CITY OF
Lynnwood

CITY OF LYNNWOOD
Highway 99 Corridor Subarea Plan

Draft Supplemental Environmental Impact Statement

September 2010

FACT SHEET

Project Title	**Highway 99 Corridor Sub-area Plan**
Proposed Action	The Proposed Action by the City of Lynnwood includes the following actions: 1. Adoption of a sub-area plan 2. Adoption of Zoning and Development Regulations 3. Adoption of Design Guidelines The SEIS considers two alternatives: 1. No Action 2. Preferred Action – Development of 5,028 multi family units in mixed use development over a 15-year period; commercial and multi-family development within five "nodes" along the Highway 99 Corridor.
Location of Proposal	The Highway 99 Corridor is a 5.25-mile section of Highway 99 stretching from the southerly city limits at 216th Street SW and extending north to 148th Street SW, including the northern portion of the Lynnwood Municipal Urban Growth Area. In addition, properties about a quarter of a mile to the east and west of the Highway 99 Corridor are included in the study to evaluate land use compatibility and ease of pedestrian use.
Proponent	**City of Lynnwood**
Lead Agency	**City of Lynnwood**
Responsible Official & EIS Contact Person	**City of Lynnwood** Environmental Review Committee ATTN: Kevin Garrett, AICP, Committee Coordinator P.O. Box 5008 Lynnwood, WA 98046-5008 425-670-5405

Required Permits & Approvals	City of Lynnwood Sub-area Plan adoption, Amendment of Comprehensive Plan, Adoption of Zoning and Design Guidelines
Draft SEIS Authors & Principal Contributors	**Reid Middleton** – Document Preparation; Land Use; Population; **David Evans and Associates** – Transportation, Greenhouse Gas Analysis **Gray and Osborne** – Utilities
Type & Timing of Environmental Review	To meet the City's GMA/planning responsibilities and to comply with SEPA, the City of Lynnwood is using SEPA's Phased Review (WAC 197-11-060(5)) and its integrated GMA/Planning provisions process (WAC 197- 11-210).
Location of Background Information	**City of Lynnwood Community Development** 19100 44th Ave W Lynnwood WA 98036
Prior Environmental Documents; Use of Existing Documents	This document supplements the Draft and Final EISs prepared for the Lynnwood General Policy Plan (1994).
Date of Draft SEIS	**September 10, 2010**
Comments on DEIS due	**October 11, 2010** Submit written comments to: **Environmental Review Committee** City of Lynnwood P.O. Box 5008 Lynnwood, WA 98046-5008
Cost & Availability Of DEIS	The Draft SEIS (and other project documents) are available on the City of Lynnwood web site; the DEIS will be in electronic format (www.ci.lynnwood.wa.us) or by email from Mr. Garrett (kgarrett@ci.lynnwood.wa.us). Copies of the Draft SEIS may be purchased for $____ _. Copies shall be available for review at the Lynnwood Library (19200 44th Ave. W. Lynnwood WA 98036.

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ACRONYMS

ADA	Americans with Disabilities Act
AWWD	Alderwood Water & Wastewater District
B-1	Community Business
B-2	Limited Commercial
BAT	Business Access and Transit
BRT	Bus Rapid Transit
CACP	Clean Air and Climate Protection
CAFÉ	Corporate Average Fuel Economy
CG	General Commercial
CPP's	Countywide Planning Policies
CPTED	Crime Prevention through Environmental Design
CTED	Community, Trade, and Economic Development
DEIS	Draft Environmental Impact Statement
DNR	Drainage Needs Report
DOC	Department of Ecology and Commerce
DSEIS	Draft Supplemental Environmental Impact Statement
du	dwelling units
ECC	Edmonds Community College
EdCC	Edmonds Community College
EIS	Environmental Impact Statement
ERU	Equivalent Residential Unit
ESA	Endangered Species Act
FHWA	Federal Highway Administration
FLUM	Future Land Use Map
GC	General Commercial
GFA	Gross Floor Area
GHG	Greenhouse Gas
GMA	Growth Management Act
gpd	gallon per day
H99	Highway 99
HCM	Highway Capactiy Manual
ICLEI's	International Council for Local Environmental Initiatives
IPCC	Intergovernmental Panel on Climate Change

LG-5	Lunds Gulch - 5
LID	Local Improvement District
LID	Low Impact Development
LMC	Lynnwood Municipal Code
LOS	Level of Service
LS	Lift Station
LU-14	Land Use - 14
MF	Multi-family
mgd	million gallons per day
MUGA	Municipal Urban Gross Area
MU-RE	Mixed Use - Residential Encouraged
MU-RR	Mixed Use - Residential Required
NB	North Bound
NES	North-East-South
NPDES	National Pollutant Discharge Elimination System
OFM	Office of Financial Management
PSCAA	Puget Sound Clean Air Agency
PUD	Planned Unit Development
SB	South Bound
SEIS	Supplemental Environmental Impact Statement
SEPA	State Environmental Policy Act
SOV	Single Occupancy Vehicle
SR	State Route
SWMCP	Surface Water Management Comprehensive Plan
SWMP	Stormwater Management Program
TAZ	Traffic Analysis Zones
TDM	Transportation Demand Management
TIA	Traffic Impact Assessment
TIP	Transportation Improvement Plan
TOD	Transit-Oriented Development
UC	Urban Centers
UGA's	Urban Growth Areas
VMT	Vehicle Miles Travelled
WAC	Washington Administrative Code
WWTP	Waste Water Treatment Plant

SUMMARY
OF ALTERNATIVES, ENVIRONMENTAL IMPACTS & MITIGATION

This section summarizes environmental information documented in the City of Lynnwood Highway 99 Corridor Draft Supplemental Environmental Impact Statement (DSEIS). This summary provides an overview of environmental issues and includes a matrix of issues, impacts, and mitigation measures for each alternative.

A. Proposed Action & Alternatives

The Proposed Action consists of the following elements:

1. Adoption of a subarea plan
2. Adoption of implementing Zoning
3. Adoption of Design Guidelines

B. Location of Action

The Highway 99 Corridor is a 5.25-mile section of Highway 99 stretching from the southerly city limits at 216th Street SW and extending north to 148th Street SW, into the northern portion of the Lynnwood Municipal Urban Growth Area (MUGA). In addition, properties about a quarter of a mile to the east and west of the Highway 99 Corridor are included in the study area to evaluate compatibility of land uses and ease of pedestrian use.

C. Alternatives

The planning horizon for purpose of analysis of the DSEIS alternatives is 2025.

a. Preferred Alternative

The Preferred Alternative is the adoption of a subarea plan (the Plan) for the Highway 99 Corridor. It is based on the concept of encouraging more intense mixed-use nodes near Bus Rapid Transit (BRT) stops and other strategic locations along Highway 99. The proposed Plan divides Highway 99 into segments that will remain largely commercial (under current zoning) plus five new mixed-use zones, or "nodes."

The Preferred Alternative envisions development over a 15 year period (to 2025) of 5,028 units of mixed use development; commercial and multi-family development within five "nodes" along the Highway 99 Corridor. One of these nodes is currently within an area of Snohomish County proposed for annexation into the City of Lynnwood. Existing zoning in the Lynnwood portion of the corridor does not allow residential development.

These five nodes are located at the following intersections:

- Highway 99 and 176th St. SW
- Highway 99 and 188th St. SW
- Highway 99 and 196th St. SW; and
- Highway 99 and 204th to 208th St. SW
- Highway 99 and 148th St. SW(outside the current City limits but inside the MUGA)

In addition to these five new nodes, the Plan identifies a special planning area between 188th and 180thStreets SW on the west side of Highway 99.

Two new zoning categories are associated with the Preferred Alternative to create development standards for the proposed nodes. The two zoning categories are:

1. **Mixed Use – Residential Required** (MU-RR); and,
2. **Mixed Use – Residential Encouraged** (MU-RE).

The primary purpose of these two zoning categories is to allow, and in one zone, require residential development where it is currently prohibited. The MU-RR requires residential units to be included in any proposed mixed use development. The parcels zoned MU-RR are located near BRT stops and are intended to promote residential units near transit. These areas are considered within Primary Nodes for the purposes of the Plan.

The MU-RE zone is intended to encourage property owners to consider the addition of residential units on properties. However, residential development will not be required. Properties within the MU-RE zone are close to Highway 99 but not located at BRT nodes. These are considered secondary nodes.

Of the parcels proposed for rezoning as part of the Preferred Alternative; 147 acres would be rezoned MU-RR and 97 acres would be rezoned MU-RE with an additional 23.5 acres in the Special Planning Area that would be zoned MU-RE for a total of 268 acres to be rezoned. In order to describe the potential impact of approving the proposed plan and zoning, this analysis anticipates that there could be approximately 5,028 new residential units by 2025 along Highway 99 in these five separate nodes.

The Preferred Action includes adoption by the City of Lynnwood of Design Guidelines that would apply within the MU-RR and MU-RE zones. These guidelines address, among other issues, site planning including compatibility with adjacent properties, storm water management, Pedestrian Access, Amenities, and Open Space Design and Vehicular Access and Parking Design as well as building design.

b. No Action Alternative

The No Action Alternative assumes that development will continue along the Highway 99 Corridor consistent with existing development regulations and market trends. No changes would be made to the existing land use regulations and comprehensive plan designations for the City of Lynnwood. The interim zoning along the Highway 99 Corridor would revert to the prior zoning of CG (General Commercial), B-1 (Community Business), and B-2 (Limited Commercial). No residential development would be allowed along Highway 99. Redevelopment of properties with new buildings and uses, as allowed by these zones, and expansion of existing buildings and businesses would be permitted.

Improvements and maintenance of public infrastructure would be constructed according to adopted public facilities and utilities plans.

D. Planning Process & Environmental Review

This Draft Supplemental EIS will build on and supplement relevant environmental information contained in the EIS prepared for the City's Comprehensive Plan General Policy Plan, adopted in 1994 dated 1995 and subsequently updated.

Future environmental documents may similarly supplement this Highway 99 SEIS. This environmental review is integrated with development of the 99 Subarea Plan, consistent with applicable SEPA provisions (WAC 197-11-210).

This programmatic, or "nonproject," SEIS, as described in Section 197-11-442 of the SEPA Rules has been prepared to evaluate impacts from planning level documents - the adoption of a subarea plan, and development regulations. No specific development projects are evaluated or proposed at this time as part of this planning effort.

E. Summary of Environmental Impacts

Table S-1 on the next page summarizes the environmental impacts and mitigation measures evaluated in this draft SEIS. The following elements of the environment are evaluated in this document:

1. Land Use
2. Transportation
3. Utilities; water, sewer and storm water management
4. Greenhouse gas emissions
5. Parks and Open Space

Table S-1 - Summary of Environmental Impacts by Alternative

Elements of the Environment	No Action Alternative	Preferred Alterative
	IMPACTS	
LAND USE	Development would continue parcel by parcel consistent with the existing comprehensive plan designations and zoning regulations, including the restriction of no new residential development along Highway 99. There would be no change in the current development patterns along the corridor under this Alternative. There would be less likelihood that existing commercial uses within the designated nodes would be displaced.	Implementation of the Highway 99 Corridor Plan would result in the incremental redevelopment over time of existing land uses within the five primary and secondary nodes and the special planning area. The expected form of mixed-use or residential development in these nodes is 4- to 6 –story buildings with 3 to 5 stories of residential over retail businesses and/or structured parking. In between these nodes of mixed use development, general commercial development would continue to expand and redevelop based on the existing land use patterns for those areas. Existing commercial uses within the designated nodes could be displaced.
PLANS, POLICIES & REGULATIONS	Under the No Action Alternative, the Highway 99 Corridor Subarea Plan would not be adopted. There would be no changes to the existing zoning code and the existing Citywide Design Guidelines would continue to apply to new development in the corridor. There would continue to be a prohibition on residential uses consistent with the language in LMC 21.46. The Interim Highway 99 Corridor zones would revert back to the prior zoning of CG, B-2 and B-1. No new multi-family housing would be built within the Highway 99 Corridor because of the zoning restriction on residential development.	**Comprehensive Plan**: New comprehensive plan goals and policies would be recommended in the Highway 99 Subarea Plan. They would fall under the following Elements for the Comprehensive Plan: Land Use, Transportation and Infrastructure, Parks and Open Space and Urban Design. **Zoning**: Two new zoning categories would be adopted under LMC 21.26: MU-RR and MU-RE. These would change the current zoning for approximately 268 acres within the Highway 99 Corridor. Key aspects of the new zoning include: • Minimum density of 40 du/a required in MU-RR, no minimum in MU-RE • Mixed Use development including residential allowed • Parking requirements reduced

Elements of the Environment	No Action Alternative	Preferred Alterative
	IMPACTS	
PLANS, POLICIES & REGULATIONS (cont.)		**Design Guidelines**: New design guidelines would apply within the MU-RR and MU-RE zones. These design guidelines will address: • Site Planning – The relationship of the structure to the street • Pedestrian Access, Amenities, and Open Space Design • Parking Area Design • Building Design • Lighting As a result of the proposed rezoning, the five nodes and special planning area would redevelop with a mix of commercial and residential development. Between the nodes the existing mode of commercial development would remain. For the purpose of assessing the potential impacts of approving the proposed corridor plan and new zoning, this analysis assumes development of 5,028 units of multi-family housing in the corridor.
TRANSPORTATION	**Avg. Peak Hour Traffic Volumes:** Traffic Volumes would increase within the Highway 99 Corridor under No Action during peak hour traffic: *2005 N Bound Avg.: 1,677, 2005 S Bound Avg.: 1,355* *2025 N Bound Avg.: 2,114, 2025 S Bound Avg.: 1,823* *Increase: N Bound – 437 trips, S Bound – 468 trips* **LOS:** The Level of Service (LOS) for major signaled intersections within the Highway 99 Corridor is currently at LOS D. With the No Action Alternative, these intersections would drop to LOS E and F except the intersection at 216th Street SW which would remain at LOS D. Current projects identified within the City's adopted TIP would be implemented.	**Avg. Peak Hour Traffic Volumes:** Traffic volumes would decrease within the Highway 99 Corridor under the Preferred Action. **Peak Hour Volumes N and S Bound:** *2005 N Bound Avg.: 1,677, 2005 S Bound Avg.: 1,355* *2025 N Bound Avg.: 2,101, 2025 S Bound Avg.: 1,800* *Increase: N Bound- 424 trips, S Bound – 445 trips* **LOS:** The Level of Service (LOS) for major signaled intersections within the Highway 99 Corridor is currently at LOS D. The change associated with the Preferred Alternative would be the same as the No Action Alternative; these intersections would drop to LOS E and F except the intersection at 216th Street SW which would remain at LOS D.

Elements of the Environment	No Action Alternative	Preferred Alterative
	IMPACTS	
GREEN-HOUSE GAS EMIS-SIONS (GHG)	GHG emissions for the purpose of this project are being evaluated based upon two factors that are calculated for the area of Snohomish County including Lynnwood and South Snohomish County. These are potential for increase in Vehicle Miles Traveled (VMT) for the South Snohomish County Region (the Region) and potential for increase in CO2 emissions from passenger vehicles and heavy trucks and busses. **VMT** For the No Action Alternative, VMT in the region would be approximately 940,909 miles on a daily basis. **CO2 Emissions** The CO2 emission for the No Action Alternative establishes the base line by which to determine whether the preferred alternative will change CO2 Emissions.	**VMT** The Preferred Alternative results in 935,547 VMT, a decrease of 5,362 VMT in the Snohomish County Region. (is this a decrease as compared to 2005 or as compared to 2025 no action?) **CO2 Emissions** The Preferred Alternative will result in a decrease in the amount of CO2 emissions within the Region: Metric Tons of CO2: -9,133 Metric Tons of CO2 for Heavy Trucks: 533 -553 *Total Metric Tons of CO2 Emissions: -9686*
UTILITIES		
WATER	According to Washington Administrative Code (WAC) 246-290, a water system must maintain a minimum pressure of 30 psi in the distribution system under peak hour demand conditions. Peak Hour flows for the No Action Alternative will be within the capacity of the City of Lynnwood water system. There is sufficient water for fire flow under the No Action Alternative.	The Peak Hour Flow for the Preferred Alternative will be the same as for the No Action Alternative. There is sufficient water for fire flow under the Preferred Action Alternative.

Elements of the Environment	No Action Alternative	Preferred Alterative
	IMPACTS	
SEWER	The City of Lynnwood Comprehensive Sewer Plan projects that the sewer conveyance system (pipes and lift stations) (the No Action Alternative) will be exceeded by 2023and will be inadequate for wastewater flows. The size of a number of existing pipes and the capacity of one lift station will need to be increased.	As with the No Project Alternative, the sewer conveyance system (pipes and lift stations) will be inadequate for wastewater flows by 2023. The Preferred Alternative has similar requirements as the No Action Alternative for sewer conveyance expansion. In some sections, pipe size will need to be increased above the size that would be required for the No Action Alternative. What percent is contributing from this action?
STORM-WATER	The No Action Alternative would continue to implement the existing storm water methods as required in Title 13. The City is currently adopting new stormwater regulations to implement the 2005 Department of Ecology manual with emphasis on Low Impact Development techniques for managing storm water, as called for in the City's 2009 Surface Water Management Comprehensive Plan (2009 Plan). These new regulations would, when adopted, be applicable under this Alternative. The 2009 Plan identifies traditional storm water management techniques and capital improvements needed to maintain the existing city system. In addition, the plan recommends the City focus on developing tools to support both public and private projects that could seek to incorporate innovated stormwater management techniques in areas such as the Highway 99 subarea.	The new stormwater regulations would also be applicable under the Preferred Alternative, consistent with the 2009 City of Lynnwood Surface Water Management Comprehensive Plan (the 2009 Plan). The proposed Design Guidelines call for specific uses of Low Impact Development and biofiltration consistent with the 2009 Plan.
PARKS & OPEN SPACE	Population increases under the No Action Alternative will increase the demand for parks and open spaces and reduce the Level of Service. Mitigation measures will be required to provide additional parks and open space.	Population increases under the Preferred alternative will increase the demand for parks and open spaces and reduce the Level of Service. Mitigation measures will be required to provide additional parks and open space. The City might consider a Parks Impact Mitigation Ordinance as a mitigating measure.

F. Mitigation Measures

a. Land Use

Impacts associated with the potential density of the development within the primary and secondary nodes for the Preferred Alternative would be mitigated through the implementation of development regulations and Design Guidelines as identified in the proposed Plan.

b. Transportation

As discussed above, the traffic impact analysis concluded that development of the mixed-use nodes would not have a significant impact on traffic volumes and intersection operations in the corridor. However, analysis of the No Action Alternative showed that intersection operations are expected to degrade substantially by 2025 under either alternative. In order to mitigate these "baseline" impacts, the traffic impact analysis recommends that City should consider taking the following actions:

1. Add east-west through lanes across Highway 99 at each signalized intersection, to allow more time per signal cycle for the north-south users of Highway 99.
   Seek to reduce left-turn conflicts and avoid additional through lanes by considering new and nontraditional intersection channelization concepts as identified in publications of the FHWA (http://safety.fhwa.dot.gov/intersection/alter_design/) and the Institute of Transportation Engineers (http://ite.org).
2. Develop arterial right-of-way requirements for site planning purposes that assume each east-west arterial crossing of Highway 99 would have one more lane each way than at present; and provide for pedestrians, bicycles, and transit in accordance with City design standards. That amount of right-of-way expansion would generally permit development of both traditional and alternative intersection concepts.
3. Require continuity of pedestrian circulation networks, bicycle facilities, and transit access within each development site, with optimal connection to the public facilities for the same modes, in order to achieve the trip reduction and transit use assumed for the corridor.
4. Condition future land development actions on compliance with road widening, right-of-way, and access control needs that may be found necessary for improved traffic operations.
5. Encourage transit ridership development by careful attention to site design standards in relation to the Swift Bus stations, and by limiting parking supply in new developments, so future residents attracted to the corridor will increasingly self-select for transit-oriented development.
6. Consider adding two additional Swift Bus stations at 196th Street SW to reduce the walking access time and distances to the existing stations in both directions of travel.
7. Increase the frequency and regional connectivity of Swift Bus service on Hgihway-99 to maximize the future diversion of excess automobile volumes through the corridor to transit.
8. Convert most unsignalized intersections and driveways along Hgihway-99 to right-in, right-out operation only; and use site planning to redirect left-turn access demand to the adjacent signalized intersections.

9. Interconnect parking areas to minimize short trips and turning movements on/off Highway 99 and connecting arterials.
10. Develop an access management plan specific to Highway-99 including driveway spacing, frequency, and proximity to adjacent intersections.
11. Conduct a corridor safety study. Improvements to consider may include a center median and U-turns. Study may also include improved pedestrian crossings by providing improved and/or new signalized crossings. These signalized crossings may be for both vehicles and non-motorized traffic or non-motorized traffic only.
12. Consider striping a continuous (solid) white lane line along the curb lane to better designate the lane used by the SWIFT buses.
13. Prepare a comprehensive and detailed East/West Corridor Study, evaluating intersection improvements that focus on increased capacity and reductions in delay. Reducing the time the east-west traffic takes to move through Highway 99 intersections will allow greater signal "green time" for north-south traffic.
14. Consider revising sidewalk/planter standards to increase separation between sidewalk and vehicular traffic along the corridor.
15. Parking restrictions along the corridor and in areas served by the corridor
16. Additional TDM measures in areas serviced by the corridor

c. Utilities

Water:

No mitigation measures are recommended with respect to Water service. Peak Hour flows for both Alternatives will be within the capacity of the City of Lynnwood water system.

Waste Water:

The City's conveyance system will be unable to adequately convey future wastewater flows for either the No Action or the Preferred Action Alternatives in the year 2023. Proposed mitigation to address the impact of the proposed redevelopment would be to require slightly larger pipe diameters for conveyance in a section of the system upstream of LS-16 than those identified in the 2006 Plan.

Stormwater:

No mitigation measures are recommended, as the City is in the process of adopting new stormwater regulations that will implement the 2005 Department of Ecology stormwater manual with an emphasis on Low Impact Development techniques for managing stormwater. The new regulations would be consistent with recommendations in the City's 2009 Surface Water Management Comprehensive Plan.

d. Greenhouse Gas Emissions

No mitigation measures are recommended because the Preferred Alternative results in a decrease in the GHG emissions compared to the No Action Alterative in 2025 within the Highway 99 Corridor and will contribute to an overall reduction in GHG for the Lynnwood Region.

e. Parks & Open Space

Lynnwood's adopted Level of Service standard is expressed as 10 acres of park, recreation and open space needed for each 1,000 persons. As the Plan includes only one public parks in the corridor (Gold Park), the new population in the nodes would increase the demand for park and open space land in the City. Using current adopted LOS standards, approximately 55 acres of Core Park land, 33 acres of open space, and an additional 2.75 miles of trails will be needed in or near the Corridor to meet the current LOS standard for active and passive recreational opportunities in parks, open space and trails.

As part of its capital facilities planning and budgeting, the City would need to provide for purchase and development of additional public parks and open space land to meet its current Level of Service standard. The need for parks, open space and trails generated by an increased population within the Corridor could also be addressed by City adoption of a park impact mitigation ordinance.

G. Significant Unavoidable Adverse Impacts

Land Use, Plans, Policies or Regulations:

No significant unavoidable adverse impacts associated with plans, policies, or regulations are identified with the proposed alternatives.

Transportation:

Both the Preferred Alternative and the No Action Alternative would result in increased traffic in the study area. Although the effects of additional vehicles on traffic congestion can be mitigated to varying degrees through the proposed transportation improvements, the actual increase in traffic under either alternative is considered a significant unavoidable adverse impact.

Greenhouse Gas Emissions:

Both the No Action Alternative and the Preferred Action result in an increase in Vehicle Miles Traveled between the measured time frame of 2009 and 2025. However, the Preferred Alternative would result in less of an increase, and therefore lower emissions of greenhouse gases. This result indicates that the Preferred Alternative will not have a significant unavoidable adverse impact on the amount of GHG emissions, compared to the No Action Alternative.

Utilities:

No significant unavoidable adverse impacts to the City of Lynnwood's public utilities are associated with either the No Action or the Preferred Action Alternatives.

CHAPTER 1
PROJECT DESCRIPTION & ALTERNATIVES

1.1. Proposed Action & Alternatives

The City of Lynnwood proposes to adopt a subarea plan, along with development regulations and design guidelines, to implement the economic revitalization of the Highway 99 Corridor. The Lynnwood Highway 99 Subarea Plan (the "Plan") emphasizes land use and urban design recommendations to encourage and guide the economic revitalization of properties along the Highway 99 corridor and, particularly, the development of higher intensity mixed-use nodes at key intersections. The planning area extends along Highway 99 from 216th Street SW to 148th Street SW.

The subarea plan is divided into three sections:

- An **introduction**, which summarizes the project background, existing conditions, planning process, and the project's goals and objectives.
- A **Plan Concept**, which describes how the goals and objectives are translated into the physical directions that frame the implementation recommendations. The Plan Concept also includes a discussion of the growth targets, development types, and other fundamental ideas.
- **Implementation Recommendations**, which list goals and policies, as well as recommended key actions directed toward achieving project goals.

Adoption of the Subarea Plan will amend the City's Comprehensive Plan. A variety of tools will be required to implement the Plan. These tools include changes to the City's zoning classifications, amendments to the zoning map, and adoption of Design Guidelines. These actions will be adopted concurrent with the Sub Area Plan.

1.2. Overview of Highway 99 Corridor

1.2.1. Existing Land Use Pattern

The study area comprises an approximate 5.25 mile section of Highway 99 stretching from the southerly city limits at 216th Street SW, extending north to the City limits at 164th Street SW and continuing to 148th Street SW in Lynnwood's Municipal Urban Growth Area. See . In addition, properties about a quarter of a mile to the east and west of the highway are included in the study to evaluate land use compatibility and ease of pedestrian use.

Highway 99 is Lynnwood's primary commercial corridor. The existing development pattern along the corridor is primarily strip commercial, auto-oriented businesses with surface parking lots fronting along the roadway. The study area includes a mix of commercial, residential, industrial, hotels, and warehousing. Larger retail uses include James Village, Lynnwood Center, Harris Ford, Acura, Pull-a-Part, Costco, and Safeway. The Edmonds Community College (EdCC) campus (which hosts Central Washington University) and adjacent City of Lynnwood Golf Course are located at the western edge of the Corridor along 68th Avenue West between 196th and 208th Streets. EdCC is growing and attracts thousands of students daily. Stevens Hospital and other medical and insurance office buildings are generally concentrated close to Highway 99, between 216th and 220th Streets SW. There is one public park, Gold Park, located within the Corridor on 200th Street SW. In the vicinity of the Corridor, Scriber Lake Park and Wilcox Park are located to the east on 196th Street SW.

A market analysis report for the corridor, based on 2006 data, identified 7,500 of the 8,274 total parcels within a half mile of the Highway 99 corridor as occupied by residential use. Retail, hotel, industrial, warehousing, and office uses comprise the majority of land use in the study area. Properties along the highway are generally zoned General Commercial (CG) and Community Business (B-1), allowing a broad mix of commercial uses. Neither zone currently permits residential development. Properties immediately east and west of the commercial uses are primarily zoned for and occupied by single family and multi-family development. The southern portion of the study area includes a small section of Light Industrial zoning.

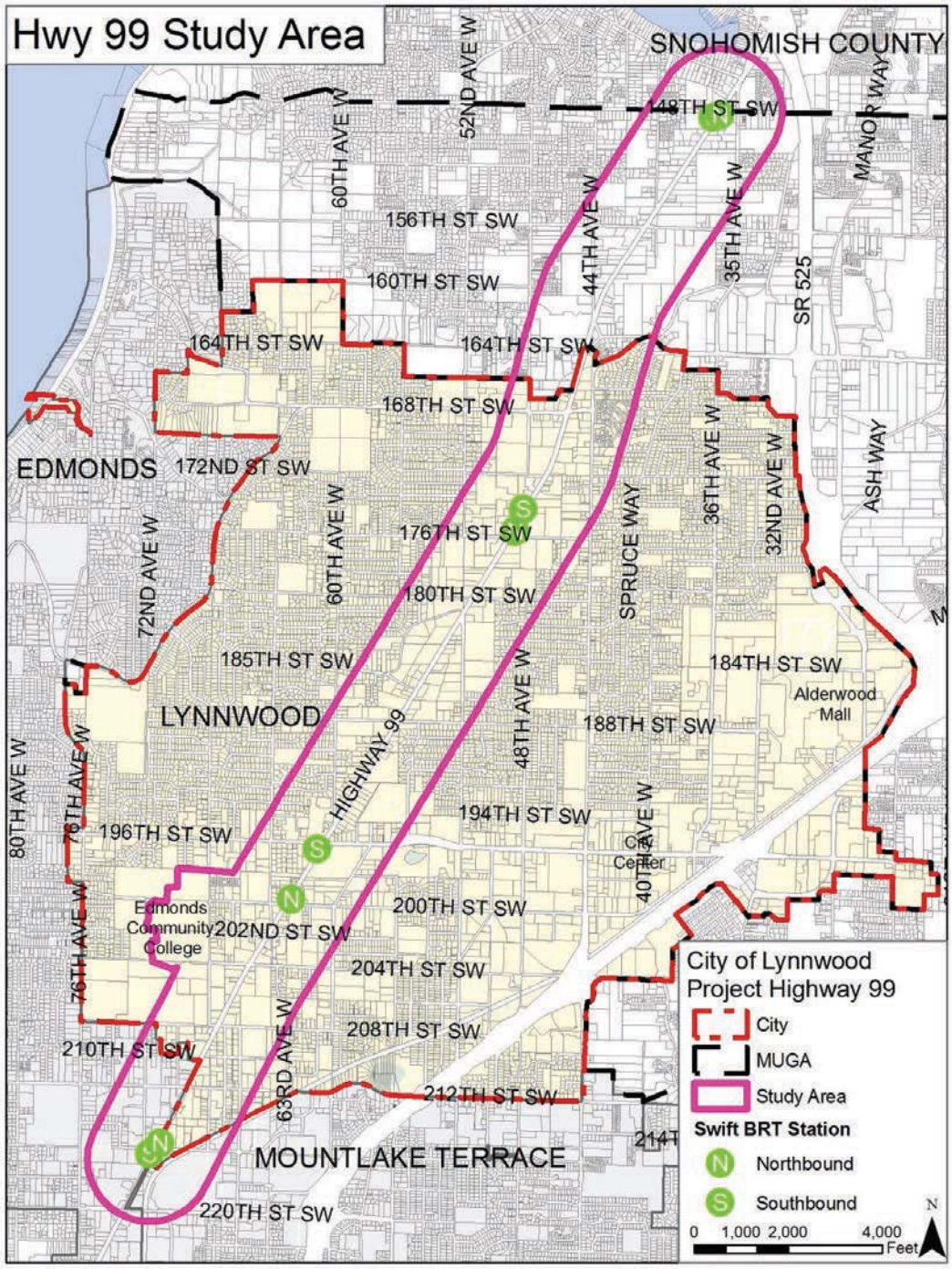

Figure 1-1. Highway 99 Study Area

1.2.2. Transportation System

Highway 99, originally known as the Pacific Highway, is a primary north-south transportation spine through the City of Lynnwood and communities to the north and south. Today, Highway 99 is a state highway with three northbound travel lanes, three southbound travel lanes and a center turn lane. Highway 99 has attached concrete curb, gutter, and sidewalks along both sides of the street for the entire study area, with marked crosswalks at major intersections. On-street parking is not allowed on Highway 99.. The existing curb to curb width is 84 feet. Average daily traffic on Highway 99 is about 40,000 vehicles.

Major east-west cross streets within the study area that have signalized intersections with Highway 99 include 216th Street SW, 212th Street SW, 208th Street SW, 200th Street SW, 196th Street SW, 188th Street SW, 176th Street SW, 168th Street SW, 164th Street SW, 156th Street SW, and 148th Street SW. Two streets, 196th Street SW and 44th Avenue West, provide access to Interstate 5 southbound, with a northbound entrance at 196th Street and Poplar Way, approximately 1.5 miles east from the intersection of Highway 99 and 196th Street.

The major streets in the study area generally form a north-south/east-west grid, although curvilinear and angled (relative to north) streets, irregular parcels, and topography provide variation to the grid pattern. The minor streets within the study area do not form a regular pattern. Hwy 99 runs at an angle to the City street grid resulting in non-perpendicular intersections and a large number of often odd-shaped parcels that are undersized for modern commercial uses.

The intersection of Highway 99 and 196th Street SW was an early commercial node; 196th Street SW is now also a state highway (SR 524). At its intersection with Highway 99, 196th Street has two or three lanes in either direction and a center turn lane. Other major cross-streets in the study area typically have one travel lane in each direction and a center turn lane.

Sound Transit and Community Transit provide transit services to Lynnwood. The nearest Sound Transit service is at the Lynnwood Transit Center (located just south of 200th Street SW and 46th Avenue West), approximately one mile east of the study area. Community Transit has several routes that travel along or cross Highway 99. Community Transit's Swift Bus Rapid Transit serves several stops along Highway 99. BRT service uses tandem buses with short headways and developed stations instead of traditional stops. Since opening in November 2009, the service has seen rapid and continuous increases in ridership.

1.2.3. City of Lynnwood Comprehensive Plan

The City of Lynnwood adopted a Comprehensive Plan in1995, complying with the Growth Management Act (GMA). This Plan was most recently updated in 2009. Under the Comprehensive Plan, Lynnwood's future development pattern is more oriented to that of a compact city, with denser, mixed-use development clustered in activity centers such as the Highway 99 corridor.

As part of initiating work on the proposed subarea plan, the City changed the land use designation for properties in the corridor to "Highway 99 Corridor," Prior to that action, these properties were

designated as "Regional Commercial." The "Highway 99 Corridor" land use designation – consistent with the economic revitalization strategies – calls for redevelopment of properties in the corridor with a wide range of commercial uses and with mixed use, transit supportive development at major intersections. Throughout the remainder of the Corridor, land uses will continue to include retail, office, service, and eating and entertainment uses.

The Lynnwood Comprehensive Plan contains the following specific Land Use Objective:

> *Land Use Objective 12 : Promote infill commercial development and redevelopment with opportunities for new residential development in specific locations within the Highway 99 activity center while improving the visual character and image.*

The proposed Highway 99 Subarea Plan is intended to implement this objective.

The Economic Development Element of the Comprehensive Plan calls on the City to implement the Revitalization Strategies for the Highway 99 Corridor, as adopted by the City Council in February 2008. The proposed Subarea Plan is intended to implement these strategies.

1.2.4. Environmental Review – State Environmental Policy Act (SEPA) Process

Environmental review of the proposed Highway 99 Subarea Plan and development regulations is being conducted concurrently with the development of the Subarea Plan and associated regulations under the provisions of the SEPA Rules (WAC 197-11- 210 *et seq*) which recognize that GMA planning and environmental review are interdependent and encourage them to occur together. This Draft SEIS is considered a "companion document" to the proposed Subarea Plan, Zoning Code and map Amendments, and Design Guidelines.

This SEPA review is being undertaken as a "non-project" SEIS under the provisions of WAC 197-11-704(2)(b). This review provides a programmatic analysis of alternative future development patterns and the potential impacts of those development patterns. Future development projects will require additional SEPA review, but this subsequent review will be focused on project-specific issues.

WAC 197-11-442 provides for greater flexibility in the format for a non-project EIS. This applies where the action is a master plan, planning document, or policy statement because less detailed information is usually available on specific environmental impacts and on any subsequent project proposals.

The discussion of probable adverse impacts for a non-project action, such as review of a subarea plan, is not required under SEPA to examine all conceivable policies, designations, or implementation measures but should cover a range of such topics. The SEIS content may be limited to a discussion of alternatives that have been formally proposed or which are, while not formally proposed, reasonably related to the proposed action.

1.2.5. Supplemental EIS – Phased Review

The City is following the provisions of SEPA that permit environmental review to be phased in appropriate circumstances (WAC 197-11-060(5)). Phasing enables the lead agency to focus on elements

of a proposal and environmental issues that are well defined and supported by plans and information at a particular point in time, and to defer detailed review of other elements of a proposal or issues that are less well defined or known to a subsequent point in time.

The environmental document for the Highway 99 Subarea Plan will be a Supplemental EIS (SEIS). This SEIS will build on and supplement relevant environmental information contained in the EIS prepared for the City's Comprehensive Plan General Policy Plan adopted in 1994 dated 1995. Other city documentation relied upon for this SEIS includes:

- GHG Baseline Inventory for Lynnwood (2009)
- Surface Water Plan by Herrera (2009)
- Comprehensive Water Plan by Gray and Osborne (2005)
- Comprehensive Waste Water Plan by Gray and Osborne (2006)

This SEIS also builds and relies on other plans, studies and documents that have been prepared for the Highway Corridor, including:

- City of Lynnwood *Highway 99 Corridor Urban Activity Profile and Market Assessment (2008) prepared by Community Attributes*
- *SR-99 Corridor Land Use Revisions – Traffic Impact Assessment, (2010)* prepared by David Evans Associates
- *City Of Lynnwood Highway 99 Corridor Redevelopment Water Analysis* by Gray and Osborne, (2010)
- *City Of Lynnwood Highway 99 Corridor Redevelopment Waste Water Analysis* by Gray and Osborne, (2010)

Future environmental documents may similarly augment or supplement the Highway 99 SEIS. As explained under Section 1.3.2, this environmental review is also being integrated with development of the Highway 99 Subarea Plan, consistent with applicable SEPA provisions (WAC 197-11-210).

1.2.6. Scope of SEIS

This programmatic, or "nonproject," EIS, as described in Chapter 197-11-442 of the SEPA Rules, has been prepared to evaluate impacts from planning level documents - the adoption of a subarea plan and development regulations. No specific development projects are evaluated or proposed at this time as part of this planning effort. Therefore, the environmental review is broad and is used by the City to determine a policy direction to guide development along the Highway 99 Corridor.

Individual projects allowed or eventually developed under the Subarea plan and zoning regulations will need to be reviewed in advance of planned construction. Projects will be evaluated to identify probable adverse environmental impacts and identify measures necessary to mitigate those impacts (unless exempt from environmental review under state law).

The City of Lynnwood issued a scoping notice for this project on February 13, 2009; the comment period ended on March 13, 2009. The City received six comments in response to the scoping notice.

The Determination of Significance identified five elements of the environment to be evaluated in this EIS. They are:

- Land Use
- Transportation
- Utilities, Stormwater facilities (including Low Impact Development)
- Greenhouse Gases
- Parks and Open Space

1.3. Description of Alternatives

This SEIS provides analysis of two alternatives to compare the development patterns that could occur along the Highway 99 Corridor. The two alternatives are the Preferred Alternative and the No Action Alternative.

The Preferred Alternative is based upon the proposed Lynnwood Highway 99 Corridor Subarea Plan (the Plan). The No Action Alternative provides a basis for comparing the proposed Plan with build out along the Lynnwood Highway 99 Corridor based upon existing land use patterns and regulations. The key difference between the two alternatives is that existing commercial zoning in the corridor does not allow residential development, while the Subarea Plan and implementing zoning allows multiple family residential developments as part of mixed use "nodes" at key intersections in the corridor.

1.3.1. Background of Subarea Planning Process

The Highway 99 Corridor is identified in the City of Lynnwood Comprehensive Plan as a key activity center that "appears to include ample opportunity for redevelopment." (Land Use Element, page 7) Development in the corridor began prior to World War II, with connection of the military road (now Highway 99) from Seattle to Everett. Today, properties along the highway are occupied with a broad mix of land uses and businesses, including auto dealerships, shopping centers, free-standing stores and businesses, and ethnic businesses and markets.

While many of the businesses along the corridor are doing well, the City has an interest in increasing economic development, accommodating projected population growth, enhancing the overall quality and livability of the corridor and surrounding neighborhoods, as well as promoting and supporting the new Swift Bus Rapid Transit (BRT) line. To this end, the City initiated a development market study and strategic planning effort in 2007 that resulted in a set of City Council economic development strategies. Initial planning work in the corridor included preparation of the *Highway 99 Corridor Urban Activity Profile and Market Assessment (the* "Highway 99 Corridor Market Assessment") by Community Attributes, dated April 2008.

One of the strategies from the City of Lynnwood Highway 99 Corridor Urban Activity Profile and Market Assessment is to develop a plan to make the corridor's physical conditions consistent with the adopted strategies, to improve quality-of-life conditions, and to expand and upgrade connections with adjacent neighborhoods.

The City initiated this planning process for a Highway 99 Subarea Plan in December 2008. The City and consultant team conducted a review of existing conditions and stakeholder input gathered in the development of the Highway 99 economic development strategies. Following the review, the City conducted public workshops, meetings with transportation agencies, and a series of consultations with the City Planning Commission – the project advisory committee for this project. From that input and additional analysis, the planning team developed the draft Highway 99 Subarea Plan.

1.3.2. Preferred Alternative – Proposed Subarea Plan, Zoning Amendments & Design Guidelines

The Preferred Alternative is based on the concept of encouraging more intense mixed-use nodes near Bus Rapid Transit (BRT) stops and other strategic locations along Highway 99 in Lynnwood. The proposed Plan divides Highway 99 into segments that will remain largely commercial (under current zoning) plus five new mixed use "nodes." As used in the Plan, "mixed-use development" means a combination of residential and commercial uses in proximity but not necessarily in the same building. The term "node" refers to a concentration of more intense development and human activity. These five nodes are located generally at the following intersections:

- Highway 99 and 176th Street SW
- Highway 99 and 188th Street SW
- Highway 99 and 196th Street SW; and
- Highway 99 and 204th to 208th Street SW
- Highway 99 and 148th Street SW(outside the current City limits but inside the MUGA)

These nodes correlate with the nodes identified and described in the City Highway 99 Corridor Market Assessment. In addition to these five new nodes, the Plan identifies a special planning area between 188th and 180thStreets SW on the west side of Highway 99.

The Preferred Alternative identifies two types of nodes, Primary and Secondary. Two primary nodes are located at 176th and 196thStreets SW. In addition, the node between 148th and 156th Streets SW, within the County, is identified as a primary node. The secondary nodes are located at 188th and 204thStreets SW. The distinction between the two types of nodes is as follows:

- **Primary Node:** A primary node generally correlates with BRT stops. Within these nodes, mixed use projects would be required to provide residential units as part of all new development. A new zoning category is proposed for this Node - Mixed Use – Residential Required (MU-RR).
- **Secondary Node:** A secondary node indicates areas where mixed use would encourage, but not require, residential units with all new development. A new zoning category is also proposed for this Node - Mixed Use – Residential Encouraged (MU-RE).

The Special Planning Area identified along the West side of Highway 99 between 180th and 188th Streets SW consists of approximately 24 acres. This site has been identified as having special development opportunities. Given the size of this parcel, the City recognizes a unique opportunity to create an innovative site plan and unique development design at this site.

Figure 1-2 below shows the proposed locations for the primary and secondary nodes, the special planning area and the general commercial areas along the Highway 99 Corridor. The areas between these nodes would be occupied by general commercial development.

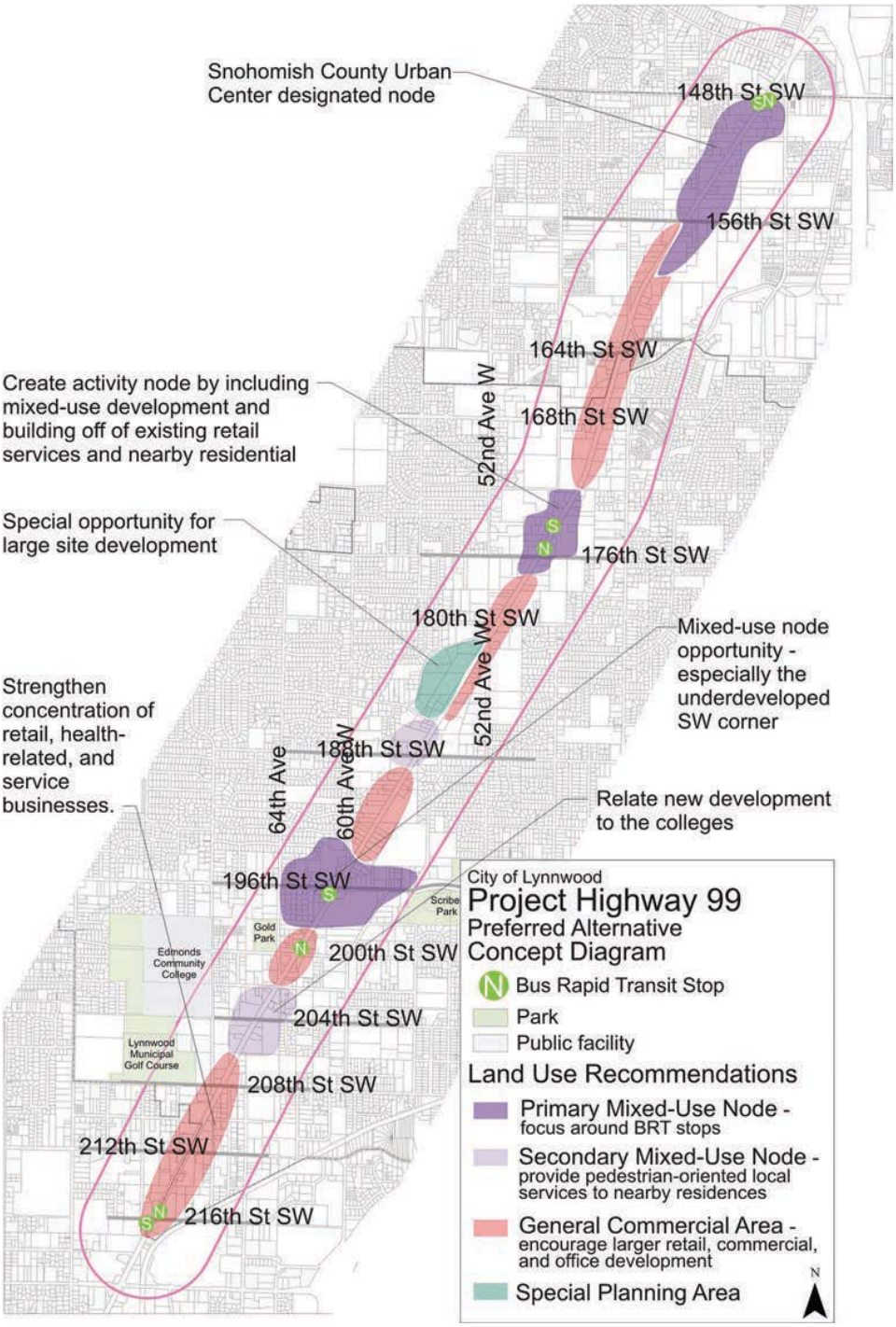

Figure 1-2. Land Use Concept

The major change anticipated by the Plan is the introduction of residential development along the Highway 99 Corridor at the nodes, where residential development is not currently allowed on commercial property. The node redevelopment strategy would allow multi-family housing along with neighborhood-oriented and other businesses to be situated in proximity to transit connections.

This SEIS assumes a planning horizon of 2025, for assessing the potential impacts of approving the Plan. In particular, traffic modeling and analysis for the Plan is based upon a forecast year of 2025.

While land use in most of the Highway 99 corridor will remain commercial, the study area could experience substantial new development/redevelopment over the next 20 years, including residential and mixed-use development. The environmental impacts associated with the potential redevelopment of the corridor are based upon the potential additional residential dwelling units (du) that will support the proposed Plan for mixed-use nodes and clustering of neighborhood-oriented businesses.

The proposed Plan provides the following analysis of how to determine the number of residential units that might be required within each node to support a modest cluster of neighborhood-oriented businesses, such as a small grocery store, drug store, laundry, family-style restaurant, or coffee shop.

> *If the area within about a quarter mile of the center of a mixed-use node includes about 1,000 dwelling units (du), for example, then about half of the customers for those shops can access the businesses on foot. The residential neighborhoods on either side of the corridor are sufficient to provide the additional customer base needed. This same target of at least 1,000 du within each node is consistent with the population needed to support bus rapid transit (BRT) and to generate enough activity to make the area feel "lively."*

In order to analyze the environmental impacts associated with this proposal, further assumptions were developed about the maximum number of residential units that might be constructed under this plan over the next 15 years.

Proposed Zoning Code Amendments

As described above, areas within the primary nodes would be rezoned to a new zoning category called Mixed Use – Residential Required (MU-RR). Areas within the secondary nodes would be rezoned to Mixed Use – Residential Encouraged (MU-RE). Figure 1-2 below shows the locations for each of the new zoning areas. Not all of the properties within the primary and secondary nodes would be rezoned to these new zoning categories. It should be noted the Preferred Alternative would not change designations to the City of Lynnwood Comprehensive Plan. Those changes were made in 2008 and are discussed in Chapter 2.

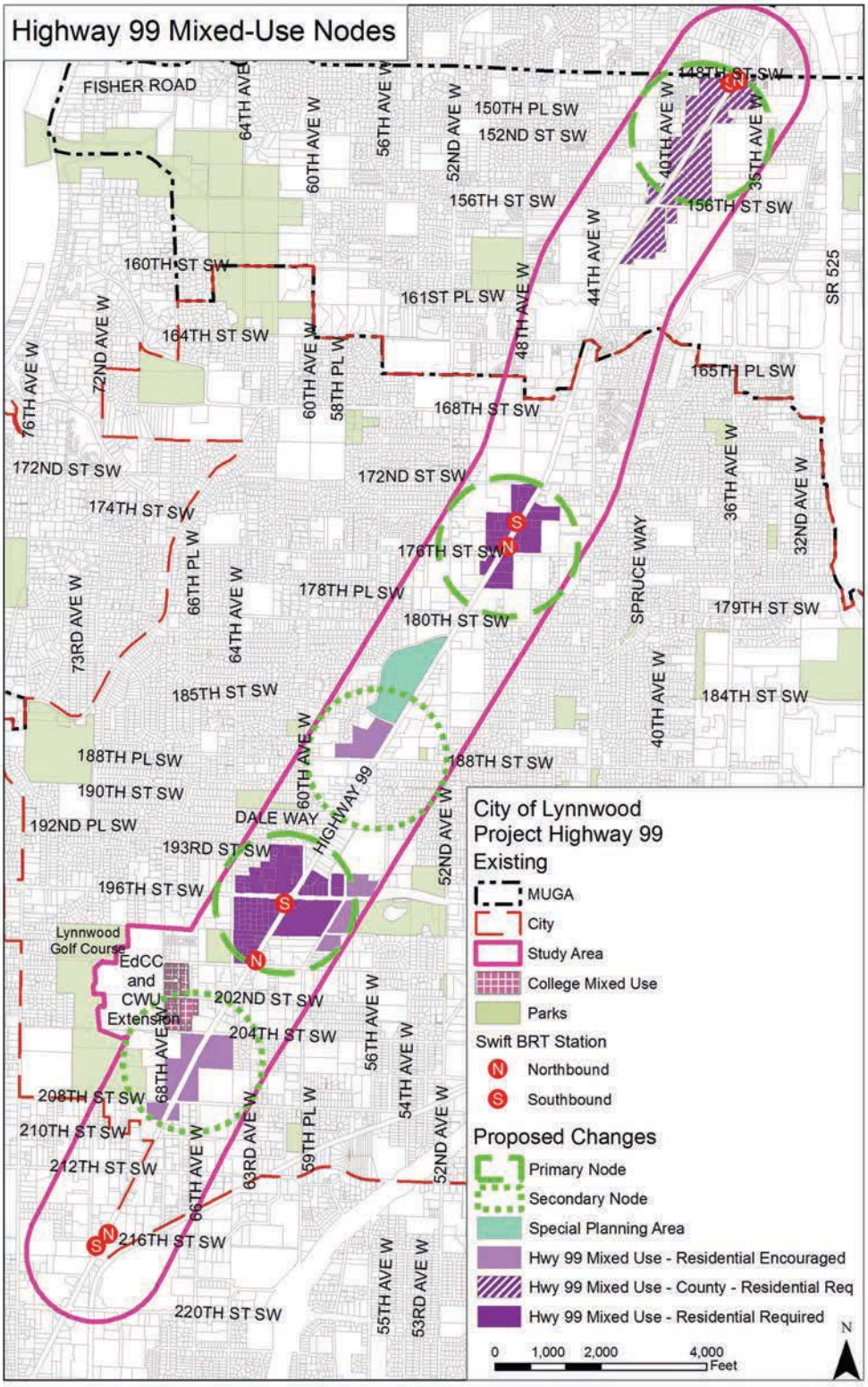

Figure 1-3. Zoning Code Recommended Changes

The two proposed new zoning designations have the following stated purposes:

- **Highway 99 Mixed Use – Residential Encouraged (MU-RE)**

  The purpose of this zone is to create mixed-use nodes at key locations on Highway 99 with transit-oriented development around Bus Rapid Transit (BRT) stops. The transit-oriented development will consist of a combination of pedestrian-oriented retail that serves the local residential population and multifamily residential development. The mixed use development can be in the form of vertical mixed use (residential on top of retail) or horizontal mixed use (residential adjacent to retail). Development standards and guidelines will provide design guidance, emphasizing building and spatial relationships, with particular emphasis on the design of pedestrian spaces, linkages between the development, Hwy 99, and BRT stations, and related pedestrian facilities and amenities.

- **Highway 99 Mixed Use – Residential Required (MU-RR)**

  The purpose of this zone is to create mixed-use nodes at key locations on Highway 99 with transit-oriented development around Bus Rapid Transit (BRT) stops. The transit-oriented development will consist of a combination of pedestrian-oriented retail that serves the local residential population and multifamily residential development. The mixed use development can be in the form of vertical mixed use (residential on top of retail) or horizontal mixed use (residential adjacent to retail). A minimum residential density is required of all new development. Development standards and guidelines will provide design guidance, emphasizing building and spatial relationships, with particular emphasis on the design of pedestrian spaces, linkages between the development, Hwy 99, and BRT stations, and related pedestrian facilities and amenities.

1.3.3. No Action Alternative

The No Action alternative is based on the assumption that development will continue along the Highway 99 Corridor consistent with existing development regulations and market trends. No changes would be made to the existing land use regulations and comprehensive plan designations for the City of Lynnwood. Existing businesses along the corridor would continue to operate and property owners would redevelop their properties under existing zoning and in response to market opportunities.

Based upon the existing zoning regulations, development activity along the Highway 99 Corridor would result in no new residential units within the Lynnwood portion of the corridor because residential development is prohibited within the General Commercial, B-2 and B-1 zones. However, north of the City limits, Snohomish County has designated an urban center between 148th and 156th Streets SW. Data from the County shows that approximately 1,200 units could be built at this urban center.

Consistent with other areas of the city, improvements and maintenance of public infrastructure would be constructed according to adopted public facilities and utilities plans.

CHAPTER 2
AFFECTED ENVIRONMENT

2.1. Overview

Chapter 2 of this Draft SEIS includes information about the existing conditions within the area subject to the proposed Lynnwood Highway 99 Corridor Plan. The elements of the environment evaluated in this section are those identified in the February 13, 2009, scoping notice for the project, and include:

- Land Use – existing land use patterns, comprehensive planning, zoning designations, and population and housing
- Transportation – existing circulation improvements and level of service analysis
- Greenhouse Gases – efforts to control carbon dioxide emissions
- Utilities – existing water, sanitary sewer, and storm drainage systems
- Parks and Open Space – existing public parks and open space facilities

Information regarding existing conditions for land use in Lynnwood is found in the *City of Lynnwood Comprehensive Plan*, dated November 28, 2008. with additional amendments in September 2009. Background information for this Draft SEIS, with respect to Transportation conditions, is based upon the report titled *SR-99 Corridor Land Use Revisions – Traffic Impact Assessment*, prepared by David Evans and Associates, dated March 2010, and included in the Appendix to this DSEIS.

2.2. Land Use

2.2.1. Existing Land Use Patterns

The existing development pattern along the Highway 99 corridor is an auto-oriented strip commercial corridor with surface parking lots fronting the roadway. Properties along Highway 99 and the adjacent study area are occupied by a broad mix of commercial land uses and businesses, including auto dealerships, shopping centers, professional offices, and ethnic businesses and markets. Larger retail uses include: James Village, Lynnwood Center, Harris Ford, Acura, Toyota, Pull-a-Part, Costco, and Safeway. Multi-family and single-family residential development is located off Highway 99, east and west of the study area. Stevens Hospital and other medical and insurance office buildings are generally concentrated close to Highway 99 just beyond the southern edge of the corridor, between 216th and 220th Streets SW.

The study area also encompasses environmentally sensitive natural features. Several mapped wetlands are found within the study area, including those surrounding Scriber Lake, and a large wetland area north of 172nd Street SW. Fish and wildlife conservation areas generally consist of wetland and streams that provide high quality habitat for fish and wildlife. The wetland areas and several stream channels within the study area, including Scriber Creek, are mapped as fish and wildlife conservation areas. Gold Park, located within the study area, contains environmentally sensitive natural features, including a seasonal stream, second growth conifers, wildlife habitat, and native vegetation.

2.2.2. City of Lynnwood Comprehensive Plan

In September 2009, the City of Lynnwood adopted an amendment to its Comprehensive Plan and included the following vision statement that provides legislative foundations for the Highway 99 Corridor Plan.

> *The City of Lynnwood will be a regional model for a sustainable, vibrant community with engaged citizens and an accountable government.*
>
> *Our vision is…*
>
> - *To be a welcoming city that builds a healthy and sustainable environment.*
> - *To encourage a broad business base in sector, size and related employment, and promote high quality development.*
> - *To invest in preserving and expanding parks, recreation, and community programs.*
> - *To be a cohesive community that respects all citizens.*
> - *To invest in efficient, integrated, local and regional transportation systems.*
> - *To ensure a safe environment through rigorous criminal and property law enforcement.*
> - *To be a city that is responsive to the wants and needs of our citizens.*

This vision language added to the Lynnwood Comprehensive Plan supplements earlier comprehensive plan amendments directly related to the Highway 99 Corridor.

In November 2008, the City of Lynnwood adopted amendments to the city's 2020 Comprehensive Plan regarding the Highway 99 corridor. Under the 2008 Comprehensive Plan amendments, the Highway 99 corridor is identified as an area the City intends to move toward more compact development, with denser, mixed-use development clustered in activity centers.

The Comprehensive Plan's Land Use element identifies Highway 99 as an area for future growth through redevelopment. The Plan calls for redevelopment along the corridor, consistent with the strategies in the City of Lynnwood Highway 99 Corridor Urban Activity Profile and Market Assessment. The Comprehensive Plan states that the purpose of the Highway 99 Corridor Designation is, *"to identify the area where the City will encourage redevelopment of properties, consistent with the*

strategies in the Highway 99 Corridor economic study, by allowing a wide range of commercial uses AND allowing mixed use, transit supportive development at major intersections ('nodes') in the corridor." (Lynnwood Comprehensive Plan, page Land Use-16.)

As part of the 2008 City of Lynnwood Comprehensive Plan Amendment, the Highway 99 Corridor comprehensive designation was changed from Regional Commercial to Highway 99 Corridor – "H99."

Principle uses identified for the corridor include: retail, office (all types), service, and eating and entertainment businesses. Existing light industrial uses will be allowed to remain, but no new light industrial uses will be allowed. At major intersections (designated by zoning), mixed-use development (including multiple family residential) will be required. At properties not designated for mixed use, auto dealerships and other retail uses that require large parking lots will be permitted.

Properties at major intersections along the corridor will be designated for mixed-use development, with densities and design requirements that will support transit-supportive development. All new development within the nodes will be required to comply with design guidelines specifically developed to support Corridor strategies. To promote compatibility, the Comprehensive Plan states that on-site activities shall not significantly affect adjoining properties outside the corridor. The Plan includes a Land Use sub goal for Specific Subarea Plans, stating that a review of development and aesthetic qualities within the Corridor should be conducted, and a course of action to improve the corridor proposed. (LU- 14)

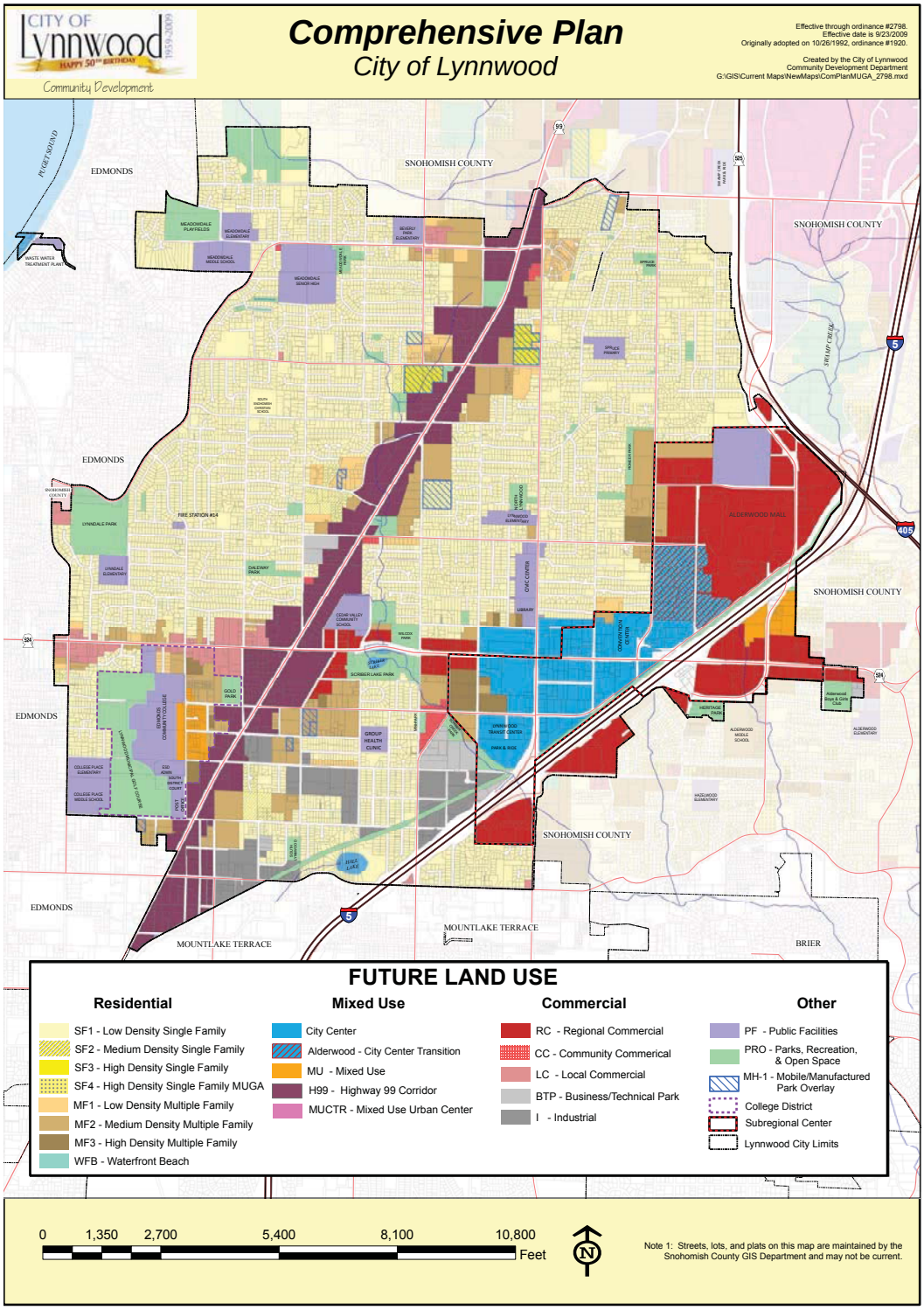

Figure 2-1. Comprehensive Plan Designations

Source: City of Lynnwood Comprehensive Plan

The City of Lynnwood's 2020 Comprehensive Plan contains several policies that relate specifically to the Highway 99 Corridor.

2.2.3. Land Use Policies:

Objective LU-12: *Promote infill commercial development and redevelopment with opportunities for new residential development in specific locations within the Highway 99 activity center while improving the visual character and image.*

Policy LU-3.1: *Incentives and performance related standards shall be established to allow residential uses and mixed-use developments on Office Commercial and Regional Commercial designated properties, at appropriate locations in the Subregional, Community College, and Highway 99 Corridor Subareas.*

Policy LU-4.4: *Encourage mixed use development (including multiple family residences) at major intersections along Highway 99, provided that development sites are large enough to enable high-quality urban design and inclusion of site amenities.*

Policy LU-8.12: *Attractive gateways shall be established at all principal entry points to the City.*

Policy LU-8.13: *Reconstruction of streets located within principal gateways shall incorporate high quality landscape and streetscape design and features.*

Policy LU-8.15: *The number, size, and height of signs shall provide for business and product identification while creating an aesthetically pleasing visual environment.*

Policy LU-8.16: *Signs shall be designed and placed on a site in a way that provides an integrated development appearance and is aesthetically pleasing as viewed from the street and surrounding properties.*

Policy LU-8.17: *The City shall implement a program requiring nonconforming signs to be made conforming or be removed.*

Policy LU-8.18: *The visual character of buildings shall be enhanced by means of architectural design and landscape elements to create a human scale and positive visual character for the streetscape and abutting residential uses.*

Policy LU-8.19: *Screening of elements such as recycling and waste collection areas, compactors and dumpsters, loading and service areas, and mechanical equipment shall be required so that these elements do not create a negative impact to the streetscape and nearby residential areas.*

2.2.4. City of Lynnwood Zoning Designations

The Washington State Growth Management Act requires consistency between comprehensive plans and implementing development regulations such as zoning codes. The majority of the properties fronting Highway 99 are zoned CG- General Commercial. Properties in the vicinity of the intersection with 196th Street SW are zoned B-1- Community Business and PUD – Planned Unit Development (allowing project-specific approval of a development proposal). Two additional zoning classifications for smaller areas of the corridor are Light Industrial and Limited Business. Properties within the study area lying further east and west of Highway 99 are generally zoned single-family and multi-family. Title 21 of the Lynnwood Municipal Code contains the development standards for properties within each of the zoning designations.

General Commercial. The General Commercial (CG) zone has the stated purpose of providing…

> *…for a wide variety of commercial, retail and other uses, including municipal services. These uses are primarily related toward auto borne clientele, rather than pedestrian clientele. These uses tend to locate along arterials and, by nature of their activity, create a high degree of turning movements which impede the flow of arterial traffic and create traffic hazards. The commercial development extending along arterials generally reflects a low aesthetic quality at locations which have maximum visual exposure to residents and visitors. Because of the adverse impact of this type of development, it is not the intent of this section to encourage this type of development, but to provide a legitimate classification for existing strip development and to encourage the improvement of these facilities. It is further intended that certain uses which have heretofore been permitted but which are more of an industrial nature shall be allowed only by a conditional use permit thereby providing that the existing establishments shall not be nonconforming but any new establishments may be confined to appropriate locations. LMC 21.46.050 A.5.*

The CG zone does not allow multi-family development.

Community Business. The purpose of the Community Business (B-1) zone is:

> *…to create a diversified central business area, consisting of retail stores, offices, service establishments, recreation and entertainment, medical and professional services, and such other activities and uses, including municipal services, as are common to a central business district. By excluding most uses which rely on outdoor sales, display or storage, it is intended to encourage the concentration of a maximum variety of indoor stores and shops within the areas to which this classification is applied, as a contribution to the convenience of shoppers and patrons. It is recognized that the characteristics of the uses permitted in this classification produce an environment undesirable for residential purposes, and that residential uses in a commercial area may decrease the capacity of businesses to render maximum services. For these reasons, most residential uses are excluded from this classification. (Emphasis added) One exception found to be in the public interest is housing and/or long-term care for the elderly and the physically disabled who, due to functional limitations imposed by advanced age and/or physical impairment, benefit from living in close walking proximity to shopping, transit, medical clinics, and other services. Contrary to the typical central business district, which by being highly concentrated in a small area is convenient for the pedestrian shopper, but cannot provide sufficient automobile parking space, it is intended that the central business area shall have adequate off-street parking through the provision that with each new building, enough spaces are provided to meet the anticipated parking demands generated by the building, either by ground-level out-of-doors parking or by parking garages. LMC 21.46.050 A.4.*

The Lynnwood zoning code contains a matrix of permitting uses within both the B-1 and CG zones. See LMC 21.46.100. Development standards for the two districts are also specified within the code – See LMC 21.46.200.

Additional development standards in the B-1 and CG zone are found in LMC 21.46.210. These include requirements for site screening for outdoor storage, parking, and landscaping requirements.

Interim Zoning. The City adopted an "Interim Highway 99 Overlay Zone" (Ordinance No. 2744) in October 2008, to guide development of the corridor while the Subarea Plan was in preparation and to protect the City's ability to implement the recently-adopted economic revitalization strategies for the corridor. The overlay zone was intended to ensure that development occurring before adoption of the sub-area plan would be compatible with the goals of the plan. The interim zone allows multi-

family development as part of a mixed-use development, and requires approval of a Planned Unit Development for certain new development/expansion in excess of 50,000 square feet. Mixed use development (commercial and residential) is required at five intersections along the corridor. These interim regulations will expire upon adoption of the new sub-area plan and implementing regulations.

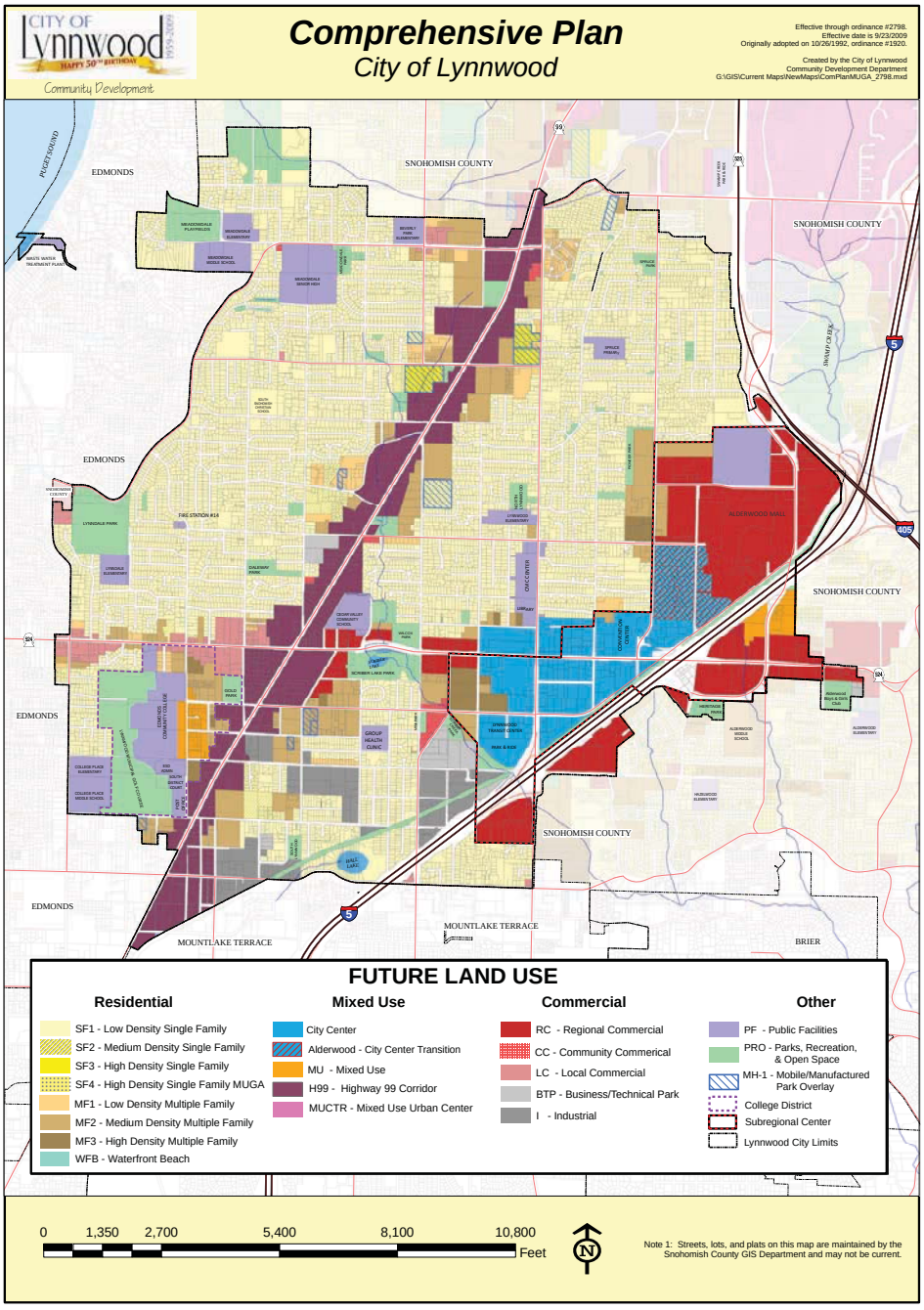

Figure 2-2. Current Zoning

Source: City of Lynnwood

2.2.5. Snohomish County Comprehensive Plan & Zoning

A portion of the Highway 99 Corridor lies within Snohomish County along the northern city limits for Lynnwood. This area, from 164th Street to 148th Street is designated as part of the Lynnwood Municipal Urban Growth Area (MUGA) on the Snohomish County Comprehensive Plan Map, map 3, revised September 10, 2009. The Land Use Element of the Snohomish County Comprehensive Plan identifies this area as one of six urban center locations within unincorporated Snohomish County. An Urban Center is defined in the plan as an area that provides a mix of high-density residential, office, and retail development with public and community facilities and pedestrian connections located along a designated high capacity route.

The following Goals and Objectives are found in the Snohomish County Comprehensive Plan:

GOAL LU 3 Establish compact clearly defined mixed-use centers that promote a neighborhood identification and support the county's sustainability goals.

Objective LU 3.A Plan for Urban Centers within unincorporated Urban Growth Areas (UGAs) consistent with Vision 2040 and the CPP's.

Land Use Policies

3.A.1 The Future Land Use Map (FLUM) and UGA land use plans shall include designations and implementation measures for Urban Centers, based on the characteristics and criteria below.

3.A.2 Urban Centers shall be compact (generally not more than 1.5 square miles), pedestrian-oriented areas within designated Urban Growth Areas with good access to higher frequency transit and urban services. Pedestrian orientation includes pedestrian circulation, pedestrian scaled facilities and pedestrian convenience. These locations are intended to develop and redevelop with a mix of residential, commercial, office, and public uses at higher densities, oriented to transit and designed for pedestrian circulation. Urban Centers should also include urban services and reflect high quality urban design. Urban Centers shall emphasize the public realm (open spaces, parks and plazas) and create a sense of place (identity). Urban Centers will develop/redevelop over time and may develop in phases.

3.A.3 Urban Centers shall be located adjacent to a freeway/highway and a principal arterial road, and within one-fourth mile walking distance from a transit center, park-and-ride lot, or be located on a regional high capacity transit route.

3.A.4 Residential net densities shall not be less than 12 dwelling units per acre; maximum densities may be established as part of more detailed planning. Population and employment size will be consistent with criteria in the Countywide Planning Policies and General Policy Plan.

3.A.5 Urban Centers are designated on the FLUM and additional Urban Centers may be designated in future amendments to the Comprehensive Plan.

3.A.6 Desired growth within Urban Centers shall be accomplished through application of appropriate zoning classifications, provision of necessary services and public facilities, including transit, sewer, water, stormwater, roads and pedestrian improvements, parks, trails and open space, and protection of critical areas. The County will identify and apply methods to facilitate development within designated Urban Centers, including supportive transit, parks, road and non-motorized improvements.

The County zoning designation for the area is a mixture of General Commercial and Urban Centers, as shown on the most recent Snohomish County Zoning Map, dated June 9, 2010.

General Commercial (GC): The intent and function of the general commercial zone is to provide for a wide variety of retail and nonretail commercial and business uses. General commercial sites are auto-oriented as opposed to pedestrian or neighborhood oriented.

Urban Centers (UC): The intent and function of the Urban Center zone is to implement the Urban Center designation on the future land use map. The Urban Center zone allows a mix of high-density residential, office, and retail uses with public and community facilities and pedestrian connections located within one-half mile of existing or planned stops or stations for high capacity transit routes. High capacity transit routes may be light rail or commuter rail lines, regional express bus routes, or transit corridors that contain multiple bus routes or which otherwise provide access to such transportation.

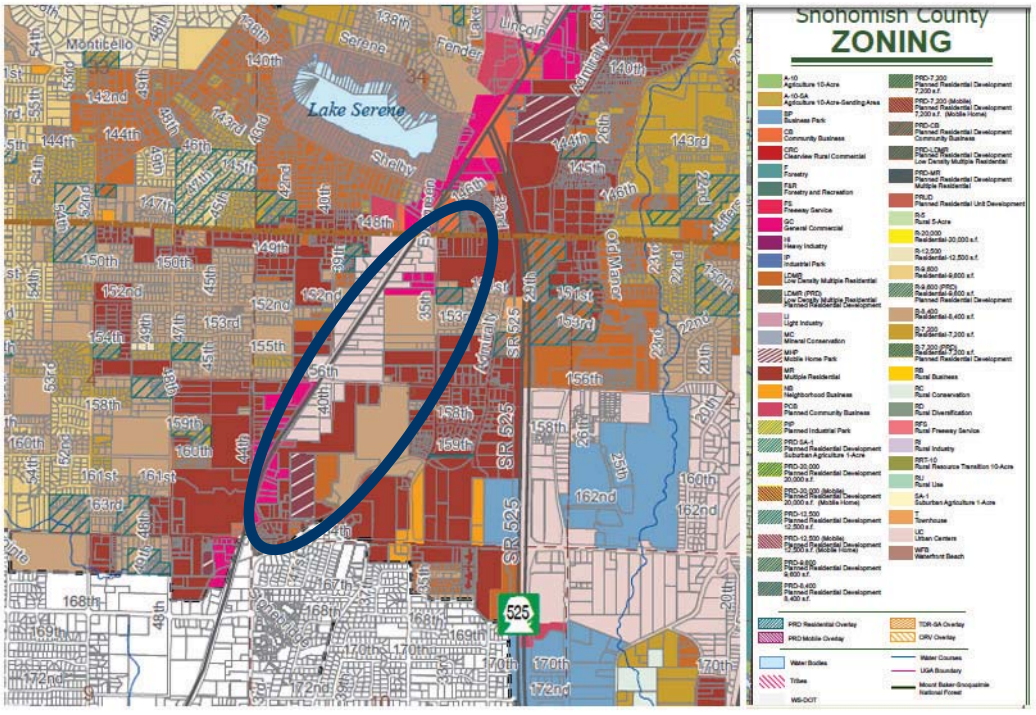

Figure 2-3. Snohomish County Zoning

2.3. Transportation

This transportation section includes information about the overall Highway 99 system, public transit information, and a description of Level of Service standards. The information for this portion of the SEIS is taken primarily from the *SR-99 Corridor Land Use Revisions – Traffic Impact Assessment* prepared by David Evans and Associates, dated July 2010.

2.3.1. Transportation Policies

The City of Lynnwood Comprehensive Plan contains a Transportation Element. The following goals and policies are found in the 2009 Comprehensive Plan Transportation Element and pertain to the potential redevelopment of Highway 99. Moreover, these relate to the City of Lynnwood's vision to encourage transit along the Highway 99 Corridor.

Objective T-23: *Control the location and spacing of commercial driveways and the design of parking lots to avoid traffic and pedestrian conflicts and confusing circulation patterns.*

Policy T-23.1: *Driveways shall be located to provide adequate sight distance for all traffic movements and not interfere with traffic operations at intersections.*

Policy T-23.3: *Driveway access onto all classifications of arterial streets shall be avoided whenever possible. Require property access to streets with lower classifications.*

Policy T-23.4: *Shared vehicle access between adjacent commercial and industrial development sites should be provided where feasible or provisions made to allow for future shared access to reduce development traffic impacts.*

Sub goal Public Transit System: Work with the transit providers to make transit an attractive travel option for local residents, employees, and users of regional facilities.

Objective T-11: *Work with the transit providers to establish a hierarchy of transit services focused on three major elements: 1) neighborhood services, 2) local urban service, and 3) inter-community and regional services.*

Policy T-26.1: *Require the construction and operation of transportation facilities and services to meet the standards of the Americans with Disabilities Act (ADA).*

2.3.2. Roadway & Transit Characteristics

Highway 99 is a state highway that serves as a regional north-south corridor for both automobile traffic and public transit. Highway 99 provides three northbound travel lanes, three southbound travel lanes, and a center turn lane. Attached concrete curb, gutter, and sidewalks are located along both sides of the street for the entire study area, with marked crosswalks at major intersections. A double left-turn lane is provided where needed to support high turning volumes. For a majority of the corridor, the curb lane is designated as a Business Access and Transit (BAT) lane and is limited to buses and right-turning vehicles. A median lane is designated in some locations as a dedicated left-turn pocket.

Swift Bus transit operations were inaugurated in the corridor in 2009, using the curbside BAT lanes for limited-stop operations. Swift Bus loading platforms have been installed at four major intersections in this corridor: 148th Street SW, 176th Street SW, 196th Street SW, and 216th Street SW.

On-street parking is not allowed on Highway 99. East-west arterials cross Highway 99 at intervals of 1/2 to 3/4 miles with multi-phase signal controls and, in some cases, multiple lanes for left turns and right turns. Following are the locations of currently signalized intersections: 168th Street SW, 176th Street SW, 188th Street SW, 196th Street SW, 200th Street SW, 208th Street SW, 212th Street SW, and 216th Street SW.

State Route (SR) 524, also known as 196th Street SW in Lynnwood, intersects Highway 99 along this corridor. The intersection of Highway 99 and 196th Street SW has two lanes in either direction and a center turn lane. Other major cross streets in the study area typically have one travel lane in each direction and a center turn lane.

The major streets in the study area generally form a north-south/east-west grid, though curvilinear and angled (relative to north) streets, irregular parcels, and topography provide variation to the grid pattern. The minor streets within the study area do not form a regular pattern.

The existing unsignalized intersection at 180th Street SW is channelized to allow left turns from SR-99, but limits east-west traffic on 180th Street SW to right turns only. Left turns and through trips across SR-99 are prohibited from both directions of 180th Street SW.

Sound Transit and Community Transit provide transit services to Lynnwood. The nearest Sound Transit service is at the Lynnwood Transit Center (south of 200th Street SW at 46th Avenue SW), approximately 1 mile east of the study area. Community Transit has several routes that travel along or cross Highway 99. Community Transit's Swift Bus Rapid Transit serves several stops along Highway 99. The eight Bus Rapid Transit (BRT) stops (both northbound and southbound) within the study area are generally located near the following intersections with Hwy 99: 148th Street SW, 176th Street SW, 196th Street SW, and 216th Street SW.

2.3.3. Traffic Volumes

Highway 99 carries peak hour volumes of up to 2,000 vehicles in the peak direction, and typically about three quarters of that level in the off-peak direction, with variations throughout the corridor. The middle of the corridor carries lower volumes than the more congested sections at the north and south ends. Volumes on east-west cross streets are lower, ranging from 500 to 800 in the peak direction. The exception is 196th Street SW, where east-west volumes presently exceed 1,000 vehicles per hour by direction.

2.3.4. Level of Service

Lynnwood is required under the State Growth Management Act (GMA) to set level of service (LOS) standards, or minimum benchmarks of performance, for its transportation facilities. The City of Lynnwood has developed an LOS standard to quantify and qualify the flow of traffic and to measure the overall transportation system's ability to move people and goods. Realizing that there is a difference between City Center, state facilities, and the rest of the City, the City has developed a different level of service for each. The City of Lynnwood Comprehensive Plan states, "the LOS for the majority of the City arterials takes into consideration the need to protect neighborhoods from excessive pass through traffic. The level of service for non-City Center arterials and non-State Highways is established as LOS 'D' during the PM peak hour."

The following table, Table 2-1. Primary Intersections Traffic Volume. , provides information regarding the volume of traffic at the primary intersections in the study area. These are volumes of traffic flowing north bound and south bound during peak hours.

Table 2-1. Primary Intersections Traffic Volume

Location On SR-99	2005	
	NB	SB
n/o 148th	1857	1833
n/o 168th	1695	1255
n/o 180th	1711	1374
n/o 196th	1400	1200
n/o 216th	1721	1112

Source: Lynnwood Traffic Model

When evaluating new development proposals, the City of Lynnwood applies what is called a Concurrency Test. The City concurrency standard allows 20 percent of the City's intersections to be below their associated level of service before concurrency is considered to have failed. For this purpose only, signalized intersections are considered. LOS failures at unsignalized locations are separately addressed under SEPA review of new developments.

The number of new trips generated by a proposed development is added to the Transportation Model for the concurrency pipeline case, including all previous development proposals under review. If the model shows that the development does not bring the percentage of remedial intersections above 20 percent, the development is considered to have passed Concurrency. The development would pay its calculated mitigation fees and the model is then updated to add the new trips into the background for future tests.

The Highway Capacity Manual (HCM) 2000 Edition defines level of service in terms of delay, rather than volume/capacity ratio, as a more direct measure of the effects of congestion. Table 2.2 provides the criteria for Level of Service grades A-F, as found in the Lynnwood Comprehensive Plan.

Table 2-2. Level of Service Standards for Lynnwood

Level of Service	Intersection Delay
A	Never Stop
B	Only Hesitate
C	Short Wait
D	1/4 Signal Cycle Wait
E	1/2 Signal Cycle Wait
F	1 Signal Cycle Wait

Within the study area, existing LOS is generally D. However, it falls to LOS E at two locations—176th Street SW and 196th Street SW. The two intersections identified above as LOS E operate with long signal cycles and do not currently qualify as failing the City's version of LOS D due to the longer cycle length at those intersections. Therefore, within the plan area, there are currently no intersections failing to meet the current City of Lynnwood LOS standards.

Table 2-3. Existing LOS at Intersections within Study Area

Name	Existing 2005	
	HCM LOS	Delay (sec/veh)
168TH ST SW	D	35.7
176TH ST	E	56.5
188TH ST SW	D	51.1
196TH ST	E	68.5
200TH ST SW	D	54.6
204TH ST		unsignalized
208TH ST SW	D	44.2
212TH ST SW	D	48.1

The City of Lynnwood Transportation Element of the Comprehensive Plan identifies the following pedestrian, non-motorized vehicle, and road projects at streets in the Highway 99 corridor over the next 20 years:

Table 2-4. City of Lynnwood Transportation Improvement Projects – 20 Year Horizon

Pedestrian Projects:			
202ND ST SW	68th Ave W	SR 99	Pedestrian project
180TH ST SW	56th Ave W	44th Ave W	Pedestrian project
60TH AVE W	188th St SW	SR 99	Pedestrian project
196TH ST SW	SR 99	48th Ave W	Pedestrian project
185TH ST SW/186TH PL SW	64th Ave W	SR 99	Pedestrian project
188TH ST SW	68th Ave W	SR 99	Pedestrian project
Bicycle Projects			
52ND AVE W	SR 99	196th St SW	Bicycle project
200TH ST SW	SR 99	48th Ave W	Bicycle project
208TH ST SW	SR 99	52nd Ave W	Bicycle project

Bicycle Projects - cont.			
212TH ST SW	SR 99	52nd Ave W	Bicycle project
68TH AVE W	208th St SW	196th St SW	Bicycle project
168TH ST SW	SR 99	44th Ave W	Bicycle project
176TH ST SW	54th Ave W	44th Ave W	Bicycle project
216TH ST SW	SR 99	Interurban Trail	Bicycle project
64TH AVE W	176th St SW	200th St SW	Bicycle project
180TH ST SW	56th Ave W	44th Ave W	Bicycle project
60TH AVE W	188th St SW	SR 99	Bicycle project
200TH ST SW	Edmonds CC	SR 99	Bicycle project
Road Projects			
PEDESTRIAN SIGNAL	SR 99	180th St SW	Pedestrian signal
196TH ST SW IMPROVEMENTS	SR 99	Scriber Lk Rd	Add lanes
200TH ST SW IMPROVEMENTS	64th Ave W	48th Ave W	Add lanes
SR-99 CORRIDOR SAFETY	164th St SW	218th St SW	Access management
204TH ST SW EXTENSION	68th Ave W	SR 99	New road

Source: City of Lynnwood Comprehensive Plan, 2009

Funding exists for the following projects identified in the 2010-2015 Lynnwood Transportation Improvement Plan (TIP):

- 196th Street SW add right turn lane
- 204th Street SW add signalization and extend 204th Street to 68th Avenue W (funding is subject to approval of a Local Improvement District (LID). The LID is currently on hold.)
- 202nd Street SW restrict to right-turns only after 204th Street improvements

2.4. Greenhouse Gas (GHG) Emissions

The City of Lynnwood recognizes the importance of planning for climate change. The City's Comprehensive Plan contains an Energy and Sustainability Element. The Element lays out a framework for the City's sustainability and climate change policies.

The state of Washington has set targets for mitigating GHG emissions and adapting to climate change impacts. On February 7, 2007, Governor Gregoire signed Executive Order No. 07-02 directing the departments of Ecology and Commerce (DOC) (formerly known as Community, Trade, and Economic Development (CTED)) to lead the "Washington Climate Change Challenge." In the order, the Governor noted several significant actions previously undertaken by the state, including the 2005 Clean

Car Act, the widely acclaimed Energy Code, and citizen approval of the Washington Clean Energy Initiative (I-937). The order formally established the first statewide GHG emissions reduction targets:

- By 2020, reduce GHG emissions to 1990 levels (10MMT below 1994)
- By 2035, reduce GHG emissions to 25 percent below 1990 levels (30MMT below 1994)
- By 2050, "do its part" to reach climate stabilization by reducing emissions to 50 percent below 1990 levels

These goals were formally adopted by the legislature in 2008 in HB 2815. Among other specific recommendations, HB 2815 states that the DOE must develop and implement a system for monitoring and reporting GHG emissions. It is this legislative requirement that has initiated efforts to define the role of SEPA as the tool for monitoring and reporting GHG emissions.

The Energy and Sustainability Element identifies Goals, Objectives, and Policies as an initial high-level blueprint to guide the city's actions over the next six years, with the intent of providing clear guidance by the 2014 Comprehensive Plan Update. The Energy & Sustainability Element, in Subgoal E&S-2.2, established policies for including GHG emissions in the environmental review process.

***Subgoal E&S-2.2**: Incorporating Climate Change into the Environmental Review Process*

Policy E&S-2.2.1 The Community Development department, in cooperation with the Public Works department, shall establish a process for incorporating evaluation and mitigation of GHG emissions into the city's environmental review process under SEPA no later than July 1, 2010. These procedures shall include an emissions schedule and applicant-friendly estimating methodology and apply only to such developments that are over a reasonable threshold as determined by the SEPA responsible official. The Council may establish by ordinance conditions under which a project action or a non-project action would be deemed not to have significant environmental impact.

The Element also lays out a framework for developing and implementing a Climate Action Plan. As a first step in this framework, Lynnwood developed a baseline for its GHG emissions detailed in the Greenhouse Gas Inventory and Reference Forecast.

The Lynnwood inventory includes a detailed baseline year analysis (2001), a reference year analysis (2006), and a future emissions forecast (2020). The analysis for the baseline year and reference year use the same methodology and level of detail and inventory both energy use and GHG emissions. ICLEI's Clean Air and Climate Protection (CACP) software was used to organize the inventory data and to calculate emissions using standard models and protocols.

An initial finding from the inventory shows that transportation is the primary contributor to greenhouse gas emissions in Lynnwood. See Figure 2-7 on the next page.

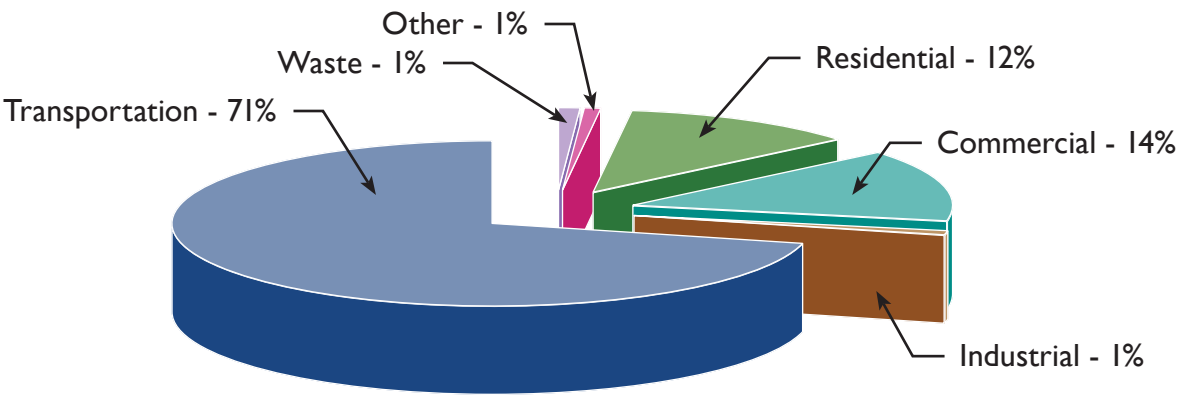

Figure 2-4. 2001 Community Emissions by Sector

Source: City of Lynnwood Initial Greenhouse Gas Inventory 2001-2006 & 2020 Reference Forecast

The *Lynnwood GHG Inventory* provides a methodology for determining GHG emissions from transportation related sources. Estimating GHG emissions from transportation can be done by one of two methods: fuel purchase or vehicle miles. While fuel purchase is the Intergovernmental Panel on Climate Change (IPCC) preferred method, there are problems using this approach in an urban region where fuel purchases can be made outside the areas where the fuel is used. The Washington fuel tax system is structured so that tax is assessed at the distribution point ("the rack") - where fuel leaves the refinery. This structure makes small area estimates impossible. Lynnwood followed the lead of the Puget Sound Clean Air Agency (PSCAA) and estimates GHG emissions using vehicle miles travelled (VMT).

There is a second major choice to be made when evaluating emissions from transportation – selection of total travel within the local government jurisdiction versus the "home-based trips" approach that looks at the VMT of residents and local business, regardless of where they occur. At the time of the initial inventory (2006), Lynnwood chose the "home based trips" alternative. Emerging protocols now favor the total travel approach, and that approach was used in the *Greenhouse Gas Emissions Inventory and Reference Forecast* to avoid double-counting with other jurisdictions.

Appendix C of the *Lynnwood GHG Inventory* describes the methodology to be used in the City of Lynnwood to model emissions from transportation. That model recommends:

- develop an estimate of total vehicle miles of travel (VMT) in 2005 based on calibration for the Lynnwood Base Transportation Model and for 2025 using BTM forecasts,
- estimate VMT in 2001 and 2006 by trending the Base Transportation Model data to 2001 and 2006 using WSDOT traffic volume data for Snohomish County,
- assign VMT to vehicle and fuel type class based on splits developed by the Puget Sound Clean Air Agency, and
- enter VMT by CACP 2003 vehicle type, and allow CACP to calculate emissions based on embedded EPA emissions models.
- Straight-line interpolation of 2020 data from 2005 and 2025 model data, followed by emissions calculations based on assumed characteristics of 2025 fleet under current laws (CAFÉ standards, etc.)

Chapter 3 of this EIS contains a section that demonstrates the impacts of the No Action Alternative and the Preferred Alternative using a simplified methodology for evaluating transportation GHG emissions associated with the Highway 99 Corridor. These impacts will be compared to the Baseline GHG emissions to determine the level of impact associated with each of these alternatives.

2.5. Public Utilities

Information regarding existing public utilities comes primarily from the following City documents:

- Comprehensive Plan.
- *Wastewater Comprehensive Plan*, prepared by Gray and Osborne, dated January 2006.
- *Water System Plan*, prepared by Gray and Osborne, dated November 2005.
- *Surface Water Management Comprehensive Plan*, prepared by Herrera Environmental Consultants, dated September 2009.

2.5.1. Water

The City receives all of its water supply from the City of Everett Filtration Plant via the Alderwood Water & Wastewater District (AWWD). Supply is delivered through a meter located near 164th Street SW and Spruce Way. Locations along Highway 99 are generally served by one of two water mains that run parallel to the roadway on the east and west sides. These mains range in diameter from eight inches to 18 inches. The City's water distribution system is divided into four pressures zones to maintain adequate pressures based on the topography of the service area. The corridor is located within the City's 573 Zone, which operates at a nominal hydraulic grade of 573 feet. This zone is served by two reservoirs with a total storage of 5.77 million gallons.

All water used in the study area is treated at the City of Everett's water filtration plant. Everett's water supply comes from the Lake Spada Reservoir and the Chaplain Reservoir within the Sultan River watershed.

According to the 2008 City of Lynnwood Comprehensive Plan Update, the Sultan River watershed has the capacity to supply the current and projected future demands for the City of Everett and its service area, which includes the City of Lynnwood, through 2023.

Lynnwood's agreement with AWWD is valid through 2010, when the agreement will be extended or renegotiated. The northern portion of the study area, located outside the city limits, is served directly by the AWWD.

2.5.2. Sanitary Sewer

The City of Lynnwood provides sanitary sewer service to the majority of the study area. The northern portion of the study area, located outside the city limits, is served by the AWWD. The City's sewer system has a number of lift stations, including one at the southern end of the study area near the intersection of 216th Street SW and 68th Avenue West. The City's 2006 Wastewater Comprehensive

Plan (the 2006 Wastewater Plan) proposes several capital improvements within the study area, including replacing 1,080 linear feet of sewer in Highway 99 between 180th Street SW and 183rd Street SW, and several alternatives for a new lift station and associated sewer mains.

The City operates a Waste Water Treatment Plant (WWTP). According to the growth anticipated in the 2008 City of Lynnwood Comprehensive Plan (with 2009 updates), average annual flows for the City are projected to increase from the 5.30 mgd for 1990 to 6.50 mgd at 2018. This projected flow would not exceed the design flow capacity of the plant. Based on the requirements of the City's National Pollution Discharge Elimination System (NPDES) operating permit, improvements may need to be made to the WWTP or Infiltration/Inflow (I/I) may need to be reduced prior to 2023 to maintain adequate capacity.

Based upon the 2006 Wastewater Plan, 2023 flows are expected to be 6.9 mgd. With the proposed project development, the flow would be increased to approximately 7.3 mgd. The facility is currently permitted at 7.4 mgd. In the 2006 Plan, it was anticipated that a revised Facility Plan would be warranted near the year 2020 due to Max Month flow to the plant exceeding 85 percent of the permitted plant capacity for three consecutive months. The additional flow generated by the proposed development would likely trigger a revision to the Facility Plan a year or two earlier than anticipated in the 2006 plan.

Wastewater from the portion of the study area served by AWWD goes to the District's wastewater treatment facility at Picnic Point. An upgraded facility is currently under construction at Picnic Point that will provide necessary future capacity and comply with permitting requirements. Construction of the new facility will be complete in 2011. In addition to public sanitary sewer, a number of homes near the unincorporated portion of the study area still rely on private septic systems.

2.5.3. Stormwater Drainage

For purposes of stormwater management, the Highway 99 Corridor is situated within four separate drainage basins: the Scriber Creek basin and Hall Creek basin in that portion of the Corridor within existing city limits; and the Lund's Gulch basin and Swamp Creek basin in the areas currently in Snohomish County.

The majority of the Highway 99 corridor, within the Scriber basin, is served by the North Scriber Regional Detention Facility, located west of Highway 99 at 172nd Street SW. The Scriber Creek basin is a subbasin of the Swamp Creek drainage basin and the largest drainage basin in the City, comprising an area of approximately 3,000 acres. It is a highly developed basin, where approximately 39 percent of the surrounding land is considered impervious surface. (Herrera Environmental).

The upper reaches of Scriber Creek are located near 164th Street SW in the northern portion of the City. The stream in this headwater area has a low gradient. In the upper basin areas, large sections of the stream are piped, and open channel reaches are lined with riprap for bank armoring where the creek parallels Highway 99, passing through a variety of low-, medium-, and high-density residential areas and numerous commercial areas. (Herrera Environmental).

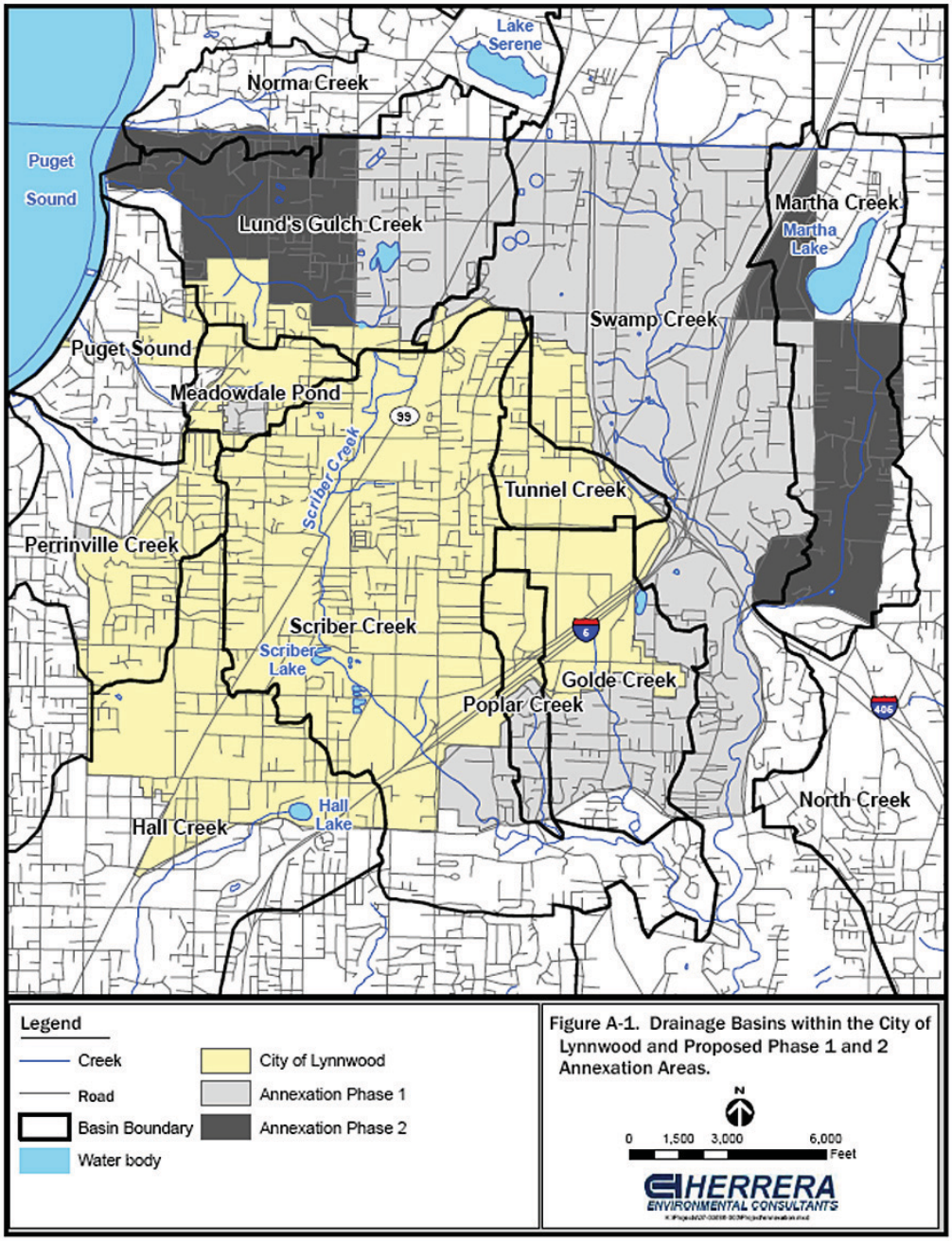

Figure 2-5. Stormwater Drainage Basins

Source: Herrera Environmental

Scriber Creek then crosses Highway 99 near 186th Place SW before flowing through residential developments between 188th Street SW and 196th Street SW. After passing under 196th Street SW, the creek flows into Scriber Lake. It then flows southeast from Scriber Lake and eventually discharges to Swamp Creek near the intersection of Cypress Way and Locust Way. (Herrera Environmental).

The Swamp Creek basin is within the Lake Washington Watershed. Swamp Creek ultimately discharges to the Sammamish River, approximately 0.5 miles east of Lake Washington. (Herrera Environmental).

Several properties along Scriber Creek, located between the Highway 99 crossing and Scriber Lake (within the Highway 99 study area) have experienced long-term flooding problems – standing water in public rights-of–way, including arterial streets, stream flooding over residential streets, and damage to private property. This flooding is a result of increased urbanization of the upstream drainage basin, undersized culverts, encroachment onto the floodplain, sediment accumulation in low gradient reaches, and ongoing sediment input from upstream channel enlargement between Highway 99 and 176th Street SW. These issues are documented in the *Scriber Creek Flood Study, 188th Street SW to 44th Avenue W.*=s prepared for the City by Herrera Environmental in June 2009. This study includes potential project-specific solutions to the flooding problems.

City of Lynnwood Drainage Regulations

The City of Lynnwood regulates the management of stormwater through Chapter 13.40 of the Lynnwood Municipal Code ("Stormwater Management"). The purpose of the chapter is to promote sound development policies and construction procedures that respect and preserve the city's watercourses; minimize water quality degradation; prevent sedimentation of creeks, streams, ponds, lakes, and other water bodies; protect the life, health, and property of the general public; preserve and enhance the suitability of waters for contact recreation and fishing; preserve and enhance the aesthetic quality of the waters; maintain and protect valuable groundwater resources; minimize adverse effects of alterations in groundwater quantities, locations, and flow patterns; insure the safety of city roads and rights-of-way; decrease drainage-related damage to public and private property; and avoid or abate public nuisances. (LMC 13.40.010)

On May 10, 2010, the City Council adopted Ordinance 2833 approving these new City stormwater regulations. These new regulations are based on the 2005 stormwater manual issued by the state Department of Ecology and emphasize a broader range of opportunities for managing stormwater, including the use of Low Impact Development Techniques, than did the prior City stormwater regulations.

City of Lynnwood Stormwater Planning Documents

Federal and state stormwater regulations regarding the management of stormwater runoff led to preparation of a *Surface Water Management Comprehensive Plan* for the City of Lynnwood. This plan, completed in September 2009, identifies areas for improvement of the City's overall stormwater management plan. It also provides information about opportunities for use of low-impact development techniques. This is the first major update of the City's Stormwater Plan since 1998.

The 1998 plan focused on improvement projects for flood control and water quality improvements. Projects from this plan have been implemented over the years, though not all are completed. The new plan includes some recommendations from the 1998 plan that have not been fully implemented, in addition to evaluating new programs that respond to several new regulatory developments. These include the Phase II requirements of the NPDES.

The City of Lynnwood is a Phase II jurisdiction under the 2007 NPDES Western Washington Municipal Stormwater Permit. The City has prepared a Stormwater Management Program (SWMP) that intends to reduce the discharge of pollutants from its storm sewer system to the maximum extent practicable, using all known and reasonable methods of treatment. This information is included as a part of the *Surface Water Management Comprehensive Plan (SWMCP)*.

The 2008 City of Lynnwood Comprehensive Plan notes that,

> *…localized, temporary flooding has been a problem in areas of the City due to increased development and insufficient culvert and detention capacity. Flooding has also occurred as a result of ditches becoming clogged, debris plugging the inlets to catch basins and pipes backing up. Other problems result from surface runoff to infiltration systems causing system levels to rise. Water quality problems resulting from the effects of urban development are common in urban cities such as Lynnwood. Pollutants of concern include chemicals, petroleum products, solid wastes, and silts from development projects. Pollutants in the surface water system degrade the natural habitat of Lynnwood's streams and lakes.*

The 2009 *Surface Water Management Comprehensive Plan* addresses this range of issues. The Plan identifies stormwater management techniques and capital improvements needed to maintain the existing city system. However, the plan also addresses the opportunity the City has to expand the use of Low Impact Development (LID) Stormwater management techniques. The Plan recognizes that the City has focused on collecting runoff from developed areas and conveying them to the various basins as described above. The Plan recommends the City focus on developing tools to support both public and private projects that could seek to incorporate innovative stormwater management techniques in areas such as the Highway 99 subarea. (Herrera).

The Plan notes that alternative approaches, such as LID stormwater management (e.g., bioretention swales, green roofs, pervious pavements) and off-site regional facilities will be required in order to achieve water quality and flow control targets and enable this development to occur as planned. Chapter 6 of the Surface Water Management Comprehensive Plan includes recommendations for the stormwater management program and implementation steps. One of the implementation steps pertaining to the Highway 99 Corridor states:

> *Develop and adopt a City-specific addendum to the Stormwater Management Manual for Western Washington, or an approved equivalent manual, including provisions for using LID stormwater management techniques throughout the City. Give special consideration to the City Center, Sub-Regional Center and Highway 99 revitalization.*

Recommended stormwater projects identified in the *Surface Water Management Comprehensive Plan* related to the Highway 99 Corridor include the following:

Table 2-6. City of Lynnwood Surface Water Management Capital Projects along Highway 99

ID No.	Project Name	Project Description
1.	Scriber Creek	Conversion of existing unimproved ditch to a bioretention swale along 180th between Highway 99 and Scriber Creek
2.	Scriber Creek Channel between 176th and SR 99	Approximately 1,000 feet of linear stream bank restoration

Source: Herrera Environmental

These proposed projects are within the study area subject to this EIS.

Figure 2-6. Project #1: Scriber Creek Bioretention Swale

Figure 2-7. Project #1 Scriber Creek Bank Restoration

Snohomish County Stormwater Planning Documents

The Snohomish County Council authorized the accelerated development of drainage plans in 2001 to gain a better understanding of the drainage systems, streams, and wetlands within the unincorporated UGAs of Snohomish County. The purpose of the Drainage Needs Report (DNR) project is to plan for existing and future drainage infrastructure needs in a way that identifies ways to reduce road and property flooding, protect and enhance aquatic habitat, and reduce stormwater pollution. This project produced a series of 11 individual reports on drainage systems; the material in this section is taken from the Puget Sound Tributaries DNR. The Puget Sound Tributaries DNR study area generally covers the unincorporated UGAs between the cities of Edmonds and Mukilteo, in southwest Snohomish County.

Lund's Gulch Creek consists of a perennial main stem that flows from its relatively flat headwaters, through forested ravines, and out to Puget Sound. Land uses near the upper reaches of Lund's Gulch Creek and

Norma Creek consist primarily of suburban residential neighborhoods and commercial development along the Highway 99 corridor. The majority of the Lund's Gulch basin is in unincorporated Snohomish County, with the cities of Edmonds and Lynnwood in the southwest and southern portions of the basin, respectively.

The DNR identified a set of projects to address problems in the Lund's Gulch drainage. Two projects (LG-5 and LG-11 in the DNR) address roadway and property flooding problems. These projects call for improving stormwater conveyance facilities located immediately west of Highway 99 at 164th Street SW and 156th Street SW, respectively.

2.6. Parks & Open Space

2.6.1. Parks & Open Space Policies

The Parks, Recreation and Cultural Arts Element of the 2009 City Comprehensive Plan includes the following goals, objectives, and policies as they pertain to the potential redevelopment of Highway 99.

Goal: Park System: **Provide a system of mini, neighborhood and community parks to meet the recreational needs of the community.**

Objective P-1: Acquire park land in the city for the development of Core Parks to help meet the community's recreational needs.

Policy P-1.1: Provide the minimum adopted level of service of 5 acres/1000 population for Core Parks.

Policy P-1.4: Plan for the location of parks in the proximity of high-density developments.

Policy P-1.5: Use a variety of methods for funding acquisition of park lands including grants, user fees, City funding, interjurisdictional cost-sharing, land developer contributions and other sources.

Policy P-1.6: Adopt and implement a program to require new residential and commercial development to provide impact mitigation to the City, either by dedication of park land, plazas, park improvements, or payment of "in-lieu-of" fees.

Objective P-4:Plan and develop new parks and renovate existing parks in the city and in the Municipal Urban Growth Area.

Policy P-4.1: Design new parks in accordance with the purpose, size and classification of each.

Policy P-4.2: Design new parks and provide improvements to existing parks to promote public safety and security.

Policy P-4.3: Provide a variety of recreational opportunities to serve a diverse population.

Policy P-4.4: Provide accessibility to all park facilities in accordance with Americans with Disabilities Act standards.

Goal: Open Space System: **Provide a system of open space to preserve and protect the area's remaining native forests, wetlands, streams and wildlife habitats.**

Policy OS-1.2: Preserve and protect in public ownership areas with significant environmental features such as view corridors, landforms, steep slopes and plant and animal habitats from the impacts of development.

Objective OS-4: Acquire open space within urban areas to buffer and enhance the built environment.

Policy OS-4.2: Preserve open space corridors and trail linkages between parks, neighborhoods, schools and commercial centers. Where possible, acquire key linkages between parks and trail segments to create connected trail system.

Policy OS-5.1: Provide neighborhood access to natural areas with trailheads and parking, in accordance with Chapter 17 of the Lynnwood Municipal Code and ESA regulations.

Goal: Facilities and Programs: **Provide facilities and programs that promote a balance of recreational opportunities.**

Objective FP-4: Develop a master plan for Wilcox Park, Scriber Lake Park and the adjoining School District property, reflecting how these areas can be connected for pedestrian access and related activities.

Goal: Trail System: **Provide a connecting system of trails for recreational, commuter and general circulation purposes to promote Lynnwood as a "walkable city".**

Objective T-1: Assist other City departments, in the process of drafting the "Multi-Choice Transportation System Plan", which proposes a comprehensive city-wide "skeleton system" of sidewalks, walkways, bike paths and trails. The Plan would link parks, schools, community facilities, commercial centers, neighborhoods and adjacent regional trail systems.

Policy T-1.1: Work with other jurisdictions to provide a continuous regional trail network.

Objective T-2: Develop additional trails outside of parks to meet the adopted minimum level of service.

Policy T-2.1: Provide the adopted minimum level of service standard of 0.25 miles/1000 population for trails outside parks.

Policy T-2.2: Design and construct trails to required standards to serve a variety of users at varying skill levels.

Policy T-2.4: Include bicycle lanes when City streets are being reconstructed or built, and add bike routes to existing City streets, where feasible.

Policy T-2.5: Require new subdivisions to provide access to parks, trails and school sites.

Policy T-2.6: Encourage public and private funding for the development of trails.

Objective T-3: Plan and construct the northward extension of the Scriber Creek Trail to generally follow the creek route, from Scriber Lake Park north to the Meadowdale area and Lund's Gulch.

Policy T-3.1: Promote trail safety through signage and educational activities for pedestrians and bicyclists.

Goal: Activity Centers: **Ensure that parks and open space are included as part of the land use mix in the activity centers' master plans.**

Objective AC-1: Work with Community Development to identify parks and open space sites, related improvements, and implementation strategies for the City Activity Centers and City Center plans, including the City Center Parks Master Plan.

Objective AC-2: Establish park and open space guidelines and achieve revised level of service standards for public and private improvements in the City Center.

2.6.2. Comprehensive Plan - Level of Service

Lynnwood has adopted a Level of Service (LOS) standard for parks and open space land and related facilities in its Parks, Recreation and Cultural Arts Element of its Comprehensive Plan. Lynnwood's adopted Level of Service standard is expressed as 10 acres of park, recreation, and open space needed for each 1,000 persons. The standard is further delineated as 5 acres per 1,000 for "Core Parks" (mini, neighborhood, and community parks), and 5 acres per 1,000 for open space and special use facilities. The demand and need for parks, recreation, and open space in Lynnwood has been assessed through analyses of existing conditions, recreation trends, surveys, public meetings, and available resources.

The following Table 2-7 shows the current and projected 2025 statistics for parks, recreation, and open space property in Lynnwood.

Table 2-7. Parks, Recreation, & Open Space Property in the City of Lynnwood

#	Classification	Existing [1, 4]	2008 – 35,680 OFM Est. Population		2025 – 43,910 Est. Population [5]	
			Demand [2]	Need [3]	Demand [2]	Need [3]
	CORE PARKS:					
5	MINI	3.32 ac	5.35 ac	2.03 ac	6.58 ac	3.26 ac
9	NEIGHBORHOOD	45.21 ac	53.52 ac	8.31 ac	65.87 ac	20.66 ac
4	COMMUNITY	94.77 ac	119.53 ac	24.76 ac	147.10 ac	52.33 ac
	SUBTOTAL:	**143.30 ac**	**178.40 ac**	**35.10 ac**	**219.55 ac**	**76.25 ac**
	OTHER PARK LAND:					
4	SPECIAL USE	81.45 ac	71.36 ac	0 ac	87.82 ac	6.37 ac
	OPEN SPACE	134.22 ac	107.04 ac	0 ac	131.73 ac	18.54 ac
	SUBTOTAL:	**215.67 ac**	**178.40 ac**	**0 ac**	**219.55 ac**	**24.91 ac**
	TOTAL:	**358.97 ac**	**356.80 ac**	**0 ac**	**439.10 ac**	**101.16 ac**
4	TRAILS:	7.10 mi	8.92 mi	1.82 mi	10.98 mi	3.88 mi

Source: City of Lynnwood Parks, Recreation and Cultural Arts Department, revised 4/2009.

Notes:

1. Includes both developed and undeveloped park facilities within the city limits only.

2. Demand reflects total park acres required to meet adopted level of service standard for each category.

3. Need reflects additional park land required to meet adopted level of service standard for each category.

4. City park property located outside the city in the UGA is not included in the City's demand and need analysis.

5. The 2025 population estimate includes the City Center population, which is projected to be 5,400. The demand and need for 2025 reflects a recommended LOS standard reduction of 5 ac/1000 for the City Center population.

2.6.3. Existing Parks, Recreation & Open Space in the Corridor

Gold Park is located within the Highway 99 Corridor on 200th Street SW. This park is a passive recreation facility that contains environmentally sensitive natural features, including a seasonal stream, second growth conifers, wildlife habitat, and native vegetation. Because of its proximity to Edmonds Community College, it also serves as an outdoor classroom for service-learning projects.

The study area also encompasses the environmentally sensitive natural features of Scriber Lake Park on 196th Street SW. The park contains a non-recreational lake and associated wetlands, Scriber Creek, and fish and wildlife conservation areas. Scriber Creek Trail begins in the park and generally follows the Scriber Creek corridor southeast to the Transit Center.

Wilcox Park is also located east of the Corridor on 196th Street SW, directly across from Scriber Lake Park. This is a heavily used active recreational community park that includes informal play fields, playground equipment, a basketball court, bandstand, picnic shelter, and forested areas.

CHAPTER 3
ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, & UNAVOIDABLE ADVERSE IMPACTS

3.1. Introduction

In this Chapter, the Preferred Alternative (the proposed Highway 99 Subarea Plan, proposed amendments to the zoning code and map, other City development regulations and proposed Design Guidelines) is compared to the No Action Alternative, with respect to potential impacts on the environment. Those elements of the environment to be evaluated mirror the elements identified in Chapter 2. Each of the alternatives will be evaluated for potential impacts to Land Use, Transportation, Greenhouse Gas (GHG) Emissions, Sanitary Sewer, Water, and Stormwater.

If an impact from the proposed action is determined to have a probable significant adverse impact, then mitigation is appropriate. Mitigation measures are identified as applicable for each element of the environment evaluated in this section. Finally, this chapter will determine whether any aspects of the two alternatives demonstrate unavoidable adverse impacts that cannot be mitigated.

As noted in Chapter 1, this SEIS supplements the environmental impact analysis conducted for the 1995 City of Lynnwood Comprehensive Plan. Therefore, this document incorporates by reference any environmental analysis conducted in association with the adoption of that plan. This document identifies new information about impacts associated with the Highway 99 Subarea plan that may not have been addressed in the earlier Comprehensive Plan EIS. This document also incorporates by reference other relevant environmental documentation such as the review of Community Transit's Bus Rapid Transit (BRT) system, where such analysis is relevant to the proposed plan. Ref. WAC 197-11-620

3.2. Land Use

3.2.1. Jurisdictions & City Boundary

The majority of the Highway 99 Corridor Plan study area lies within the jurisdictional boundaries of the City of Lynnwood. However, a portion of the study area lies north of the City of Lynnwood jurisdictional boundary within the city's Municipal Urban Growth Boundary (MUGA).

As described in Chapter 2, the portions of the study area within the City of Lynnwood are subject to the Lynnwood Comprehensive Plan, zoning code, and other development regulations for any development activities along this portion of the corridor. Until the property within the MUGA is incorporated into the City of Lynnwood, development activities will be subject to Snohomish County Comprehensive Plan, zoning code, and other development regulations.

3.2.2. Land Use Patterns

This section of the SEIS identifies potential changes to the land use and development patterns for the Highway 99 corridor. The focus is on the difference in land use patterns between the Preferred Alternative (the Proposed Highway 99 Subarea Plan) and No Action Alternative (described in Chapter 1).

The Preferred Alternative (proposed Plan) is intended to implement the City's Comprehensive Plan and strategies from the *City of Lynnwood Revitalization Strategies for the Highway 99 Corridor*. The proposed Plan builds on the adopted strategies by translating them into physical actions, including changes to land use regulations and design guidelines and recommendations for physical infrastructure and open space improvements.

The planning "horizon" year for the proposed Plan is 2025; within that timeframe, development and redevelopment of buildings and properties will continue along the Highway 99 corridor. The difference between the two alternatives, the Preferred Alternative and the No Action Alternative, is the overall pattern in which that redevelopment will occur.

As noted in Chapter 2, the existing pattern of land use along Highway 99 is primarily strip commercial, auto-oriented businesses with surface parking lots fronting along the roadway. The No Action Alternative would generally result in a continuation of this commercial development pattern, with redevelopment occurring on a parcel-by-parcel, project-by-project basis. The key differences between the two Alternatives, with respect to land use patterns, lies in the Preferred Alternative's introduction of residential uses, combined with commercial uses along Highway 99 at specified nodes, the opportunity for master planning the redevelopment of larger parcels, and focusing on design quality and public amenities along the corridor.

Preferred Alternative

The Preferred Alternative envisions a broader range of land uses along the Highway 99 corridor compared to the No Action Alternative. Over time, mixed-use development, including residential multi-family residences would develop in clusters at the BRT stops in the primary nodes at 196th, 176th and 148th Streets SW. The proposed Mixed Use - Residential Required zoning for these nodes would require a minimum residential density of 40 units per acre. The expected form of mixed-use or residential development in these nodes is 4- to 6 –story buildings with three to five stories of residential development over retail businesses and structured parking. The three primary nodes total approximately 153 acres. For the purposes of assessing the potential impact of implementing the proposed plan and development regulations, this SEIS assumes up to 4,351 multi-family units developing in these nodes.

The Preferred Alternative also designates a 24 acre parcel of land as a Special Planning Area. The plan recommends that the City create a process that allows the developer to work closely with the City to create an innovative site plan and unique development design, while accomplishing the City's intent for this site.

Additional mixed-use areas, including residential development, would potentially develop in the area of the secondary nodes at 204th Street and 188th Street and a portion of the area around 196th Street. The proposed Mixed Use - Residential Encouraged zoning has no minimum residential density requirement. The secondary nodes total approximately 92 acres, and this document envisions up to 677 multi-family units. Proposed primary and secondary nodes are shown in Figure 3-1, below. As owners of properties in the primary and secondary nodes redevelop their properties, some existing commercial uses within the nodes would be displaced. In total, approximately 269 acres will be affected.

Between these nodes of mixed-use development, general commercial development would continue to expand and redevelop, based on the existing land use patterns and development regulations for those areas.

The 5,028 new multi-family units envisioned within the new nodes will also absorb projected population increases and relieve development pressure on other Lynnwood neighborhoods.

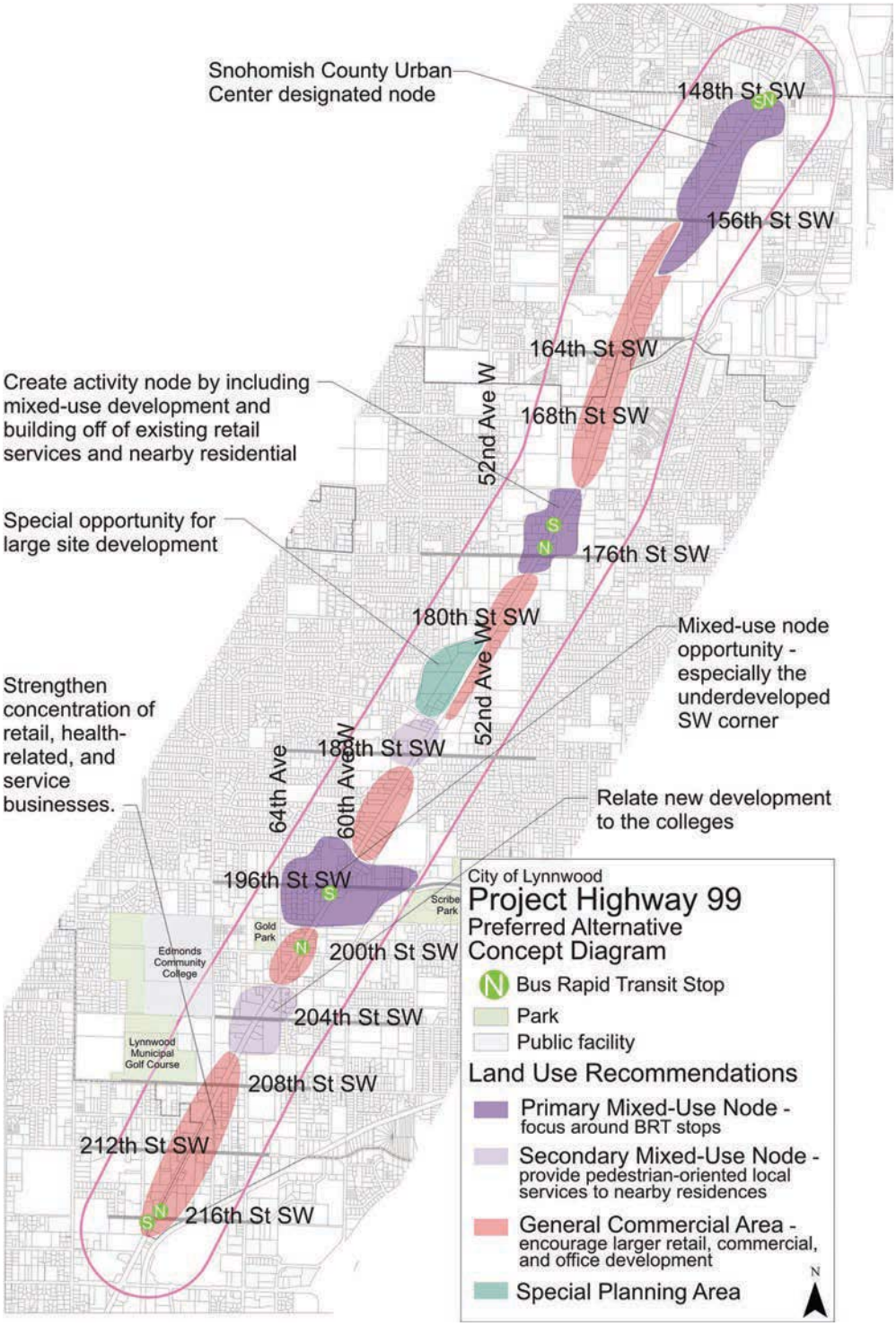

Figure 3-1. Project Highway 99 DRAFT - Preferred Alternative Concept Diagram.

The Plan's primary emphasis is to encourage more intense mixed-use nodes near BRT stops and – for the nodes at 196th Street and 204th Street – near Edmonds Community College. As used here, "mixed-use development" means a combination of residential and commercial uses in proximity but not necessarily in the same building. The term "node" refers to a concentration of more intense development and human activity.

Because these nodes will include residences, with local retail services and regional transit connections, they provide the best opportunity to create comfortable, safe, and attractive pedestrian-oriented settings. To attract new residents along the corridor, the Plan states it will be necessary to provide amenities and enhance existing open spaces or add new ones near each node, as called for in the objective regarding "community gathering spaces."

No Action Alternative

The No Action Alternative represents continued parcel-by-parcel commercial development and redevelopment consistent with the existing comprehensive plan designations and zoning regulations, including the restriction of no residential development along Highway 99. There would be no change in the current development patterns along the corridor under this Alternative. There is less likelihood that existing commercial uses within the designated nodes would be displaced. The overall density and intensity of development may still increase along the Highway 99 corridor with infill development and redevelopment of existing properties, but there would be no attempt to establish more intense development nodes, emphasize urban design principals, or allow the potential for mixed-use development. All new residential multi-family development projected for this general area would be absorbed by adjacent areas currently zoned to allow multi-family development. It is unknown whether future population increases would increase pressure for rezoning to higher residential densities elsewhere in the City or its Municipal Urban Growth Area (MUGA).

The actual pace, location of, and quantity of new development in the next 15 years (to 2025, the planning period for this assessment) is uncertain - where it will occur and when, cannot be predicted. Future development will be "driven," in large part, by market conditions and the actions of individual property owners. Therefore, impacts to land use are identified generally, with respect to the overall pattern of land use and the density of development associated with each alternative.

3.2.3. City of Lynnwood Comprehensive Plan

Preferred Alternative

Approval of the Preferred Alternative would include adopting the subarea plan for the corridor "by reference" into the City's Comprehensive Plan. No changes would be made to the Comprehensive Plan of Snohomish County. If adopted, the subarea plan would become effective in the currently-unincorporated portion of the corridor when the area is annexed to Lynnwood (annexation of this area is currently proposed).

The Preferred Alternative implements existing City Comprehensive Plan language. As described in Chapter 2, the 2008 Comprehensive Plan changed the Highway 99 corridor to a new land use designation - "Highway 99 Corridor - H99." The land use goals and policies call for the development of a subarea plan along the Highway 99 corridor.

The proposed Highway 99 Subarea Plan goals and major policies follow:

Land Use

Goal 1: Create nodes of activity at key locations along Highway 99.

1.1 Policy: Designate primary mixed-use nodes along Hwy 99 that have BRT stops with a new 'Hwy 99 Mixed-Use – Residential Required' zone with zoning standards and design guidelines to facilitate transit-oriented development and to help create walkable, mixed-use areas.

1.2 Policy: Designate secondary mixed-use nodes along Hwy 99 that have the potential to redevelop with a new 'Hwy 99 Mixed-Use – Residential Encouraged' zone that encourages residential development as a part of new development and has specific zoning standards and design guidelines to help create walkable mixed-use areas.

1.3 Policy: Establish specific standards for the Hwy 99 Mixed-Use zones.

1.4 Policy: Create unique redevelopment opportunities for the "Special Planning Area."

Goal 2: Encourage a variety of business types between designated nodes along Highway 99.

2.1 Policy: Continue to implement the adopted strategies from the Economic Development Study to foster businesses and enhance economic activity along the corridor.

2.2 Policy: Encourage the aggregation of similar businesses to create regional destinations.

Goal 3: Support existing housing along and adjacent to the Highway 99 corridor from the impacts of higher intensity development.

See Goal 1, Policies 1.1 and 1.2 and supporting recommendations.

3.1 Policy: Protect single family neighborhoods adjacent to the corridor.

Transportation & Infrastructure

Goal 4: Keep people moving along Highway 99.

4.1 Policy: Improve transportation circulation in the SR 99 corridor.

4.2 Policy: Encourage safe and efficient traffic flow along the SR 99 corridor.

4.3 Policy: Promote pedestrian safety and connectivity in the Highway 99 corridor.

4.4 Policy: Support and encourage transit ridership.

4.5 Policy: Improve bicycle connections throughout the study area.

Parks & Open Space

Goal 5: Enhance Community Gathering Spaces.

5.1 Policy: Improve existing parks and open space within the Highway 99 corridor study area.

5.2 Policy: Create new parks and public amenities within the Highway 99 corridor.

5.3 Policy: Provide a network of trails and pathways that connect residential and commercial areas along the Corridor to key gathering places, transit stops, and other amenities.

Urban Design

Goal 6: Improve identity and image of corridor.

6.1 Policy: Establish development standards and design guidelines to accomplish a variety of planning objectives in mixed-use zones.
(Note: See also recommendations 1.2.6, 1.2.7, 1.2.8, 4.3.1, 4.3.2, and 4.3.3.)

6.2 Policy: Incorporate more green features along corridor.

6.3 Policy: Create a "sense of place" at primary and secondary nodes, reflected in building forms, development patterns, and the public realm.

Goal 7: Improve public safety.

7.1 Policy: Use Crime Prevention through Environmental Design (CPTED) techniques.

7.2 Policy: Improve lighting along corridor and at key nodes.

When adopted as part of the City of Lynnwood Comprehensive Plan, these seven goals and their supporting policies will provide clarity and guidance for the implementation of the Highway 99 Subarea Plan.

No Action Alternative

Under the No Action Alternative, the Highway 99 Subarea Plan would not be adopted. There would be no changes to the existing zoning code or the adoption of design guidelines.

The Comprehensive Plan Designation of Highway 99 Corridor (H99) for the corridor would remain in effect. The No Action Alternative would be in conflict with the following policy in the Comprehensive Plan. Policy LU-3.1 states that:

> *Incentives and performance related standards shall be established to allow residential uses and mixed-use developments on Office, Commercial, and Regional Commercial designated properties, at appropriate locations in the … Highway 99 Subarea. (Lynnwood Comprehensive Plan)*

As noted above, the primary distinction between alternatives is the introduction of residential development in higher-intensity nodes along the Highway 99 corridor. There would continue to be a prohibition on residential uses under the No Action Alternative consistent with the language in LMC 21.46.

3.2.4. City of Lynnwood Zoning Regulations

Preferred Alternative

Approval of the Preferred Alternative would include amending the City's Zoning Code to include new zoning regulations for the proposed nodes. No changes would be made to the zoning regulations of Snohomish County. If adopted, the new City zoning regulations would become effective in the currently-unincorporated portion of the corridor when the area is annexed to Lynnwood (annexation of this area is currently proposed).

The Preferred Alternative includes two new zoning districts designed to implement the concept of mixed-use nodes. These two new zones, Mixed Use-Residential Required (MU-RR) and Mixed Use Residential Encourage (MU-RE) would be implemented at properties in the new primary and secondary nodes. The primary purpose of the new MU–RR and MU-RE zones would be to require or encourage residential development in specified areas. In total, approximately 269 acres would be rezoned.

Table 3-1 compares the two primary existing commercial zoning districts and the two new districts proposed for the primary and secondary nodes, as part of the Preferred Alternative. Under the Preferred Alternative, existing zoning would remain in effect in portions of the corridor not included in a node. The No Action Alternative would retain the existing zoning throughout the corridor.

Table 3-1. Lynnwood Highway 99 Corridor Zoning Comparisons

DEVELOPMENT STANDARDS	EXISTING		MIXED USE NODES PREFERRED ALTERNATIVE	
	B-1	CG	MU-RR	MU-RE
DENSITY- MULTI-FAMILY RESIDENTIAL	Not Allowed*	Not Allowed*	Min. 40 du/a	Allowed, No minimum
DESIGN GUIDELINES	Citywide and Commercial	Citywide and Commercial	New Guidelines for nodes	New Guidelines for nodes
MAXIMUM BUILDING HEIGHT	none	none	none	none
MAXIMUM LOT COVERAGE	35%	35%	No Maximum provided other development regulations are fulfilled.	No Maximum provided other development regulations are fulfilled.
PARKING REQUIREMENTS: RESIDENTIAL MF	N/A: Multifamily Residential not allowed in these zones.		1.25 parking spaces and surface parking is limited to a maximum of 2 parking spaces per dwelling unit.	1.25 parking spaces and surface parking is limited to a maximum of 2 parking spaces per dwelling unit.

DEVELOPMENT STANDARDS	EXISTING		MIXED USE NODES PREFERRED ALTERNATIVE	
	B-1	CG	MU-RR	MU-RE
PARKING REQUIREMENTS: COMMERCIAL OFFICE BUILDINGS/ OFFICES NOT PROVIDING ON-SITE SERVICES: LESS THAN 25,000 SF GFA 25,000 – 100,000 SF GFA 100,000 – 500,000 SF GFA OVER 500,000 SF GFA	3.8 per 1,000 SF GFA: minimum 10 stalls 3.5 per 1,000 SF GFA 3.0 per 1,000 SF GFA 2.8 per 1,000 SF GFA		4 stalls per 1,000 SF of building area dedicated to commercial or non-residential uses	
PARKING REQUIREMENTS: COMMERCIAL OFFICES PROVIDING ON-SITE SERVICE	One per 200 SF GFA; minimum 10 stalls		4 stalls per 1,000 SF of building area dedicated to commercial or non-residential uses	

* Senior Housing Allowed

Design Guidelines

In addition to the regulations within the Lynnwood Municipal Code, Design Guidelines will be adopted to complement the Lynnwood Municipal Code (LMC) provisions of Chapter 21 and, more specifically, Section 21.62. The general purpose of these Highway 99 Design Guidelines (Guidelines) is to implement the City's Comprehensive Plan vision calling for a vibrant, pedestrian-friendly mixed-use center that includes an accessible and revitalized corridor, active nodes, and enhanced design and landscaped setting. Topics addressed within the guidelines are:

- Site Planning – The relationship of the structure to the street
- Pedestrian Access, Amenities, and Open Space Design
- Parking Area Design
- Building Design
- Lighting

All construction of new buildings and structures and additions to existing buildings that increase gross floor area by 1,000 sq ft within the Highway 99 Mixed-Use-Residential Required (HMU-RR) zone and Highway 99 Mixed-Use-Residential Encouraged (HMU-RE) zone will be subject to the

Guidelines. There will be an administrative review process for design drawings (buildings, site, and landscaping plans) for consistency with the design guidelines. The Guidelines would be administered through the City of Lynnwood Director of Community Development.

148th Street SW Primary Mixed-Use Node

The node shown in Figure III-2 at 148th Street SW is currently located within the County but is within the City's North-East-South (NES) Annexation Area. This node is about 57.25 acres in area. Snohomish County has designated this area as an Urban Center in the County Comprehensive Plan. Existing development within this node currently consists of predominantly auto-oriented businesses. Several large sites with redevelopment potential are located between 152nd Street SW and 156th Street SW, which are approximately 1/2 mile from the current Swift BRT stops. Although the corridor itself is not currently residential in character, the surrounding residential neighborhood makes this node a likely location for large scale residential development.

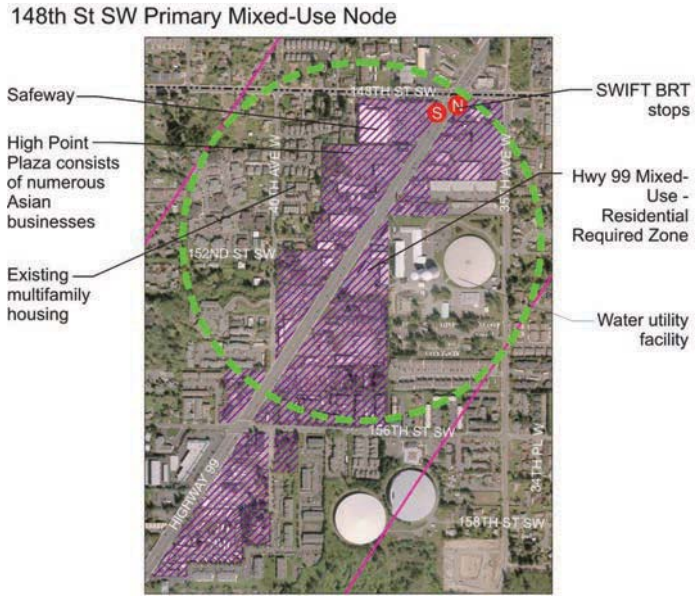

Figure 3-2. 148th St. SW Primary Mixed-Use Node

176th Street SW Primary Mixed-Use Node

The node at 176th is shown in Figure 3-3; it is about 40.3 areas in area. The node encompasses existing commercial businesses that serve the local residential population. A number of sites are available for potential mixed-use redevelopment in this node.

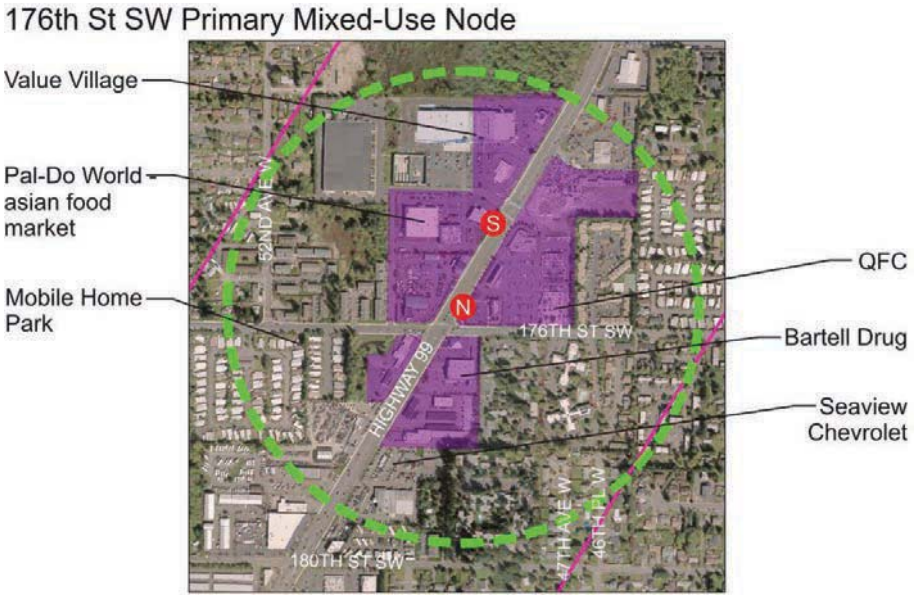

Figure 3-3. 176th St. SW Primary Mixed-Use Node

196th Street SW Primary Mixed-Use Node

shows the 196th Street SW node; it is about 55 acres in area. The node has significant redevelopment potential, primarily in the southwest quadrant. The potential for infill development exists on present shopping center sites. New mixed-use development will add residential units within the node, which is intended to help support transit and businesses, and create a more cohesive neighborhood. This node also provides the closest BRT stop to Edmonds Community College (EdCC) and the branch campus of Central Washington University. Most of the streets in this vicinity have sidewalks, but lights and street trees should be added where feasible to improve the pedestrian experience along the route from the transit stops to the colleges.

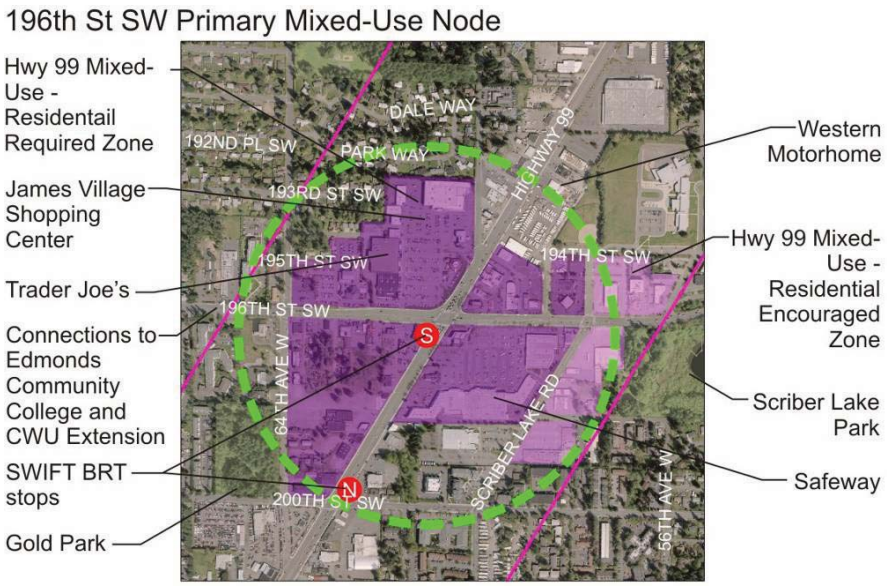

Figure 3-4. 196th St SW Primary Mixed-Use Node

188th Street SW Secondary Mixed-Use Node

The secondary node located at 188th Street SW is shown in Figure 3-5; it is about 11.67 acres in area. Existing retail businesses are generally auto-oriented and serve a regional population. The proposed mixed-use area is relatively small, so there is limited redevelopment potential. However, the "special planning area" directly to the north includes about 23.75 acres.

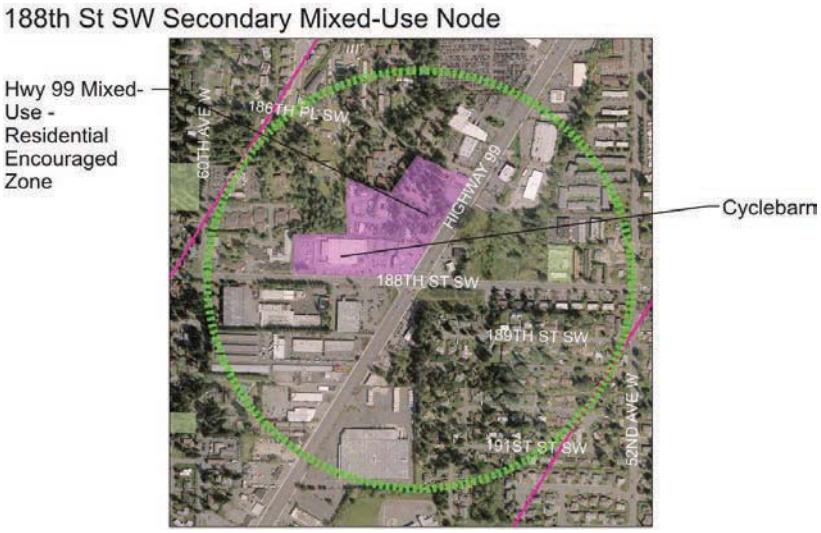

Figure 3-5. 188th St SW Secondary Mixed-Use Node

204th Street SW Secondary Mixed-Use Node

The node at 204th Street SW shown in Figure 3-6 is primarily occupied by auto dealerships; it is about 26.1 acres in area. Edmonds Community College (ECC) and Central Washington University is located within the node's 1/4 mile radius. New mixed-use development within this node could serve the more than 11,000 students who attend the colleges each quarter.

The fact that commercial property in this node is occupied by auto dealerships means that new development could displace these businesses. One of the policies proposed in the Preferred Alternative encourages the retention of auto dealerships as a strong revenue source.

Policy 2.1.2

Continue to recognize auto dealers and service as a desirable niche business. Work with these business owners to improve the physical condition and appearance of properties, while maintaining visibility along the corridor.

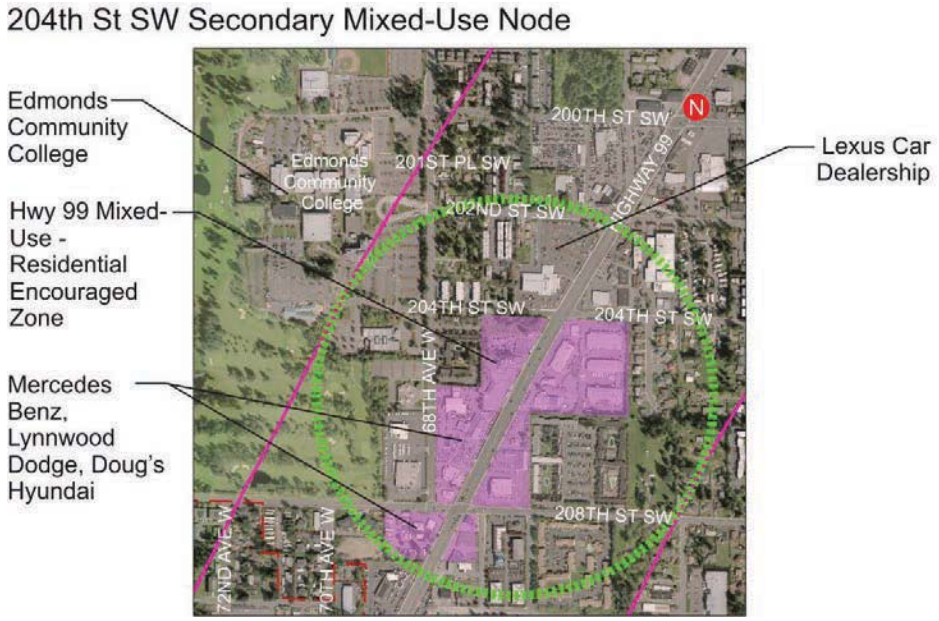

Figure 3-6. 204th St SW Secondary Mixed-Use Node

Special Use Planning Area

The Special Planning Area between 188th and 180th shown in Figure 3-7 is currently used for an automotive wrecking yard. There are no residential units within this area. The City proposes a process where the developer can work closely with the City to create an innovative site plan and unique development design, while accomplishing the City's intent for this site. The City's intent for this area is to create a walkable development that connects to Hwy 99 and surrounding neighborhood, incorporate a combination of commercial and residential uses, provide an appropriate transition from Hwy 99 to surrounding residential neighborhood and can mitigate potential impacts to surrounding residential neighborhood through an approach to access management, landscaping, setbacks, and site design.

Figure 3-7. Special Use Planning Area

Overall Node Redevelopment Potential

Table 3-2 allocates the redevelopment potential of residential units to each of these nodes. The acres available for redevelopment were identified as part of the *City of Lynnwood Highway 99 Corridor Urban Activity Profile and Market Assessment*, prepared by Community Attributes, dated April 2008. As described in Chapter 1, an assumption was developed for the residential density that might ultimately be developed within each of the two new zones.

Table 3-2. Potential Redevelopment Scenario

NODE	Potential Dwelling Units
	# Residences
204/208TH	377
196TH	2,103
188TH	100
176TH	555
148TH/156TH	1,693
TOTAL	5,028

No Action Alternative

Under the No Action Alternative, the Highway 99 Subarea Plan would not be adopted. There would be no changes to the existing zoning code and no adoption of new design guidelines for the nodes. The development pattern along Highway 99 would continue along the same pattern that currently exists. Existing zoning designations and regulations would remain in effect, and the Lynnwood Citywide Design Guidelines would continue to be applicable to new development in the corridor. There would continue to be a prohibition on residential uses under the No Action Alternative consistent with the language in LMC 21.46.

The Comprehensive Plan Designation for Highway 99 Corridor would remain in effect under either alternative. However, the No Action Alternative, with the current zoning designations, would be in conflict with policies under the Comprehensive Plan. Specifically, Policy LU-3.1 states that:

> *Incentives and performance related standards shall be established to allow residential uses and mixed-use developments on Office Commercial and Regional Commercial designated properties, at appropriate locations in the … Highway 99 Corridor Subarea. (Lynnwood Comprehensive Plan)*

3.2.5. Mitigating Measures

Impacts associated with the potential density of the development within the primary and secondary nodes for the Preferred Alternative would be mitigated through the implementation of development regulations and Design Guidelines as identified in the proposed Plan.

Under the No Action Alternative, the City should reconsider the designation of properties along the corridor to the Highway 99 corridor future land use category. The designation should include the reference in Policy LU-3.1 allowing mixed-use development in the Highway 99 corridor.

3.2.6. Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts associated with plans, policies, or regulations are identified with the proposed alternatives.

3.3. Transportation Impacts

Information regarding vehicular transportation impacts is taken from *The SR-99 Corridor Land Use Revisions – Traffic Impact Assessment* (TIA), prepared by David Evans and Associates, dated July 2010. This section evaluates and compares traffic impacts associated with the No Action Alternative and the Preferred Alternative.

3.3.1. TIA Methodology

In 2003, the City of Lynnwood began development of a new travel demand forecasting model. The new Lynnwood Traffic Model incorporates land use information (trip beginnings and ends) for approximately 200 Traffic Analysis Zones (TAZ) within the City, and over 120 zones in surrounding King and Snohomish Counties. This information provided the baseline conditions for the Highway 99 corridor analysis.

The Lynnwood Traffic Model was developed for vehicular planning purposes. A trip reduction process based on each TAZ's transit accessibility was used to adjust for applications where higher transit mode splits were expected, including high-density and mixed use areas. An additional reduction factor was applied to account for intra-area pedestrian trip internalization. The aggregate adjustments made were:

- 10 percent reduction of all trips distributed to/from corridor TAZ to other areas to account for transit usage, and
- 30 percent reduction for short local trips within each TAZ or to an adjacent TAZ where walking would substitute for vehicular trips

These reductions factors are less extreme than reductions sometimes claimed for Transit –Oriented Development (TOD). Please see the Technical Memorandum for additional details on mode split, land use, road system, and volume forecast adjustments.

This model was used to evaluate the impacts of the proposed redistribution of dwelling units into the Highway 99 corridor by comparing the 2025 forecast conditions under the Preferred Alternative to the 2025 forecast for the baseline case without the proposal (No Action). Comparisons were applied to traffic volumes and level of service (LOS) ratings within the Highway 99 corridor, elsewhere in Lynnwood, and across Snohomish County

3.3.2. Highway 99 Corridor - Traffic Volumes

An analysis of changes in traffic volumes was conducted for the primary and secondary nodes identified in the Preferred Alternative. The study (Appendix A) concludes that the proposed additional development intensity for the preferred alternative will cause additional traffic generation in the study corridor, transit demand, and pedestrian and bicycle circulation. However, the total amount of vehicular trip generation would be less than expected for the same amount of development in dispersed suburban areas, due to the corridor's increase in mixed-use character and transit usage, resulting from its proximity to the Swift Bus transit corridor on SR-99.

For this study, a total of 5,028 multi-family dwelling units were assumed to be added to the Traffic Analysis Zones (TAZs) in the SR-99 corridor. In addition, a corresponding amount of multi-family dwelling units were removed from TAZ's elsewhere in Snohomish County to maintain the same growth total countywide. To accomplish this adjustment, the 2005 to 2025 growth amounts were tabulated for all TAZs outside Lynnwood. An equal percentage reduction was applied to all zones, leading to the desired reduction. The majority of these adjustments occurred in southwest Snohomish County. Several hundred units were removed in this way and taken from TAZs on Lynnwood's immediate periphery, just north of the SR-99 corridor and northeast of the existing city limits. This is consistent with the stated intention of the City of Lynnwood to annex and downzone those areas, compared to existing Snohomish County zoning.

Table 3-3 shows the comparison of peak-hour volumes - both north bound (NB) and south bound (SB) - for both the Preferred Alternative and No Action Alternative at selected locations. The table

compares the Baseline (No Action Alternative) and the Proposal (the Preferred Alternative) with traffic volumes from 2005. This table demonstrates that only a small change in actual traffic flow in either direction would occur with the implementation of the Preferred Alternative.

Table 3-3. Highway 99 PM Peak Hour Volumes

Location	2005		No Action Alternative 2025 Baseline		Preferred Alternative 2025 Proposal		2025 Baseline vs. 2025 Preferred Alternative Change	
On SR-99	NB	SB	NB	SB	NB	SB	NB	SB
N/O 148TH	1857	1833	1965	2498	1887	2438	-78	-60
N/O 168TH	1695	1255	2460	2069	2488	2042	28	-27
N/O 180TH	1711	1374	2005	1554	2013	1568	8	14
N/O 196TH	1400	1200	1573	1370	1531	1373	-42	3
N/O 216TH	1721	1112	2568	1624	2587	1580	19	-44

Source: Lynnwood Traffic Model

The significant change is the overall growth in peak hour volumes from 2005 to the 2025 base case. This represents an increase between 6 percent and 65 percent, depending on location. The corridor segments north of 168th Street SW and south of 196th Street SW are most severely impacted, carrying volumes significantly higher than any corridor volumes observed in 2005 anywhere in the corridor. The middle section of the corridor between, 168th and 196th, demonstrates lower traffic volume increases between 2005 and 2025.

3.3.3. Highway 99 Intersection LOS

Analyzing the level of service is another way to evaluate impacts associated with a proposed plan or development. A decrease in the LOS associated with a project may indicate traffic volumes have an impact needs to be mitigated. In the TIA, LOS is measured in terms of average expected vehicle delay at key intersections.

Table 3-4 provides the comparison data for corridor intersections. The 2025 LOS conditions are essentially the same for the baseline (No Action Alternative) and the Preferred Alternative. The average delay per vehicle of the SR 99 intersections analyzed increases by 0.6 percent for the case with the Preferred Alternative versus the baseline scenario.

As with the traffic volumes discussed above, the forecast 2025 delays increase slightly in the corridor commensurate with the increase in corridor volumes forecast in the preferred alternative.

Table 3-4. Intersection Level of Service in Highway 99 Corridor

ID	Name	Existing 2005		No Action Base Scenario 2025		Preferred Alternative	
		HCM LOS	Delay (sec/veh)	HCM LOS	Delay (sec/veh)	HCM LOS	Delay (sec/veh)
13	168TH ST SW	D	35.7	F	104.7	F	122.4
14	176TH ST	E	56.5	F	102.3	F	100.6
15	188TH ST SW	D	51.1	E	71.2	E	74.9
16	196TH ST	E	68.5	F	131.1	F	138.4
17	200TH ST SW	D	54.6	F	232.7	F	236.2
230	204TH ST		unsignal-ized	F	113.5	F	111.6
18	208TH ST SW	D	44.2	F	122	F	114.7
19	212TH ST SW	D	48.1	F	149	F	154.1
23	216TH ST	B	14.6	D	45.1	D	45.1

Source: David Evans and Associates

The Growth Management Act requires cities to manage the level of service on arterials. The accepted LOS on arterials for non-City Center streets in Lynnwood is established at LOS "D" during PM peak hours. When the LOS at an intersection falls below this threshold LOS, the City will evaluate alternative ways to improve that intersection. If the anticipated decrease in LOS is due to a private development proposal, then the applicant will be required to propose mitigating measures. Where a city sponsored development proposal demonstrates the impacts will result in a decreased level of service, the city may be required to demonstrate actions it will take to reduce the impact on any given intersection affected by a plan or proposal. Further, the City has adopted a citywide LOS program that allows up to 20 percent of the City's signalized intersections to be below their associated level of service before concurrency is considered to have failed.

As shown in Table 3-4, seven of the nine signalized intersections are at HCM LOS F in 2025, as compared to D or E conditions in the 2005 case. One location is at LOS E, or minimally acceptable by the Lynnwood LOS standard. Only 216th Street SW, at the south end of the study area, is forecast to remain at an entirely acceptable LOS D condition in 2025.

In terms of average delay per vehicle, the HCM threshold for LOS E/F is 80 seconds. This is the nominally acceptable limit for operations equivalent to Lynnwood's LOS D. Only one intersection (188th) meets this standard in the 2025 scenario. Seven intersections would be in the Lynnwood LOS E range, with average delays between 100 and 150 seconds. One intersection (200th) would have an average delay of 235 seconds for Lynnwood LOS F. This is an extremely overloaded situation that is

essentially not workable. Therefore, eight of nine intersections require mitigation to reach a delay level consistent with Lynnwood LOS D in 2025; this conclusion applies to the 2025 base scenario and the 2025 development alternative.

The relocation of previously assumed future developments leads to reductions in external through-travel in the SR-99 corridor. These reductions tend to offset the local increases in traffic. The primary finding of this analysis is that the future traffic conditions in the SR-99 corridor are essentially the same, with or without the proposed redistribution of land use. Net traffic volume impacts at each major intersection are minor between the two scenarios for 2025. The same seven of nine signalized intersections analyzed on SR-99 are forecast to operate at level of service F in 2025 with or without the proposal. The overall average delay per vehicle for these analyzed intersections is increased by only 0.4 seconds.

It is also true that, because of planned regional growth, operating conditions in the corridor in 2025 are forecast to deteriorate from the existing acceptable conditions with or without the proposal. The 2025 forecasts predict a worsened future condition that does not meet LOS standards of the City of Lynnwood or of the Washington State Department of Transportation (WSDOT). This is true of the existing comprehensive plan scenario without the proposal. The study shows adding the proposed developments into this corridor (instead of elsewhere in Snohomish County) results in no measurable alteration of the corridor's traffic conditions. Mitigation improvements needed to meet accepted LOS standards without the proposal will also work with the proposal.

As a response to this increase in area-wide traffic and congestion on Highway 99, the Subarea Plan recommends a comprehensive and detailed east/west corridor study, evaluating intersection improvements that focus on increased capacity and reductions in delay. Reducing the time the east-west traffic takes to move through Highway 99 intersections will allow greater signal "green time" for north-south traffic. Providing left- and right-turn lanes will improve traffic flow in some cases. The Plan also recommends:

- Minimizing direct access to and from Highway 99
- Reconfiguring access points (shared driveways)
- Monitoring signal timing along Highway 99
- Locating drives from side streets where possible
- Providing internal roadway connections
- Connecting with adjacent properties for greater access

3.3.4. Public Transit

The Preferred Alternative is intended to support public transit. A target population of approximately 1,000 dwelling units within each of the proposed nodes and the vicinity is consistent with the population needed to support BRT, as suggested by the project economic consultants. The primary nodes would be located near BRT stops, giving residents improved access to both local and regional destinations. The new MU-RR and MU-RE zoning would also reduce required off-street parking, potentially limiting the number of automobiles and encouraging the use of public transit by residents

within the mixed-use nodes. The Plan also recommends collaborating with Community Transit to monitor ridership trends and increase transit ridership; consideration of new and relocated transit stops; and construction and expansion of local transit shelters.

The No Action Alternative would not result in residential development around public transit stops and would not encourage transit use to the same degree as the Preferred Alternative. The No Action Alternative could, however, include closer collaboration with Community Transit to improve transit opportunities along the Highway 99 corridor based on the current development pattern.

3.3.5. Pedestrian Circulation

The Preferred Alternative encourages pedestrian circulation. Pedestrian circulation would be encouraged through sidewalks with street trees and lighting; improving pedestrian connectivity, especially to transit stops; improving Highway 99 pedestrian crossings; and requiring improved, consistent sidewalks along both Highway 99 and intersecting streets.

The No Action Alternative would likely not result in significant, coordinated improvements to the pedestrian circulation system. Although many improvements would be possible, the lack of a residential population to use the improvements, and the individual parcel-by-parcel, project-by-project approach to development would make the improvements less likely.

3.3.6. Mitigation Measures

The traffic analysis demonstrates that by 2025, LOS within the study area will decrease whether the No Action Alternative or the Preferred Alternative is chosen. As the analysis found that development in the nodes would not significantly affect intersection operations along Highway 99, no mitigation measures related to the adoption of the Subarea Plan and new zoning are recommended.

To achieve adequate future LOS conditions, with or without the proposed redistribution of land use, capacity improvements will be needed in the Highway 99 corridor. The recommended east-west traffic analysis is recommended, regardless of which Alternative is adopted, to develop a program and set of projects that will address future congestion in the Highway 99 corridor.

Some trip reduction will be achieved as ridership expands on the new Swift Bus service along Highway 99. The TIA includes an assumption of increased ridership on the SWIFT Bus service. The amount of trip reductions needed to remove all the observed LOS deficiencies in 2025 is unlikely to be achieved by Swift Bus ridership alone. Nevertheless, mitigation needs could be lessened as Swift Bus ridership grows. Actual bus ridership and traffic growth rates in the Highway 99 corridor should be monitored annually to manage traffic and congestion in this corridor.

Improving capacity and operations at corridor intersections should be based on further evaluation of individual intersections. This should include consideration of Highway 99 approach realignment and controlling access to adjacent properties as those properties redevelop. Innovative site-specific analysis may lead to creative solutions involving public-private partnerships to accomplish overall improvement in the corridor.

The recommended study of congestion in the Highway 99 corridor should consider the following:

1. Add east-west through lanes across Highway 99 at each signalized intersection, to allow more time per signal cycle for the north-south users of Highway 99.
2. Seek to reduce left-turn conflicts and avoid additional through lanes by considering new and nontraditional intersection channelization concepts as identified in publications of the FHWA (http://safety.fhwa.dot.gov/intersection/alter_design/) and the Institute of Transportation Engineers (http://ite.org).
3. Develop arterial right-of-way requirements for site planning purposes that assume each east-west arterial crossing of Highway 99 would have one more lane each way than at present. Provide for pedestrians, bicycles, and transit in accordance with City design standards. This amount of right-of-way expansion would generally permit development of both traditional and alternative intersection concepts.
4. Require continuity of pedestrian circulation networks, bicycle facilities, and transit access within each development site, with optimal connection to the public facilities for the same modes, to achieve the trip reduction and transit use assumed for the corridor.
5. Condition future land development actions on compliance with road widening, right-of-way, and access control needs that may be found necessary for improved traffic operations.
6. Encourage transit ridership development by careful attention to site design standards in relation to the Swift Bus stations and by limiting parking supply in new developments; increasing self-selection for transit-oriented development.
7. Consider adding two additional Swift Bus stations at 196th Street SW to reduce the walking access time and distances to the existing stations in both directions of travel.
8. Increase the frequency and regional connectivity of Swift Bus service on Highway 99 to maximize the future diversion of excess automobile volumes to transit.
9. Convert most unsignalized intersections and driveways along Highway 99 to right-in, right-out operation only; use site planning to redirect left-turn access demand to the adjacent signalized intersections.
10. Interconnect parking areas to minimize short trips and turning movements on/off Highway 99 and connecting arterials.
11. Develop an access management plan specific to Highway 99, including driveway spacing, frequency, and proximity to adjacent intersections.
12. Conduct a corridor safety study. Improvements to consider may include a center median and U-turns. Study may also include improved pedestrian crossings by providing improved and/or new signalized crossings. These signalized crossings may be for both vehicles and non-motorized traffic or non-motorized traffic only.
13. Consider striping a continuous (solid) white lane line along the curb lane to better designate the lane used by the SWIFT buses.
14. Prepare a comprehensive and detailed east/west corridor study, evaluating intersection improvements that focus on increased capacity and reductions in delay. Reducing the time the east-west traffic takes to move through Highway 99 intersections will allow greater signal "green time" for north-south traffic.

15. Consider revising sidewalk/planter standards to increase separation between sidewalk and vehicular traffic along the corridor.
16. Parking restrictions along the corridor and in areas served by the corridor.
17. Additional TDM measures in areas serviced by the corridor.

3.3.7. Significant Unavoidable Adverse Impacts

As noted above, both the Preferred Alternative and the No Action Alternative would result in increased traffic in the study area. Chapter 2 identifies proposed improvements to the transportation network within the study area. Although the effects of additional vehicles on traffic congestion can be mitigated to varying degrees through the proposed transportation improvements, the actual increase in traffic under either alternative is considered a significant unavoidable adverse impact.

3.4. Green House Gas Emissions Impacts

This section summarizes potential impacts associated with climate change and discusses future uncertainty and risk associated with climate change. Chapter 2 discusses the policy direction established by the City of Lynnwood, with respect to evaluating the impacts of activities affecting climate change. The methodology used in this SEIS for evaluating GHG emissions is a simplified version of that described in the Greenhouse Gas Emissions Inventory and Reference Forecast. Estimated GHG emissions from the study area and from the region are compared. For the purposes of this analysis, the GHG emission estimates are expressed in terms of their increase between 2010 and 2025.

Table 3-5 below provides a comparison of Vehicle Miles Traveled (VMT) for the No Action Alternative and the Preferred Alternative. As explained in Chapter 2, the use of VMT is considered one method for determining the amount of GHG emitted by the City of Lynnwood. By comparing the amount of VMT estimated for different alternatives, an initial determination can be made of impacts associated with alternatives. As shown in Table 3-5, the Proposed Alternative would reduce VMT and, as a result, contribute to a greater reduction in regional GHG emissions compared to the No Action Alternative. Specifically, the overall difference in VMT between the No Action and the Preferred Action within the Snohomish Region would be a difference of 5,362 Peak Hour VMT.

Table 3-5. Peak Hour VMT Calculation for Lynnwood Model

Area Name	PM Peak Hour Vehicle-Miles of Travel (VMT)		Peak Hour VMT Difference	VMT Percent Difference
	No Action Alternative 2025	Preferred Alternative 2025		
CITY CENTER AREAS	12,615	12,537	-77	-0.61%
SR 99 CORRIDOR	**21,165**	**21,117**	**-47**	
LYNNWOOD EXCEPT CBD AND SR 99	96,488	95,962	-527	-0.55%
LYNNWOOD TOTAL	**130,268**	**129,616**	**-651**	**-0.50%**
SNOHOMISH COUNTY EXCEPT LYNNWOOD	**810,641**	**805,931**	**-4,710**	**-0.58%**
SNOHOMISH REGION	**940,909**	**935,547**	**-5,362**	**-0.57%**

Source: David Evans and Associates (see also Appendix A, Table 1)

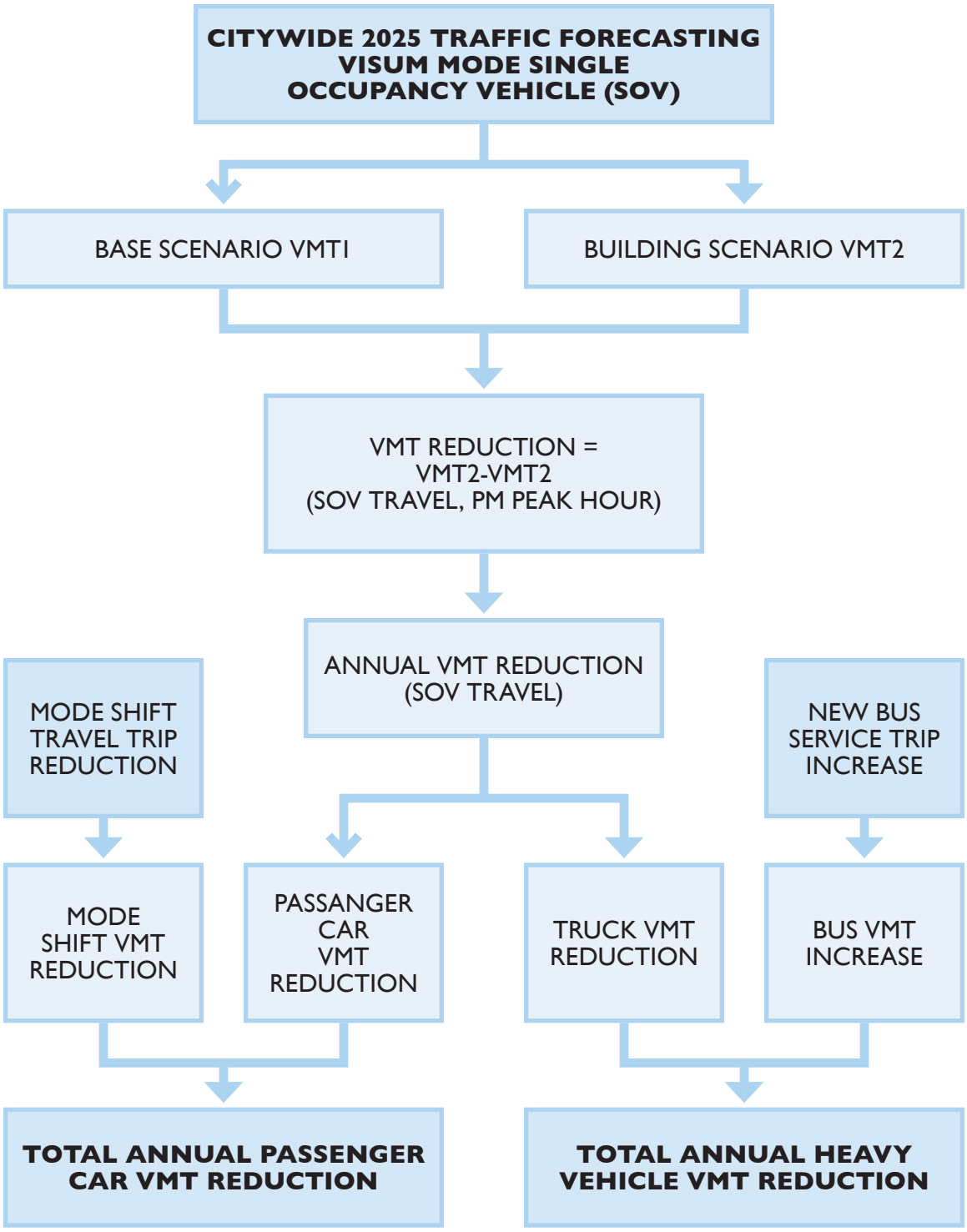

Figure 3-8. VMT Calculation Flow Chart

Source: David Evans and Associates

Starting with Peak Hour VMT for the two alternatives, the change in Peak Hour VMT is determined. (Appendix C, Table 1) Using standard factors, Peak Hour VMT is converted to annualized VMT. (See Appendix C, Table 2). Annualized VMT is then divided into two vehicle categories: passenger car (gasoline) and truck/bus (diesel). (Appendix C, Table 3) As the Lynnwood Transportation Model only addresses single occupancy vehicle (SOV) and does not model mode split or increased use of transit buses, the consultant has added compensating multi-mode factors[1] as shown in Appendix C, Table 4. Published emissions factors are then used to convert vehicle-miles to metric tons of CO2 to GHG (actually CO2) emissions for each of the two vehicle classes. (Appendix C, Table 6-8). The methodology used in the *Emissions Inventory* is similar but uses a larger number of vehicle types as well as changing fleet composition over the forecast period VMT.

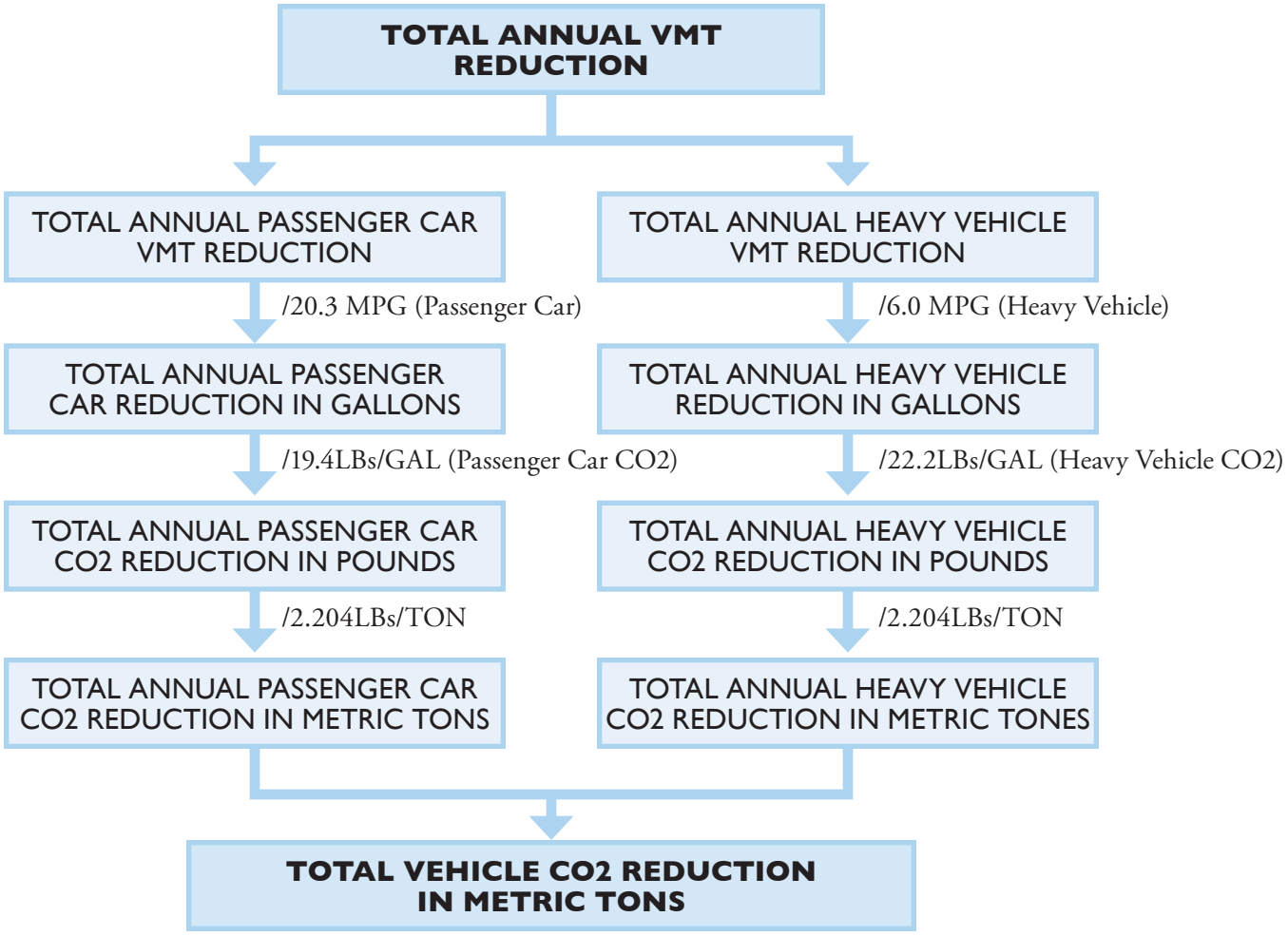

Figure 3-9. CO2 Reduction Calculation Flowchart

Source: David Evans and Associates

1 Personal communication, Min Luo, David Evans and Associates, June 2, 2010.

Based on the 2025 year planning horizon (see Appendix C, Table 9) and a peak hour VMT reduction of 5,362 trips, the GHG model described above results in the following CO2 emissions:

Planning Horizon: 2025

Metric Tons of CO2: -9,133

Metric Tons of CO2 for Heavy Trucks -553

Total Metric Tons of CO2 Emissions: -9686

This reduction in CO2 emissions is spread over the Snohomish Region of the Lynnwood Traffic Model, and is directly attributable to the changes of land use described in the Preferred Alternative.[2]

3.4.1. Mitigation Measures

No mitigation measures are recommended because the Preferred Alternative results in a decrease in the GHG emissions within the Highway 99 corridor and will contribute to an overall reduction in GHG for the Lynnwood Region.

3.4.2. Significant Unavoidable Adverse Impacts

Both the No Action Alternative and the Preferred Alternative result in an increase in Vehicle Miles Traveled between 2010 and 2025. Moreover, both alternatives will result in increased CO2 emissions over the same time period. As the Preferred Alternative would result in a smaller increase than would the No Action Alternative, the Preferred Alternative will not have significant unavoidable adverse impacts on the amount of GHG emissions.

3.5. Utilities

3.5.1. Water

Analysis of the impact on water demand from the No Action Alternative and the Preferred Alternative was performed by Gray and Osborne. Two modeling scenarios were considered for this study; peak hour flow and fire flow.

Peak hour modeling examines the water system's ability to deliver the highest expected flow over a 1-hour period. According to Washington Administrative Code (WAC) 246-290, a water system must maintain a minimum pressure of 30 psi in the distribution system under peak hour demand conditions.

Fire flow modeling examines the water system's ability to deliver adequate fire flow under peak day demands. Per WAC 246-290, a water system must deliver adequate fire flow while maintaining a minimum system pressure of 20 psi. Additionally, per the City's 2005 Water System Plan, a maximum pipe velocity of 10 fps is considered for design purposes.

2 Due to the differences in methodology, it is impossible to make a direct comparison between the baseline emissions determined by this SEIS and the baseline emissions contained in the City's Baseline Emissions Inventory and Reference Forecast. The forecast 2025 baseline City of Lynnwood VMT developed in the SEIS (approximately 130K) is roughly 20% higher than that found in the Baseline Emissions Inventory (113K). As the alternatives are compared using the same SEIS methodology, it is likely that use of the City's existing methodology would produce results of similar sign and magnitude.

Peak Hour Modeling

Peak hour modeling was performed using MWH Soft's H20Net modeling software. The new results were compared with the results presented in the City's 2005 Water System Plan. The 2005 Plan identified a number of low pressure nodes throughout the distribution system for 2023 peak hour demand. The lowest pressure nodes are compared before redevelopment and after as shown in Table 3-6. The results indicated that the lowest pressure nodes in the distribution system were at or above 30 psi. The effect of the increased demands due to proposed redevelopment did not result in any nodes falling below the 30 psi minimum.

Table 3-6. Peak Hour Modeling Results

Model Node ID	Peak Hour Pressure (psi)	
	No Action Alternative	Preferred Alternative
4786	30	30
4756	31	30

Source: Gray and Osborne

Fire Flow Results

Fire flow modeling was performed at the nodes identified in the Preferred Alternative. The result of this modeling is presented in Table 3-7. The Table shows the available fire flow at a given node, limited by either the 20 psi minimum pressure at a system node condition or the 10 fps in a distribution pipe condition.

Table 3-7. Available Fire Flow

Node	2023 No Action Alternative		Preferred Action Alternative	
	Available Fire Flow (gpm)-Pressure Limited[1]	Available Fire Flow (gpm)-Velocity Limited[2]	Available Fire Flow (gpm)-Pressure Limited[1]	Available Fire Flow (gpm)-Velocity Limited[2]
204TH/208TH				
West	5,670	4,800	5,180	4,750
East	5,800	5,700	5,260	5,720
196TH				
Northeast	5,790	6,500	5,280	6,530
Southeast	5,740	11,620	5,250	11,200
Southwest	5,540	4,360	5,260	4,360
Northwest	5,600	4,460	5,080	4,280
188TH				
Northwest	5,800	11,520	5,270	11,570
176TH				
Northwest	6,140	6,960	5,420	6,950
Northeast	4,670	3,510	4,500	3,510
FUTURE PLANNING AREA				
186th-180th	5,910	11,510	5,400	11,450

Source: Gray and Osborne

(1) Limited by pressure lower than 20 psi in a distribution system node.

(2) Limited by a maximum velocity of 10 fps in a system pipe.

The modeling conducted demonstrates that the Preferred Alternative will not adversely impact the City of Lynnwood's existing water distribution system, provided actual water usage is below the estimated amount. The City has sufficient capacity for future peak hour demands and fire flow for the Preferred Alternative. The one caveat is that fire flow requirements within the node areas will depend on a building's construction type and will be determined by the City using Insurance Service Office guidelines as identified in the City' Standards at the time of development. Finally, the Preferred Alternative would not cause any deficiencies in the hydraulics of the City of Lynnwood's water distribution system.

The No Action Alternative would also not impact the City's water system. In fact, the fire flow requirements associated with the No Action Alternative are actually slightly higher than for the Preferred Alternative, and the peak water flow would be the same.

3.5.1.1. Mitigation Measures

No mitigating measures are required.

3.5.2. Sanitary Sewer

Analysis of the impact on the City of Lynnwood wastewater system from the No Action Alternative and the Preferred Alternative was performed by Gray and Osborne. Modeling was performed using DHI's MOUSE hydraulic model software. MOUSE is GIS compatible and can be integrated into the City's GIS system and other hydraulic models. The City's hydraulic model is an existing model created for the 2006 City of Lynnwood Wastewater Comprehensive Plan (2006 Plan), which uses 2023 as the planning year. This Plan was prepared by Gray & Osborne, Inc. For the purposes of this analysis, the planning horizon is 2023.

Table 3-8 demonstrates the additional wastewater flow in gallons per day (gpd) that would result from the Preferred Alternative. The flow is measured for the equivalent residential units (ERU). The proposed multifamily units for each node were converted to ERUs by multiplying the number of multifamily units by a factor of 0.75 to account for the decrease in population per unit typical in multifamily residential dwellings. The additional flow is calculated from the ERU.

Table 3-8. Additional Flow for Equivalent Residential Units

NODE	Comp Plan 2023 ERU	Total Comp Plan 2023 Flow No Action (gpd)(1)	Proposed Multi-Family Residential Units	Proposed Equivalent Residential Units(2)	Proposed Additional Flow (gpd)	Total Flow Preferred Action (gpd)
204TH/208TH						
West	482	124,416	281	211	33,338	157,754
East	155	38,862	96	72	11,365	50,227
196TH						
Northeast	917	162,467	233	175	27,650	190,117
Southeast	916	161,210	297	233	35,234	196,444
Southwest	87	35,942	1,465	1,099	173,642	209,584
Northwest	258	71,783	107	81	12,798	84,581
188TH						
Northwest	274	81,706	99	75	11,850	93,556
176TH						
Northwest	291	67,427	150	113	17,854	85,281
Northeast	114	27,758	403	303	47,874	75,632
FUTURE PLANNING AREA						
186th-180th	84	20,546	200	150	23,700	44,246
TOTAL	3,578	792,118	3,331	2,502	395,305	1,187,423

1) Includes Commercial Flow, Inflow, and Infiltration
2) Each Multifamily Unit is 75% of an ERU

Source: Gray and Osborne

The model identified a number of pipes within the system with insufficient capacity to adequately convey the estimated 2023 flows for either the No Action or the Preferred Action Alternatives. These pipes are located within Reaches 1, 2, 3, and 4 and are proposed to be replaced with "New Pipes." All pipe sections identified as deficient in this analysis were also previously identified as deficient in the 2006 Plan. The additional flow to the system resulted in an increase in pipe diameter, in some sections of pipe upstream of LS-16 over those recommended in the 2006 Plan.

Downstream of the LS-16 discharge, the required increase in pipe diameter is more substantial. This is a result of the redirection of flow to this system through LS-16 and is not a direct result of the proposed development. The improvements required to provide sufficient conveyance for the forecast 2023 flows, including the redevelopment, are shown in Table 3-9.

The model also shows that LS-12 has insufficient capacity to pump the forecast 2023 flows for either the No Action Alternative or the Preferred Alternative. The lift station has a current capacity of 3,450 gallons per minute. To adequately convey the future flow, the lift station's capacity will need to be increased to approximately 4,000 gallons per minute.

Table 3-9 demonstrates that within Reaches 1 and 2, both the No Action and the Preferred Alternatives will require changes to the existing sewer pipe systems to provide sufficient capacity. The Preferred Alternative will have a greater impact in Reach 1 than in Reach 2.

The impacts of the No Action Alternative and the Preferred Alternative are essentially the same for Reaches 3 and 4. However, in both cases, they will require upgrades to the existing system.

Table 3-9. Peak Hour Modeling Results

ID	Up Invert Elevation (ft)	Down Invert Elevation (ft)	Length (ft)	Existing Pipe Size (in)	2023 No Action Pipe Size (in)	Preferred Action Pipe Size (in)
REACH #1 (60TH AVENUE WEST FROM 204TH STREET WEST TO HALLS LAKE WAY)						
2-60.1 to 2-59	357	355.5	369	8	10	15
2-59 to 2-58	355.5	354	380	8	10	15
2-58 to 2-55	354	346	250	8	10	15
2-55 to 2-51	346	340	330	8	10	15
2-51 to 2-49	340	339	179	8	10	15
2-49 to 2-48	339	337.03	242	8	10	15
2-48 to 2-47	337.03	335	250	8	10	15
2-47 to 2-4	335	321.9	297	8	10	15
REACH #2 (186TH STREET SW AND HWY 99 TO LS #16)						
4-185 to 3-122	356.3	355.47	55	10	12	12
3-122 to 3-121	354.58	353.33	178	10	15	16
3-121 to 3-120	353.33	352.35	128	10	15	16
3-120 to 3-120.1	352.34	351.65	98	10	15	16
3-120.1 to 3-117	351.65	349.14	359	10	15	16
3-117 to 3-111	349.14	358.81	290	10	15	16
3-111 to 3-106.1	347.75	347.09	158	12	15	16
3-106.1 to 3-106	347.09	346.81	69	12	15	16
3-106 to 3-100	346.81	345.67	179	12	15	16
3-100 to 3-98	345.67	345.07	275	12	15	16
3-98 to 3-95	345.07	344.82	115	12	15	18
3-95 to 9-94	344.82	338.09	279	12	18	18
3-94 to 3-93	338.09	338.01	37	12	18	18
3-93 to 3-92	338.01	336.34	330	12	18	18
3-92 to 3-89	336.34	335.95	180	12	18	18
3-89 to 3-88	335.95	335.85	53	12	18	18
3-88 to 3-87	335.85	335.12	322	12	18	18
3-87 to 3-77	335.12	334.78	200	12	18	18
3-77 to LS-16	334.78	333.78	100	12	18	18
REACH #3 (WEST SIDE OF HWY 99 FROM 182ND STREET SW TO 186TH STREET SW)						
17-7 to 17-6	387.77	385.89	227	10	12	12
17-6 to 17-5	385.89	383.55	262	10	12	12
17-5 to 17-4	383.55	380.65	350	10	12	12
17-4 to 17-3	380.65	378.63	240	10	12	12
17-3 to 17-2	378.63	372.93	400	10	12	12
17-2 to 17-1	372.93	363.73	400	10	12	12
17-1 to 4-185	358.5	355.47	400	10	12	12
REACH #4 (EAST SIDE OF HWY 99 FROM 180TH STREET SW TO 186TH STREET SW)						
4-197 to 4-196	370.5	358.1	385	10	12	12
4-196 to 4-186	358.1	356.3	401	10	12	12
4-186 to 4-185	356.3	355.47	55	10	12	12

Source: Gray and Osborne

Based upon the 2006 Wastewater Plan, 2023 flows are expected to be 6.9 million gallons per day (mgd). With the proposed project development, the flow would be increased to approximately 7.3 mgd. The facility is currently permitted at 7.4 mgd. In the 2006 Plan, it was anticipated that a revised facility plan would be warranted near the year 2020, due to max month flow to the plant exceeding 85 percent of the permitted plant capacity for three consecutive months. The additional flow generated by the proposed development would likely trigger a revision to the facility plan a year or two earlier than anticipated in the 2006 plan.

3.5.2.1. Mitigation Measures

The City's conveyance system is unable to adequately convey future wastewater flows for either the No Action or the Preferred Alternatives. Proposed mitigation to address the impact of the proposed redevelopment would be to require slightly larger pipe diameters in a section of the system upstream of LS-16 than those identified in the 2006 Plan.

In addition, the City of Lynnwood wastewater treatment plant would exceed the permitted capacity, requiring a revised facility plan and potential upgrades to the facility.

3.5.3. Stormwater

Chapter 2 describes the 2009 City of Lynnwood Surface Water Management Comprehensive Plan. This Plan identifies stormwater management techniques and capital improvements needed to maintain the existing city system. In addition, the plan recommends the City focus on developing tools to support both public and private projects that could seek to incorporate innovative stormwater management techniques, in areas such as the Highway 99 subarea, to the maximum extent practicable. On May 10, 2010, the City Council approved Ordinance 2833, which adopts the 2005 Stormwater Manual from the State Department of Ecology as guidance for stormwater management in Lynnwood. This ordinance also emphasizes Low Impact Development techniques for managing stormwater runoff.

The Preferred Alternative recognizes the importance of using alternative methods of stormwater management. The Plan recommends amending the Comprehensive Plan to include Urban Design Policy 6.1.8, which states:

> *Within mixed-use zones, integrate stormwater management systems into the site design and, where feasible, incorporate low-impact development techniques.*

Additional guidance is provided in the proposed Design Guidelines for the Highway 99 Mixed Use Zones. Guideline B.7 specifically addresses Stormwater Facility Planning.

When used, integrate biofiltration swales, rain gardens, stormwater planters, and other stormwater management measures into the overall site design. Methods of filtration are listed below in order of preference:

> (1) Incorporate the biofiltration system, including low-impact development (LID) features, as part of the landscape features of the development. If the biofiltration system is incorporated into the landscaping of the site's open space, the stormwater facility may be counted as part of the required open space (upon approval of the Director).

(2) Locate biofiltration swales, ponds, or other approved biofiltration systems as part of a landscape screen. Trees may be planted near the grass swale as long as they do not substantially shade the grass within the swale. The swale or pond should be designed so it does not impede pedestrian circulation or shared parking between two or more properties.

(3) Where topography is favorable, locate the biofiltration swale, wet pond, or other approved biofiltration system within the paved parking or service area. The swale or pond should be landscaped as part of the required internal parking lot landscaping and oriented so it does not impede pedestrian circulation.

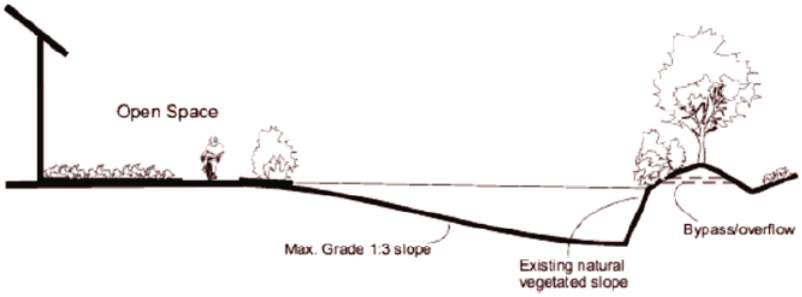

Figure 3-10. Biofiltration swale designed as an amenity

The No Action Alternative would also implement the new stormwater ordinance, with the emphasis on Low Impact Development techniques. The specific guidance for integrating those techniques into site design in the Design Guidelines for the nodes, described above, would not be implemented.

3.5.3.1. Mitigation Measures

No mitigation measures are recommended.

3.5.4. Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to the City of Lynnwood's public utilities are associated with either the No Action or the Preferred Action Alternatives.

3.6. Parks & Open Space Impacts

This section summarizes potential impacts on parks and opens space level of service associated with increased residential development along the Highway 99 corridor. Information regarding impacts to parks and open space level of service is taken from the Parks, Recreation, and Open Space Element of the 2009 City Comprehensive Plan.

3.6.1. Level of Service

Lynnwood's adopted level of service standard is expressed as 10 acres of park, recreation, and open space needed for each 1,000 persons. The standard is further delineated as 5 acres per 1,000 for

"Core Parks" (mini, neighborhood, and community parks), and 5 acres per 1,000 for open space and special use facilities. The demand and need for parks, recreation, and open space in Lynnwood has been assessed through analyses of existing conditions, recreation trends, surveys, public meetings, and available resources.

The "Parks, Recreation and Open Space Property in the City of Lynnwood" table demonstrates that by 2025, demand and need for parks and open space will increase and LOS will decrease whether the No Action Alternative or the Preferred Alternative is chosen.

Adoption of the proposed Subarea Plan and new zoning regulations would allow residential development in the mixed use nodes. The population of these new residential developments would need to be taken into account in the calculation of the City's level of service standard for parks and open space land within the corridor.

As the Plan includes only one public parks in the corridor (Gold Park), the new population in the nodes would increase the demand for park and open space land in the City. It has been estimated that the Highway 99 corridor project will add approximately 120 acres of development, which will include over 5,000 residential units with approximately 11,000 new Lynnwood residents. Using current adopted LOS standards, approximately 55 acres of Core Park land, 33 acres of open space, and an additional 2.75 miles of trails will be needed in or near the corridor to meet the current LOS standard for active and passive recreational opportunities in parks, open space, and trails.

3.6.1.1. Mitigation Measures

As part of its capital facilities planning and budgeting, the City would need to provide for purchase and development of additional public parks and open space land to meet its current level of service standard. Alternatively, the City could consider either adopting a reduced LOS standard for the Highway 99 corridor (similar to the Lynnwood City Center) or revising the LOS standard citywide.

The need for parks, open space, and trails generated by an increased population within the corridor could also be addressed by City adoption of a park impact mitigation ordinance. This would require new development to provide mitigation either by dedication of park land, open space, park improvements, or payment of "in-lieu-of" fees, as stated in the Policy P-1.6 of the Parks, Recreation, and Open Space Element of the Comprehensive Plan.

APPENDIX A
DISTRIBUTION LIST

U.S. Army Corps of Engineers Seattle District Regulatory Branch P.O. Box 3755 Seattle, WA. 98124-3755	**Environmental Protection Agency** Region 10 EIS Review 1200 Sixth Ave. #900 Seattle, WA. 98101	**National Park Service** LWFC &UPRR Proj. Manager 909 First Ave. SE. Seattle, WA. 98104-1060
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Snohomish County PUD Planning/Project Referral 21018 Hwy 99 Edmonds, WA. 98026	**Snohomish County Health Dist.** Environmental Health 3020 Rucker Ave. #102 Everett, WA. 98201-3971	**Snohomish County Fire Dist.** Fire Chief 12310 Meridian Ave. Everett, WA. 98208-5764
Community Transit 7100 Hardeson Rd. Everett, WA. 98203-5834	**Master Builders Ass** King/Snohomish Counties 335 116th St. SE. Bellevue, WA. 98014	**Tulalip Tribes** Attn: Natural Resources 6700 Totem Beach Rd. Tulalip, WA. 98271
Muckleshoot Tribe Attn: Karen Walter 39015 172nd Ave. SE Auburn, WA. 98092	**Everett Herald** PO Box 930 Everett, WA 98206	**Snohomish County** Planning & Devel Serv 3000 Rockefeller M/S 604 Everett, WA 98201
Snohomish County Sheriff Dept. 3000 Rockefeller M/S 606 Everett, WA 98201	**Snohomish Co. Airport** 3220 100th St. SW Everett, WA 98204	**Edmonds School District** 20420 68th Ave. W. Lynnwood, WA. 98036
Alderwood Water & Sewer Attn: Greg Williamson 3636 156th St. SW. Lynnwood, WA. 98987-5021	**Edmonds Community College** Attn: John Michelson 20000 68th Ave. W. Lynnwood, WA. 98036	**Enterprise Newspaper** 4303 198th St. SW. Lynnwood, WA. 98036
South Snohomish County Chamber of Commerce 3815 196th St, SW. #136 Lynnwood, WA. 98036	**City of Edmonds** Project Planning Referral 121 Fifth Ave. N. Edmonds, WA. 98020	**City of Bothell** City Hall 18305 101st Ave. NE. Bothell, WA. 98011
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Dept. of Fish & Wildlife Attn: Katie Knight 600 Capitol Way North Olympia, WA. 98501	**City of Everett** Planning Dept 2930 Wetmore Ave., Ste 8A Everett, WA. 98201	**Dept. of Agriculture** Attn: Linda Crerar PO Box 42560 Olympia, WA. 98504
Parks and Recreation Com. Attn: Bill Koss PO Box 42650 Olympia, WA. 98504	**EFSEC** Attn: Allan Fiksdal PO Box 43172 Olympia, WA. 98504	**Dept. of Transportation** Attn: K. Klockenteger PO Box 47325 Olympia, WA. 98504

APPENDIX B

SR-99 CORRIDOR LAND USE REVISIONS - TRAFFIC IMPACT ASSESSMENT

prepared by David Evans and Associates, July 2010

SR-99 CORRIDOR LAND USE REVISIONS
TRAFFIC IMPACT ASSESSMENT

TECHNICAL MEMORANDUM

MAUD0000-0002

Prepared for:

CITY OF LYNNWOOD

Prepared by:

DAVID EVANS AND ASSOCIATES, INC.
415 – 118th Avenue SE
Bellevue, WA 98005

JULY 2010

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C□D	central □usiness district
□□□ A	□ederal □igh□ay Administration
□□□	greenhouse gas emissions
□CM	□igh□ay Capacity Manual
I-□	Interstate □
SR-99	State Route 99
TA□	Traffic Analysis □one
TCRP	Transit Cooperative Research Program
T□D	Transit □riented Development
□MT	vehicle miles traveled
□ SD□T	□ ashington State Department of Transportation

1.0 Introduction

This technical memorandum documents the analysis of potential traffic impacts of a proposed Comprehensive Plan revision in the City of Lynnwood. The proposal would allow the development of approximately 5,028 dwelling units in high-density mixed-use buildings along State Route 99 (SR-99) between 212th Street SW and 1[illegible]4th Street SW within the city limits, and including potential annexation area south to 148th Street SW as well. The analysis used the traffic forecasting model for the 2025 planning horizon and utilized it to compare the proposed uses to previously modeled 2025 conditions under the land use assumptions of the currently adopted Comprehensive Plan. Using the model to predict travel for 2025 with and without the proposed land use change, the net change in traffic volumes and related traffic impacts were identified and evaluated for mitigation need[illegible].

The most important assumption for this analysis is that the additional 5,028 dwelling units in the corridor do not represent new growth from the regional perspective, but rather a re-distribution of the regional control total of housing growth. An off-setting amount of growth was removed from other parts of Snohomish County, [illegible] net change in total development countywide [illegible] the county-wide growth control total for the year 2025 without change.

2.0 Summary of Results

The proposed additional development intensity would cause additional traffic generation in the study corridor, as well as transit demand and pedestrian and bicycle circulation. The total amount of vehicular traffic generation will be less than would be expected for the same amount of development in suburban areas, because of internalization due to the mixed-use character of the development and increased transit usage due to the proximity to the Swift Bus Rapid Transit on SR-99.

The relocation of previously assumed future development elsewhere leads to reductions in external through travel in the SR-99 corridor. These reductions tend to offset the local increases in traffic. The main finding of this analysis is that the future traffic conditions in the SR-99 corridor are essentially the same, with and without the proposed redistribution of land use. Net traffic volume [illegible] at each [illegible] intersection are quite small between the two scenarios for 2025. The [illegible] 9 signalized intersections analyzed on SR-99 are expected to operate at Level of Service (LOS) [illegible] in 2025 without the proposal, and at LOS [illegible] with the proposal. The overall average delay per vehicle at these signalized intersections increases by only 0.4 seconds.

It is also true that traffic conditions in the corridor in 2025 with and without the proposal are expected to deteriorate from the acceptable conditions now existing, because of planned regional growth. The 2025 forecasts predict [illegible] future conditions that do not meet LOS standards of the City of Lynnwood and of the Washington State Department of Transportation (WSDOT) [illegible] the existing Comprehensive Plan scenario without the proposal. The study finding is that moving the proposed development into this corridor *instead of elsewhere in Snohomish County* results in no measurable alteration of the corridor's traffic conditions. Whatever mitigation or improvements are needed to meet adopted LOS standards without the proposal will also apply with the proposal.

The proposal has beneficial traffic effects for the surrounding region due to the reduction in development activity planned elsewhere. The total countywide vehicle-miles of travel with the proposed redistribution are less than the same total without redistribution, by 5,400 miles per weekday peak hour, [illegible]-0[illegible] percent; greenhouse gas emissions [illegible] reduced.

Mitigation to improve the future operations [illegible] in the corridor to meet [illegible] the same with or without the proposed actions [illegible] several types of actions [illegible] general suggestions for improvements that would be beneficial to all signalized intersections and all developable land uses in the corridor. Site-specific additional improvements [illegible] in the subsequent technical analysis. Detailed analysis [illegible]

At a minimum, mitigation planning should include the following:

1. Add east-west through lanes across SR-99 at each signalized intersection, to allow more green time [illegible] for the north-south users of SR-99.
2. Seek to reduce left-turn conflicts and avoid additional through lanes by considering non-traditional intersection channelization concepts, such as have been identified in publications by the Federal Highway Administration (FHWA) ([illegible]) and the Institute of Transportation Engineers ([illegible]).
3. Develop arterial right-of-way requirements and site planning guidelines that ensure each east-west arterial crossing SR-99 could have one more lane each way than at present, and provide for [illegible] pedestrian, bicycle, and transit [illegible] that account for right-of-way would generally permit development of both traditional and alternative intersection concepts.
4. Require continuity in pedestrian circulation networks, bicycle facilities, and transit access within each development site, with internal connection to the public facilities of the same type, in order to achieve the future level of [illegible] in the corridor.
5. Condition future land development actions on compliance with access management, right-of-way, and [illegible] needs that would be [illegible]
6. Ensure that new development [illegible] special attention to site design [illegible] in relation to the Swift Bus station, and [illegible] new development [illegible] future [illegible] the [illegible] oriented development.
7. Consider adding additional Swift Bus station at 196th Street SW to [illegible] the existing station [illegible]
8. Increase the frequency and regional connectivity of Swift Bus service on SR-99 to [illegible] the future [illegible] volumes through the [illegible]
9. Convert most unsignalized intersections and driveways along SR-99 to right-in, right-out operation only, and use site-planning to re-direct left-turn traffic desiring to the adjacent signalized intersections.
10. Interconnect [illegible] signals to [illegible] turning movements on/off SR-99 and connecting arterials.

[illegible]

The [illegible] evaluated [illegible] the current Comprehensive Plan land use element. Therefore, the [illegible] model for 2025 [illegible] the current Plan [illegible] the land use action [illegible] results are compared to the previous version of 2025 without the proposed redistribution of land uses.

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5 S t Bu l n S-99 e e ente n SUM t n ht-un-nl l ne n th un n uth un t e h nte e t n he u e Bu ne A e n nt BA l ne e entl e t S-99 e e t te t u e t n t u e n ht-tu n n veh le nl utu e th uh t v lu e n e e e the e ne t the e t n th uh l ne 2 e h n S-99, e le ve l n

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Central □usiness District □C□D□	12,□1□	12,□□□	-□□	-0.□□
SR 99 Corridor	21,1□□	21,11□	-□□	-0.2□
Lynn□ood e□cept C□D and SR 99	9□,□□□	9□,9□2	-□2□	-0.□□
Lynn□ood Total	1□0,2□□	129,□1□	-□□1	-0.□□
Snohomish County e□cept Lynn□ood	□10,□□1	□0□,9□1	-□,□10	-0.□□
Snohomish County Total	9□0,909	9□□,□□□	-□,□□2	-0.□□

□□eenh□u□e □□□e□ □□□□n□□e □□□ l□l□□e□u□e□ □□the □□□□□e□ □e□□t□□ut□n, n □u□h □□□□□t□n t□the h□n□e n □M□□U□n□ □ve□□□e □□u□□t□n□□□□veh□le □eet □□, □□e□t□n□ □ee□, n□ the□n□ut□u□e□ t□ □□l□ul□te e□□□□□n, the e□t□□te□ □nnu□l □e□u□t□n n □□□e□u□e□ □□□□□n□n 2025 □10,000 □et□□□t□n□ □□□□□□n □□□□□□e□

th tu , t t l 5,028 ult- l ell n unt e e u e t e e t A n the S-99 n t n, e n n unt l nne ult- l ell n unt e e e ve A el e he e n Sn h th unt t nt n the e th t t l unt e h th v u l ne t ene t n th n th t u e h eve, n the nte t the 2025 l nn n h ll Sn h h unt, the e ll e e net h n e n ell n unt th he e nten t n th th n the S-99 e tl et e u e te th n ll the e Sn h h unt, t ul ll un n te e e ent t nn t the n th, e t, n n the t et ne t ene t n th n the ll n e e h eve, the te t ene t n t ult-u e te th n th ll e le th n ul u t l t n el e he e n the unt e u e e the e e t h he en t ute u n the S t Bu t n t, n nte n l t n the t th n the ue t e -u e evel ent l n, ll le t t e u t n et een 10 e ent n 0 e ent e t ult- l evel ent n e t t n l ett n

W th n the S-99 , v lu e n e e n the ue t h he l l t ene t n e u hl et e u e t th u h the the A e ult, the utu e S n the e t n n t n n the e e ent ll un h n e the ev u 2025 e t th ut e t ut n evel ent

t e n the S-99 e l ne l le, even l htl ene l t l M n nn n th u h ut Sn h h unt e u e e 0 e ent n 2025, e t e t e t n l n eenh u e e e n veh ul t vel e l l e u e, n e t te 10,000 et t n e e e

Alth u h the e l n u e h n e h ene ll ne l le t t e t the ev u 2025 l nn n en t, t e n t ue th t utu e n t t n n the S-99 ll n t eet the S t n the t WSD , e u e u ul t ve th n t 2025 ll e e e t n n t n ve t e he e e, n e t h eve e u te S n t n n the utu e, th th ut the e e t ut n l n u e, t ve ent e nee e n the S-99 M t the u entl n l e nte e t n n the tu e ll ll t S , e n eth l e the M h e e n u hl t S E u n the lte n te eth l e ne n nn e hen ve l n E the , el n ueue e e e ve t t nte e t n n the

he ve ll level n e t n n 2025 e l htl ve t te e u e e h v lu e n the S t Bu te e n t e t l unte the utu e veh ul v lu e ul e e u e e t nve t n ut t nt the e e te S t Bu e h th t e e ne, the e t 2025 el n ueue ul e e h t le th n th n l h ent e h eve, the ve ll nee t t t n ul t ll e t Alte n t vel, the h n e the v lu e n l e he e ul e u he t 20 0 nte

he unt t e u t n nee e t e ve ll the e ve S e en e n 2025 unl el t e h eve S t Bu e h l ne eve thele , t t n nee ul e le ene S t Bu e h A tu l u e h n t th te n the S-99 h ul e nnu ll n t e n the utu e t e ne the el n e ent th tu

t t n n the n v n t n t n e t n t nte e t n h ul e e n u the ev lu t n n v u l nte e t n h h ul n lu e n e t n e -l n ent he t S-99, n e t ent e te e the e te e e-evel n the utu e

nn v t ve te- e l n l le t e ve lut n nv lv n u l - v te ne h t l h ve ll ve ent n the

At n u, t t n l nn n h ul n e the ll n

1. A e t-e t th u h l ne S -99 t e h n l e nte e t n, t ll e t e e n l le the n th- uth u e S -99

2. See t e u e le t-tu n n l t n v t n l th u h l ne n e n ne n n- t t n l nte e t n h nnel t n n e t u h h ve een ent e n u l t n the WA htt et h t v nte e t n e u e n the n t tute n n t t n En nee htt te

Devel te l ht- - e u e ent te l nn n u e th t u e e h e t-e t te l n S -99 ul h ve ne e l ne e h th n t e ent n v e ell e e t n, le, n t n t n n e th t e n t n h t unt ht- - e n n ul ene ll e t evel ent th t t n l n lte n t ve nte e t n n e t

4. e u e nt nu t e e t n ul t n net , le ll e, n t n t e th n e h evel ent te, th t l nne t n t the u l ll e the e e, n e t h eve the u e level t e u t n the

5. n t n utu e l n evel ent t n n l n e th en n, ht- - , n e nt l nee th t e un ne e ve t e t n

En u e t n t e h evel ent e ul ttent n t te e n t n n el t n t the S t Bu t t n, n l t n n u l n ne evel ent th t utu e e ent tt te t the ll n e n l n the el- ele t n t t n t- nte evel ent

n e n t l S t Bu t t n t 19th Steet SW t e u e the l n e t e n t n e t the e t n t t n th e t n t vel

8. n e e the e uen n e n l nne t v t S t Bu e v e n S -99 t e the utu e ve n e e ut le v lu e th u h the t t n t

9. nve t t un n l e nte e t n n ve l n S -99 t ht- n, ht- ut e t n nl n u e te- l nn n t e- e t let-tu n e e n t the ent n l e nte e t n

10. nte nne t n e t n e h t t n tu n n ve ent n S -99 n nne t n te l

APPENDIX C
HIGHWAY 99 CORRIDOR REDEVELOPMENT WATER ANALYSIS

prepared by Gray and Osborne, April 2010

CITY OF LYNNWOOD

HIGHWAY 99 CORRIDOR REDEVELOPMENT
WATER ANALYSIS

INTRODUCTION AND OBJECTIVES

[illegible]

TABLE 1

Potential Multi-Family Units(1)

Node	TAZ	Redevelopment Potential		Dwelling Units/acre			Multi-Family Units
		MU required	MU encouraged	100	75	50	75 du/a/ 25 du/a
[illegible]							
[illegible]	92		[illegible]	1,125	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		[illegible]	[illegible]	289	[illegible]	[illegible]
[illegible]							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	404	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]		1,954	[illegible]	[illegible]	[illegible]
[illegible]	51	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
188th							
[illegible]	[illegible]		[illegible]	[illegible]	299	199	[illegible]
[illegible]							
[illegible]	22	[illegible]		201	151	101	[illegible]
[illegible]	[illegible]	[illegible]		[illegible]	404	[illegible]	[illegible]
[illegible]							
[illegible]	[illegible]		[illegible]	800	[illegible]	400	[illegible]
		33.92	**31.63**	[illegible]	[illegible]	[illegible]	**3335.15**

(1) [illegible]

HYDRAULIC MODEL SETUP

City of Lynnwood Water System

□he □□t□ □e□e□ve□ □ll □□□t□□ □□te□ □u□□l□ □□□ the □□t□ □□Eve□ett □□lt□□t□□n □l□nt v□□the Al□e□□□□ W□te□□ W□te□ □te□D□□t□□t Su□□l□ □□el□ve□e□th□□u□h □ □ete□ □□ te□ ne□□ 1□4th St□eet SW □n□ S□□u□ e W□□ □□□t□□n□□l□n□ □ □h□□99 □□e □ene□□ll□ □e□ve□ □□□ne□□t□□ □ □te□□ □□n th□t □un □□□llel t□ the □□□□□ □□n the e□□t □n□ □e□t □□e□ □he□e □ □□n□ □n□e □n □□□□ete□□□□ 8 □n□he□ t□ 18 □n□he□□ □he □□t□ □□□ □te□ □□□t□□ut□□n □□te□ □□v□e□ □nt□ □ □u□e □ue□ □ne□ t□ □ □nt□n □e□u□te □e□u□e □□e□ □n the t□□□□□ h□□ the □e□v□e □e□ □he □□tent□□l □evel□□□ent □□te□ □□e l□□□te□ □□th□n the □□t□□5□□ □ne □h□h □e□ □te□□t □n□ □□n□l h□□ □ul□ □□□e □5□□ eet□ □h□□ □ne □□ □e□ve□ □□t□□ □e□ □□ □□□th □t□t□l □t□□□e □5□□ □ □ll□n □□ll□n□

Hydraulic Model

M□□el□n□ □ □ □□e□□□□ e□u□n□MW□ S□□t□□20□et □ □el□n□ □□□t□□e, □h□h □□e□□te□ □n □n Aut□□AD □□□ □ute□-□□e□ □e□□n env□□□n□ent□ □he h□□□ul□□ □□□el □e□□e□ent□the □□te□ □□te□ □□□h□ll □u□n□ □□ e□e□□□□□e□□n□ n□e□ B□□□n□ □□□ □t□n □u□h □□ elev□t□□n □□n□e□, □□□ete□ □□□e□ □ □□te□level □n □e□e□v□□□□ h□□een □□□□□□ □e□ □nt□ the □□□te□ □ □he □□nn□□□□ h□□□ul□□□ □□el u□e□ □□□□□n e□□t□n□ □□□el □e□te□□□□ the 2005 □□t□□□□□nn□□□□W□te□S□□te□ □ l□n □2005 □l□n□□ □h□ □l□n □□□□□e□ □e□ □□ □□□□□ □□□□□ne, □n□ De□ □n□□□□□ the 20-□e□ □h□□□□n □n the 2005 □l□n □e□e u□e□□

Assumptions

□n □□□e□ t□ ev□lu□te the □□ □□□t□□□ □e□evel□□□ent □n the □□te□ □□te□, the □ □te□u□□e □□ the □e□evel□□e□ □e□ □nee□□□ t□ □e e□t□□□ □te□□A□e□ □e□ □n□□ □e e□t□□□ □te□ □□e□□n □□te□u□e □n□ □□□v□e□ □□ the 2005 □l□n □n□ □e□evel□□□ent □n□□□ □t□□n □□□v□e□ □□ the □ □u□ent □□□t□ □□□□nn□□□□ □e□evel□□□ent □□tent□□l □n □□ □h□□99□□ □he □ □u□ent □□□v□e□ □nu□ □e□ □□ ne□ □ult□-□□□ □l□ □□ell□n□ □unt□ □□e □h n□e □ent □□e□ □ l□n□the □□□□□□□□ □□e□ ente□ □n □□□ le 1□A t□t□l □□□,□5 ne□ □ult□-□□□ □l□ □□ell□n□ □unt□□e e□□e□te□, □e□□e□ent□n□ □ □□□ul□t□□n □□□□□□□□□ □tel□□,000 □ □e□□ent□□l □ □te□u□□e □□ e□t□□ □te□ u□n□ v□lue□ □□v□e□ □□ the 2005 □l□n, □n□lu□n□ □ □ □ □u□□n □e□unt□□□□ □ult□-□□□ □l□ □evel□□□ent□□n the □□t□ □ □□ell □□□e□ □□□□t□ □ □te□u□□e □□□□ult□-□□□ □l□ □e□□ent□□ □e□ □□□□ □n□ □e□h□u□□□□t□□□ □e □□□v□e□ □□the 2005 □l□n□ □□□ □e□□□l □evel□□□ent □ □□ent□□l □□n□t□□□v□e□ □n the □□t□□□□□e□evel□□□ent □n□□□□ □t□□n, □□ □□n e□t□□ □te, □□□e□ □n □□t□□□□□ the 2005 □l□n □□□u□e□ □t □□□□u□e□th□t □e□evel□□□ent □□ll □e □□□e□-u□e □n□□n□lu□e □□□□e□□□l □evel□□□ent □n l□□e□l□□□□ □□□ □e□□□l □□te□ u□e □□e□t□ □te□u□n□ □v□lue □□□e□t□n□ □ □te□u□e □e□□□□e □□l□ul□te□ □□ □□v□□n□the t□t□l □□□ □e□□□l □□te□□n□u□ □t□n □□□ the 2005 □l□n □□the t□t□l □□e□ □□□□□ □e□□□l □□n□n□□ □h□□ □□te□u□e □e□□□□e □□□ult□l□e□ □□the □□e□ □□□□tent□□l □e□evel□□□ent □□ent□□e□ □□the □□t□t□e□t□□ □te □□□ □e□□□l □ □te□u□e□A□u□ □t□□n□u□e□ □n the □□l□ul□t□□n □□ □ □□el □e□ □n□□ □□e □e□ente□ □n □□□le 2□ □□l□ul□te□ □e□ □n□□u□e□ □n the

□□el □e □e□ente□n □□le □□De□ □n□□□e □□□1e□t□the h□□□ul□□ □□el □th□n the □ent□□e□ □e□evel□□□ent n□e□□

TABLE 2

Model Demand Assumptions(1)

Description	Value	Units
□□ul□t□n Den□t□[2□]	2□1	□e□□n□un□t
□e□□□□t□W□te□U□□□e[□□□]	5□	□□□□e□□n
□e□Un□t W□te□□□n□u□ □t□n	119□□	□□□un□t
□□□ □e□□□l A□□e□e[4□]	954	□□e□
□□□ □e□□□l W□te□U□□□e[4□]	850,000	□□□
□□□ □□WU□□□e	891	□□□□□e
□e□□D□□ □□□t□□	1□□	□DD□ADD
□e□□ □□u□□□t□□	1□□2	□□D□DD

□1□ S□u□e□2005 □t□ □□□□nn□□□□W□te□S□□te□ □1n□
□2□ □e□□n□□e□□ult-□□□ 1□ □□ell n□un□t□
□□□ W□te□u□□e □e□□e□□n □□□□ult-□□□ 1□ □u□t□□e□□
□4□ □e□e□ent□ent□e □t□ □□□□nn□□□□ □□te□□e□v□e □e□□

TABLE 3

Model Demands

Node	Peak Day Demand(1) (gpm)	Peak Hour Demand(1) (gpm)
204th□208th		
We□t	51□□	8□□8
E□t	1□□□	28□□
19□th		
□□the□t	□□□9	□1□4
S□uthe□t	4□□□	□□□1
S□uth□e□t	22□□□	□□8□9
□□th□e□t	1□□□	2□□9
188th		
□□th□e□t	18□4	29□8
1□□th		
□□th□e□t	2□□□	□□□□
□□the□t	□2□□	101□4
□utu□e □1□nn□n□A□e□		
18□th-180th	□□□□	59□5

□1□ □e□e□ent□the □u□ □□□e□□□ent□l □n□□□□e□□□l □e□□n□□□

MODEL SCENARIOS

□□□□ □el□n□ □en□□□□e□e □n□□e□e□ □□□th□□n□1□□□□e□h□u□□n□ □□e □1□□ □e□□ h□u□ □el□n□e□□□ ne□the □□te□□□te□ □□□1□t□ □el□ve□the h□□he□t e□e□te□ □1□□ □ve□□1-h□u□ □e□□□□A□□□□n□t□W□□h□n□t□n A□□ n□t□t□ve □□□e □WA□□24□-290, □ □te□□□te□ □u□t □ □nt□n □□ □n□□u□ □e□□u□e □□□0 □□□n the □□□t□□ut□□n □□te□ un□e□ □e□ □h□u□ □e□ □n□ □□n□t□□n□ □□e □1□□ □ □el□n□e□□□ ne□the □□te□□□te□ □□ □□1□t□□t□ □el□ve□□□e□u□te □□e □1□□ un□e□ □e□□ □□□e□ □n□□□ □e□WA□□24□-290, □□□te□ □□te□ □u□t □el□ve□□□e□u□te □□e □1□□ □h□le □ □nt□□n□n□ □□□ □n□□u□ □□te□ □e□□u□e □□ 20 □□□□A□□t□□n□ll□, □e□the □□t□□□2005 W□te□S□□te□ □1□n, □□□□□□u□ □□□e vel□□□t□ □□10 □t□□□□□n□□e□e□ □□□□e□□n □u□□□e□□

Peak Hour Results

□e□□h□u□□ □el□n□ □□□□e□□□□e□u□n□the □ □□el□ □he ne□ □e□ult□□e□e □□□□□e□ □□th the □e□ult□□e□ente□ □n the □□t□□□2005 W□te□S□□te□ □1□n□ □he 2005 □1□n □ent□□e□ □nu□ □e□□□1□□ □e□□u□e n□□e□th□u□h□ut the □□□t□□ut□□n □□□te□ □□□20-□e□□ □e□□h□u□□e□ □n□□ □he l□□e□t □□e□□u□e n□□e□□□e □□□ □□e□ □e□□e □e□evel□□□ent □n□ □□te□□n □□□le 4□ □he □e□ult□□n□□□□te□th□t the l□□e□t □□e□□u□e n□□e□□n the □□□t□□ut□□n □□□te□ □e□e □t □□□□□□ve □0 □□□□ □he e□□e□t □□the □n□e□e□□e□ □e□ □n□□□ue t□ □e□evel□□□ent □□□n□t □e□ult □n □n□n□□e□□ll□n□ □el□□ the □0 □□□□ □n□□u□ □

TABLE 4

Peak Hour Modeling Results

Model Node ID	Peak Hour Pressure (psi)	
	20-Year No Action Alternative	20-Year Preferred Action Alternative
4□8□	□0	□0
4□5□	□1	□0

Fire Flow Results

□□e □1□□ □ □□el□n□ □□□□□e□□□□e□ □t the n□□e□□ent□□e□ □□□□tent□□l □e□evel□□□ent □□te□□ □he □e□ult □□th□□ □□el□n□ □□□□e□ente□ □n □□□le 5 □□the □□□A□t□□n Alte□n□t□ve □□ □ell □□the □□e□e□□e□A□t□□n Alte□n□t□ve□ □he □□□le □h□□ the □v□□1□□le □□e □1□□ □t □ □□ven n□□e, l□□ □te□□ □□e□the□the 20 □□□□ □n□□u□ □□e□□u□e □t □□□□te□ n□□e □□n□t□□n □□ the 10 □t□□n □□□t□□□ut□□n □□□e □□n□□t□□n□Av□□1□□le □□e □1□□ □□□1□htl□ □e□□e□□e□ □n the □□e□e□□e□A□t□□n Alte□n□t□ve □ue t□the □n□□e□e□□ □t□t□□□ □e□ □n□□□n the □□□□te□□

TABLE 5

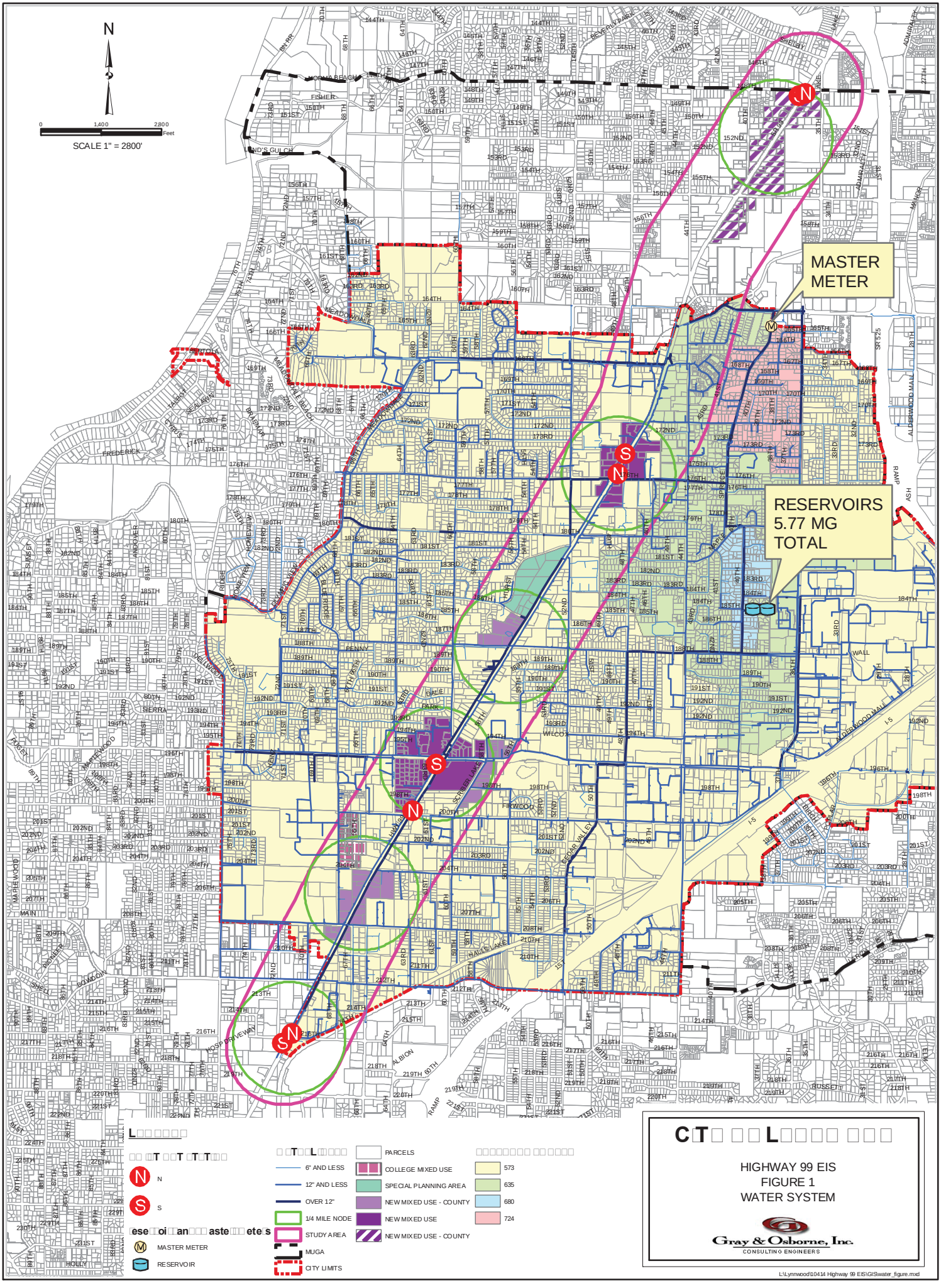
Available Fire Flow at Redevelopment Sites

Node	20-Year Preferred Action Alternative		20-Year No Action Alternative	
	Available Fire Flow (gpm)-Pressure Limited[1]	Available Fire Flow (gpm)-Velocity Limited[2]	Available Fire Flow (gpm)-Pressure Limited[1]	Available Fire Flow (gpm)-Velocity Limited[2]
204th-208th				
West	5,180	4,□50	5,□□0	4,800
East	5,2□0	5,□20	5,800	5,□00
19□th				
□□the□t	5,280	□,5□0	5,□90	□,500
S□uthe□t	5,250	11,200	5,□40	11,□20
S□uth□e□t	5,2□0	4,□□0	5,540	4,□□0
□□th□e□t	5,080	4,280	5,□00	4,4□0
188th				
□□th□e□t	5,2□0	11,5□0	5,800	11,520
1□□th				
□□th□e□t	5,420	□,950	□,140	□,9□0
□□the□t	4,500	□,510	4,□□0	□,510
□utu□e □l□nn□n□ A□e□				
18□th-180th	5,400	11,450	5,910	11,510

□1□ □□□te□□□e□u□e l□□e□th□n 20 □□□n □□□t□□ut□n □□te□ n□□e□
□2□ □□□te□□□□□□□□u□ vel□□t□ □□10 t□□n □□□te□ □□e□

CONCLUSION

B□e□□n the n□□□□□t□n □□v□e□, □n□the □□□u□□t□n□l□te□n th□□n□l□□□, the □e□evel□□□ent□□□□□□e□□ll n□t □□ve□el□□□ □□t the □t□□□□nn□□□□□□e□□t□n□ □□te□□□t□□ut□n □□te□, □□v□e□□tu□l □□te□u□□e □□□el□□ the e□t□□te□□□□unt□ □he □□□el n□□□te□the e□□t□n□□□te□ h□□u□□□□ent □□□□□t□t□□□v□e □□□the □utu□e □e□h□u□□e□n□□□□the □l□nne□□e□evel□□□ent n□e□□he e□□t□n□□□te□ □□□l□□ □□le t□□□v□e the □□e □l□□□l□te□□□□ve□□□e □l□□ □e□u□e□ent□□□□e□evel□□e□□e□□ □ll □e□en□□n the □□n□t□u□t□□n t□e □□the □u□l□n□□□n□□ll □e□ete□□□ne□□□□n□u□□n□e Se□v□e □□□□e □u□el□ne□□□□ent□□e□□n the □t□St□n□□□□□□ h□□□n□l□□□□□□□n□t □eve□l□n□□e□□□□en□□e□□n the h□□□□ul□□□□□ the □t□□□□nn□□□□□□□□□t□□□ut□□n □□te□ □□u□e□□□the □□□□□□e□□e□evel□□□ent□



HIGHWAY 99 EIS
FIGURE 1
WATER SYSTEM

Gray & Osborne, Inc.
CONSULTING ENGINEERS

L:\Lynnwood\10414 Highway 99 EIS\GIS\water_figure.mxd

APPENDIX D

HIGHWAY 99 CORRIDOR REDEVELOPMENT WASTE WATER ANALYSIS

prepared by Gray and Osborne, April 2010

CITY OF LYNNWOOD

HIGHWAY 99 CORRIDOR REDEVELOPMENT
SEWER ANALYSIS

INTRODUCTION AND OBJECTIVES

[illegible]

HYDRAULIC MODEL SETUP

[illegible]

ASSUMPTIONS

[illegible]

[illegible]

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A□u□□t□n□u□e□n the □1□ul□t□n □□□te□te□1□□ □□e □e□ente□n □□le 1□
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TABLE 1

Flow Generation Assumptions

Description	Value	Units
E□U □□□ul□t□□n Den□□t□	2□8	□e□□□n□un□t
M□ □□□ul□t□□n Den□□t□	2□1	□e□□□n□un□t
□1□□ □e□E□U	158	□□□E□U
□1□□ □e□M□E□U	118[1]	□□□
□□□ □e□□□1 □1□□	2,□00[2]	□□□□
□n1□□ □n□n□lt□□t□n	1,100	□□□□
□e□□ □□u□□□t□□	1□□	

□1□ □1□□M□E□U □□1□□E□U□□5
□2□ 200□W□te□□te□□□□ □ehen□ve □1□n, □n□lu□e□n1□□ □ □n□lt□□t□n□

TABLE 2

Redevelopment ERUs

Node	Multifamily Residential Units	Equivalent Residential Units[(1)]	Total Flow Comp. Plan 2023 [(2)] (gpd)	Total Flow w/Proposed Development (gpd)	Proposed Additional Flow (gpd)
204th□208th					
We□t	281	211	124,41□	15□,□54	□□,□□8
E□□t	9□	□2	□8,8□2	50,22□	11,□□5
19□th					
□□the□t	2□□	1□5	1□2,4□□	190,11□	2□,□50
S□uthe□t	29□	22□	1□1,210	19□,444	□5,2□4
S□uth□e□t	1,4□5	1,099	□5,942	209,584	1□□,□42
□□th□e□t	10□	81	□1,□8□	84,851	12,□98
188th					
□□th□e□t	99	□5	81,□0□	9□,55□	11,850
1□□th					
□□th□e□t	150	11□	□□,42□	85,281	1□,854
□□the□t	40□	□0□	2□,□58	□5,□□2	4□,8□4
□utu□e □1□nn□n□A□e□					
18□th-180th	200	150	20,54□	44,24□	2□,□00
Total	**3,331**	**2,502**	**792,118**	**1,187,423**	**395,305**

□1□ Mult□1□M□ □e□□ent□l Un□t□□□0□□5 t□□et E□U□□
□2□ E□h □ult□□□ 1□un□t □□5□ □□□n E□U□

MODEL SCENARIO

□he □ □□el □ □□□un □□□ul□t□n□the □e□□h□u□1□□ □n the □e□□202□□All □n□ut□t□the □ □□el e□□e□t □□□the □e□□ent□□l □ □□te□ □te□1□□ □□e□e hel□ □□n□t□nt □□th th□□e □n the 200□ □1□n□ □he □□nve□□n□e □□□te□ □ □□ele□ □□u□□te□ □□□ the 200□ □1□n t□ □n□lu□e □□□t St□t□□n 1□ □□S-1□□□ □S-1□ □el□eve□the □□nve□□n□e □□□te□ □□□□n□t□e□□ □□S□□□e□ □□□e t□ □□□t St□t□□n 10 □□□□□n□□e□□le □□ □unt □□□ □□te□ □te□1□□ □ □S-1□ □□□u□□entl□ □n the □1□nn□n□□□□n□t□u□t□□n □t□□e□

□he □ □□el □ □□□1□□u□e□t□ □e□□e □□□e□□ete□ □ne□t□h□ve □n□u□□□□ent h□□□□ul□□ □□□□□□t□ t□ □□e□u□tel□ □□nve□the □e□□h□u□1□□ □ □□□e□ □ □th □ □u□h□□□e □e□te□th□n 1 □□□t □□□ve the □□□□n □□the □□□e □e□e □□n□□e□e□t□h□ve □n□□e□u□te □□□□□□t□□ □h□ □u□h□□□e 1□ □t□t□n □ □□e□ □1□e□t□ □□□te□t □□□□n□t □□□ □□e t□ □□□v□te □□□□e□t□ □n□ □□□□n□t □ □nh□le □ve□1□□□□

MODEL RESULTS

□he □ □□el □□ent□□□e□ □nu□ □e□□□□□□□e□□ □th□n the □□□te□ □ □th □n□u□□□□ent □□□□□□t□t□ □□e□u□tel□ □□nve□the e□t□ □ □te□202□ □1□□□ □De□□□ent □□□e□□e □h□□n □n □□□u□e □□All □□□e □e□t□n□□ent□□□e□ □□□e□□□ent □n th□ □n□1□□□□e□e □1□□ □ev□ □u□1□ □ent□□□e□ □□ □e□□□ent □n the 200□ □1□n□ □he □□□□t□n□1 1□□ □□□e□t□the □□□te□ □□the □e□evel□□□□ent □e□ulte□ □n □n □n□□e□□e □n □□□e □□□□ete□□n □□□e □e□t□n□□□□□□e u□□te□□ □□□S-1□ □ve□ th□□e □e□□□ □en□e□ □n the 200□ □1□n□

D□□n□te□□ □□the □S-1□ □□□□h□□e, the □e□u□□e□ □n□□e□□e □n □□□e □□□□ete□□□□ □□e □u□□t□nt□□1□ □h□□ □□□e□ult □□the □e□□e□t□n □□□1□□ t□th□□ □□□te□ th□□u□h □S-1□ □n□□ n□t □□□□e□ t □e□ult □□the □□□□□□e□ □evel□□□□ent□ □he □e□u□□e□ □□ □□□ve□ent□t□ □□□v□e □u□□□□□ent □□nve□□n□e □□□the □□□e□□t 202□ □1□□□, □n□lu□□n□the □e□evel□□□□ent, □□e □h□□n □n □□□□le □□

TABLE 3

Peak Hour Modeling Results

ID	Up Invert Elevation (ft)	Down Invert Elevation (ft)	Length (ft)	Existing Pipe Size (in)	2006 Pipe Size (in) Pipe	Required Pipe Size (in)
Reach #1 (60th Avenue West from 204th Street West to Halls Lake Way)						
2-□0□1□t 2-59	□5□	□55□5	□ □9	8	10	15
2-59 t□ 2-58	□55□5	□54	□80	8	10	15
2-58 t□ 2-55	□54	□4□	250	8	10	15
2-55 t□ 2-51	□4□	□40	□ □0	8	10	15
2-51 t□ 2-49	□40	□ □9	1□9	8	10	15
2-49 t□ 2-48	□ □9	□ □ □ □ □0□	242	8	10	15

TABLE 3 – (continued)

Peak Hour Modeling Results

ID	Up Invert Elevation (ft)	Down Invert Elevation (ft)	Length (ft)	Existing Pipe Size (in)	2006 Pipe Size (in) Pipe	Required Pipe Size (in)
2-48 t□ 2-4□	□□□□0□	□□5	250	8	10	15
2-4□t□2-4	□□5	□21□9	29□	8	10	15
Reach #2 (186th Street SW and Hwy 99 to LS #16)						
4-185 t□ □-122	□5□□□	□55□4□	55	10	12	12
□-122 t□ □-121	□54□58	□5□□□□	1□8	10	15	1□
□-121 t□ □-120	□5□□□□	□52□□5	128	10	15	1□
□-120 t□ □-120□1	□52□□4	□51□□5	98	10	15	1□
□-120□1□t □-11□	□51□□5	□49□14	□59	10	15	1□
□-11□□t □-111	□49□14	□58□81	290	10	15	1□
□-111 t□ □-10□□1	□4□□□5	□4□□09	158	12	15	1□
□-10□□1□t□-10□	□4□□09	□4□□81	□9	12	15	1□
□-10□□t □-100	□4□□81	□45□□□	1□9	12	15	1□
□-100 t□ □-98	□45□□□	□45□0□	2□5	12	15	1□
□-98 t□ □-95	□45□0□	□44□82	115	12	15	18
□-95 t□ 9-94	□44□82	□□8□09	2□9	12	18	18
□-94 t□ □-9□	□□8□09	□□8□01	□□	12	18	18
□-9□□t □-92	□□8□01	□□□□□4	□□0	12	18	18
□-92 t□ □-89	□□□□□4	□□5□95	180	12	18	18
□-89 t□ □-88	□□5□95	□□5□85	5□	12	18	18
□-88 t□ □-8□	□□5□85	□□5□12	□22	12	18	18
□-8□□t □-□□	□□5□12	□□4□□8	200	12	18	18
□-□□□t □S-1□	□□4□□8	□□□□□8	100	12	18	18
Reach #3 (West Side of Hwy 99 from 182nd Street SW to 186th Street SW)						
1□-□t□1□-□	□8□□□□	□85□89	22□	10	12	12
1□-□t□1□-5	□85□89	□8□55	2□2	10	12	12
1□-5 t□1□-4	□8□55	□80□□5	□50	10	12	12
1□-4 t□1□-□	□80□□5	□□8□□□	240	10	12	12
1□-□t□1□-2	□□8□□□	□□2□9□	400	10	12	12
1□-2 t□1□-1	□□2□9□	□□□□□□	400	10	12	12
1□-1 t□ 4-185	□58□5	□55□4□	400	10	12	12
Reach #4 (East Side of Hwy 99 from 180th Street SW to 186th Street SW)						
4-19□ t□ 4-19□	□□0□5	□58□1	□85	10	12	12
4-19□ t□ 4-18□	□58□1	□5□□□	401	10	12	12
4-18□ t□ 4-185	□5□□□	□55□4□	55	10	12	12

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WASTEWATER TREATMENT PLANT IMPACTS

□e□ the 200□ □l□n, 202□ □l□□ □ □□e e□□e□te□ t□ □e □9 □ □□□ W□th th□ □evel□□□ent the □l□□ □ □ul□ □e □n□□e□□e□ t□ □□□□□□□□ □tel□ □□□ □□□ □he □□□l□□t □ □□u□□entl□ □e□□□tte□ □t □4 □ □□□ □n the 200□ □l□n, □t □□ □□nt□□□□te□ th□t □ □ev□□e□ □□□l□t□□ □l□n □ □ul□ □e □□□□□nte□ne□ □the □e□□ 2020 □ue t□ M□□ M□nth □l□□ □t the □l□nt e□□ee□□n□ 85 □e□□ent □□ the □e□□□tte□ □l□nt □□□□□□t□ □□ th□ee □□n□e□ut□ve □ □nth□□ □he □□□□t□□n□l □l□□ □ene□□te□ □□ the □□□□□□e□ □evel□□□ent □ □ul□ l□□el□ t□□□□e□ □ □ev□□□□n t□ the □□□□l□t□ □l□n □□e□□□□□t□ □e□ □l□e□ th□n □□nt□□□□□te□ □n the 200□ □l□n□

CONCLUSION

□he □□t□□□ □□nve□□n□e □□□te□ □ □un□□le t□ □□e□u□tel□ □□nve□ □utu□e □□□□te□□□te□ □l□□□ □□th □□□ □th□ut □□□□t□□n□l □e□evel□□□ent □l□n □the □□ □h□□□99 □□□□□□□□ □he □□ □□□t □□ the □□□□□□e□ □e□evel□□□ent □□t □□e□u□□e□ □l□□htl□ □l□□□e□□ □□e □□□□□ete□ □□□□□nve□□n□e □n □□e□t□□n □□ the □□□te□ □u□t□e□ □□□ □□S-1□ th□n th□□e □□ent□□□e□ □n the 200□ □l□n□ □he □□ □□□ve□ent□ h□ve □een □□v□□e□ □nt□ the □□u□e□ □he□□□□e□□□□□e□ □n □□□le □□ □el□□ □n□ □□□t e□t□□□ □te□ □□ the □□ □□□ve□ent□ □□e □□t□□he□□

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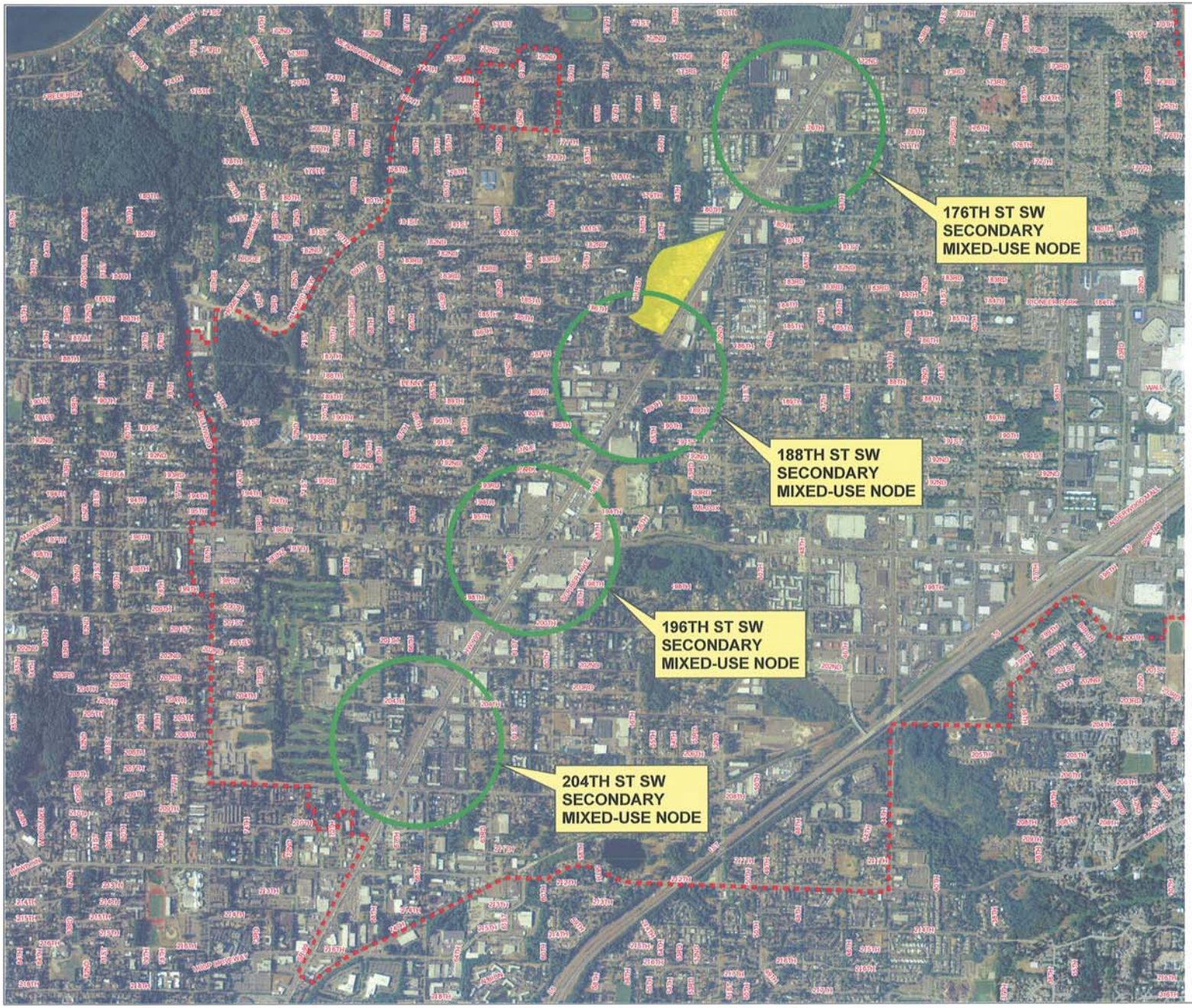


N

0 1,500 3,000 Feet

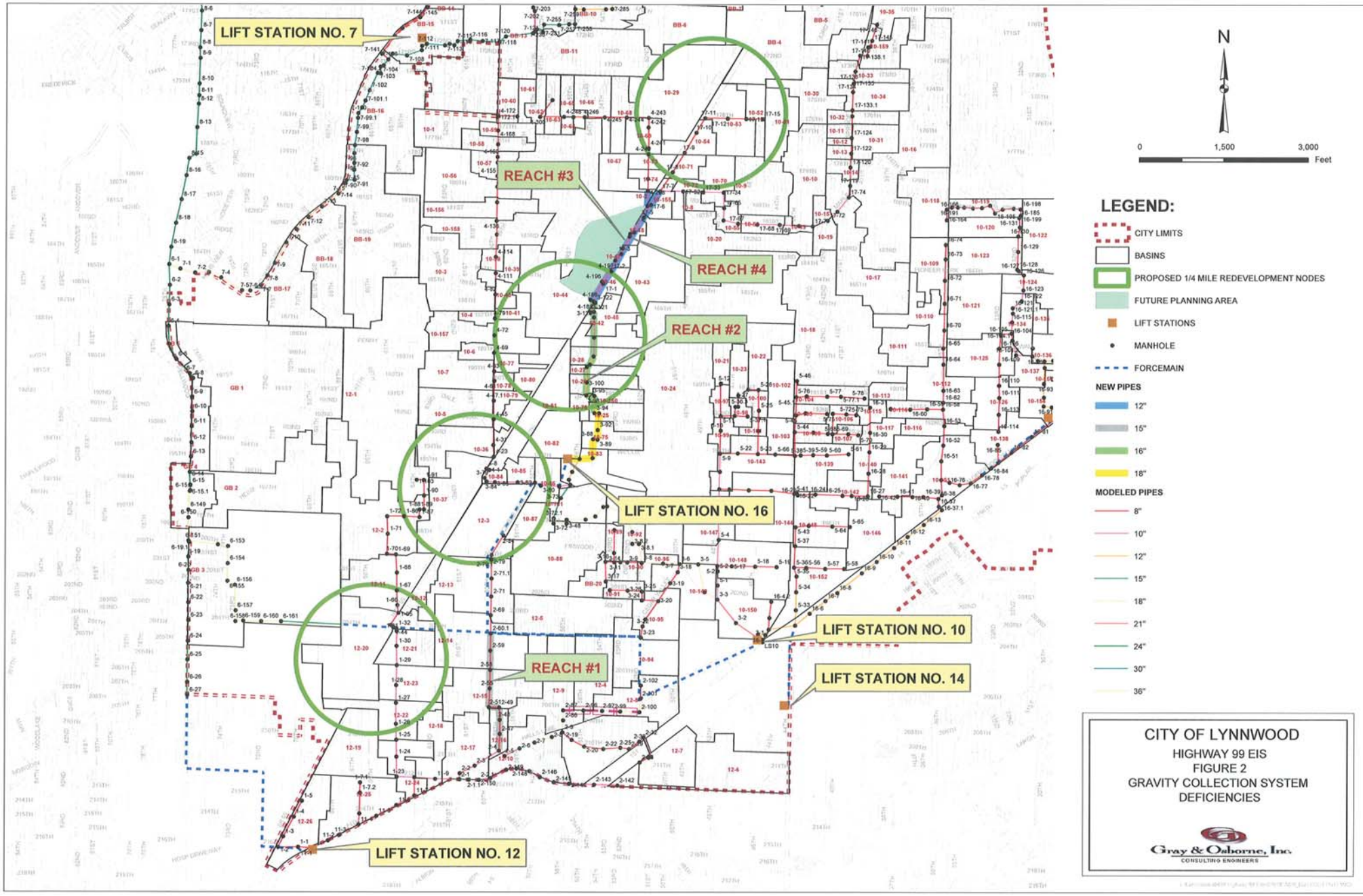
LEGEND:

- PROPOSED 1/4 MILE REDEVELOPMENT NODES
- FUTURE PLANNING AREA
- CITY LIMITS

CITY OF LYNNWOOD

HIGHWAY 99 EIS
FIGURE 1
PROPOSED DEVELOPMENT NODES

Gray & Osborne, Inc.
CONSULTING ENGINEERS


LIFT STATION NO. 7
REACH #3
REACH #4
REACH #2
LIFT STATION NO. 16
LIFT STATION NO. 10
LIFT STATION NO. 14
REACH #1
LIFT STATION NO. 12
N
0
1,500
3,000
Feet
LEGEND:
CITY LIMITS
BASINS
PROPOSED 1/4 MILE REDEVELOPMENT NODES
FUTURE PLANNING AREA
LIFT STATIONS
MANHOLE
FORCEMAIN
NEW PIPES
12"
15"
16"
18"
MODELED PIPES
8"
10"
12"
15"
18"
21"
24"
30"
36"
CITY OF LYNNWOOD
HIGHWAY 99 EIS
FIGURE 2
GRAVITY COLLECTION SYSTEM
DEFICIENCIES
Gray & Osborne, Inc.
CONSULTING ENGINEERS

APPENDIX E
CO2 CALCULATIONS

Table 1. VMT Calculation for Lynnwood Model with and without SR 99 Development

Area Name	Vehicle-Mile Traveled (VMT)		VMT Difference[1]	VMT Percent Difference
	Base Scenario	2025 with SR 99 Development		
City Center Areas	12,615	12,537	-77	-0.61%
SR 99 Corridor	21,165	21,117	-47	
Lynnwood except CBD and SR	96,488	95,962	-527	-0.55%
Lynnwood Total	**130,268**	**129,616**	-651	-0.50%
Snohomish County except Lynnwood	810,641	805,931	-4,710	-0.58%
Snohomish County except Ly	**810,641**	**805,931**	-4,710	-0.58%
Snohomish Region	940,909	935,547	-5,362	-0.57%

1. Base Scenario is the base scenario for comparison. 2. All VMT is from the citywide travel forecasting model.

Table 2. Total Annual Regular-Mode VMT Reduction

Total PM Peak Hour VMT Reduction	K-Factor	Effective Days per Year	Total Annual VMT
-5,362	0.0909	330	-19,464,924

Table 3. Total Annual Regular Mode Passenger Car and Heavy Truck VMT

Vehicle Category	Annual Regular Mode Travel VMT	Vehicle percentage	Annual Regular Mode Travel VMT
Passenger Car	-19,464,924	98%	-19,075,626
Heavy Vehicles		2%	-389,298

Table 4. Total Annual Multi-Mode VMT Reduction

Multi-Mode Travel	PM Peak Hour Trips	Daily Trips (at 5 peak hours /day)	Annual Trips (at 300 day/year)	Annual VMT (at 5 miles /trip)
Mode Shift Travel (Passenger Cars)	-265	-1,325	-397,500	-1,987,500
New Bus Service (Heavy Vehicles)	8	40	12,000	60,000

Table 5. Total Annual VMT for 2025 Build Scenario

Vehicle Category	Annual Regular Mode Travel VMT	Annual Multi-Mode Travel VMT	Annual All Mode Travel VMT
Passenger Cars	-19,075,626	-1,987,500	-21,063,126
Heavy Vehicles	-389,298	60,000	-329,298
Total	**-19,464,924**	**-1,927,500**	**-21,392,424**

Table 6. Fuel Economy Indicator

Category	Unit	Indicator	Sources
PASSENGER MPG	20.3	MPG (GASOLINE)	Emission Facts, United States Environmental Protection Agency (EAP420-f-05-003), February 2005
HEAVY-DUTY MPG	6.0	MPG (DIESEL)	Fuel economy data in 2003, Fuel Economy of Heavy-Duty Trucks in the USA
PASSENGER CO_2	19.4	LB/GAL (GASOLINE)	Emission Facts, United States Environmental Protection Agency (EAP420-f-05-003), February 2005
HEAVY-VEHICLE (HV) CO_2	22.2	LB/GAL (DIESEL)	Emission Facts, United States Environmental Protection Agency (EAP420-f-05-003), February 2005

Table 7. Passenger Car CO_2 Emission Reduction

BUILD YEAR	PASSENGER VMT	PASSENGER GALLONS	PASSENGER CO_2	BUILD PASSENGER CO_2	BUILD PASSENGER CO_2
YEAR	**(VMT)**	**(GAL)**	**(LBS)**	**(TONS)**	**(METRIC TONS)**
2010	0	0	0	0	0
2011	-1,404,208	-69,173	-1,341,953	-671	-609
2012	-2,808,417	-138,346	-2,683,906	-1,342	-1,218
2013	-4,212,625	-207,518	-4,025,859	-2,013	-1,827
2014	-5,616,834	-276,691	-5,367,811	-2,684	-2,435
2015	-7,021,042	-345,864	-6,709,764	-3,355	-3,044
2016	-8,425,250	-415,037	-8,051,717	-4,026	-3,653
2017	-9,829,459	-484,210	-9,393,670	-4,697	-4,262
2018	-11,233,667	-553,383	-10,735,623	-5,368	-4,871
2019	-12,637,875	-622,555	-12,077,576	-6,039	-5,480
2020	-14,042,084	-691,728	-13,419,528	-6,710	-6,089
2021	-15,446,292	-760,901	-14,761,481	-7,381	-6,698
2022	-16,850,501	-830,074	-16,103,434	-8,052	-7,306
2023	-18,254,709	-899,247	-17,445,387	-8,723	-7,915
2024	-19,658,917	-968,420	-18,787,340	-9,394	-8,524
2025	-21,063,126	-1,037,592	-20,129,293	-10,065	-9,133
2026	-22,467,334	-1,106,765	-21,471,245	-10,736	-9,742
2027	-23,871,542	-1,175,938	-22,813,198	-11,407	-10,351
2028	-25,275,751	-1,245,111	-24,155,151	-12,078	-10,960
2029	-26,679,959	-1,314,284	-25,497,104	-12,749	-11,569
Total	**-266,799,592**	**-13,142,837**	**-254,971,039**	**-127,486**	**-115,686**

Table 8. Heavy-Vehicle CO_2 Emission Reduction

BUILD YEAR	HV VMT	HV GALLONS	HV CO_2	BUILD HV CO_2	BUILD HV CO_2
YEAR	(VMT)	(GAL)	(LBS)	(TONS)	(METRIC TONS)
2010	0	0	0	0	0
2011	-21,953	-3,659	-81,227	-41	-37
2012	-43,906	-7,318	-162,454	-81	-74
2013	-65,860	-10,977	-243,681	-122	-111
2014	-87,813	-14,635	-324,908	-162	-147
2015	-109,766	-18,294	-406,135	-203	-184
2016	-131,719	-21,953	-487,362	-244	-221
2017	-153,673	-25,612	-568,589	-284	-258
2018	-175,626	-29,271	-649,816	-325	-295
2019	-197,579	-32,930	-731,043	-366	-332
2020	-219,532	-36,589	-812,270	-406	-369
2021	-241,486	-40,248	-893,497	-447	-405
2022	-263,439	-43,906	-974,724	-487	-442
2023	-285,392	-47,565	-1,055,950	-528	-479
2024	-307,345	-51,224	-1,137,177	-569	-516
2025	-329,298	-54,883	-1,218,404	-609	-553
2026	-351,252	-58,542	-1,299,631	-650	-590
2027	-373,205	-62,201	-1,380,858	-690	-627
2028	-395,158	-65,860	-1,462,085	-731	-663
2029	-417,111	-69,519	-1,543,312	-772	-700
Total	**-4,171,114**	**-695,186**	**-15,433,122**	**-7,717**	**-7,002**

Table 8. Total CO_2 Emission Reduction

YEAR	BUILD PASSENGER CO_2	BUILD HV CO_2	BUILD TOTAL
	(METRIC TONS)	(METRIC TONS)	(METRIC TONS)
2010	0	0	0
2011	-609	-37	-646
2012	-1,218	-74	-1,291
2013	-1,827	-111	-1,937
2014	-2,435	-147	-2,583
2015	-3,044	-184	-3,229
2016	-3,653	-221	-3,874
2017	-4,262	-258	-4,520
2018	-4,871	-295	-5,166
2019	-5,480	-332	-5,812
2020	-6,089	-369	-6,457
2021	-6,698	-405	-7,103
2022	-7,306	-442	-7,749
2023	-7,915	-479	-8,394
2024	-8,524	-516	-9,040
2025	-9,133	-553	-9,686
2026	-9,742	-590	-10,332
2027	-10,351	-627	-10,977
2028	-10,960	-663	-11,623
2029	-11,569	-700	-12,269
Total	**-115,686**	**-7,002**	**-122,688**