Site

The street improvements for Evergreen Road site include the Huffman Road extension from the Genentech property boundary, and the upgrade of existing Sewell Road to urban county standards. The Huffman Road cross-section should be designed to 3-lanes west of the eastern boundary. From that point to Shute Road, the forecasted traffic volumes will require additional capacity, such as a 5-lane street cross-section.

In addition, the fronting street improvements of Evergreen Road to a full 5-lane section along the site to NW 281st Avenue have been included in the cost estimates. These include right-of-way on-site, street constructions, and conservative assumptions about project design, administration and construction. The total cost for these improvements is $49 million, including the cost for right-of-way. The Evergreen Road improvement should be eligible for System Development Charge credits, since it is a planned improvement in the Washington County Transportation System Plan. Refer to the appendix for cost estimate details.

Table 10: Evergreen Road Site Street Improvements

Street	Extent	Facility Type	Right-of-Way	Construction Costs	Total Cost
Sewell Road	Evergreen Road to Meek Rd.	3-lane Collector	$5,218,184	$6,715,500	$14,375,684
Huffman Road	E. Boundary to W. Boundary	3-lane Collector	$10,282,892	$13,634,500	$23,917,392
Evergreen Road	NW 281st to Meier Jurgen	5-lane Arterial	$3,302,845	$7,515,625	$10,818,470
				$27,865,625	**$49,111,546**

Helvetia Road Site

The street improvements for Helvetia Road site include the upgrading of existing Schaff Road and Pubols Road, and the re-alignment of Jacobson Road to connect with Schaff Road east of its intersection with Helvetia Road. All on-site streets would be collector or local level, with the Jacobson Road facility planned to serve 3-lanes of traffic (one through lane in each direction, with space for left-turn pockets where appropriate). The Pubols Road and Schaff Road street would be industrial class streets built to Washington County industrial standards.

In addition, the fronting street improvements of Helvetia Road to a full 5-lane section from the US 26 Ramps to Schaff Road, and 3-lanes from that point north to West Union Road would be required. Also, West Union Road would be upgraded to urban standards as a 3-lane arterial facility. The cost estimates include right-of-way on-site, street constructions, and conservative assumptions about project design, administration and construction. The total cost for these improvements is $55 million, including the cost for right-of-way. The Helvetia Road and West Union improvement should be eligible for System Development Charge credits, since it is a planned improvement in the Washington County Transportation System Plan.

Table 11: Helvetia Road Site Street Improvements

Street	Extent	Facility Type	Right-of-Way	Construction Costs	Total Cost
Pubols Road	Helvetia Road to E. Boundary	2-lane Collector	$4,106,520	$6,105,000	$10,211,520
Schaff Road	Helvetia Road to E. Boundary	2-lane Collector	$4,355,400	$6,475,000	$10,830,400
Jacobson Road	Helvetia Road to Clara Lane	3-lane Collector	$3,222,996	$4,273,500	$7,496,496
				$16,853,500	**$28,538,416**

Table 12: Helvetia Road Site Frontage Improvements

Street	Extent	Facility Type	Right-of-Way	Construction Costs	Total Cost
Helvetia Road	US 26 Ramps to Jacobson Road (Schaff Road)	Arterial	$612,000	$3,048,780	$10,818,470
West Union Road	Helvetia Road to plan boundary	Arterial	$0	$8,140,000	$8,140,000
Helvetia Road	Jacobson Road (Schaff Road) to West Union Road	Arterial	$0	$6,715,500	$6,715,500
				$17,904,280	**$25,673,970**

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Scenario Report

Scenario:	2030 No Build PM Peak
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 NW Glencoe Rd/NW Evergreen Rd	F	201.9	1.533	F	201.9	1.533	+ 0.000 D/V
# 2 NE Jackson School Rd/NW Evergr	F	160.9	1.354	F	160.9	1.354	+ 0.000 D/V
# 3 NW Jackson School Rd/NW Evergr	F	138.9	1.388	F	138.9	1.388	+ 0.000 D/V
# 4 NE 25th Ave/NW Evergreen Rd	C	24.8	0.868	C	24.8	0.868	+ 0.000 D/V
# 5 NW Sewell Rd/NW Evergreen Rd	F	OVRFL	0.000	F	OVRFL	0.000	+ 0.000 D/V
# 6 NW SHute Rd/NW Evergreen Pkwy	F	88.6	1.131	F	88.6	1.131	+ 0.000 D/V
# 7 NW 229th Ave/NW Evergreen Rd	F	96.4	1.205	F	96.4	1.205	+ 0.000 D/V
# 8 NW Cornelius Pass Rd/NW Evergr	F	200.2	1.467	F	200.2	1.467	+ 0.000 D/V
# 9 NW Jackson School Rd/Hwy 26 WB	F	921.1	0.000	F	921.1	0.000	+ 0.000 D/V
# 10 NW Jackson School Rd/Hwy 26 EB	E	47.0	0.000	E	47.0	0.000	+ 0.000 D/V
# 11 NW Jackson School Rd/NW Meek R	F	99.7	0.000	F	99.7	0.000	+ 0.000 D/V
# 15 NW Helvetia Rd/NW Jacobson Rd	F	371.4	0.000	F	371.4	0.000	+ 0.000 D/V
# 16 NW Shute Rd/Hwy 26 WB Ramp	C	26.3	0.878	C	26.3	0.878	+ 0.000 D/V
# 17 NW Shute Rd/Hwy 26 EB Ramp	D	50.3	1.093	D	50.3	1.093	+ 0.000 D/V
# 18 NW Shute/NW Huffman St	F	OVRFL	0.000	F	OVRFL	0.000	+ 0.000 D/V
# 19 NW Shute Rd/NE Shute Rd	B	16.9	0.757	B	16.9	0.757	+ 0.000 D/V
# 20 NE Brookwood Pkwy/NE Cornell R	F	190.7	1.436	F	190.7	1.436	+ 0.000 D/V
# 21 NE Brookwood Pkwy/W Baseline R	F	179.0	1.487	F	179.0	1.487	+ 0.000 D/V
# 22 NW Jacobson Rd/NW Century Blvd	F	OVRFL	0.000	F	OVRFL	0.000	+ 0.000 D/V
# 23 NW Cornelius Pass Rd/NW Jacobs	F	95.3	1.219	F	95.3	1.219	+ 0.000 D/V
#326	E	37.3	0.952	E	37.3	0.952	+ 0.000 V/C

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 NW Glencoe Rd/NW Evergreen Rd

Cycle (sec): 50 Critical Vol./Cap.(X): 1.533
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 201.9
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0 1	0	1	0 1	0	0	0 0	1	0	0 1
Volume Module:												
Base Vol:	0	462	473	169	427	0	0	0	0	751	0	221
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	462	473	169	427	0	0	0	0	751	0	221
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	491	503	180	454	0	0	0	0	799	0	235
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	491	503	180	454	0	0	0	0	799	0	235
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	491	503	180	454	0	0	0	0	799	0	235
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	0.93	0.93	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.85
Lanes:	0.00	0.49	0.51	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	829	849	1710	1800	0	0	0	0	1710	0	1530
Capacity Analysis Module:												
Vol/Sat:	0.00	0.59	0.59	0.11	0.25	0.00	0.00	0.00	0.00	0.47	0.00	0.15
Crit Moves:		****		****						****		
Green/Cycle:	0.00	0.39	0.39	0.07	0.46	0.00	0.00	0.00	0.00	0.30	0.00	0.30
Volume/Cap:	0.00	1.53	1.53	1.53	0.55	0.00	0.00	0.00	0.00	1.53	0.00	0.50
Delay/Veh:	0.0	263	263.0	301.3	10.8	0.0	0.0	0.0	0.0	266.9	0.0	15.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	263	263.0	301.3	10.8	0.0	0.0	0.0	0.0	266.9	0.0	15.2
LOS by Move:	A	F	F	F	B	A	A	A	A	F	A	B
HCM2kAvgQ:	0	60	60	13	6	0	0	0	0	48	0	4

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 NE Jackson School Rd/NW Evergreen Rd

Cycle (sec): 60 Critical Vol./Cap.(X): 1.354
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 160.9
Optimal Cycle: 180 Level Of Service: F

Street Name: Jackson School - driveway

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	1	0 0 1	0	0	1! 0 0	1	0	0 1 0	1	0	0 1 0
Volume Module:												
Base Vol:	98	0	446	0	0	0	0	586	124	477	1120	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	0	446	0	0	0	0	586	124	477	1120	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	107	0	485	0	0	0	0	637	135	518	1217	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	107	0	485	0	0	0	0	637	135	518	1217	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	107	0	485	0	0	0	0	637	135	518	1217	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.71	1.00	0.84	1.00	1.00	1.00	1.00	0.95	0.94	0.93	0.98	1.00
Lanes:	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.83	0.17	1.00	1.00	0.00
Final Sat.:	1272	0	1515	0	1800	0	1800	1405	297	1676	1764	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.32	0.00	0.00	0.00	0.00	0.45	0.45	0.31	0.69	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.24	0.00	0.24	0.00	0.00	0.00	0.00	0.33	0.33	0.23	0.56	0.00
Volume/Cap:	0.35	0.00	1.35	0.00	0.00	0.00	0.00	1.35	1.35	1.35	1.22	0.00
Delay/Veh:	19.8	0.0	199.4	0.0	0.0	0.0	0.0	190	190.4	198.6	123	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	19.8	0.0	199.4	0.0	0.0	0.0	0.0	190	190.4	198.6	123	0.0
LOS by Move:	B	A	F	A	A	A	A	F	F	F	F	A
HCM2kAvgQ:	2	0	27	0	0	0	0	41	41	29	53	0

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 NW Jackson School Rd/NW Evergreen Rd

Cycle (sec): 60 Critical Vol./Cap.(X): 1.388
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 138.9
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0	1	0	0	1	0	1	0
Volume Module:												
Base Vol:	2	1	2	151	2	555	496	535	3	9	1095	464
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	1	2	151	2	555	496	535	3	9	1095	464
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	1	2	164	2	603	539	582	3	10	1190	504
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	1	2	164	2	603	539	582	3	10	1190	504
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	1	2	164	2	603	539	582	3	10	1190	504
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.60	0.60	0.60	0.77	0.77	0.82	0.93	0.98	0.98	0.94	0.99	0.82
Lanes:	0.40	0.20	0.40	0.99	0.01	1.00	1.00	0.99	0.01	1.00	1.00	1.00
Final Sat.:	432	216	432	1363	18	1472	1676	1752	10	1693	1782	1482
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.01	0.12	0.12	0.41	0.32	0.33	0.33	0.01	0.67	0.34
Crit Moves:					****		****				****	
Green/Cycle:	0.09	0.09	0.09	0.09	0.09	0.32	0.23	0.70	0.70	0.01	0.48	0.48
Volume/Cap:	0.06	0.06	0.06	1.39	1.39	1.29	1.39	0.47	0.47	0.47	1.39	0.71
Delay/Veh:	25.4	25.4	25.4	244.9	245	164.7	212.7	4.3	4.3	45.6	197	15.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.4	25.4	25.4	244.9	245	164.7	212.7	4.3	4.3	45.6	197	15.5
LOS by Move:	C	C	C	F	F	F	F	A	A	D	F	B
HCM2kAvgQ:	0	0	0	11	11	31	31	5	5	1	65	9

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 NE 25th Ave/NW Evergreen Rd

Cycle (sec): 80 Critical Vol./Cap.(X): 0.868
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 24.8
Optimal Cycle: 87 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 0 2	0	0	0 0 0	0	0	1 1 0	2	0	2 0 0
Volume Module:												
Base Vol:	317	0	770	0	0	0	0	1155	144	199	1083	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	317	0	770	0	0	0	0	1155	144	199	1083	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	345	0	837	0	0	0	0	1255	157	216	1177	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	345	0	837	0	0	0	0	1255	157	216	1177	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	345	0	837	0	0	0	0	1255	157	216	1177	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	0.74	1.00	1.00	1.00	1.00	0.92	0.92	0.90	0.93	1.00
Lanes:	1.00	0.00	2.00	0.00	0.00	0.00	0.00	1.78	0.22	2.00	2.00	0.00
Final Sat.:	1693	0	2666	0	0	0	0	2959	369	3251	3352	0
Capacity Analysis Module:												
Vol/Sat:	0.20	0.00	0.31	0.00	0.00	0.00	0.00	0.42	0.42	0.07	0.35	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.28	0.00	0.36	0.00	0.00	0.00	0.00	0.49	0.49	0.08	0.57	0.00
Volume/Cap:	0.71	0.00	0.87	0.00	0.00	0.00	0.00	0.87	0.87	0.87	0.62	0.00
Delay/Veh:	30.7	0.0	32.3	0.0	0.0	0.0	0.0	23.5	23.5	62.7	12.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.7	0.0	32.3	0.0	0.0	0.0	0.0	23.5	23.5	62.7	12.3	0.0
LOS by Move:	C	A	C	A	A	A	A	C	C	E	B	A
HCM2kAvgQ:	9	0	14	0	0	0	0	20	20	5	11	0

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 NW Sewell Rd/NW Evergreen Rd

Average Delay (sec/veh): 18.2 Worst Case Level Of Service: F[5549.9]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 1 0 0 1			1 0 0 1 0			1 0 0 1 0		
Volume Module:												
Base Vol:	2	0	1	12	0	144	130	1381	4	2	1201	69
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	0	1	12	0	144	130	1381	4	2	1201	69
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	0	1	13	0	157	141	1501	4	2	1305	75
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	0	1	13	0	157	141	1501	4	2	1305	75
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	3211	3171	1503	3134	3135	1343	1380	xxxx	xxxxx	1505	xxxx	xxxxx
Potent Cap.:	6	11	151	7	11	188	503	xxxx	xxxxx	451	xxxx	xxxxx
Move Cap.:	1	8	151	5	8	188	503	xxxx	xxxxx	451	xxxx	xxxxx
Volume/Cap:	2.81	0.00	0.01	2.47	0.00	0.83	0.28	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	6.0	1.1	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	79.5	14.9	xxxx	xxxxx	13.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	F	B	*	*	B	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	1	xxxxx	5	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.2	xxxxx	2.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	5550	xxxxx	1952	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	F	*	*	*	*	*	*	*	*
ApproachDel:	5549.9			223.5			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 NW SHute Rd/NW Evergreen Pkwy

Cycle (sec): 110 Critical Vol./Cap.(X): 1.131
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 88.6
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Ovl				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	2	0 1	1	0	2	0 2	2	0	1	1 0	2	0	2	0 1
Volume Module:																
Base Vol:	154	985	406		74	856	232		431	1353	138		354	760	192	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	154	985	406		74	856	232		431	1353	138		354	760	192	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	167	1071	441		80	930	252		468	1471	150		385	826	209	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	167	1071	441		80	930	252		468	1471	150		385	826	209	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	167	1071	441		80	930	252		468	1471	150		385	826	209	
Saturation Flow Module:																
Sat/Lane:	1800	1800	1800		1800	1800	1800		1800	1800	1800		1800	1800	1800	
Adjustment:	0.95	0.95	0.85		0.95	0.95	0.75		0.92	0.94	0.94		0.92	0.95	0.84	
Lanes:	1.00	2.00	1.00		1.00	2.00	2.00		2.00	1.81	0.19		2.00	2.00	1.00	
Final Sat.:	1710	3420	1530		1710	3420	2693		3317	3060	312		3317	3420	1508	
Capacity Analysis Module:																
Vol/Sat:	0.10	0.31	0.29		0.05	0.27	0.09		0.14	0.48	0.48		0.12	0.24	0.14	
Crit Moves:	****					****				****			****			
Green/Cycle:	0.09	0.28	0.28		0.04	0.24	0.44		0.19	0.42	0.42		0.10	0.33	0.33	
Volume/Cap:	1.13	1.10	1.01		1.10	1.13	0.22		0.73	1.13	1.13		1.13	0.73	0.42	
Delay/Veh:	163.8	99.9	86.2		188.2	116	19.5		45.7	xxxx	100.0		138.6	34.6	29.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	163.8	99.9	86.2		188.2	116	19.5		45.7	xxxx	100.0		138.6	34.6	29.0	
LOS by Move:	F		F		F		F		B	D	F		F	F	C	C
HCM2kAvgQ:	11		29	21	6		27	3	9		44	44	13		14	6

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
1994 HCM Operations Method (Base Volume Alternative)

Intersection #7 NW 229th Ave/NW Evergreen Rd

Cycle (sec): 110 Critical Vol./Cap.(X): 1.205
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 96.4
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	0 1	1	0 0 1	0	1	0 2	0 1	1	0 1	1 0
Volume Module:												
Base Vol:	92	249	576	160	134	25	112	1414	94	234	723	127
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	92	249	576	160	134	25	112	1414	94	234	723	127
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	97	262	606	168	141	26	118	1488	99	246	761	134
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	97	262	606	168	141	26	118	1488	99	246	761	134
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.00	1.00	1.05	1.05
FinalVolume:	97	262	606	168	141	26	118	1563	99	246	799	140
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	0.99	0.84	0.91	0.94	0.94	0.94	0.99	0.84	0.94	0.97	0.97
Lanes:	1.00	1.00	1.00	1.00	0.84	0.16	1.00	2.00	1.00	1.00	1.70	0.30
Final Sat.:	1787	1881	1599	1736	1509	282	1787	3762	1599	1787	3136	551
Capacity Analysis Module:												
Vol/Sat:	0.05	0.14	0.38	0.10	0.09	0.09	0.07	0.42	0.06	0.14	0.25	0.25
Crit Moves:			****	****				****		****		
Green/Cycle:	0.15	0.31	0.31	0.08	0.25	0.25	0.09	0.34	0.34	0.11	0.36	0.36
Volume/Cap:	0.37	0.44	1.20	1.20	0.37	0.37	0.70	1.20	0.18	1.20	0.70	0.70
Delay/Veh:	27.9	19.7	146.8	190.5	22.3	22.3	39.2	134	16.3	175.5	20.4	20.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.9	19.7	146.8	190.5	22.3	22.3	39.2	134	16.3	175.5	20.4	20.4
DesignQueue:	5	11	28	10	8	8	7	35	4	14	20	20

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 NW Cornelius Pass Rd/NW Evergreen Pkwy

Cycle (sec): 125 Critical Vol./Cap.(X): 1.467
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 200.2
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 2	0 1	2	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	144	1291	82	437	1198	38	329	1274	149	121	502	546
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	144	1291	82	437	1198	38	329	1274	149	121	502	546
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	157	1403	89	475	1302	41	358	1385	162	132	546	593
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	157	1403	89	475	1302	41	358	1385	162	132	546	593
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	157	1403	89	475	1302	41	358	1385	162	132	546	593
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.92	0.91	0.91	0.93	0.93	0.82	0.91	0.93	0.93	0.94	0.87	0.86
Lanes:	1.00	1.88	0.12	1.00	2.00	1.00	2.00	1.79	0.21	1.00	1.00	1.00
Final Sat.:	1660	3094	197	1676	3352	1472	3284	2983	349	1693	1561	1549
Capacity Analysis Module:												
Vol/Sat:	0.09	0.45	0.45	0.28	0.39	0.03	0.11	0.46	0.46	0.08	0.35	0.38
Crit Moves:		****		****				****		****		
Green/Cycle:	0.10	0.31	0.31	0.19	0.40	0.40	0.08	0.32	0.32	0.05	0.29	0.29
Volume/Cap:	0.96	1.47	1.47	1.47	0.96	0.07	1.33	1.47	1.47	1.47	1.21	1.33
Delay/Veh:	114.8	259	258.6	276.6	52.3	22.9	230.0	258	257.9	320.0	151	201.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	114.8	259	258.6	276.6	52.3	22.9	230.0	258	257.9	320.0	151	201.8
LOS by Move:	F	F	F	F	D	C	F	F	F	F	F	F
HCM2kAvgQ:	9	61	61	38	31	1	15	64	64	12	37	45

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 NW Jackson School Rd/Hwy 26 WB Ramp

Average Delay (sec/veh): 476.1 Worst Case Level Of Service: F[921.1]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0 1	0	0	0	0 1	0	1	0	0 0	0	0	0	1 0	0	1
Volume Module:																
Base Vol:	142	326	0	0	380	5	0	0	0	708	1	201				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	142	326	0	0	380	5	0	0	0	708	1	201				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
PHF Volume:	154	354	0	0	413	5	0	0	0	770	1	218				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	154	354	0	0	413	5	0	0	0	770	1	218				
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3				
Capacity Module:																
Cnflict Vol:	418	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1079	1082	354				
Potent Cap.:	1151	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	244	219	694				
Move Cap.:	1151	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	219	190	694				
Volume/Cap:	0.13	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	3.52	0.01	0.31				
Level Of Service Module:																
2Way95thQ:	0.5	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1.3				
Control Del:	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.6				
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	B				
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT						
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	219	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	72.9	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	1179	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	F	*	*				
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			921.1						
ApproachLOS:	*			*			*			F						

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 NW Jackson School Rd/Hwy 26 EB Ramp

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: E[47.0]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0 1	0	1	1	0 1	0	0	0	1 0	0	1	0	0 0	0	0
Volume Module:																
Base Vol:	0	319	902		218	816	0		5	2	45		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	319	902		218	816	0		5	2	45		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	347	980		237	887	0		5	2	49		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	347	980		237	887	0		5	2	49		0	0	0	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx		6.4	6.5	6.2		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0	3.3		xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		1327	xxxx	xxxxx		2198	2688	887		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		527	xxxx	xxxxx		50	22	346		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		527	xxxx	xxxxx		32	12	346		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		0.45	xxxx	xxxx		0.17	0.18	0.14		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		2.3	xxxx	xxxxx		xxxx	xxxx	0.5		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		17.3	xxxx	xxxxx		xxxxx	xxxx	17.1		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		C	*	*		*	*	C		*	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		22	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		1.0	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		239.0	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		F	*	*		*	*	*	
ApproachDel:	xxxxxx				xxxxxx				47.0				xxxxxx			
ApproachLOS:	*				*				E				*			

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 NW Jackson School Rd/NW Meek Rd

Average Delay (sec/veh): 9.9 Worst Case Level Of Service: F[99.7]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	1 0	0 1	0	0 0	0 0	0	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	0	926	5	92	623	0	0	0	0	26	0	145
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	926	5	92	623	0	0	0	0	26	0	145
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	1007	5	100	677	0	0	0	0	28	0	158
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1007	5	100	677	0	0	0	0	28	0	158
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1012	xxxx	xxxxx	xxxx	xxxx	xxxxx	1886	1886	1009
Potent Cap.:	xxxx	xxxx	xxxxx	693	xxxx	xxxxx	xxxx	xxxx	xxxxx	78	71	294
Move Cap.:	xxxx	xxxx	xxxxx	693	xxxx	xxxxx	xxxx	xxxx	xxxxx	69	60	294
Volume/Cap:	xxxx	xxxx	xxxx	0.14	xxxx	xxxx	xxxx	xxxx	xxxx	0.41	0.00	0.54
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.5	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	11.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	B	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	197	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	7.7	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	11.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	99.7	xxxxx
Shared LOS:	*	*	*	B	*	*	*	*	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			99.7		
ApproachLOS:	*			*			*			F		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #15 NW Helvetia Rd/NW Jacobson Rd

Average Delay (sec/veh): 50.2 Worst Case Level Of Service: F[371.4]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1!	0 0	0 0	1!	0 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	6	524	385	9	429	2	3	1	4	208	1	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	524	385	9	429	2	3	1	4	208	1	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	7	570	418	10	466	2	3	1	4	226	1	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	7	570	418	10	466	2	3	1	4	226	1	3
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	468	xxxx	xxxxx	988	xxxx	xxxxx	1281	1488	467	1282	1280	779
Potent Cap.:	1104	xxxx	xxxxx	707	xxxx	xxxxx	144	125	600	144	167	399
Move Cap.:	1104	xxxx	xxxxx	707	xxxx	xxxxx	140	123	600	140	164	399
Volume/Cap:	0.01	xxxx	xxxx	0.01	xxxx	xxxx	0.02	0.01	0.01	1.62	0.01	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.3	xxxx	xxxxx	10.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	B	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	221	xxxxx	xxxx	141	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	16.4	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	22.0	xxxxx	xxxxx	371	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			22.0			371.4		
ApproachLOS:	*			*			C			F		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 NW Shute Rd/Hwy 26 WB Ramp

Cycle (sec): 70 Critical Vol./Cap.(X): 0.878
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 26.3
Optimal Cycle: 84 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	0 0	0	0	1	1 0	0	0	0	0 0	1	1	0	0 1
Volume Module:																
Base Vol:	275	798		0 0	415		58		0		0	0	701		0	70
Growth Adj:	1.00	1.00		1.00 1.00	1.00		1.00		1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	275	798		0 0	415		58		0		0	0	701		0	70
User Adj:	1.00	1.00		1.00 1.00	1.00		1.00		1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.92	0.92		0.92 0.92	0.92		0.92		0.92		0.92	0.92	0.92		0.92	0.92
PHF Volume:	299	867		0 0	451		63		0		0	0	762		0	76
Reduct Vol:	0	0		0 0	0		0		0		0	0	0		0	0
Reduced Vol:	299	867		0 0	451		63		0		0	0	762		0	76
PCE Adj:	1.00	1.00		1.00 1.00	1.00		1.00		1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00	1.00		1.00 1.00	1.00		1.00		1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	299	867		0 0	451		63		0		0	0	762		0	76
Saturation Flow Module:																
Sat/Lane:	1800	1800		1800 1800	1800		1800		1800		1800	1800	1800		1800	1800
Adjustment:	0.92	0.97		1.00 1.00	0.90		0.89		1.00		1.00	1.00	0.92		1.00	0.82
Lanes:	1.00	1.00		0.00 0.00	1.75		0.25		0.00		0.00	0.00	2.00		0.00	1.00
Final Sat.:	1660	1748		0 0	2833		396		0		0	0	3297		0	1472
Capacity Analysis Module:																
Vol/Sat:	0.18	0.50		0.00 0.00	0.16		0.16		0.00		0.00	0.00	0.23		0.00	0.05
Crit Moves:		****			****								****			
Green/Cycle:	0.30	0.57		0.00 0.00	0.27		0.27		0.00		0.00	0.00	0.26		0.00	0.26
Volume/Cap:	0.60	0.88		0.00 0.00	0.60		0.60		0.00		0.00	0.00	0.88		0.00	0.20
Delay/Veh:	23.0	22.2		0.0 0.0	23.7		23.7		0.0		0.0	0.0	34.8		0.0	20.3
User DelAdj:	1.00	1.00		1.00 1.00	1.00		1.00		1.00		1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	23.0	22.2		0.0 0.0	23.7		23.7		0.0		0.0	0.0	34.8		0.0	20.3
LOS by Move:	C	C		A A	C		C		A		A	A	C		A	C
HCM2kAvgQ:	6	20		0 0	6		6		0		0	0	11		0	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 NW Shute Rd/Hwy 26 EB Ramp

Cycle (sec): 70 Critical Vol./Cap.(X): 1.093
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 50.3
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1	0 1	1	0	2	0 0	0	1	0	0 1	0	0	0	0 0
Volume Module:																
Base Vol:	0	1131		886	129	1005		0	42		1	191	0		0	0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	0	1131		886	129	1005		0	42		1	191	0		0	0
User Adj:	1.00	1.00		0.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.93	0.93		0.00	0.93	0.93		0.93	0.93		0.93	0.93	0.93		0.93	0.93
PHF Volume:	0	1216		0	139	1081		0	45		1	205	0		0	0
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Reduced Vol:	0	1216		0	139	1081		0	45		1	205	0		0	0
PCE Adj:	1.00	1.00		0.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00	1.00		0.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	0	1216		0	139	1081		0	45		1	205	0		0	0
Saturation Flow Module:																
Sat/Lane:	1800	1800		1800	1800	1800		1800	1800		1800	1800	1800		1800	1800
Adjustment:	1.00	0.99		1.00	0.92	0.92		1.00	0.94		0.94	0.82	1.00		1.00	1.00
Lanes:	0.00	1.00		1.00	1.00	2.00		0.00	0.98		0.02	1.00	0.00		0.00	0.00
Final Sat.:	0	1782		1800	1660	3321		0	1646		39	1472	0		0	0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.68		0.00	0.08	0.33		0.00	0.03		0.03	0.14	0.00		0.00	0.00
Crit Moves:		****			****							****				
Green/Cycle:	0.00	0.62		0.00	0.08	0.70		0.00	0.13		0.13	0.13	0.00		0.00	0.00
Volume/Cap:	0.00	1.09		0.00	1.09	0.46		0.00	0.21		0.21	1.09	0.00		0.00	0.00
Delay/Veh:	0.0	69.1		0.0	139.3	4.8		0.0	27.9		27.9	123.2	0.0		0.0	0.0
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	0.0	69.1		0.0	139.3	4.8		0.0	27.9		27.9	123.2	0.0		0.0	0.0
LOS by Move:	A	E		A	F	A		A	C		C	F	A		A	A
HCM2kAvgQ:	0	44		0	8	6		0	1		1	10	0		0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #18 NW Shute/NW Huffman St

Average Delay (sec/veh): 49.7 Worst Case Level Of Service: F[1591.0]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1	1 0	1	0	2	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module:																
Base Vol:	0	1835		40	56	1009		0	0		0	0	67		0	27
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	0	1835		40	56	1009		0	0		0	0	67		0	27
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.92	0.92		0.92	0.92	0.92		0.92	0.92		0.92	0.92	0.92		0.92	0.92
PHF Volume:	0	1995		43	61	1097		0	0		0	0	73		0	29
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
FinalVolume:	0	1995		43	61	1097		0	0		0	0	73		0	29
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx		xxxxx	4.1	xxxx		xxxxx	xxxxx		xxxx	xxxxx	6.8		xxxx	6.9
FollowUpTim:	xxxxx	xxxx		xxxxx	2.2	xxxx		xxxxx	xxxxx		xxxx	xxxxx	3.5		xxxx	3.3
Capacity Module:																
Cnflict Vol:	xxxx	xxxx		xxxxx	2038	xxxx		xxxxx	xxxx		xxxx	xxxxx	2686		xxxx	1019
Potent Cap.:	xxxx	xxxx		xxxxx	281	xxxx		xxxxx	xxxx		xxxx	xxxxx	18		xxxx	238
Move Cap.:	xxxx	xxxx		xxxxx	281	xxxx		xxxxx	xxxx		xxxx	xxxxx	15		xxxx	238
Volume/Cap:	xxxx	xxxx		xxxx	0.22	xxxx		xxxx	xxxx		xxxx	xxxx	4.82		xxxx	0.12
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx		xxxxx	0.8	xxxx		xxxxx	xxxx		xxxx	xxxxx	10.0		xxxx	0.4
Control Del:	xxxxx	xxxx		xxxxx	21.3	xxxx		xxxxx	xxxxx		xxxx	xxxxx	2223		xxxx	22.2
LOS by Move:	*	*		*	C	*		*	*		*	*	F		*	C
Movement:	LT -	LTR -		RT	LT -	LTR -		RT	LT -		LTR -	RT	LT -		LTR -	RT
Shared Cap.:	xxxx	xxxx		xxxxx	xxxx	xxxx		xxxxx	xxxx		xxxx	xxxxx	xxxx		xxxx	xxxxx
SharedQueue:	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx	xxxxx		xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx		xxxxx	xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx	xxxxx		xxxx	xxxxx
Shared LOS:	*	*		*	*	*		*	*		*	*	*		*	*
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				1591.0			
ApproachLOS:	*				*				*				F			

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 NW Shute Rd/NE Shute Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.757
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 16.9
Optimal Cycle: 68 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Ovl			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	1	1 0	1	0	2	0 0	0	0	0	0 0	1	0	0	0 2
Volume Module:																
Base Vol:	0	722		13	670	864		0	0		0	0	9		0	663
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	0	722		13	670	864		0	0		0	0	9		0	663
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.92	0.92		0.92	0.92	0.92		0.92	0.92		0.92	0.92	0.92		0.92	0.92
PHF Volume:	0	785		14	728	939		0	0		0	0	10		0	721
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Reduced Vol:	0	785		14	728	939		0	0		0	0	10		0	721
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
FinalVolume:	0	785		14	728	939		0	0		0	0	10		0	721
Saturation Flow Module:																
Sat/Lane:	1800	1800		1800	1800	1800		1800	1800		1800	1800	1800		1800	1800
Adjustment:	1.00	0.95		0.95	0.95	0.95		1.00	1.00		1.00	1.00	0.95		1.00	0.75
Lanes:	0.00	1.96		0.04	1.00	2.00		0.00	0.00		0.00	0.00	1.00		0.00	2.00
Final Sat.:	0	3349		60	1710	3420		0	0		0	0	1710		0	2693
Capacity Analysis Module:																
Vol/Sat:	0.00	0.23		0.23	0.43	0.27		0.00	0.00		0.00	0.00	0.01		0.00	0.27
Crit Moves:		****			****								****			
Green/Cycle:	0.00	0.31		0.31	0.56	0.87		0.00	0.00		0.00	0.00	0.01		0.00	0.57
Volume/Cap:	0.00	0.76		0.76	0.76	0.31		0.00	0.00		0.00	0.00	0.76		0.00	0.47
Delay/Veh:	0.0	34.3		34.3	20.1	1.2		0.0	0.0		0.0	0.0	174.7		0.0	12.8
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	0.0	34.3		34.3	20.1	1.2		0.0	0.0		0.0	0.0	174.7		0.0	12.8
LOS by Move:	A	C		C	C	A		A	A		A	A	F		A	B
HCM2kAvgQ:	0	13		13	18	3		0	0		0	0	1		0	8

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #20 NE Brookwood Pkwy/NE Cornell Rd

Cycle (sec): 180 Critical Vol./Cap.(X): 1.436
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 190.7
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	0 1	1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	29	398	185	150	965	294	260	1098	100	297	1533	212
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	29	398	185	150	965	294	260	1098	100	297	1533	212
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	31	419	195	158	1016	309	274	1156	105	313	1614	223
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	419	195	158	1016	309	274	1156	105	313	1614	223
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	31	419	195	158	1016	309	274	1156	105	313	1614	223
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.93	0.89	0.89	0.93	0.98	0.83	0.94	0.93	0.93	0.94	0.92	0.92
Lanes:	1.00	1.36	0.64	1.00	1.00	1.00	1.00	1.83	0.17	1.00	1.76	0.24
Final Sat.:	1676	2178	1012	1676	1764	1499	1693	3066	279	1693	2921	404
Capacity Analysis Module:												
Vol/Sat:	0.02	0.19	0.19	0.09	0.58	0.21	0.16	0.38	0.38	0.18	0.55	0.55
Crit Moves:	****				****			****			****	
Green/Cycle:	0.01	0.28	0.28	0.14	0.40	0.40	0.11	0.33	0.33	0.16	0.38	0.38
Volume/Cap:	1.44	0.69	0.69	0.69	1.44	0.51	1.44	1.13	1.13	1.13	1.44	1.44
Delay/Veh:	440.5	60.5	60.5	83.0	258	41.5	303.3	130	129.8	168.8	256	256.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	440.5	60.5	60.5	83.0	258	41.5	303.3	130	129.8	168.8	256	256.0
LOS by Move:	F	E	E	F	F	D	F	F	F	F	F	F
HCM2kAvgQ:	4	16	16	9	92	13	27	48	48	25	88	88

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #21 NE Brookwood Pkwy/W Baseline Rd

Cycle (sec): 95 Critical Vol./Cap.(X): 1.487
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 179.0
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 1	0 1	1	0 1	0 1	1	0 0	1 0
Volume Module:												
Base Vol:	196	342	80	81	608	92	115	677	160	579	488	83
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	196	342	80	81	608	92	115	677	160	579	488	83
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	204	356	83	84	633	96	120	705	167	603	508	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	204	356	83	84	633	96	120	705	167	603	508	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	204	356	83	84	633	96	120	705	167	603	508	86
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.93	0.95	0.95	0.95	0.94	0.99	0.84	0.93	0.98	0.82	0.93	0.96	0.96
Lanes:	1.00	0.81	0.19	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.15
Final Sat.:	1676	1389	325	1693	1782	1515	1676	1764	1476	1676	1474	251
Capacity Analysis Module:												
Vol/Sat:	0.12	0.26	0.26	0.05	0.36	0.06	0.07	0.40	0.11	0.36	0.34	0.34
Crit Moves:	****				****			****		****		
Green/Cycle:	0.08	0.27	0.27	0.05	0.24	0.24	0.09	0.27	0.27	0.24	0.42	0.42
Volume/Cap:	1.49	0.95	0.95	0.95	1.49	0.26	0.82	1.49	0.42	1.49	0.82	0.82
Delay/Veh:	297.5	64.7	64.7	125.3	268	29.8	70.9	265	29.4	268.2	31.2	31.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	297.5	64.7	64.7	125.3	268	29.8	70.9	265	29.4	268.2	31.2	31.2
LOS by Move:	F	E	E	F	F	C	E	F	C	F	C	C
HCM2kAvgQ:	16	18	18	5	45	2	6	50	4	43	17	17

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #22 NW Jacobson Rd/NW Century Blvd

Average Delay (sec/veh): OVERFLOW Worst Case Level Of Service: F[xxxxx]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0	0	1 0	0	0 1	0 0	0	0 1!	0 0	0	1 0	0 0
Volume Module:												
Base Vol:	264	255	335	0	132	0	15	394	105	257	53	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	264	255	335	0	132	0	15	394	105	257	53	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	287	277	364	0	143	0	16	428	114	279	58	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	287	277	364	0	143	0	16	428	114	279	58	0
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	xxxxx	6.5	xxxxx	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	4.0	xxxxx	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1206	1134	485	xxxx	1191	xxxxx	58	xxxx	xxxxx	542	xxxx	xxxxx
Potent Cap.:	162	204	586	xxxx	189	xxxxx	1560	xxxx	xxxxx	1037	xxxx	xxxxx
Move Cap.:	0	138	586	xxxx	127	xxxxx	1560	xxxx	xxxxx	1037	xxxx	xxxxx
Volume/Cap:	xxxx	2.01	0.62	xxxx	1.13	xxxx	0.01	xxxx	xxxx	0.27	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	8.4	xxxxx	0.0	xxxx	xxxxx	1.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	185	xxxxx	7.3	xxxx	xxxxx	9.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	F	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	243	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	54.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	1.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	778.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.7	xxxx	xxxxx
Shared LOS:	*	*	F	*	*	*	*	*	*	A	*	*
ApproachDel:	xxxxxx			185.0			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #23 NW Cornelius Pass Rd/NW Jacobson Rd

Cycle (sec): 70 Critical Vol./Cap.(X): 1.219
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 95.3
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	0	1 0	1 0	1	0 1 0
Volume Module:												
Base Vol:	99	1417	106	17	637	90	665	233	232	15	20	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	1417	106	17	637	90	665	233	232	15	20	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	108	1540	115	18	692	98	723	253	252	16	22	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	1540	115	18	692	98	723	253	252	16	22	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	108	1540	115	18	692	98	723	253	252	16	22	9
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.95	0.94	0.94	0.94	0.95	0.93	0.93	0.95	0.93	0.92	0.95	0.96	0.96
Lanes:	1.00	1.86	0.14	1.00	1.75	0.25	1.00	0.50	0.50	1.00	0.71	0.29
Final Sat.:	1710	3150	236	1710	2938	415	1710	834	830	1710	1230	492
Capacity Analysis Module:												
Vol/Sat:	0.06	0.49	0.49	0.01	0.24	0.24	0.42	0.30	0.30	0.01	0.02	0.02
Crit Moves:		****			****			****				****	
Green/Cycle:	0.09	0.40	0.40	0.01	0.32	0.32	0.35	0.35	0.35	0.01	0.01	0.01
Volume/Cap:	0.73	1.22	1.22	1.22	0.73	0.73	1.22	0.87	0.87	0.87	1.22	1.22
Delay/Veh:	47.8	126	126.3	343.8	23.5	23.5	136.0	34.2	34.2	178.6	289	288.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.8	126	126.3	343.8	23.5	23.5	136.0	34.2	34.2	178.6	289	288.5
LOS by Move:	D	F	F	F	C	C	F	C	C	F	F	F
HCM2kAvgQ:	4	41	41	2	10	10	35	14	14	2	3	3

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #326

Cycle (sec): 100 Critical Vol./Cap.(X): 0.952
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 37.3
Optimal Cycle: 0 Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	40	169	289	7	77	15	35	170	63	187	227	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	169	289	7	77	15	35	170	63	187	227	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	43	184	314	8	84	16	38	185	68	203	247	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	184	314	8	84	16	38	185	68	203	247	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	43	184	314	8	84	16	38	185	68	203	247	14
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.08	0.34	0.58	0.07	0.78	0.15	0.13	0.63	0.24	0.44	0.53	0.03
Final Sat.:	46	193	330	30	331	64	64	311	115	229	278	16
Capacity Analysis Module:												
Vol/Sat:	0.95	0.95	0.95	0.25	0.25	0.25	0.59	0.59	0.59	0.89	0.89	0.89
Crit Moves:	****				****		****			****		
Delay/Veh:	49.7	49.7	49.7	13.0	13.0	13.0	18.7	18.7	18.7	40.1	40.1	40.1
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.7	49.7	49.7	13.0	13.0	13.0	18.7	18.7	18.7	40.1	40.1	40.1
LOS by Move:	E	E	E	B	B	B	C	C	C	E	E	E
ApproachDel:	49.7			13.0			18.7			40.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	49.7			13.0			18.7			40.1		
LOS by Appr:	E			B			C			E		
AllWayAvgQ:	6.4	6.4	6.4	0.3	0.3	0.3	1.2	1.2	1.2	4.4	4.4	4.4

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Scenario Report

Scenario:	2030 No Build PM Peak
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 NW Glencoe Rd/NW Evergreen Rd	F	211.8	1.561	F	211.8	1.561	+ 0.000 D/V
# 2 NE Jackson School Rd/NW Evergr	F	158.6	1.343	F	158.6	1.343	+ 0.000 D/V
# 3 NW Jackson School Rd/NW Evergr	F	142.5	1.403	F	142.5	1.403	+ 0.000 D/V
# 4 NE 25th Ave/NW Evergreen Rd	C	24.9	0.873	C	24.9	0.873	+ 0.000 D/V
# 5 NW Sewell Rd/NW Evergreen Rd	F	OVRFL	0.000	F	OVRFL	0.000	+ 0.000 D/V
# 6 NW SHute Rd/NW Evergreen Pkwy	F	129.3	1.345	F	129.3	1.345	+ 0.000 D/V
# 7 NW 229th Ave/NW Evergreen Rd	F	158.1	1.336	F	158.1	1.336	+ 0.000 D/V
# 8 NW Cornelius Pass Rd/NW Evergr	F	231.3	1.568	F	231.3	1.568	+ 0.000 D/V
# 9 NW Jackson School Rd/Hwy 26 WB	F	601.8	0.000	F	601.8	0.000	+ 0.000 D/V
# 10 NW Jackson School Rd/Hwy 26 EB	E	44.5	0.000	E	44.5	0.000	+ 0.000 D/V
# 11 NW Jackson School Rd/NW Meek R	F	305.6	0.000	F	305.6	0.000	+ 0.000 D/V
# 15 NW Helvetia Rd/NW Jacobson Rd	F	746.2	0.000	F	746.2	0.000	+ 0.000 D/V
# 16 NW Shute Rd/Hwy 26 WB Ramp	D	35.1	0.957	D	35.1	0.957	+ 0.000 D/V
# 17 NW Shute Rd/Hwy 26 EB Ramp	F	97.6	1.281	F	97.6	1.281	+ 0.000 D/V
# 18 NW Shute/NW Huffman St	F	OVRFL	0.000	F	OVRFL	0.000	+ 0.000 D/V
# 19 NW Shute Rd/NE Shute Rd	B	17.4	0.787	B	17.4	0.787	+ 0.000 D/V
# 20 NE Brookwood Pkwy/NE Cornell R	F	199.5	1.447	F	199.5	1.447	+ 0.000 D/V
# 21 NE Brookwood Pkwy/W Baseline R	F	179.9	1.498	F	179.9	1.498	+ 0.000 D/V
# 22 NW Jacobson Rd/NW Century Blvd	F	OVRFL	0.000	F	OVRFL	0.000	+ 0.000 D/V
# 23 NW Cornelius Pass Rd/NW Jacobs	F	99.9	1.234	F	99.9	1.234	+ 0.000 D/V
#325 NW Helvetia Rd/West Union Rd	D	26.5	0.842	D	26.5	0.842	+ 0.000 V/C

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 NW Glencoe Rd/NW Evergreen Rd

Cycle (sec): 50 Critical Vol./Cap.(X): 1.561
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 211.8
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0 1	0	1	0 1	0	0	0 0	0	1	0 0 1
Volume Module:												
Base Vol:	0	489	458	171	448	0	0	0	0	774	0	202
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	489	458	171	448	0	0	0	0	774	0	202
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	520	487	182	477	0	0	0	0	823	0	215
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	520	487	182	477	0	0	0	0	823	0	215
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	520	487	182	477	0	0	0	0	823	0	215
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	0.94	0.94	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.85
Lanes:	0.00	0.52	0.48	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	869	814	1710	1800	0	0	0	0	1710	0	1530
Capacity Analysis Module:												
Vol/Sat:	0.00	0.60	0.60	0.11	0.26	0.00	0.00	0.00	0.00	0.48	0.00	0.14
Crit Moves:		****		****						****		
Green/Cycle:	0.00	0.38	0.38	0.07	0.45	0.00	0.00	0.00	0.00	0.31	0.00	0.31
Volume/Cap:	0.00	1.56	1.56	1.56	0.59	0.00	0.00	0.00	0.00	1.56	0.00	0.46
Delay/Veh:	0.0	275	275.5	313.3	11.3	0.0	0.0	0.0	0.0	279.0	0.0	14.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	275	275.5	313.3	11.3	0.0	0.0	0.0	0.0	279.0	0.0	14.6
LOS by Move:	A	F	F	F	B	A	A	A	A	F	A	B
HCM2kAvgQ:	0	62	62	13	6	0	0	0	0	51	0	3

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 NE Jackson School Rd/NW Evergreen Rd

Cycle (sec): 60 Critical Vol./Cap.(X): 1.343
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 158.6
Optimal Cycle: 180 Level Of Service: F

Street Name: Jackson School - driveway

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	1	0 0 1	0	0	1! 0 0	1	0	0 1 0	1	0	0 1 0
Volume Module:												
Base Vol:	95	0	431	0	0	0	0	573	126	491	1135	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	0	431	0	0	0	0	573	126	491	1135	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	103	0	468	0	0	0	0	623	137	534	1234	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	103	0	468	0	0	0	0	623	137	534	1234	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	103	0	468	0	0	0	0	623	137	534	1234	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.71	1.00	0.84	1.00	1.00	1.00	1.00	0.94	0.94	0.93	0.98	1.00
Lanes:	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.82	0.18	1.00	1.00	0.00
Final Sat.:	1272	0	1515	0	1800	0	1800	1394	306	1676	1764	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.31	0.00	0.00	0.00	0.00	0.45	0.45	0.32	0.70	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.23	0.00	0.23	0.00	0.00	0.00	0.00	0.33	0.33	0.24	0.57	0.00
Volume/Cap:	0.35	0.00	1.34	0.00	0.00	0.00	0.00	1.34	1.34	1.34	1.23	0.00
Delay/Veh:	20.1	0.0	195.7	0.0	0.0	0.0	0.0	186	186.1	193.4	124	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	20.1	0.0	195.7	0.0	0.0	0.0	0.0	186	186.1	193.4	124	0.0
LOS by Move:	C	A	F	A	A	A	A	F	F	F	F	A
HCM2kAvgQ:	2	0	26	0	0	0	0	40	40	29	54	0

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 NW Jackson School Rd/NW Evergreen Rd

Cycle (sec): 60 Critical Vol./Cap.(X): 1.403
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 142.5
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0	1	0	0	1	0	1	0
Volume Module:												
Base Vol:	2	1	2	155	2	556	462	540	3	9	1122	524
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	1	2	155	2	556	462	540	3	9	1122	524
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	1	2	168	2	604	502	587	3	10	1220	570
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	1	2	168	2	604	502	587	3	10	1220	570
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	1	2	168	2	604	502	587	3	10	1220	570
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.75	0.75	0.75	0.68	0.69	0.82	0.93	0.98	0.98	0.94	0.99	0.82
Lanes:	0.40	0.20	0.40	0.99	0.01	1.00	1.00	0.99	0.01	1.00	1.00	1.00
Final Sat.:	539	270	539	1214	16	1472	1676	1752	10	1693	1782	1482
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.14	0.41	0.30	0.33	0.33	0.01	0.68	0.38
Crit Moves:					****			****			****	
Green/Cycle:	0.10	0.10	0.10	0.10	0.10	0.31	0.21	0.69	0.69	0.01	0.49	0.49
Volume/Cap:	0.04	0.04	0.04	1.40	1.40	1.31	1.40	0.49	0.49	0.49	1.40	0.79
Delay/Veh:	24.6	24.6	24.6	250.5	250	176.9	221.2	4.7	4.7	46.8	204	18.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	24.6	24.6	24.6	250.5	250	176.9	221.2	4.7	4.7	46.8	204	18.6
LOS by Move:	C	C	C	F	F	F	F	A	A	D	F	B
HCM2kAvgQ:	0	0	0	11	11	32	29	6	6	1	67	11

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 NE 25th Ave/NW Evergreen Rd

Cycle (sec): 80 Critical Vol./Cap.(X): 0.873
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 24.9
Optimal Cycle: 88 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 0 2	0	0	0 0 0	0	0	1 1 0	2	0	2 0 0
Volume Module:												
Base Vol:	349	0	685	0	0	0	0	1187	129	266	1138	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	349	0	685	0	0	0	0	1187	129	266	1138	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	379	0	745	0	0	0	0	1290	140	289	1237	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	379	0	745	0	0	0	0	1290	140	289	1237	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	379	0	745	0	0	0	0	1290	140	289	1237	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	0.74	1.00	1.00	1.00	1.00	0.93	0.93	0.90	0.93	1.00
Lanes:	1.00	0.00	2.00	0.00	0.00	0.00	0.00	1.80	0.20	2.00	2.00	0.00
Final Sat.:	1693	0	2666	0	0	0	0	3008	327	3251	3352	0
Capacity Analysis Module:												
Vol/Sat:	0.22	0.00	0.28	0.00	0.00	0.00	0.00	0.43	0.43	0.09	0.37	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.26	0.00	0.36	0.00	0.00	0.00	0.00	0.49	0.49	0.10	0.59	0.00
Volume/Cap:	0.87	0.00	0.78	0.00	0.00	0.00	0.00	0.87	0.87	0.87	0.62	0.00
Delay/Veh:	45.9	0.0	27.0	0.0	0.0	0.0	0.0	23.6	23.6	57.0	11.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.9	0.0	27.0	0.0	0.0	0.0	0.0	23.6	23.6	57.0	11.1	0.0
LOS by Move:	D	A	C	A	A	A	A	C	C	E	B	A
HCM2kAvgQ:	12	0	11	0	0	0	0	20	20	6	11	0

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 NW Sewell Rd/NW Evergreen Rd

Average Delay (sec/veh): OVERFLOW Worst Case Level Of Service: F[xxxxx]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 1	0	0 1	1 0	0	1 0	1 0	1	0
Volume Module:												
Base Vol:	2	0	1	454	0	244	90	1296	4	2	1197	251
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	0	1	454	0	244	90	1296	4	2	1197	251
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	0	1	493	0	265	98	1409	4	2	1301	273
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	0	1	493	0	265	98	1409	4	2	1301	273
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	3181	3185	1411	3049	3051	1438	1574	xxxx	xxxxx	1413	xxxx	xxxxx
Potent Cap.:	6	10	171	8	13	165	424	xxxx	xxxxx	489	xxxx	xxxxx
Move Cap.:	0	8	171	6	10	165	424	xxxx	xxxxx	489	xxxx	xxxxx
Volume/Cap:	xxxx	0.00	0.01	77.04	0.00	1.61	0.23	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	18.0	0.9	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	348.6	16.0	xxxx	xxxxx	12.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	F	C	*	*	B	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	0	xxxxx	6	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	63.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	35346	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	F	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 NW SHute Rd/NW Evergreen Pkwy

Cycle (sec):	110	Critical Vol./Cap.(X):	1.345
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	129.3
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Ovl				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1 0	2	0	1	1 0	2	0	2	2 0	1	1	0	2 0	2	0	1
Volume Module:																
Base Vol:	186	598	558		60	822	307		797	1539	269		387	797	184	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	186	598	558		60	822	307		797	1539	269		387	797	184	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	202	650	607		65	893	334		866	1673	292		421	866	200	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	202	650	607		65	893	334		866	1673	292		421	866	200	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	202	650	607		65	893	334		866	1673	292		421	866	200	
Saturation Flow Module:																
Sat/Lane:	1800	1800	1800		1800	1800	1800		1800	1800	1800		1800	1800	1800	
Adjustment:	0.95	0.95	0.85		0.95	0.95	0.75		0.92	0.93	0.93		0.92	0.95	0.84	
Lanes:	1.00	2.00	1.00		1.00	2.00	2.00		2.00	1.70	0.30		2.00	2.00	1.00	
Final Sat.:	1710	3420	1530		1710	3420	2693		3317	2846	497		3317	3420	1508	
Capacity Analysis Module:																
Vol/Sat:	0.12	0.19	0.40		0.04	0.26	0.12		0.26	0.59	0.59		0.13	0.25	0.13	
Crit Moves:			****		****					****			****			
Green/Cycle:	0.10	0.29	0.29		0.03	0.22	0.49		0.27	0.44	0.44		0.09	0.26	0.26	
Volume/Cap:	1.17	0.64	1.34		1.34	1.17	0.25		0.97	1.34	1.34		1.34	0.97	0.51	
Delay/Veh:	172.7	35.2	208.1		299.7	135	16.3		62.2	191	190.7		224.8	62.7	35.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	172.7	35.2	208.1		299.7	135	16.3		62.2	191	190.7		224.8	62.7	35.6	
LOS by Move:	F	D	F		F	F	B		E	F	F		F	E	D	
HCM2kAvgQ:	13	11	41		6	28	4		20	68	68		16	20	6	

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
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Level Of Service Computation Report
1994 HCM Operations Method (Base Volume Alternative)

Intersection #7 NW 229th Ave/NW Evergreen Rd

Cycle (sec): 110 Critical Vol./Cap.(X): 1.336
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 158.1
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	0 1	1	0 0 1	0	1	0 2	0 1	1	0 1	1 0
Volume Module:												
Base Vol:	89	278	600	221	220	104	192	1616	94	234	735	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	278	600	221	220	104	192	1616	94	234	735	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	94	293	632	233	232	109	202	1701	99	246	774	129
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	293	632	233	232	109	202	1701	99	246	774	129
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.05	1.00	1.00	1.05	1.05
FinalVolume:	94	293	632	233	232	109	202	1786	99	246	812	136
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	0.99	0.84	0.91	0.91	0.91	0.94	0.99	0.84	0.94	0.97	0.97
Lanes:	1.00	1.00	1.00	1.00	0.68	0.32	1.00	2.00	1.00	1.00	1.71	0.29
Final Sat.:	1787	1881	1599	1736	1178	557	1787	3762	1599	1787	3159	529
Capacity Analysis Module:												
Vol/Sat:	0.05	0.16	0.39	0.13	0.20	0.20	0.11	0.47	0.06	0.14	0.26	0.26
Crit Moves:			****	****				****		****		
Green/Cycle:	0.08	0.30	0.30	0.10	0.31	0.31	0.14	0.36	0.36	0.10	0.32	0.32
Volume/Cap:	0.63	0.53	1.34	1.34	0.63	0.63	0.81	1.34	0.17	1.34	0.81	0.81
Delay/Veh:	37.1	21.6	251.5	285.5	22.5	22.5	41.5	237	15.8	283.2	25.2	25.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.1	21.6	251.5	285.5	22.5	22.5	41.5	237	15.8	283.2	25.2	25.2
DesignQueue:	5	13	30	13	15	15	11	40	4	14	21	21

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 NW Cornelius Pass Rd/NW Evergreen Pkwy

Cycle (sec): 125 Critical Vol./Cap.(X): 1.568
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 231.3
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 2	0 1	2	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	203	1374	77	427	1227	38	336	1486	154	121	517	551
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	203	1374	77	427	1227	38	336	1486	154	121	517	551
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	221	1493	84	464	1334	41	365	1615	167	132	562	599
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	1493	84	464	1334	41	365	1615	167	132	562	599
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	1493	84	464	1334	41	365	1615	167	132	562	599
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.92	0.92	0.91	0.93	0.93	0.82	0.91	0.93	0.93	0.94	0.87	0.86
Lanes:	1.00	1.89	0.11	1.00	2.00	1.00	2.00	1.81	0.19	1.00	1.00	1.00
Final Sat.:	1660	3119	175	1676	3352	1472	3284	3025	313	1693	1563	1550
Capacity Analysis Module:												
Vol/Sat:	0.13	0.48	0.48	0.28	0.40	0.03	0.11	0.53	0.53	0.08	0.36	0.39
Crit Moves:		****		****				****		****		
Green/Cycle:	0.12	0.31	0.31	0.18	0.36	0.36	0.09	0.34	0.34	0.05	0.30	0.30
Volume/Cap:	1.10	1.57	1.57	1.57	1.10	0.08	1.28	1.57	1.57	1.57	1.19	1.28
Delay/Veh:	148.3	304	303.9	322.9	98.2	26.3	205.3	301	301.2	364.7	138	176.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	148.3	304	303.9	322.9	98.2	26.3	205.3	301	301.2	364.7	138	176.1
LOS by Move:	F	F	F	F	F	C	F	F	F	F	F	F
HCM2kAvgQ:	14	69	69	40	39	1	15	78	78	13	37	43

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 NW Jackson School Rd/Hwy 26 WB Ramp

Average Delay (sec/veh): 344.8 Worst Case Level Of Service: F[601.8]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0 1	0	0	0	0 1	0	1	0	0 0	0	0	0	1 0	0	1
Volume Module:																
Base Vol:	106	323	0	0	385	5	0	0	0	690	1	404				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	106	323	0	0	385	5	0	0	0	690	1	404				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
PHF Volume:	115	351	0	0	418	5	0	0	0	750	1	439				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	115	351	0	0	418	5	0	0	0	750	1	439				
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3				
Capacity Module:																
Cnflict Vol:	424	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1003	1005	351				
Potent Cap.:	1146	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	271	243	697				
Move Cap.:	1146	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	250	219	697				
Volume/Cap:	0.10	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	3.00	0.00	0.63				
Level Of Service Module:																
2Way95thQ:	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	4.5				
Control Del:	8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	18.5				
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	C				
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT						
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	250	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	66.9	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	942.9	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	F	*	*				
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			601.8						
ApproachLOS:	*			*			*			F						

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 NW Jackson School Rd/Hwy 26 EB Ramp

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: E[44.5]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0 1	0	1	1	0 1	0	0	0	1 0	0	1	0	0 0	0	0
Volume Module:																
Base Vol:	0	280	971		213	811	0		5	2	50		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	280	971		213	811	0		5	2	50		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	304	1055		232	882	0		5	2	54		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	304	1055		232	882	0		5	2	54		0	0	0	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx		6.4	6.5	6.2		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0	3.3		xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		1360	xxxx	xxxxx		2177	2704	882		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		512	xxxx	xxxxx		52	22	348		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		512	xxxx	xxxxx		33	12	348		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		0.45	xxxx	xxxx		0.16	0.18	0.16		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		2.3	xxxx	xxxxx		xxxx	xxxx	0.5		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		17.7	xxxx	xxxxx		xxxxx	xxxx	17.2		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		C	*	*		*	*	C		*	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		22	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		1.0	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		239.6	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		F	*	*		*	*	*	
ApproachDel:	xxxxxx				xxxxxx				44.5				xxxxxx			
ApproachLOS:	*				*				E				*			

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 NW Jackson School Rd/NW Meek Rd

Average Delay (sec/veh): 36.2 Worst Case Level Of Service: F[305.6]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0	1 0	0 1	0	0 0	0 0	0	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	0	953	5	94	601	0	0	0	0	54	0	164
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	953	5	94	601	0	0	0	0	54	0	164
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	1036	5	102	653	0	0	0	0	59	0	178
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	1036	5	102	653	0	0	0	0	59	0	178
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1041	xxxx	xxxxx	xxxx	xxxx	xxxxx	1896	1896	1039
Potent Cap.:	xxxx	xxxx	xxxxx	676	xxxx	xxxxx	xxxx	xxxx	xxxxx	77	70	283
Move Cap.:	xxxx	xxxx	xxxxx	676	xxxx	xxxxx	xxxx	xxxx	xxxxx	68	59	283
Volume/Cap:	xxxx	xxxx	xxxx	0.15	xxxx	xxxx	xxxx	xxxx	xxxx	0.86	0.00	0.63
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.5	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	11.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	B	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	158	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	15.5	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	11.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	306	xxxxx
Shared LOS:	*	*	*	B	*	*	*	*	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			305.6		
ApproachLOS:	*			*			*			F		

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #15 NW Helvetia Rd/NW Jacobson Rd

Average Delay (sec/veh): 78.4 Worst Case Level Of Service: F[746.2]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1!	0 0	0 0	1!	0 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	6	596	382	9	637	2	3	1	4	188	1	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	596	382	9	637	2	3	1	4	188	1	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	7	648	415	10	692	2	3	1	4	204	1	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	7	648	415	10	692	2	3	1	4	204	1	3
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	695	xxxx	xxxxx	1063	xxxx	xxxxx	1584	1789	693	1584	1583	855
Potent Cap.:	910	xxxx	xxxxx	663	xxxx	xxxxx	89	82	447	89	110	361
Move Cap.:	910	xxxx	xxxxx	663	xxxx	xxxxx	86	80	447	85	107	361
Volume/Cap:	0.01	xxxx	xxxx	0.01	xxxx	xxxx	0.04	0.01	0.01	2.39	0.01	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.0	xxxx	xxxxx	10.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	B	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	142	xxxxx	xxxx	87	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	19.3	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	32.0	xxxxx	xxxxx	746	xxxxx
Shared LOS:	*	*	*	*	*	*	*	D	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			32.0			746.2		
ApproachLOS:	*			*			D			F		

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 NW Shute Rd/Hwy 26 WB Ramp

Cycle (sec): 70 Critical Vol./Cap.(X): 0.957
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 35.1
Optimal Cycle: 110 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	0 0	0	0 1	1 0	0	0 0	0 0 0	1	1	0 0 1
Volume Module:												
Base Vol:	347	878	0	0	551	111	0	0	0	749	0	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	347	878	0	0	551	111	0	0	0	749	0	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	377	954	0	0	599	121	0	0	0	814	0	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	377	954	0	0	599	121	0	0	0	814	0	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	377	954	0	0	599	121	0	0	0	814	0	65
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.92	0.97	1.00	1.00	0.89	0.89	1.00	1.00	1.00	0.92	1.00	0.82
Lanes:	1.00	1.00	0.00	0.00	1.66	0.34	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	1660	1748	0	0	2668	537	0	0	0	3297	0	1472
Capacity Analysis Module:												
Vol/Sat:	0.23	0.55	0.00	0.00	0.22	0.22	0.00	0.00	0.00	0.25	0.00	0.04
Crit Moves:		****		****						****		
Green/Cycle:	0.29	0.57	0.00	0.00	0.28	0.28	0.00	0.00	0.00	0.26	0.00	0.26
Volume/Cap:	0.79	0.96	0.00	0.00	0.79	0.79	0.00	0.00	0.00	0.96	0.00	0.17
Delay/Veh:	31.8	33.1	0.0	0.0	27.9	27.9	0.0	0.0	0.0	46.6	0.0	20.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	31.8	33.1	0.0	0.0	27.9	27.9	0.0	0.0	0.0	46.6	0.0	20.4
LOS by Move:	C	C	A	A	C	C	A	A	A	D	A	C
HCM2kAvgQ:	10	26	0	0	10	10	0	0	0	14	0	1

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 NW Shute Rd/Hwy 26 EB Ramp

Cycle (sec): 70 Critical Vol./Cap.(X): 1.281
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 97.6
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	0 1	1	0 2	0 0	0	1 0	0 0 1	0	0	0 0 0
Volume Module:												
Base Vol:	0	1281	817	229	1089	0	45	1	192	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1281	817	229	1089	0	45	1	192	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.00	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	1377	0	246	1171	0	48	1	206	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1377	0	246	1171	0	48	1	206	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1377	0	246	1171	0	48	1	206	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	0.99	1.00	0.92	0.92	1.00	0.94	0.94	0.82	1.00	1.00	1.00
Lanes:	0.00	1.00	1.00	1.00	2.00	0.00	0.98	0.02	1.00	0.00	0.00	0.00
Final Sat.:	0	1782	1800	1660	3321	0	1647	37	1472	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.77	0.00	0.15	0.35	0.00	0.03	0.03	0.14	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.60	0.00	0.12	0.72	0.00	0.11	0.11	0.11	0.00	0.00	0.00
Volume/Cap:	0.00	1.28	0.00	1.28	0.49	0.00	0.27	0.27	1.28	0.00	0.00	0.00
Delay/Veh:	0.0	148	0.0	191.2	4.4	0.0	29.4	29.4	196.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	148	0.0	191.2	4.4	0.0	29.4	29.4	196.6	0.0	0.0	0.0
LOS by Move:	A	F	A	F	A	A	C	C	F	A	A	A
HCM2kAvgQ:	0	69	0	15	6	0	1	1	13	0	0	0

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #18 NW Shute/NW Huffman St

Average Delay (sec/veh): OVERFLOW Worst Case Level Of Service: F[xxxxx]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	0 1	0	1	0 1	1 0	1	0 1	0 1	1	0 0	1 0
Volume Module:												
Base Vol:	76	1579	41	65	1044	133	312	30	167	47	30	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	1579	41	65	1044	133	312	30	167	47	30	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	83	1716	45	71	1135	145	339	33	182	51	33	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	83	1716	45	71	1135	145	339	33	182	51	33	24
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	1279	xxxx	xxxxx	1761	xxxx	xxxxx	2388	3274	640	2629	3324	880
Potent Cap.:	549	xxxx	xxxxx	360	xxxx	xxxxx	18	9	423	12	8	294
Move Cap.:	549	xxxx	xxxxx	360	xxxx	xxxxx	0	6	423	0	6	294
Volume/Cap:	0.15	xxxx	xxxx	0.20	xxxx	xxxx	xxxx	5.32	0.43	xxxx	5.74	0.08
Level Of Service Module:												
2Way95thQ:	0.5	xxxx	xxxxx	0.7	xxxx	xxxxx	xxxx	5.5	2.1	xxxx	xxxx	xxxxx
Control Del:	12.7	xxxx	xxxxx	17.4	xxxx	xxxxx	xxxxx	3098	19.7	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	C	*	*	*	F	C	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	10
SharedQueue:	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	8.4
Shrd ConDel:	12.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	2928
Shared LOS:	B	*	*	*	*	*	*	*	*	*	*	F
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			F			F		

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 NW Shute Rd/NE Shute Rd

Cycle (sec): 110 Critical Vol./Cap.(X): 0.787
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 17.4
Optimal Cycle: 76 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1 1	0	1	0 2	0 0	0	0 0	0 0	1	0 0	0 2
Volume Module:												
Base Vol:	0	582	60	770	894	0	0	0	0	7	0	600
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	582	60	770	894	0	0	0	0	7	0	600
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	633	65	837	972	0	0	0	0	8	0	652
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	633	65	837	972	0	0	0	0	8	0	652
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	633	65	837	972	0	0	0	0	8	0	652
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	0.94	0.94	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.75
Lanes:	0.00	1.81	0.19	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00
Final Sat.:	0	3057	315	1710	3420	0	0	0	0	1710	0	2693
Capacity Analysis Module:												
Vol/Sat:	0.00	0.21	0.21	0.49	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.24
Crit Moves:		****		****						****		
Green/Cycle:	0.00	0.26	0.26	0.62	0.89	0.00	0.00	0.00	0.00	0.01	0.00	0.63
Volume/Cap:	0.00	0.79	0.79	0.79	0.32	0.00	0.00	0.00	0.00	0.79	0.00	0.39
Delay/Veh:	0.0	42.4	42.4	19.3	1.1	0.0	0.0	0.0	0.0	220.8	0.0	10.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	42.4	42.4	19.3	1.1	0.0	0.0	0.0	0.0	220.8	0.0	10.2
LOS by Move:	A	D	D	B	A	A	A	A	A	F	A	B
HCM2kAvgQ:	0	13	13	22	3	0	0	0	0	1	0	6

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #20 NE Brookwood Pkwy/NE Cornell Rd

Cycle (sec): 180 Critical Vol./Cap.(X): 1.447
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 199.5
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 1	0 1	1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	30	403	180	153	1009	294	236	1123	100	302	1531	209
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	403	180	153	1009	294	236	1123	100	302	1531	209
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	32	424	189	161	1062	309	248	1182	105	318	1612	220
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	32	424	189	161	1062	309	248	1182	105	318	1612	220
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	32	424	189	161	1062	309	248	1182	105	318	1612	220
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.93	0.89	0.89	0.93	0.98	0.83	0.94	0.93	0.93	0.94	0.92	0.92
Lanes:	1.00	1.38	0.62	1.00	1.00	1.00	1.00	1.84	0.16	1.00	1.76	0.24
Final Sat.:	1676	2210	987	1676	1764	1499	1693	3072	274	1693	2925	399
Capacity Analysis Module:												
Vol/Sat:	0.02	0.19	0.19	0.10	0.60	0.21	0.15	0.38	0.38	0.19	0.55	0.55
Crit Moves:	****				****		****				****	
Green/Cycle:	0.01	0.29	0.29	0.14	0.42	0.42	0.10	0.32	0.32	0.16	0.38	0.38
Volume/Cap:	1.45	0.67	0.67	0.67	1.45	0.50	1.45	1.19	1.19	1.19	1.45	1.45
Delay/Veh:	442.1	58.8	58.8	80.3	261	39.3	311.7	155	154.8	191.4	262	261.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	442.1	58.8	58.8	80.3	261	39.3	311.7	155	154.8	191.4	262	261.5
LOS by Move:	F	E	E	F	F	D	F	F	F	F	F	F
HCM2kAvgQ:	4	16	16	9	97	12	25	52	52	26	88	88

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #21 NE Brookwood Pkwy/W Baseline Rd

Cycle (sec): 95 Critical Vol./Cap.(X): 1.498
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 179.9
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 1	0 1	1	0 1	0 1	1	0 1	0 1
Volume Module:												
Base Vol:	193	352	85	83	614	122	120	680	202	587	485	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	193	352	85	83	614	122	120	680	202	587	485	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	201	367	89	86	640	127	125	708	210	611	505	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	367	89	86	640	127	125	708	210	611	505	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	201	367	89	86	640	127	125	708	210	611	505	85
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.93	0.95	0.95	0.94	0.99	0.84	0.93	0.98	0.82	0.93	0.96	0.96
Lanes:	1.00	0.81	0.19	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.14
Final Sat.:	1676	1379	333	1693	1782	1515	1676	1764	1476	1676	1476	249
Capacity Analysis Module:												
Vol/Sat:	0.12	0.27	0.27	0.05	0.36	0.08	0.07	0.40	0.14	0.36	0.34	0.34
Crit Moves:	****				****			****		****		
Green/Cycle:	0.08	0.27	0.27	0.05	0.24	0.24	0.09	0.27	0.27	0.24	0.42	0.42
Volume/Cap:	1.50	0.99	0.99	0.99	1.50	0.35	0.81	1.50	0.53	1.50	0.81	0.81
Delay/Veh:	302.5	74.2	74.2	138.3	272	30.6	69.7	270	31.1	272.4	31.4	31.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	302.5	74.2	74.2	138.3	272	30.6	69.7	270	31.1	272.4	31.4	31.4
LOS by Move:	F	E	E	F	F	C	E	F	C	F	C	C
HCM2kAvgQ:	16	19	19	6	46	3	6	51	6	44	17	17

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #22 NW Jacobson Rd/NW Century Blvd

Average Delay (sec/veh): OVERFLOW Worst Case Level Of Service: F[xxxxx]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	1 0	1	0	0	0 0	1	0	0	0 1!	0	0	0	1 0	0	0
Volume Module:																
Base Vol:	334	269	368		0	138	1		51	412	245		256	78	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	334	269	368		0	138	1		51	412	245		256	78	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	363	292	400		0	150	1		55	448	266		278	85	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	363	292	400		0	150	1		55	448	266		278	85	0	
Critical Gap Module:																
Critical Gp:	7.1	6.5	6.2	xxxxx	6.5	6.2	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx			
FollowUpTim:	3.5	4.0	3.3	xxxxx	4.0	3.3	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx			
Capacity Module:																
Cnflict Vol:	1409	1333	581	xxxx	1466	85	85	xxxx	xxxxx		714	xxxx	xxxxx			
Potent Cap.:	117	155	517	xxxx	129	980	1525	xxxx	xxxxx		895	xxxx	xxxxx			
Move Cap.:	0	95	517	xxxx	79	980	1525	xxxx	xxxxx		895	xxxx	xxxxx			
Volume/Cap:	xxxx	3.09	0.77	xxxx	1.91	0.00	0.04	xxxx	xxxx		0.31	xxxx	xxxx			
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx		1.3	xxxx	xxxxx			
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx		10.8	xxxx	xxxxx			
LOS by Move:	*	*	*	*	*	*	A	*	*		B	*	*			
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT		LT -	LTR -	RT			
Shared Cap.:	0	xxxx	179	xxxx	xxxx	79	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	68.0	xxxxx	xxxx	13.3	xxxxx	xxxx	xxxxx		1.3	xxxx	xxxxx			
Shrd ConDel:	xxxxx	xxxx	1340	xxxxx	xxxx	539.3	xxxxx	xxxx	xxxxx		10.8	xxxx	xxxxx			
Shared LOS:	*	*	F	*	*	F	*	*	*		B	*	*			
ApproachDel:	xxxxxx			539.3			xxxxxx				xxxxxx					
ApproachLOS:	F			F			*				*					

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #23 NW Cornelius Pass Rd/NW Jacobson Rd

Cycle (sec):	70	Critical Vol./Cap.(X):	1.234
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	99.9
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 1	1	0	1	0 1	1	0	1	0 0	1	0	1	0 0	1	0
Volume Module:																
Base Vol:	114	1439	102		17	653	92		674	239	240		24	20	8	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	114	1439	102		17	653	92		674	239	240		24	20	8	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	124	1564	111		18	710	100		733	260	261		26	22	9	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	124	1564	111		18	710	100		733	260	261		26	22	9	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	124	1564	111		18	710	100		733	260	261		26	22	9	
Saturation Flow Module:																
Sat/Lane:	1800	1800	1800		1800	1800	1800		1800	1800	1800		1800	1800	1800	
Adjustment:	0.95	0.94	0.94		0.94	0.95	0.93		0.93	0.95	0.93		0.92	0.95	0.96	
Lanes:	1.00	1.87	0.13		1.00	1.75	0.25		1.00	0.50	0.50		1.00	0.71	0.29	
Final Sat.:	1710	3161	224		1710	2942	415		1710	831	834		1710	1230	492	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.49	0.49		0.01	0.24	0.24		0.43	0.31	0.31		0.02	0.02	0.02	
Crit Moves:		****				****				****				****		
Green/Cycle:	0.09	0.40	0.40		0.01	0.32	0.32		0.35	0.34	0.34		0.02	0.01	0.01	
Volume/Cap:	0.77	1.23	1.23		1.23	0.77	0.77		1.23	0.91	0.91		0.91	1.23	1.23	
Delay/Veh:	50.3	133	132.7		350.9	25.0	25.0		142.1	40.1	40.1		162.5	295	295.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	50.3	133	132.7		350.9	25.0	25.0		142.1	40.1	40.1		162.5	295	295.1	
LOS by Move:	D	F	F		F	C	C		F	D	D		F	F	F	
HCM2kAvgQ:	5	42	42		2	10	10		36	15	15		2	3	3	

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Build Conditions (2030)

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #325 NW Helvetia Rd/West Union Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.842
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	26.5
Optimal Cycle:	0	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	41	105	297	25	57	14	34	186	45	117	239	75
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	105	297	25	57	14	34	186	45	117	239	75
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	45	114	323	27	62	15	37	202	49	127	260	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	45	114	323	27	62	15	37	202	49	127	260	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	45	114	323	27	62	15	37	202	49	127	260	82
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.09	0.24	0.67	0.26	0.59	0.15	0.13	0.70	0.17	0.27	0.56	0.17
Final Sat.:	53	137	387	110	252	62	64	352	85	151	309	97
Capacity Analysis Module:												
Vol/Sat:	0.83	0.83	0.83	0.25	0.25	0.25	0.57	0.57	0.57	0.84	0.84	0.84
Crit Moves:			****		****			****			****	
Delay/Veh:	30.0	30.0	30.0	12.3	12.3	12.3	17.0	17.0	17.0	32.0	32.0	32.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.0	30.0	30.0	12.3	12.3	12.3	17.0	17.0	17.0	32.0	32.0	32.0
LOS by Move:	D	D	D	B	B	B	C	C	C	D	D	D
ApproachDel:	30.0			12.3			17.0			32.0		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	30.0			12.3			17.0			32.0		
LOS by Appr:	D			B			C			D		
AllWayAvgQ:	3.3	3.3	3.3	0.2	0.2	0.2	1.0	1.0	1.0	3.5	3.5	3.5

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Mitigated No Build Conditions (2030)

Scenario Report

Scenario:	2030 Mitigated No Build PM Peak
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Mitigated No Build Conditions (2030)

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 NW Glencoe Rd/NW Evergreen Rd	C	22.1	0.714	C	22.1	0.714	+ 0.000 D/V
# 2 NE Jackson School Rd/NW Evergr	B	16.7	0.705	B	16.7	0.705	+ 0.000 D/V
# 3 NW Jackson School Rd/NW Evergr	D	36.5	0.933	D	36.5	0.933	+ 0.000 D/V
# 5 NW Sewell Rd/NW Evergreen Rd	F	72.6	0.000	F	72.6	0.000	+ 0.000 D/V
# 6 NW SHute Rd/NW Evergreen Pkwy	D	50.7	0.947	D	50.7	0.947	+ 0.000 D/V
# 7 NW 229th Ave/NW Evergreen Rd	D	49.0	0.963	D	49.0	0.963	+ 0.000 D/V
# 8 NW Cornelius Pass Rd/NW Evergr	D	51.1	0.964	D	51.1	0.964	+ 0.000 D/V
# 9 NW Jackson School Rd/Hwy 26 WB	C	24.3	0.649	C	24.3	0.649	+ 0.000 D/V
# 15 NW Helvetia Rd/NW Jacobson Rd	B	17.6	0.795	B	17.6	0.795	+ 0.000 D/V
# 17 NW Shute Rd/Hwy 26 EB Ramp	B	19.6	0.647	B	19.6	0.647	+ 0.000 D/V
# 18 NW Shute/NW Huffman St	A	9.3	0.751	A	9.3	0.751	+ 0.000 D/V
# 20 NE Brookwood Pkwy/NE Cornell R	D	51.7	0.969	D	51.7	0.969	+ 0.000 D/V
# 21 NE Brookwood Pkwy/W Baseline R	D	43.2	0.848	D	43.2	0.848	+ 0.000 D/V
# 22 NW Jacobson Rd/NW Century Blvd	D	42.5	0.839	D	42.5	0.839	+ 0.000 D/V
# 23 NW Cornelius Pass Rd/NW Jacobs	D	41.6	0.938	D	41.6	0.938	+ 0.000 D/V

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Mitigated No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 NW Glencoe Rd/NW Evergreen Rd

Cycle (sec):	90	Critical Vol./Cap.(X):	0.714
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	22.1
Optimal Cycle:	60	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	0 1	1	0 1	0 0	0	0 0	0 0	2	0 0	0 1
Volume Module:												
Base Vol:	0	462	473	169	427	0	0	0	0	751	0	221
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	462	473	169	427	0	0	0	0	751	0	221
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	491	503	180	454	0	0	0	0	799	0	235
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	491	503	180	454	0	0	0	0	799	0	235
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	491	503	180	454	0	0	0	0	799	0	235
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.85	0.95	1.00	1.00	1.00	1.00	1.00	0.92	1.00	0.85
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	1800	1530	1710	1800	0	0	0	0	3317	0	1530
Capacity Analysis Module:												
Vol/Sat:	0.00	0.27	0.33	0.11	0.25	0.00	0.00	0.00	0.00	0.24	0.00	0.15
Crit Moves:		****		****						****		
Green/Cycle:	0.00	0.38	0.72	0.15	0.53	0.00	0.00	0.00	0.00	0.34	0.00	0.34
Volume/Cap:	0.00	0.71	0.46	0.71	0.48	0.00	0.00	0.00	0.00	0.71	0.00	0.46
Delay/Veh:	0.0	27.2	5.6	45.9	13.7	0.0	0.0	0.0	0.0	28.3	0.0	24.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.2	5.6	45.9	13.7	0.0	0.0	0.0	0.0	28.3	0.0	24.0
LOS by Move:	A	C	A	D	B	A	A	A	A	C	A	C
HCM2kAvgQ:	0	13	6	6	8	0	0	0	0	11	0	5

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Mitigated No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 NE Jackson School Rd/NW Evergreen Rd

Cycle (sec):	90	Critical Vol./Cap.(X):	0.705
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	16.7
Optimal Cycle:	59	Level Of Service:	B

Street Name: Jackson School - driveway

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	1 0	0 1	0	0 1!	0 0	1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	98	0	446	0	0	0	0	586	124	477	1120	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	0	446	0	0	0	0	586	124	477	1120	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	107	0	485	0	0	0	0	637	135	518	1217	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	107	0	485	0	0	0	0	637	135	518	1217	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	107	0	485	0	0	0	0	637	135	518	1217	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	1.00	0.84	1.00	1.00	1.00	1.00	0.90	0.89	0.93	0.93	0.95
Lanes:	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.65	0.35	1.00	2.00	0.00
Final Sat.:	1696	0	1515	0	1800	0	1800	2668	565	1676	3352	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.32	0.00	0.00	0.00	0.00	0.24	0.24	0.31	0.36	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.09	0.00	0.53	0.00	0.00	0.00	0.00	0.34	0.34	0.44	0.78	0.00
Volume/Cap:	0.70	0.00	0.61	0.00	0.00	0.00	0.00	0.70	0.70	0.70	0.47	0.00
Delay/Veh:	53.9	0.0	16.1	0.0	0.0	0.0	0.0	28.0	28.0	23.6	3.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.9	0.0	16.1	0.0	0.0	0.0	0.0	28.0	28.0	23.6	3.6	0.0
LOS by Move:	D	A	B	A	A	A	A	C	C	C	A	A
HCM2kAvgQ:	4	0	10	0	0	0	0	11	11	13	6	0

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Mitigated No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 NW Jackson School Rd/NW Evergreen Rd

Cycle (sec): 90 Critical Vol./Cap.(X): 0.933
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 36.5
Optimal Cycle: 119 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0	1	0	1	1	0	1	0	2	0	1
Volume Module:															
Base Vol:	2	1	2	151	2	555	496	535	3	9	1095	464
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	1	2	151	2	555	496	535	3	9	1095	464
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	1	2	164	2	603	539	582	3	10	1190	504
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	1	2	164	2	603	539	582	3	10	1190	504
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	1	2	164	2	603	539	582	3	10	1190	504
Saturation Flow Module:															
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.86	0.86	0.86	0.68	0.69	0.82	0.93	0.93	0.93	0.94	0.94	0.82
Lanes:	0.40	0.20	0.40	0.99	0.01	1.00	1.00	1.99	0.01	1.00	2.00	1.00
Final Sat.:	620	310	620	1215	16	1472	1676	3330	19	1693	3386	1481
Capacity Analysis Module:															
Vol/Sat:	0.00	0.00	0.00	0.14	0.14	0.41	0.32	0.17	0.17	0.01	0.35	0.34
Crit Moves:					****			****				****		
Green/Cycle:	0.14	0.14	0.14	0.14	0.14	0.49	0.34	0.70	0.70	0.02	0.38	0.38
Volume/Cap:	0.02	0.02	0.02	0.93	0.93	0.84	0.93	0.25	0.25	0.25	0.93	0.90
Delay/Veh:	33.1	33.1	33.1	86.2	86.2	28.3	50.7	5.0	5.0	46.5	39.3	44.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.1	33.1	33.1	86.2	86.2	28.3	50.7	5.0	5.0	46.5	39.3	44.5
LOS by Move:	C	C	C	F	F	C	D	A	A	D	D	D
HCM2kAvgQ:	0	0	0	8	8	17	19	3	3	1	22	17

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Mitigated No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 NW Sewell Rd/NW Evergreen Rd

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: F[72.6]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	R	L	-	T	R	L	-	T	R	L	-	T	R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1! 0	0	0	1	0	1	1	0	1	0	1	0	1	0
Volume Module:																
Base Vol:	2	0	1	12	0	144	130	1381	4	2	1201	69
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	0	1	12	0	144	130	1381	4	2	1201	69
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	0	1	13	0	157	141	1501	4	2	1305	75
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	0	1	13	0	157	141	1501	4	2	1305	75
Critical Gap Module:																
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:																
Cnflict Vol:	2443	3171	753	2380	3135	690	1380	xxxx	xxxxx	1505	xxxx	xxxxx
Potent Cap.:	17	11	357	19	11	392	503	xxxx	xxxxx	451	xxxx	xxxxx
Move Cap.:	8	8	357	14	8	392	503	xxxx	xxxxx	451	xxxx	xxxxx
Total Cap:	40	41	xxxxx	84	64	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.05	0.00	0.00	0.16	0.00	0.40	0.28	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.9	1.1	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	20.1	14.9	xxxx	xxxxx	13.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	C	B	*	*	B	*	*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	56	xxxxx	84	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	72.6	xxxxx	55.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	F	*	*	*	*	*	*	*	*
ApproachDel:	72.6			22.9			xxxxxx			xxxxxx		
ApproachLOS:	F			C			*			*		

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Mitigated No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 NW SHute Rd/NW Evergreen Pkwy

Cycle (sec):	120	Critical Vol./Cap.(X):	0.947
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	50.7
Optimal Cycle:	158	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 1	1	0 2	0 2	2	0 2	1 0	2	0 3	0 1
Volume Module:												
Base Vol:	154	985	406	74	856	232	431	1353	138	354	760	192
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	154	985	406	74	856	232	431	1353	138	354	760	192
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	167	1071	441	80	930	252	468	1471	150	385	826	209
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	167	1071	441	80	930	252	468	1471	150	385	826	209
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	167	1071	441	80	930	252	468	1471	150	385	826	209
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.95	0.95	0.85	0.95	0.95	0.75	0.92	0.90	0.90	0.92	0.91	0.84
Lanes:	1.00	2.00	1.00	1.00	2.00	2.00	2.00	2.72	0.28	2.00	3.00	1.00
Final Sat.:	1710	3420	1530	1710	3420	2693	3317	4396	448	3317	4914	1508
Capacity Analysis Module:												
Vol/Sat:	0.10	0.31	0.29	0.05	0.27	0.09	0.14	0.33	0.33	0.12	0.17	0.14
Crit Moves:	****				****			****		****		
Green/Cycle:	0.10	0.34	0.46	0.05	0.29	0.50	0.22	0.35	0.35	0.12	0.26	0.26
Volume/Cap:	0.95	0.92	0.62	0.92	0.95	0.19	0.65	0.95	0.95	0.95	0.65	0.54
Delay/Veh:	105.6	50.0	26.1	127.3	59.1	16.3	44.9	49.2	49.2	83.5	40.8	39.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	105.6	50.0	26.1	127.3	59.1	16.3	44.9	49.2	49.2	83.5	40.8	39.7
LOS by Move:	F	D	C	F	E	B	D	D	D	F	D	D
HCM2kAvgQ:	10	24	13	5	22	3	9	26	26	11	11	7

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
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Future Mitigated No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 NW 229th Ave/NW Evergreen Rd

Cycle (sec):	120	Critical Vol./Cap.(X):	0.963
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	49.0
Optimal Cycle:	172	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	0 2	1	0 1	0 1	1	0 2	0 1	1	0 1	1 0
Volume Module:												
Base Vol:	92	249	576	160	134	25	112	1414	94	234	723	127
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	92	249	576	160	134	25	112	1414	94	234	723	127
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	97	262	606	168	141	26	118	1488	99	246	761	134
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	97	262	606	168	141	26	118	1488	99	246	761	134
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	97	262	606	168	141	26	118	1488	99	246	761	134
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	0.99	0.74	0.91	0.96	0.82	0.94	0.94	0.83	0.94	0.92	0.92
Lanes:	1.00	1.00	2.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.70	0.30
Final Sat.:	1693	1782	2657	1645	1732	1472	1693	3386	1500	1693	2816	495
Capacity Analysis Module:												
Vol/Sat:	0.06	0.15	0.23	0.10	0.08	0.02	0.07	0.44	0.07	0.15	0.27	0.27
Crit Moves:		****		****				****		****		
Green/Cycle:	0.11	0.15	0.30	0.11	0.15	0.15	0.12	0.46	0.46	0.15	0.48	0.48
Volume/Cap:	0.54	0.96	0.75	0.96	0.54	0.12	0.56	0.96	0.14	0.96	0.56	0.56
Delay/Veh:	53.9	94.8	41.6	110.4	49.1	44.1	52.8	46.6	19.1	96.5	22.4	22.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.9	94.8	41.6	110.4	49.1	44.1	52.8	46.6	19.1	96.5	22.4	22.4
LOS by Move:	D	F	D	F	D	D	D	D	B	F	C	C
HCM2kAvgQ:	4	14	13	10	5	1	5	34	2	13	12	12

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Mitigated No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 NW Cornelius Pass Rd/NW Evergreen Pkwy

Cycle (sec):	125	Critical Vol./Cap.(X):	0.964
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	51.1
Optimal Cycle:	179	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 2	0 1	2	0 2	0 1	2	0 3	0 1	2	0 3	0 2
Volume Module:												
Base Vol:	144	1291	82	437	1198	38	329	1274	149	121	502	546
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	144	1291	82	437	1198	38	329	1274	149	121	502	546
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	157	1403	89	475	1302	41	358	1385	162	132	546	593
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	157	1403	89	475	1302	41	358	1385	162	132	546	593
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	157	1403	89	475	1302	41	358	1385	162	132	546	593
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.92	0.97	0.82	0.93	0.98	0.82	0.94	0.99	0.84	0.94	0.99	0.82
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	2.00
Final Sat.:	3321	3496	1476	3352	3528	1475	3386	5346	1515	3386	5346	2955
Capacity Analysis Module:												
Vol/Sat:	0.05	0.40	0.06	0.14	0.37	0.03	0.11	0.26	0.11	0.04	0.10	0.20
Crit Moves:		****		****				****		****		
Green/Cycle:	0.06	0.42	0.42	0.15	0.50	0.50	0.16	0.27	0.27	0.04	0.15	0.30
Volume/Cap:	0.74	0.96	0.15	0.96	0.74	0.06	0.67	0.96	0.40	0.96	0.67	0.67
Delay/Veh:	70.4	51.5	22.8	84.5	26.5	16.1	53.0	61.2	38.1	125.8	52.3	40.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.4	51.5	22.8	84.5	26.5	16.1	53.0	61.2	38.1	125.8	52.3	40.5
LOS by Move:	E	D	C	F	C	B	D	E	D	F	D	D
HCM2kAvgQ:	5	32	2	13	21	1	8	22	5	5	8	11

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #9 NW Jackson School Rd/Hwy 26 WB Ramp

Cycle (sec):	90	Critical Vol./Cap.(X):	0.649
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	24.3
Optimal Cycle:	52	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	0 0	0	0 1	0 1	0	0 0	0 0	1	1 0	0 1
Volume Module:												
Base Vol:	142	326	0	0	380	5	0	0	0	708	1	201
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	142	326	0	0	380	5	0	0	0	708	1	201
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	154	354	0	0	413	5	0	0	0	770	1	218
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	154	354	0	0	413	5	0	0	0	770	1	218
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	154	354	0	0	413	5	0	0	0	770	1	218
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.95	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	0.88	0.88	0.85
Lanes:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.99	0.01	1.00
Final Sat.:	1710	1800	0	0	1800	1530	0	0	0	3174	4	1530
Capacity Analysis Module:												
Vol/Sat:	0.09	0.20	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.24	0.24	0.14
Crit Moves:	****				****						****	
Green/Cycle:	0.14	0.49	0.00	0.00	0.35	0.35	0.00	0.00	0.00	0.37	0.37	0.37
Volume/Cap:	0.65	0.40	0.00	0.00	0.65	0.01	0.00	0.00	0.00	0.65	0.65	0.38
Delay/Veh:	42.8	14.7	0.0	0.0	26.7	18.9	0.0	0.0	0.0	24.6	24.6	21.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.8	14.7	0.0	0.0	26.7	18.9	0.0	0.0	0.0	24.6	24.6	21.0
LOS by Move:	D	B	A	A	C	B	A	A	A	C	C	C
HCM2kAvgQ:	5	6	0	0	10	0	0	0	0	10	10	5

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
Future Mitigated No Build Conditions (2030)

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 NW Helvetia Rd/NW Jacobson Rd

Cycle (sec): 90 Critical Vol./Cap.(X): 0.795
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 17.6
Optimal Cycle: 82 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	1	0	0	1! 0	0	0	1! 0	0	0
Volume Module:												
Base Vol:	6	524	385	9	429	2	3	1	4	208	1	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	524	385	9	429	2	3	1	4	208	1	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	7	570	418	10	466	2	3	1	4	226	1	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	570	418	10	466	2	3	1	4	226	1	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	570	418	10	466	2	3	1	4	226	1	3
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.93	0.93	0.89	0.99	0.99	0.99	0.85	0.85	0.85	0.71	0.71	0.71
Lanes:	0.01	0.72	1.27	0.02	0.97	0.01	0.37	0.13	0.50	0.98	0.01	0.01
Final Sat.:	14	1204	2050	36	1734	8	575	192	767	1253	6	18
Capacity Analysis Module:												
Vol/Sat:	0.47	0.47	0.20	0.27	0.27	0.27	0.01	0.01	0.01	0.18	0.18	0.18
Crit Moves:		****									****	
Green/Cycle:	0.60	0.60	0.60	0.60	0.60	0.60	0.23	0.23	0.23	0.23	0.23	0.23
Volume/Cap:	0.79	0.79	0.34	0.45	0.45	0.45	0.02	0.02	0.02	0.79	0.79	0.79
Delay/Veh:	17.6	17.6	9.3	10.4	10.4	10.4	27.1	27.1	27.1	46.9	46.9	46.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.6	17.6	9.3	10.4	10.4	10.4	27.1	27.1	27.1	46.9	46.9	46.9
LOS by Move:	B	B	A	B	B	B	C	C	C	D	D	D
HCM2kAvgQ:	19	19	5	7	7	7	0	0	0	8	8	8

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 NW Shute Rd/Hwy 26 EB Ramp

Cycle (sec): 120 Critical Vol./Cap.(X): 0.647
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 19.6
Optimal Cycle: 55 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	2 0	1	1	0	2 0	0	0	1	0	0
Volume Module:												
Base Vol:	0	1131	886	129	1005	0	42	1	191	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1131	886	129	1005	0	42	1	191	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.00	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	1216	0	139	1081	0	45	1	205	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1216	0	139	1081	0	45	1	205	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1216	0	139	1081	0	45	1	205	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	0.94	1.00	0.92	0.92	1.00	0.94	0.94	0.82	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	0.00	0.98	0.02	1.00	0.00	0.00	0.00
Final Sat.:	0	3386	1800	1660	3321	0	1646	39	1472	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.00	0.08	0.33	0.00	0.03	0.03	0.14	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.56	0.00	0.13	0.68	0.00	0.22	0.22	0.22	0.00	0.00	0.00
Volume/Cap:	0.00	0.65	0.00	0.65	0.48	0.00	0.13	0.13	0.65	0.00	0.00	0.00
Delay/Veh:	0.0	19.3	0.0	56.4	9.0	0.0	38.1	38.1	47.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	19.3	0.0	56.4	9.0	0.0	38.1	38.1	47.5	0.0	0.0	0.0
LOS by Move:	A	B	A	E	A	A	D	D	D	A	A	A
HCM2kAvgQ:	0	17	0	6	10	0	1	1	8	0	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 NW Shute/NW Huffman St

Cycle (sec):	120	Critical Vol./Cap.(X):	0.751
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	9.3
Optimal Cycle:	70	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	1 0	1	0 2	0 0	0	0 0	0 0 0	1	0 0	0 1
Volume Module:												
Base Vol:	0	1835	40	56	1009	0	0	0	0	67	0	27
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1835	40	56	1009	0	0	0	0	67	0	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	1995	43	61	1097	0	0	0	0	73	0	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1995	43	61	1097	0	0	0	0	73	0	29
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1995	43	61	1097	0	0	0	0	73	0	29
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	0.85
Lanes:	0.00	1.96	0.04	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	3337	73	1710	3420	0	0	0	0	1710	0	1530
Capacity Analysis Module:												
Vol/Sat:	0.00	0.60	0.60	0.04	0.32	0.00	0.00	0.00	0.00	0.04	0.00	0.02
Crit Moves:		****		****						****		
Green/Cycle:	0.00	0.80	0.80	0.05	0.84	0.00	0.00	0.00	0.00	0.06	0.00	0.06
Volume/Cap:	0.00	0.75	0.75	0.75	0.38	0.00	0.00	0.00	0.00	0.75	0.00	0.34
Delay/Veh:	0.0	7.4	7.4	88.3	2.3	0.0	0.0	0.0	0.0	83.2	0.0	56.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	7.4	7.4	88.3	2.3	0.0	0.0	0.0	0.0	83.2	0.0	56.7
LOS by Move:	A	A	A	F	A	A	A	A	A	F	A	E
HCM2kAvgQ:	0	21	21	4	5	0	0	0	0	4	0	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #20 NE Brookwood Pkwy/NE Cornell Rd

Cycle (sec):	120	Critical Vol./Cap.(X):	0.969
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	51.7
Optimal Cycle:	177	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	1 0	1	0 2	0 1	2	0 1	1 0	2	0 2	0 1
Volume Module:												
Base Vol:	29	398	185	150	965	294	260	1098	100	297	1533	212
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	29	398	185	150	965	294	260	1098	100	297	1533	212
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	31	419	195	158	1016	309	274	1156	105	313	1614	223
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	419	195	158	1016	309	274	1156	105	313	1614	223
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	31	419	195	158	1016	309	274	1156	105	313	1614	223
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.93	0.93	0.93	0.93	0.98	0.83	0.94	0.98	0.98	0.94	0.99	0.84
Lanes:	1.00	1.37	0.63	1.00	2.00	1.00	2.00	1.83	0.17	2.00	2.00	1.00
Final Sat.:	1676	2293	1066	1676	3528	1499	3386	3227	294	3386	3564	1510
Capacity Analysis Module:												
Vol/Sat:	0.02	0.18	0.18	0.09	0.29	0.21	0.08	0.36	0.36	0.09	0.45	0.15
Crit Moves:	****				****		****				****	
Green/Cycle:	0.02	0.21	0.21	0.11	0.30	0.30	0.08	0.44	0.44	0.11	0.47	0.47
Volume/Cap:	0.97	0.88	0.88	0.88	0.97	0.69	0.97	0.82	0.82	0.82	0.97	0.32
Delay/Veh:	205.9	58.0	58.0	87.7	62.2	42.1	99.7	33.1	33.1	65.0	46.4	20.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	205.9	58.0	58.0	87.7	62.2	42.1	99.7	33.1	33.1	65.0	46.4	20.2
LOS by Move:	F	E	E	F	E	D	F	C	C	E	D	C
HCM2kAvgQ:	3	14	14	8	24	11	8	22	22	8	35	5

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #21 NE Brookwood Pkwy/W Baseline Rd

Cycle (sec):	95	Critical Vol./Cap.(X):	0.848
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	43.2
Optimal Cycle:	96	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	0 1	0	1	0 2	0 1	1	0	2	0 1	0 1
Volume Module:												
Base Vol:	196	342	80	81	608	92	115	677	160	579	488	83
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	196	342	80	81	608	92	115	677	160	579	488	83
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	204	356	83	84	633	96	120	705	167	603	508	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	204	356	83	84	633	96	120	705	167	603	508	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	204	356	83	84	633	96	120	705	167	603	508	86
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.93	0.95	0.95	0.94	0.94	0.84	0.93	0.93	0.83	0.90	0.98	0.83
Lanes:	1.00	0.81	0.19	1.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	1676	1389	325	1693	3386	1515	1676	3352	1488	3251	1764	1495
Capacity Analysis Module:												
Vol/Sat:	0.12	0.26	0.26	0.05	0.19	0.06	0.07	0.21	0.11	0.19	0.29	0.06
Crit Moves:	****				****			****		****		
Green/Cycle:	0.14	0.31	0.31	0.06	0.22	0.22	0.09	0.25	0.25	0.22	0.37	0.37
Volume/Cap:	0.85	0.84	0.84	0.84	0.85	0.29	0.77	0.85	0.45	0.85	0.77	0.15
Delay/Veh:	63.1	42.4	42.4	87.9	44.4	31.3	62.7	42.1	31.1	44.9	31.6	19.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.1	42.4	42.4	87.9	44.4	31.3	62.7	42.1	31.1	44.9	31.6	19.9
LOS by Move:	E	D	D	F	D	C	E	D	C	D	C	B
HCM2kAvgQ:	9	15	15	5	12	3	5	13	5	12	15	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #22 NW Jacobson Rd/NW Century Blvd

Cycle (sec):	90	Critical Vol./Cap.(X):	0.839
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	42.5
Optimal Cycle:	92	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1 0 1	1	0	0 1 0	0	1	0 0 1	0	1	0 0 0
Volume Module:												
Base Vol:	264	255	335	0	132	0	15	394	105	257	53	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	264	255	335	0	132	0	15	394	105	257	53	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	287	277	364	0	143	0	16	428	114	279	58	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	287	277	364	0	143	0	16	428	114	279	58	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	287	277	364	0	143	0	16	428	114	279	58	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.85	0.96	0.96	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	0.00	0.04	0.96	1.00	0.83	0.17	0.00
Final Sat.:	1710	1800	1530	1800	1800	0	66	1731	1530	1433	295	0
Capacity Analysis Module:												
Vol/Sat:	0.17	0.15	0.24	0.00	0.08	0.00	0.25	0.25	0.07	0.19	0.19	0.00
Crit Moves:	****				****			****			****	
Green/Cycle:	0.20	0.29	0.29	0.00	0.09	0.00	0.29	0.29	0.29	0.23	0.23	0.00
Volume/Cap:	0.84	0.52	0.81	0.00	0.84	0.00	0.84	0.84	0.25	0.84	0.84	0.00
Delay/Veh:	51.2	27.4	39.7	0.0	69.1	0.0	41.1	41.1	24.5	47.4	47.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.2	27.4	39.7	0.0	69.1	0.0	41.1	41.1	24.5	47.4	47.4	0.0
LOS by Move:	D	C	D	A	E	A	D	D	C	D	D	A
HCM2kAvgQ:	10	7	12	0	6	0	14	14	3	12	12	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #23 NW Cornelius Pass Rd/NW Jacobson Rd

Cycle (sec):	120	Critical Vol./Cap.(X):	0.938
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	41.6
Optimal Cycle:	152	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 1	1	0	1	0 1	1	0	2	0 0	1	0	1	0 0	1	0
Volume Module:																
Base Vol:	99	1417	106		17	637	90		665	233	232		15	20	8	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	99	1417	106		17	637	90		665	233	232		15	20	8	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	108	1540	115		18	692	98		723	253	252		16	22	9	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	108	1540	115		18	692	98		723	253	252		16	22	9	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	108	1540	115		18	692	98		723	253	252		16	22	9	
Saturation Flow Module:																
Sat/Lane:	1800	1800	1800		1800	1800	1800		1800	1800	1800		1800	1800	1800	
Adjustment:	0.95	0.94	0.94		0.95	0.93	0.93		0.92	0.93	0.92		0.95	0.96	0.96	
Lanes:	1.00	1.86	0.14		1.00	1.75	0.25		2.00	0.50	0.50		1.00	0.71	0.29	
Final Sat.:	1710	3150	236		1710	2938	415		3317	834	830		1710	1230	492	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.49	0.49		0.01	0.24	0.24		0.22	0.30	0.30		0.01	0.02	0.02	
Crit Moves:		****			****					****			****			
Green/Cycle:	0.11	0.52	0.52		0.01	0.42	0.42		0.31	0.32	0.32		0.01	0.03	0.03	
Volume/Cap:	0.56	0.94	0.94		0.94	0.56	0.56		0.71	0.94	0.94		0.94	0.71	0.71	
Delay/Veh:	54.2	37.1	37.1		232.3	26.9	26.9		38.9	63.8	63.8		244.4	99.7	99.7	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	54.2	37.1	37.1		232.3	26.9	26.9		38.9	63.8	63.8		244.4	99.7	99.7	
LOS by Move:	D	D	D		F	C	C		D	E	E		F	F	F	
HCM2kAvgQ:	5	35	35		2	12	12		13	23	22		2	2	2	

Note: Queue reported is the number of cars per lane.

Movement Summary

2030 No Build - Evergreen / Helvetia

NW Jackson School Rd / NW Meek Rd

Roundabout

Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
South Approach										
32	T	1007	2.0	0.673	10.2	LOS B	157	0.34	0.62	31.5
33	R	5	16.7	0.667	0.6	LOS A	157	0.34	0.12	14.0
Approach		**1012**	**2.1**	**0.673**	**10.2**	**LOS B**	**157**	**0.34**	**0.62**	**31.4**
East Approach										
22	L	28	2.2	0.267	5.9	LOS A	54	0.81	0.76	12.1
22	R	158	2.2	0.267	5.9	LOS A	54	0.81	0.76	12.1
Approach		**186**	**2.2**	**0.267**	**5.9**	**LOS A**	**54**	**0.81**	**0.76**	**12.1**
North Approach										
42	L	100	2.1	0.477	0.1	LOS A	105	0.15	0.02	14.6
42	T	677	2.1	0.477	0.1	LOS A	105	0.15	0.02	14.6
Approach		**778**	**2.1**	**0.477**	**0.1**	**LOS A**	**105**	**0.15**	**0.02**	**14.6**
All Vehicles		**1976**	**2.1**	**0.673**	**5.8**	**LOS A**	**157**	**0.31**	**0.40**	**24.7**

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Movement Summary

2030 No Build Evergreen / Helvetia

Shute 26 WB Ramp

Roundabout

Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
South Approach										
32	L	299	2.0	0.665	0.0	LOS A	171	0.05	0.00	14.9
32	T	867	2.0	0.665	0.0	LOS A	171	0.05	0.00	14.9
33	R	1	50.0	0.667	0.0	LOS A	171	0.05	0.00	14.9
Approach		**1168**	**2.1**	**0.665**	**0.0**	**LOS A**	**171**	**0.05**	**0.00**	**14.9**
East Approach										
22	L	1	4.9	0.127	8.3	LOS A	25	0.79	0.70	11.0
22	T	1	4.9	0.127	8.3	LOS A	25	0.79	0.70	11.0
22	R	76	4.9	0.127	8.3	LOS A	25	0.79	0.70	11.0
Approach		**81**	**4.9**	**0.127**	**8.3**	**LOS A**	**25**	**0.79**	**0.70**	**11.0**
North Approach										
42	L	1	2.1	0.412	1.2	LOS A	64	0.41	0.25	14.0
42	T	451	2.1	0.412	1.2	LOS A	64	0.41	0.25	14.0
42	R	63	2.1	0.412	1.2	LOS A	64	0.41	0.25	14.0
Approach		**516**	**2.1**	**0.412**	**1.2**	**LOS A**	**64**	**0.41**	**0.25**	**14.0**
West Approach										
12	L	1	50.0	0.009	2.1	LOS A	1	0.45	0.29	13.9
12	T	1	50.0	0.009	2.1	LOS A	1	0.45	0.29	13.9
12	R	1	50.0	0.009	2.1	LOS A	1	0.45	0.29	13.9
Approach		**6**	**50.0**	**0.009**	**2.1**	**LOS A**	**1**	**0.45**	**0.29**	**13.9**
All Vehicles		**1771**	**2.4**	**0.667**	**0.7**	**LOS A**	**171**	**0.19**	**0.11**	**14.4**

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Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Scenario Report

Scenario:	Existing PM Peak
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 NW Glencoe Rd/NW Evergreen Rd	C	22.8	0.743	C	22.8	0.743	+ 0.000 D/V
# 2 NE Jackson School Rd/NW Evergr	B	17.4	0.733	B	17.4	0.733	+ 0.000 D/V
# 3 NW Jackson School Rd/NW Evergr	D	37.5	0.949	D	37.5	0.949	+ 0.000 D/V
# 5 NW Sewell Rd/NW Evergreen Rd	F	OVRFL	0.000	F	OVRFL	0.000	+ 0.000 D/V
# 6 NW SHute Rd/NW Evergreen Pkwy	E	55.7	0.994	E	55.7	0.994	+ 0.000 D/V
# 7 NW 229th Ave/NW Evergreen Rd	E	67.4	1.071	E	67.4	1.071	+ 0.000 D/V
# 8 NW Cornelius Pass Rd/NW Evergr	E	62.6	1.040	E	62.6	1.040	+ 0.000 D/V
# 9 NW Jackson School Rd/Hwy 26 WB	C	23.1	0.618	C	23.1	0.618	+ 0.000 D/V
# 15 NW Helvetia Rd/NW Jacobson Rd	B	19.2	0.840	B	19.2	0.840	+ 0.000 D/V
# 17 NW Shute Rd/Hwy 26 EB Ramp	C	23.4	0.773	C	23.4	0.773	+ 0.000 D/V
# 18 NW Shute/NW Huffman St	C	34.2	0.882	C	34.2	0.882	+ 0.000 D/V
# 20 NE Brookwood Pkwy/NE Cornell R	D	52.5	0.976	D	52.5	0.976	+ 0.000 D/V
# 21 NE Brookwood Pkwy/W Baseline R	E	56.3	0.915	E	56.3	0.915	+ 0.000 D/V
# 22 NW Jacobson Rd/NW Century Blvd	F	100.5	1.163	F	100.5	1.163	+ 0.000 D/V
# 23 NW Cornelius Pass Rd/NW Jacobs	D	44.9	0.962	D	44.9	0.962	+ 0.000 D/V

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Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 NW Glencoe Rd/NW Evergreen Rd

Cycle (sec):	90	Critical Vol./Cap.(X):	0.743
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	22.8
Optimal Cycle:	64	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0 1	0 1	1	0 1	0 0	0	0 0	0 0	2	0 0	0 1
Volume Module:												
Base Vol:	0	489	458	171	448	0	0	0	0	774	0	202
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	489	458	171	448	0	0	0	0	774	0	202
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	520	487	182	477	0	0	0	0	823	0	215
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	520	487	182	477	0	0	0	0	823	0	215
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	520	487	182	477	0	0	0	0	823	0	215
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	0.85	0.95	1.00	1.00	1.00	1.00	1.00	0.92	1.00	0.85
Lanes:	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00
Final Sat.:	0	1800	1530	1710	1800	0	0	0	0	3317	0	1530
Capacity Analysis Module:												
Vol/Sat:	0.00	0.29	0.32	0.11	0.26	0.00	0.00	0.00	0.00	0.25	0.00	0.14
Crit Moves:		****		****						****		
Green/Cycle:	0.00	0.39	0.72	0.14	0.53	0.00	0.00	0.00	0.00	0.33	0.00	0.33
Volume/Cap:	0.00	0.74	0.44	0.74	0.50	0.00	0.00	0.00	0.00	0.74	0.00	0.42
Delay/Veh:	0.0	27.9	5.3	48.5	13.8	0.0	0.0	0.0	0.0	29.3	0.0	23.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.9	5.3	48.5	13.8	0.0	0.0	0.0	0.0	29.3	0.0	23.8
LOS by Move:	A	C	A	D	B	A	A	A	A	C	A	C
HCM2kAvgQ:	0	14	6	7	9	0	0	0	0	12	0	5

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 NE Jackson School Rd/NW Evergreen Rd

Cycle (sec):	90	Critical Vol./Cap.(X):	0.733
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	17.4
Optimal Cycle:	62	Level Of Service:	B

Street Name: Jackson School - driveway

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	1 0	0 1	0	0 1!	0 0	1	0 1	1 0	1	0 1	1 0
Volume Module:												
Base Vol:	95	0	431	0	0	0	0	573	126	491	1135	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	0	431	0	0	0	0	573	126	491	1135	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	103	0	468	0	0	0	0	623	137	534	1234	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	103	0	468	0	0	0	0	623	137	534	1234	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	103	0	468	0	0	0	0	623	137	534	1234	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.71	1.00	0.84	1.00	1.00	1.00	1.00	0.90	0.90	0.93	0.93	0.95
Lanes:	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.64	0.36	1.00	2.00	0.00
Final Sat.:	1272	0	1515	0	1800	0	1800	2648	582	1676	3352	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.31	0.00	0.00	0.00	0.00	0.24	0.24	0.32	0.37	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.11	0.00	0.55	0.00	0.00	0.00	0.00	0.32	0.32	0.43	0.76	0.00
Volume/Cap:	0.73	0.00	0.57	0.00	0.00	0.00	0.00	0.73	0.73	0.73	0.49	0.00
Delay/Veh:	56.6	0.0	14.4	0.0	0.0	0.0	0.0	29.8	29.8	24.9	4.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.6	0.0	14.4	0.0	0.0	0.0	0.0	29.8	29.8	24.9	4.4	0.0
LOS by Move:	E	A	B	A	A	A	A	C	C	C	A	A
HCM2kAvgQ:	4	0	9	0	0	0	0	11	11	14	7	0

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 NW Jackson School Rd/NW Evergreen Rd

Cycle (sec): 90 Critical Vol./Cap.(X): 0.949
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 37.5
Optimal Cycle: 129 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0	1	0	1	1	0	1	0	2	0	1
Volume Module:															
Base Vol:	2	1	2	155	2	556	462	540	3	9	1122	524
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	1	2	155	2	556	462	540	3	9	1122	524
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	1	2	168	2	604	502	587	3	10	1220	570
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	1	2	168	2	604	502	587	3	10	1220	570
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	1	2	168	2	604	502	587	3	10	1220	570
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.86	0.86	0.86	0.68	0.69	0.82	0.93	0.93	0.93	0.94	0.94	0.82
Lanes:	0.40	0.20	0.40	0.99	0.01	1.00	1.00	1.99	0.01	1.00	2.00	1.00
Final Sat.:	620	310	620	1216	16	1472	1676	3330	18	1693	3386	1481
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.14	0.41	0.30	0.18	0.18	0.01	0.36	0.38
Crit Moves:					****		****					****
Green/Cycle:	0.15	0.15	0.15	0.15	0.15	0.46	0.32	0.70	0.70	0.02	0.41	0.41
Volume/Cap:	0.02	0.02	0.02	0.95	0.95	0.89	0.95	0.25	0.25	0.25	0.89	0.95
Delay/Veh:	33.0	33.0	33.0	90.4	90.4	35.9	57.0	5.0	5.0	46.6	32.4	50.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	33.0	33.0	33.0	90.4	90.4	35.9	57.0	5.0	5.0	46.6	32.4	50.6
LOS by Move:	C	C	C	F	F	D	E	A	A	D	C	D
HCM2kAvgQ:	0	0	0	8	8	19	19	3	3	1	20	21

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 NW Sewell Rd/NW Evergreen Rd

Average Delay (sec/veh): 206.1 Worst Case Level Of Service: F[1040.8]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1! 0	0	1	0	0	1	1	0	0	2	0	0	0	0	1	1	0
Volume Module:																			
Base Vol:	0	0	0	454	0	244	90	1296	0	0	1197	251
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	454	0	244	90	1296	0	0	1197	251
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	493	0	265	98	1409	0	0	1301	273
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	493	0	265	98	1409	0	0	1301	273
Critical Gap Module:												
Critical Gp:	7.5	6.5	6.9	6.8	xxxx	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	2255	3178	704	2338	xxxx	787	1574	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	23	11	384	32	xxxx	339	424	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	4	8	384	26	xxxx	339	424	xxxx	xxxxx	xxxx	xxxx	xxxxx
Total Cap:	0	46	xxxxx	114	76	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	0.00	0.00	4.33	xxxx	0.78	0.23	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	51.1	xxxx	6.4	0.9	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	1576	xxxx	45.0	16.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	F	*	E	C	*	*	*	*	*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx		0	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			1040.8			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 NW SHute Rd/NW Evergreen Pkwy

Cycle (sec): 120 Critical Vol./Cap.(X): 0.994
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 55.7
Optimal Cycle: 180 Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 1	1	0 2	0 2	2	0 2	1 0	2	0 3	0 1
Volume Module:												
Base Vol:	186	598	558	60	822	307	797	1539	269	387	797	184
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	186	598	558	60	822	307	797	1539	269	387	797	184
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	202	650	607	65	893	334	866	1673	292	421	866	200
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	202	650	607	65	893	334	866	1673	292	421	866	200
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	202	650	607	65	893	334	866	1673	292	421	866	200
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.95	1.00	0.85	0.95	1.00	0.85	0.95	0.98	0.98	0.95	1.00	0.84
Lanes:	1.00	2.00	1.00	1.00	2.00	2.00	2.00	2.55	0.45	2.00	3.00	1.00
Final Sat.:	1710	3600	1530	1710	3600	3060	3420	4494	786	3420	5400	1508
Capacity Analysis Module:												
Vol/Sat:	0.12	0.18	0.40	0.04	0.25	0.11	0.25	0.37	0.37	0.12	0.16	0.13
Crit Moves:	****				****			****		****		
Green/Cycle:	0.12	0.32	0.45	0.05	0.25	0.55	0.30	0.37	0.37	0.12	0.19	0.19
Volume/Cap:	0.99	0.56	0.89	0.85	0.99	0.20	0.83	0.99	0.99	0.99	0.83	0.69
Delay/Veh:	114.2	34.1	43.7	110.9	73.5	13.4	44.6	56.2	56.2	94.7	52.3	51.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	114.2	34.1	43.7	110.9	73.5	13.4	44.6	56.2	56.2	94.7	52.3	51.7
LOS by Move:	F	C	D	F	E	B	D	E	E	F	D	D
HCM2kAvgQ:	12	10	24	4	22	3	17	31	31	12	13	8

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 NW 229th Ave/NW Evergreen Rd

Cycle (sec): 120 Critical Vol./Cap.(X): 1.071
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 67.4
Optimal Cycle: 180 Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	0 2	1	0 1	0 1	1	0 2	0 1	1	0 1	1 0
Volume Module:												
Base Vol:	89	278	600	221	220	104	192	1616	94	234	735	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	278	600	221	220	104	192	1616	94	234	735	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	94	293	632	233	232	109	202	1701	99	246	774	129
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	293	632	233	232	109	202	1701	99	246	774	129
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	94	293	632	233	232	109	202	1701	99	246	774	129
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	0.99	0.84	0.91	0.96	0.82	0.94	0.99	0.83	0.94	0.97	0.97
Lanes:	1.00	1.00	2.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.71	0.29
Final Sat.:	1693	1782	3019	1645	1732	1472	1693	3564	1500	1693	2989	500
Capacity Analysis Module:												
Vol/Sat:	0.06	0.16	0.21	0.14	0.13	0.07	0.12	0.48	0.07	0.15	0.26	0.26
Crit Moves:		****		****				****		****		
Green/Cycle:	0.08	0.15	0.29	0.13	0.20	0.20	0.18	0.45	0.45	0.14	0.40	0.40
Volume/Cap:	0.66	1.07	0.72	1.07	0.66	0.37	0.65	1.07	0.15	1.07	0.65	0.65
Delay/Veh:	64.5	125	41.4	133.3	48.8	42.1	50.3	77.6	19.9	131.4	30.5	30.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.5	125	41.4	133.3	48.8	42.1	50.3	77.6	19.9	131.4	30.5	30.5
LOS by Move:	E	F	D	F	D	D	D	E	B	F	C	C
HCM2kAvgQ:	5	17	12	14	9	4	8	43	2	15	14	14

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 NW Cornelius Pass Rd/NW Evergreen Pkwy

Cycle (sec): 125 Critical Vol./Cap.(X): 1.040
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 62.6
Optimal Cycle: 180 Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 2	0 1	2	0 2	0 1	2	0 3	0 1	2	0 3	0 2
Volume Module:												
Base Vol:	203	1374	77	427	1227	38	336	1486	154	121	517	551
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	203	1374	77	427	1227	38	336	1486	154	121	517	551
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	221	1493	84	464	1334	41	365	1615	167	132	562	599
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	221	1493	84	464	1334	41	365	1615	167	132	562	599
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	221	1493	84	464	1334	41	365	1615	167	132	562	599
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.92	0.97	0.82	0.93	0.98	0.82	0.94	0.99	0.84	0.94	0.99	0.82
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	3.00	1.00	2.00	3.00	2.00
Final Sat.:	3321	3496	1476	3352	3528	1475	3386	5346	1515	3386	5346	2955
Capacity Analysis Module:												
Vol/Sat:	0.07	0.43	0.06	0.14	0.38	0.03	0.11	0.30	0.11	0.04	0.11	0.20
Crit Moves:		****		****				****		****		
Green/Cycle:	0.08	0.41	0.41	0.13	0.46	0.46	0.17	0.29	0.29	0.04	0.16	0.30
Volume/Cap:	0.82	1.04	0.14	1.04	0.82	0.06	0.65	1.04	0.38	1.04	0.65	0.69
Delay/Veh:	73.9	71.6	23.1	107.5	32.3	18.6	51.4	78.2	35.9	151.2	50.8	41.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.9	71.6	23.1	107.5	32.3	18.6	51.4	78.2	35.9	151.2	50.8	41.3
LOS by Move:	E	E	C	F	C	B	D	E	D	F	D	D
HCM2kAvgQ:	6	38	2	14	24	1	8	28	5	5	8	11

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #9 NW Jackson School Rd/Hwy 26 WB Ramp

Cycle (sec): 90 Critical Vol./Cap.(X): 0.618
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 23.1
Optimal Cycle: 49 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 1	0 0	0	0 1	0 1	0	0 0	0 0	1	1 0	0 1
Volume Module:												
Base Vol:	106	323	0	0	385	5	0	0	0	690	1	204
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	323	0	0	385	5	0	0	0	690	1	204
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	115	351	0	0	418	5	0	0	0	750	1	222
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	351	0	0	418	5	0	0	0	750	1	222
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	115	351	0	0	418	5	0	0	0	750	1	222
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.95	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00	0.88	0.88	0.85
Lanes:	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.99	0.01	1.00
Final Sat.:	1710	1800	0	0	1800	1530	0	0	0	3178	5	1530
Capacity Analysis Module:												
Vol/Sat:	0.07	0.20	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.24	0.24	0.14
Crit Moves:	****				****						****	
Green/Cycle:	0.11	0.48	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.38	0.38	0.38
Volume/Cap:	0.62	0.40	0.00	0.00	0.62	0.01	0.00	0.00	0.00	0.62	0.62	0.38
Delay/Veh:	44.5	15.1	0.0	0.0	24.6	17.6	0.0	0.0	0.0	23.5	23.5	20.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.5	15.1	0.0	0.0	24.6	17.6	0.0	0.0	0.0	23.5	23.5	20.5
LOS by Move:	D	B	A	A	C	B	A	A	A	C	C	C
HCM2kAvgQ:	4	6	0	0	10	0	0	0	0	9	9	5

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 NW Helvetia Rd/NW Jacobson Rd

Cycle (sec): 120 Critical Vol./Cap.(X): 0.840
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 19.2
Optimal Cycle: 93 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	0	1! 0	0	0	1! 0	0	0	1! 0
Volume Module:												
Base Vol:	6	596	382	9	637	2	3	1	4	188	1	3
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	596	382	9	637	2	3	1	4	188	1	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	7	648	415	10	692	2	3	1	4	204	1	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	648	415	10	692	2	3	1	4	204	1	3
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	648	415	10	692	2	3	1	4	204	1	3
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.95	0.95	0.95	0.98	0.98	0.98	0.92	0.92	0.92	0.95	0.95	0.95
Lanes:	0.01	0.60	0.39	0.01	0.98	0.01	0.37	0.13	0.50	0.98	0.01	0.01
Final Sat.:	10	1030	660	25	1741	5	618	206	825	1676	9	27
Capacity Analysis Module:												
Vol/Sat:	0.63	0.63	0.63	0.40	0.40	0.40	0.01	0.01	0.01	0.12	0.12	0.12
Crit Moves:		****						****			****	
Green/Cycle:	0.75	0.75	0.75	0.75	0.75	0.75	0.01	0.01	0.01	0.15	0.15	0.15
Volume/Cap:	0.84	0.84	0.84	0.53	0.53	0.53	0.84	0.84	0.84	0.84	0.84	0.84
Delay/Veh:	15.4	15.4	15.4	6.7	6.7	6.7	247.5	248	247.5	71.6	71.6	71.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	15.4	15.4	15.4	6.7	6.7	6.7	247.5	248	247.5	71.6	71.6	71.6
LOS by Move:	B	B	B	A	A	A	F	F	F	E	E	E
HCM2kAvgQ:	29	29	29	11	11	11	1	1	1	10	10	10

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 NW Shute Rd/Hwy 26 EB Ramp

Cycle (sec): 120 Critical Vol./Cap.(X): 0.773
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 23.4
Optimal Cycle: 75 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	2 0 1	1	0	2 0 0	0	1	0 0 1	0	0	0 0 0
Volume Module:												
Base Vol:	0	1281	817	229	1089	0	45	1	192	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1281	817	229	1089	0	45	1	192	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.00	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	1377	0	246	1171	0	48	1	206	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1377	0	246	1171	0	48	1	206	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1377	0	246	1171	0	48	1	206	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	0.94	1.00	0.92	0.92	1.00	0.94	0.94	0.82	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	0.00	0.98	0.02	1.00	0.00	0.00	0.00
Final Sat.:	0	3386	1800	1660	3321	0	1647	37	1472	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.41	0.00	0.15	0.35	0.00	0.03	0.03	0.14	0.00	0.00	0.00
Crit Moves:		****		****					****			
Green/Cycle:	0.00	0.53	0.00	0.19	0.72	0.00	0.18	0.18	0.18	0.00	0.00	0.00
Volume/Cap:	0.00	0.77	0.00	0.77	0.49	0.00	0.16	0.16	0.77	0.00	0.00	0.00
Delay/Veh:	0.0	24.8	0.0	57.1	7.5	0.0	41.7	41.7	59.8	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	24.8	0.0	57.1	7.5	0.0	41.7	41.7	59.8	0.0	0.0	0.0
LOS by Move:	A	C	A	E	A	A	D	D	E	A	A	A
HCM2kAvgQ:	0	22	0	10	10	0	2	2	9	0	0	0

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 NW Shute/NW Huffman St

Cycle (sec): 120 Critical Vol./Cap.(X): 0.882
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 34.2
Optimal Cycle: 120 Level Of Service: C

Approach:	North Bound			South Bound			East Bound				West Bound			
Movement:	L	T	R	L	T	R	L	T	R		L	T	R	
Control:	Protected			Protected			Protected				Protected			
Rights:	Include			Include			Ovl				Include			
Min. Green:	0	0	0	0	0	0	0	0	0		0	0	0	
Lanes:	1	0 1	1 0	1	0 1	1 0	1	0 1	0 1		1	0 0	1 0	
Volume Module:														
Base Vol:	76	1579	41	65	1044	133	312	20	167		47	30	22	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	76	1579	41	65	1044	133	312	20	167		47	30	22	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	83	1716	45	71	1135	145	339	22	182		51	33	24	
Reduct Vol:	0	0	0	0	0	0	0	0	0		0	0	0	
Reduced Vol:	83	1716	45	71	1135	145	339	22	182		51	33	24	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	83	1716	45	71	1135	145	339	22	182		51	33	24	
Saturation Flow Module:														
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800		1800	1800	1800	
Adjustment:	0.95	1.00	1.00	0.95	0.98	0.98	0.95	1.00	0.85		0.95	0.94	0.94	
Lanes:	1.00	1.95	0.05	1.00	1.77	0.23	1.00	1.00	1.00		1.00	0.58	0.42	
Final Sat.:	1710	3495	91	1710	3139	400	1710	1800	1530		1710	973	714	
Capacity Analysis Module:														
Vol/Sat:	0.05	0.49	0.49	0.04	0.36	0.36	0.20	0.01	0.12		0.03	0.03	0.03	
Crit Moves:		****			****			****				****		
Green/Cycle:	0.07	0.56	0.56	0.05	0.53	0.53	0.22	0.18	0.26		0.08	0.04	0.04	
Volume/Cap:	0.68	0.88	0.88	0.88	0.68	0.68	0.88	0.07	0.46		0.38	0.88	0.88	
Delay/Veh:	68.8	28.1	28.1	119.4	21.5	21.5	65.4	40.5	38.6		54.3	130	129.6	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	68.8	28.1	28.1	119.4	21.5	21.5	65.4	40.5	38.6		54.3	130	129.6	
LOS by Move:	E	C	C	F	C	C	E	D	D		D	F	F	
HCM2kAvgQ:	4	31	31	5	18	18	15	1	6		2	4	4	

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #20 NE Brookwood Pkwy/NE Cornell Rd

Cycle (sec): 120 Critical Vol./Cap.(X): 0.976
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 52.5
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound			South Bound			East Bound				West Bound			
Movement:	L	T	R	L	T	R	L	T	R		L	T	R	
Control:	Protected			Protected			Protected				Protected			
Rights:	Include			Include			Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0		0	0	0	
Lanes:	1	0 1	1 0	1	0 2	0 1	2	0 1	1 0		2	0 2	0 1	
Volume Module:														
Base Vol:	30	403	180	153	1009	294	236	1123	100		302	1531	209	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	30	403	180	153	1009	294	236	1123	100		302	1531	209	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		0.95	0.95	0.95	
PHF Volume:	32	424	189	161	1062	309	248	1182	105		318	1612	220	
Reduct Vol:	0	0	0	0	0	0	0	0	0		0	0	0	
Reduced Vol:	32	424	189	161	1062	309	248	1182	105		318	1612	220	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	32	424	189	161	1062	309	248	1182	105		318	1612	220	
Saturation Flow Module:														
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800		1800	1800	1800	
Adjustment:	0.93	0.93	0.93	0.93	0.98	0.83	0.94	0.98	0.98		0.94	0.99	0.84	
Lanes:	1.00	1.38	0.62	1.00	2.00	1.00	2.00	1.84	0.16		2.00	2.00	1.00	
Final Sat.:	1676	2326	1039	1676	3528	1499	3386	3233	288		3386	3564	1510	
Capacity Analysis Module:														
Vol/Sat:	0.02	0.18	0.18	0.10	0.30	0.21	0.07	0.37	0.37		0.09	0.45	0.15	
Crit Moves:	****				****		****					****		
Green/Cycle:	0.02	0.21	0.21	0.11	0.31	0.31	0.08	0.43	0.43		0.11	0.46	0.46	
Volume/Cap:	0.98	0.85	0.85	0.85	0.98	0.67	0.98	0.85	0.85		0.85	0.98	0.31	
Delay/Veh:	206.5	54.6	54.6	80.7	62.5	39.9	104.7	35.8	35.8		69.5	48.1	20.5	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	206.5	54.6	54.6	80.7	62.5	39.9	104.7	35.8	35.8		69.5	48.1	20.5	
LOS by Move:	F	D	D	F	E	D	F	D	D		E	D	C	
HCM2kAvgQ:	3	13	13	8	25	11	8	24	24		8	35	5	

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #21 NE Brookwood Pkwy/W Baseline Rd

Cycle (sec): 120 Critical Vol./Cap.(X): 0.915
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 56.3
Optimal Cycle: 137 Level Of Service: E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 0	1	0	1	0 1	1	0	1	0 1	1	0	2	0 1	0	1
Volume Module:																
Base Vol:	193	352	85		83	614	122		120	680	202		587	485	82	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	193	352	85		83	614	122		120	680	202		587	485	82	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.96	0.96	0.96		0.96	0.96	0.96		0.96	0.96	0.96		0.96	0.96	0.96	
PHF Volume:	201	367	89		86	640	127		125	708	210		611	505	85	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	201	367	89		86	640	127		125	708	210		611	505	85	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	201	367	89		86	640	127		125	708	210		611	505	85	
Saturation Flow Module:																
Sat/Lane:	1800	1800	1800		1800	1800	1800		1800	1800	1800		1800	1800	1800	
Adjustment:	0.93	0.95	0.95		0.94	0.97	0.97		0.93	0.95	0.94		0.93	0.98	0.83	
Lanes:	1.00	0.81	0.19		1.00	1.67	0.33		1.00	1.54	0.46		2.00	1.00	1.00	
Final Sat.:	1676	1380	333		1693	2899	576		1676	2626	780		3352	1764	1493	
Capacity Analysis Module:																
Vol/Sat:	0.12	0.27	0.27		0.05	0.22	0.22		0.07	0.27	0.27		0.18	0.29	0.06	
Crit Moves:	****					****				****				****		
Green/Cycle:	0.13	0.31	0.31		0.06	0.24	0.24		0.10	0.29	0.29		0.20	0.39	0.39	
Volume/Cap:	0.91	0.85	0.85		0.85	0.91	0.91		0.73	0.91	0.91		0.91	0.73	0.15	
Delay/Veh:	89.5	51.0	51.0		101.7	58.8	58.8		67.1	53.4	53.4		64.2	35.0	23.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	89.5	51.0	51.0		101.7	58.8	58.8		67.1	53.4	53.4		64.2	35.0	23.6	
LOS by Move:	F	D	D		F	E	E		E	D	D		E	D	C	
HCM2kAvgQ:	11	18	18		5	17	17		6	20	20		15	17	2	

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #22 NW Jacobson Rd/NW Century Blvd

Cycle (sec): 90 Critical Vol./Cap.(X): 1.163
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 100.5
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Ovl				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 1	0	1	1	0 0	1	0	0	0 1!	0	0	0	1 0	0	0
Volume Module:																
Base Vol:	334	269	368		0	138	1		51	412	245		256	78	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	334	269	368		0	138	1		51	412	245		256	78	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	363	292	400		0	150	1		55	448	266		278	85	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	363	292	400		0	150	1		55	448	266		278	85	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	363	292	400		0	150	1		55	448	266		278	85	0	
Saturation Flow Module:																
Sat/Lane:	1800	1800	1800		1800	1800	1800		1800	1800	1800		1800	1800	1800	
Adjustment:	0.95	1.00	0.85		1.00	1.00	1.00		0.95	0.95	0.95		0.96	0.96	1.00	
Lanes:	1.00	1.00	1.00		1.00	0.99	0.01		0.07	0.58	0.35		0.77	0.23	0.00	
Final Sat.:	1710	1800	1530		1800	1785	13		123	994	591		1329	405	0	
Capacity Analysis Module:																
Vol/Sat:	0.21	0.16	0.26		0.00	0.08	0.08		0.45	0.45	0.45		0.21	0.21	0.00	
Crit Moves:	****					****				****				****		
Green/Cycle:	0.18	0.25	0.43		0.00	0.07	0.07		0.39	0.39	0.39		0.18	0.18	0.00	
Volume/Cap:	1.16	0.64	0.60		0.00	1.16	1.16		1.16	1.16	1.16		1.16	1.16	0.00	
Delay/Veh:	139.5	32.8	21.0		0.0	171	171.1		116.8	117	116.8		139.6	140	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	139.5	32.8	21.0		0.0	171	171.1		116.8	117	116.8		139.6	140	0.0	
LOS by Move:	F	C	C		A	F	F		F	F	F		F	F	A	
HCM2kAvgQ:	20	8	9		0	10	10		38	38	38		20	20	0	

Note: Queue reported is the number of cars per lane.

Evergreen/Helvetia Conceptual Design Plan
PM Peak Hour
2030 Concept Plan - includes No Build Mitigations

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #23 NW Cornelius Pass Rd/NW Jacobson Rd

Cycle (sec):	120	Critical Vol./Cap.(X):	0.962
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	44.9
Optimal Cycle:	171	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 1	1	0	1	0 1	1	0	2	0 0	1	0	1	0 0	1	0
Volume Module:																
Base Vol:	114	1439	102		17	653	92		674	239	240		24	20	8	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	114	1439	102		17	653	92		674	239	240		24	20	8	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	124	1564	111		18	710	100		733	260	261		26	22	9	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	124	1564	111		18	710	100		733	260	261		26	22	9	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	124	1564	111		18	710	100		733	260	261		26	22	9	
Saturation Flow Module:																
Sat/Lane:	1800	1800	1800		1800	1800	1800		1800	1800	1800		1800	1800	1800	
Adjustment:	0.95	0.94	0.94		0.95	0.93	0.93		0.92	0.93	0.92		0.95	0.96	0.96	
Lanes:	1.00	1.87	0.13		1.00	1.75	0.25		2.00	0.50	0.50		1.00	0.71	0.29	
Final Sat.:	1710	3161	224		1710	2942	415		3317	830	834		1710	1230	492	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.49	0.49		0.01	0.24	0.24		0.22	0.31	0.31		0.02	0.02	0.02	
Crit Moves:		****				****					****			****		
Green/Cycle:	0.12	0.51	0.51		0.01	0.40	0.40		0.32	0.33	0.33		0.02	0.03	0.03	
Volume/Cap:	0.60	0.96	0.96		0.96	0.60	0.60		0.70	0.96	0.96		0.96	0.70	0.70	
Delay/Veh:	54.6	41.7	41.7		246.1	28.8	28.8		38.2	69.0	69.0		215.0	98.0	98.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	54.6	41.7	41.7		246.1	28.8	28.8		38.2	69.0	69.0		215.0	98.0	98.0	
LOS by Move:	D	D	D		F	C	C		D	E	E		F	F	F	
HCM2kAvgQ:	5	37	37		2	13	13		13	24	24		3	2	2	

Note: Queue reported is the number of cars per lane.

Movement Summary

2030 Base Case - Evergreen / Helvetia

NW Jackson School Rd / NW Meek Rd

Roundabout

Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
South Approach										
32	T	1036	2.0	0.695	10.3	LOS B	175	0.37	0.62	31.4
33	R	5	16.7	0.667	0.6	LOS A	175	0.37	0.13	14.0
Approach		**1042**	**2.1**	**0.695**	**10.2**	**LOS B**	**175**	**0.37**	**0.62**	**31.3**
East Approach										
22	L	59	2.1	0.358	6.6	LOS A	77	0.86	0.83	11.8
22	R	178	2.1	0.358	6.6	LOS A	77	0.86	0.83	11.8
Approach		**238**	**2.1**	**0.358**	**6.6**	**LOS A**	**77**	**0.86**	**0.83**	**11.8**
North Approach										
42	L	102	2.0	0.491	0.2	LOS A	109	0.24	0.04	14.4
42	T	653	2.0	0.491	0.2	LOS A	109	0.24	0.04	14.4
Approach		**755**	**2.0**	**0.491**	**0.2**	**LOS A**	**109**	**0.24**	**0.04**	**14.4**
All Vehicles		**2035**	**2.1**	**0.695**	**6.1**	**LOS A**	**175**	**0.38**	**0.43**	**24.4**

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Movement Summary

2030 Base Case - Evergreen / Helvetia

Shute 26 WB Ramp

Roundabout

Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Prop. Queued	Eff. Stop Rate	Aver Speed (mph)
South Approach										
32	L	377	2.0	0.759	0.0	LOS A	271	0.06	0.00	14.8
32	T	954	2.0	0.759	0.0	LOS A	271	0.06	0.00	14.8
33	R	1	50.0	0.667	0.0	LOS A	271	0.06	0.00	14.8
Approach		**1334**	**2.1**	**0.759**	**0.0**	**LOS A**	**271**	**0.06**	**0.00**	**14.8**
East Approach										
22	L	1	4.3	0.141	13.3	LOS B	30	0.89	0.81	9.5
22	T	1	4.3	0.141	13.3	LOS B	30	0.89	0.81	9.5
22	R	65	4.3	0.141	13.3	LOS B	30	0.89	0.81	9.5
Approach		**69**	**4.3**	**0.141**	**13.3**	**LOS B**	**30**	**0.89**	**0.81**	**9.5**
North Approach										
42	L	1	2.1	0.596	2.4	LOS A	129	0.56	0.51	13.6
42	T	599	2.1	0.596	2.4	LOS A	129	0.56	0.51	13.6
42	R	121	2.1	0.596	2.4	LOS A	129	0.56	0.51	13.6
Approach		**721**	**2.1**	**0.596**	**2.4**	**LOS A**	**129**	**0.56**	**0.51**	**13.6**
West Approach										
12	L	1	50.0	0.010	2.9	LOS A	2	0.54	0.38	13.5
12	T	1	50.0	0.010	2.9	LOS A	2	0.54	0.38	13.5
12	R	1	50.0	0.010	2.9	LOS A	2	0.54	0.38	13.5
Approach		**6**	**50.0**	**0.010**	**2.9**	**LOS A**	**2**	**0.54**	**0.38**	**13.5**
All Vehicles		**2130**	**2.3**	**0.759**	**1.3**	**LOS A**	**271**	**0.26**	**0.20**	**14.2**

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Evergreen Conceptual Design Plan
PM Peak Hour
Future Conditions (2030) MITIGATED for Concept Plan

Scenario Report

Scenario:	Existing PM Peak
Command:	Default Command
Volume:	Default Volume
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Evergreen Conceptual Design Plan
PM Peak Hour
Future Conditions (2030) MITIGATED for Concept Plan

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 5 NW Sewell Rd/NW Evergreen Rd	D	38.4	0.944	D	38.4	0.944	+ 0.000 D/V
# 6 NW SHute Rd/NW Evergreen Pkwy	D	48.2	0.922	D	48.2	0.922	+ 0.000 D/V
# 7 NW 229th Ave/NW Evergreen Rd	D	52.3	0.990	D	52.3	0.990	+ 0.000 D/V
# 21 NE Brookwood Pkwy/W Baseline R	D	52.7	0.887	D	52.7	0.887	+ 0.000 D/V
# 22 NW Jacobson Rd/NW Century Blvd	D	43.2	0.905	D	43.2	0.905	+ 0.000 D/V

Evergreen Conceptual Design Plan
PM Peak Hour
Future Conditions (2030) MITIGATED for Concept Plan

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 NW Sewell Rd/NW Evergreen Rd

Cycle (sec):	120	Critical Vol./Cap.(X):	0.944
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	38.4
Optimal Cycle:	156	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1! 0	0	1	0 1	1	0	2 0 0	0	0 1	1 0
Volume Module:												
Base Vol:	0	0	0	454	0	244	90	1296	0	0	1197	251
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	454	0	244	90	1296	0	0	1197	251
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	493	0	265	98	1409	0	0	1301	273
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	493	0	265	98	1409	0	0	1301	273
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	493	0	265	98	1409	0	0	1301	273
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	0.95	1.00	1.00	0.93	0.93
Lanes:	0.00	1.00	0.00	1.00	1.00	1.00	1.00	2.00	0.00	0.00	1.65	0.35
Final Sat.:	0	1800	0	1710	1800	1530	1710	3420	0	0	2754	577
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.29	0.00	0.17	0.06	0.41	0.00	0.00	0.47	0.47
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.31	0.00	0.31	0.06	0.56	0.00	0.00	0.50	0.50
Volume/Cap:	0.00	0.00	0.00	0.94	0.00	0.57	0.94	0.73	0.00	0.00	0.94	0.94
Delay/Veh:	0.0	0.0	0.0	66.7	0.0	36.6	126.5	21.2	0.0	0.0	39.8	39.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	66.7	0.0	36.6	126.5	21.2	0.0	0.0	39.8	39.8
LOS by Move:	A	A	A	E	A	D	F	C	A	A	D	D
HCM2kAvgQ:	0	0	0	22	0	9	6	21	0	0	34	34

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Future Conditions (2030) MITIGATED for Concept Plan

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 NW SHute Rd/NW Evergreen Pkwy

Cycle (sec):	120	Critical Vol./Cap.(X):	0.922
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	48.2
Optimal Cycle:	141	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:		Ovl			Ovl			Ovl			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 2	0 1	1	0 2	0 2	2	0 3	0 1	2	0 3	0 1
Volume Module:												
Base Vol:	186	598	558	60	822	307	797	1539	269	387	797	184
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	186	598	558	60	822	307	797	1539	269	387	797	184
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	202	650	607	65	893	334	866	1673	292	421	866	200
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	202	650	607	65	893	334	866	1673	292	421	866	200
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	202	650	607	65	893	334	866	1673	292	421	866	200
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.95	1.00	0.85	0.95	1.00	0.85	0.95	1.00	0.84	0.95	1.00	0.84
Lanes:	1.00	2.00	1.00	1.00	2.00	2.00	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	1710	3600	1530	1710	3600	3060	3420	5400	1510	3420	5400	1508
Capacity Analysis Module:												
Vol/Sat:	0.12	0.18	0.40	0.04	0.25	0.11	0.25	0.31	0.19	0.12	0.16	0.13
Crit Moves:	****				****			****		****		
Green/Cycle:	0.13	0.35	0.48	0.05	0.27	0.56	0.29	0.34	0.46	0.13	0.18	0.18
Volume/Cap:	0.92	0.52	0.82	0.78	0.92	0.20	0.88	0.92	0.42	0.92	0.88	0.73
Delay/Veh:	91.6	31.4	34.1	93.8	56.4	13.3	50.2	46.7	21.8	75.6	57.2	55.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	91.6	31.4	34.1	93.8	56.4	13.3	50.2	46.7	21.8	75.6	57.2	55.8
LOS by Move:	F	C	C	F	E	B	D	D	C	E	E	E
HCM2kAvgQ:	11	10	21	4	20	3	18	24	7	11	13	8

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Future Conditions (2030) MITIGATED for Concept Plan

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 NW 229th Ave/NW Evergreen Rd

Cycle (sec):	120	Critical Vol./Cap.(X):	0.990
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	52.3
Optimal Cycle:	180	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 1	0 2	2	0 1	0 1	1	0 2	0 1	1	0 1	1 0
Volume Module:												
Base Vol:	89	278	600	221	220	104	192	1616	94	234	735	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	89	278	600	221	220	104	192	1616	94	234	735	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	94	293	632	233	232	109	202	1701	99	246	774	129
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	293	632	233	232	109	202	1701	99	246	774	129
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	94	293	632	233	232	109	202	1701	99	246	774	129
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.94	0.99	0.84	0.91	0.96	0.82	0.94	0.99	0.83	0.94	0.97	0.97
Lanes:	2.00	1.00	2.00	2.00	1.00	1.00	1.00	2.00	1.00	1.00	1.71	0.29
Final Sat.:	3386	1782	3019	3290	1732	1472	1693	3564	1502	1693	2989	500
Capacity Analysis Module:												
Vol/Sat:	0.03	0.16	0.21	0.07	0.13	0.07	0.12	0.48	0.07	0.15	0.26	0.26
Crit Moves:		****		****				****		****		
Green/Cycle:	0.04	0.17	0.31	0.07	0.20	0.20	0.20	0.48	0.48	0.15	0.43	0.43
Volume/Cap:	0.68	0.99	0.67	0.99	0.68	0.38	0.60	0.99	0.14	0.99	0.60	0.60
Delay/Veh:	69.7	99.3	37.7	111.3	50.2	42.7	46.8	50.0	17.3	105.1	26.9	26.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.7	99.3	37.7	111.3	50.2	42.7	46.8	50.0	17.3	105.1	26.9	26.9
LOS by Move:	E	F	D	F	D	D	D	D	B	F	C	C
HCM2kAvgQ:	3	16	11	8	9	4	8	38	2	14	13	13

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Future Conditions (2030) MITIGATED for Concept Plan

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #21 NE Brookwood Pkwy/W Baseline Rd

Cycle (sec):	120	Critical Vol./Cap.(X):	0.887
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	52.7
Optimal Cycle:	123	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0 0	1 0	1	0 2	0 1	1	0 1	1 0	2	0 1	0 1
Volume Module:												
Base Vol:	193	352	85	83	614	122	120	680	202	587	485	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	193	352	85	83	614	122	120	680	202	587	485	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	201	367	89	86	640	127	125	708	210	611	505	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	201	367	89	86	640	127	125	708	210	611	505	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	201	367	89	86	640	127	125	708	210	611	505	85
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.93	0.95	0.95	0.94	0.99	0.84	0.93	0.95	0.94	0.93	0.98	0.83
Lanes:	1.00	0.81	0.19	1.00	2.00	1.00	1.00	1.54	0.46	2.00	1.00	1.00
Final Sat.:	1676	1380	333	1693	3564	1515	1676	2626	780	3352	1764	1494
Capacity Analysis Module:												
Vol/Sat:	0.12	0.27	0.27	0.05	0.18	0.08	0.07	0.27	0.27	0.18	0.29	0.06
Crit Moves:		****		****				****		****		
Green/Cycle:	0.14	0.30	0.30	0.06	0.21	0.21	0.11	0.30	0.30	0.21	0.40	0.40
Volume/Cap:	0.84	0.89	0.89	0.89	0.84	0.39	0.71	0.89	0.89	0.89	0.71	0.14
Delay/Veh:	72.2	57.1	57.1	112.6	53.3	41.2	64.4	49.3	49.3	59.7	33.1	22.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	72.2	57.1	57.1	112.6	53.3	41.2	64.4	49.3	49.3	59.7	33.1	22.7
LOS by Move:	E	E	E	F	D	D	E	D	D	E	C	C
HCM2kAvgQ:	10	19	19	6	14	4	6	19	19	14	16	2

Note: Queue reported is the number of cars per lane.

Evergreen Conceptual Design Plan
PM Peak Hour
Future Conditions (2030) MITIGATED for Concept Plan

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #22 NW Jacobson Rd/NW Century Blvd

Cycle (sec):	90	Critical Vol./Cap.(X):	0.905
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	43.2
Optimal Cycle:	111	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 0	1	1 0	0 1	0	0 1	0 1	0	0 1	0 0	0
Volume Module:												
Base Vol:	334	269	368	0	138	1	51	412	245	256	78	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	334	269	368	0	138	1	51	412	245	256	78	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	363	292	400	0	150	1	55	448	266	278	85	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	363	292	400	0	150	1	55	448	266	278	85	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	363	292	400	0	150	1	55	448	266	278	85	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	0.90	0.90	0.90	0.96	0.96	1.00
Lanes:	1.00	1.00	1.00	1.00	0.99	0.01	0.14	1.17	0.69	0.77	0.23	0.00
Final Sat.:	1710	1800	1530	1800	1785	13	233	1879	1117	1329	405	0
Capacity Analysis Module:												
Vol/Sat:	0.21	0.16	0.26	0.00	0.08	0.08	0.24	0.24	0.24	0.21	0.21	0.00
Crit Moves:	****				****		****				****	
Green/Cycle:	0.23	0.33	0.56	0.00	0.09	0.09	0.26	0.26	0.26	0.23	0.23	0.00
Volume/Cap:	0.90	0.50	0.47	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00
Delay/Veh:	56.9	25.0	12.3	0.0	83.7	83.7	45.1	45.1	45.1	57.0	57.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.9	25.0	12.3	0.0	83.7	83.7	45.1	45.1	45.1	57.0	57.0	0.0
LOS by Move:	E	C	B	A	F	F	D	D	D	E	E	A
HCM2kAvgQ:	14	7	7	0	7	7	15	15	15	14	14	0

Note: Queue reported is the number of cars per lane.

Appendix H

Draft Sanitary Sewer Trunk Concept Design
Evergreen Road Planning Area

Draft Sanitary Sewer Trunk Concept Design Evergreen Road Planning Area

PREPARED FOR: Shuki Einstein

PREPARED BY: Richard Attanasio, P.E., C.F.M./CH2M HILL

Emily Callaway, E.I.T.

DATE: August 30, 2007

PROJECT NUMBER: 355284.01.A7.C0.00

Introduction

The Evergreen Road Planning Area was brought into the City of Hillsboro's urban growth boundary in 2004. The planning area was added to the urban growth boundary for the purpose of maintaining a 20-year supply of industrial land in the Portland Metro region[1].

This document is a conceptual overview of the existing sanitary services in the planning area, the challenges in sewering the area, and the proposed method of providing future sanitary service.

The Evergreen Road Planning Area (ERPA) lies within Township 1N, Range 2W (1N2W), and is approximately 533 acres in size. It is located in Washington County adjacent to and outside of the current Clean Water Services (CWS) service area. This area will be brought into both the City's and CWS's service area.

CWS is in the process updating its sanitary sewer master plan (SSMP). The projected flows from the Evergreen Road Planning Area have not been added to the CWS SSMP hydraulic model. Therefore, determination of adequate downstream capacity in the CWS system to serve the ERPA can not be verified at this time.

Existing Sanitary Sewer System

Two trunk systems are in proximity to the Evergreen Road Planning Area. The McKay Creek Trunk line extends from the west to NW 273rd Avenue (extended south of NW Evergreen Road). The pipe invert at this point is 174.63 feet. The trunk continues west for 1,455 feet to a point on NW 268th Avenue 70 feet south of the intersection of NW 268th Avenue (Sewell Road) and NW Evergreen Road. The pipe invert elevation at this location is 177.71 feet[2]. The McKay Creek Trunk terminates at the Rock Creek Treatment Plant. Preliminary estimates indicate the McKay Creek Trunk may be capacity limited given the build-out flows from the ERPA.

[1] Evergreen and Helvetia Concept Planning Newsletter, April 2007

[2] Inverts based on email from Clean Water Service on August 14, 2007.

To the east of the ERPA, the Dawson Creek Trunk terminates south of Evergreen Road, approximately 900 yards south of the intersection of NW Evergreen Road and NW Dawson Creek Road. The Dawson Creek Trunk flows into the Rock Creek Trunk which also terminates at Rock Creek Treatment Plant.

To the east of the ERPA, the area is currently under partial development. A sanitary sewer is to be installed to a terminus 1,060-feet east of Shute Road at elevation 189.39[3]. The terminus of this line is approximately 1,600-feet from the ERPA eastern boundary. This line could potentially be used to carry sanitary flow from a small portion of the eastern ERPA; however, it is limited by both topography and downstream capacity.

Flow Generation

Build-out sanitary sewer flows are based on the current land use projections. These land use numbers are preliminary and subject to change. The entire ERPA was considered as a single tributary area. Land use is expected to be entirely industrial. Sanitary flows from industrial uses can be highly variable depending upon the actual industry. To be conservative, gross land area was used for sanitary flow projections.

An Inflow and Infiltration (I&I) rate of 1,650 gallons per net acre per day (gpad) was used for downstream analysis. An I&I rate of 4,000 gpad should be used for design on the new system, in accordance with CWS standards. Peaking factors are flow based and taken from the City of Portland's Sewer Design Manual, as was the average flow per net acre.

Table 1: Preliminary Land Use and Peak Sanitary Sewer Flows (based on I&I of 1,650 gpad)

Land Use	Gross Acreage (Ac)	Peak Flow (cfs)
Industrial	533	**12.7**

Concept Plan Sanitary Trunk Sewer Considerations

The primary challenge of sewering the ERPA is the general slope of the land toward the north, away from existing trunk lines. The design concept of the trunk line system is to convey flows to the low point in the northwest for connection to existing trunk lines.

Conceptual Alternatives

Two alternatives are proposed for providing sanitary service to the ERPA. The first alternative provides for an all-gravity system into the McKay Trunk system. The second alternative is a pump station with discharge to the Dawson Creek system. Pending the findings of a downstream analysis and a detailed design study, parts of both of these alternatives could be combined to provide the optimal alternative.

[3] Invert based on email from Clean Water Service on August 14, 2007.

Alternative 1

Alternative 1 is an all-gravity connection to the McKay Creek trunk. The gravity alternative provides the benefits of increased reliability and reduced maintenance. There may, however, be downstream capacity limitations of the McKay Creek system.

There is limited elevation change between the low point at the northern end of NW 273rd Avenue and the ground elevation at the intersection of NW 273rd Avenue and NW Evergreen Road. However, the invert elevation at the intersection of NW 273rd Ave and NW Evergreen Road is deep enough to allow connection of a gravity pipe at minimum slope; although the very northern edge of the ERPA cannot be served by gravity.

Alternative 2

Alternative 2 is a pump-station alternative. A gravity system can be used to convey flow to the low spot at the northern end of NW 273rd Avenue. At that location, a pump station will discharge through a 20-inch forcemain to the Dawson Creek Trunk in NW Dawson Creek Drive.

Disadvantages to Alternative 2 include the increased initial cost and long-term maintenance. Advantages include avoidance of potential downstream capacity to accommodate peak flow.

Planning Level Concept Cost Estimates

Planning level cost estimates are given in Table 2. Cost estimates for the conceptual sanitary collection system alternatives are based on best professional judgment. Total program cost includes engineering fees equal to 30% of the estimated construction cost. These are costs for main lines only and do not include minor collectors or laterals.

Table 2: Conceptual Construction and Program Costs

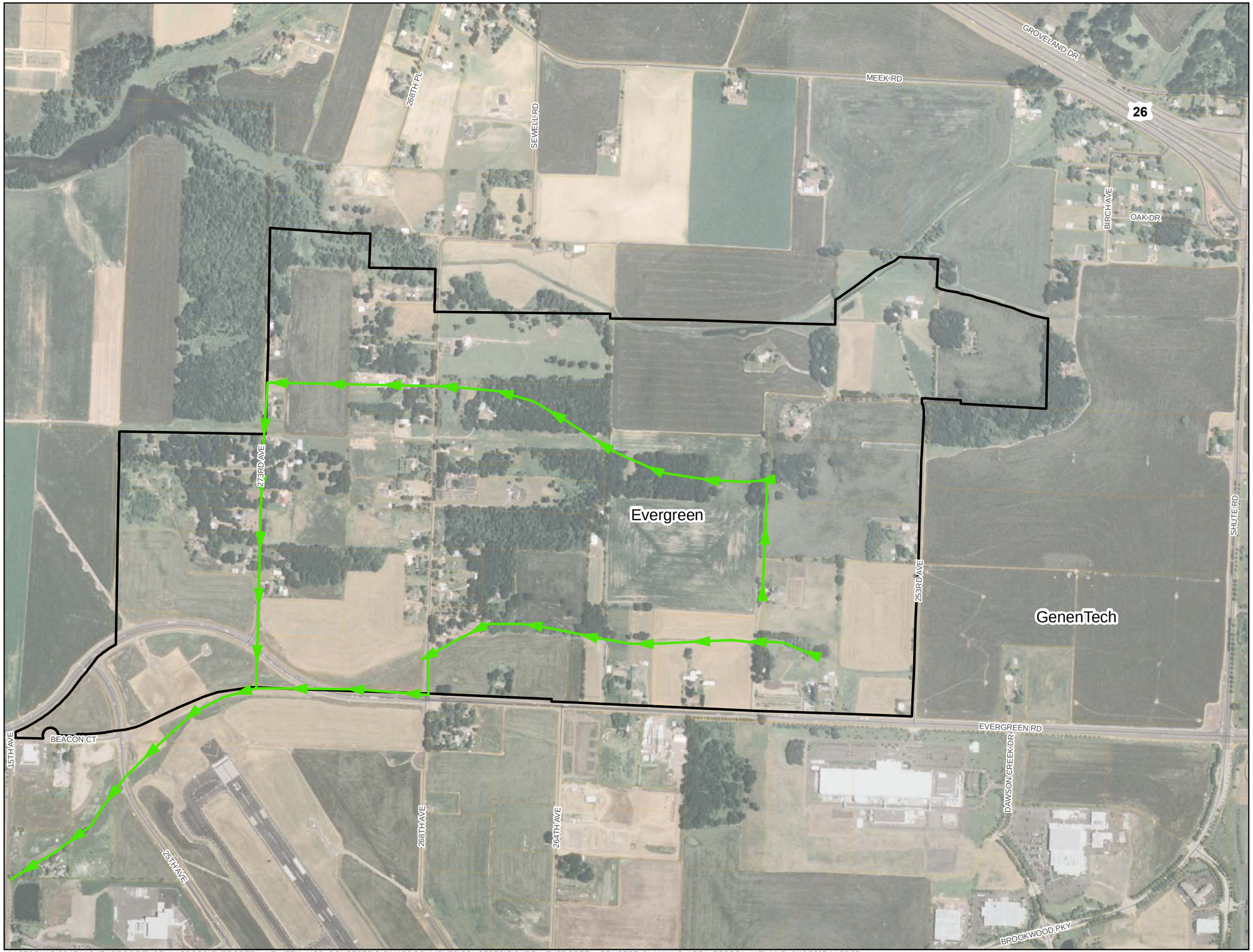
Alternative	Total Construction Cost ($)	Total Program Cost ($)
Alternative 1	2,900,000	3,700,000
Alternative 2	5,100,000	6,700,000

Recommendations for Future Studies

As part of their master planning process CWS will determine the downstream effects of development of the ERPA. Downstream impacts to the CWS trunk sewer system are potentially profound. Specific site studies should be performed in the ERPA to obtain complete topographic mapping and geotechnical characterization of the site, prior to system design.

Figure 1
Evergreen Concept Planning Area Sanitary Sewer System Conceptual Alternative One

Evergreen/Helvetia UGB
Concept Plans



LEGEND

- Gravity Pipe
- Evergreen Site (Planning Area = 532.93 ac)
- Roads
- Tax Lots

N

0 800 1,600
Feet

Angelo planning group

CH2MHILL

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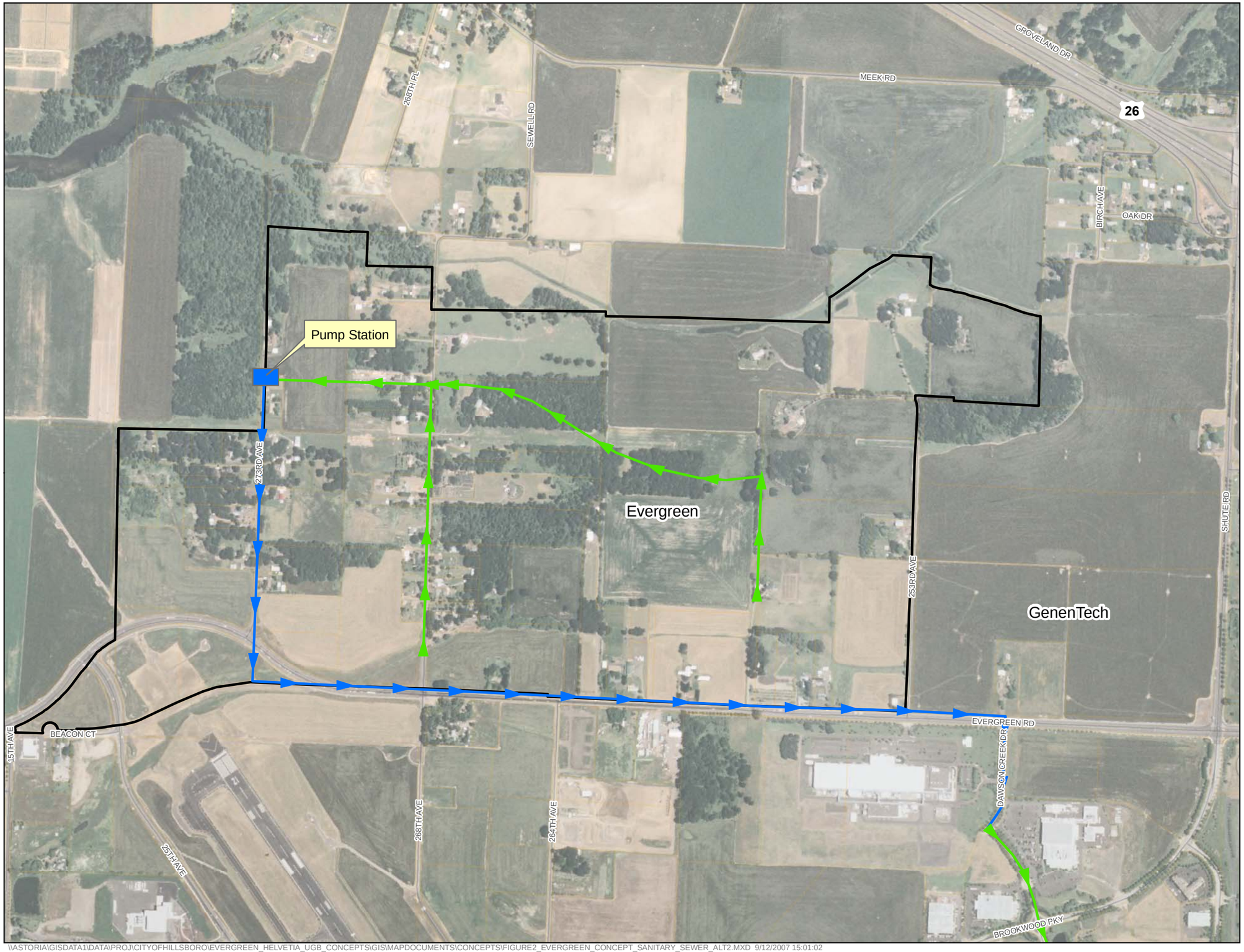

Figure 2

Evergreen Concept Planning Area Sanitary Sewer System Conceptual Alternative Two

Evergreen/Helvetia UGB
Concept Plans

LEGEND

- Gravity Pipe
- Force Main
- Evergreen Site (Planning Area = 532.93 ac)
- Roads
- Tax Lots

N

0 800 1,600
Feet

Angelo planning group

CH2MHILL

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Appendix I

Draft Stormwater Concept Design
Evergreen Road Planning Area

Draft Stormwater Concept Design
Evergreen Road Planning Area

PREPARED FOR: Shuki Einstein

PREPARED BY: Richard Attanasio, P.E., C.F.M./CH2M HILL

DATE: August 30, 2007

PROJECT NUMBER: 355284.01.A7.C0.00

Introduction

The Evergreen area is flat to gently sloping and populated primarily with hydrologic group C and D soils. These soils have relatively low rates of infiltration and high runoff potential, particularly when wet. Average annual precipitation is on the order of 40-inches per year, with the majority of precipitation falling during the winter months.

There is currently no stormwater conveyance system within the Evergreen Road Planning Area with the exception of a storm system in the eastern section of Evergreen Road. In general, the eastern section of Evergreen is curb and gutter and served by an enclosed storm system. The western section of Evergreen Road is drained by roadside ditches.

The storm system within Evergreen Road should have limited capacity to accept drainage from the Evergreen Road Planning Area. The original system design should have included capacity for flow from the proximal areas of the Evergreen Road Planning Area based on their zoned use at the time of design, which was agricultural.

Regulatory Issues

The primary regulatory driver for stormwater management is Clean Water Services and their Design and Construction Standards. These standards regulate the conveyance, detention and water quality treatment of stormwater with the Washington County UGB. The standards were recently updated (R&O 07-20) and published June 1, 2007.

These standards require stormwater quality treatment for all impervious area created by the development, whether its new or re-developed impervious area. Stormwater treatment is required for the first 0.36-inchs of precipitation over a 4-hour period. The new standards also allow the use of Low Impact Development (LID) techniques in concert with traditional quality and quantity control methods. LID techniques can be used to provide quality treatment and reduce the requirements for quantity control. The inclusion of LID techniques in the Design and Construction Standards are new to the Clean Water Services standards and were not included in the past standards.

Quantity control, or detention, is required when there is an identified downstream deficiency. The discharger can either be required to improve the downstream conveyance system to eliminate the downstream deficiency or provide detention to prevent an increase in peak runoff rates for the 2, 10, and 25-year discharges. There is currently extensive flooding of Waible Gulch in the Evergreen area; therefore, it is reasonable to assume that quantity control will be required for the creation of new impervious area.

The standards require stormwater conveyance for the 25-year build-out flow. All public storm systems components that are located in private rights-of-way will require easements granted to Clean Water Services. This is inclusive of pipes and management facilities.

A potential additional regulatory driver for stormwater in the Evergreen Road Planning Area is the Endangered Species Act. If a federal nexus exists in the permitting of any development within the Evergreen Road Planning Area, stormwater management guidelines promulgated by the National Marine Fisheries Service (NMFS) could be required. These guidelines could potentially increase the requirements for stormwater management. NMFS guidelines specify water quality treatment for 72-percent of the 2-year, 24-hour storm, or 1.80-inches in 24 hours. Detention is to be provided for ½ of the 2-year, 24-hour event through the 50-year, 24-hour event. Providing facilities to meet these standards will require greater commitment of area a resources than those required under the Clean Water Services standards. The NMFS guidelines recognize the benefits of LID techniques; therefore, these techniques can also be incorporated into a stormwater management plan designed to meet their guidelines.

Conceptual Stormwater Design Issues

The extent of water quality and detention requirements for an individual development will depend on whether the development is federalized making it subject to NMFS consultation and their stormwater management guidelines. If the development is not federalized the stormwater management needs to meet CWS standards for conveyance, water quality and detention. If the development is federalized, the development will also need to meet all the CWS requirements in addition to the NMFS guidelines.

Water quality treatment options are contained in Chapter 4 of CWS's Design and Construction Standards. LID options are specifically addressed in §4.07 of CWS's Design and Construction Standards. Among the acceptable LID options for private systems are: pervious paving, Eco-Roofs/Roof Gardens; Infiltration Planters; Flow through Planters; Sand Filters; and Tree boxes. Acceptable LID options for public systems also include: Street Swales; Vegetated Filter Strips; and Vegetated Infiltration Basins. For any developments less than one acre, if at least 75-percent of the post development impervious area is treated with LID options no additional stormwater management may be required by CWS.

Discharge of piped or overland conveyance should go to Wiable Gulch or to the Evergreen Road storm sewer system. The stormwater system within Evergreen Road was originally designed to accommodate runoff from agricultural zoning on the north, not industrial; therefore, a downstream analysis must be performed on the system to determine permissible discharge rates. Outfalls to Wiable Gulch should be designed in compliance with §5.07.7 of CWS's Design and Construction Standards. They should be above mean low

water level and use energy dissipation. These outfalls may also trigger Clean Water Act permit issues.

Appendix J

Evergreen Water System Concept Planning

Evergreen Water System Concept Planning

PREPARED FOR: Shuki Einstein

PREPARED BY: David T. Mustonen PE, CWRE

DATE: September 6, 2007

Evergreen Development Water Infrastructure Improvements

This section discusses the estimated water demands, water supply sources, private water infrastructure improvements and estimated costs for developing the needed water infrastrure for the Evergreen developments.

Evergreen Water Demands

The evergreen development area will consist of approximately 534 acres, for purposes of estimating water demands it is assumed that the site will be developed primarily with general industry and commercial industry. Empircal water demand data was used to estimate the average water demanad for these types of uses. The average water demand for the site based on this type of usage is estimated to be approximately 5,500 Gallons per day (GPD)/Acre on a continuous basis. This results in a total water system average demand of approximately 2.85 Million Gallons per Day (MGD). The peaking factor for this use is estimated to be 1.5 considering there could be irrigation demands in the summer months. This results in a peak water demand of 4.28 MGD.

Evergreen Water Supply Source

The Evergreen development site resides within the service area of the City of Hillsboro Water Department, and water provided to the development will be provided by the City of Hillsboro. The City of Hillsboro receives it source potable water from the Joint Water Commission water treatment plant located in the City of Forest Grove. The treatment plant treats surface waters stored in Henry Haag Lake. The City of Hillsboro has indicated that the additional 5 to 6 MGD of peak demand could be provided to the Evergreen site without the need of any specific public water infrastructure improvements. The City of Hillboro currently has an 18 inch water transmission main located adjacent to the southern boundary of the Evergreen site along Evergreen Road. The City has indicated that the development could connect to this 18inch transmission main and extend the private water infrasture within the site to adequately supply the needed water for general industry applications.

Evergreen Water Infrastructure Improvements

The primary water system infrastructure improvements required for the Evergreen development site are illustrated in Figure 1. The improvements primarily consist of water transmission pipelines and 4 interconnections and 4 metering stations with the City of Hillsboro 18 inch water transmission main located along Evergreen Road. Water transmission pipelines have been sized with design criteria maintain pipeline velocities less

than 5 feet per second. The City of Hillsboro has also requested that two of the transmission mains be upsized to enable the City of Hillsboro to convey water to the north of the development at some point in the future.

The estimated construction costs for developing the primary water infrastructure for the Evergreen development is approximately $4.44 M, a detailed breakdown of the cost estimate is presented in Table 1, this estimate is considered an Order of Magnitude estimate with an accuracy of +30%/-50%. In addition to capital improvement costs, the development will incur System Development Charges (SDCs) from the City of Hillsboro for enabling the City to provide the water supply for the Evergreen site. The SDCs are based on the water usage for the development. Based on an average flow rate of 2.85 MGD and peak flow rate of 4.28 MGD, the total SDCs for this development are estimated to be $31M.. The City of Hillsboro SDC calculation worksheet is provided in Attachment A.

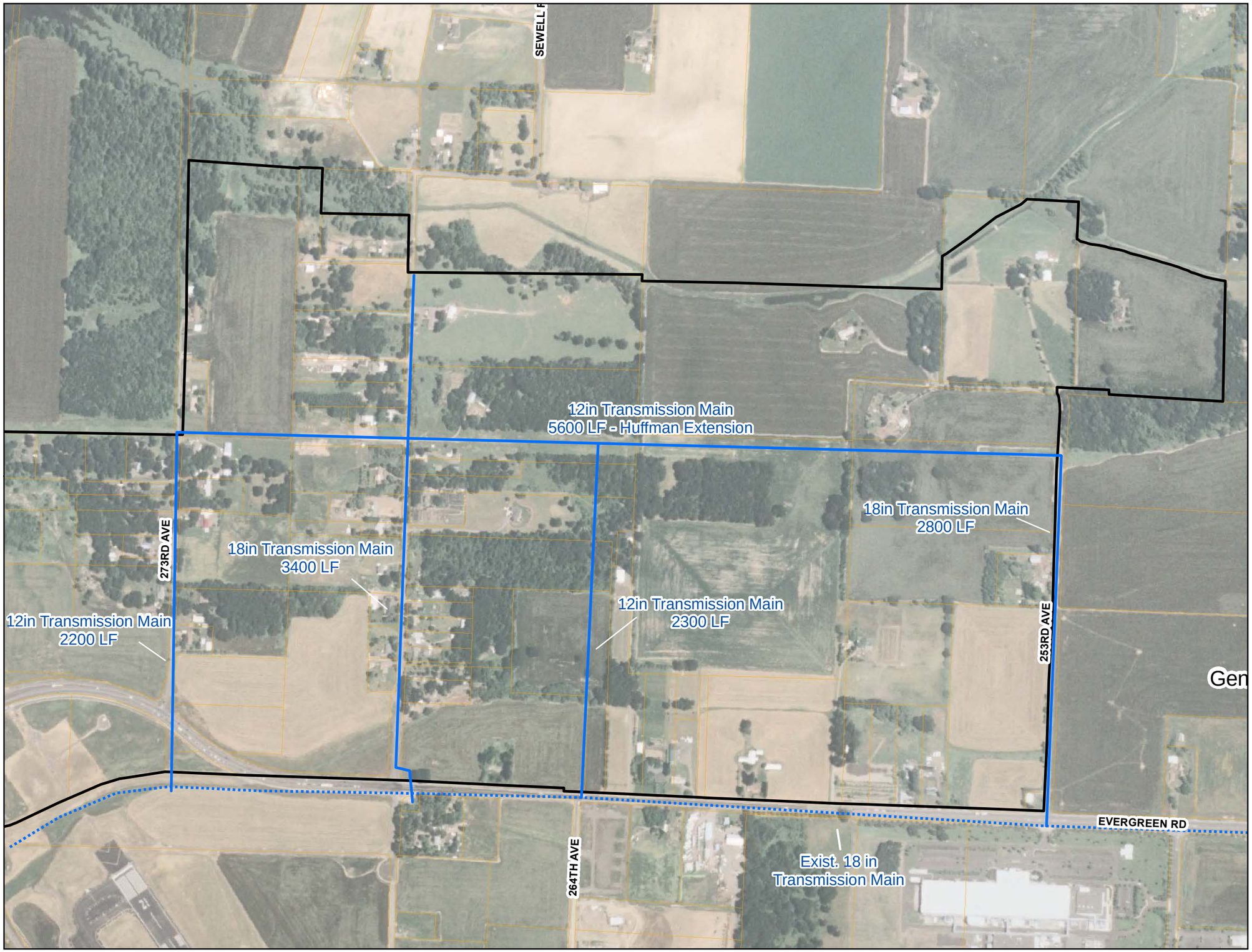

Figure 1

Evergreen Site
Water Infrastructure
Improvements

Evergreen/Helvetia UGB
Concept Plans

LEGEND

Tax Lots

Main

Concept Water Main

Existing Water Main

Evergreen Site
(Planning Area =
532.93 ac)

N

0 300 600 1,200
Feet

Angelo planning group

CH2MHILL

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Table 1. Evergreen Development Water Infrastruction Improvements
Order of Magnitude Comparative Construction Cost Estimates

			Materials		Labor				
Item Description	**Quantity**		**Unit**	**Total**	**Unit**	**Total**	**Unit Price**	**Line Total**	**Costing Assumptions**
General Conditions	$511,900								
General Conditions	1	LS	$163,900	$163,900	$177,300	$177,300	$341,200	$341,200	Allow 10% of Total Contract Amount
Bonds/Insurance	1	LS	32,800	32,800	35,500	35,500	68,300	68,300	Allow 2% of Total Contract Amount
Mobilization/Demobilization/Site Facilities	1	LS	49,200	49,200	53,200	53,200	102,400	102,400	Allow 3% of Total Contract Amount
Earthwork	$2,900,000								
Pipe Installed In City Streets--12" dia	10,100	LF	70.00	707,000	80.00	808,000	150.00	1,515,000	Means 06 BCCD 02510 730 2100
Pipe Installed In City Streets--18" dia	6,200	LF	90.00	558,000	110.00	682,000	200.00	1,240,000	Means 06 BCCD 02510 730 2100
Valved Branches in Main Line	10	EA	2,500	25,000	1,000	10,000	3,500	35,000	Allowance
Valves in Main Line	2	EA	3,500	7,000	1,500	3,000	5,000	10,000	Allowance
Connection to Existing Service (8 inch service)	4	EA	24,000	96,000	1,000	4,000	25,000	100,000	Allowance

Subtotal Estimated Construction Cost of Evergreen UGB Industrial Area Water Supply	$3,411,900
+ Contingency @ 30%	1,028,100
Total Estimated Construction Cost of Evergreen UGB Industrial Area Water Supply	**$4,440,000**

The cost estimates shown have been prepared for guidance in project evaluation and implementation from the information available at the time of the estimate. The final costs of the project will depend on actual labor and material costs, competitive market conditions, final project scope, implementation schedule and other variable factors. As a result, the final project costs will vary from the estimates presented herein. Because of this, project feasibility and funding needs must be carefully reviewed prior to making specific financial decisions to help ensure proper project evaluation and adequate funding.

Attachment A

City of Hillsboro Estimated System Development Charges

Evergreen Development

CITY OF HILLSBORO UTILITIES COMMISSION

FOR RETAIL CUSTOMERS

SDC WORKSHEET FOR METERS 3" AND GREATER

Date	9/6/2007
Project Name	Evergreen Development
Project Address	North of Evergreen
Size of Water Meter	Multiple 8" meters
Quote given by	B. Monahan

Peaking Factor = 1.5x Average

PEAK DAY SDC COST IS: **(or client-provided amount, whichever is greater)**

If water usage is given in Cubic Feet per month, it must be converted to gallons per day, _____ (cubic feet).

Cubic Feet X 748 = 0 gallons per month (gpm) divided by 30 days = 0 gpd.

Estimated water usage - **Peak Day Usage is** 4,280,000 gpd divided by 786 = 5,445 (peak day flow of Gallons/Day/ME) X $3,375

= (peak day SDC cost for a 3/4" meter) = $ 18,377,862.60

AVERAGE DAILY WATER USAGE SDC COST IS:

If water usage is given in Cubic Feet per month, it must be converted to gallons per day, _____ (cubic feet).

Cubic Feet X 748 = 0 gallons per month (gpm) divided by 30 days = 0 gpd.

Estimated water usage - **Average Day Usage is** 2,850,000 gpd divided by 496 = 5,746 (average day flow of Gallons/Day/ME) X $2,181

= (average day SDC cost for a 3/4" meter) = $ 12,531,955.65

TOTAL SDC

Peak Day SDC	$18,377,862.60
Average Day SDC	$12,531,955.65
Administrative Charge	$30.00
Total SDC Charge	$30,909,848.24
Connection Charge	

Estimated Total SDC **$30,909,848.24**

NOTE: Water consumption in excess of projected amounts will incur additional SDC costs to be paid by the customer. SDC cost will be calculated based on the most current ME fees in effect.

Actual SDC costs are recalulated at time of Building Permit approval based on ME fee in effect at that time.

Appendix K

Evergreen Area Industrial Plan
(New Comprehensive Plan Section)

Section 24. Evergreen Area Industrial Plan.

(I) Goal.

To expand and diversify the Hillsboro industrial economic base by establishing and implementing an *Evergreen Area Development Plan* and *Development Program* that provides for:

- Large parcels for large industrial campuses and other industrial sites that can accommodate large, vertically-integrated companies and related businesses in cutting-edge industry sectors such as high technology sector, sustainable energy/ environmental products sector, bio-technology, bio-medical and bio-pharmaceutical sector; and

- Flex building space within small- and medium-size industrial campuses and business parks to accommodate flex uses, research and development companies, incubator businesses, business suppliers, spin-off companies and other businesses that derive from, or are extensions of larger campus users and industrial developments within the Evergreen Area and Portland Region.

(II) Policies.

(A) Develop, adopt and apply ***performance-based*** Area Comprehensive Plan and Zoning Implementation Provisions and Measures to guide the development of industrial uses, properties and projects within the Area towards conformance with this Plan and corresponding City land use regulations with sufficient flexibility and authority to enable City Plan and regulatory responsiveness to changing industrial market trends and opportunities for the Area over time.

(B) Provide development opportunities within the Evergreen Area for industry uses that fall within any of the following preferred industry categories specified in the *Evergreen Area Development Program*:

- High technology sector and related companies and businesses.
- Sustainable industries sector and related businesses and companies.
- Bio-technology, bio-medical, bio-pharmaceutical sector and related businesses and companies.
- Businesses and companies that are incubators, start-ups, spin-offs and research and development firms associated with main industrial sectors.
- Industry supplies and distribution businesses.
- Limited support commercial services.

(C) Encourage and facilitate the creation of large industrial sites (parcels 50 – 100 or more acres in size) for large-scale industrial campuses and development projects, and land assembly and reservation of such sites where large-size parcels form the prevailing land ownership pattern.

(D) Where smaller parcels form the prevailing lot ownership pattern encourage and facilitate the development of smaller, diversified industrial uses and sites (20 – 50 acres in size) - especially smaller-scaled flex-space industrial business parks - that support the main industry sectors encouraged by this Plan.

(E) Use the industry land use categories specified in the *Evergreen Area Development Program* and graphically expressed in three alternative conceptual land use design schemes for the Area shown in *Evergreen Conceptual Illustrations "A", "B-1" and "B-2"* (shown in Figures 1, 2 and 3, respectively) to guide new industrial development within the Area.

(F) Only two (2) support commercial service developments shall be permitted within the Area; provided, however, that each development demonstrate that its proposed retail and business services will directly and primarily serve the daily commerce needs of businesses and employees in the surrounding industrial area.

(G) Provide for aesthetically attractive, well designed industrial uses and sites within every development approved for construction in the Evergreen Industrial Area.

(H) In accordance with ORS 268.390 (SB 722 ('07)), develop and apply an Evergreen Area Industrial Plan and corresponding Evergreen Special Industrial District Ordinance that substantially comply with Metro Urban Growth Boundary (UGB) Conditions of Approval and Urban Growth Management Functional Plan requirements that may apply to the Evergreen Area.

(III) Implementation Measures.

(A) Evergreen Area Development Program:

(1) The industrial use categories prescribed in Policy (II (B), above, and corresponding *Evergreen Special Industrial District (ESID)* Zoning Ordinance comprise the *Evergreen Area Development Program*. City review and approval of proposed land uses and development activities within the Evergreen Area for compliance with this Plan shall be guided by whether the proposed use or activity: (1) falls within any land use category prescribed by the *Development Program*; and, (2) generally achieves the preferred Area Conceptual Land Use Design identified in Implementation Measure (III) (B) in this Section.

(2) The *Evergreen Road Area Special Industrial District* (ESID) Ordinance adopted pursuant to Implementation Measure (III) (C) in this Section shall further define and implement the industrial land use categories prescribed by the *Evergreen Area Development Program* as follows:

Evergreen Area Development Program Industrial Use Categories	**Preferred Project Development Scale (Range in Acres)**
High Technology, Sustainable Industries and Bio-Technology, Bio-Medical, Bio-Pharmaceutical Sectors.	• Large campuses: 50-100 or more acres • Small campuses: 30-50 acres
Business incubators, start-ups, spin-offs, expansions, R&D associated with the major industry sectors	Small and medium-size industrial business parks and flex space: 10-40 acres
Industry suppliers and distribution businesses	Smaller- and medium-size bulk storage and distribution space: 10-20 acres
Support Commercial Services	Smaller, visible-to-traffic sites: not more than 5-10 acres

(B) Evergreen Area Conceptual Land Use Designs (Urban Growth Diagram)

Three conceptual land use design schemes for the Area are shown in *Evergreen Conceptual Illustrations "A", "B-1" and "B-2"* (shown in Figures 1, 2 and 3, respectively). Each alternative design is adopted by reference as a part of this Plan as a distinct Area-wide land use design alternative. Each alternative design can be implemented by a corresponding City *Evergreen Area Special Industrial District* (ESID) Ordinance. Only one of the three land use designs, however, shall be actively used at any given time to generally guide public and private land uses and development in the Area toward implementation of the *Development Program*.

Upon adoption of this Plan Ordinance, Concept "___" shall be the preferred Area land use design scheme to be implemented through applications of the ESID Ordinance to proposed land uses and developments. Over the Plan's 20-years time, significant shifts or changes in Area industrial market trends and direction may dictate a need to change the preferred alternative either to Concepts "___" or "___" if recommended by the Planning Commission and approved by the City Council.

(C) Evergreen Area Special Industrial District (ESID)

(1) An *Evergreen Special Industrial District* (ESID) Ordinance shall be prepared, adopted and applied by the City to generally guide proposed Evergreen Area developments toward achievement of the *Development Program* by assuring general development consistency with Concept "___". As applied to individual properties in the Area, should a land use policy conflict arise between what is specified for a property by the

Development Program and what is shown for that property by Concept "___", the *Development Program* provision shall prevail and control. Application of ESID Ordinance provisions to Area properties may occur only upon their annexation to the City.

(2) Consistent with ORS 268.390 (SB 722 ('07)), ESID Ordinance provisions shall assure that public and private land use and development actions within the Area attain substantial compliance with Regional UGB Conditions of Approval, including conditions requiring compliance with Title 4 development requirements and Regionally Significant Industrial Area (RSIA) designations.

(3) Site design and architectural measures that provide for compatibility between and among industrial land uses developed within the Area and nearby agricultural uses and operations shall be considered and required through the City Development Review/Approval process (Section 133 of the Hillsboro Zoning Ordinance), unless demonstrated to be physically or financially impracticable. Possible compatibility measures include, but are not limited to: building orientation and setbacks; landscaping; land buffers; and access easements for farming vehicles and machinery.

(D) Area Annexation Plan.

Prior to their annexation to the City and the concurrent application of the ESID Ordinance to properties in the Evergreen Area, land uses within the Area shall continue to be governed by the existing Washington County zoning of the properties. Annexation of Area properties to the City shall take place in accordance with annexation policies and practices set forth in the City Municipal Code and in the Boundary Change Code of the Portland Metropolitan Service District ("Metro").

(E) Area Natural Resources Management Plan.

In accordance with the City's Goal 5 provisions of Section 6, Natural Resources, Open Space, Scenic and Historical Sites, of the Hillsboro Comprehensive Plan, significant wetland and riparian/upland wildlife habitat resources in the Evergreen Area shall be accorded the appropriate protection level prescribed by Section 131A, Significant Natural Resources Overlay District, of the Hillsboro Zoning Ordinance upon annexation to the City of the land on which they exist.

Within the Evergreen Industrial Area, mitigation and enhancement activities shall emphasize the improvement of the Waible Creek Tributary wetlands, floodplain and riparian upland wildlife habitat resources (Riparian Corridor). The overall guiding principle for the Waible Creek Tributary Riparian Corridor is connectivity of resource types in order to allow wildlife passage between the larger habitat units and genetic flow between plant communities.

For developments within the Evergreen Industrial Area that impact significant natural resources, the City may identify and require appropriate mitigation and

enhancement measures to be undertaken by such development to improve connectivity and wetland and riparian upland wildlife habitat resource functions and values within, and connected to the Waible Creek Tributary wetlands, floodplain and riparian upland wildlife habitat resources (Riparian Corridor).

(F) Area Public Infrastructure (Water, Sewer, Stormwater Systems) Management Plan.

The recommended water system, sanitary sewer system and storm water disposal system facilities shown on the Evergreen Area Industrial Plan *Public Facilities and Services Maps* in Figures 4 through 6, shall be incorporated into the following Hillsboro Public Facilities (2001) Maps (as amended) as appropriate:

- *Hillsboro Public Facility Plan Water System Improvement Map* (June, 2001) as amended (for proposed Evergreen Area water system and lines).
- *Hillsboro Public Facility Plan Surface Water Management System Improvement Map* (June, 2001) as amended (for proposed Evergreen Area storm water facilities).
- *Hillsboro Public Facility Plan Sanitary Sewers System Improvement Map* (June, 2001) as amended (for proposed Evergreen Area sanitary sewer system and lines).

(G) Area Transportation System Plan.

The conceptual transportation system and facilities shown in Figures 1, 2 and 3 are intended to support development of the land use designs and arrangements shown in corresponding Evergreen Conceptual Illustrations "A", "B-1" and "B-2". Proposed roadway improvements include extensions of Huffman Road, improvements to NW 253rd Avenue, NW 264th Avenue, NW Sewell Road, NW 273rd Avenue, NW Evergreen Road to either collector or arterial status, and improvements to the roadway intersections along NW Evergreen Road and NW Shute Road, NW 253rd Avenue, NW 264th Avenue, NW Sewell Road and NW 273rd Avenue as appropriate to support each conceptual alternative design for the Area. The location and design of the transportation facilities shown in Figures 1, 2 and 3 are conceptual and general in nature. Specific roadway alignments for these facilities and specific intersection improvements along NW Evergreen Road will be determined through future studies and shall be incorporated into the City Transportation System Plan (TSP) when such specific Area roadway alignments and intersection improvements have been firmly determined and finalized.

Evergreen
concept plan

Figure 1

Conceptual Illustration A

7 Sept 07

Legend

- **Sustainable Energy & Environmental Business**
- **Industrial Business Park**
- **Commercial Node**
  location not specific - see ESID

N

0 800 1,600
Feet

Angelo planning group

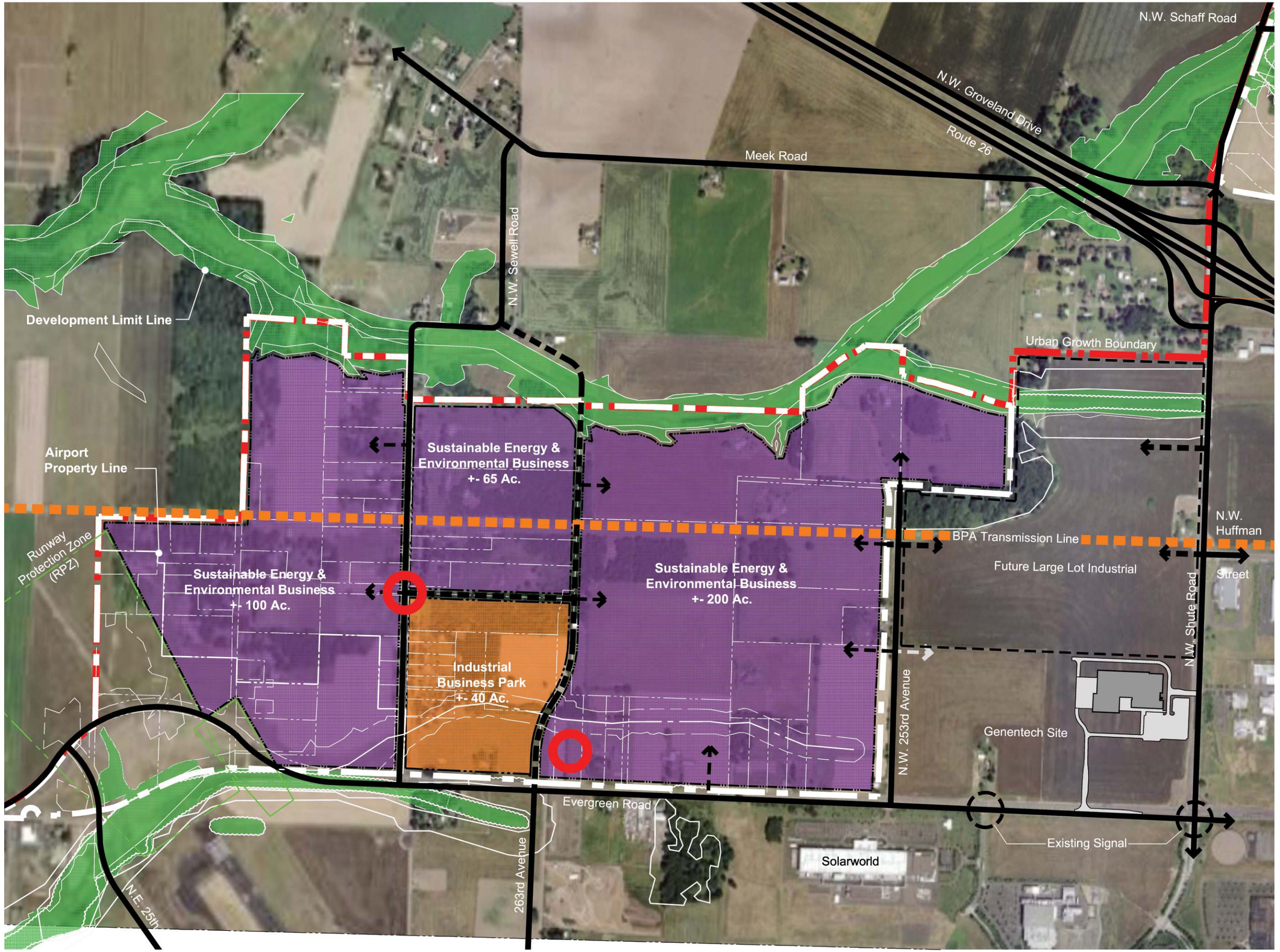
CH2MHILL IDC

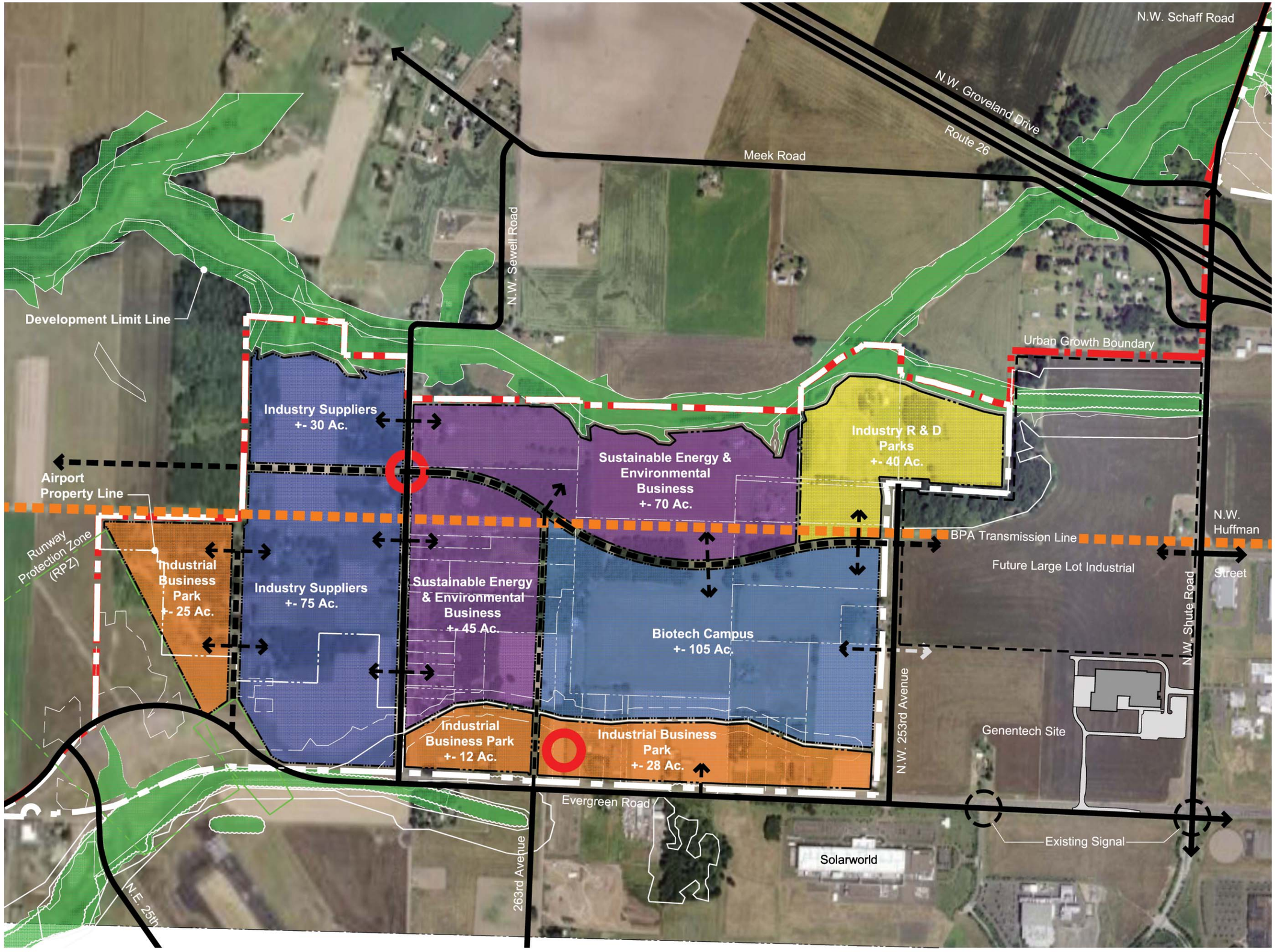
LCG

DKS Associates
TRANSPORTATION SOLUTIONS

Jeanne Lawson Associates, Inc.
public involvement specialists

CITY OF HILLSBORO





Evergreen concept plan

Figure 2

Conceptual Illustration B-1

7 Sept 07

Legend

- Sustainable Energy & Environmental Business
- Industry R&D Parks
- Biotech Campus
- Industry Suppliers
- Industrial Business Park
- Commercial Node
  location not specific - see ESID

N

0 800 1,600

Feet

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Evergreen
concept plan

Figure 3

Conceptual Illustration B-2

7 Sept 07

Legend

- Sustainable Energy & Environmental Business
- Industry R&D Parks
- Biotech Campus
- Industry Suppliers
- Industrial Business Park
- Commercial Node
  location not specific - see ESID

N

0 800 1,600
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N.W. Schaff Road
N.W. Groveland Drive
Route 26
Meek Road
N.W. Sewell Road
Development Limit Line
Urban Growth Boundary
Industrial Business Park +- 40 Ac.
Sustainable Energy & Environmental Business +- 110 Ac.
Airport Property Line
Runway Protection Zone (RPZ)
Industry R & D Parks +- 25 Ac.
Industrial Business Park +- 60 Ac.
Industry Suppliers +- 40 Ac.
Biotech Campus +- 105 Ac.
BPA Transmission Line
Future Large Lot Industrial
N.W. Huffman Street
N.W. Shute Road
N.W. 253rd Avenue
Industrial Business Park +- 12 Ac.
Industrial Business Park +- 28 Ac.
Genentech Site
Evergreen Road
Existing Signal
Solarworld
263rd Avenue
N.E. 25th

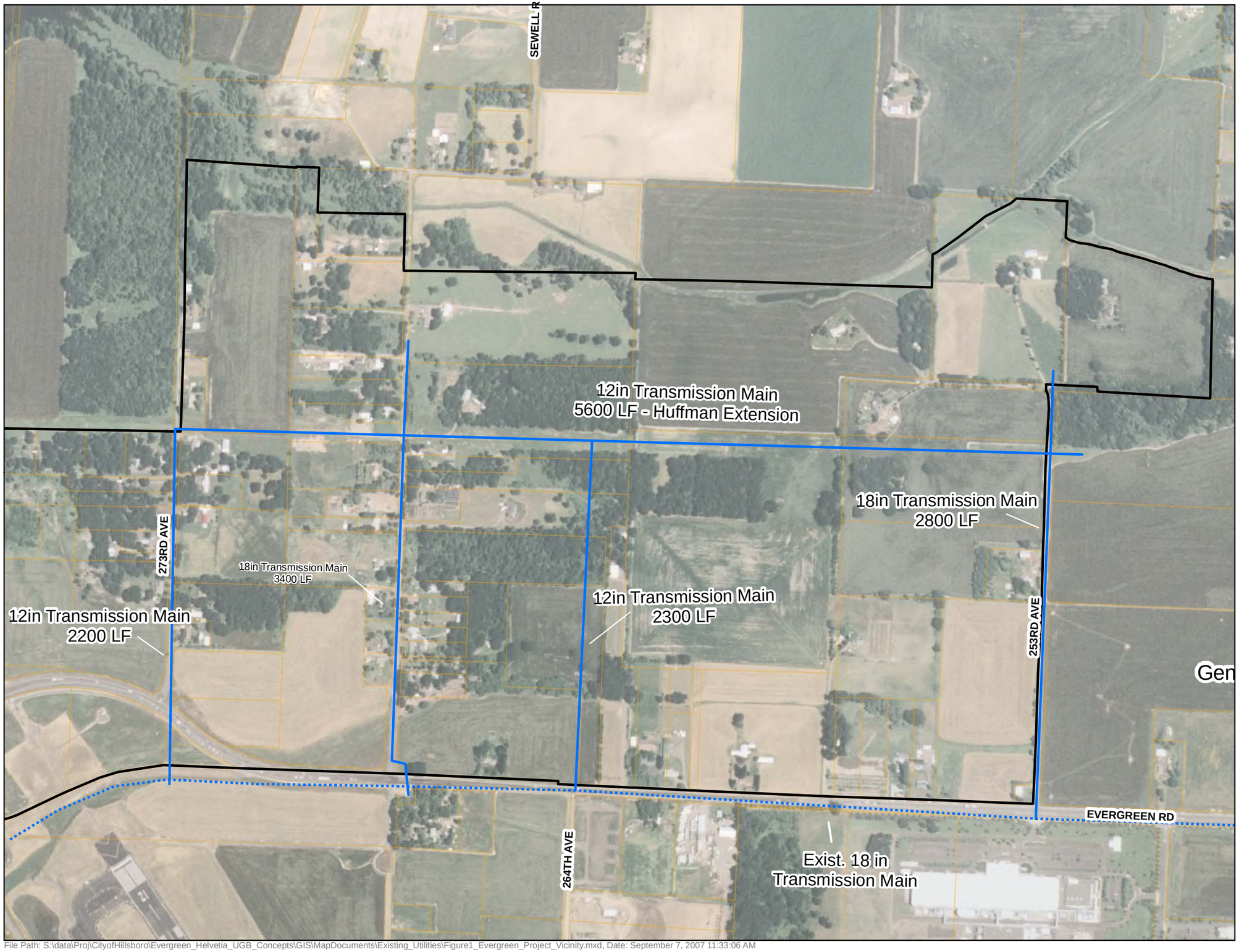


Figure 4

Evergreen Site Water Infrastructure Improvements

Evergreen/Helvetia UGB
Concept Plans

LEGEND

Tax Lots

Main

Concept Water Main

Existing Water Main

Evergreen Site
(Planning Area = 532.93 ac)

N

0 300 600 1,200
Feet

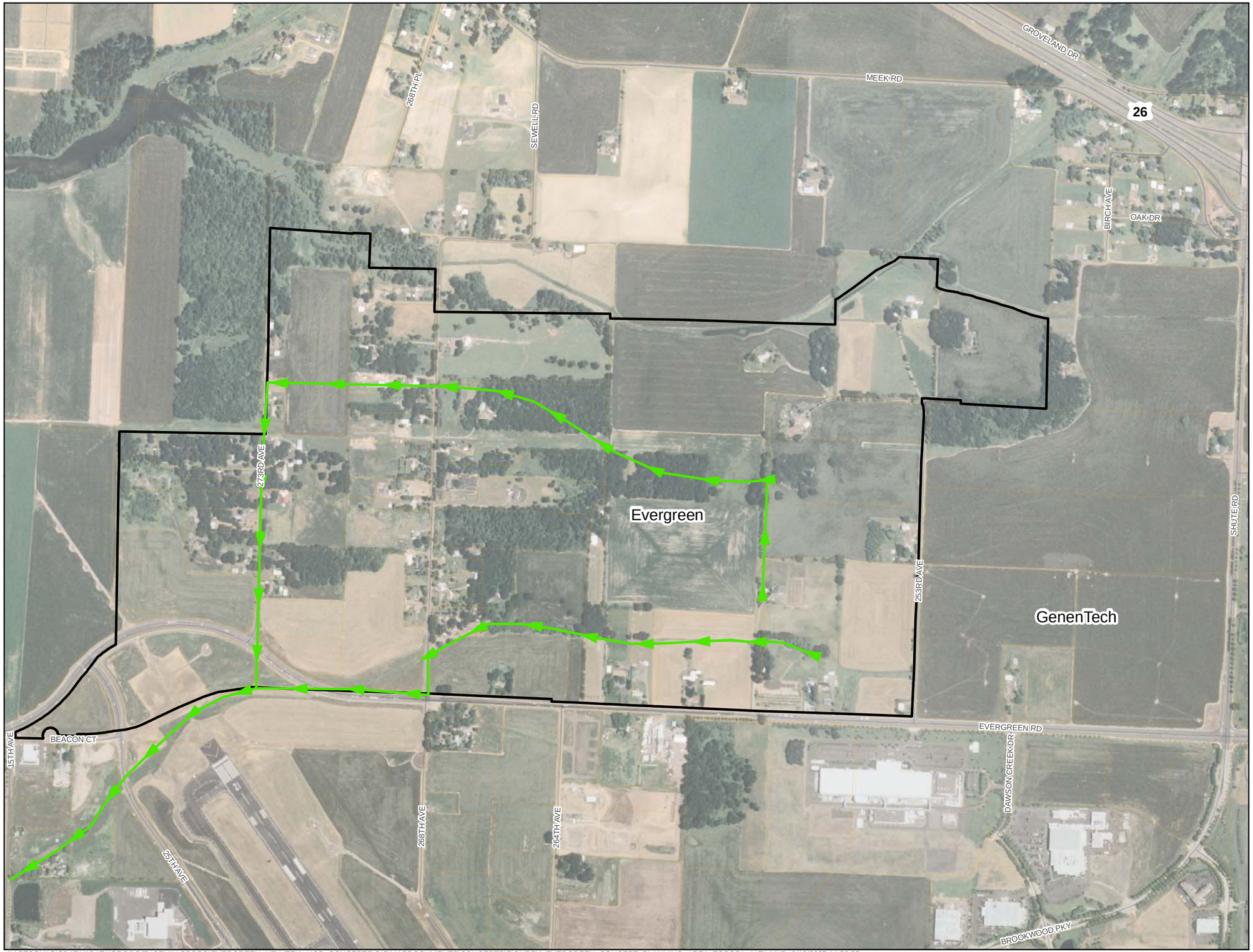
Angelo planning group

CH2MHILL

File Path: S:\data\Proj\CityofHillsboro\Evergreen_Helvetia_UGB_Concepts\GIS\MapDocuments\Existing_Utilities\Figure1_Evergreen_Project_Vicinity.mxd, Date: September 7, 2007 11:33:06 AM

Figure 5
Evergreen Concept Planning Area Sanitary Sewer System Conceptual Alternative One

Evergreen/Helvetia UGB
Concept Plans



LEGEND

- Gravity Pipe
- Evergreen Site (Planning Area = 532.93 ac)
- Roads
- Tax Lots

N

0 800 1,600
Feet

Angelo planning group

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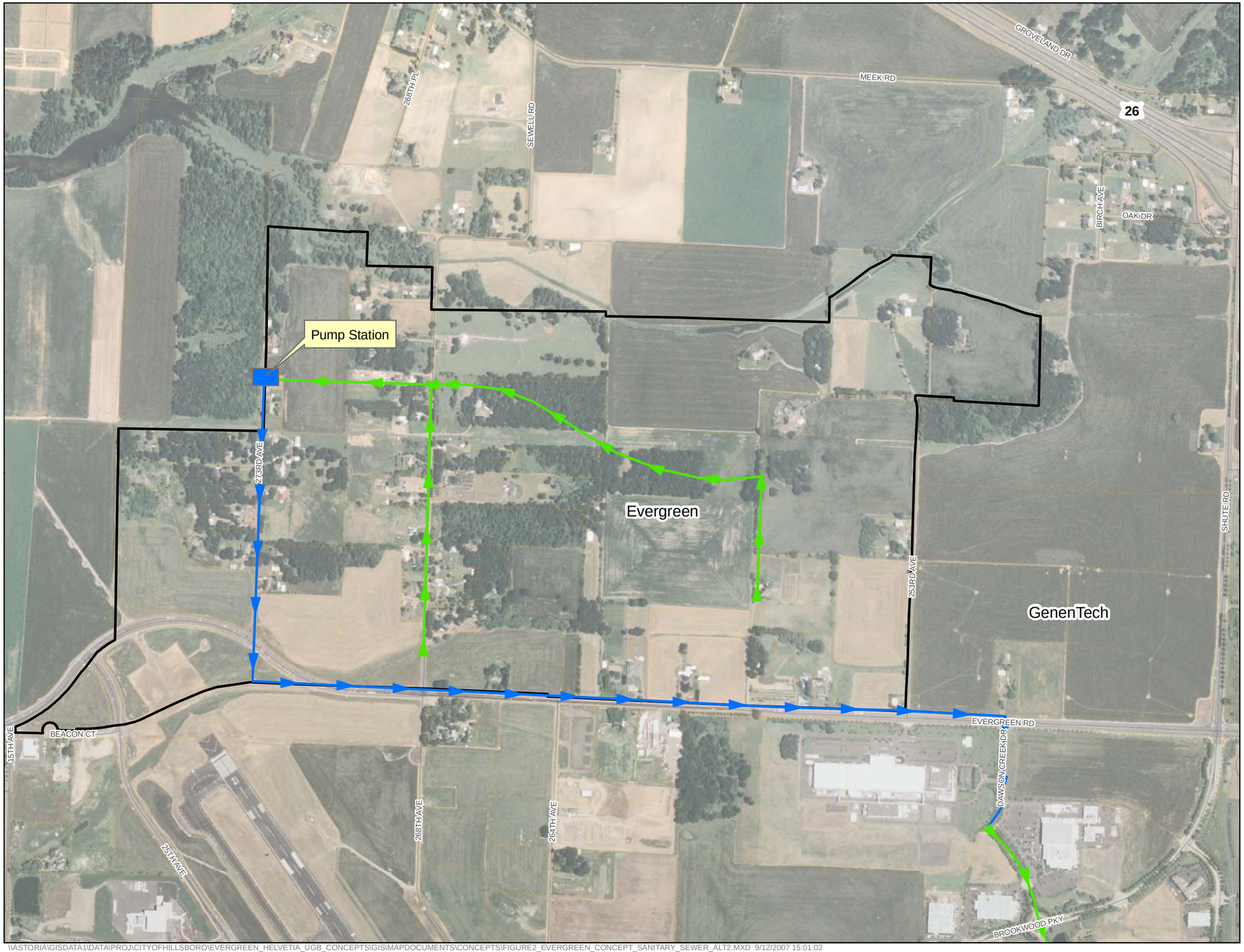


Figure 6

Evergreen Concept Planning Area Sanitary Sewer System Conceptual Alternative Two

Evergreen/Helvetia UGB
Concept Plans

LEGEND

- Gravity Pipe
- Force Main
- Evergreen Site (Planning Area = 532.93 ac)
- Roads
- Tax Lots

N

0 800 1,600
Feet

Angelo planning group

CH2MHILL

\\ASTORIA\GISDATA1\DATA\PROJ\CITYOFHILLSBORO\EVERGREEN_HELVETIA_UGB_CONCEPTS\GIS\MAPDOCUMENTS\CONCEPTS\FIGURE2_EVERGREEN_CONCEPT_SANITARY_SEWER_ALT2.MXD 9/12/2007 15:01:02

Appendix L

Evergreen Special Industrial District (ESID)
(New Development Code Section)

Section 134B. Evergreen Area Special Industrial District (ESID)

A. **Purpose**. Evergreen Area Special Industrial District (ESID) Zone provisions contained in this Section shall apply to and regulate land within the Evergreen Area shown on attached map Exhibit "A" upon adoption of this Ordinance and annexation of such land to the City. The purpose of the ESID is to:

1. Provide industrial sites and land development opportunities within the Evergreen Area that can accommodate on large and small development sites *high technology and related companies and businesses* and local, national and international *"sustainable industries" businesses and companies* (including uses that support or complement such companies and businesses).

2. Facilitate and nurture the establishment, development and growth of a *"sustainable industries" cluster* and a *"bio-tech/bio-medical/bio-pharmaceutical" industry cluster* within the Evergreen Area.

3. Encourage and accommodate the *creation of larger industrial parcels* within Sub-area "A" of the Evergreen Area through ESID Zone provisions that facilitate land assembly consolidations to create large campus-like industrial sites.

4. Facilitate and accommodate *business clusters on smaller industrial sites* within Sub-area "B" of the Evergreen Area for business start-ups, incubators and spin-offs that derive from high-tech, sustainable industries and bio-tech/bio-medical/bio-pharmaceutical industry clusters and for supporting public and private facilities and utilities.

5. Support and implement the development goals, development program, and corresponding implementation measures described in Section 24, Evergreen Area Industrial Plan, of the Hillsboro Comprehensive Plan.

B. **Applicability**. ESID Zone provisions apply to properties within two ESID Sub-areas: "*East Evergreen*" – Sub-area A, and "*West Evergreen*" – Sub-area B as shown on attached Exhibit "A" attached to, and hereby made a part of this ESID Zone Ordinance. Some ESID Zone provisions apply differently in Sub-area A than in Sub-Area B in response to unique industrial development opportunities and constraints presented in each Sub-area. The Official City of Hillsboro Zoning Map shall be amended to incorporate and include the attached Exhibit "A" as the official City Zoning Map only for properties in both Evergreen Area Sub-areas upon their annexation to the City.

C. **Definitions**. The industrial use category defined in this Section shall be interpreted and applied narrowly and exclusively to exclude from the ESID Zone land uses that fall under other general industrial categories not specifically listed in this Section. However, the range and types of industry uses covered within each industrial category listed in this Section may be broadly interpreted and applied to include uses currently associated with the category by recognized industry classification systems and new kinds of uses that

may evolve in the future from businesses in that category. As used in the application and enforcement of this ESID Zone Ordinance:

1. "*Sustainable Energy and Environmental Businesses*" means and includes industrial businesses and land uses engaged in the research and design or development, manufacturing, processing, marketing (and combinations of such activities) of products or services associated with local, national and international sustainable energy and environmental industries. Such businesses include, but are not limited to large and small firms and companies engaged in high technology research and products development and manufacturing; solar and wind energy products and parts manufacturing; and, other high-tech and sustainable industry operations. These businesses usually require parcels of various sizes, especially large parcels (e.g., 50 – 100 or more acres in size), to accommodate vertically-integrated business operations, entirely within a single business site.

2. *"Biotech Campus"* means and includes industrial businesses and land uses engaged in research and design or development, manufacturing and processing, marketing (and combinations thereof) of bio-technology, bio-medical, bio-pharmaceutical business products or services and like-kind businesses. Biotech campuses usually require medium-sized parcels (35 – 50 or more acres in size).

3. "*Industrial Incubators, Start-ups and Spin-offs Business Parks*" means and includes small-to-medium sized specialized business parks that contain (within leased, building spaces) a mix of small, emerging industrial companies that evolve from, or support the established, larger high tech, sustainable industries and bio-tech companies nearby. Typical business parks present a unifying brand and image controlled by project covenants or conditions and restrictions (CC&Rs). Some Business Parks may provide raw industrial building space, while others may provide industrial flex building spaces. Leased spaces often contain combined business office and product production operations. These types of business parks usually require medium-sized parcels (20 – 40 acres in size).

4. "*Industry Research & Development (R&D) Parks*" means and includes industrial R&D business parks that primarily provide industry flex-space developments for vertically-integrated research and development businesses and research laboratories that develop new products and/or industry technologies in smaller campus-like projects. Industry Business Parks, R& D Parks also usually require small-to-medium sized parcels (20 – 30 acres in size).

5. "*Industry Suppliers*" means and includes businesses that manufacture, process, distribute or provide production materials, parts, product components and business services used by local high tech, sustainable industry and bio-tech businesses in the Portland Region. They include, but are not limited to suppliers of test equipment, uniforms and linens, lab supplies, sub-components and circuit boards, and packaging materials. Industry suppliers usually require smaller-sized parcels (10 – 20 or more acres in size).

6. "*Support Commercial Services*" means and includes a clustering within a single development project of support commercial retail uses and professional services that directly and primarily serve the daily commerce needs of businesses and employees in the immediate surrounding industrial area. Such a building cluster may not contain more than 50,000 sq. ft. of total structural or building floor area, and the total floor area within such a building cluster that may be allocated to a single use, tenant or business to be located within the building may not exceed 20,000 sq. ft. of floor area. Typical uses include food services and restaurants, banking, convenience shops, automated businesses support services and like-kind limited retail and professional business services. A support commercial service cluster usually requires a small geographic land area (not more than 5 - 10 acres of land) located to be both visible to drive-by traffic and within reasonable walking or driving distance to/from businesses and employees in the surrounding industrial area. Free-standing, single user commercial retail uses or professional offices do not fall within this land use category and are not permitted in the ESID.

7. "*Distribution Businesses*" are industries that require good access to the transportation network, via Highway 26, in order to deliver goods throughout the region.

8. "*Lot of Record*" means any lot or parcel of property described on Washington County Tax Maps on the date of annexation of the lot or parcel of land to the City of Hillsboro.

9. "*Contiguous Lots of Record in Common Ownership*" means all contiguous lots or parcels which are either owned by a single individual or entity at the time land is placed in this district or which are thereafter acquired by a single individual or entity.

10. "*Pre-Existing Use*" means any lawfully created use or structure established and in existence on the date of adoption of this ordinance.

D. **Standards**. All land uses, land development and lot partition and lot development requirements within the ESID Zone shall comply with the standards contained in Sections D. and E. of this ESID Zone Ordinance and the standards of the M-P Industrial Park Zone of Hillsboro Zoning Ordinance specifically identified or referenced in this ESID Ordinance. All land uses, land development and lot partition and lot development requirements within the ESID Zone shall also be subject to review and approval under Section 133, Development Review/Approval, of the Hillsboro Zoning Ordinance:

1. **Land Use**. Land uses, new development and redevelopment within the ESID Zone shall be allowed and shall occur in accordance with the following requirements:

a. Permitted land uses:

Sub-area A: East Evergreen

Permitted uses within Sub-area A: East Evergreen shall be limited to kinds of land uses described in the following Industrial use categories as defined in Section C. of this ESID Zone Ordinance:

(1) Sustainable, Environmental, and Energy Businesses
(2) Biotech Campus
(3) Industry Research & Development (R&D) Parks
(4) Industrial Incubators, Start-ups and Spin-offs Business Parks
(5) Support Commercial Services [see Section D.1.d. of the ESID]
(6) Transportation facilities, including public improvements for streets, transit, parking, and bicycle and pedestrian facilities
(7) Public service or utility uses and facilities
(8) Other uses similar in type and character to the permitted use categories in Sub-area A as determined by the Planning Director pursuant to Section 117 of the Hillsboro Zoning Ordinance if proposed to be developed on properties less than twenty five (25) acres in land area, and by the Planning Commission if proposed to be developed on properties containing twenty five (25) or more acres in land area.

Sub-area B: West Evergreen

Permitted uses within Sub-area B: West Evergreen shall be limited to the kind of land uses described in the following Industrial use categories as defined in Section C. of this Ordinance:

(1) Sustainable, Environmental, and Energy Businesses
(2) Biotech Campus
(3) Industry Research & Development (R&D) Parks
(4) Industrial Incubators, Start-ups and Spin-offs Business Parks
(5) Distribution Businesses
(6) Industry Suppliers
(7) Support Commercial Services [see Section D.1.d. of the ESID]
(8) Transportation facilities, including public improvements for streets, transit, parking, and bicycle and pedestrian facilities
(9) Public service or utility uses and facilities
(10) Other uses similar in type and character to the permitted use categories in Sub-area B as determined by the Planning Director pursuant to Section 117 of the Hillsboro Zoning Ordinance if proposed to be developed on properties less than twenty five (25) acres in land area, and by the Planning Commission if proposed to be developed on properties containing twenty five (25) or more acres in land area.

b. Conditional uses:
Only the following Conditional Land Uses may be permitted within the ESID Zone when proposed, processed, approved and developed in accordance with the provisions Sections 78 to 83 of the Hillsboro Zoning Ordinance and Section 133, Development Review/Approval, of the Zoning Ordinance:

(1) Transit Park and Ride
(2) Radio transmission facilities

c. Excluded uses:
Unless a use is permitted outright or as a conditional use, or is determined to be permissible by the Planning Director or the Planning Commission in accordance with the provisions of this ESID Zone Ordinance, the use shall be excluded from, and may not be permitted to develop within the ESID.

d. Special Provisions for Support Commercial Services uses:

(1) At least one million (1,000,000) total square feet of building floor area of permitted industrial development within Sub-area A, and at least one-half million (500,000) total square feet of building floor area of permitted industrial development within Sub-area B, must first be approved by the City (as documented by building permits issued for industrial projects) before the City may consider and approve the development within Sub-area A and Sub-area B, respectively, of a support commercial service use permitted under Section C.6. of this ESID Ordinance.[1]

(2) Development of the support commercial service use will require an amendment to the Evergreen Area Plan Map, City zone change, and City Development Review approval of the proposed use.

(3) Specific retail and professional service uses to be included within a proposed Support Commercial Services development shall be consistent with the kinds of uses described in Section C. of this ESID which defines "Support Commercial Services". If a question arises whether a proposed retail or professional service use is consistent with that definition, the Hillsboro Planning Director shall issue a written determination of consistency of the proposed

[1] This provision limiting the development of retail commercial and professional offices only to one (1) site in Sub-area A and one (1) site in Sub-area B that may not exceed 10 acres in size and must include retail and offices uses demonstrated to directly and primarily serve the daily needs of immediately surrounding industrial businesses and employees is intended to accommodate and achieve the intent and objectives of applicable Metro Urban Growth Management Functional Plan Title 4 restrictions on large retail commercial, professional offices and Title 4 Regionally Significant Industrial Area (RSIA) requirements.

use with the definition of "Support Commercial Services" pursuant to the Section 117 of the Hillsboro Zoning Ordinance. The Director's determination shall be based on documents that describe how the proposed retail or professional service use satisfies the definition. The documents shall be compiled and submitted to the director by the party seeking City approval of the proposed support commercial services use.

(4) The land area to be occupied by proposed Support Commercial Services use may not contain more than ten (10) net acres of developed land.

e. Pre-Existing Uses:
Any lawfully created use of any building, structure or land existing at the time of adoption of this ESID Zone Ordinance may continue to operate and may expand to add up to 20 percent (20%) more floor area and ten percent (10%) more land area.

2. **Lot Size**.

a. Sub-area A: East Evergreen:

(1) Industrial developments allowed by this ESID Zone Ordinance within Sub-area A shall have a minimum lot size of 50 acres. All other lots of record or contiguous lots of record in common ownership within the ESID smaller than 50 acres in size may contain any business or use described in Section D.1.a. of this Ordinance.[2]

(2) Subdivision of parcels within Sub-area A will be permitted for lots larger than 50 acres in size so long as the resulting land division creates one lot or parcel of at least 50 acres and the remaining lot(s) created contains at least one parcel of 25 acres of contiguous land.

b. Sub-area B: West Evergreen:

(1) Industrial developments allowed by this ESID Zone Ordinance within Sub-area B shall have a minimum lot size of 10.0 acres. All other lots of record or contiguous lots of record in common

[2] This 50 acres minimum lot size standard for industrial developments and 50-acres lot-creation subdivision standard established by Subsection D.2.a.(1) and D.2.a.(2) for Sub-area A are intended to:
1) Encourage and facilitate parcel aggregations and consolidations into several large lots within Sub-area A containing at least 50 acres and, therefore, better accomplish an Evergreen Area UGB Condition of Approval requiring the establishment of one 100-acre industrial lot within the Evergreen Area; and,
2) Address ORS 197.352 (Ballot Measure 37) considerations.

ownership within the ESID smaller than 10 acres in size may contain any business or use listed in Section D.1.a. of this ordinance.

(2) Subdivision of parcels within Sub-area B will be permitted for lots larger than 10 acres in size so long as the resulting land division creates one lot or parcel of at least 10 acres and the remaining lot(s) contains at least one parcel of 5 acres of contiguous land.

3. **Implementing the City Transportation System Plan**.
The required minimum lot sizes for Sub-areas A and B may be reduced in size to the extent necessary to allow the dedication and/or construction of public collector or arterial roadways necessary to implement Section 13: Transportation of the Hillsboro Comprehensive Plan.

4. **Natural & Hazard Areas**. The required minimum lot sizes for Sub-areas A and B may be reduced in size to the extent made necessary by the presence on the lot(s) of a natural area, flood hazard area or other resource or hazard designation restricting development pursuant the provisions of the Hillsboro Comprehensive Plan or Zoning Ordinance; or for the sole purpose of segregating common or public ownership of natural areas, flood hazard areas or other natural resource or hazard areas within an industrial park.

E. **Land Development Standards**. The following M-P District provisions shall apply to all developments within the ESID Zone unless modified by the Planning Director as a result of Development Review to achieve improved project design, protect or enhance significant natural resources, achieve public infrastructure efficiencies and economies of scale or other practicable project development solutions.

1. **Setback Requirements**. The yard setback requirements set forth in Section 68 of the Hillsboro Zoning Ordinance shall apply.

2. **Height of Buildings**. The building height limits and standards set forth in Section 69 of the Zoning Ordinance shall apply.

3. **Lot Coverage**. The maximum lot coverage standard in Section 70 of the Zoning Ordinance shall apply.

4. **Off-Street Parking and Loading**. The off-street parking and loading standard in Section 71 of the Zoning Ordinance shall apply.

F. **Performance Standards**. The land and structure use and development performance standards in Section 72 of the Zoning Ordinance shall apply. In the ESID Zone, as a condition for granting of a building permit, it shall be agreed that, upon request of the City, information sufficient to determine the extent of compliance with the performance

standards in Section 72 shall be furnished by the owner of the property to which the building permit was granted or all successors and assignees of the owner. Such requests may include a requirement for continuous records of operation likely to violate the standards, for periodic checks to assure maintenance of standards, of for special surveys in the event a question arises regarding compliance with Section 72 performance standards.

Industrial development within properties situated in Sub-Area A, the "East Evergreen" Area and Sub-Area "B", the "West Evergreen" Area shall comply with Airport Safety and Compatibility Overlay Zone (Section 135B) requirements pertaining to the height of structures; smoke, glare, dust, wildlife attractants, and electronic emissions and interferences; and, construction of public or private facilities or infrastructure in locations that may create hazardous or safety conflicts with the safe landing and departure of aircraft from the Hillsboro Airport.

G. **Development Review Standards**. All developments within the ESID Zone are subject to, and shall comply with the development standards and procedures set forth in Section 133, Development Review/Approval of Plans, of the Hillsboro Zoning Ordinance:

1. The Planning Director shall review and may approve each proposed development within the ESID Zone in accordance with the review standards and procedures prescribed in this ESID Zone Ordinance and in Section 133 of this Zoning Ordinance. If the provisions of this ESID Zone Ordinance and Section 133 are inconsistent or conflict as applied to any proposed development, the provisions of the ESID Zone Ordinance shall apply and control.

2. Within the ESID Zone, final development plans for any proposed land use to be built or site alteration to take place on a lot of record or contiguous lots of record in common ownership within the ESID shall comply with the applicable provisions of Section 133.

3. Any subdivision of lots and parcels within this ESID Zone shall comply with the applicable provisions of this ESID Zone Ordinance and the City of Hillsboro Subdivision Ordinance. If the provisions of this ESID Zone Ordinance and the City Subdivision Ordinance are inconsistent or conflict as applied to any proposed development in the ESID Zone, the provisions of the ESID Zone Ordinance shall apply and control.

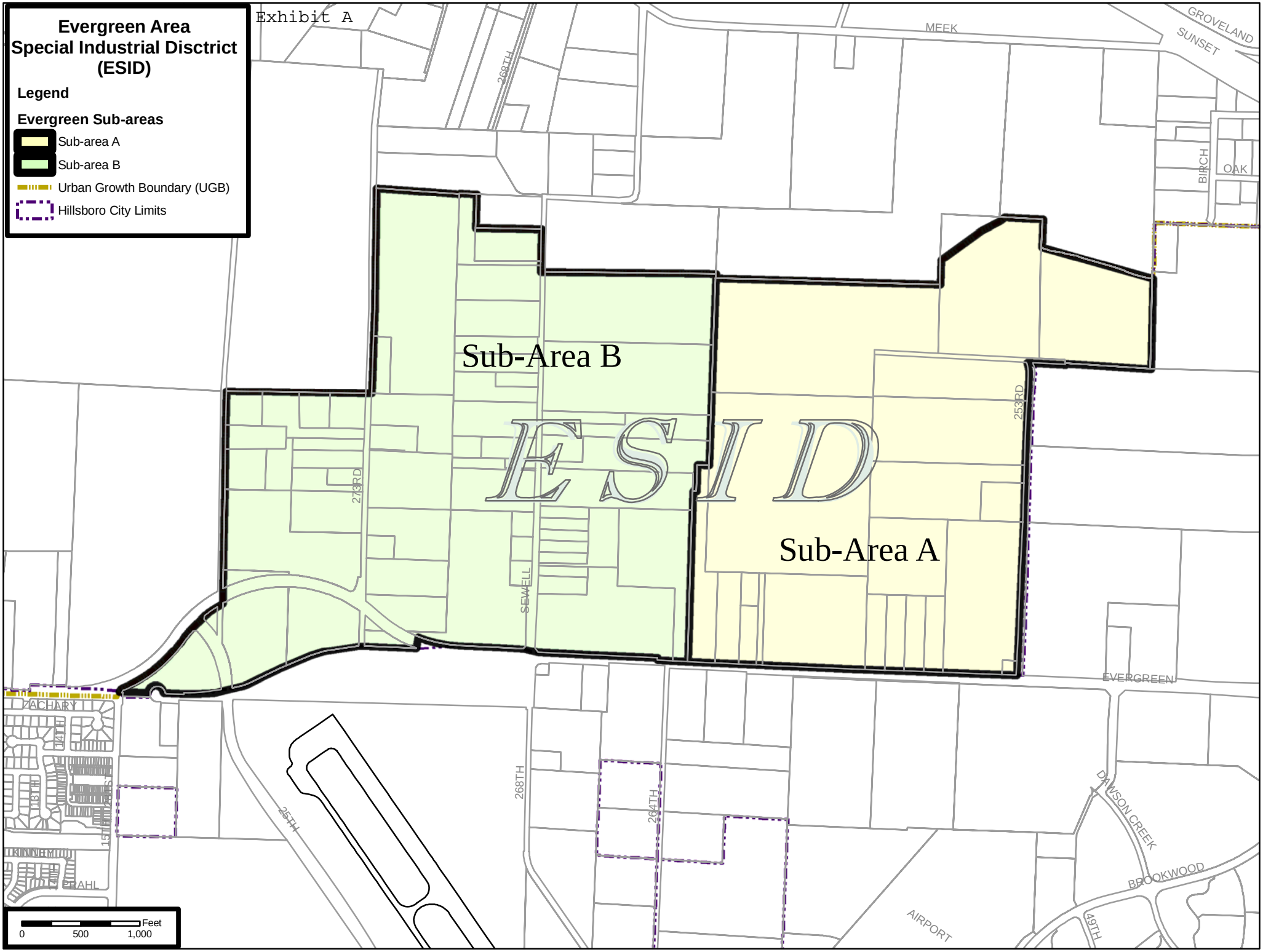


Exhibit A
Evergreen Area
Special Industrial Disctrict
(ESID)
Legend
Evergreen Sub-areas
Sub-area A
Sub-area B
Urban Growth Boundary (UGB)
Hillsboro City Limits
Sub-Area B
Sub-Area A
ESID
MEEK
GROVELAND
SUNSET
BIRCH
OAK
253RD
273RD
SEWELL
EVERGREEN
ZACHARY
14TH
18TH
15TH PLACE
KINNEY
PRAHL
268TH
264TH
25TH
DAWSON CREEK
BROOKWOOD
AIRPORT
49TH
Feet
0
500
1,000

Appendix M

Infrastructure Financing
Evergreen Concept Area

Evergreen & Helvetia
Concept Planning

MEMORANDUM

Date: October 23, 2007

To: Evergreen / Helvetia Concept Plans Project Team

From: Chris Zahas, Leland Consulting Group
Tina Mosca, Leland Consulting Group

Re: Infrastructure Financing, Evergreen Concept Area

This memo summarizes projected infrastructure costs and funding sources associated with the development of the Evergreen concept area. It is assumed that private development will finance all onsite development costs (internal roads, onsite utilities, onsite open spaces and trails, etc.) and a portion of offsite development costs.

As described below, in the Infrastructure Financing Analysis, mandatory fees and charges that private developers are assessed at the time of development are expected to generate a surplus of revenues to finance offsite infrastructure costs associated with development in the Evergreen area. Despite the fact that no infrastructure financing gap is projected, the City may wish to explore alternative funding sources such as urban renewal and local improvement districts (LIDs) to buy down the cost of development in order to attract private investment or to help pay for other planned, but unfunded, improvements. Accordingly, this memo includes a brief discussion of additional funding sources.

Infrastructure Financing Analysis

Summary of Infrastructure Costs and Sources of Funding

Infrastructure costs related to development at Evergreen will fall into the following categories:

- Transportation (including storm drainage facilities)[1]
- Water
- Sanitary Sewer

Detailed cost information for each of these categories can be found in separate technical memorandums by DKS Associates (transportation) and CH2M Hill (water, sanitary sewer).

[1] Costs associated with storm water conveyance are assumed to be incorporated into the transportation infrastructure improvements. Onsite storm water systems will be paid for by the developer.

Existing city financing tools include required system development charges (SDCs) and traffic impact fees (TIF) from new development. SDCs and TIF revenues generated by development in Evergreen can be used to finance offsite improvements, including systemwide improvements. SDCs may also be used to reimburse developers for offsite sanitary sewer infrastructure costs.[2]

Table 1 illustrates the estimated costs and revenues for all onsite and offsite infrastructure improvements associated with the Evergreen concept plan. These are good faith estimates based on the preliminary Evergreen concept plan.

Table 1: Summary of costs and revenues associated with Evergreen development

Infrastructure Type	Costs	Developer Requirements	TIF Revenues	Resulting Balance (Costs - Revenues)
Transportation	$51,611,546	$49,111,546	$8,039,574	-$5,539,574 (surplus)
Water	$4,440,000	$4,400,000	n/a	$0
Sanitary Sewer Alt. 1	$3,700,000	$3,700,000	n/a	$0
Sanitary Sewer Alt. 2	$6,700,000	$6,700,000	n/a	$0

As shown above, revenues generated by private development in the Evergreen area are projected to exceed the combined cost of onsite and offsite infrastructure improvements needed for the Evergreen concept plan by $5.5 million. Therefore, no funding gap is anticipated. However, as described in the introduction, to attract private development, especially in the initial stages of build-out, the City could use a variety of funding sources discussed later in this document to assist with infrastructure financing costs.

Transportation

Summary of Transportation Costs

The Helvetia and Evergreen Area Future Transportation Conditions Analysis developed by DKS Associates (see separate technical memorandum) identifies transportation infrastructure improvements that build-out of the Evergreen area will require.

The projected cost of onsite transportation infrastructure in the Evergreen area is $49 million. An additional $2.5 million in offsite transportation infrastructure costs is needed to finance intersection improvements, including additional turn lanes and a traffic signal, at five locations that will be impacted by development in the Evergreen area.

Transportation Revenues

Development at Evergreen will contribute to transportation funding in two primary ways:

- **Onsite infrastructure.** Developers will construct all onsite transportation infrastructure at their own expense.

[2] Based on discussions with the City of Hillsboro Water Department, development in the Evergreen concept area is not projected to necessitate any off-site water system improvements.

- **TIFs.** The City of Hillsboro collects TIFs for all new development, which is assigned to one of five general use categories: residential, business/commercial, office, industrial, or institutional. TIFs are calculated based on the total trips a development is projected to generate. Within each general use category, "unit factors" are assigned to different development types and reflect the magnitude of the impacts the development is anticipated to have on the transportation system. For example, within the industrial use category, warehouses, which generally have a very low job density, will generate fewer trips than industrial parks, which have a higher job density.

  For industrial uses, total trips are estimated by multiplying a building's total gross square footage (TGSF) by the appropriate unit factor. The methodology for estimating total trips for most commercial uses is similar, except the unit factor is multiplied by a building's total gross leasable square footage (TGLSF). For hotels, however, total trips are estimated by multiplying the number of rooms by the hotel unit factor.

Table 2 shows projected TIF revenues for the Evergreen Area. Assuming a job density of 21.3 employees per acre, development in the Evergreen Area is projected to produce $8.0 million in TIF revenues, which may be used to finance off-site improvements.

Table 2: Projected TIF Revenues for Evergreen concept area[3]

Item	Area (acres)	Building Area (s.f.) / No. of Rooms	GLA (COM Uses)	Description	No. of Units	Total Trips (Gross Bldg s.f. x No. of Units/ 1000)[1/]	Basis of Trip Rate	TIF estimate (Basis of Trip Rate x Total Trips)
Gross area	534.0							
less infrastructure/circulation (16%)	84.0							
Net development area	450.0							
First Sustainable Energy & Environmental Business	70.0	609,840	n/a	Industrial Park	6.97	4,251	$308	$1,309,180
Second sustainable energy & environmental business	45.0	392,040	n/a	Industrial Park	6.97	2,733	$308	$841,616
Biotech Campus	105.0	914,760	n/a	Industrial Park	6.97	6,376	$308	$1,963,770
Industry Suppliers 1	30.0	274,428	n/a	Manufacturing	3.85	1,057	$308	$325,417
Industry Suppliers 2	75.0	686,070	n/a	Manufacturing	3.85	2,641	$308	$813,542
Industrial Business Park 1	28.0	292,723	n/a	Industrial Park	6.97	2,040	$308	$628,406
Industrial Business Park 2	25.0	261,360	n/a	Industrial Park	6.97	1,822	$308	$561,077
Industrial Business Park 3	12.0	125,453	n/a	Industrial Park	6.97	874	$308	$269,317
Industry R & D Parks	40.0	418,176	n/a	Manufacturing	4	1,610	$308	$495,873
Hotel	2.5	200 rooms	n/a	Hotel	8.70	1,740	$81	$140,940
Commercial Node 1	7.5	98,010	40,000	Shopping Center Unter 50000 Gr. SF	94.71	3,788	$81	$306,860
Commercial Node 2	10.0	130,680	50,000	Shopping Center Unter 50000 Gr. SF	94.71	4,736	$81	$383,576
TOTAL	450.0	4,072,860						$8,039,574

[1/] For hotels, total trips calcuation is no. of rooms x no. of units. For shopping centers, total trips calculation is gross leasable area (GLA) x no. of units.

[2/] For hotels, job density calculation is no. of employees per room.

Source: Leland Consulting Group

[3] For the purpose of transportation modeling, assumptions were made about the average employment density and number of jobs projected for the Evergreen concept area at build-out. The development program presented in Table 2 most closely reflects these assumptions.

Revenues generated by development in the Evergreen area are expected to exceed the cost of on-site transportation improvements. What is not accounted for in Table 1 or this analysis is the cost of off-site transportation improvements that will be needed regardless of development occurring in Evergreen.

Water

Water Costs

The Water System Concept Design developed by CH2M Hill (see separate technical memorandum) identifies water system infrastructure improvements that will be required for the Evergreen concept area, which will be served by the City of Hillsboro.

The total construction cost estimate for Evergreen water improvements, including a 30 percent contingency, is $4.4 million.

Water Revenues

The water system improvements described above are considered onsite improvements that would be the responsibility of developers. Thus, there will be no public utility obligations to fund water infrastructure at Evergreen.

Development at Evergreen will generate revenues based on SDCs that are levied on development as it occurs. These fees, assessed by the City of Hillsboro, enable the District to build and maintain the internal capacity to serve the Evergreen area. The methodology for determining SDCs is described in CH2M Hill's technical memorandum.

Sanitary Sewer

Sanitary Sewer Costs

The Sanitary Sewer Trunk Concept Design developed by CH2M Hill (see separate technical memorandum) proposes two alternatives for providing sanitary service to the Evergreen concept area.

The total program cost estimate for Alternative 1, which provides for an all-gravity system in to the McKay Trunk system, is $3.7 Million. The total program cost estimate for Alternative 2, a pump station with discharge to the Dawson Creek system, is $6.7 Million.

Sanitary Sewer Revenues

Based on CH2M Hill's analysis of sanitary sewer infrastructure requirements, it is assumed that private development will bear the total cost of sanitary sewer improvements associated with build-out of the Evergreen area.

Specifically, developer requirements will include:

- Onsite infrastructure. Developers will be responsible for all onsite infrastructure costs.

- Connection fees/SDCs. Clean Water Services (CWS), which will be the sanitary sewer service provider for the Evergreen Area, will assess SDCs to new development to finance connection charges, which may include:

  a. Direct connections to the District sewer system;

  b. Indirect connections to the District sewer system including, but not limited to, building additions, or expansions, which include sanitary facilities;

  c. Change in the use of an existing connection; and

  d. Substantial increase(s) in the flow or alteration of the character or sewage to an existing connection.

  For industrial uses, connection fees will be calculated as Dwelling Unit Equivalents (DUEs) based on the estimated or actual metered flow in incoming water, or metered effluent. The fees are calibrated to match the expected true cost of any offsite improvements required by the development. Thus, there will be no unmet funding obligation as a result of development at Evergreen.

Alternate Funding Tools

As described above, to facilitate private development, additional funding tools may be needed to assist with onsite infrastructure costs in Evergreen. The City and Washington County, working with Metro and the State, will also need to identify funding sources to pay for off-site transportation costs associated with regional growth. A wide range of funding tools is available to support capital improvements and infrastructure planning in Oregon. Many transportation funding tools are funded via the Oregon Department of transportation (ODOT) through competitive grants that are offered annually or biannually. Local funding tools, such as urban renewal and LIDs, may be used to finance capital improvements within designated geographic areas or special districts.

The following programs and funding tools are some of the most common and most likely to be of use in the Evergreen concept area.

- **Tax Increment Financing/Urban Renewal**. Tax increment financing (TIF) is one of the most powerful public funding tools for revitalization. TIF is a mechanism where public projects are financed by debt borrowed against the future growth of property taxes in a defined urban renewal district. The assessed value of all properties within the district is set at the time the district is first established (the frozen base). As public and private projects enhance property values within the district, the increase in property taxes over the base (the increment) is set aside. Debt is issued, up to a set maximum amount (the maximum indebtedness), to carry out the urban renewal plan and is repaid through the incremental taxes generated within the district. The duration of urban renewal districts is usually 15 to 20 years. When the district is retired, the frozen base is removed and all property taxes in the district return to normal distribution. Because urban renewal is such a useful tool for revitalization and can generate significant amounts of money for infrastructure, it should be strongly considered to help fund projects in the Evergreen

Area. As a part of subsequent conceptual plan implementation, the City would need to prepare an urban renewal plan, which would identify specific projects to be funded and the likely funding capacity from tax increment revenues.

- **Local Improvement District.** A Local Improvement District, or LID, is a special assessment district where property owners are assessed a fee to pay for capital improvements such as sidewalks, underground utilities, shared open space, and other features. LIDs are typically petitioned by and must be supported by a majority or supermajority of the affected property owners. Since LIDs are funded by private property owners, they can help share the funding burden in a public-private partnership. Further, since it requires private property owner support, it is a good mechanism to help organize property owners around a common goal. Such a mechanism could be a useful tool to fund shared amenities and infrastructure at Evergreen.

- **Oregon Pedestrian and Bicycle Program (ODOT).** A range of pedestrian and bicycle improvements will be a part of the Evergreen transportation infrastructure. ODOT provides grants for crosswalks, bike lane striping, and pedestrian crossing islands that fall within the rights-of-way of streets, roads and highways. Bike/ped grants usually fall between $80,000 and $500,000.

- **Oregon Transportation Enhancements (TE) Program**. Using federal transportation funds, ODOT TE grants are awarded to local governments and other public agencies to support projects that improve communities and enhance the experience of traveling. New sidewalks, bike lanes, and pedestrian amenities such as benches and streetlights are eligible TE projects, as are the restoration of historic railroad stations, bus stations, and bridges. TE awards typically range from $200,000 to $1 million, and local governments must contribute ten percent of the project's cost.

- **State Transportation Improvement Program.** The STIP is Oregon's adopted four-year investment program for major state and regional transportation systems, including interstate, state, and local highways and bridges, public transportation systems, and federal and tribal roads. It covers all major transportation projects for which funding is approved and project implementation is expected to occur during a certain time frame. The STIP includes all major transportation projects and programs in Oregon that are funded with federal dollars. It also includes state-funded projects that relate to the state highway system, and "regionally significant" locally funded projects in metropolitan areas that affect the state's transportation system.

- **Immediate Opportunity Fund (IOF).** The IOF program is a special program in the STIP administered by the ODOT Financial Services' Economics and Policy Analysis Unit. It was created in 1988 by the Oregon Transportation Commission (OTC) in order to quickly process and fund transportation improvements that would attract or retain jobs. The fund is a collaborative effort between the Oregon Economic and Community Development Department (OECDD) and ODOT. It is intended as quick-response or incentive funding for either targeted business development projects or business district revitalization projects. Projects are either pulled from a city or county's transportation

system plan (TSP), or are small projects that are not listed in the TSP and may be added onto other larger projects.

- **Major Streets Transportation Improvement Program (MSTIP).** Washington County voters approved a third version of the MSTIP in 1995. The MSTIP uses property tax revenue to issue bonds for capital construction of major transportation projects with Countywide benefit. Most of these projects take place on County roads. From FY06-07 through FY11-12, $140 million has been allocated for projects in MSTIP C3.

Evergreen Concept Plan Area

NW 268TH AVE

NW 253RD AVE

NW 273RD AVE

AVE (SEWELL RD)

NW 268TH AVE

NW 253RD AVE

EVERGREEN RD

EVERGREEN RD

NE BEACON CT

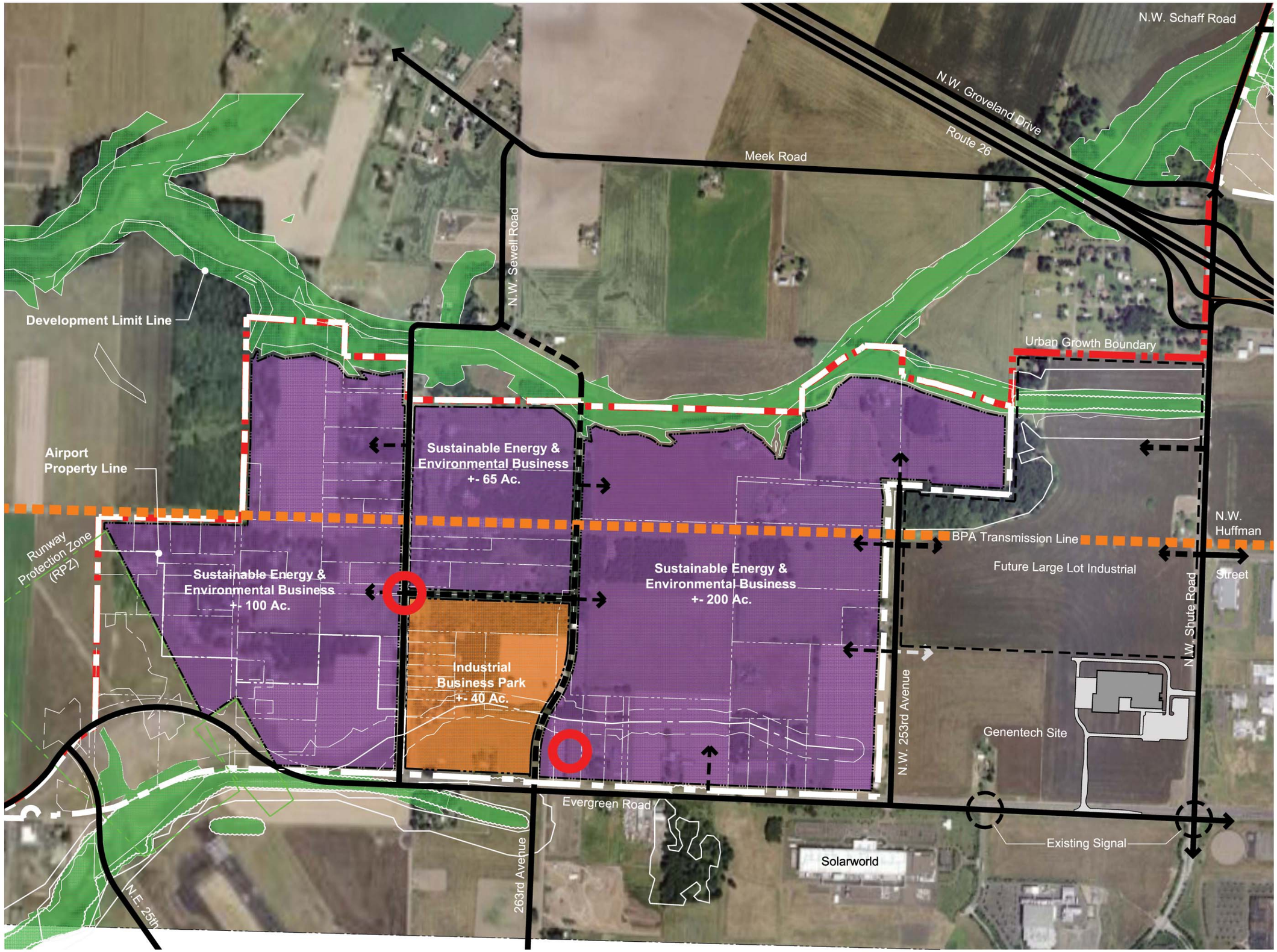
NW 264TH AVE

NE DAWSON RD

NE DAWSON

Legend

- Urban Growth Boundary
- City Limits
- Evergreen UGB Expansion Area



Evergreen
concept plan

Conceptual Illustration A

7 Sept 07

Legend

- **Sustainable Energy & Environmental Business**
- **Industrial Business Park**
- **Commercial Node**
  location not specific - see ESID

N

0 800 1,600
Feet

Angelo planning group

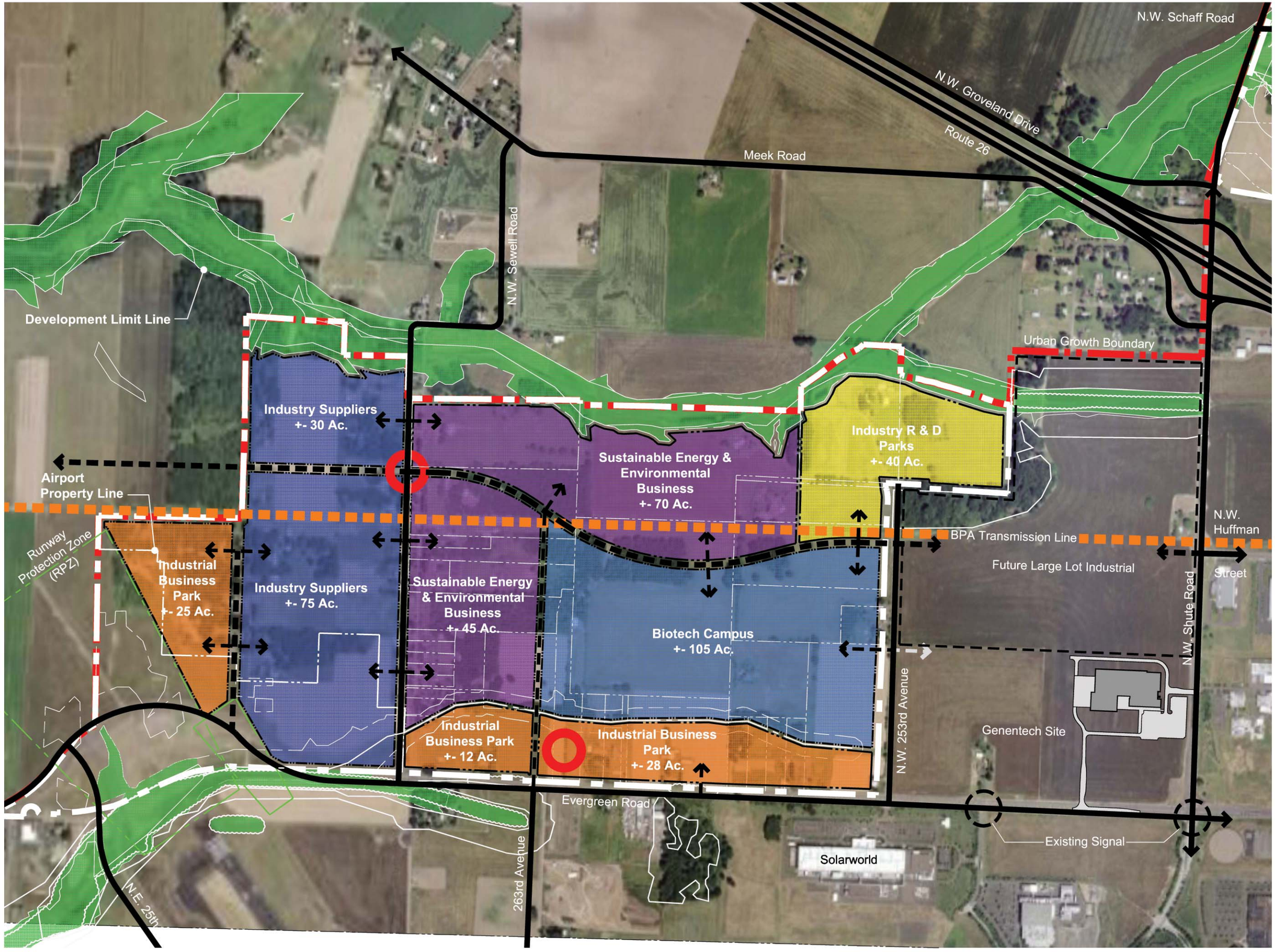
CH2MHILL IDC

LCG

DKS Associates
TRANSPORTATION SOLUTIONS

Jeanne Lawson Associates, Inc.
public involvement specialists

CITY OF HILLSBORO



Evergreen
concept plan

Conceptual Illustration B-1

7 Sept 07

Legend

- Sustainable Energy & Environmental Business
- Industry R&D Parks
- Biotech Campus
- Industry Suppliers
- Industrial Business Park
- Commercial Node
  location not specific - see ESID

N

0 800 1,600
Feet

Angelo planning group

CH2MHILL IDC

LCG

DKS Associates
TRANSPORTATION SOLUTIONS

Jeanne Lawson Associates, Inc.
public involvement specialists

CITY OF HILLSBORO

Evergreen
concept plan

Conceptual Illustration B-2

7 Sept 07

Legend

- Sustainable Energy & Environmental Business
- Industry R&D Parks
- Biotech Campus
- Industry Suppliers
- Industrial Business Park
- Commercial Node
  location not specific - see ESID

N

0 800 1,600
Feet

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CH2MHILL IDC

LCG

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TRANSPORTATION SOLUTIONS

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public involvement specialists

CITY OF HILLSBORO

N.W. Schaff Road
N.W. Groveland Drive
Route 26
Meek Road
N.W. Sewell Road
Development Limit Line
Urban Growth Boundary
Industrial Business Park +- 40 Ac.
Sustainable Energy & Environmental Business +- 110 Ac.
Airport Property Line
Runway Protection Zone (RPZ)
Industry R & D Parks +- 25 Ac.
Industrial Business Park +- 60 Ac.
Industry Suppliers +- 40 Ac.
Biotech Campus +- 105 Ac.
BPA Transmission Line
Future Large Lot Industrial
N.W. Huffman Street
N.W. Shute Road
N.W. 253rd Avenue
Industrial Business Park +- 12 Ac.
Industrial Business Park +- 28 Ac.
Genentech Site
Evergreen Road
Existing Signal
Solarworld
263rd Avenue
N.E. 25th