

III. CHAPTER 3

Affected Environment, Impacts of the Alternatives, Mitigating Measures, and Significant Unavoidable Adverse Impacts

A. Earth

1. Affected Environment

The project site has a grade change of approximately 40 feet from the southwest corner down to the northeast corner of the property. In the current condition, slopes on the site vary significantly. Existing transition grades onto the site are fairly steep: approximately 15 to 20 percent along the west property line, over 50 percent along the south property line, 30 percent along the east property line, and 3 to 5 percent along the north property line where the existing vehicle driveway exits the site. Grades on and around the sports fields and parking lots range between 1 and 6 percent.

There are several soil types on the site and in the vicinity. The main soils on the site are classified by the USDA Natural Resource Conservation Service as *Urban Land*, *Alderwood-Urban Land Complex*, and *Everett Gravelly Sandy Loam*. About 60 percent of the developed portion of the school site comprises *Urban Land*. In general, this soil unit is covered by streets, buildings, and paving that obscure or alter the soils so that classification is not possible. On the project site, it underlies the former sites of school buildings, the football/track and baseball fields, and most of the parking areas on the site.

The western one-third of the site, which includes the undeveloped portion of the school property, comprises two soil types. The northwest corner of the site is designated *Alderwood-Urban Land Complex (8-15% slopes)*, a type of soil in which runoff is slow and the hazard of water erosion is slight. The southwest corner of the site is *Everett Gravelly Sandy Loam (8-15% slopes)*, which is considered to be “somewhat excessively drained,” with a hydrologic soil classification ‘A’. Runoff is slow and the hazard of water erosion is slight.

The Lynnwood Municipal Code (LMC) Section 17.10.090 classifies geologically hazardous areas as naturally occurring slopes of 40 percent or more or other areas that the City believes are geologically unstable due to factors such as landslide, seismic, or erosion hazards. Neither the soil conditions nor the natural existing slope on the western portion of the site would meet the City’s definition of a geologically hazardous area.

The remainder of the site is classified as *Mukilteo Muck (0-1% slopes)*, a hydric soil type. This soil type is present in the north-northeast part of the site where the existing detention pond is sited. The *Mukilteo* series consists of very deep, very poorly drained organic soils in depressional areas. These soils formed in organic material derived

dominantly from sedges. No development is planned for this portion of the property. (See also discussion of wetlands in the *Plants and Animals* section).

The site is documented to overlie portions of a confined aquifer and an unconfined aquifer (Shannon & Wilson, Inc. 2000). For a number of years, shallow subsurface water seeped through cracks and joints in building foundations and retaining walls. Over time, sumps were installed around the school property, operating throughout the year. In 1998, based on the conclusions of a hydrological investigation (Landau Associates, Inc., 1998), a shallow drain was installed in the drive along the west side of the site and a deeper drain was installed to the west of the school buildings. This reduced some of the seepage.

Another geotechnical study conducted in 2000 revealed that the previously installed drains succeeded in partially lowering the water table, but problems continued due to the complexity of the on-site geology (Shannon & Wilson, 2000). However, the study concluded that a variety of mitigating measures would be available to resolve the groundwater issues when the site is redeveloped. These conclusions are covered below under the discussion of impacts and mitigation for each alternative developed for this EIS.

A Phase II report was prepared by Associated Earth Sciences, Inc. (AESI) in January 2011, with an amendment in April 2011, that found contaminated soils exceeding Model Toxics Control Act (MTCA) clean up levels in the area of the northern portion of the former main school building near the elevator shaft (Associated Earth Sciences, Inc., 2011a). At test pit locations 3, 6, 7 and 8, a strong creosote-like odor was observed in the fill with little or no odors observed in the underlying native sediments.

Ground water samples were collected and tested for diesel, motor oil-range total petroleum hydrocarbons (TPH), gasoline-range TPH, BTEX compounds (benzene, toluene, ethylbenzene and xylenes, and polynuclear aromatic hydrocarbons (PAHs). Contaminant concentrations in excess of the MTCA cleanup levels in ground water were limited to diesel and motor oil-range TPH. It appears that the contamination is associated with fill that was used in the past to backfill a low area on the property. Ecology has been notified about the contamination. A voluntary clean-up plan (VCP) will be submitted to Ecology to ensure the contamination is remediated properly. For additional details, see the discussion under *Environmental Health*.

There are no areas that meet the definition of a geologically hazardous area on the subject property as defined in the Lynnwood Municipal Code (LMC) 17.10.030.

2. Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Construction

All structures have been demolished and removed from the property. The site would be graded to match the existing topography as much as possible, sloping generally from south to north and from west to east. The proposed site would be graded relatively flat (approximately one to six percent slope), which would require cuts in the south portion and filling in the north and east portions. Estimated earthwork quantities for the proposed development range between 375,000 and 425,000 cubic yards of on-site cut that would be used as fill elsewhere on-site (BCRA Engineering, 2011). Importation of crushed rock and bedding material would be required for the project in areas of road pavement, sidewalks, and building pads. It is anticipated that approximately 25,000 to 50,000 cubic yards of material would be required for sub-base preparation. Retaining walls would be required along the west and north portions of the new road to minimize the amount of disturbance along the forested area in the west and the wetlands in the north. Retaining walls would be required along the 184th Street frontage and around the north and east sides of the Costco Wholesale building as well.

The results of subsurface testing for soil contamination did not find soil contamination near the existing underground storage tanks (USTs). There is a known UST next to the former school boiler room that was used to store fuel oil. Another small UST, used to store discarded motor oil, is suspected next to the former shop area (Shockey/Brent, Inc., 2008). Both of these USTs would be removed during the proposed construction.

Remediation of the contaminated soils would be accomplished during the proposed construction. It is likely that the removal of the contaminated soils would correct the ground water contamination.

Contaminated soil would be treated according to Department of Ecology (Ecology) and U.S. Environmental Protection Agency (EPA) regulations established to protect and restore groundwater resources. The Model Toxic Control Act (MTCA), WAC 173-340, provides standards for toxic cleanup based on type and concentration of contaminant, soil profile, groundwater, air and surface water conditions and land use conditions.

During construction, excavation and trenching activities may require dewatering. The water would be routed around the activity, discharged to a controlled conveyance system (i.e., temporary interceptor ditches, storm system), and conveyed to the onsite sediment pond. Unless approved by Ecology and the City of Lynnwood, no construction water from trenching and excavations would be allowed to discharge offsite without first passing through the sediment pond. All de-watering techniques would be accomplished in accordance with the 2005 Washington State Department of Ecology *Stormwater Management Manual for Western Washington*.

Structural fill on the site would be compacted and prepared to provide sufficient bearing capacity and stability to remediate the existing groundwater seepage issues, to ensure vertical and lateral stability of buildings, and to prevent failure of surface paving. If necessary, a permanent dewatering system (active or passive) would be installed to lower the hydraulic pressure of the unconfined aquifer to eliminate the recharge of the shallow aquifer.

Site construction could cause potential erosion and sedimentation to occur, especially in wet weather. Transport of sediment to offsite properties and streets is a potential impact. However, a detailed Temporary Erosion Control Plan would be prepared by the civil engineer. A two-phase erosion control plan would be utilized to minimize the potential for erosion problems. This two-phase plan would address erosion control from the start of construction to the end, when the site is stabilized.

Best Management Practices (BMPs) would be used to reduce the potential impacts of erosion, including the prevention of sediment runoff and fugitive dust from escaping the site. Such measures include temporary sediment ponds, interceptor ditches, check dams, rock construction entrances, filter fabric siltation fencing, catch basin inlet protection, hydro seeding, mulching, and stockpile protection. All temporary erosion and sediment control measures would be in accordance with the 2005 Washington State Department of Ecology *Stormwater Management Manual for Western Washington*. A Stormwater Pollution Prevention Plan (SWPPP) would be prepared for the site in accordance with Department of Ecology requirements. The SWPPP plan would be used by the contractor during construction to help ensure that the proper temporary erosion control BMPs are in place.

Overall, impacts during construction are expected to be minor.

Operation

The project is designed to retain and treat surface water runoff on-site, thereby permitting only clean water to be released into the public drainage system that runs along Alderwood Mall Parkway (see *Stormwater* section).

Under Alternative 1, stormwater runoff from the increased impervious surfaces would be managed by expanding the existing detention basin at the northeast corner of the property. In addition, a detention vault would be installed underneath the surface parking on the east side of the site. Catch basins and storm lines would drain runoff from the southwest corner through the site into one of these two detention facilities. Outflow from the detention vault would be carried off-site to the east of the pond through a storm drain line.

Overall, impacts during operation are expected to be minor.

3. Mitigating Measures for Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Measures Required by Regulation

As indicated in the impact discussion, a two-phase Temporary Erosion Control Plan would be prepared that includes Best Management Practices to reduce the potential impacts of erosion. Such measures include temporary sediment ponds, interceptor ditches, check dams, rock construction entrances, filter fabric siltation fencing, catch basin inlet protection, hydroseeding, mulching, and stockpile protection. All temporary erosion and sediment control measures would be in accordance with the 2005 Washington State Department of Ecology *Stormwater Management Manual for Western Washington*. In addition, a Stormwater Pollution Prevention Plan would be prepared in accordance with Department of Ecology requirements to help ensure that the proper temporary erosion control BMPs are in place.

Additional Measures

None.

4. Significant Unavoidable Adverse Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

No significant unavoidable adverse earth impacts are expected to occur. All impacts are expected to be minor and would be mitigated with the above referenced mitigation measures.

5. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 2—Project Sponsor's Preferred Alternative without Office

Impacts

Grading for Alternative 2 would be similar to Alternative 1, including remediation of the contaminated soils.

The site would generally slope from south to north and from west to east. Building pads and parking lots would vary in elevation within one or two feet. The absence of underground parking would reduce the amount of cut and fill to the lower end of the 350,000 to 400,000-cubic yard estimate.

Mitigating Measures

Mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse impacts are expected.

6. Impacts, Mitigating Measures, and Significant Unavoidable Averse Impacts of Alternative 3—Lower Intensity Mixed Use Alternative

Impacts

Grading for Alternative 3 would be similar to Alternative 1, including the remediation of the contaminated soils.

The site would generally slope from south to north and from west to east. Building pads and parking lots would vary in elevation within one or two feet. The absence of underground parking would reduce the amount of cut and fill to the lower end of the 375,000 to 425,000-cubic yard estimate.

Mitigating Measures

Mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse impacts are expected.

7. Impacts, Mitigation Measures, and Significant Unavoidable Adverse Impacts of Alternative 4—All Retail Alternative

Impacts

Grading for Alternative 4 would be similar to Alternative 1, including the remediation of the contaminated soils.

The site would generally slope from south to north and from west to east. Building pads and parking lots would vary in elevation within one or two feet. The absence of underground parking would reduce the amount of cut and fill to the lower end of the 250,000 to 300,000-cubic yard estimate.

Mitigating Measures

Mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse impacts are expected

8. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 5—No Action Alternative

Impacts

Grading for Alternative 5 would be similar to Alternative 1, including the remediation of the contaminated soils.

The site would generally slope from south to north and from west to east. Building pads and parking lots would vary in elevation within one or two feet. The absence of underground parking would help reduce the quantity of cut and fill material to the lower end of the 250,000 to 300,000-cubic yard estimate.

Mitigating Measures

Mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse impacts are expected.

B. Air Quality

This section describes the analysis conducted by ENVIRON International Corporation (ENVIRON) to evaluate the air quality implications of the proposed Lynnwood Crossing development alternatives. For traffic-related air quality concerns, the relative significance of project-related air pollution is based on comparison of predicted worst-case concentrations of carbon monoxide with levels allowed by established health-based air quality standards. Potential construction-related emissions and climate change issues were also addressed.

1. Regulatory Overview

Air quality generally is assessed in terms of whether concentrations of air pollutants are higher or lower than ambient air quality standards established to protect human health and welfare with a margin of safety. Three agencies have jurisdiction over ambient air quality in the project area: the U.S. Environmental Protection Agency (EPA), the Washington Department of Ecology (Ecology), and the Puget Sound Clean Air Agency (PSCAA). These agencies have established regulations that govern both the concentrations of pollutants in the outdoor air and contaminant emissions from air pollution sources. Some of the applicable local, state, and federal ambient air quality standards are displayed in Table 3-1. The standards shown are for some of the so-called "criteria" air pollutants, which have been officially designated in federal laws as being subject to standards. Examples of "non-criteria" pollutants include substances like mercury and other air toxics that are much less wide spread and are in some cases subject to health risk assessment levels instead of specifically defined health-based air quality standards.

Ecology and PSCAA maintain a network of monitoring stations throughout the Puget Sound region to measure existing air quality. Based on monitoring information collected over a period of years, the state (Ecology) and federal (EPA) agencies designate regions as being either "attainment" or "nonattainment" for particular air pollutants. Attainment status is a measure of whether air quality in an area complies with the National Ambient Air Quality Standard (NAAQS). Areas where prior air quality problems have resolved to the extent that the air quality standards have been attained are considered air quality "maintenance" areas. The project area is considered in "attainment" for all monitored air pollutants except carbon monoxide (CO) for which portions of the Puget Sound region are considered a maintenance area for the NAAQS. This suggests that air quality in the project vicinity is generally good.

There are special requirements in federal and state air quality rules for nonattainment and maintenance areas to ensure that proposed projects that affect the regional transportation system do not cause or contribute to existing air quality problems. These so-called "conformity rules" require analyses to demonstrate compliance with existing air quality control plans and programs. The specific requirements for air quality conformity are discussed in the *Impacts* section.

Table 3-1. Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Terms of Compliance ^(a)	Concentration
Inhalable Particulate Matter (PM10) 24-Hour Average ($\mu\text{g}/\text{m}^3$)	The 3 year average of the 99th percentile of the daily concentrations must not exceed	150 $\mu\text{g}/\text{m}^3$
Fine Particulate Matter (PM2.5) Annual Average ($\mu\text{g}/\text{m}^3$) 24-Hour Average ($\mu\text{g}/\text{m}^3$)	The 3-year annual average of daily concentrations must not exceed The 3-year average of the 98th percentile of daily concentrations must not exceed	15 $\mu\text{g}/\text{m}^3$ 35 $\mu\text{g}/\text{m}^3$
Carbon Monoxide (CO) 8-Hour Average (ppm) 1-Hour Average (ppm)	The 8-hour average must not exceed more than once per year The 1-hour average must not exceed more than once per year	9 ppm 35 ppm
Ozone (O₃) 8-Hour Average (ppm)	The 3-year average of the 4th highest daily maximum 8-hour average must not exceed	0.075 ppm
<p>Note: $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; ppm = parts per million ^(a) All limits are federal <u>and</u> state air quality standards except as noted. All indicated limits represent "primary" air quality standards intended to protect human health. Source: ENVIRON International Corporation</p>		

2. Affected Environment

Typical existing sources of air pollution in the vicinity of the proposed Lynnwood Crossing site include automobile and truck traffic on local roads and nearby freeways, emissions associated with retail stores and malls, and residential wood-burning devices. While many types of pollutant sources are present, the single largest contributor of criteria pollutant emissions in the area is on-road mobile sources (CO emissions) and residential wood burning. Pollutant emissions from diesel sources (e.g., most heavy-duty truck engines) include fine particles and a variety of toxic air pollutants. Non-diesel vehicle emissions are comprised primarily of CO, but also include small amounts of sulfur dioxide (SO₂), toxic air pollutants, and both hydrocarbons and nitrogen oxides, which can transform to become ground-level ozone. Residential wood burning produces a variety of air contaminants, including relatively large quantities of fine particulate matter (PM₁₀ and PM_{2.5}). Several of these pollutants are discussed further below.

Particulate Matter – PM₁₀ and PM_{2.5}

Particulate matter air pollution is generated by many sources, including fuel combustion sources like residential wood burning, motor vehicle engines and tires, and other sour-

ces. Federal, state, and local regulations set limits for particle concentrations in the air based on the size of the particles and the related potential threat to health. When first regulated, particle pollution rules were based on concentrations of "total suspended particulate," which included all size fractions. As air sampling technology has improved and the importance of particle size and chemical composition have become more clear, ambient standards have been revised to focus on the size fractions thought to be most dangerous to people. Based on the most recent studies, EPA has redefined the size fractions and set new, more stringent standards for particulate matter based on fine and coarse inhalable particulate matter to focus control efforts on the smaller size fractions.

Currently, there are health-based ambient air quality standards for PM₁₀, or particles less than or equal to about 10 micrometers (microns) in diameter, as well as for PM_{2.5}, or particulate matter less than or equal to 2.5 microns in diameter. The latter size fraction and even smaller (ultra-fine) particles are now considered the most dangerous size fractions of airborne particulate matter because such small particles (e.g., a typical human hair is about 100 microns in diameter) can be breathed deeply into lungs. In addition, such particles are often associated with toxic substances that are deleterious in their own right that can adsorb to the particles and be carried into the respiratory system.

With the revocation of the federal annual standard for PM₁₀ in October 2006, the focus of ambient air monitoring and control efforts related to particle air pollution in the Puget Sound region has been almost entirely on fine particulate matter (PM_{2.5}). There are several PM_{2.5} monitoring stations in the Puget Sound area, located at known or suspected PM "hot-spots." Based on particulate matter measurements over the last few years, EPA in 2009 established a PM_{2.5} nonattainment area in Tacoma¹. There are no other particulate matter nonattainment areas in Washington.

The closest particulate matter monitors to the project area are located in Edmonds and Marysville (PM_{2.5}). Based on reported data from these locations, measured PM_{2.5} values are less than the current 24-hour and annual NAAQS.

It is likely that throughout most of the year, existing fine particulate concentrations in the project vicinity are also below the limits set by the standards. During prolonged periods of stagnant meteorological conditions, however, it is possible that emissions from vehicles, residential solid-fuel space heating, and other sources in the study area could elevate particulate matter concentrations beyond the established health standards. However, the operation of the proposed project or its alternatives would be a relatively minor source of particulate matter, so it is not necessary to analyze these emissions to conclude that the project would not result in impacts due to particulate matter².

¹ The nonattainment area is called the Wapato Hills-Puyallup River Valley area. See information and maps at: <http://www.ecy.wa.gov/programs/air/Nonattainment/Nonattainment.htm>.

² This statement assumes that no wood-burning devices would be allowed as part of the residential portions of the development alternatives.

Carbon Monoxide (CO)

Carbon monoxide (CO) is a by-product of incomplete combustion. It is generated by vehicular traffic and other fuel-burning activities, such as residential space heating, especially heating units that use solid fuels such as coal or wood. There are two short-term air quality standards for CO: a 1-hour average standard of 35 parts per million (ppm) and an 8-hour average standard of 9 ppm (see Table 3-1). Short-term standards are often the controlling, or most restrictive, air pollution standards.

The impacts of CO are usually localized, with the highest ambient concentrations usually occurring near congested roadways and intersections during periods of cold temperatures, light winds, and stable atmospheric conditions (e.g., autumn and winter months). Such weather conditions reduce the mechanisms that disperse and dilute pollutants into the atmosphere.

There are currently no CO monitors in Lynnwood; the nearest monitor is in downtown Seattle along a congested traffic corridor. This station and others in the Puget Sound region have not measured a violation of the 1-hour or 8-hour CO standard in recent years. Lynnwood and the project area are within the Puget Sound region CO maintenance area.

Ozone

Ozone is a highly reactive form of oxygen that is not emitted directly by emission sources but which is instead created by sunlight-activated chemical transformations of nitrogen oxides and volatile organic compounds (hydrocarbons) in the atmosphere. Ozone problems tend to be regional in nature because the atmospheric chemical reactions that produce ozone occur over a period of time, and because during the delay between emission and ozone formation, ozone precursors can be transported far from their sources. Transportation sources are some of the sources that produce ozone precursors.

In the past, due to violations of the federal ozone standard the Puget Sound region was designated as nonattainment for ozone based on the 1-hour standard in effect at that time. In 1997, the EPA determined that the Puget Sound ozone nonattainment area had attained the public health-based NAAQS for ozone. At that time EPA redesignated the Puget Sound region as attainment for ozone and approved the associated air quality maintenance plan. In 2005 EPA revoked the 1-hour ozone standard in most areas of the US including the Puget Sound region. This action ended the maintenance status of this region including the project study area. EPA has since adopted a more stringent 8-hour ozone standard, and although currently considered attainment, the Puget Sound region is about to again be designated nonattainment for ozone. Note that because ozone is not emitted directly, only very sophisticated air quality models are capable of considering ozone formation in the atmosphere, and such models are typically used for regional assessments of air quality plans instead of for project-specific reviews. Under current air quality plans and policies, the potential future nonattainment status for ozone probably has no direct implications for the proposed project.

Greenhouse Gas Emissions

Another area of recent concern is atmospheric emissions and conditions affecting climate change. Global climate change and greenhouse gas emissions (including carbon dioxide) from transportation are currently unregulated federally, but King County has developed an approach for calculating project-level greenhouse gas emissions. This process is discussed later in this section.

3. Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Construction Impacts

Development of the Lynnwood Crossing would include the construction of residences, office and retail commercial buildings, and creation of roads and other infrastructure improvements. Such activities could result in temporary, localized impacts to air quality because of emissions from construction-related sources. For example, dust from short-term construction activities such as excavation, grading, sloping, and filling would contribute to ambient concentrations of suspended particulate matter. Construction contractor(s) would have to comply with PSCAA regulations requiring that reasonable precautions be taken to minimize fugitive dust emissions.

Construction would require use of heavy trucks, excavators, graders and a range of smaller equipment such as generators, pumps, and compressors. The engines on such equipment would emit air pollutants that would slightly degrade local air quality, but these emissions and the resulting concentrations would be far outweighed by emissions from existing traffic around the project area. Nonetheless, emissions from such sources, and especially from diesel-fueled engines, are coming under increasing scrutiny because of their known or suspected risk to human health. Specific dose/response effects are unknown, but long-term exposure to excessive amounts of diesel emissions could represent a health risk, especially to sensitive groups like the chronically ill, the old, and the very young. Hence, although there is little or no danger of such emissions resulting in pollutant concentrations that would exceed an applicable ambient air quality standard, air pollution control agencies are now urging that emissions from diesel equipment be minimized to the extent practicable. With implementation of effective actions to minimize on-site diesel engine idling and to locate combustion-fueled equipment as far as possible from nearby residences, diesel emissions from on-site construction would be unlikely to substantially affect air quality in the project vicinity.

Some construction phases would cause odors, particularly during paving operations using tar and asphalt. Construction contractor(s) would have to comply with PSCAA regulations that prohibit the emission of any air contaminant in sufficient quantities and of such characteristics and duration that it would be, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property. Any odors related to construction would be short-term and unlikely to significantly affect the nearest residences.

Construction activities would also yield land-clearing debris. Washington State is phasing out outdoor burning of land clearing debris in favor of alternative disposal methods (e.g., chipping and composting) to reduce risk to public health related to combustion emissions. The Washington Department of Ecology now prohibits residential yard debris and land-clearing materials burning in all cities and urban growth areas, and PSCAA has adopted the state outdoor burning restrictions. All portions of the project site are within the City of Lynnwood, so the state and PSCAA prohibitions on land-clearing debris and all other outdoor waste burning apply.

Construction equipment and material hauling can affect traffic flow in a project area. Given that there is heavy traffic in the project vicinity, construction traffic could potentially cause some intermittent, temporary delays but is not likely to affect overall traffic-related emissions.

There is a potential for dust and other emissions to affect on-site residences during construction of other residential and commercial facilities if the residences are occupied before project construction is complete. Any impacts from construction or equipment emissions would be temporary and probably minor after implementation of reasonable methods to limit such emissions. However, construction-related dust or equipment emissions could represent a health risk to sensitive individuals like the chronically ill, the old, and the very young. Communication with residential and other sensitive users during construction and implementation of a construction management plan could prevent or minimize the potential for such impacts.

With implementation of the controls required for the various aspects of construction activities, and with attention to minimize exposure of any nearby people to prolonged exposure to emissions from diesel equipment and dust, construction would not be expected to significantly affect air quality in the Lynnwood area.

Operation Impacts Related to Traffic

Overview

In the case of projects that generate vehicular traffic, the air pollutant of major concern is carbon monoxide. Of the various vehicular emissions, CO is the pollutant emitted in the largest quantity for which there are health-based ambient air quality standards. Because the primary air pollutant emissions source associated with the proposed project would be related to vehicle traffic, CO was the focus of the air quality review.

Analytical Method

An air quality review of transportation sources (i.e., vehicles) typically considers potential air quality impacts in accordance with EPA air quality "hot-spot" modeling guidelines (EPA 1992). EPA guidelines suggest that quantitative analyses should be considered for intersections when project-related traffic affects congested signalized intersections to a sufficient degree, and that if no projected CO violations occur at these most-affected

signalized intersections under worst-case conditions, then no significant air quality impacts would be expected due to traffic.

Congested intersections, operating at level-of-service (LOS) "D" or worse, have the greatest potential to generate high CO levels. Several intersections are projected to degrade to a level-of-service "D" or worse under future conditions. Therefore, the three intersections with the highest volumes and an LOS "D" or worse were chosen for screening review to assess whether detailed modeling was required.

ENVIRON used the Washington State Intersection Screening Tool (WASIST) to estimate peak-hour CO concentrations near the three intersections most affected by the project. WASIST estimates worst-case 1-hour and 8-hour CO concentrations at signalized intersections based on data from the latest versions of EPA emission factor model (MOBILE 6.2) and the CAL3QHC mobile source dispersion model. This tool considers "free-flow" and "queue" emissions together with intersection geometry, wind direction, and other worst-case meteorological factors. WASIST quickly and conservatively estimates the highest CO concentrations that would occur at an intersection to provide a means for screening for potential air quality impacts and determining whether more complete modeling should be performed. Results of the WASIST analysis are provided in Tables 3-2 and 3-3.

The following assumptions and parameters were used in the WASIST to calculate the worst-case CO concentrations:

- A "background" 1-hour and 8-hour average concentration of 4.0 ppm was assumed to represent other nearby sources in the vicinity. This is probably a very conservative assumption.
- Emission factors were based on the Snohomish County Puget Sound CO maintenance area emissions for 2006, 2012, and 2040 as provided in the model.
- P.M. peak-hour traffic operating conditions were provided by the transportation consultant for the Existing and Proposed future alternatives in the Opening and Horizon years.
- Near-road receptors were placed at sidewalk locations in positions 10 and 80 feet from the intersection roadway.
- Intersection surroundings were set to "Central Business District."
- The analysis used the most accurate or worst-case intersection configuration based on WSDOT guidance.

Table 3-2. Washington State Intersection Screening Tool CO Screening Model Results 2012-2013 (ppm)

Intersection	Averaging Period	2012-2013 Alternatives				
		Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
196th St SW and Alderwood Mall Pkwy	1-hour	7.8	7.8	7.8	7.6	7.8
	8-hour	6.7	6.7	6.7	6.5	6.7
30th Place W and Alderwood Mall Pkwy	1-hour	7.5	7.5	7.5	7.4	7.3
	8-hour	6.4	6.4	6.4	6.4	6.3
33rd Avenue W and 188th Street SW	1-hour	5.9	5.9	5.9	5.9	5.9
	8-hour	5.3	5.3	5.3	5.3	5.3

Notes:
 All CO concentrations include a background concentration of 4.0 ppm
 8-hr average CO concentrations are calculated by multiplying the 1-hr average concentrations by a persistence factor of 0.7 and then adding the background concentration
 1-hr CO standard is 35 ppm; 8-hr CO standard is 9 ppm

Table 3-3. Washington State Intersection Screening Tool CO Screening Model Results (ppm) 2040

Intersection	Averaging Period	2040 Alternatives				
		Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
196th St SW and Alderwood Mall Pkwy	1-hour	6.4	6.4	6.4	6.4	6.4
	8-hour	5.7	5.7	5.7	5.7	5.7
30th Place W and Alderwood Mall Pkwy	1-hour	5.8	5.8	5.8	5.8	5.8
	8-hour	5.3	5.3	5.3	5.3	5.3
33rd Avenue W and 188th Street SW	1-hour	6.9	6.9	6.9	6.9	7.1
	8-hour	6.0	6.0	6.0	6.0	6.2

Notes:
 The same modeling assumptions and parameters used for the analysis of existing and 2012 alternatives were also used for the 2040 alternatives.
 All CO concentrations include a background concentration of 4.0 ppm
 8-hr average CO concentrations are calculated by multiplying the 1-hr average concentrations by a persistence factor of 0.7 and then adding the background concentration
 1-hr CO standard is 35 ppm; 8-hr CO standard is 9 ppm

Project-Level Conformity Determination

Although the project is not considered regionally significant and would not trigger a regional conformity determination, the project is in a CO maintenance area, and any proposed actions that would affect the function of the transportation system may be subject to project-level review under the federal and state transportation conformity air quality rules. To determine whether air quality conformity rules pertain to this project, ENVIRON evaluated intersection LOS and traffic delay data to compare traffic conditions under the project alternatives with and without the development. One consideration of that review was that a new bypass road would alter the intersection of 30th Place W and

Alderwood Mall Parkway; a portion of the latter is considered a primary arterial by the City of Lynnwood. In addition, traffic modeling indicates traffic related to the development alternatives and construction of the new bypass road would affect intersection performance in the study area by increasing delay at some intersections. Consequently, elements of the proposed project could affect the transportation system and trigger the need for an air quality conformity review.

Because the project triggers a quantitative project-level conformity review, potential traffic-related air quality impacts were also considered for the project's alternatives in the horizon year of 2040, in addition to the opening year (2012). Traffic study data in 2040 were limited to the alternatives found to be the worst-case alternatives in the 2012 scenarios and Alternative 5, the No Action scenario. Modeling results for the worst-case alternatives are included in Table 3-3.

Impact Analysis Results

With Alternative 1, vehicular traffic volumes would increase at surrounding intersections due to the project, but lower vehicle emission rates in the future would offset expected increases in traffic congestion. Consequently, the calculated 1-hour and 8-hour CO concentrations in 2040 are lower than those predicted for 2012 conditions and are well below the 35-ppm 1-hour and the 9-ppm 8-hour standard at all intersections examined (Tables 3-2 and 3-3). No projected worst-case concentrations exceed the NAAQS, so none of the Alternatives would be expected to result in significant adverse air quality impacts.

With respect to project-level conformity, the following statement applies:

Local CO concentrations from traffic affected by implementation of the proposed bypass road were predicted using approved regulatory models. With Alternative 1 in the opening year (2012), the highest 8-hour CO concentration would be 7.8 ppm, which is less than the 9-ppm 8-hour standard. The highest 8-hour projected CO concentration for the same alternative in the project horizon year (2040) is 6.7 ppm, which is also less than the ambient air quality standard. Maximum model-predicted 1-hour concentrations in both the opening and horizon years are less than the 35-ppm 1-hour CO standard. The project, therefore, would not cause violations of the 1-hour or 8-hour standards for CO in years 2012 or 2040. Based on a project-level review of the potential air quality implications, the proposed project conforms at a project-level with the air quality conformity requirements under state and federal air quality laws. As such, the project would not cause a new violation of an air quality standard, nor would it prolong the time required to attain a standard.

Operation Impacts Related to Green House Gas Emissions

Overview

The phenomenon of natural and human-caused effects on the atmosphere due to global warming and other changes is generally referred to as "climate change." Due to the importance of the "greenhouse effect" and related atmospheric warming to climate change, the gases that affect such warming are called greenhouse gases or GHGs. The GHGs of primary importance are carbon dioxide (CO₂), methane, ozone, and nitrous oxide. Because CO₂ is the most abundant of these gases (but not necessarily the most damaging to the atmosphere on a volume basis because of varying residence time after emission) GHGs are now often quantified in terms of CO₂ equivalents, or CO₂e.

Vehicles are a significant source of GHG emissions primarily through the burning of gasoline and diesel fuels. National estimates indicate the transportation sector (including on-road, construction, airplanes, and boats) accounts for 30 percent or more of total domestic CO₂ emissions. Estimates for Washington State suggest transportation accounts for nearly half of GHG emissions because the state relies heavily on hydropower for electricity, unlike other states that rely more heavily on fossil fuels (coal, petroleum, and natural gas) to generate electricity. The next largest contributors to total gross GHG emissions in Washington are about 20 percent each in fossil fuel combustion in the residential, commercial, and industrial sectors and in electricity consumption. Solid waste contributes about 2 percent (State of Washington, 2008b).

Compared to the "criteria" air pollutants like carbon monoxide and fine particulate matter, GHGs are only recently being recognized as an issue for consideration during the environmental review of proposed projects. CO₂ is not considered an air "pollutant" based on direct health-related impacts, so it is not subject to ambient standards used to gauge pollutant concentrations in the air. Instead, approaches to managing CO₂e emitted directly from sources are based on emission controls aimed at first slowing down and then reducing overall atmospheric concentrations over time. On the local level, GHG management is typically aimed at transportation and land use planning and energy conservation of proposed developments.

In response to the issue of climate change on a global or regional scale, several states and many local jurisdictions are now taking steps to begin reducing GHG emissions. Although recent legislation in Washington State established GHG emission reduction targets in future years and set specific emission targets for some sources, there are as yet no specific emission reduction requirements or targets that apply to land use projects. Nor are there generally accepted emission level "impact" thresholds that provide means to assess potential localized or global impacts of GHG emissions. The Washington State Department of Ecology has issued draft guidance for assessing GHG emissions during the SEPA review process, but these guidelines are still in a preliminary stage. Consequently, the GHG tabulation for this project is a preliminary indication of expected project-related GHG emissions based on a modified version of King County's emission tabulation tool.

GHG Estimate Method

The tabulation of GHG emissions was based on the spreadsheet tool issued by King County, Washington in December 2007. ENVIRON modified this tool to reflect project-specific data where possible. In accordance with findings regarding the primary sources of GHG emissions, this tabulation focused on three areas/sources of emissions as described below.

Building Materials and Processes (Embodied Emissions). This portion of the calculation considered both the "upstream" (i.e., mining, harvest, manufacturing, and transport) and the "downstream" (i.e., subsequent, "in place" use and maintenance) of building materials. ENVIRON applied averages of all typical building materials (wood, concrete, stucco, glazing, etc.) in the spreadsheet tool. ENVIRON calculated the global warming potentials of these materials using the ATHENA model, assuming the average of the types of material systems and then used these values in the spreadsheet tool. Also, because the existing spreadsheet cannot calculate embodied emissions for structures other than single-family residential buildings, ENVIRON revised the spreadsheet (based on consultation with building architects for other projects) to allow adjustments based on component percentages to provide more realistic specifications for building materials. This analysis used a different building "type" to represent the components of the various project alternatives: mid-rise residential buildings with retail. The estimated amount of pavement for driveways and surface parking was not included. Note that the lifespan of the buildings is projected to be 80 years for multi-family residential buildings, as per the King County spreadsheet model.

Post-development Energy Use (Energy). This element considered energy consumption such as heating and electrical usage. For this calculation, the energy values were adjusted to reflect the usage reported for the Pacific Northwest (as opposed to national averages). No consideration was made for whether or not the buildings would incorporate Built Green or Energy Star ratings, or LEED® ratings.

Transportation (Transport). This component considered GHG emissions related to vehicle travel of residences and employees. The King County tool default calculation was used to estimate vehicle travel. However, the annual miles traveled and mileage assumptions were updated based on more recent statewide DOT data and updated fleet mileage increases.

Life-Cycle GHG Emissions

The estimated CO₂ equivalent (CO₂e) emissions are shown in **Table 3-4**; they represent the lifecycle emissions of the project alternatives. The lifecycle emissions are the cumulative emissions over the expected useful life of the buildings included in the development alternatives. Comparing results of potential GHG emissions using the King County tool, it is clear that the alternative with the most development square footage (Alternative 2) has the potential to generate more GHG emissions than the other alternatives. This difference is due primarily to the amount of building construction.

Table 3-4. Summary of Project-related Greenhouse Gas Emissions

Building Use	Life Span Emissions (MTCO ₂ e)				
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Residential	322,982	489,366	215,321	0	0
Costco Food Sales	283,788	283,788	283,788	0	0
Food Service	49,017	80,879	36,763	19,607	0
Health Care\Day Care	180,237	0	144,190	0	915,442
Retail	156,224	231,993	89,829	251,130	0
Total Emissions	992,249	1,086,026	769,891	270,737	915,442

MTCO₂e = metric tons CO₂ equivalents

There are as yet no specific means to gauge whether GHG emissions constitute a "significant impact" in terms of their potential effects on climate. Current guidance in this area simply indicates the need to estimate CO₂e emissions with the intent to compile data for use in later discussions of this issue. And although it would be useful to put these emissions into perspective based on comparisons with similar sorts of projects, no truly comparative data yet exist.

Although there are no specific requirements to do so, there are measures that would reduce GHG emissions due to construction of the development, energy use by the people who live there, and the need to drive. Each of these measures is addressed further below.

Construction-related GHG emission reduction measures typically include features that focus on use of renewable resources, composites, and/or materials made from recyclables (e.g., farmed wood and wood/plastic composites – from recycled plastic and wood), and de-emphasize use of non-renewable resources (e.g., old-growth or exotic lumber, virgin metals, or more than essential quantities of concrete). Because renewable and recycled materials use less resources and require a fraction of the energy necessary to produce virgin materials, associated GHG emissions are substantially lower. The building design could incorporate renewable materials to reduce GHG emissions compared with more conventional development techniques.

End-use energy consumption in residences and offices is a primary contributor to overall GHG emissions. Such energy use is a function of multiple factors, many of which can be positively affected during development of the facility. Site layout/design that maximizes exposure to the sun in the winter and takes advantage of natural ventilation can reduce winter heating needs and the need for summertime forced-air ventilation. Using construction techniques and materials that exceed building code requirements can reduce long-term energy use. Employing innovative heating technologies such as heat pumps, hot-water radiant floors, and ultra-high efficiency furnaces also would reduce energy consumption compared with standard space-heating systems. Similarly, technologies to provide or supplement water heating (e.g., on-demand and/or solar-assisted heating instead of continuously heated, large tank reservoirs) also would reduce the overall energy footprint of the development. In addition, steps that reduce

energy use would also reduce any related GHG emissions. Implementing a high LEED®, Built Green, or other low-impact/high-efficiency building standard would help conserve resources and reduce GHG emissions compared with conventional development techniques.

Other general recommendations for site design and energy use considerations include:

- Use Low Impact Development for storm water design.
- Design water efficient landscaping.
- Construct green roofs.
- Use high-albedo (i.e., reflective) roofing materials.
- Install high-efficiency HVAC systems.
- Eliminate or reduce use of refrigerants in HVAC systems.
- Incorporate motion sensors and lighting and climate control.
- Use efficient, directed exterior lighting.
- Incorporate on-site renewable energy sources into project including solar, wind, geothermal, low-impact hydro, biomass, and bio-gas strategies.
- Use water-conserving fixtures that exceed building code requirements.
- Re-use gray water and/or collect and re-use rainwater.
- Use low-VOC adhesives, sealants, paints, carpets, and wood.
- Purchase Energy Star-rated appliances that are the lowest energy rating.
- Provide no-idling truck zones at loading/off-loading and queuing areas.
- Implement Commute Trip Reduction program.

Alternative 1 would consist of a mixed-use development composed of a Costco Wholesale warehouse and fuel facility on the north portion of the site, with medical office, retail, and 330 residential units proposed on the southern portion. Of these building use types, residential use is the largest contributor to GHG emissions with Alternative 1 because occupants would consume energy in the form of electricity and commuters would consume fuel. Food sales would also generate a large portion of the GHG emissions due to electricity consumption and fuel used for vehicle trips. Alternative 1 building uses generate more GHG emissions than all other project alternatives except Alternative 2, which would have the highest density building uses and would therefore generate the most GHG emissions.

Operation Impacts Related to Costco Fuel Facility Emissions

The Costco Wholesale retail fueling facility could potentially emit ambient pollutants such as volatile organic compounds (VOCs), hydrocarbons, and toxic air pollutants. The fueling facility design would include equipment of the latest technology and with many safety features to prevent potential environmental impacts, designed in accordance with local, state, and federal requirements. To minimize potential emissions, the tanks and dispensers would be equipped with Phase I and II Enhanced Vapor Recovery (EVR) control equipment technology that meets strict air pollutant control regulations. The Phase I EVR equipment controls vapors in the return path from the tanks back to the tanker truck during offloading filling operations. The Stage I EVR systems are 98 percent effective in controlling fugitive emissions from escaping into the environment.

The Phase II EVR equipment controls vapors in the return path from the vehicles back to the tanks and are 95 percent effective in controlling fugitive emissions from escaping into the environment. These control technologies would also minimize potential odors from fuel facility activities because this equipment reduces the types of emissions that may cause odors. Also, the facility would likely be required to obtain necessary storage tank and fuel service permits from the Department of Ecology and/or the PSCAA, which would also minimize the potential for significant air emissions from these sources. In general, the operational activities associated with the fuel facility are not likely to cause significant air quality or odor impacts.

4. Mitigating Measures for Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Construction Mitigation

The following is a list of *possible* mitigating measures that could be implemented to reduce potential impacts from vehicle exhaust and fugitive dust during construction of the project with either alternative in place. This list was developed based on control measures and best management practices suggested by the Associated General Contractors of Washington (*AGC Guide to Handling Fugitive Dust from Construction Projects*).

- Use only equipment and trucks that are maintained in optimal operational condition.
- Require all off road equipment to be retrofit with emission reduction equipment.
- Use bio-diesel or other lower-emission fuels for vehicles and equipment.
- Use car-pooling or other trip reduction strategies for construction workers.
- Stage construction to minimize overall transportation system congestion and delays in order to reduce regional emissions of pollutants during construction.
- Implement restrictions on construction truck idling (e.g., limit idling to a maximum of 5 minutes).
- Locate construction equipment away from sensitive receptors such as fresh air intakes to buildings, air conditioners, and sensitive populations.
- Locate construction-staging zones where diesel emissions will not be noticeable to the public or near sensitive populations such as the elderly and the young.
- Develop a dust control plan during project planning to identify sources and activities that would be likely to generate fugitive dust and the means to control such emissions.
- Spray exposed soil with water or other suppressant to reduce emissions of PM₁₀ and deposition of particulate matter; include dust controls on paved and unpaved roads and in site preparation, grading and loading areas.
- Cover or use moisteners or soil stabilizers to minimize emissions from storage piles; minimize drop heights involved in creating storage piles or haul-vehicle loading.

- Cover all trucks transporting materials, wet down materials in trucks, or provide adequate freeboard (space from the top of the material to the top of the truck bed) to reduce PM10 emissions and deposition during transport.
- Pave or use gravel on staging areas and roads that would be exposed for long periods, and reduce speeds on unpaved roads or work areas.
- Use quarry spalls at entrances, vehicle scrapes, or wheel washers to remove particulate matter that would otherwise be carried off site by vehicles to decrease deposition of particulate matter on area roadways.
- Remove particulate matter deposited on paved, public roads, sidewalks, and bicycle and pedestrian paths to reduce mud and dust; sweep and wash streets continuously to reduce emissions.
- Cover dirt, gravel, and debris piles as needed to reduce dust and wind blown debris, and avoid dust-generating activities during windy periods.
- Route and schedule construction trucks to reduce delays to traffic during peak travel times to reduce air quality impacts caused by a reduction in traffic speeds.

Operational Mitigation

Based on the results of the air quality analysis, no significant air quality impacts would be expected from any of the alternative development scenarios being considered; therefore, no operational mitigation measures are warranted or proposed.

5. Significant Unavoidable Adverse Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

No significant adverse air quality impacts are expected as a result of the Lynnwood Crossing Development Project if mitigation is implemented.

6. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 2—Project Sponsor's Preferred Alternative without Office

Construction Impacts

Construction impacts would be similar to Alternative 1.

Traffic-Related Impacts

Alternative 2 would result in development similar to, but at a greater density than, Alternative 1. Calculated CO concentrations resulting from this alternative are equal to that of Alternative 1 and would comply with the CO limits defined in the NAAQS (see Tables 3-2 and 3-3). Therefore, this alternative would not be expected to result in significant adverse air quality impacts.

Green House Gas Emissions

Alternative 2 also would create a mixed-use land development similar to Alternative 1 but would incorporate more retail and residential development and would result in more lifecycle GHG emissions than any of the other alternatives. This would be primarily due to the amount of construction materials required and the energy consumption due to anticipated building use.

Mitigating Measures

Construction and operational mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse air quality impacts are expected.

7. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 3—Lower Intensity Mixed Use Alternative

Construction Impacts

Construction impacts would be similar to the Alternative 1.

Traffic-Related Impacts

Alternative 3 would result in development similar to, but at a lesser density than, Alternative 1. CO concentrations resulting from this alternative would be equal to that of Alternative 1 and would comply with the CO limits defined in the NAAQS (see Tables 3-2 and 3-3). Therefore, this alternative would not be expected to result in significant adverse air quality impacts.

Green House Gas Emissions

Alternative 3 would also create a mixed-use land development but incorporate less retail, office, and residential development than Alternatives 1 and 2. Consequently, lesser quantities of lifecycle GHG emissions are predicted for the construction and use of the developed buildings.

Mitigating Measures

Construction and operational mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse air quality impacts are expected.

8. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 4—All Retail Alternative

Construction Impacts

Construction impacts would be similar to Alternative 1.

Traffic-Related Impacts

Alternative 4 would be developed similar to Alternative 1 but without residential and office elements and without the Costco Warehouse and fuel facility. Similar to Alternative 1, CO concentrations resulting from the increase in vehicular traffic by 2040 would be offset due to lower vehicle emission rates in the future. Thus, the calculated 1-hour and 8-hour CO concentrations resulting from this alternative in 2012 and 2040 are lower than the limits set by the NAAQS (Table 3-1). This alternative would not be expected to result in significant adverse air quality impacts.

Green House Gas Emissions

With Alternative 4, there would be less overall development and consequently less building materials needed. Lifecycle energy consumption also would be less because the more energy-consuming building uses (residential and office) are not included in this alternative. This alternative is therefore projected to have the least GHG emissions compared to all other alternatives.

Mitigating Measures

Construction and operational mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse air quality impacts are expected.

9. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 5—No Action Alternative

Construction Impacts

Construction impacts would be similar to Alternative 1.

Traffic-Related Impacts

With Alternative 5, the bypass would be constructed and the project site could be developed up to the limits allowed by the existing Comprehensive Plan and existing zoning. Vehicular traffic would increase at surrounding intersections due to development on the site, but lower vehicle emission rates in the horizon year (2040) would offset expected increases in traffic congestion. Modeling results indicate that emissions would be lower than opening year (2012) (see Tables 3-2 and 3-3). Modeling results are the same as for the other alternatives, and remain below the NAAQS for the 35-ppm 1-hour and the 9-ppm 8-hour standard at all intersections examined. Therefore, this alternative would not be expected to result in significant adverse air quality impacts.

Green House Gas Emissions

This alternative assumes build out of the existing site with uses other than those proposed with the development alternatives, up to the limits permitted by the existing Comprehensive Plan and by existing zoning. This would allow for the creation of mixed land uses including institutional (nursing home), medical and dental offices and daycare. This alternative would generate more lifecycle GHG emissions than Alternatives 3 and 4 because the health care and office building uses generally consume more electricity than some other uses, and because the total square footage of developed space is greater than with those alternatives. However, GHG emissions under this alternative are less than those projected for the more intensive Alternatives 1 and 2.

Mitigating Measures

Construction and operational mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse air quality impacts are expected.

C. Stormwater

This section examines the impacts of the Alternatives on stormwater quantity and quality on and in the vicinity of the site. It also discusses mitigating measures as well as applicable regulations affecting the handling of stormwater.

1. Affected Environment

The proposed site is located in Water Resource Inventory Area (WRIA) No. 8 – in the Lake Washington/Cedar/Sammamish Watershed. More specifically, the site is located in the Swamp Creek Subarea of WRIA 8.

The proposed site is the former site of Lynnwood High School and the Lynnwood Athletic Complex. The site was developed with several school buildings, a number of asphalt tennis courts, several athletic fields (a baseball field, a track/football field, a soccer field), and several parking lots. The District demolished all school buildings in 2010. For all alternatives, all on-site features would be removed prior to construction of the proposed development. The total site area is 40.22 acres, although approximately 35 acres would be affected under the proposed development. Most of the remaining acreage is proposed to be retained in its current natural state; between 1.5 and 2 acres would be used for transition grading and wetland mitigation. Redevelopment would include new buildings, new roads, new parking areas, new landscaped areas, and removal and replacement of the existing stormwater system.

Two undeveloped areas consisting of trees and two wetlands (Wetlands A and C) lie along the northern and west central boundaries of the site, respectively (see *Plants and Animals Including Wetlands* section). As part of the project development for all alternatives, approximately one acre of the undeveloped area near the southwest corner of the site, including Wetland C, would be impacted to accommodate the proposed street improvements.

The area immediately adjacent to the site to the west includes a 20-acre commercial site (H-Mart, formerly Mervyn's), a 10-acre apartment site (Alderwood Manor Apartments), and a cul-de-sac consisting of single-family residential homes to the west and 184th Street SW to the south. An undeveloped area (which contains a portion of a creek and pond known as Tunnel Creek) is north of the site, and a largely commercially developed area and Alderwood Mall Parkway are to the east.

Under current conditions, on-site stormwater is collected in catch basins and conveyed in a northeasterly direction to a detention pond located at the northeast corner of the site. A wetpool area within the footprint of the detention pond likely provides some level of treatment of stormwater runoff from the pollution-generating impervious surfaces before discharging from the site. The wetpool is the volume of water more or less permanently contained within the lowest portion of a pond or vault that provides water quality benefits primarily by the settlement of particulates out of the stormwater. Pollution-generating impervious surfaces (also known as PGIS) are impervious surfaces that are

considered to be a significant source of pollutants in stormwater runoff. Such surfaces include those that receive direct rainfall and are regularly used by motor vehicles, such as roads, driveways, and parking lots.

The storage volume of the existing pond is approximately 1.73 acre-feet. The controlled outflow from the pond at the 25-year event is approximately 11.4 cubic feet per second (cfs) (Reid Middleton, 1997). The pond was designed to previous standards that are not as restrictive as today's standards.

The pond is located adjacent to a roadside ditch along Alderwood Mall Parkway. This ditch is actually a portion of Tunnel Creek. A berm separates the pond from the creek. The existing detention pond releases stormwater through two 12-inch-diameter corrugated metal pipes (CMP) into Tunnel Creek.

Tunnel Creek originates north of the site and is fed by surface water runoff from adjacent developed land. Tunnel Creek enters the site at the northwest corner and generally flows east. It veers slightly to the north and exits the property approximately 150 feet east of the site's westerly property line. It then continues east and enters a small off-site pond. The off-site pond outflows into a pipe system that continues east and discharges to a channelized ditch on the south side of 30th Place W along the site's north property line. The creek continues east to Alderwood Mall Parkway, where it veers south as a roadside ditch.

From the detention pond discharge location, Tunnel Creek flows south in the roadside ditch for approximately 200 feet to where it crosses east under Alderwood Mall Parkway through a 24-inch-diameter CMP culvert. From the Alderwood Mall Parkway culvert outlet, the creek extends east/northeast through a native growth protection area¹ (BCRA, 2010) for approximately 350 feet before joining a roadside ditch along the west side of Ash Way. The roadside ditch flows south for approximately 300 feet before entering a culvert crossing that conveys flow east under Ash Way. This drainage continues east crossing under SR 525 and ultimately joins with Swamp Creek.

The existing collection system carries runoff not only from the former high school site, but also off-site stormwater runoff from both the H-Mart commercial site and the Alderwood Manor Apartment complex, north of H-Mart. These two drainage areas are approximately 20 and 10 acres in size, respectively. Each is served by separate detention facilities, a detention vault for the H-Mart site and a detention pond for the apartment complex. Because these flows (from the H-Mart site and Alderwood Manor Apartments) connect to the high school site's piped drainage system, they are conveyed to the detention pond (Reid Middleton, 1997).

Tunnel Creek and the off-site flow from 180th Place SW bypass the site's drainage system and do not enter the existing detention pond.

¹ A native growth protection area or NGPA generally means those areas that are to be left permanently undisturbed in a substantially natural state and in which no clearing, grading, filling, building construction or placement, or road construction is allowed.

Portions of the project site have shallow groundwater (18 to 36 inches below the soil surface) from January through March. Groundwater has been the cause of problems in portions of the site, including occasional flooding of finished floors. The school district made improvements in the past to reduce flooding and intercept high groundwater in certain areas. According to school district personnel, surcharging during significant storm events occurred at two locations in the existing storm drainage collection system. One location is in the vicinity north of the soccer fields. The second location is in the vicinity north of the track/football field, which also had resulted in flooding of the former gymnasium. Additionally, as determined from hydraulic modeling (Reid Middleton, 1997), backwater effects of the water surface elevation in the existing detention pond at the 25-year event also results in surcharging of the pipe system just upstream of the detention pond. Backwater means an increase in water depth upstream due to a downstream obstruction, resulting in deeper water than would occur without the obstruction.

An existing flooding problem occurs at the intersection of Ash Way and Maple Road, near the SR 525 overpass. This problem is documented in the City's Surface Water Management Comprehensive Plan (Herrera Environmental Consultants, 2009). This problem area is not directly downstream of the high school site. Rather, runoff from this area drains to the same roadside ditch along Ash Way into which the site drains. However, because the area is very flat and much of the system backs up into standing water areas, the existing drainage from the high school property as well as other off-site areas likely contributes to this problem.

2. Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Alternative 1 is a mixed-use redevelopment that includes construction of both residential and commercial buildings on the site. Stormwater impacts from development can be categorized as either construction-related stormwater impacts or permanent stormwater impacts related to final development of the proposed site.

Construction-Related Stormwater Impacts

Project construction would involve grading, excavation, and the creation of temporary construction stockpiles, all of which would increase the potential for increased erosion and sediments in surface water runoff if unprotected/uncontrolled.

The total disturbed area for Alternative 1 is estimated to be approximately 35 acres. The cut/fill volume for Alternative 1 is estimated to be between 375,000 to 425,000 cubic yards. Without measures to limit erosion and treat stormwater, exposure and handling of soils of this magnitude would create a significant potential for erosion and, consequently, deposition of sediments in the downstream system.

The Proponent will be required to implement stormwater mitigation by designing to the Department of Ecology's 2005 Surface Water Management Manual for Western Wash-

ington (SWMM). The Construction Stormwater Pollution Prevention Plan (SWPPP) would identify how the project intends to prevent and control pollution generated during the construction phase only, primarily erosion and sediment pollution.

The 12 elements listed below must be considered in the development of the Construction SWPPP unless site conditions render the element unnecessary. If an element is considered unnecessary, the Construction SWPPP must provide the justification. These elements cover the general water quality protection strategies of limiting site impacts, preventing erosion and sedimentation, and managing activities and sources. The 12 elements of the Construction SWPPP are:

- Mark Clearing Limits
- Establish Construction Access
- Control Flow Rates
- Install Sediment Controls
- Stabilize Soils
- Protect Slopes
- Protect Drain Inlets
- Stabilize Channels And Outlets
- Control Pollutants
- Control De-Watering
- Maintain BMPs
- Manage the Project

A complete description of each element and its associated BMPs is given in Volume 2 of the SWMM.

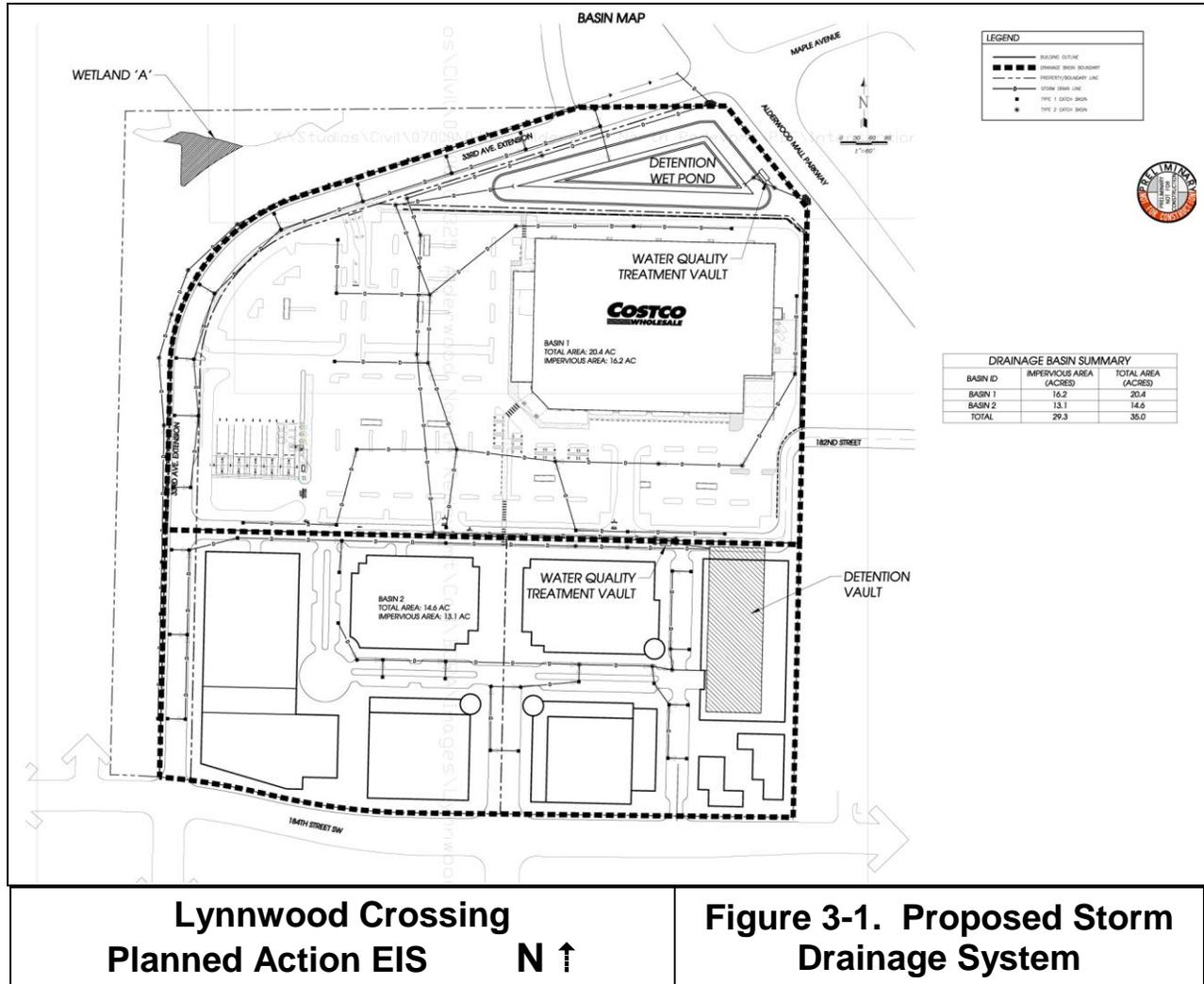
Permanent Stormwater Changes

To assess the project impacts on stormwater and water resources and to identify preliminary concepts for drainage control, the Proponent prepared a preliminary stormwater plan entitled Draft EIS Storm Report for Lynnwood Crossing (BCRA, 2010)². This plan is intended to develop the basic concepts for stormwater control for the project. The measures proposed in the plan are consistent with current stormwater standards defined in the 2005 SWMM. The Permanent Stormwater Control Plan (PSCP) would identify how the project intends to provide permanent stormwater detention and water quality treatment Best Management Practices (BMPs) for the control of pollution from stormwater runoff after construction is completed.

The Proponent proposes to provide stormwater storage with two separate detention facilities serving two separate drainage basins. Basin 1, in the northern portion of the site, is 20.4 acres in size and encompasses approximately 58 percent of the site. Basin 2 encompasses the remaining southern portion of the site and is 14.6 acres in size. All runoff collected within the developed portion of the site (i.e., 35 acres) would be con-

² Revised model runs to determine the detention volume and the wetpool water quality volume were provided as updates to the BCRA report (BCRA, 2011).

veyed to one of the two detention facilities. Each of the facilities would also contain a wetpool volume that will remove the required suspended solids as well as some oil and grease from the stormwater. Discharge from each of the combined detention/wetpool facilities would be conveyed to a media filter vault to provide an enhanced level of water quality treatment. The media filter vaults would contain StormFilter® cartridges with ZPG™ media. The cartridges would further remove suspended solids, oil and grease, as well as soluble metals and organics. These facilities are presented in Figure 3-1, taken from the Draft EIS Storm Report (BCRA, 2010).



Lynnwood Crossing
 Planned Action EIS N ↑

Figure 3-1. Proposed Storm Drainage System

The Basin 1 facility would be a combined detention/wet pond that would replace the existing detention pond in the northeast corner of the site. The new pond would be significantly larger than the existing pond, with a combined detention/wetpool volume of 7.4 acre-feet versus 1.73 acre-feet. The new pond would control flows from Basin 1. Based on estimates provided by the Project Proponent, Basin 1 would be approximately 86 percent impervious, resulting in a required detention volume of approximately 7.0

acre-feet and a water quality (wetpool) volume of 0.36 acre-feet. The wetpool portion of this facility would provide basic water quality treatment for Basin 1. The media filter vault will be downstream from the detention/wet pond to provide an enhanced level of treatment.

The Basin 2 facility would be an underground detention/water quality vault that would provide detention storage and a wetpool volume for Basin 2. The combined detention/wet pond would be located below the parking garage near the southeastern portion of the site. Based on estimates provided by the Project Proponent, Basin 2 would be 90 percent impervious resulting in a required detention volume of approximately 5.5 acre-feet and a water quality (wetpool) volume of 0.26 acre-feet. Flows from the detention/wetvault would be conveyed to a media filter vault to provide an enhanced level of treatment.

It should be noted that based on the preliminary design for Alternative 1, the overall amount of impervious area for the site is estimated to be 87.6 percent.

Also, offsite flows would bypass the onsite stormwater detention and treatment facilities; therefore, their volumes are not included in sizing of the facilities for each basin.

Outflow from the detention/water quality vaults would discharge directly to Tunnel Creek near the existing discharge location at the site.

As discussed previously, the existing pond serves the entire site with a total detention volume of approximately 1.73 acre-feet and a 25-year release rate of 11.4 cfs. Under Alternative 1, the total site detention volume would be increased to a total of 12.5 acre-feet³ (BCRA, 2010). Based on hydrologic modeling⁴, the combined 25-year inflow into the detention pond and detention vault would be 17.7 cfs with a controlled release rate reduced to 1.72 cfs. This is based on a total developed site consisting of approximately 30.68 acres of impervious area and 4.32 acres of pervious area. It should be noted that the 11.4 cfs discharged from the site under existing conditions includes off-site runoff from the Alderwood Manor Apartments and the H Mart sites. As noted previously, the off-site runoff would be routed around the site, thereby bypassing the new on-site detention/water quality facilities. Again, these upstream developments have their own detention facilities.

Criteria used to size the new facilities were based on the 2005 SWMM. For flow control, sizing is based upon the duration standard to match post-developed flows to “forested” conditions.

For water quality treatment, proposed measures are classified as enhanced treatment meeting the guidelines set forth in Volume 5, Section 3.4 of the 2005 SWMM using a treatment train approach (a wetpool followed by a StormFilter vault). The total required water quality volume (wetpool volume) would be 0.36 acre-feet for Basin 1 and 0.26

³ 7.0 acre-feet for Basin 1 and 5.5 acre-feet for Basin 2.

⁴ A continuous model meeting Ecology’s 2005 SWMM requirements.

acre-feet for Basin 2 (BCRA, 2011). This is the 91st percentile, 24-hour runoff volume indicated by the Western Washington Hydrology Model (WWHM). As discussed previously, the detention facilities will discharge directly to a vault containing StormFilter™ cartridges filled with ZPG™ media. The StormFilter Vaults would be sized to treat the 2-year discharge from their respective detention facilities, thereby meeting the requirements of the SWMM.

Under Alternative 1, on-site stormwater would be controlled to a higher standard than currently exists, likely resulting in a significant reduction in runoff rates from runoff generated onsite. In addition, the water quality of site discharge would likely be improved due to the benefits provided by the proposed wetpond, wetvault, and StormFilter™ vaults. In conclusion, Alternative 1 would beneficially affect stormwater discharge rates (flow control) and water quality.

Under Alternative 1, the estimated detention volume (excluding the water quality volume) of the pond (Basin 1) at the design water surface elevation is 7.0 acre-feet and the detention volume of the vault (Basin 2) is approximately 5.5 acre-feet, as noted previously.

3. Mitigating Measures for Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Measures Proposed by the Project Proponent

Mitigating measures that are proposed by the project Proponent are those required by regulation and are described as part of Alternative 1 (i.e., runoff control, detention, and controlled releases).

Measures Required by Regulation

All stormwater measures proposed by the Project Sponsor are required by regulation. In Washington State, the Department of Ecology (Ecology) administers the federal National Pollutant Discharge Elimination System (NPDES) Permit Program that includes regulation of municipal storm sewer systems. The City of Lynnwood is covered under the Phase II NPDES permit for western Washington. Since the Proposed Action would disturb one acre or more, the requirements of the Stormwater Management Manual for Western Washington (SWMM) (Ecology, 2005) must be met. The Lynnwood Municipal Code 13.40 also provides stormwater requirements to ensure compliance with the Western Washington NPDES permit, including the requirement for employing low impact development (LID) techniques to the maximum extent feasible.

The SWMM defines ten minimum requirements (MR) that must be addressed for control and treatment of stormwater runoff from new development, redevelopment, and construction sites.

These ten minimum requirements are as follows:

- MR #1: Preparation of Stormwater Site Plans
- MR #2: Construction Stormwater Pollution Prevention Plan (SWPPP)
- MR #3: Source Control of Pollution
- MR #4: Preservation of Natural Drainage Systems and Outfalls.
- MR #5: On-site Stormwater Management
- MR #6: Runoff Treatment
- MR #7: Flow Control
- MR #8: Wetlands Protection
- MR #9: Basin/Watershed Planning
- MR#10: Operations and Maintenance

MR# 9 is not applicable for this project.

MR#1: Preparation of Stormwater Site Plans

Development sites are to demonstrate compliance with the ten minimum requirements defined by the NPDES Permit Program, as discussed above, through the preparation of Stormwater Site Plans (SSP). Two major components of the SSP are a Construction Stormwater Pollution Prevention Plan (SWPPP) and a Permanent Stormwater Control Plan (PSCP). The SSP shall include detailed design drawings of the proposed flow control, water quality treatment, and conveyance system along with the final storm drainage report and calculations. Erosion control, paving, and utility design drawing shall also be included. The SSP will be provided to the City as part of the permit submittal for the project.

MR#2: Construction Stormwater Pollution Prevention Plan (SWPPP)

Stormwater discharges from construction sites where one or more acres will be disturbed require the development of site-specific Temporary Sediment Control Plans and Stormwater Pollution Prevention Plans. As part of the NPDES general permit for construction activities, stormwater sampling for turbidity and pH are also required.

A complete SWPPP and narrative describing how the project will address 12 required erosion control elements will be included in the SSP and submitted to the City as part of permit submittal. It is anticipated that several different erosion control best management practices (BMPs) will be implemented during the course of construction, including silt fencing, catch basin inlet protection, construction entrances, interceptor ditches, rock check dams and sediment ponds. Clearing limits will be clearly marked to protect natural areas. Hydroseeding, mulching, and placement of other cover methods will be used to stabilize soils. Dust will be controlled by lightly spraying exposed soils with water. These and other BMPs will be implemented as needed to prevent sediment-laden stormwater from leaving the site and/or affecting any on-site wetlands or critical areas to be preserved.

MR #3: Source Control of Pollution

The project will provide measures for preventing pollution from potential sources. Source control BMPs that meet the standards of the Chapter IV of the 2005 SWMM will be implemented to protect water quality. These measures will be tailored to the type of development and will be identified and discussed in the storm water design report.

MR #4: Preservation of Natural Drainage Systems and Outfalls.

The site currently drains to the northeast. Post-development, the site will continue to discharge to the northeast. Off-site runoff will continue to flow onto the site at the current locations and will bypass around the west and north perimeter of the property in a series of drainage ditches and culverts. The existing wetland (Wetland A) at the north-west corner of the site will be preserved. In addition, Wetland A will be enlarged per the requirements of Lynnwood Municipal Code 17.10.056 to provide mitigation for the filling of Wetland C (See MR #8 below).

MR #5: On-site Stormwater Management

On-site stormwater management BMPs focus on minimization of impervious surface area, the use of infiltration, and dispersion through on-site vegetation for stormwater flow control and treatment. Additional measures include, to the extent practicable, implementation of low impact development techniques (LIDs). Such techniques may include constructing bioretention areas, amending soils in landscaped areas and all pervious areas that are disturbed, providing permeable paving in lieu of conventional hardscapes, or providing roof downspout infiltration systems. During final design, the feasibility of incorporating grass-lined swales in lieu of piped conveyance systems, would provide some additional water quality benefits and potentially allow for some additional infiltration if suitable conditions on the site are appropriate (such as low ground water, gravelly soils, etc.). These measures would promote infiltration, thereby decreasing the volume and peak flow of runoff from the site and improving downstream base flows in the open channel system.

In addition, planting of native plants and trees would promote evapotranspiration, thereby decreasing runoff and discharge from the site.

On-site runoff control is required per the NPDES permit and will be addressed in the final design.

MR #6: Runoff Treatment

Projects in which the total effective, pollution-generating impervious surface (PGIS) is 5,000 square feet or more are required to treat the volume of runoff from a 6-month, 24-hour storm. Alternatively, the 91st percentile, 24-hour runoff volume indicated by an approved runoff model may be used. This standard meets the requirements of "Basic" treatment as defined by the SWMM and required to meet the conditions of the NPDES

permit. Per the SWMM, this project is also required to meet an “Enhanced” level of treatment. Enhanced treatment will be provided by a treatment train approach where basic treatment will be provided by a wetpool volume followed by filtration through media filter cartridges downstream of the detention/wetpool facility. Enhanced treatment provides a higher removal rate for solids, dissolved metals and oil and grease.

Enhanced runoff treatment will be provided for all PGIS of the site per Volume 5 of the SWMM. A wetpond followed by a StormFilter™ Vault will treat runoff from the north portion of the site (Basin 1) and a water quality vault followed by a StormFilter™ Vault will treat runoff from the south portion of the site (Basin 2). The StormFilter™ Vaults will be sized to treat the 2-year flow discharged from the detention facilities in each basin.

MR #7: Flow Control

The detention standard defined by the Ecology SWMM requires stormwater storage be sized to control the post-project site to match 50% of the 2-year peak flow up to the full 50-year peak flow for forested conditions. A 50-year event means that for any given year there is a 1 in 50 chance that the peak flow will be equaled or exceeded.

Flow control facilities for the site include a detention/wetpond located at the northeast corner of the site and a detention/wetvault located in the southeastern portion of the site.

The flow control facilities will be designed in accordance with the SWMM.

MR #8: Wetlands Protection

The SWMM requires an analysis to show how wetlands will be protected and/or mitigated if impacted. Wetland A is adjacent to the northern border of the site; it is a Category II wetland that will be protected and preserved as part of the proposed development. Wetland C, a Category III wetland, is located at the west central side of the site. Wetland C (3,262 square feet) will be filled for construction of the proposed bypass roadway. Replacement of the filled wetland will be at the 2:1 ratio required for a Category III wetland per the City of Lynnwood Municipal Code (Chapter 17.10.055). Therefore, a larger area of a higher quality wetland will be created in place of the filled wetland. This mitigation will be located immediately adjacent to Wetland A, thereby enlarging this higher quality wetland.

MR #10: Operations and Maintenance

An operations and maintenance manual, which will contain specific requirements for the entire storm drainage system including conveyance pipe, catch basins, treatment facilities and detention facilities, will be included with the final permit application submitted to the City of Lynnwood. A log of maintenance activity that indicates what actions were taken shall be kept and be available for inspection by the City of Lynnwood.

Additional Mitigating Measures Needed to Reduce Impacts

During Construction

The exact measures and approach to handling stormwater during construction will be more thoroughly detailed during future design and permitting for the project. These measures will need to meet 2005 SWMM requirements and the NPDES construction permit requirements, which will include water quality monitoring during construction. Because these design details are not available at this time, the additional measures listed below are preliminary recommendations and considerations rather than specific requirements. This will allow for some flexibility in the plan review process by the City. These recommendations/considerations include the following:

- Limit the extent of active construction areas (e.g., limiting the area of active grading to smaller areas in phases rather than the entire 35 acres at one time).
- Require the construction of the off-site runoff bypass system as an initial element of construction to prevent off-site runoff from coming in contact with disturbed areas.
- Consider implementation of filter systems (e.g., Baker tanks) and/or chemical treatment systems to treat construction water.
- In construction of the vaults, allow sufficient curing time of the concrete prior to vault operation. This would reduce the potential for high pH levels that typically occur from newly poured concrete.

Post-Construction

At a minimum, the project must comply with the stormwater requirements defined in the current NPDES permit and the City's stormwater code. These codes state that projects implement low impact development (LID) to the maximum extent feasible (practicable). It is noted, however, that the Department of Ecology is currently drafting new language to the NPDES permit that includes additional or more stringent requirements for LID (new permit expected in 2013). Therefore, Ecology is redefining what "the maximum extent practicable" is with respect to LID. During design of the post-construction LID, some application of the more stringent LID requirements (in draft form) may therefore be appropriate for additional mitigating measures. An example is greater use of pervious pavement.

4. Significant Unavoidable Adverse Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

With the mitigation required by regulation as described above, no significant unavoidable adverse stormwater impacts are expected.

5. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 2—Project Sponsor's Preferred Alternative without Office

Impacts of Alternative 2 without mitigation would be very similar to Alternative 1. These impacts include the potential for erosion, degradation of water quality, and increases in downstream flows. During construction, the amount of clearing (35 acres) and cut/fill volume (350,000 to 400,000 cubic yards) would be similar to Alternative 1.

Mitigating measures for Alternative 2 would also be similar to Alternative 1, although the size and extent of the mitigating measures would be slightly less based on the difference in impervious area. However, the types of temporary erosion control measures during construction, and flow control and water quality facilities for the post-developed site would be the same.

Under developed conditions, the combined 25-year inflow into the detention pond and detention vault would be between 17.3 and 18.0 cfs. The mitigated release rate from the flow control facilities for Alternative 2 would be the same as for Alternative 1 (1.72 cfs) because, in both cases, facilities would be sized to match “forested” conditions.

Alternative 1 consists of approximately 87.6 percent impervious area for the entire site; Alternative 2 is estimated to be between 85 to 90 percent impervious area. For Alternative 2 to achieve the same release rate, the stormwater flow control volume would range from slightly smaller to slightly larger than that proposed for Alternative 1, depending on the final site layout (amount of impervious surface area).

For Basin 1, this could result in a detention pond volume (excludes water quality volume) of approximately 6.9 to 7.1 acre-feet compared to 7.0 acre-feet for Alternative 1 and, for Basin 2, a detention vault volume of approximately 5.3 to 5.5 acre-feet compared to 5.5 acre-feet for Alternative 1.

Similarly, the total water quality volume required for Alternative 2 would be from slightly smaller to slightly larger than Alternative 1, depending upon the actual amount of impervious area for this alternative.

No significant unavoidable adverse impacts would occur.

6. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 3—Lower Intensity Mixed Use Alternative

Impacts of Alternative 3 without mitigation would be very similar to Alternative 1. These impacts include the potential for erosion, degradation of water quality, and increases in downstream flows. During construction, the amount of clearing (35 acres) and cut/fill volume (375,000 to 425,000 cubic yards) would be similar to Alternative 1.

Mitigating measures for Alternative 3 would also be similar to Alternative 1, although the size and extent of the mitigating measures may be slightly different if there is a difference in impervious area. However, the types of temporary erosion control measures during construction, and flow control and water quality facilities for the post-developed site would be the same.

Under developed conditions, similar to Alternative 2, Alternative 3 would consist of approximately 85 to 90 percent impervious area. The combined 25-year inflow into the detention pond and detention vault would be between 17.3 and 18.0 cfs. The mitigated release rate from the flow control facilities for Alternative 3 would be the same as for Alternatives 1 and 2 (1.72 cfs) because, in all cases, facilities would be sized to match “forested” conditions.

For Basin 1, this could result in a detention pond volume of approximately 6.9 to 7.1 acre-feet compared to 7.0 acre-feet for Alternative 1 and, for Basin 2, a detention vault volume of approximately 5.3 to 5.5 acre-feet compared to 5.5 acre-feet for Alternative 1.

Similarly, the total water quality volume required for Alternative 3 would be from slightly smaller to slightly larger than for Alternatives 1 and 2, depending upon the actual amount of impervious area for this alternative.

No significant unavoidable adverse impacts would occur.

7. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 4—All Retail Alternative

Impacts of Alternative 4 without mitigation would be very similar to Alternative 1. These impacts include the potential for erosion, degradation of water quality, and increases in downstream flows. During construction, the amount of clearing (35 acres) would be similar to Alternative 1, and cut/fill volume (250,000 to 300,000 cubic yards) would be somewhat less.

Mitigating measures for Alternative 4 would also be similar to Alternative 1, although the size and extent of the mitigating measures would be slightly less based on the difference in impervious area. However, the types of temporary erosion control measures during construction, and flow control and water quality facilities for the post-developed site would be the same.

Under developed conditions, Alternative 4 would consist of approximately 80 to 90 percent impervious area. The combined 25-year inflow into the detention pond and detention vault would be between 16.7 and 18.0 cfs. The mitigated release rate from the flow control facilities for Alternative 4 would be the same as for Alternatives 1, 2, and 3 (1.72 cfs), because, in all cases, facilities would be sized to match “forested” conditions.

For Basin 1, this range of impervious area would result in a detention pond volume of approximately 6.5 to 7.1 acre-feet compared to 7.0 acre-feet for Alternative 1 and, for

Basin 2, a detention vault volume of approximately 5.0 to 5.5 acre-feet compared to 5.5 acre-feet for Alternative 1.

Similarly, the total water quality volume required for Alternative 4 would be anywhere from slightly smaller to slightly larger than Alternatives 1, 2, and 3 depending upon the actual amount of impervious area for this alternative.

No significant unavoidable adverse impacts would occur.

8. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 5—No Action Alternative

Impacts of Alternative 5 without mitigation would be very similar to Alternative 1. These impacts include the potential for erosion, degradation of water quality, and increases in downstream flows. During construction, the amount of clearing (35 acres) would be similar to Alternative 1, and cut/fill volume (250,000 to 300,000 cubic yards) would be somewhat less.

Mitigating measures for Alternative 5 would also be similar to Alternative 1, although the size and extent of the mitigating measures would be slightly less based on the difference in impervious area. However, the types of temporary erosion control measures during construction, and flow control and water quality facilities for the post-developed site would be the same.

Under developed conditions, similar to Alternative 4, Alternative 5 would consist of approximately 80 to 90 percent impervious area. The combined 25-year inflow into the detention pond and detention vault would be between 16.7 and 18.0 cfs. The mitigated release rate from the flow control facilities for Alternative 5 would be the same as for Alternatives 1, 2, 3, and 4 (1.72cfs) because, in all cases, facilities would be sized to match “forested” conditions.

For Basin 1, this range of impervious area would result in a detention pond volume of approximately 6.5 to 7.1 acre-feet compared to 7.0 acre-feet for Alternative 1 and, for Basin 2, a detention vault volume of approximately 5.0 to 5.5 acre-feet compared to 5.5 acre-feet for Alternative 1.

Similarly, the total water quality volume required for Alternative 5 could be anywhere from slightly smaller to slightly larger than the other alternatives depending upon the actual amount of impervious area for this alternative.

No significant unavoidable adverse impacts would occur.

9. Comparison of Impacts and Mitigating Measures for the Alternatives

The following table compares the stormwater impacts and corresponding mitigation for each alternative.

Summary of Stormwater Impacts and Mitigation					
	Alternative				
	1	2	3	4	5
Impervious Area (%)	87.6	85 - 90	85 - 90	80 - 90	80 - 90
Cleared Area (acres)	35	35	35	35	35
Cut/Fill Volume (1000 cubic yards)	375 - 425	350 - 400	375 - 425	250 - 300	250 - 300
25-Year Inflow (cubic feet per second)	17.7	17.3 - 18.0	17.3 - 18.0	16.7 - 18.0	16.7 - 18.0
Basin 1 Detention Pond Volume (ac-ft)	7.0	6.9 - 7.1	6.9 - 7.1	6.5 - 7.1	6.5 - 7.1
Basin 2 Detention Pond Volume (ac-ft)	5.5	5.3 - 5.5	5.3 - 5.5	5.0 - 5.5	5.0 - 5.5
Release Rate (cubic feet per second)	1.72	1.72	1.72	1.72	1.72

D. Plants and Animals Including Wetlands

1. Affected Environment

The former Lynnwood High School site is urban with most native vegetation cleared away from buildings, streets, parking lots, sidewalks, athletic fields, landscaping, and other infrastructure components. Natural vegetation remains along the western and northern property boundaries. Site visits were conducted by Shockey Planning Group (formerly Shockey/Brent, Inc.) staff in February and June 2006 and in February 2011 to characterize the plant and animals located on the site and to identify critical areas. Four types of critical areas are defined by Lynnwood City Code¹: wetlands, streams, fish and wildlife priority areas, and geologically hazardous areas. Geologically hazardous areas and fish and wildlife priority areas do not occur on this site. Two wetlands (A and C) and one stream (Tunnel Creek) were identified.

Plants

Natural vegetation on the subject property is comprised of second-growth mixed forest, wetland, and invasive species (Table 3-5). The site has a small, non-contiguous block of undeveloped forest at its western edge.

The Washington Department of Natural Resources (DNR) website was consulted regarding endangered or threatened plant species. None was present in the project vicinity as of September 2008 (State of Washington, 2008c).

Animals

The block of undeveloped forest habitat supports a limited variety of wildlife species in an area that is undergoing development. Habitat is isolated and available to a very small number of wildlife, but many species of birds (City of Lynnwood, 2004). See Table 3-6 for wildlife species likely to inhabit the subject property. The Washington Department of Fish and Wildlife (WDFW) does not list Tunnel Creek as a fish-bearing stream.

Threatened, Endangered, and Priority Species and Habitats

According to the WDFW's Priority Habitats and Species Database (State of Washington, 2007), the site is located in the vicinity of an exotic animal farm and a heron rookery. Subsequent conversations with the WDFW verify that the site is a sufficient distance from the heron colony (more than 1,000 feet) to prevent disturbance of nesting herons due to construction activities (Thompson, 2006).

¹ LMC 17.10.050

Table 3-5. Vegetation on the Project Site

Scientific Name ²	Common Name ²	Indicator Status ³
TREES:		
<i>Alnus rubra</i>	Red alder	FAC
<i>Acer macrophyllum</i>	Big-Leaf Maple	FACU
<i>Pseudotsuga menziesii</i>	Douglas-fir	FACU
<i>Thuja plicata</i>	Western redcedar	FAC
SHRUBS:		
<i>Ilex aquifolium</i>	Holly	FACU
<i>Rubus laciniatus</i>	Evergreen blackberry	FACU+
<i>Rubus procerus</i>	Himalayan blackberry	FACU
<i>Rubus spectabilis</i>	Salmonberry	FAC+
<i>Gaultheria shallon</i>	Salal	FACU
GRAMINOIDS:		
<i>Phalaris arundinacea</i>	Reed Canary Grass	FACW
<i>Typha latifolia</i>	Common Cattail	OBL
FORBS:		
<i>Equisetum arvense</i>	Common horsetail	FAC
<i>Equisetum telmateia</i>	Giant horsetail	FACW
<i>Hedera helix</i>	English ivy	FACU
<i>Polystichum munitum</i>	Sword fern	FACU
<i>Pteridium aquilinum</i>	Bracken fern	FACU
<i>Ranunculus repens</i>	Creeping buttercup	FACW
<i>Pteridium aquilinum</i>	Bracken fern	FACU
<i>Scirpus microcarpus</i>	Small Flowered Bulrush	OBL

1 – Species list compiled during site visits in 2006.

2 – Scientific and common names following Cooke (1997).

3 – Indicator Status refers to probability of occurrence in a wetland:

OBL: obligate, Probability >99% occur in wetlands; FACW: facultative wetland, Probability 67% to 99% occur in wetlands; FAC: facultative, Probability 34% to 66% occur in wetlands; FACU: facultative upland, Probability 1% to 33% occur in wetlands; UPL: upland, Probability <1% occur in wetlands.

According to DNR’s Washington Natural Heritage Program database (verified September 2008), threatened or endangered plant species are present in the same Section, Township, and Range as the subject property. Additional information was requested from DNR that revealed that no endangered or threatened plant species are located on-site or in the immediate vicinity of this project.

Wetlands

Wetlands information is based on the report “Wetland Delineation Methods and Results for Lynnwood High School” (Shockey/Brent, Inc., 2007). Two areas exhibit positive indicators of the three criteria for regulated wetlands: presence of hydric soils, wetland hydrology, and hydrophytic vegetation. These were delineated and confirmed by the

Table 3-6. Wildlife Species Likely to Occur on the Project Site

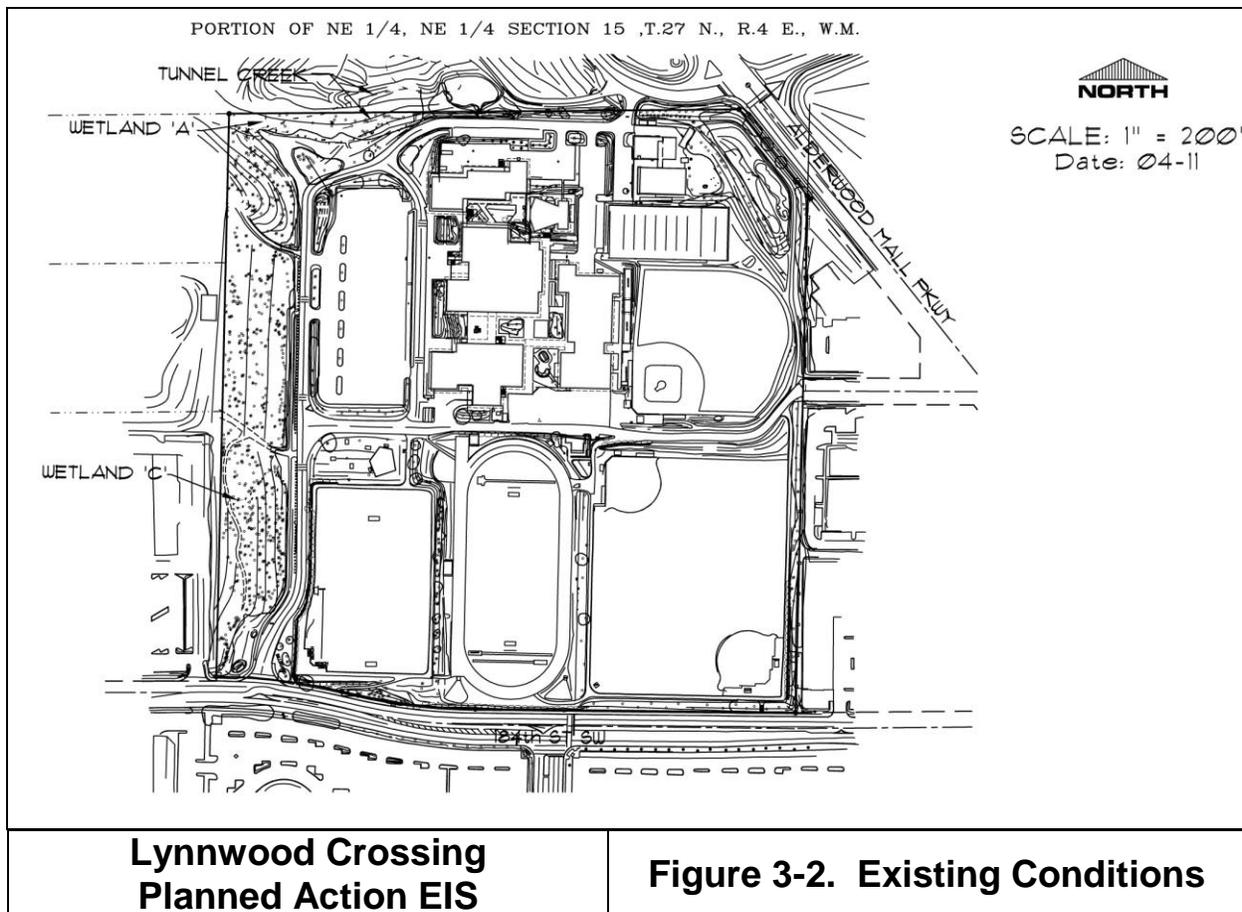
Common Name	Species Name
MAMMALS:	
Raccoon	<i>Procyon lotor</i>
Virginia Opossum	<i>Didephis virginiana</i>
Coyote	<i>Canis latrans</i>
Cottontail Rabbit	<i>Sylvilagus spp.</i>
Squirrel	<i>Sciurus spp.</i>
Muskrat	<i>Ondatra zibethicus</i>
BIRDS:	
Red-Winged Blackbird	<i>Agelaius phoeniceus</i>
Cassin's Finch	<i>Carpodacus cassinii</i>
House Finch	<i>Carpodacus mexicanus</i>
Yellow Warbler	<i>Dendroica petechia</i>
Yellow-rumped Warbler	<i>Dendroica coronata</i>
Black-throated Gray Warbler	<i>Dendroica nigrescens</i>
Western Tanager	<i>Piranga ludoviciana</i>
House Wren	<i>Troglodytes aedon</i>
Tree Swallow	<i>Tachycineta bicolor</i>
Violet-green Swallow	<i>Tachycineta thalassina</i>
American Crow	<i>Corvus brachyrhynchos</i>
Cassin's Vireo	<i>Vireo cassinii</i>
Warbling Vireo	<i>Vireo gilvus</i>
Willow Flycatcher	<i>Empidonax traillii</i>
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>
Canada Goose	<i>Branta canadensis</i>
Black-capped Chickadee	<i>Poecile atricapilla</i>

City and can be seen on Figure 3-2 on the next page. See also *Appendix B: Critical Areas Report*.

Wetland A

Wetland Characteristics. Wetland A is a flow-through depression wetland adjacent to the northern border of the subject property, which feeds the off-site stormwater detention pond. Wetland A (Figure 3-3) is associated with Tunnel Creek. The wetland is continuous from the northwest property corner to the north central property edge where it feeds into a stormwater detention pond located just north of the property line. The total area of Wetland A is 17,460 square feet.

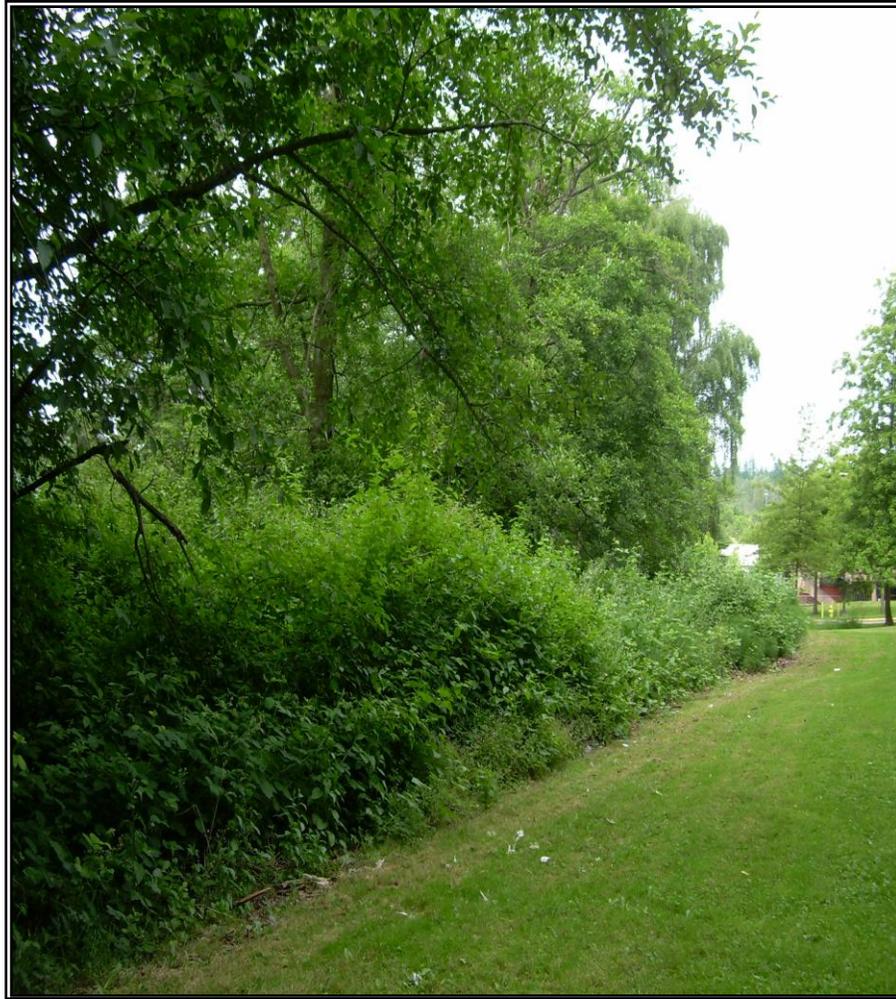
According to LMC 17.10.050, which relies on Ecology's 2004 Washington State Wetland Rating System for Western Washington to determine wetland categories, Wetland A is classified as Category II for water quality functions, hydrologic functions, and



habitat functions. Wetland A functions to improve the water quality of surface water runoff from the neighboring developed properties prior to its subsequent release into Swamp Creek via surface and groundwater routes. Category II wetlands are provided a 110-foot protective buffer in the City.

Overall, Wetland A provides moderate habitat functional values. The higher values are for overall water quality and hydrological functions. This wetland is in good condition; however, residential development, vegetation clearing, and landscaping have facilitated a heavy infestation of invasive plant species near its western boundary.

Wetland Parameters. Hydrology for Wetland A is provided primarily by culverts leading into and out of the wetland. Signs of hydrology include soil saturation to the surface, a sulfuric odor, and organic staining on vegetation and tree trunks. The dominant cover type is a forested wetland; however, scrub-shrub, and emergent cover types are also present. Plants in this wetland area include red alder, giant horsetail, small flowered bulrush, creeping buttercup, Himalayan blackberry, and bittersweet nightshade. The indicator status of all of these plants ranges from facultative to facultative wetland. The primary soil type in this wetland is Mukilteo muck. Soil color from 0 to 18 inches below ground surface is Gley 1-4/SGY with a silty sand texture.



**Lynnwood Crossing
Planned Action EIS**

**Figure 3-3.
Wetland A**

Wetland C

Wetland Characteristics. Wetland C (Figure 3-4) is located at the west central side of the site. The wetland lies in a shady forested patch with mature red alder trees and a mix of forest upland and wetland plants. It is a flow-through depressional wetland fed and drained by surface water run-off culverts from the neighboring developed properties. It is inundated seasonally. Although the wetland is not inundated during dry months, the soil remains saturated to the surface year round. The total area of Wetland C is 3,262 square feet.

According to LMC 17.10.050, Wetland C is classified as Category III for water quality functions, hydrologic functions, and habitat functions. Wetland C functions as a filter for surface water run-off before it seeps into the water table. Category III wetlands are provided a 75-foot protective buffer in the City. Overall, Wetland C provides limited habitat functional values. The highest value is for water quality. This wetland is in fair condition.



**Lynnwood Crossing
Planned Action EIS**

**Figure 3-4.
Wetland C**

Wetland Parameters. Wetland hydrology is provided primarily by surface water inflows. The wetland is dominated by a forested overstory of fir and alder trees. Other vegetation includes horsetail, bracken fern, and salmonberry. Over 50 percent of the dominant plant species are hydrophytic. The primary soil type of this wetland is Alderwood-Urban land complex. From 0 to 18 inches below ground surface the soil color is Gley 1-2.5/10Y with a silty texture. Hydrological indicators include saturation to the surface, hydric soils, a sulfuric odor, and organic staining.

Tunnel Creek

One stream, Tunnel Creek, is located at the northern property boundary of the project site (Figure 3-5). The source of the water is surface water run-off from developed land. Tunnel Creek flows northeast beneath SR-525 via culverts until it terminates in Swamp Creek. The City classifies this creek as Category III, which means that it is naturally intermittent or ephemeral during years of normal rainfall and is not used by salmonids.



**Lynnwood Crossing
Planned Action EIS**

**Figure 3-5.
Tunnel Creek**

(LMC 17.10.060). WDFW does not classify this creek as fish bearing. The City requires a 35-foot buffer from the ordinary high water mark of all Category III streams (LMC 17.10.061). The stream buffer in the northwest portion of the site is confined within the buffer of Wetland A. After exiting Wetland A, Tunnel Creek splits; a portion of the creek goes north to an off-site pond located just north of the property boundary, and the other portion enters a culvert. The portion that heads north into the pond eventually flows south again out of the pond and re-joins the piped section of Tunnel Creek on-site along the property boundary. Tunnel Creek is currently piped along the property boundary for approximately 350 linear feet. It daylights again just east of the existing access driveway, then heads south and follows Alderwood Mall Parkway. The creek crosses under Alderwood Mall Parkway near The Keg property. Eventually, it flows into Swamp Creek.

signed to have the minimum number of road crossings and to avoid intersections to ensure that maintenance of the new roadway can occur.

Under this alternative, no impacts would occur to Wetland A. The wetland and its buffers would be preserved. All stormwater would be treated in a detention pond or wetvault.

Development within wetlands and streams would require compliance with the Federal Clean Water Act, which includes State water quality certification (Section 401), the National Pollutant Discharge Elimination System (NPDES), Hydraulic Project Approval (HPA) and discharge of dredge or fill materials into waters of the U.S. The State of Washington Department of Ecology has local regulatory authority over Sections 401 and 402 of the CWA as granted by the U.S. Environmental Protection Agency.

The City of Lynnwood has local jurisdictional authority over the critical areas on site. The development proposal would be held to the standards outlined in Section 17.10 of the Lynnwood Municipal code with regard to critical areas.

3. Mitigating Measures for Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

In order to replace the functions and values of Wetland C, which would be filled under Alternative 1, the Proponent would replace the 3,262 square feet of fill by creating 6,536 square feet of wetland adjacent to the south side of Wetland A (Figure 3-6 and Figure 3-7). The new wetland boundaries would be monitored during and after development to determine that the area of replacement equals or exceeds an area of 6,536 square feet. This would create a 2:1 mitigation ratio, as required by LMC 17.10.055. Wetland mitigation would include the removal of invasive species and planting of native indigenous trees, shrubs, and herbaceous plant species. During the 5-year monitoring period, the Proponent would periodically conduct a functions and values analysis of the wetland to determine if expected functional gains are attained and maintained.

The wetland creation area would be excavated to the same elevation as Wetland A to provide a hydrologic connection via groundwater and to accept potential overbank flooding of Tunnel Creek. As part of the wetland creation, old culverts and gravel fill would be removed consistent with City policy ER-5.15. The wetland would be planted with a mix of native indigenous woody species and a seed mix appropriate to the specific conditions of the site. Historically, this area has been maintained as lawn for the school property. The wetland mitigation would return the area to a more natural condition.

Parking lot lights would be directed away from the wetland mitigation area to minimize wildlife disturbance.

Wetland A would be afforded the buffer protections provided for in LMC 17.10.

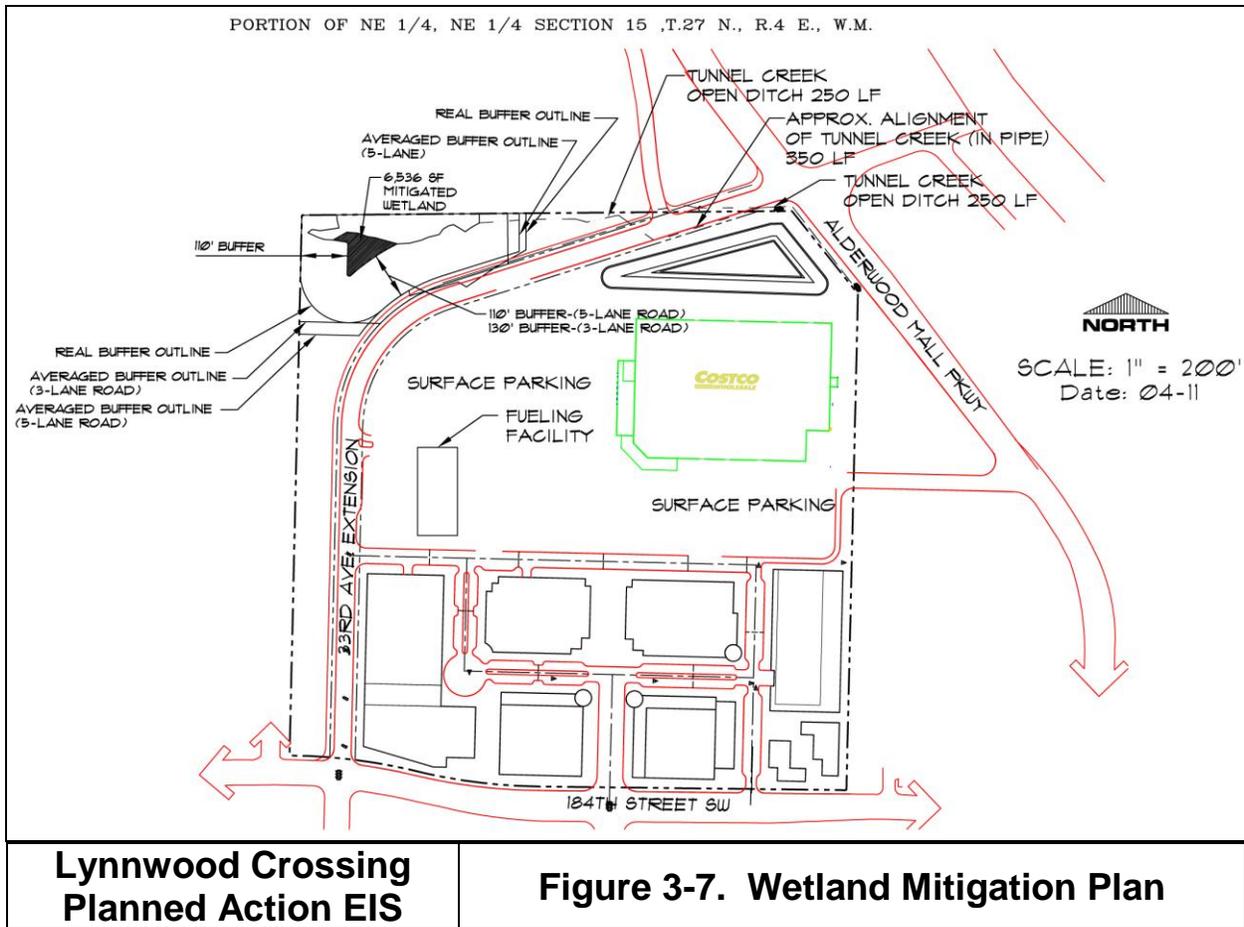


**Lynnwood Crossing
Planned Action EIS**

**Figure 3-6.
Area Proposed for
Wetland Creation**

Compensatory mitigation is proposed on site in the form of daylighting a portion (50 LF) of Tunnel Creek west of the new roadway that is currently contained in a pipe. Final design for this area has not yet been completed; however, it is anticipated that the new stream channel would be one to two feet deep and two to three feet wide. The stream buffer would be planted with a mix of native indigenous woody species and a seed mix appropriate to the specific conditions of the site.

The associated buffer with Tunnel Creek should be 35 feet in accordance with LMC 17.10.061. This buffer in the northeast portion of the site is already impacted with existing site improvements and does not currently meet the 35-foot buffer requirement. In accordance with LMC 17.10.047.C., the 35-foot buffer requirement would not be met in the northeastern portion of the site. However, this area is already developed as a detention pond and there is a detention pond proposed in the same location under Alternatives 1 - 3; no additional encroachment into the buffer is proposed. Under Alternatives 4 and 5, this buffer area would be vegetated.



Planting of native vegetation in the wetland and stream mitigation area would also compensate for impacts to plants and animals. Plant species proposed for the mitigation area would be native to western Washington and of value to wildlife for habitat and foraging opportunities.

4. Significant Unavoidable Adverse Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

With the mitigating measures described in the previous section, no significant unavoidable adverse impacts are anticipated.

5. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 2—Project Sponsor's Preferred Alternative without Office

Impacts

Alternative 2 would result in impacts to plants and animals similar to those for Alternative 1. Wetland and stream impacts would also be similar to Alternative 1. A connector street would cross the site and Wetland C would be filled and Tunnel Creek would be impacted as outlined for Alternative 1.

Mitigating Measures

Mitigating measures for Alternative 2 are the same as those proposed for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are anticipated.

6. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 3—Lower Intensity Mixed Use Alternative

Impacts

Alternative 3 would result in impacts to plants and animals similar to those for Alternative 1. Wetland and stream impacts would also be similar to Alternative 1. A connector street would cross the site and Wetland C would be filled and Tunnel Creek would be impacted as outlined in Alternative 1.

Mitigating Measures

Mitigating measures for Alternative 3 are the same as those proposed for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are anticipated.

7. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 4—All Retail Alternative

Impacts

Alternative 4 would result in impacts to plants and animals similar to those for Alternative 1. Wetland and stream impacts would also be similar to Alternative 1. A connector

street would cross the site and Wetland C would be filled and Tunnel Creek would be impacted as outlined in Alternative 1.

Mitigating Measures

Mitigating measures for Alternative 4 are the same as those proposed for Alternative 1. Under Alternative 4, the buffer area of Tunnel Creek in the northeast corner of the site would be vegetated.

Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are anticipated.

8. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 5—No Action Alternative

Impacts

Alternative 5 would result in impacts to plants and animals similar to those for Alternative 1. Wetland and stream impacts would also be similar to Alternative 1. A connector street would cross the site and Wetland C would be filled and Tunnel Creek would be impacted as outlined in Alternative 1.

Mitigating Measures

Mitigating measures for Alternative 5 are the same as those proposed for Alternative 1. Under Alternative 4, the buffer area of Tunnel Creek in the northeast corner of the site would be vegetated.

Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are anticipated.

E. Environment Health

This section addresses noise and soil contamination impacts of the proposed action. The first part of this section discusses noise impacts and the second section discusses soil contamination.

Noise

Noise can be characterized as excessive or unwanted sound. The decibel scale used to describe noise is a logarithmic system that accounts for the large differences in audible sound intensities. This scale accounts for the human perception that loudness doubles with an increase of 10 decibels (dB). For example, a 70-dB sound level will sound twice as loud as a 60-dB sound level. People generally cannot detect differences of 1 dB. Although differences of 2 or 3 dB can be detected under ideal laboratory situations, they are difficult to discern in an active outdoor noise environment. A 5-dB change would likely be perceived under normal listening conditions.

Because of the logarithmic scale used to describe noise, a doubling of noise source strength produces a 3-dB increase in average noise. For example, two adjacent, discrete noise events occurring simultaneously would result in a 3-dB increase over the sound level produced by only one event. Such an increase would not be perceived as a doubling in noise *loudness*, which requires a 10-dB increase.

When addressing the effects of noise on people, it is necessary to consider the frequency response of the human ear, or those frequencies that people hear best. Sound measuring instruments are therefore often programmed to “weight” sounds based on the way people hear. The frequency-weighting most often used to evaluate environmental noise is A-weighting because it best reflects how humans perceive sound. Measurements from instruments using this system are reported in “A-weighted decibels,” or dBA.

Factors affecting noise transmission include distance from a source, frequency of the sound, the absorbency of the ground, obstructions and duration of the sound. The potential for impact at a given receiver also depends both on who is listening and on the existing levels where the sound is received.

Federal regulatory agencies often use the equivalent sound level (L_{eq}) to characterize sound levels and to evaluate noise impacts. The L_{eq} is the level of a *constant* sound that has the same sound energy as the actual, fluctuating sound. As such, the L_{eq} can be considered an energy-average sound level. However, unlike a simple arithmetic average, which can obscure very high and very low variations from the average, the L_{eq} gives most weight to the highest and the longest lasting sound levels because they contain the most energy. The L_{eq} noise metric has been found to be highly correlated to community response to noise, and it is often the metric calculated by noise models used to assess potential impacts and the need for mitigation.

1. Regulatory Overview

Noise is typically regulated by local ordinances. The Lynnwood Crossing site is subject to the noise limits and regulations established in Chapter 10.12 of the Lynnwood Municipal Code (LMC 10.12). LMC 10.12 establishes limits on sounds crossing property boundaries based on the Environmental Designation for Noise Abatement (EDNA) of the sound source and the receiving properties. Generally, lands where people reside and sleep are considered Class A EDNAs. Lands with commercial uses are considered Class B EDNAs and industrial lands are Class C EDNAs. Lynnwood assigns specific zoning designations to each EDNA, generally following the previous guidelines. The allowable noise levels are displayed in Table 3-7.

Table 3-7. Lynnwood Maximum Permissible Noise Levels (dBA)

EDNA of Source Property	EDNA of Receiving Property		
	Class A Day/Night	Class B	Class C
Class A	55/45	57	60
Class B	57/47	60	65
Class C	60/50	65	70
The limitations for noise received in Class A EDNAs are reduced by 10 dBA during nighttime hours (10 p.m. - 7 a.m.). Source: LMC 10.12.500			

The Lynnwood noise rule allows the “maximum” permissible noise levels presented above to be exceeded for certain periods of time in any hour of the day or night as follows:

- 5 dBA for no more than 15 minutes
- 10 dBA for no more than 5 minutes
- 15 dBA for no more than 1.5 minutes

Sometimes these exceptions are described in terms of the percentage of time a certain level is exceeded, using statistical noise descriptors (L_{ns}) that can be measured. For example, L_{25} represents a sound level that is exceeded 25 percent of the time, or 15 minutes in an hour. Similarly, $L_{8.33}$ and $L_{2.5}$ are the sound levels that are exceeded 8.33 and 2.5 percent of the time, or 5 and 1.5 minutes in an hour, respectively.

The allowable sound level is not to be exceeded by more than 15 dBA (L_{max}) at any time.

A number of noise sources and activities are exempt from the noise limits shown in Table 3-7, including the following:

- sounds created by motor vehicles traveling on public roadways (i.e., when regulated by LMC 10.12.600, the motor vehicle noise performance standards); and
- sounds from temporary construction sites, except between the hours of 10 p.m. and 7 a.m. if the receiving property is located within a Class A EDNA. The City limits construction to 7:00 AM to 6:00 PM weekdays unless specific authorization has been granted.

Under Alternatives 1 through 4, the site would be zoned “Commercial-Residential” (C-R). This zoning classification does not have an explicit EDNA designation in LMC 10.12.400. Given the mix of residential and commercial uses, it would likely be considered either a Class A or Class B EDNA noise source by the City.

The nearest residences west and north of the site are zoned RMM (Medium Density Multiple-Family) and RS-8 (Single-Family Residential) and are Class A EDNA receiving properties. The noise limits are 55 and 57 dBA during the day (7 a.m. to 10 p.m.) and 45 and 47 dBA, for Class A and Class B EDNA noise sources, respectively.

The Residence Inn east of the site is zoned PCD (Planned Commercial Development) and is a Class B EDNA receiving property. The noise limits at this location are 57 and 60 dBA any time of day or night for Class A and Class B EDNA noise sources, respectively.

Because the Lynnwood Municipal Code exempts noise from motor vehicles traveling on public roadways from its noise limits, ENVIRON used the Federal Highway Administration (FHWA) noise impact criteria to assess potential noise impacts due to the new bypass road associated with the project. *These criteria do not apply to this project* because they are intended for analyzing effects related to new, expanded, or substantially modified roads controlled by state or federal agencies. However, the FHWA traffic noise criteria and the Washington state implementation of these rules through state policies are discussed below to provide readers a perspective on the noise levels related to traffic sources.

The FHWA identified noise criteria and established procedures for evaluating road improvement projects in its Federal-Aid Highway Manual (U.S. Department of Transportation, 1982b). The FHWA defines a traffic noise impact as a predicted traffic noise level approaching or exceeding 67 dBA at exterior locations associated with residential uses, or when the predicted traffic noise levels substantially exceed the existing noise levels. FHWA leaves the definition of “approach” to the states. The Washington State Department of Transportation (WSDOT) defines “approaching” the FHWA limits as sound levels within 1 dBA of the criterion level (i.e., 66 dBA for residential properties). WSDOT defines “substantially exceeding” existing noise levels as an increase greater than 10 dBA.

2. Affected Environment

In July 2008, ENVIRON measured long-term (i.e., 24-hour) sound levels at two locations representing potentially affected receivers nearest to the project site. ENVIRON took the measurements using two Larson Davis 820 sound level meters, with an accuracy of approximately ± 1 dBA. The meters had been factory certified within the previous 12 months and were field calibrated immediately prior to the measurements. ENVIRON fitted the microphones of the meters with windscreens and set them approximately five feet above the ground (at a typical listening height).

Although the sound level meters were unattended for most of the measurements, noise sources were noted during deployment and retrieval of the meters. The ranges of measured sound levels are summarized in Table 3-8. Brief descriptions of the measurement locations and noted noise sources are included in the lower portion of the table. Approximate locations of the measurements are depicted in Figure 3-8.

Table 3-8. Measured Existing Sound Levels (Hourly Levels, dBA)

Location	Time	Leq	Lmax	L2	L8	L25	L90
SLM1	Day	47-58	63-80	52-62	48-61	45-59	43-55
	Night	46-54	55-64	50-57	49-56	47-55	43-51
SLM2	Day	47-51	61-85	50-59	48-53	46-50	44-47
	Night	47-54	56-71	50-57	49-56	48-55	45-52

(SLM = Sound Level Measurement)

SLM1 - Near the eastern property boundary of the Alderwood Park Apartments, adjacent to the western boundary of the project site. This measurement location represents residences in the eastern end of the apartment complex as well as single-family residences at the eastern end of 180th Place SW. Noise sources included distant traffic, maintenance activities in the apartment complex, and airplanes.

SLM2 – At the eastern dead end 179th Street SW northwest of the project site. Taken to represent residences on 179th Street SW as well as the Sims residence on the property directly north of the project site. Noise sources included distant traffic and airplanes.

Source: ENVIRON International Corporation, 2008

3. Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Construction Impacts (Common to All Alternatives)

During construction under any of the project's alternatives, there would be temporary increases in sound levels near active areas of the site, near the alignment of the new bypass road, and along existing roadways used for construction vehicles.



<p>Lynnwood Crossing Planned Action EIS</p>	<p>Figure 3-8. Sound Level Measurement (SLM) and Receptor Locations</p>
--	--

The increases in noise levels with all alternatives would depend on the types of equipment being used and the amount of time it is in use. Sound levels near many types of construction equipment can, at times, exceed the levels recommended for residential or sensitive land uses; these sound levels decrease at a rate of about 6 dBA for each doubling of distance from the source(s). This analysis focused on estimating the possible ranges of construction noise that could occur at residential locations near the project site as outlined in Table 3-9.

During construction, noise from construction equipment would likely exceed Lynnwood’s noise limits at locations very near the construction activity. Construction noise is exempt from the limits during daytime hours (i.e., between 7 a.m. and 10 p.m.). The City limits construction to 7:00 AM to 6:00 PM weekdays unless specific authorization has been granted. Impacts may nonetheless occur at residences close to the active construction areas. In addition, while the temporary nature of construction noise may serve to limit the duration and severity of noise impacts, the potential for noise impacts should be considered during construction of the proposed facility by adhering to the construction hours outlined in the Lynnwood Municipal Code.

Table 3-9. Ranges of Typical Construction Equipment Noise (dBA)

Construction Activity	Types of Equipment	Range Of Noise Levels		
		100 feet	200 feet	500 feet
Clearing	Bulldozer	71-90	65-84	57-76
	Dump Truck	76-88	70-82	62-74
Grading	Scraper	74-87	68-81	60-73
	Bulldozer	71-90	65-84	57-76
Paving	Paver	80-82	74-76	66-68
	Dump Truck	76-88	70-82	62-74
Erection	Crane	70-81	64-75	56-67
	Concrete Mixers	69-81	63-75	55-67
Materials Handling	Concrete Mixers	69-81	63-75	55-67
	Concrete Pumps	75-77	69-71	61-63
	Cranes (movable)	70-81	64-75	56-67
	Cranes (derrick)	80-82	74-76	66-68
Stationary Equipment	Pumps	63-65	57-59	49-51
	Generators	65-76	59-70	51-62
	Compressors	68-81	62-75	54-67
Impact Equipment	Pneumatic Wrenches	77-82	71-76	63-68
	Rock Drills	76-92	69-86	61-78
<p>The range of sound levels presented stem from the variety of types of equipment that may be used for particular tasks as well as the different sound levels that may be produced by different operational modes of the same equipment. For example, some equipment would make more noise when handling heavy loads than when simply idling.</p> <p>Source: U.S. Environmental Protection Agency, 1971</p>				

Operation Impacts

Potential sources of noise associated with the proposed Lynnwood Crossing project include cars accessing the parking lots; heating, ventilation, and air conditioning (HVAC) and other mechanical systems associated with the new buildings; loading docks and heavy trucks idling at the proposed Costco Wholesale warehouse; vehicles at the Costco fueling facility; miscellaneous noises associated with new on-site residences; and off-site traffic on a new bypass road and other area roadways traveling to and from the site. The noise implications of these various project-related sources are discussed below.

Parking Lots/Garage Structure

Parking lots are not typically major generators of noise and rarely cause significant noise impacts. This is particularly true for this project, where the parking lots and garages would all be fairly distant from the nearest off-site sensitive receivers. ENVIRON used procedures established by the United States Federal Transit Administration (FTA) to assess the potential for impacts from the on-site parking facilities. FTA procedures indicate that parking facilities greater than 125 feet from the nearest sensitive receiver (as measured from the center of the parking facility) have little to no potential for noise impact and do not need to be considered further. With the proposed Lynnwood Crossing, the centers of all on-site parking facilities would be at least 350 feet from the nearest off-site residences west of the site and at least 200 feet from the nearest off-site sensitive receiver (i.e., the Residence Inn) east of the site. Therefore, no noise impacts are anticipated from these facilities.

In addition, residential uses in proposed Buildings D and E would be greater than 150 feet from the center of the nearest Costco parking lots and are not expected to be significantly impacted by noise from these facilities.

HVAC Equipment

Heating, ventilation, and air conditioning (HVAC) units may be installed to service commercial/retail uses and possibly new residences. Refrigeration units also may be required to store food at restaurants or cafes. Specific noise levels generated by such equipment would depend on the location, height, and design of individual equipment and building systems. The conceptual site plans available at the time of the noise analysis give no indication of where any HVAC units might be located. However, these units are typically installed atop or adjacent to buildings, and the buildings are approximately 475 feet from the nearest off-site residences west of the site. These distances would greatly reduce the potential for noise impacts from such equipment. Other specific details are not yet available. Regardless, noise from these types of sources would need to be controlled in order to comply with the Lynnwood noise limits at the nearest sensitive receivers during both day and night hours. For a commercial/retail noise source affecting nearby residences (including new on-site residences constructed as part of the development), the nighttime noise limit would be 47 dBA.

Loading Dock and Truck Idling Noise

Other potential noise sources from new commercial establishments include loading docks and idling trucks at the loading docks, specifically at the proposed new Costco Wholesale warehouse. Similar to the HVAC and mechanical equipment discussed previously, loading docks would be more than 1,000 feet from the nearest residences west and north of the site, and noise from loading dock activities would be minimal at these off-site residences. The Costco loading dock could be as near as 250 feet to the hotel east of the site, and noise from the loading dock should be analyzed in more detail nearer final design to identify any measures or design features necessary to ensure the facility complies with the 60-dBA noise limit applicable at this receiver. Compliance with the applicable noise limits at the off-site sensitive receivers nearest the site and at the proposed on-site residences in Buildings D and E, as required by the Lynnwood rule, will minimize the potential for noise impacts from loading dock activities.

Costco Fueling Facility

As part of Alternatives 1 - 3, a fueling facility is proposed in the northwest quadrant of the project site. Noise from vehicles waiting to purchase fuel and moving through the facility could affect nearby off-site residential uses west of the site and proposed new on-site residential uses in Buildings D and E.

To estimate sound levels from the proposed fueling facility, ENVIRON characterized the facility as a parking lot using the CadnaA noise model.⁽¹⁾ Noise from vehicles waiting to purchase fuel would be similar to noise from a parking lot with a high turnover rate.

The facility would have five fuel islands, with two fuel pumps on each side of each island and a potential queue of vehicles waiting for one of two pumps. An average of 5 vehicles could be in each of ten queues waiting for a fuel pump to become available, and each pair of fuel pumps is expected to turnover approximately 27.5 times during a weekend peak hour (i.e., from 11 a.m. to 3 p.m. weekends). This would result in as many as 1,650 vehicle movements at the fuel facility during a peak hour, assuming a worst-case scenario where every vehicle serviced would have to move six times while progressing through the queue and ultimately accessing the fuel pump. Using these assumptions, the modeled sound level at the nearest off-site residence to the west (R4) is 47 dBA, while the modeled levels at the remaining off-site receptor locations range from 37 to 45 dBA. At the nearest proposed on-site residential uses, the predicted sound levels are 50 and 43 dBA at Buildings D and E, respectively. These levels are all well below the City of Lynnwood's daytime noise limit of 57 dBA for a commercial (Class B EDNA) noise source affecting a residential receiving property.

⁽¹⁾ CadnaA (version 4.0, DataKustik 2010) is a computer model that can calculate cumulative sound levels from a variety of sound sources after considering the noise reductions or enhancements caused by distance, topography, ground surfaces, the presence of obstructions (e.g., noise barriers), atmospheric absorption, and meteorological conditions.

During early morning activities (i.e., before 7 a.m.), 35 cars or fewer would be expected to be serviced at the facility in an hour, resulting in a predicted level of 28 dBA or less at the nearest off-site residence and 33 dBA or less at the nearest on-site residential use. These levels are well below the City's nighttime noise limit of 47 dBA.

Because the predicted sound levels of the fuel facility are well below the City of Lynnwood's daytime and nighttime noise limits, no significant noise impacts are expected from this source at the nearest on or off-site residential uses.

On-Site Residential Uses

Noise from maintenance activities on the properties and at new on-site residences would add to the overall noise in their respective vicinities. However, this type of noise is typically minimal, infrequent, and would be similar to maintenance activities occurring at existing residences and public/commercial properties in the project vicinity. Therefore, no noise impacts are expected from this source.

Project-Related Traffic

General Traffic Noise Modeling Data and Methods. Potential noise impacts from project-related traffic were assessed for traffic traveling on existing roadways (including Alderwood Mall Parkway, 184th Street SW, 30th Place SW, and SR-525) and on proposed new public roadways (i.e., the 179th Street SW Extension and the proposed new bypass road around the north and west sides of the project site). For this assessment, ENVIRON considered both the *overall* traffic sound levels and the potential *increases* in traffic sound levels due to the project alternatives. As noted above, noise from traffic traveling on public roadways is exempt from the Lynnwood noise limits. Therefore, this assessment used the FHWA/WSDOT noise impact criteria to gauge potential traffic-related noise impacts.

To assess the potential for noise impacts from project-related traffic, overall traffic noise levels with and without the project were estimated at off-site residential locations west and north of the project site using the CadnaA noise model. ENVIRON used the CadnaA TNM module for estimating traffic noise.⁽²⁾

In addition to assessing traffic noise at off-site residences, ENVIRON considered future (2040) traffic noise levels at new on-site residential uses proposed under Alternatives 1, 2, and 3. Because the residences do not currently exist, impacts were assessed only by comparing the future traffic noise levels to the FHWA/WSDOT noise impact criteria of 66 dBA. Potential noise impacts due to predicted increases in future traffic noise levels compared to existing levels are not expected and were not considered.

Traffic data used in the modeling (including volumes, speeds, and vehicle mixes for area roadways in the year 2012/2013) were obtained from Heffron Transportation (Hef-

⁽²⁾ The TNM module is a form of the FHWA Traffic Noise Model approved by federal and state agencies for considering noise from roadway sources. CadnaA incorporates a recent version of this modeling process.

fron). Alignment data for the new bypass road and other area roadways were provided by BCRA Engineering (BCRA).

It should be noted that there is a new road planned in the project vicinity that is not related to the proposed development. The 179th Street SW Extension Project is planned to be constructed in the next several years; it would connect the eastern terminus of 179th Street SW to 30th Place SW. This roadway project will introduce a new traffic noise source near residences north and northwest of the project site, and this roadway was included in all modeled alternatives in 2012/2013. In addition, the new bypass road around the north and west sides of the project site would be constructed in conjunction with any of the project alternatives, including Alternative 5 (i.e., the No Action Alternative), and was included in the modeling of all alternatives.

Impact Assessment Results for Alternative 1. The modeled traffic noise levels at several representative receptor locations are shown in Table 3-10. The off-site receptor locations are displayed in Figure 3-8.

Table 3-10. Modeled Off-site Traffic Noise Levels, PM Peak Hourly Leq

Receptor	Existing (2011)	2012/2013 Alternatives									
		Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5	
		Level	Inc over Exist	Level	Inc over Exist	Level	Inc over Exist	Level	Inc over Exist	Level	Inc over Exist
Nearest Off-site Residences:											
R1-17902 30th PI W ^a	59	60	1	60	1	60	1	60	1	60	1
R2-17905 33 rd PI W ^b	54	59	5	59	5	59	5	59	5	59	5
R3-3204 180th PI SW ^c	54	54	0	54	0	54	0	54	0	54	0
R4-Alderwood Park Apartments ^d	54	55	1	55	1	55	1	54	1	55	1
Proposed New On-site Residences^e:											
Building D	NA	55	NA	55	NA	55	NA	NA	NA	NA	NA
Building E		54		54		NA					
Building H		NA		59		NA					
^a R1 represents the residence directly north of the project site (i.e., the Sims residence) ^b R2 represents the residences NW of the site near the current eastern terminus of 179 th Street SW ^c R3 represents the residences at the eastern terminus of 180 th PI SW nearest the proposed new bypass road along the western border of the project site ^d R4 represents the nearest Alderwood Park Apartments to the proposed new bypass road along the western border of the project site ^e New on-site residential uses are proposed under Alternatives 1 through 3, but not under Alternatives 4 and 5. Alternative 1 proposes residential uses in Buildings D and E; Alternative 2 proposes residential uses in Buildings D, E, and H; Alternative 3 proposes residential uses in Building D. Because any on-site residential uses would be new, comparison to existing sound levels is not applicable. Apparent errors are due to rounding; all values are rounded to nearest whole decibel. Source: ENVIRON International Corporation, 2011											

As shown in Table 3-10, the highest calculated sound level with Alternative 1 is 60 dBA at the nearest off-site residence due north of the project site (R1). This level would not be considered an impact using FHWA/WSDOT criteria. Furthermore, the modeled sound levels at all other off-site and on-site receivers were 59 dBA or less, well below the 66 dBA considered an impact by WSDOT.

Additionally, the largest calculated increase with Alternative 1 in 2012/2013 compared to the existing sound levels is 5 dBA; it occurs at residences near the current eastern terminus of 179th Street SW (R2). This increase in 2012/2013 would be due primarily to the extension of 179th Street SW to 30th Place SW and would not be due to the proposed project. Regardless, the 5-dBA increase (and the lesser increases at the other receivers) would not be considered “substantial” nor result in an impact according to WSDOT criteria.

It may seem surprising that the new bypass road would have such a minimal effect on overall traffic noise levels at off-site residences near the western edge of the project site. However, a tall retaining wall proposed to be constructed along the western edge of the bypass road as part of that project would act as an effective noise barrier between traffic on the bypass road and residences west and northwest of the project site. This *de facto* noise barrier would reduce noise transmission from the bypass road to levels that would not be expected to be discernible above levels that would occur without the bypass road. At R2, the increase of 5-dBA would be discernible but would be due primarily to the extension of 179th Street SW.

4. Mitigating Measures for Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Construction Mitigation

For any of the project alternatives construction activities could result in audible construction noise at nearby residences. Although exempt from the Lynnwood noise limits during daytime hours (i.e., between 7 a.m. and 10 p.m.; the City limits construction to 7:00 AM to 6:00 PM weekdays unless specific authorization has been granted), construction noise can negatively affect people living nearby. Some of the following techniques and practices can reduce the extent to which people are affected.

Contractors shall use properly sized and maintained mufflers, engine intake silencers, and engine enclosures and turn off idle equipment. Construction contracts can specify that mufflers be in good working order and that engine enclosures be used on equipment when the engine is the dominant source of noise.

Construction staging areas expected to be in use for more than a few weeks should be placed as far as possible from sensitive receivers, particularly residences. Similarly, stationary equipment should be placed as far away from sensitive receiving locations as

possible. Where this is infeasible, portable noise barriers should be placed around the equipment with the opening directed away from the sensitive receiving property. These measures are especially effective for engines used in pumps, compressors, welding machines, and similar equipment that operate continuously and contribute to high, steady background noise levels. In addition to providing about a 10-dBA reduction in equivalent sound levels, the portable barriers demonstrate to the public the contractor's commitment to minimizing noise impacts during construction.

Substituting hydraulic or electric models for impact tools such as jackhammers, rock drills, and pavement breakers would reduce construction and demolition noise. Electric pumps should be specified if pumps are required.

Although back-up alarms (safety warning devices) are exempt from noise ordinances, these devices emit some of the most annoying sounds from a construction site. One potential mitigating measure would be to require back-up alarms on equipment be ambient-sensing alarms that broadcast a warning sound loud enough to be heard over background noise but without having to use a preset, maximum volume. Another alternative would be to use broadband backup alarms instead of typical pure tone alarms. Such devices have been found to be very effective in reducing annoying noise from construction sites.

Operation Mitigation

Potential noise impacts associated with all alternatives are expected to be similar. Noise sources of concern with all of the alternatives include HVAC equipment and loading docks/truck activities. The proponents would need to ensure that noise from these sources will comply with the City of Lynnwood's noise limits at both off-site and new on-site residences, particularly if operated at night. This should include selection of quiet equipment and/or installation in an enclosure or in a location shielded from nearby residences. Noise from the Costco loading dock should be analyzed in more detail nearer final design to identify any measures or design features necessary to ensure the facility complies with the 60-dBA noise limit applicable at the hotel east of the site.

No other noise sources are expected to result in noise impacts, so no other mitigation is suggested.

5. Significant Unavoidable Adverse Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

With the mitigating measures described in the previous section, no significant unavoidable adverse noise impacts are anticipated with the project alternatives. A possible exception is that sound levels at new on-site residences may exceed limits during nighttime hours under Alternatives 1 through 3 as a result of fueling operations.

6. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 2—Project Sponsor's Preferred Alternative without Office

Construction Impacts

Construction impacts would be similar to Alternative 1.

Operation Impacts

Alternative 2 would entail development similar to, but at a higher density than, the development proposed with Alternative 1. Potential noise sources with Alternative 2 would be similar to those identified with Alternative 1 and include parking facilities, HVAC equipment, the Costco loading dock and fueling facility, and human/residential activity on the site. As with Alternative 1, most of these sources have minimal potential to cause noise impacts at the residences nearest the site. Furthermore, noise from activities and equipment on the project site would need to comply with the noise limits established by the City of Lynnwood in LMC 10.12.400. Compliance with these limits would minimize the potential for noise impacts.

Traffic sound levels from new traffic generated by Alternative 2 would be the same as the levels identified with Alternative 1 (Table 3-9). The overall model-calculated sound levels (due to all traffic sources) at the sensitive off-site receivers nearest the site with Alternative 2 are 60 dBA or less. The overall model-calculated sound levels at proposed new on-site residential uses in Buildings D, E, and H are 59 dBA or less. These levels are not considered an impact using WSDOT criteria. Traffic noise increases over existing levels are projected to be 5 dBA or less at existing off-site residences (primarily due to the extension of 179th Street SW), which would not be considered an impact by WSDOT. Thus, no significant traffic noise impacts would be expected with this alternative.

Mitigating Measures

Construction-related mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse noise impacts are expected.

7. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 3—Lower Intensity Mixed Use Alternative

Construction Impacts

Construction impacts would be similar to Alternative 1.

Operation Impacts

Alternative 3 would entail development similar to, but at a lesser density than, the development proposed with Alternative 1. Potential noise sources with Alternative 3 would be similar to those identified with Alternative 1 and include parking facilities, HVAC equipment, the Costco loading dock and fueling facility, and human/residential activity on the site. As with Alternative 1, most of these sources have minimal potential to cause noise impacts at the residences nearest the site. Furthermore, noise from activities and equipment on the project site would be required to comply with the noise limits established by the City of Lynnwood in LMC 10.12.400, and doing so would minimize the potential for noise impacts.

Traffic sound levels from new traffic generated by Alternative 3 would be the same as the levels identified with Alternative 1 (Table 3-9). The overall model-calculated sound levels (due to all traffic sources) at the sensitive receivers nearest the site with Alternative 3 are 60 dBA or less, a level not considered an impact using WSDOT criteria. Traffic noise increases over existing levels are projected to be 5 dBA or less (primarily due to the extension of 179th Street SW), which would not be considered an impact by WSDOT. Thus, no significant traffic noise impacts would be expected with this alternative.

Mitigating Measures

Construction-related mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse noise impacts are expected.

8. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 4—All Retail Alternative

Construction Impacts

Construction impacts would be similar to Alternative 1.

Operation Impacts

Alternative 4 would entail development similar to Alternative 1, but without the residential and office elements. Potential noise sources of concern are similar to those identified with Alternative 1 and could include HVAC equipment, loading docks, and parking facilities. As with Alternative 1, most of these sources have minimal potential to cause noise impacts at the nearest residences to the site. Furthermore, noise from activities and equipment on the project site would need to comply with the noise limits established by the City of Lynnwood in LMC 10.12.400, and doing so would minimize the potential for noise impacts.

Traffic sound levels from new traffic generated by Alternative 4 would be similar to the levels identified with Alternative 1 (Table 3-9). The overall model-calculated sound levels (due to all traffic sources) at the nearest off-site sensitive receivers to the site with Alternative 4 are 60 dBA or less. The overall model-calculated sound level at proposed new on-site residential uses in Buildings D is 55 dBA. Levels of 65 dBA or less are not considered an impact using WSDOT criteria. Traffic noise increases over existing levels are projected to be 5 dBA or less at existing off-site residences (again, primarily due to the extension of 179th Street SW), which would not be considered an impact by WSDOT. No significant traffic noise impacts are expected.

Mitigating Measures

Construction-related mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse noise impacts are expected.

9. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 5—No Action Alternative

Construction Impacts

Construction impacts would be similar to Alternative 1.

Operation Impacts

Alternative 5 would entail development that conforms to the existing zoning and land use designations for the site and would include construction of the bypass road. With Alternative 5, the sound levels from long-term activities on the site would likely be similar to levels expected with Alternative 1. Regardless, any future developer would need to ensure that activities and equipment on the project site comply with the noise limits established by the City of Lynnwood in LMC 10.12.400. Doing so would minimize the potential for noise impacts.

Traffic sound levels from the new bypass road and from traffic generated by on-site activities are expected to be similar to the levels identified with Alternative 1 (Table 3-9). The overall modeled sound levels (due to all traffic sources) at the nearest sensitive receivers to the site are 60 dBA or less, a level not considered an impact using WSDOT criteria. Similarly, traffic sound level increases over existing levels are projected to be 5 dBA or less (primarily due to the extension of 179th Street SW), which would not be considered an impact by WSDOT. No significant traffic noise impacts are expected.

Mitigating Measures

Construction-related mitigation would be the same as Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse noise impacts are expected.

Soil Contamination

Soil and ground water cleanup levels in Washington State are regulated under the Model Toxics Control Act (MTCA) – Chapter 173-330 WAC. The MTCA regulations provide three methods for determining cleanup levels known as Methods A, B and C. Method A involves the use of a tabulated list of cleanup levels for a variety of common contaminants. This method is intended for routine cleanup levels and site assessments for unrestricted site use. Methods B and C provide guidance for calculating health risk-based cleanup levels for unrestricted site use and industrial properties, respectively. The majority of the metals and organic compounds included in the analyses that were conducted are included in the tabulated list of Model A cleanup levels, and this method was used to evaluate most of the testing results.

Selected soil and ground water samples collected at the site were analyzed for diesel- and motor-oil-range total petroleum hydrocarbons (TPH), gasoline range TPH, BTEX compounds (benzene, toluene, ethylbenzene and xylenes), and polynuclear aromatic hydrocarbons (PAHs) in accordance with State methods.

Some PAH compounds are known to be carcinogenic and some are not. The PAH analysis conducted on the site included a suite of 16 PAH compounds, including the seven carcinogenic PAH compounds listed in Table 708-2 of the MTCA regulations (Chapter 173-340-900, Table 708-2). Under MTCA Method A, cleanup levels for these carcinogenic PAHs (cPAHs) are based on a single carcinogenic PAH compound known as benzo(a)pyrene. This compound has the highest toxicity of the seven cPAH compounds listed in Table 708-2. Under MTCA Method A, a Toxicity Equivalency Factor (TEF) is applied to the measured concentration of each of the other six cPAH compounds. Each factored concentration, together with the unfactored concentration of benzo(a)-pyrene, is summed to produce a factored total cPAH concentration. Under Method A, the factored cPAH concentration is then compared to the cleanup level for benzo(a)pyrene.

Cleanup levels for non-carcinogenic PAH compounds have not been established under MTCA Method A. For this reason, cleanup levels based on the MTCA Method B standard formula values were used to evaluate whether the concentration of non-carcinogenic PAH compounds measured in the samples exceed the State cleanup levels under MTCA. The Method B formula values for the non-carcinogenic PAH compounds

detected in the samples were obtained from the Washington State Department of Ecology's Cleanup Levels and Risk Calculations (CLARC) database.

1. Affected Environment

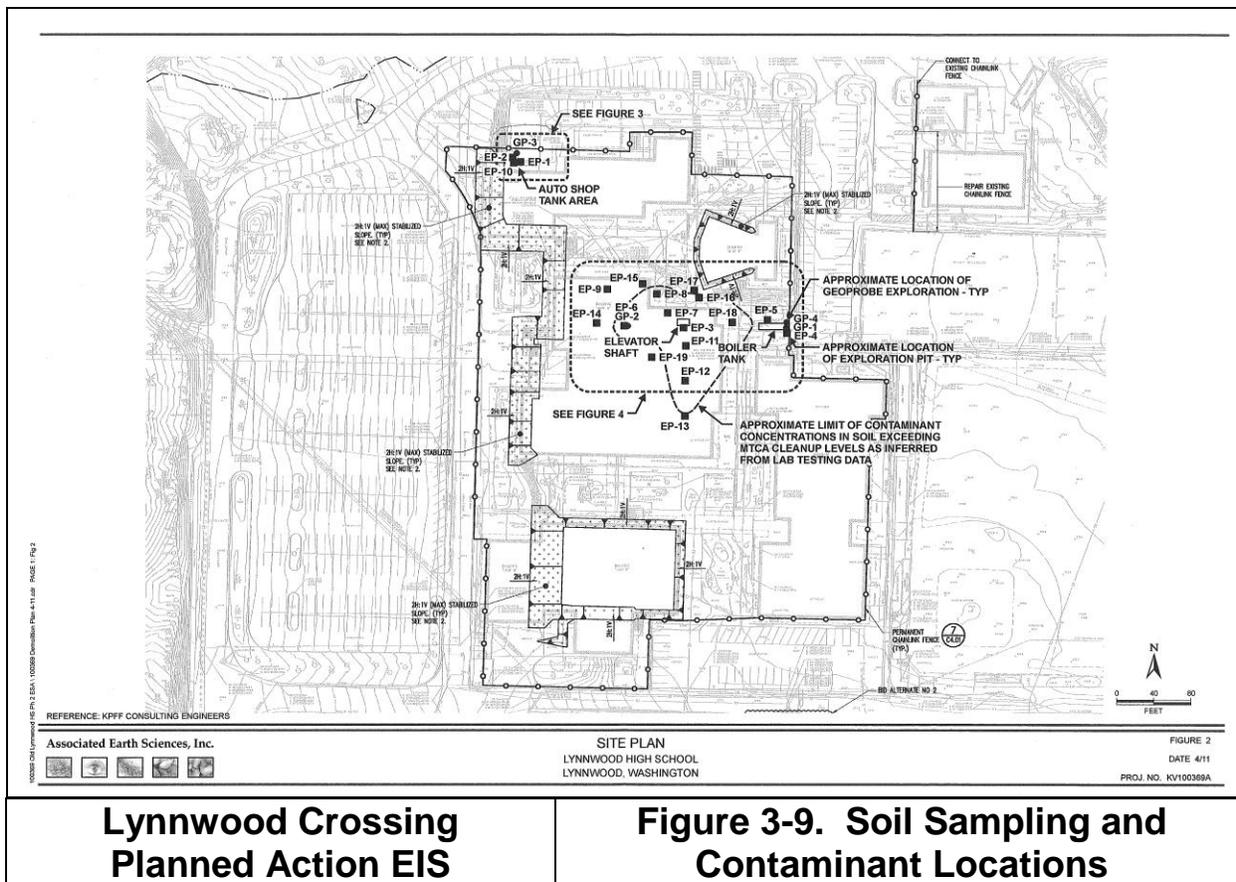
The project site consists of the former Lynnwood high school and the Lynnwood Athletic Complex. Demolition of the high school is complete. All of the buildings have been removed, but most of the building floor slabs remain. A Phase I Environmental Site Assessment (ESA) was prepared for the site by Shockey Planning Group (previously Shockey/Brent, Inc.) in March 2008. The Phase I ESA identified three primary areas of environmental concern with respect to potential soil and/or ground water contamination. These include:

- A 10,000-gallon fuel oil underground storage tank (UST) formerly used to fuel the high school boiler.
- A leaking subsurface hydraulic fluid line reportedly abandoned in the vicinity of the boiler room and an elevator shaft in one of the former school buildings (Building B).
- A UST located near the north side of the former auto shop building.

The Phase II ESA found contaminant concentrations exceeding MTCA clean up levels in the area of the northern portion of former Building B near the elevator shaft. Visible product and/or iridescent sheen were observed in the fill soil or on the ground water at exploration test pit locations EP-3, EP-6, EP-7, and EP-8, located in the vicinity of the elevator shaft (Figure 3-9). Short sections of timber piles were encountered in the fill in exploration pits GP-1 and EP-4, located near the east end of the boiler tank. No unusual odors or staining were observed in other explorations. No sheen or odors were observed on seepage accumulated in a hole in the Building B floor slab located approximately 35 feet southwest of explorations EP-6 and GP-2.

The soil samples were collected at or near the depth at which ground water seepage was first encountered, where odors or other unusual characteristics were observed or, in the case of the auto shop tank, in close proximity to the UST. Ground water samples were collected and tested for diesel, motor oil-range total petroleum hydrocarbons (TPH), gasoline-range TPH, BTEX compounds (benzene, toluene, ethylbenzene and xylenes, and PAHs).

The soil sampling results indicated that contaminant concentrations exceeding the MTCA cleanup levels were present in soil samples collected from exploration pits EP-3, EP-6, EP-7 and EP-8. These samples all consisted of fill soil collected in the area of the northern portion of former Building B. At all of the exploration locations, a strong creosote-like odor was observed in the fill with little or no unusual odors observed in the underlying native sediments. These observations and laboratory testing results suggest that the affected soil is primarily limited to the fill. The area of contaminated soil depicted on Figure 3-9 is approximately 12,000 square feet. It is assumed that the average



**Lynnwood Crossing
Planned Action EIS**

**Figure 3-9. Soil Sampling and
Contaminant Locations**

thickness of the contaminated soil throughout this area is approximately 5 feet. It is estimated that the total volume of contaminated soil within this area is approximately 2,800 cubic yards.

Contaminant concentrations in excess of the MTCA cleanup levels in ground water were limited to diesel and motor oil-range TPH in exploration pits EP-6 and EP-10. The seepage encountered in exploration pit EP-6 consisted of perched water present directly beneath the Building B floor slab and the TPH measured in this sample is similar to that found in the surrounding soil. TPH measured in ground water collected from exploration pit EP-10, located adjacent to the auto shop UST, consisted of motor oil, possibly mixed with a lighter-range petroleum product such as gasoline. These types of petroleum products are consistent with the types of products typically stored in waste oil tanks. Although it has not been determined what types of products were previously stored in the auto shop UST, its small size and location adjacent to the auto shop building suggest that it may have been used for waste oil storage.

Although no soil contamination was observed or measured in soil samples collected adjacent to the auto shop UST, laboratory detection limits for the ground water analyses are orders of magnitude lower than the detection limits achieved in the soil analyses. Given the TPH concentration measured in the ground water sample collected from exploration pit EP-10, it is the opinion of the project geologist that TPH is likely also

present in the soil in the vicinity of the auto shop tank, either in low concentrations, or in areas outside those tested. It is also the project geologist's opinion that removal of the contaminated soil in the vicinity of the tank would effectively remediate the TPH in the ground water.

2. Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Development of the Lynnwood Crossing under Alternative 1 would include the construction of residences, office and retail commercial buildings, and roads and other infrastructure improvements. Remediation of the contaminated soils would occur under all alternatives during the construction process. With remediation, there would be no adverse impacts.

Ecology has been notified about the contamination; prior to any construction a voluntary clean-up plan (VCP) will be developed between the Edmonds School District and Ecology to ensure the contamination is remediated properly.

3. Mitigating Measures for Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

As noted above, the Washington State Department of Ecology (Ecology) has been notified about the contamination in accordance with WAC 173-340-300(2). A VCP will be submitted to Ecology to ensure the contamination is remediated properly. After Ecology approves the project VCP, a Cleanup Action Plan (CAP) would be prepared that presents the proposed method for remediation of the site. The CAP would be submitted to Ecology for review and comment. Generally it includes the following elements:

- Brief summaries of the environmental site assessment reports;
- Identification of the contaminants of concern;
- MTCA-derived cleanup levels for the contamination of concern;
- Review of remedial alternatives, if appropriate;
- Disproportionate cost analysis, if appropriate;
- Description of the chosen remedial action; and
- Compliance monitoring plan.

Remediation of the contaminated soils would be accomplished during construction. It is likely that the removal of the contaminated soils would correct the groundwater contamination. Because the soil is contaminated, it should be handled in accordance with prudent health and safety practices, transported in accordance with applicable Washington State Department of Transportation (WSDOT) regulations, and disposed of at an appropriately licensed disposal facility.

Upon completion of the remedial action, a Remedial Action Plan would be prepared for submittal to Ecology that documents the results of the remedial action and includes the following:

- Description of the remedial action;
- Results of compliance monitoring samples documenting that the remaining soils and groundwater meet the MTCA cleanup levels;
- Locations of the compliance monitoring samples;
- Laboratory test certificates;
- Estimated volumes of soil remediated;
- Documentation of contaminated soil treatment and/or disposal; and
- Site plan showing the location of the remedial action.

Upon successful remediation of the site, Ecology will issue a “No Further Action” decision. Once this decision is received, the site is considered safe for public use.

4. Significant Unavoidable Adverse Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

No significant adverse environmental health impacts are expected as a result of the Lynnwood Crossing Project.

5. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 2—Project Sponsor's Preferred Alternative without Office

Impacts would be similar to Alternative 1.

No significant adverse environmental health impacts are expected as a result of Alternative 2.

6. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 3—Lower Intensity Mixed Use Alternative

Impacts would be similar to Alternative 1.

No significant adverse environmental health impacts are expected as a result of Alternative 3.

7. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 4—All Retail Alternative

Impacts would be similar to Alternative 1.

No significant adverse environmental health impacts are expected as a result of Alternative 4.

8. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 5—No Action Alternative

Impacts would be similar to Alternative 1.

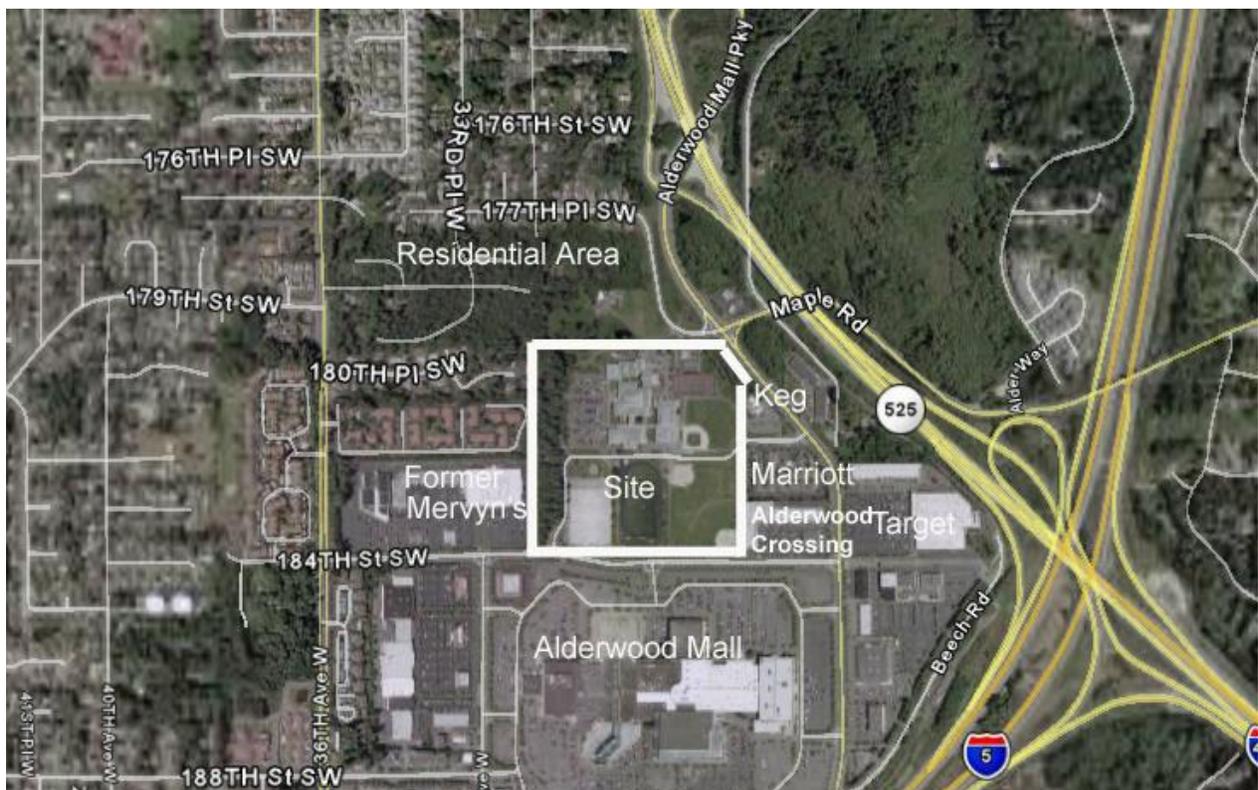
No significant adverse environmental health impacts are expected as a result of Alternative 5.

F. Land Use and Plans and Policies

This section addresses the impacts of the Proposed Action and five Alternatives on land uses on and in the vicinity of the site, and the relationship of the Proposed Action and Alternatives to applicable plans and policies.

1. Affected Environment

The subject site lies adjacent to and north of the Alderwood Mall Shopping Center (Figure 3-10). Former and existing uses on the site consist of the Lynnwood High School including the Lynnwood Athletic Complex. An undeveloped area with trees and a wetland lies within the western boundary of the site; it serves as a buffer between on-site uses and commercial and residential uses to the west. A detention pond is located in the northeast corner of the site.



<p>Lynnwood Crossing Planned Action EIS N ↑</p>	<p>Figure 3-10. Existing Land Use</p>
--	--

184th Street SW borders the site on the south, and Alderwood Mall Parkway is located approximately 530 feet east of the southeast corner of the site and is adjacent to the site at its northeast corner. Existing access across the site extends from 184th Street SW near the southwest corner of the site to a gated access point at 30th Place SW near

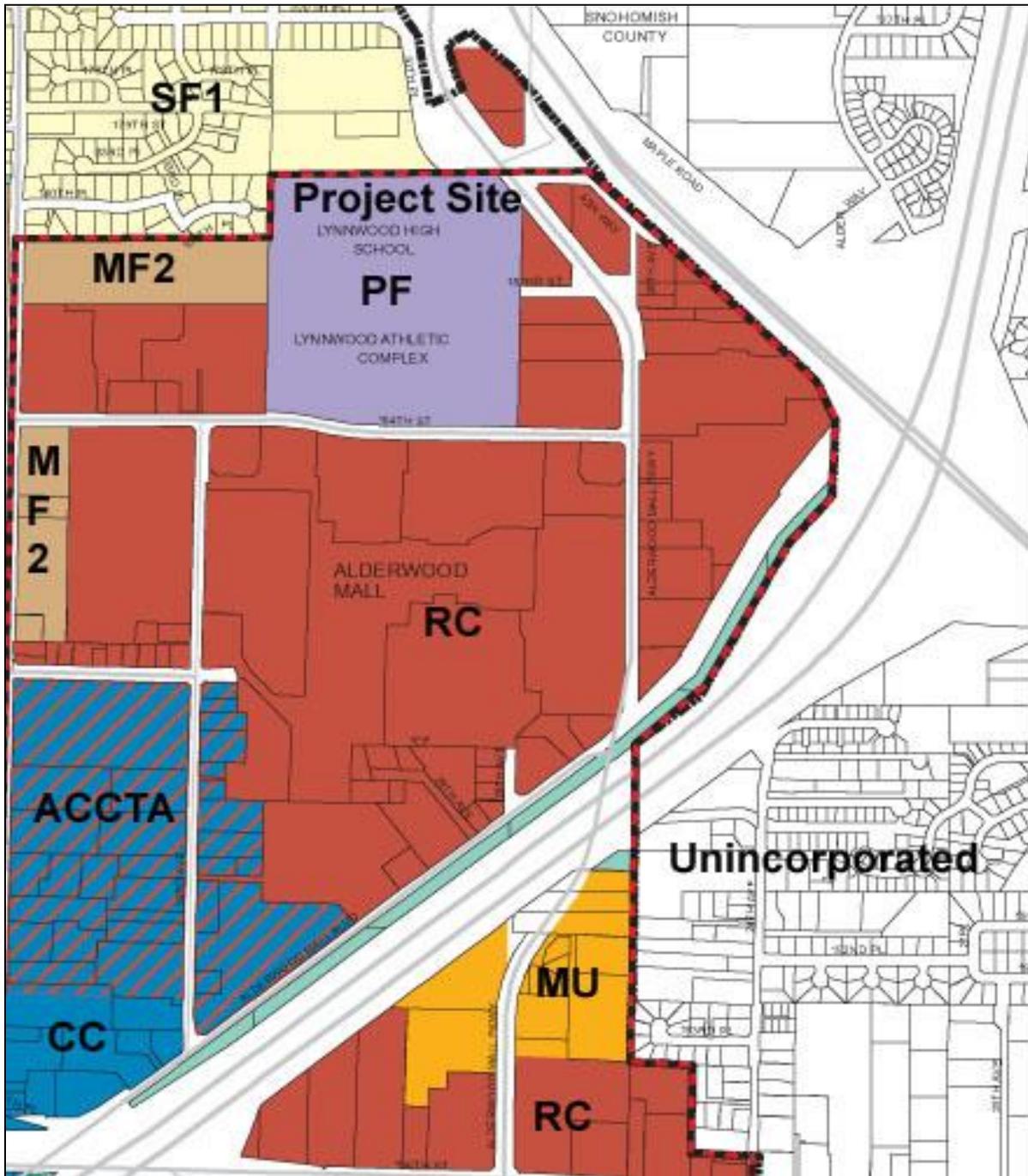
Alderwood Mall Parkway. The I-5/I-405/SR 525 interchange lies approximately one-half mile east of the site.

In general, commercial land uses dominate the area to the southwest, south and east and residential uses to the north and northwest. Surrounding land uses include Alderwood Mall to the south and Alderwood Crossing shopping center, Marriott Residence Inn, and The Keg Restaurant to the east. Single-family and multi-family residential uses abut and lie to the north and northwest of the site, and the H-Mart store (formerly Mervyn's Department store) abuts the southwest side of the site. Two single-family residences, somewhat isolated, are situated between Alderwood Mall Parkway and SR 525 opposite 182nd Street SW.

The City of Lynnwood Comprehensive Plan land use designation for the site is Public Facilities and the zoning designation is Public and Semi-Public (Figures 3-11 and 3-12). Consistent with their existing uses, lands southwest, south and east of the site are designated for commercial uses and those north/northwest are designated for residential use. The site lies within the Subregional Center, one of two commercial activity centers designated in the City's Comprehensive Plan (the other is along Highway 99). The Subregional Center (which also encompasses the Lynnwood City Center, described below) is designated by the Puget Sound Regional Council as a regional growth center – one of three in Snohomish County. The Subregional Center is intended to accommodate much of the employment and population growth in the City; development would include office buildings, housing, transit facilities, and mixed use developments (City of Lynnwood, 2007b).

The area east of SR 525 is in unincorporated Snohomish County but within Lynnwood's Municipal Urban Growth Area (MUGA ¹). Thus, that area is within the City's planning area although comprehensive planning and development permitting remain the responsibility of the County at this time. The City adopted a future land use map for this area in September 2009. The portion of the MUGA closest to the site (i.e., at the base of the "V" between SR 525 and I-5) is designated by the City for parks/recreation/open space and residential uses. Much of the area to the north (approaching and along 164th St. SW), including that abutting Alderwood Mall Parkway, is designated for mixed-use urban center and commercial and business/technical park use. These designations are generally consistent with the County's "Urban Center", "Commercial", and "Industrial" land use designations. Indicative of the intensification of land use in the MUGA is the completion of Northpointe, a commercial center that includes a 218,000-square-foot Fred Meyer and smaller retail spaces. This development is located at the southwest corner of the intersection of Alderwood Mall Parkway and 164th Street SW less than one mile from the site.

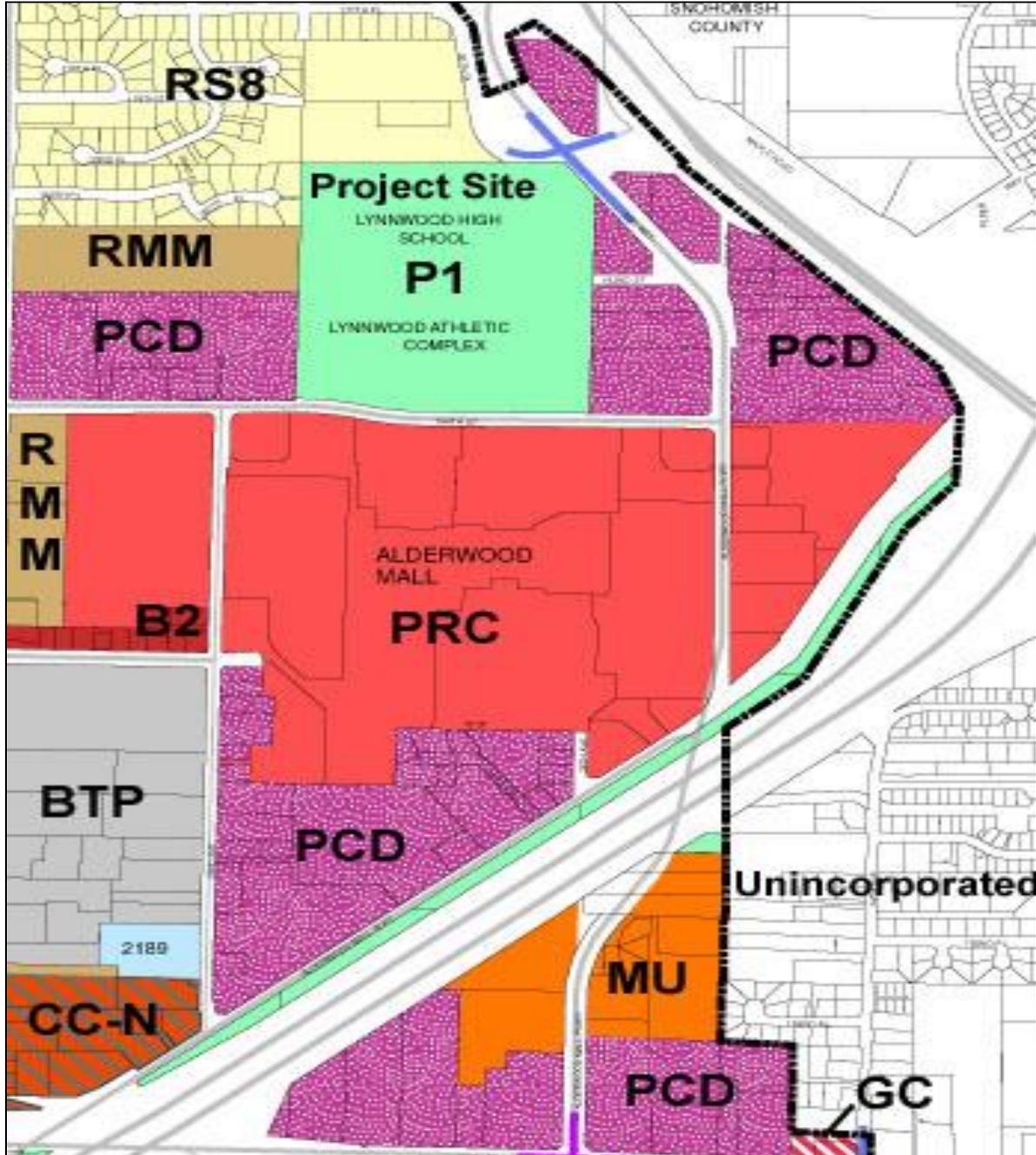
¹ A MUGA is an unincorporated area outside a municipality's boundaries that is designated to accommodate urban population and employment growth, and is likely to be annexed to a municipality within a 20-year planning time frame. In this case, Lynnwood has indicated that it plans to annex this area.



SF1 – Low Density Single Family	PF – Public Facilities
MF2 – Medium Density Multi Family	CC – City Center
MU – Mixed Use	ACCTA – Alderwood-City Center Transition
RC – Regional Commercial	

**Lynnwood Crossing
Planned Action EIS**

**Figure 3-11.
Designated Land Use**



RS8 – Residential 8400 SF	P1 – Public & Semi-Public
RMM – Multiple Residential Med. Density	CC-N – City Center North
PCD – Planned Commercial Development	MU – Mixed Use
PRC – Planned Regional Center	CG – General Commercial
BTP – Business/Technical Park	B2 – Limited Business

Lynnwood Crossing Planned Action EIS	Figure 3-12. Zoning
---	--------------------------------

The City has also adopted a City Center plan to guide development of an area southwest of Alderwood Mall. The City Center is anchored by the area generally known as the “Lynnwood Triangle”, bounded by 44th Avenue W, 196th Street SW, and I-5, but also includes parcels along the west side of 44th Avenue W, the north side of 196th Street SW, and along 33rd Avenue W. The City Center Subarea Plan calls for redevelopment of the area into an urban center for Lynnwood with mixed uses at more intensive levels than are present today. The City Center is expected to absorb much of Lynnwood’s office and residential growth in the next two decades, including high-density residential use.

The City has also designated an Alderwood-City Center Transition Area (ACCTA) that is intended to provide for a transition between Alderwood Mall and the City Center. This Transition Area will contain a mix of land uses that complements these two areas but is at a lower intensity to minimize impacts on the residential area to the west (across 36th Avenue W). Principal uses are offices, retail (excluding big-box stores), restaurants, services, and multiple family residences (as part of a mixed-use development). This land use category applies to the properties between Alderwood Mall and the City Center and east of 36th Avenue W.

2. Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Land Use Impacts

Alternative 1, a mixed-use development with a major anchor (Costco Wholesale), retail, residential, amusement/recreation, and medical office uses would replace the former high school and the Lynnwood Athletic Complex (LAC). Likewise, the activities commonly associated with commercial and residential uses, such as year-round employee and customer traffic and pedestrian activity, would replace the activities formerly associated with the former high school, such as school-year student and faculty commuters, commerce with nearby businesses, and sporting and community events associated with both a high school and a community athletic complex.

During construction, typical impacts associated with construction traffic and on-site activities (e.g., noise, dust, and possibly intermittent congestion) would occur. These effects would likely be a temporary minor adverse impact.

Alternative 1 would be compatible with commercial uses near or adjacent to most of the site. Compatibility would be less for the residential uses adjacent to the north/northwest part of the site. The site plan depicts a vegetated buffer along the westerly boundary of the site in this area; however, the proposed Costco Warehouse parking lot and fueling facility are adjacent to this area. The greater levels of activity on site, especially in this area, would lead to “proximity” impacts associated with Alternative 1 (e.g., noise, light/glare).

Occupants of the single-family residence just north of the site and two single-family residences abutting the northwest side of the site would experience the greatest impacts, including noise and other impacts associated with the proposed bypass roadway planned near this location.

Further, an extension of 179th Street SW (as 179th Place SW) to 30th Place W is planned in conjunction with an approved residential development. This extension abuts the single-family residence north of the site. Alternative 1 would contribute to greater cumulative proximity impacts at this location (see *Transportation* section).

In addition, two of the bypass roadway configurations that were evaluated include an extension of 30th Place W to the new bypass roadway (“without complete bypass” configuration and “with complete bypass and connection to 30th Place W” configuration – see *Transportation* section). With either configuration, it would be necessary to relocate the driveway that serves the single-family residence north of the site. Options include locations farther north on 30th Place W, west on Maple Road extension (i.e., the bypass), or north on the extension of 179th Place W.

In these individual cases, the impacts may be considered significant in view of Lynnwood’s goals to protect and enhance single-family neighborhoods, and to ensure retention of single-family housing through protection from conflict with or encroachment of incompatible land uses or activities. Otherwise, adverse impacts on residential use are likely to be minor to moderate.

Indirectly, the Proposed Action would supplement and, in some cases, bolster retail and other commercial activities in the surrounding area. It would reinforce the objectives of the Subregional Activity Center by providing a mix of uses that adds employment and population growth opportunities, which would lead to greater levels of retail activity. Further, Alternatives 1 - 4 may help hasten or stimulate redevelopment in the ACCTA and/or the City Center area. It will contribute to a “critical mass” of economic activity through economic linkages and may add to the demand for the types of uses planned for the City Center area. Also, the planned arterial through the site connecting 184th Street SW with Alderwood Mall Parkway at the northeast corner of the site would improve accessibility to the City Center area, which could make land parcels there more attractive for redevelopment.

Residential use provided as part of Alternatives 1 - 3 could lessen the short-term demand for residential use in the City Center area, which could lengthen the time to achieve the goal to provide residential use in this area. On the other hand, mixed use development (with residential) on this site could “prove the market” for higher density residential development in Lynnwood.

The Proposed Action could stimulate redevelopment of more intensive commercial uses east of the site. Redevelopment of properties to the east would not be incompatible with existing commercial uses in this area or Alternatives 1 - 5. For example, there are

plans for a new hotel east of Alderwood Mall Parkway opposite 182nd Street SW that would displace the two single-family residences located there.

The existing residential area north/northwest of the site could experience pressures for land use changes due to increased density and use on the site and associated increases in noise, traffic, etc. However, such pressures are not certain to lead to land use changes because it is assumed the City would abide by existing land use policies and zoning regulations to prevent encroachment of commercial uses into residential areas. As noted above, Lynnwood's goals are to protect and enhance single-family neighborhoods and to ensure retention of single-family housing through protection from conflict with or encroachment of incompatible land uses or activities.

Cumulatively, along with recent expansion of Alderwood Mall and surrounding peripheral uses, redevelopment and intensification of the ACCTA and City Center areas to the southwest, the Proposed Action would contribute to a more robust regional activity center. Altogether, indirect and cumulative land use impacts would be positive.

Relationship to Plans and Policies

The following discussion focuses on land use plans, policies, and regulations relevant to the Proposed Action and Alternatives 1 - 5.

Growth Management Act (RCW 36.70A)

Summary. The Growth Management Act (GMA), enacted by the 1990 legislature and amended several times since, contains a comprehensive framework for managing growth and coordinating land use planning with infrastructure. GMA's fourteen planning goals are intended to guide development of local comprehensive plans. The goals are:

1. Urban Growth. Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.
2. Reduce Sprawl. Reduce the inappropriate conversion of undeveloped land into sprawling, low-density development.
3. Transportation. Encourage efficient multimodal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans.
4. Housing. Encourage the availability of affordable housing to all economic segments of the population of this state, promote a variety of residential densities and housing types, and encourage preservation of existing housing stock.
5. Economic Development. Encourage economic development throughout the state that is consistent with adopted comprehensive plans, promote economic opportunity for all citizens of this state, especially for unemployed and for disadvan-

tagged persons, and encourage growth in areas experiencing insufficient economic growth, all within the capacities of the state's natural resources, public services, and public facilities.

6. Property Rights. Private property shall not be taken for public use without just compensation having been made. The property rights of landowners shall be protected from arbitrary and discriminatory actions.
7. Permits. Applications for both state and local government permits should be processed in a timely and fair manner to ensure predictability.
8. Natural Resource Industries. Maintain and enhance natural resource-based industries, including productive timber, agricultural, and fisheries industries. Encourage the conservation of productive forest lands and productive agricultural lands, and discourage incompatible uses.
9. Open Space and Recreation. Encourage the retention of open space and development of recreational opportunities, conserve fish and wildlife habitat, increase access to natural resource lands and water, and develop parks.
10. Environment. Protect the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.
11. Citizen Participation and Coordination. Encourage the involvement of citizens in the planning process and ensure coordination between communities and jurisdictions to reconcile conflicts.
12. Public Facilities and Services. Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards.
13. Historic Preservation. Identify and encourage the preservation of lands, sites, and structures that have historical or archaeological significance.
14. Shoreline Management. Provide for the management of the shorelines of the state by planning for and fostering all reasonable and appropriate uses.

Discussion. The Proposed Action includes Amendments to the Comprehensive Plan and Zoning Ordinance to change the Land Use designation of the site from “Public Facilities” (PF) to “Mixed Use” (MU), and a rezone of the site from “Public and Semi-Public” (P-1) to “Commercial-Residential” (C-R) to allow development of a mixed-use center.

The relationship of the Proposed Action to GMA’s planning goals is summarized below.

1. The project site is within an Urban Growth Area², is within a designated urban center, and is intended to be developed for a mix of high-density urban land uses (Goal 1).
2. Concentrating development at higher densities at this location would make efficient use of urban land (Goal 2).
3. The site is served by public transit. On-site and off-site road and circulation improvements would connect the site to the arterial system, and on-site public transit improvements would be made. Such improvements would help manage congestion and promote non-motorized circulation (Goal 3).
4. Inclusion of multi-family housing in Alternatives 1 - 3 would expand the range of housing choices available in Lynnwood and augment the supply of housing in Snohomish County (Goal 4).
5. Alternatives 1 - 5 would increase employment and economic development opportunities within the City (Goal 5).
6. Most of the site would remain under the ownership of the Edmonds School District. Some property may be needed for road rights-of-way. Private property would not be taken without compensation (Goal 6).
7. The site is proposed to be designated a planned action, which would expedite permitting for consistent projects (Goal 7).
8. No resource lands are located within or would be affected by Alternatives 1 - 5 (Goal 8).
9. The Proposed Action would result in the displacement of the Lynnwood Athletic Complex. Please see the *Parks and Recreation* section for a discussion of impacts (Goal 9).
10. In general, the Proposed Action and associated mitigation protect the physical environment and enhance quality of life (Goal 10).
11. Opportunities for public involvement were provided during EIS scoping and will be available during the public review period for the EIS. In addition, plan and zoning changes will be the subject of City Council meetings and hearings open to the public (Goal 11).
12. Public facilities and services requirements for the Proposed Action and Alternatives 1 - 5 will be adequate to serve the development without decreasing current

² An Urban Growth Area is an area formally designated to accommodate future development and growth. Development that is urban in character is to occur within the designated urban growth area, preferably in cities.

service levels below locally established minimum standards, with the exception of Parks and Recreation (Goal 12).

13. No lands with historic or archaeological significance have been identified at the project site (Goal 13).
14. No shorelines of the state are located within or would be affected by any of the Alternatives (Goal 14).

Vision 2040

Summary. Vision 2040, adopted by the Puget Sound Regional Council (PSRC), is a policy plan and regional growth strategy that provides a regional framework for land use, economic, and transportation planning that supports the GMA and the PSRC's goals and vision for growth and development of the region. The policies and regional strategy emphasize focusing a significant share of future growth in centers that are connected and served by high capacity transit service and are characterized by higher density housing and employment. "Centers are locations characterized by compact, pedestrian-oriented development, with a mix of different office, commercial, civic, entertainment, and residential uses. While relatively small geographically, centers are strategic places identified to receive a significant proportion of future population and employment growth when compared to the rest of the urban area" (Puget Sound Regional Council, 2008).

Discussion. Lynnwood's Subregional Center is identified as a regional growth center in Vision 2040. "*Regional growth centers* are envisioned as major focal points of higher density population and employment, served with efficient multimodal transportation infrastructure and services. These regionally designated places are the primary locations for the arts, civic activity, commerce, and recreation. The regional growth centers, with their concentration of people and jobs, form the primary focus of the transportation network for the four-county region. Linking these centers with a highly efficient transportation system allows the region to take actions to reduce the rate of growth in vehicle miles traveled, especially by providing and expanding transportation choices. Consequently, regionally significant centers should receive priority in regional and local investments in the infrastructure and services that are critical for supporting growth" (Puget Sound Regional Council, 2008). The mixed-use component of Alternatives 1 - 3, with their mix of uses and concentration of jobs and residents, would reinforce Lynnwood's role as a regional growth center. The Costco Warehouse component would be more auto-oriented vs. pedestrian-oriented and would provide less reinforcement.

Countywide Planning Policies

Summary. Countywide Planning Policies for Snohomish County provide guidance for local jurisdictions to follow in carrying out their GMA responsibilities. They provide a framework for developing coordinated County and City comprehensive plans. The policies encourage orderly and efficient development patterns with higher density devel-

opment in urban areas. The policies also promote land use, economic, and housing policies to accommodate jobs, housing, transit-supportive densities, and adequate public facilities³.

Discussion. In general, Alternatives 1 - 5 would provide high density development in an urban area that would supply jobs and housing at transit-supportive densities. Infrastructure improvements would be planned to accommodate the development. The following paragraphs summarize the relationship between specific Countywide Planning Policies and the Alternatives.

UG-11 Encourage mixed use, pedestrian friendly and transit compatible development in comprehensive plans for areas within the urban growth area which are designated for multiple residential and non-residential development;

The mixed use component of Alternatives 1 - 3 would incorporate a mix of uses by providing commercial and residential development within the same site. The site is served by public transit. Pedestrian plazas are proposed surrounding the multi-family units to provide open space amenities between the residential units and the retail uses on site. The Costco component would be less pedestrian friendly and transit compatible.

OD-8 Encourage land use, economic and housing policies that co-locate jobs and housing to optimize use of existing and planned transportation systems and capital facilities; and

The site design for the mixed-use component proposed under Alternatives 1 - 3 would provide residential units and retail and office space. The proposed development would support policies that encourage jobs and housing to be co-located.

OD-10 Encourage policies that allow for infill and redevelopment of suitable areas in accordance with local comprehensive plans.

The proposed development is within an area designated as the Subregional Center by the Lynnwood Comprehensive Plan. This is an area that encourages higher density development. The site abuts commercial/retail development. As noted previously, the current land use designation for the site is Public Facilities (PF) and an element of the Proposed Action is to amend the Future Land Use Plan Map in the Comprehensive Plan to designate the site for Mixed Use. The Mixed Use designation allows multi-family residential units and commercial development within the same building. Alternative 1 would support infill and redevelopment in accordance with the Countywide Planning Policies and the Lynnwood Comprehensive Plan.

³ New planning policies are now being considered by the Snohomish County Council. The County Planning Policies discussed herein were in effect at the time this document was written.

City of Lynnwood 2020 Comprehensive Plan (as amended in 2011)

Plan Vision - Summary. The vision for Lynnwood presented in the Comprehensive Plan 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

Plan Vision - Discussion. The Proposed Action would contribute to realization of Lynnwood's vision for those statements that are applicable. The mixed-use project would contribute to an overall balance of uses, provide commercial entertainment and commercial growth opportunities, and protect the on-site wetlands. Also, it represents controlled growth through compatible infill development / redevelopment.

A possible exception is related to the third vision statement regarding recreational opportunities. To the extent that equivalent recreation facilities and opportunities are not available under Alternatives 1 - 5, then the range of opportunities would be reduced (see *Parks and Recreation* section).

Plan Concept: Land Use Element - Summary. The basic land use concepts in the Comprehensive Plan are to:

1. Create a strong and vibrant Central Business District (in the Subregional Center);
2. Provide room and opportunities for new commercial and industrial uses;
3. Provide a complete range of housing types and values;
4. Protect and enhance single-family neighborhoods;
5. Provide for efficient and compatible infill development to achieve balance among competing interests; and
6. Coordinate growth in the City's urban growth area.

The Plan supports regional growth management policies that encourage urban areas to absorb a greater share of regional growth and to develop high capacity transit systems. The plan encourages intensification of land uses and a more diverse mixture of uses. In

furthering these policies, the City has designated two commercial activity centers, as discussed previously. One is along Highway 99 and the other is the Subregional Center, which extends from the northern boundary of the project site generally south and southwesterly to 48th/50th Avenue W along both sides of I-5.

The Subregional Center is the key activity center and is designed to accommodate much of the employment and population growth in the City. The Comprehensive Plan anticipates that over half of the population growth and much of the employment growth will locate here. New residential development is anticipated to be multi-family, either as a single land use or as part of a mixed-use concept. Development would include office buildings, housing, transit facilities, and mixed-use developments.

Plan Concept: Land Use Element - Discussion. The project site is located within the Subregional Center. The project alternatives would be infill redevelopment at a more intensive and diverse level than existing land uses. Alternatives 1 – 3 and 5 would provide employment and multifamily housing opportunities, and are conceived as a mixed-use development. Alternative 4 would contain all retail uses. Alternative 5 is consistent with the current zoning; the others are not. They require changes to the land use map and zoning as presented in the Proposed Action. The differences in impacts of implementing Alternatives 1 – 5 are the subject of this EIS.

Land Use Description: Mixed Use (MU) - Summary. As noted previously, the current land use designation for the site is Public Facilities (PF) and an element of the Proposed Action is to amend the Future Land Use Plan Map in the Comprehensive Plan to designate the site for Mixed Use. The Lynnwood Comprehensive Plan Mixed Use designation is described as follows:

Purpose: This Plan category is intended to provide the opportunity for a high intensity development of mixed uses that will result in a pedestrian friendly environment and support transit development and usage.

Principal Uses: Residential, office, or retail uses will be permitted within the same building or on the same site(s).

Locational Criteria: This category of use is suitable for location only within the Subregional Center and the college district.

Site Design: A combination of surface and structured on-site parking is anticipated. On-site open space, landscaping, and recreational amenities should be emphasized when residential use is included in the mix of uses.

Building Design: Most buildings will be multi-story. Residential uses will typically be located on the upper floors above commercial uses.

Land Use Description: Mixed Use (MU) - Discussion. Development that would occur on the southern portion of the site under Alternatives 1 - 3 would consist of high

intensity retail, residential, office, and entertainment uses with pedestrian connections and transit facilities. In the southern mixed use area, some uses would be provided within the same buildings, most of them multi-story, and both surface and structured parking would be provided. Some residential uses would be located on upper floors above commercial uses. Open space, landscaping, and commercial amusement/recreation uses (e.g., movie theater, bowling alley, and health club) are part of the development proposal. The northern portion of the site would have a single use (Costco Wholesale), and would be less pedestrian friendly and transit-supportive than the southern mixed use component.

Alternatives 4 and 5 would not contain a Costco Wholesale facility. Alternative 4 would primarily contain retail uses, along with restaurant uses. Alternative 5 would be developed under existing land use regulations and contain office, medical, nursing home and child care facilities. Open space would be incorporated within and around the site in Alternatives 4 and 5.

Policy Description: Mixed Use (MU) - Summary. The following policies implement the Mixed Use designation as proposed under the Proposed Action:

Policy LU-4.1: Zoning districts and regulations shall be established to implement the Mixed-Use land use category shown on the Future Land Use Plan map.

Policy LU-4.2: Incentives shall be provided to encourage mixed-use developments in the Subregional Center.

Policy LU-4.3: Areas in the Subregional Center appropriate for mixed-use development shall be identified and the appropriate density of such development shall be established.

Policy Description: Mixed Use (MU) - Discussion. A zoning district and regulations have been established for the Mixed-Use designation (see next section). It is not known at this time what incentives may be offered to encourage the development proposal. By approval of Alternative 1, 2 or 3, the project site would be identified as appropriate for mixed-use development. A development agreement would be adopted addressing mitigation and other performance measures.

Comprehensive Plan Goals and Policies. The Proposed Action and Alternatives 1 - 5 are consistent with the following goals and policies identified in the City of Lynnwood Comprehensive Plan:

Land Use Element

The Land Use Element deals with the future development and redevelopment of the community; the locations of residences, businesses, and other public and private uses of land; and the size and scale of new buildings and other structures. The Element im-

plements the long-range vision of the community in the context of land use, growth, and development.

GOAL: A balanced land use pattern that prevents urban sprawl, preserves and enhances residential neighborhoods, protects environmentally sensitive areas, protects people and property from environmental hazards, promotes economic development, and encourages community redevelopment at appropriate locations, resulting in a high quality physical environment for residents, workers, and visitors.

Alternatives 1 - 5 would utilize a 40-acre site owned by the Edmonds School District that is currently vacant. The wetland in the northwest corner of the site would be protected with a vegetated buffer and soil contamination would be cleaned up during construction. Redevelopment of the site under Alternatives 1 – 3 would promote economic development and reduce urban sprawl by locating jobs and housing in the same place. The result of proposed development under Alternatives 1, 2 or 3 would be a high quality mixed-use project in the southern part of the site that is pedestrian friendly and supports transit facilities with onsite densities.

Subgoal: Environment - Assure that developed uses of land avoid and protect environmentally sensitive areas and that such uses avoid and are protected from environmental hazard areas.

See Land Use goal above.

Subgoal: Compatibility - Assure that the Future Land Use Plan properly separates and buffers those land uses which are incompatible while permitting the mixing of compatible uses in appropriate ways and in appropriate areas.

A vegetated buffer approximately five acres in size would provide transitional screening between the proposed development and the existing residences to the northwest under each of the five Alternatives. The focus of the development for Alternatives 1 – 3 in the southern mixed use component is on high quality design that combines commercial and residential uses that are compatible with the surrounding uses in the area.

Subgoal: Density - Assure that the density of development is consistent with the local and regional development patterns, with available and planned infrastructure, with Growth Management Act requirements, and with surrounding land uses.

Vision 2040 is the regional policy for proposed development patterns in centers around Puget Sound. Lynnwood is a designated core city in the plan. It is assumed that these and other core cities will accommodate significant commercial and residential density. Lynnwood's location along the Interstate 5 corridor, mid-way between Seattle and Everett, has greatly influenced its development as a commercial and retail center of Snohomish County. The City's land use pattern is a suburban residential setting surrounding more concentrated urban commercial areas, with commercial developments along the arterial roadways and medium density multiple-family residential development adjacent to commercial areas. High-density multiple-family development is permitted in the

Subregional Center. The proposed development supports local and regional development patterns by accommodating medium to high-density development adjacent to a commercial area on a site that is currently vacant and underutilized. This hierarchy of uses supports GMA and Vision 2040 principles.

Any development under Alternatives 1 - 5 would be consistent with the City's planned and available water and sewer infrastructure. The City of Lynnwood's Water System Plan has set a maximum daily demand limit for water of 10 million gallons per day (mgd). Even with projected demands from planned City expansions, the average daily demand by 2023 is projected to be 5.27 mgd. The expansion to 33rd Avenue West is being constructed by the proponent to ensure that development density is consistent with the City's road infrastructure pursuant to the City's Arterial Street Plan.

The proposed development is consistent with the Growth Management Act requirements in that the project site is within the City's Urban Growth Area and concentrating development at higher densities at this location would make efficient use of the land. The site is served by public transit and circulation improvements would connect the site to the arterial system, which would help manage congestion and promote non-motorized circulation. The inclusion of multi-family housing units in Alternatives 1 -3 would expand the range of housing choices available in Lynnwood. Alternative 1 would provide 330 multi-family units, Alternative 2 would provide 500 multi-family units, and Alternative 3 would provide 220 multi-family units. Alternative 4 would not provide any residential units. Alternative 5 would provide 194,740 square feet of nursing home space. Also, any development under Alternatives 1 -5 would increase employment opportunities and stimulate the local economy.

In general, commercial land uses dominate the area to the southwest, south and east and residential uses to the north and northwest. Surrounding land uses include Alderwood Mall to the south and Alderwood Crossing shopping center, Marriott Residence Inn, and The Keg Restaurant to the east of the site. Single-family and multi-family residential uses abut and lie to the north and northwest of the site, and the H-Mart grocery store abuts the southwest side of the site. The proposed development would be compatible with the surrounding land uses and provide residents in Alternatives 1 -3 a wide variety of services in close proximity to where they live.

Subgoal: Urban Design - Establish and administer plans, policies, and regulations to improve the function and appearance of existing and new development and thereby enhance the livability and image of Lynnwood.

The focus of the development is on high quality design that increases the livability, workability and economic viability of an unused, vacant site. The proposed development will need to be consistent with the Lynnwood Design Review requirements, to enhance the appearance and function of the site, and to ensure compatibility with surrounding development.

This site is currently vacant and underutilized. Formerly it was an institutional (school) use in a commercial area and adjacent residential neighborhood. The redevelopment of the site would enhance the appearance of the site by creating a complementary commercial/residential environment. It would emphasize pedestrian connections with sidewalks, crosswalks, and bicycle lanes and provide landscaping along pedestrian and vehicle routes. Building modulation would incorporate a variety of materials to create architectural interest. In addition, the existing vegetative buffer along the western boundary of the site would be retained as a natural separation between the site and the existing neighborhood to the northwest. Wetland A, which is located in the northwest corner of the site, would be enhanced by 6,536 square feet to mitigate wetland impacts to Wetland C by the construction of the 33rd Avenue extension. The creation of additional wetland area would improve the functionality of Wetland A by the removal of invasive species and the addition of increased habitat.

The functionality of the site would be improved through the proposed three-lane roadway that would extend northward from 184th Street SW along the western side of the site, and then east along the northern portion of the site where it would intersect with Alderwood Mall Parkway at Maple Road. Internal roads would serve the site with access from 184th Street SW (two locations) and the new bypass road (three locations). In total, the proposed street and access plan will better organize uses, connections, and access around and through the site.

In order to ensure compatibility with the surrounding development, the site would support commercial, retail, and multi-family residential uses that complement the existing commercial development around Alderwood Mall. The site would retain a five-acre buffer between the northwest portion of the site and the existing residential development to the northwest. The site layout incorporates sidewalks and bicycle lanes that are consistent with the City's pedestrian and bicycle route maps.

Policy LU-27: Revise the Zoning Districts Map, as necessary, to be consistent with the Land Use Plan Map and adopt at the same time the amended Comprehensive Plan is adopted.

As previously noted, the current land use designation for the site is Public Facilities (PF) and an element of the Proposed Action is to amend the Future Land Use Plan Map in the Comprehensive Plan to designate the site for Mixed Use (MU). The Mixed Use designation allows multi-family residential units and commercial development within the same building. The current zoning designation for the site is Public and Semi-Public (P-1) and an element of the Proposed Action is to rezone the site to Commercial-Residential (C-R). The C-R zone does not currently allow residential uses except when permitted with approval of a conditional use permit. Therefore, an additional element of the Proposed Action is a text amendment to the C-R zone designating multi-family uses as permitted outright.

Policy LU-2.4: Performance related regulations shall be established and used to allow multi-family residential densities and building height to exceed designated zoning densi-

ties and building height in the subregional center, in order to promote the provision of housing and to support commercial activities in the center. A density increase may be allowed for a residential development that provides affordable housing or that locates new residences above the ground floor in mixed-use buildings. In general, this density increase should not exceed the allowable density by more than 40 percent. A greater density increase beyond 40 percent may be allowed for a development that would provide an exceptional design and that would minimize or eliminate the development's impact on surrounding properties. Building height may be increased so as to allow development of the increased density while providing substantial ground level landscaping.

As noted previously, Alternative 1 would provide 330 multi-family units, Alternative 2 would provide 500, and Alternative 3 would provide 220. There is not a minimum density in the C-R zone. The only requirement is the proposed development must be greater than five acres. The maximum building height for the development would not exceed eight stories (Alternative 2).

Policy LU-2.6: Regulations and guidelines shall be established to improve the appearance, function and livability of multi-family developments with high quality design and improvements for open space, landscaping, buffers, lighting, parking, on-site traffic circulation, trails and pedestrian facilities, solid waste facilities, recreation, streetscape, building scale and architectural features.

Alternatives 1 - 3 would provide pedestrian plazas around the buildings that contain the multi-family units. The focus of the development is on high quality design that mixes commercial and residential uses in order to provide a desirable, livable development that complements the surrounding area. Under each of the five Alternatives, a vegetated buffer would be retained in the northwest corner of the site to protect the existing wetland and provide a transition between the proposed development and the existing residents to the northwest. Open space, landscaping, and commercial amusement/recreation uses (e.g., movie theater, bowling alley and health club under Alternatives 1 - 3) are part of the development proposal.

Policy LU-7.6: In all categories, non-residential developments that adjoin residential properties shall provide transitional screening so that commercial activities do not significantly affect the livability of the residential properties.

As noted previously, a vegetated buffer approximately five acres in size would provide transitional screening between the proposed development and the existing residences to the northwest under each of the five Alternatives.

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.

See Policy LU-2.6 above.

Housing Element

GOAL: Provide for sufficient availability and a variety of opportunities for safe, decent, and affordable housing in strong, cohesive neighborhoods to meet the needs of present and future residents of Lynnwood.

As noted previously, between 220 and 500 multi-family units would be provided in Alternatives 1 – 3. This would provide Lynnwood residents an opportunity to live in an urban environment with a variety of commercial amenities within walking distance. This type of housing in Lynnwood is limited. The housing in Alternatives 1 - 3 would be located apart from existing neighborhoods and other multi-family housing, and it would not be connected to an existing neighborhood. Alternative 5 would provide 194,740 square feet of nursing home space surrounded by a variety of medical offices. This would allow for a variety of housing opportunities to be provided for present and future Lynnwood residents.

Subgoal: Housing Opportunities—Provide for diverse, safe, and decent housing opportunities that meet local housing needs without encroachment into established single-family neighborhoods.

The proposed development borders an existing single-family neighborhood to the northwest corner of the site. The site layout includes a five-acre vegetative buffer between the westerly portion of the site and the development. Alternatives 1-3 include multi-family residential units and Alternative 5 proposes 194,740 square feet of nursing home space on the southern portion of the site. Alternative 4 does not include any residential units. All Alternatives except Alternative 4 would provide a diverse mix of housing to meet the local housing needs. The proximity of housing in an area predominately established with commercial uses would allow residents to live in an area serviced by public transportation, and provided with employment opportunities and retail and entertainment choices. The separation between the existing single-family neighborhood and the proposed housing opportunities would protect the established neighborhood without encroachment.

Policy H-1.4: Allow uses that will be compatible with the existing (or most desirable) character of surrounding properties, or that can be effectively buffered or screened if they have problem potential.

Most of the surrounding development is commercial in nature. There is residential development adjacent to the northwest quadrant of the site and a vegetated buffer will be retained between the proposed development and the existing residential uses to help separate the uses. Alternatives 1 - 5 are compatible with existing Alderwood Mall and commercial/retail uses associated with it. The multi-family units included in Alternatives 1 - 3 support the purpose of the Subregional Center.

Capital Facilities Element

GOAL: Capital facilities, regulations, policies, and procedures which serve the needs of current and future residences and businesses, property owners, and commuters by providing utility services which meet basic level of service standards.

Utility services such as water, sewer, and electricity would be provided to meet City standards in all Alternatives. The proposal would not create a situation in which the levels of service for utilities would fall below City of Lynnwood standards.

Subgoal 4: Capital Facilities - Provide Capital facilities to properly serve the community in a manner that enhances quality of life and economic opportunities, optimizes the use and protection of existing facilities and provides for future needs.

In the current condition, on-site stormwater is collected in catch basins and then conveyed to the detention pond located at the northeast corner of the site. In the developed condition under all Alternatives, the existing hydrologic conditions and flow paths would be maintained to the maximum reasonable extent possible. Runoff from the newly paved areas and rooftops on the site would be collected and conveyed to on-site detention systems at two locations (See *Stormwater* section for additional details).

Policy 1.2: Land development review will include coordination of the development requirements according to pertinent adopted plans, the land development regulations, and the availability of system capacities needed to support such development.

All five alternatives would comply with the Washington State Department of Ecology 2005 *Stormwater Management Manual for Western Washington*, the City of Lynnwood Public Works requirements, the City of Lynnwood Comprehensive Plan and City of Lynnwood Municipal Code. As part of the Proposed Action, a Development Agreement is being proposed to ensure predictability for both the City and the project sponsor as to design and development requirements during the permitting and construction phases of the project.

Policy 1.3: Water, sanitary sewer, and storm water system improvements shall be designed and constructed to the size required to serve the City's projected capacity needs consistent with the Comprehensive Plan.

All water system design and construction would be per the City of Lynnwood Public Works standards.

Related Design Standards and Programs - Principle: The City has standards for the design and construction of sewer, water, and stormwater utilities, and programs to develop new or expand utility systems. These standards should include the most recent design techniques so that these utilities are constructed and operate in an efficient manner.

See Policy 1.3 above.

Policy 7.1: Require connection to the City sewer system for all new development.

See Policy 1.3 above.

Policy 7.4: Support and implement conservation strategies aimed at reducing average annual and peak-day water use. These strategies can include: billing rate structures which encourage conservation, water restrictions at appropriate times, technical assistance for leak detection, design of low-water use irrigation and other water saving measures, public information, use of drought tolerant plantings and native vegetation in City landscaping, and development regulations and construction codes requiring water saving devices.

Landscaping provided in Alternatives 1 – 5 would include drought tolerant and native vegetation to reduce water consumption and support water conservation.

Policy 7.6: New development shall construct water system improvements and dedicate easements necessary to serve the development and to provide a reliable integrated distribution system.

See Policy 1.3 above.

Policy 7.9: Stormwater management systems shall be designed and constructed to minimize adverse impacts to natural watercourses.

Stormwater management facilities would comply with all existing City of Lynnwood requirements; see Policy 1.2 above.

Policy 7.13: Require underground utilities for all new development.

All proposed utilities would be underground for all five Alternatives.

Policy 7.14: Require, where feasible, that existing utility lines be relocated underground when areas are redeveloped, or as streets are constructed, reconstructed, or widened.

See Policy 7.13 above.

Energy and Sustainability Element

GOAL 1: Sustainability—Fully embrace Sustainability as a key strategic principle providing direction and focus for current and future critical city decisions.

The mixed-use (southern) portion of the project would represent an initial step towards embracing sustainability as a key strategic principle for land use and development. Alternatives 1 – 5 would support the City's goal of sustainability by providing commercial development that is strategically located in close proximity to public transit and similar existing commercial development. Alternatives 1 – 3 would provide mixed use develop-

ment that would include urban residential densities and commercial/retail amenities within the same site.

Economic Development Element

Goal 1: Grow and Diversify Lynnwood's Economy and Employment Base through Business Retention and Attraction.

All Alternatives would support the growth of the City's economic and employment base. Alternatives 1 -3 would provide mixed use development and include Costco Wholesale, as well as other retail and recreation/entertainment uses that would provide an employment base. Alternative 4 would provide an all retail employment base while Alternative 5 would create a mix of employment opportunities primarily in the form of medical uses. All proposed Alternatives would attract a diverse employment base and increase economic viability within the City. While the type of businesses that would occupy the project is not known at this time (except for Costco Wholesale), retail development is the dominant type of employment in Lynnwood at present and so this proposal would not promote diversification of the economy and employment base in Lynnwood (except for the medical office components of Alternatives 1 and 5).

The Growth Management Act (GMA) includes fourteen goals that must be considered when updating a Comprehensive Plan. The proposed development is consistent with the following goals:

Goal 1. Urban Growth – Encourage development in urban areas where adequate public facilities/services exist or can be provided in an efficient manner.

The proposed development is located within the City's Subregional Center where high density development is encouraged. Public transportation service is available to the site and water/sewer services are adequate for the proposed development.

Goal 3: Transportation – Encourage efficient multimodal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans.

The Subregional Center is part of the Puget Sound Regional Council's (PSRC) Vision 2040, which encourages the majority of the region's future employment and housing growth to be concentrated into major cities. As previously mentioned, the site is served by public transportation. The site layout incorporates bicycle lanes and sidewalks consistent with the City's pedestrian and bike route maps. These multimodal transportation options support regional priorities and are coordinated with county and city comprehensive plans.

Goal 4: Housing – Encourage the availability of affordable housing to all economic segments of the population of this state, promote a variety of residential densities and housing types, and encourage preservation of existing housing stock.

The multi-family residential units proposed in Alternatives 1-3 encourage affordable housing options and promote a variety of housing types. Alternative 5 proposes 194,740 square feet of nursing home space that would provide housing for a segment of the population that is aging and in need of assistance.

Goal 5: Economic Development – Encourage economic development throughout the state that is consistent with adopted comprehensive plans, promote economic opportunity for all citizens of this state, especially for unemployed and for disadvantaged persons, and encourage growth in areas experiencing insufficient economic growth, all within the capacities of the state's natural resources, public services, and public facilities.

All Alternatives would support the growth of the City's economic and employment base. All proposed Alternatives would attract a diverse employment base and increase economic viability within the City. The City's tax base would increase with the addition of Costco Wholesale (Alternatives 1-3), multiple retail businesses, restaurants, office space, and entertainment and recreational opportunities. These new businesses would also provide increased employment opportunities for residents in and around the Lynnwood area.

Economic Development Action Plan—On November 22, 2004, the Lynnwood City Council adopted an economic development action plan (EDAP) that identifies economic development goals, strategies and activities. The guiding themes of the EDAP are as follows:

1. Economic Development is a Citywide Priority. Economic development is a priority for Lynnwood. City officials and staff are working to encourage a culture that values economic development and operates in accordance with those values. Economic development in Lynnwood is a citywide effort, extending beyond the Economic Development Department to include all staff and all City departments.

All Alternatives would support economic development and employment opportunities in the City. Alternatives 1-3 would include Costco Wholesale as well as other mixed-use development including recreational/entertainment opportunities provided throughout the site. Alternative 4 would include mostly retail uses and Alternative 5 would include a mix of medical office uses, nursing home space, and daycare facilities. All Alternatives would support the economic development priorities in Lynnwood to varying degrees by redeveloping an underutilized parcel within the Subregional Center.

2. A Positive Business Climate is Essential. The City will ensure that Lynnwood is a positive and attractive place to do business. A supportive business climate will help ensure that the City continues to attract and retain healthy businesses. Through excellent customer service, the City will improve its competitiveness regarding economic development.

The redevelopment of the former Lynnwood High School site into an attractive mixed-use development would support a positive business climate in Lynnwood. Costco Wholesale is a local business with a reputation for competitiveness and the ability to attract other complimentary anchor tenants. Alternatives 1-3, which include Costco Wholesale, would be most supportive of Lynnwood's EDAP.

The mixed-use portion of the site would include retail, office, restaurant, recreational, and residential living space. These uses will support Lynnwood's desire to remain competitive in attracting healthy businesses that support a positive business climate.

3. Improving and Diversifying Employment Opportunities is an Underlying, Fundamental Goal. Creating a diversity of employment opportunities in the City is critical to strengthening Lynnwood's economic vitality and creating a livable city with opportunities for a wide range of people to both live and work in the community. By concentrating on higher wage professional and technical jobs, the City will continue to expand its economic base beyond its strong retail core and to support its diverse residential population.

All Alternatives would support a diverse range of employment opportunities. Alternatives 1, 3, and 5 all specify office space. This office space may be used for medical, professional, and/or technical jobs. These Alternatives would strengthen Lynnwood's economic vitality by supporting a wide range of employment opportunities within the City. Alternatives 1-3 that include Costco Wholesale and other retail and entertainments uses would also provide many employment opportunities. Alternative 4, the all retail alternative, would create additional employment opportunities as well, but the uses would not be as diverse as the other alternatives.

4. Strategic and Effective Partnerships are Important to the City's Success. The City recognizes that many partners are necessary to foster economic development. The City is working to develop effective partnerships with agencies. To be a good partner, the City pledges to:

- *Champion economic development policies adopted in the City's Municipal Code – LMC 2.45.010 and Ordinance No. 2320;*
- *Identify resources that support activities to achieve economic development;*
- *Clearly communicate the City's economic development goals and priorities, as well as the City's roles and responsibilities;*
- *Work constructively towards shared economic development goals; and*
- *Convey to residents the importance of a strong employment and revenue base.*

The City is working with the Edmonds School District, Cypress Equities, and Costco Wholesale towards the issuance of this Planned Action EIS to support economic development goals adopted in Lynnwood's Municipal Code 2.45.040 and Ordinance No. 2320.

5. The City Values Measurable Results. Furthering the City's commitment to evaluating organizational performance, qualitative and quantitative indicators of economic devel-

opment performance and customer satisfaction have been established in this Plan. Tracking these indicators during the life of the Plan will help ensure that the City's economic development efforts are as effective as possible.

Each of the Alternatives would further the economic viability of the City by providing additional tax base. The City would track these indicators along with others within the City to ensure that its economic development efforts are effective.

Transportation Element

GOAL: To provide mobility for residents, visitors and commuters through a balanced system of transportation alternatives that supports the City's land use vision, protects neighborhoods from transportation impacts and minimizes adverse impacts on the environment.

All Alternatives include an extension of 33rd Avenue West, from 184th Street SW northward around the west and north perimeter of the site, that connects to Alderwood Mall Parkway as the west extension of Maple Road. This roadway is referred to as the "bypass". This bypass extension is part of the City of Lynnwood's long-range traffic plan.

This new bypass road (33rd Avenue West) will be constructed to City of Lynnwood standards complete with curb, gutter and sidewalks, a bicycle lane, and street lighting. The sidewalks and bicycle lane would provide transportation alternatives to residents and users of the commercial/retail businesses.

The site is also served by seven Community Transit bus routes that operate every 15-30 minutes. The Lynnwood Transit Center is located about 1.5 miles southwest of the site. The Transit Center offers substantial parking and is approximately a 10-minute bus ride from the proposed development.

These alternative transportation options offer mobility choices to residents and visitors of the site and the surrounding commercial businesses.

Subgoal: Roadway System—Provide a City system of streets for the safe, efficient, and economical movement of people and goods to local and regional destinations.

In addition to the City's future road plan showing a through connection from Alderwood Mall Parkway/Maple Road to 184th Street SW, transportation modeling showed that there would be a substantial impact on nearby roads without mitigation. The Proponent will construct a complete three-lane bypass and provide right-of-way sufficient for later expansion to five lanes. This new bypass road (33rd Avenue West) will be constructed to City of Lynnwood standards complete with curb, gutter, sidewalks, and street lighting. The balance of the streets within the proposed development would be private. However, these would have safety provisions similar to 33rd Avenue West.

Subgoal: Signal System—A traffic signal system that provides safe movement through high volume intersections and a responsive level of service during off peak hours for the residents moving within the City limits.

The City's purpose for the 33rd Avenue West Extension is to provide an additional route of access into the growing City Center Subarea to the south, and to remove such traffic from Alderwood Mall Parkway south of Maple Road. Traffic signals would be provided at intersections deemed necessary by the City of Lynnwood. This would provide safe traffic movement through the proposed intersections and travel on and off the site. Traffic generated by the proposal has been reviewed and modeled. Mitigation is planned for impacts resulting from development of the Alternatives.

Policy T-15: Work with private development and transit agencies to integrate transit facilities and pedestrian and bicycle connections to residential, retail, manufacturing, commercial office and other types of development.

The bypass extension is included on the City of Lynnwood's Planned Bike Route Map and Planned Sidewalk Map. Public streets within the City require a sidewalk and bicycle lane. Including a sidewalk and bike lane on the bypass would support pedestrian and bicycle connections between existing routes and the proposed development. Although the balance of the new roads proposed are not public streets, they will have sidewalks connecting to public streets in the immediate vicinity. Crosswalks at intersections and within the proposed development are also proposed. The site is also served by seven Community Transit bus routes. The nearest stop is located at 184th Street SW and 33rd Avenue West. Bike racks can also be included in the detailed site design.

Subgoal: Non-motorized Transportation Systems—Strive to complete an integrated safety-orientated pedestrian, school walkway and bicycle system to provide mobility choices, reduce reliance on vehicular travel and provide convenient access to schools, recreational facilities, services, transit and businesses.

See Policy T-15 above.

Policy T-17.2: Public sidewalks and walkways shall be included in the design and construction of all future arterial streets.

See Policy T-15 above.

Policy T-17.5: Paved pedestrian walkways should be provided on corner development sites from street to building entrances to encourage walking between businesses, especially at signalized intersections, to reduce development traffic impacts.

In accordance with the City's *Lynnwood Citywide Design Guidelines*, pedestrian walkways from the internal portion of the site to primary sidewalks would be provided. This would ensure that residents living in the proposed development could safely walk from the site to the surrounding commercial businesses located nearby.

Policy T-17.6: A safe, well lit pedestrian walkway network should be provided throughout commercial development sites.

A detailed lighting plan has not been prepared; however, it is anticipated that it would include lighting along the internal roadways and parking lots, and well as at building entrances. Lighting for the 33rd Avenue extension would be designed according to City of Lynnwood Public Works standards. Proposed lighting along the private roadways would be in concert with the City's required lighting style to maintain continuity throughout the site.

Lighting proposed for the mixed use portion of the site includes pedestrian, security, and plaza lighting. Pedestrian lighting and pedestrian-scale lighting in plaza areas would not exceed 16 feet in height. Some lighting attached to buildings (and structured parking as needed) is also proposed.

Policy T-17.7: At appropriate locations, walkways should be extended to the edge of development sites to connect to existing walkways on adjacent property or allow for future connections when adjacent property is developed or redeveloped.

See Policy T-15 above.

Policy T-17.8: Street right-of-way adjacent to development sites should be fully improved to current City standards, including the provision of sidewalks, to reduce traffic impacts.

See Policy T-15 above.

Policy T-21.4: Traffic generated by new and redevelopment projects should be evaluated to determine the impact on the operation of surrounding intersections and street network. Projects that create adverse traffic impacts should include measures demonstrated to mitigate those impacts.

Traffic generated by the proposal has been reviewed and modeled. Detailed information on proposed transportation mitigation can be found in the *Transportation* section of this EIS.

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.

The spacing of commercial driveways and design of parking lots will be designed to City of Lynnwood Public Works standards. Crosswalks, both at intersections and within the site (including parking lots), would be provided to ensure pedestrian safety at intersections.

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.

See Objective T-23 above.

Policy T-23.2: On-site traffic circulation shall be designed to ensure safe and efficient storage and movement of driveway traffic.

Traffic generated by the proposal has been reviewed and modeled. Traffic circulation would be consistent with the City of Lynnwood standards to ensure safe and efficient storage, stacking, and traffic movement throughout the site.

Policy T-23.5: Access to properties should be oriented away from properties that are used, zoned or shown on the Comprehensive Plan less intensively.

The bypass extension is included in the City's long-range traffic plan. Access to the development would be oriented away from the residential properties to the northwest of the site.

Policy T-24.4: Place high priority on the access needs of public safety vehicles.

Access for public safety vehicles would comply with City of Lynnwood standards.

Subgoal: Environmental Factors—Minimize the impacts of the transportation system on the City's environment and neighborhood quality of life.

Traffic generated by the proposal has been reviewed and modeled to ensure that transportation circulation is consistent with City standards. Pedestrian walkways from the internal portion of the site to primary sidewalks would be provided. This would ensure that residents living in the proposed development could safely walk from the site to the surrounding commercial businesses located nearby. Detailed information on proposed transportation mitigation can be found in the *Transportation* section of this EIS. Stormwater run-off from new streets would be managed as required by City standards.

T-28: Minimize consumption of natural resources through the efficient coordination of traffic flow, the promotion of non-motorized alternatives, and the use of public transit.

See Policy T-15 above.

City of Lynnwood Zoning

Summary. As noted previously, the current zoning designation for the site is Public and Semi-Public (P-1) and an element of the Proposed Action is to rezone the site to Commercial-Residential (C-R). The C-R zone does not currently allow residential uses except when permitted with approval of a conditional use permit. An additional element of the Proposed Action is a text amendment to the C-R zone designating multi-family uses

as permitted (among other text amendments to the zone – see *Appendix A* for the full text of the proposed amendments for the C-R zone). The proposed text related to residential use reads as follows:

“B. Residential Uses. Multi-family residential uses are permitted, provided that the multi-family residential use is part of a mix-used building or is on property that has commercial uses. Multi-family residential development without commercial uses on the property shall not be permitted.”

The C-R zone promotes the use of public transit and carpools, pedestrian access through areas with this zone, and connection to other commercial areas.

Key concepts of this zone are to:

- Locate complementary land uses within convenient walking distance of each other connected by safe, pedestrian-oriented direct walkways;
- Permit a wide variety of commercial uses in order to promote development that serves both nearby residents and users of transit facilities;
- Permit multi-family residences to provide opportunities to live and work at a single property; and
- Promote the use of public transit, carpools, or vanpools for commuting or other travel.

Please see the C-R zone text and text amendments in *Appendix A* for a description of permitted and accessory uses, design guidelines, and development standards.

Discussion. Alternatives 1 - 5 are generally consistent with the general intent and underlying concepts for this zone. In general, properties to the east, southwest, and south of the site are occupied by commercial uses. A property northwest of the site is designated as multi-family residential. Parcels directly north of the site contain single-family residences. Alternative 1 would reinforce the commercial and multi-family land use character in the general vicinity, and the southern mixed-use component of the development would promote pedestrian access and connections to commercial uses on and around the site. The relationship of the proposal to design guidelines and development standards will be determined during project review.

City of Lynnwood Parks, Recreation, and Open Space Element and Parks Facilities Map

Summary. The Parks, Recreation, and Open Space Element of the Comprehensive Plan indicates existing levels of service and level of service standards. The Parks Facilities Map designates the portion of the site occupied by the Lynnwood Athletic Complex as a park and recreation facility (Community Park).

Discussion. The existing level of service in the Parks, Recreation, and Open Space Element of the Comprehensive Plan would need to be revised. The Parks Facilities

Map would need to be amended to remove this site (see the *Parks and Recreation* section for a discussion of impacts and the proposal's relationship to goals, policies, and level of service). These amendments would occur subsequent to approval of the Proposed Action, if approved.

3. Mitigating Measures for Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Measures Proposed for Alternative 1

Maintain a vegetated buffer west of the proposed Costco Wholesale warehouse to reduce potential land use incompatibility and proximity impacts to residential uses to the north/northwest of the site.

Measures Required by Regulation

Compliance with applicable codes and fulfilling the required authorizations, permits, etc. listed in the Fact Sheet represent methods to be used to meet local, state, and Federal regulations.

Additional Measures Identified in this Document

No additional mitigating measures have been identified at this time.

4. Significant Unavoidable Adverse Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

No significant unavoidable adverse land use impacts have been identified.

5. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of the Alternative 2—Project Sponsor's Preferred Alternative without Office

Land use impacts for Alternative 2 would generally be the same as for Alternative 1. While additional employment and housing opportunities would be provided, Alternative 2 would not include an office building component. As a result, fewer employment opportunities would be provided in Alternative 2 than in Alternative 1, but increased retail space and additional multi-family units would be provided. This mix of uses would support the purpose of the Subregional Center.

6. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 3—Lower Intensity Mixed Use Alternative

Land use impacts would generally be the same as for Alternative 1 except that Alternative 3 would have a lesser effect in reinforcing the land use objectives of the Subreg-

ional Center. While additional employment and housing opportunities would be provided, they would be at lower levels than Alternative 1 - about one third less than Alternative 1. This alternative would be consistent with the plans and policies described previously for this area and its attendant land use designation and zoning.

7. Impacts, Mitigation Measures, and Significant Unavoidable Adverse Impacts of Alternative 4—All Retail Alternative

Land use impacts would generally be the same as for Alternative 1 except that Alternative 4 would have a lesser effect in reinforcing the land use objectives of the Subregional Center. While additional employment opportunities would be provided, they would likely be lower than for Alternative 1 and no housing would be provided under this alternative. Further, a mix of uses would not be provided, and the retail uses would not be at intensities that support the purpose of the Subregional Center. Therefore, Alternative 4 would not be consistent with the plans and policies described previously for this area and its attendant land use designation and zoning. The lack of high-density residential development would be considered a significant adverse impact that is unavoidable without modifying the uses and zoning for this site.

8. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 5—No Action Alternative

The site would retain its current land use designation and zoning under this alternative, and a variety of possible public uses could be developed. This alternative would not reinforce the planned character of the Subregional Center because residential units above retail units would not be included Alternative 5. This Alternative would include medical offices, nursing homes, and a daycare facility, but the lack of mixed-use development would not be consistent with regional and City land use plans and policies except for current land use and zoning. Alternative 5 would increase employment opportunities by providing many medical office buildings on site.

G. Parks and Recreation

Development of the Proposed Action would result in the displacement of the Lynnwood Athletic Complex and place additional demands for parks and recreation services and facilities by the new residents of the project. This section examines the impacts on the City of Lynnwood's parks and recreation activities and its residents as a result of this action.

1. Affected Environment

Existing Facilities and Programs

The City of Lynnwood has a comprehensive parks and recreation program comprised of numerous facilities and program activities. In addition to having contractual scheduling and access rights to the Lynnwood Athletic Complex, the City has twelve (12) other Core Parks (mini, neighborhood, and community parks), four Special Use Area facilities, approximately 138 acres of maintained open space in and adjacent to the City, and four trails (City of Lynnwood, 2010). Existing facilities are listed below:

Core Parks (136.9 acres):

Mini Parks (3.3 acres):

- Maple Mini Park
- Mini Park at Sprague's Pond
- Veterans Park

Neighborhood Parks (38.8 acres):

- Daleway Park
- Meadowdale Park
- North Lynnwood Park
- Pioneer Park
- Spruce Park
- South Lynnwood Park

Community Parks (94.8 acres):

- Lynnwood Athletic Complex (owned by Edmonds School District with public recreation use rights via an interlocal agreement with the City of Lynnwood)
- Lynndale Park (includes Lynndale Skate Park)
- Meadowdale Playfields (owned by Edmonds School District with public recreation use rights via an interlocal agreement with the City of Lynnwood)
- Wilcox Park

Other Park Land (215.7 acres):

Special Use Areas (81.5 acres):

- Lynnwood Municipal Golf Course
- Recreation Center (The Center recently completed a \$23 million renovation and expansion and was rededicated in April, 2011)
- Senior Center
- Heritage Park

Open Space/Passive Recreation(138.5 acres)

- Gold Park
- Scriber Lake Park
- Scriber Creek Park
- Lund's Gulch
- Miscellaneous Open Space and buffers

Trails (outside of parks) (7.1 miles):

- Golf Course Trail
- Interurban Trail
- Mesika Trail
- Scriber Creek Trail

A wide variety of programs and activities serve the residents of Lynnwood as well as people from surrounding areas. Both passive and active recreational activities are supported that include casual use of park facilities; preschool, youth and adult arts activities at the Recreation Center; interpretive programs at Heritage Park; and school and league sports activities in the past at the Lynnwood Athletic Complex and, currently, at Lynndale Park and Meadowdale Playfields. The reader is referred to the Lynnwood Recreation Guide for descriptions of some of these activities.

Level of Service

Lynnwood's adopted level of service standard for parks is 10 acres per 1,000 population, which is further disaggregated to individual standards of 5 acres per 1,000 population for "Core Parks" and 5 acres per 1,000 population for "Other Park Land" (Special Use Areas and open space). The standard for "Trails" is 0.25 miles of trail per 1,000 population (for trails outside parks). There is no level of service standard for recreation programming.

The 2010 level of service (prior to suspension of programs at the LAC) for "Core Parks" was 3.79 acres per 1,000 population, with the greatest deficit in the "Community Parks" category (24.96-acre deficit) (City of Lynnwood, 2011a). This deficit is expected to

increase to 52.33 acres by 2025 as the City grows unless more land is acquired and developed.

“Other Park Land” acreage currently exceeds the level of service standard (by about 41 acres), but is anticipated to be deficient by about 25 acres in 2025. There is currently a deficit of 1.84 miles of trails, which is expected to increase to 3.88 miles by 2025. The City’s policy is to provide the minimum adopted level of service as described previously.

Lynnwood Athletic Complex

The Lynnwood Athletic Complex (LAC) is a 20.4-acre sports and recreation facility located on the former Lynnwood High School campus. The original facilities were constructed in conjunction with the high school in the late 1960s/early 1970s (Miller, 2008). Some of the facilities (on 12.4 acres of the 20.4-acre site) were upgraded in 1981 pursuant to a grant to the City of Lynnwood by the federal government that provided matching funding. The property is owned by Edmonds School District, and the facilities had been operated and maintained pursuant to a 40-year joint use agreement between the school district and the City of Lynnwood that expires in 2019 (City of Lynnwood, 2007b).

Facilities and Programs

A wide range of facilities were provided at the Lynnwood Athletic Complex. These include the following:

- Multi-purpose (soccer and football) synthetic turf field, lighted
- 1/4-mile track, lighted
- 90’ base path baseball field, lighted
- Two competition-level softball fields, lighted
- Multipurpose (soccer and softball) sand field, lighted
- Five tennis courts
- Two volleyball courts
- Children’s play area
- Picnic area
- Athletic office, concession facility, and rest rooms

Although use of the LAC and associated facilities was suspended in 2010, including organized league play, these facilities are still available¹ for recreational use, which is allowed through the interlocal agreement.

¹ Due to safety considerations, the LAC fields were closed to public use just prior to demolition of the high school buildings in 2010. The sports fields are still present and intact. Prior to suspending activities at the LAC, the City maintained the fields; after demolition, the School District assumed grass-mowing duties. It is possible and allowable under the interlocal agreement that use of the sports fields could resume.

The multipurpose artificial turf field was constructed in 2001 pursuant to an interlocal agreement among the City, the School District, and Edmonds Community College.

The athletic complex supported a wide variety of activities locally and regionally on a year-round basis. This includes casual, unscheduled use of the track, tennis courts, and other facilities by city residents and employees at the Alderwood Mall and other commercial developments on a daily basis. For example, the track had been used on Tuesdays and Thursdays by an organized group of mothers with strollers (Hendricks, 2007). In addition, the complex hosted the largest softball program in the state, which was managed by the City of Lynnwood (Sordel and Anderson, 2007). The softball program consisted of three seasons of play, 320 teams, and 6,500 players from throughout the region; there were approximately 30 to 40 teams on a waiting list each season. During the summer, there were four games each night with the last game (which often was a rain-out game) beginning at 9:45 pm and going until about 11 pm. The softball program at the LAC was discontinued in 2009 and, at a reduced number of teams and games, relocated to Meadowdale Playfields.

In addition to the softball program, more than 30 community groups used the facilities. This includes sports organizations such as Little League, Boys and Girls Clubs, Sno-King, adult soccer, and Select Soccer.

The softball, baseball, and field turf fields were also used by Edmonds School District sports teams for practices and scheduled games (football and baseball, tennis, track, softball, and soccer) and by students for physical education activities. Edmonds Community College used one of the softball fields and the synthetic turf field for soccer matches. Other activities included sports youth camps and fireworks at the annual 4th of July celebration, held since 1989. An Easter “Egg Scramble”, held since 2000, and a family-oriented physical fitness program (“Get Movin’”) also used the facilities; these activities have since moved to other venues (Sordel and Anderson, 2007). The City scheduled the facilities through its athletic program.

The LAC site is centrally located within the Lynnwood community, which made it easily accessible for both City of Lynnwood residents and Lynnwood Parks Department staff. The City maintained office and other facilities within the complex that provided opportunities for program management, maintenance, and efficient utilization of staff resources.

As noted, the City used the facility to host July 4th celebrations and fireworks. It is estimated that attendance averaged between 7,000 and 15,000 annually, with 15,000 to 20,000 people attending this event in 2009. The July 4th celebration had been held for 16 years at the LAC site until it was discontinued in 2010 with the loss of the LAC. The central location of the complex, complemented by the area’s topography, made it an ideal venue for this activity.

Athletic complex usage data for 2004, 2006, 2008, and 2009 for the multi-purpose synthetic turf field, multipurpose sand field, and baseball and softball fields are summarized below:

User	Hours of Use			
	2004	2006	2008	2009
Edmonds School District	1,082	1,084	1,036	551
Edmonds Community College	297	194	0	0
City of Lynnwood	1,383	1,420	1,384	782
Community Groups	<u>3,779</u>	<u>3,459</u>	<u>3,539</u>	<u>2,548</u>
Total	6,541	6,157	5,958	3,880

Use declined sharply in 2009 with the pending demolition of the high school and suspension of organized sports programs. As is evident, community groups accounted for the highest level of use, over 50 percent of the total (City of Lynnwood, undated-a). The multi-purpose synthetic turf field experienced the most use of the various facilities. Usage for this field was as follows: (City of Lynnwood, undated-b).

<u>Year</u>	<u>Hours of Use</u>
2005	2,213 hours
2006	2,086 hours
2007	1,774 hours
2008	1,734 hours
2009	1,408 hours

League play began to be curtailed in 2009 with the pending demolition of the high school.

Revenue

The athletic complex was an important revenue generator for the City. The softball program provided about \$150,000 per year in fees (Sordel and Anderson, 2007), and rental fees from the synthetic turf field amounted to about \$42,000 in 2009, up from \$40,000 in 2006 (City of Lynnwood, undated-b). Revenue from other field rentals averaged about \$20,000 per year.

Ownership and Agreements

As noted previously, the Lynnwood Athletic Complex facilities are situated on land owned by Edmonds School District, but were jointly developed, managed, and maintained by Edmonds School District and the City of Lynnwood. Some of the facilities were upgraded in 1981 with funding provided by the City and matched by funds granted to the State of Washington Interagency Committee for Outdoor Recreation by the fed-

eral government (Land and Water Conservation Fund). The Interagency Committee (renamed the Recreation and Conservation Office or RCO in 2007), in turn, administered allocation of the grant to the City and School District.

The Project Contract for the grant, executed in 1980, provided for:

“the partial construction of the Lynnwood Athletic Complex located in Lynnwood, Washington. Specific items to be completed under this contract include:

Site Preparation	Lighting
Utilities	Fencing
Irrigation System	Picnic Area
Landscaping	Children’s Play area
Pathway	Planning and Engineering
Restroom	Sales Tax
Playfields	(State of Washington, 1980)”.

The grant and the project contract applied to athletic and recreational facilities occupying 12.4 acres of the 20.4-acre LAC site (State of Washington Recreation and Conservation Office, 2008). This area, which included the multi-purpose sand soccer field, two natural turf softball fields, the field house, and the play area, are referred to as restricted Section 6(f) property (i.e., subject to conversion restrictions). As of May 20, 2010, the Recreation and Conservation Office approved the transfer of all federal restrictions from this site to the new Lynnwood High School site.

A joint use agreement was established in 1979 to prescribe the rights and responsibilities of the parties. Subsequently, additional interlocal agreements were made to address operations and maintenance activities in 1996 (which replaced the 1979 agreement) and 2001 (related to the athletic field artificial turf renovation project) (Edmonds School District and City of Lynnwood, 1996, and Edmonds School District, City of Lynnwood, and Edmonds Community College, 2001). Edmonds School District and Edmonds Community College entered into a superseding interlocal agreement in May 2007 relocating college field use from this site to other district fields. The obligations of the parties are set forth in these agreements; the joint use agreement between the City and District is in effect until 2019².

While the contractual obligation is set to expire in 2019, as noted above this agreement has a term of 40 years. Lynnwood is a fully developed community with little vacant land available for park acquisition and development. The City and District have been partners in use of recreation facilities at this site and others almost since Lynnwood was incorporated. Had the District not decided to relocate Lynnwood High School or had it decided to construct a replacement facility on-site, it is reasonable to assume that the joint use agreement or something comparable would have been extended for many

² The grant provisions for conversion of the funded park land to the new high school site is an issue separate from the interlocal agreement and the access rights of the City to continue using the LAC facilities, including restarting league play.

decades into the future. Therefore, it is not appropriate to assume that the value of the LAC and related recreational opportunities to the Lynnwood community would have been completely extinguished in 2019.

The 1996 agreement also designated scheduling responsibilities as follows:

City of Lynnwood –

July 1 - August 19 – all use of facilities
 August 20 - June 30 – after 5 p.m. weekdays
 all day weekends (subject to
 District’s scheduling authority)

Edmonds School District –

August 20 - June 30 – weekdays until 5 p.m.
 priority use after 5 p.m. week-
 days and all day weekends (part
 of the time)

The City has made on-going investments in maintenance and improvements since the initial Project Contract. Funding provided by the City for capital improvements amounts to over \$905,000, as follows (Anderson, 2006):

Initial development (1980/81)	\$394,000
Resurfacing track and tennis courts (1994)	25,000
Renovating ball field (1996)	150,000
Installing synthetic field turf (2001)	<u>336,228</u>
Total	\$905,228

These figures do not include routine operating and maintenance costs.

2. Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Introduction

In addition to the demand for additional park land created by the proposed development, the most significant adverse impact on *Parks and Recreation* is the loss of the Lynnwood Athletic Complex. While the high school and other school buildings on site were demolished in 2010 and scheduled athletic programs were suspended, it is appropriate to consider impacts as they would occur with the LAC recreation facilities in place³. Several factors support this position:

³ Due to the national recession, the Project Sponsor in early 2009 withdrew a proposal for a mixed use project at the site just prior to release of a Draft EIS for the proposal. At that time, the LAC was fully operational, which was the baseline against which impacts were assessed.

1. The principal consideration leading to the decision to suspend programs at the LAC was the pending development of the site and the School District's demolition of buildings on the property. The demolition of the buildings on the property in 2010 was based on the School District's desire to position the site for redevelopment and a need to address safety considerations at the property associated with vacant buildings. The demolition included a building owned by the City of Lynnwood and used as an office for the City's Athletic Program. To accommodate the School District's desires, the City processed permits for demolition of the buildings with the understanding that in doing so the City did not waive any of its rights under any agreements. The demolition of the building makes running recreation programs more difficult, but does not prevent the City from doing so.
2. The City has a substantial financial investment in the facilities including, for example, improvements to the field turf. The elimination of the Lynnwood Athletic Complex resulting from the proposed development would result in the immediate loss of the City's investment in these facilities.
3. As noted previously, the City has contractual rights through a joint use agreement for use of the LAC that expires in 2019. A joint use agreement of some type has been in effect for 40 years. Had the District not decided to relocate Lynnwood High School or had it decided to construct a replacement facility on-site, it is reasonable to assume that the joint use agreement or something comparable would have been extended given the longstanding history of this agreement. Therefore, it is appropriate to assume that the value of the LAC to the Lynnwood community would have extended to or well beyond 2019.

While moving some programs to the new Lynnwood High School was considered, this option is not feasible because:

1. It would be too costly to move to the new Lynnwood High School site. Costs to participate there were estimated to be higher than at the existing site (for example, field turf replacement and distance-related higher fuel costs and time costs for staff because the new site is outside the City);
2. Certain features of the new site are not entirely suitable (e.g., ball field dimensions are too small for adult league play);
3. The site is not conveniently located for community use; because the new high school site is located outside of the Lynnwood City limits, it is not as readily accessible to City residents as is the existing Lynnwood Athletic Complex; and
4. The functions, utility, and accessibility of recreational opportunities at the new high school are not comparable to the recreational opportunities being lost at the Lynnwood Athletic Complex.

Accordingly, resumption of athletic activities at the site is still feasible. Impacts associated with the loss of recreational program hours for the community, loss of revenue, and loss of prior investment must be analyzed. For the reasons discussed above, a functional Lynnwood Athletic Complex is the baseline against which impacts of its loss to the City's parks and recreation program are assessed.

Potential parks and recreation impacts of the Proposed Action include the loss of facilities, activities, and events; proximity, accessibility, and opportunity impacts; effects on level of service; administration and operations issues; and economic loss.

Loss of Facilities, Activities, and Events

This alternative would result in the displacement of all of the existing facilities at the Lynnwood Athletic Complex, which would be considered a direct adverse impact for and in the City of Lynnwood. The City would have fewer recreational facilities and there would be a direct loss of programs/activities and events.

City of Lynnwood Impacts: Unscheduled Activities

The track, two volleyball courts, children's play area, and the picnic area have been used on a casual, unscheduled basis. No data on the level of use are available, although it is likely that for the play area and picnic area, local residents and family members accompanying participants in other athletic activities account for most of the use of these facilities. These recreational opportunities would be foregone with the Proposed Action.

Residents who have used these facilities who live in relatively close proximity to the athletic complex may choose substitute locations in the city, although increased demands on these facilities could lead to over-crowding at peak use times. The new on-site residential population (estimated at 594 residents) would further contribute to such increased demands. The nearest alternative facilities are at Pioneer Park, approximately 0.5 mile west off 36th Avenue West, and North Lynnwood Park, approximately one (1) mile west on 44th Avenue West. Both of these parks have picnic facilities and play equipment. Overall, the magnitude and extent of the impacts with respect to loss of the picnic facilities and play area would likely be moderate.

City residents previously had access for use of volleyball courts at the Cedar Valley Gym through an interlocal agreement between Edmonds School District and the City. Effective January 1, 2011, community use (rentals by various groups) is now being scheduled by the School District, and City programming at the gym (e.g., open gym and scheduled pickleball and dodgeball leagues) has been cancelled. No other substitute facilities are available in Lynnwood. The magnitude of the impacts on volleyball activities is anticipated to be moderate to significant.

Overall, the loss of the two volleyball courts, children's play area, and the picnic area would result in inconvenience for some users because of greater travel distance and possible over-crowding.

The track was also used by residents on an unscheduled basis. Its displacement has greatest adverse effect on residents and employees who are in closest proximity to the site, especially those who travel to the site on foot. The magnitude of this impact would likely be minor to moderate.

City of Lynnwood Impacts: Scheduled Activities

Loss of the LAC facilities adversely impacts league and community group programs and activities. With the suspension of scheduled activities at the LAC, the City has moved its softball program to the Meadowdale Playfields (located inside the City of Lynnwood, approximately 3.4 road miles northwest of the LAC), but at a reduced number of teams, games and hours of use compared to activity levels at the LAC. The City went from a seven days per week, 5 pm -11 pm availability at the LAC to a three days per week, 6 pm -10 pm availability at the Meadowdale Playfields. Community group activities at the LAC would be eliminated. The loss of league and community group programs would be extensive and long term, resulting in a significant impact for league programs and a significant impact for community group programs and activities.

Another affected event is the annual 4th of July celebration. This major community event had been held at the LAC site for 16 years until it was discontinued in 2010 with the loss of the LAC. Its loss is considered a significant impact upon community-oriented recreational opportunities offered in the City.

Edmonds Community College Impacts

Edmonds Community College (EdCC), a partner in the operation of the Lynnwood Athletic Complex, has used the LAC facilities for women's and men's soccer and softball practice and games and for intramural sports activities (softball and soccer practice, games, and camps). EdCC expects it will continue these programs at the new high school site. The adverse impact associated with the less convenient location is expected to be offset by the beneficial impact of having newer, up-to-date facilities (Harrison, 2007). Overall, impacts would be neutral.

Effects on Level of Service

Effects with Loss of LAC

As described previously, the level of service standard for "Core Parks" is 5 acres per 1,000 population and the current level of service is 3.79 acres. Loss of the Lynnwood Athletic Complex would further reduce the level of service.

There are currently 136.9 acres of "Core Parks" land. With an estimated 2010 population of 36,160, the level of service calculates to be 3.79 acres per 1,000 population, as indicated above. Loss of 20.4 acres of "Core Parks" land would reduce the level of service to 3.23 acres per 1,000 population, a 15-percent reduction and a level of service that is 35 percent lower than the City's adopted standard.

For "Community Parks", the level of service would be lowered from 2.62 acres per 1,000 population to 2.06 acres per 1,000 population, a 21-percent reduction.

Effects Due to On-Site Population

Residents of the proposed development would also place demands on Lynnwood's parks and recreation facilities further reducing the level of service. The 330 multi-family residential units would have 594 residents using a factor of 1.8 persons per unit. For "Core Parks" land, the level of service would decrease to 3.17 acres per 1,000 population (116.5 acres / 36,754 population), and for "Community Parks" it would decrease to 2.02 acres per 1,000 population.

A summary of increased park demand (acres and trail miles) based on projected new residents and the City's adopted level of service for parks is as follows:

Adopted City LOS	Alt 1 - Project Sponsor's Preferred Alternative w/ Office	Alt 2 - Project Sponsor's Preferred Alternative without Office	Alt 3 - Lower Intensity Mixed Use	Alt 4 - All Retail	Alt 5 - No Action*
Core Parks: 5 acres/1000	2.97 acres	4.5. acres	1.98 acres	-	-
Other Parks: 5 acres /1000	2.97 acres	4.5 acres	1.98 acres	-	-
Trails: 0.25 miles/1000	0.149 miles	0.225 miles	0.10 miles	-	-

* Some lower level of demand might be associated with on-site residential population of the nursing home, but it has been deemed insignificant for purposes of this analysis.

Revenue Impacts

The estimated revenue that would be foregone with loss of the LAC over the 10-year period from 2009 through the end of the interlocal agreement is estimated to be over \$1.4 million as follows (Hendricks, 2011):

Concessions	\$ 18,000
Field Rentals	630,000
Team Registration	761,600
Softball Tournaments	<u>35,000</u>
Total	\$1,444,600

Estimated expenditures during this same period would be \$986,530.

Administrative Impacts

As noted previously, the City has been responsible for scheduling the athletic facilities part of the time through its athletic program. With demolition of the field house/office, the City has lost the ability to house recreation department staff at the site. This would be considered a moderate impact.

Summary

The Project Sponsor's initial proposal for a mixed use development was withdrawn in early 2009 due to the national recession. The environmental review for that proposal, which was suspended as well, evaluated impacts to the Lynnwood Athletic Complex as a fully operational facility. In the intervening period, the Lynnwood High School and the LAC have been displaced by demolition that occurred as the first step in moving forward with the Proposed Action. Even though the demolition preceded preparation of this EIS, the demolition has (and site development would) reduced the number of recreation facilities and programs/activities available to Lynnwood residents (and others), reduced access to recreation facilities for many Lynnwood residents, reduced the City's control over managing and scheduling many recreation activities, decreased the parks and recreation level of service, reduced annual revenues collected by the City, and caused a loss in capital investment represented by expenditures for the existing facilities.

Other facilities in Lynnwood, such as the Meadowdale Playfields, are unable to absorb all of the demand displaced from the Lynnwood Athletic Complex (Sordel and Anderson, 2007).

Overall, without mitigation, the Proposed Action would result in probable significant adverse impacts on parks and recreation.

3. Mitigating Measures for Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Measures Proposed by the Project Sponsor

The Edmonds School District has built replacement athletic facilities at the new high school site, outside existing City limits. Distance from the Lynnwood community, compounded by circuitous access for many City residents, higher costs to the City, and less than suitable facilities are some of the factors that off-set relocation of activities as an option to mitigate the loss of the LAC. Athletic facilities provided at the new high school are:

- Multi-purpose (soccer and football) synthetic turf field
- 1/4-mile track

- Natural turf baseball field
- Two multi-purpose (soccer and softball) synthetic turf fields
- Five tennis courts
- Athletic office, concession facility, and rest rooms

Measures Required by Agreement

Upon termination of the 2001 Interlocal Agreement, Edmonds School District is required to refund to the City a prorated portion of the funds supplied by the City for the athletic field artificial turf renovation project. The refund would be reduced for depreciation and normal wear and tear.

Measures Needed to Mitigate Impacts

Mitigating measures that should be considered to reduce impacts are listed below. The intent of the mitigation shall be to provide for acquisition and development of replacement recreation facilities within the City that provide utility equivalent to the existing complex, the same level of accessibility to Lynnwood residents, the same programs and activities, and the same level of City managerial control.

Individual measures that should be considered include:

- Incorporate open space, a trail for walking and jogging in the design and layout of the proposed development on the existing site, and a connection to the Interurban Trail.
- Provide a monetary or in-kind contribution to the City allowing for the replacement and/or enhancement of substitute parks and recreation resources.
- Develop additional facilities near Alderwood Mall to accommodate casual users.
- Compensate the City for the loss of its capital investment.
- Improve facilities owned by the District within Lynnwood and contract with the City to provide equivalency in terms of utilization and management.

4. Significant Unavoidable Adverse Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

The parks and recreation experience as it existed prior to the demolition would be unavoidably affected regardless of what mitigation is prescribed. The extent to which the impact is significant depends upon mitigation. If replacement facilities of equivalent utility, value, and location are provided within the City, the impact would likely be minor to moderate; there would not be significant unavoidable adverse impacts to parks and

recreation in this case. If replacement facilities are not of equivalent utility, value, and location, the level of impact would be significant.

5. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 2—Project Sponsor's Preferred Alternative without Office

The Lynnwood Athletic Complex would be displaced under this alternative, also. Therefore, impacts, mitigation, and unavoidable impacts would be the same as for Alternative 1 except that a higher on-site residential population (an estimated 900 residents vs. 594 for Alternative 1) would place greater demands on Lynnwood's parks and recreation facilities.

6. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 3—Lower Intensity Mixed Use Alternative

The Lynnwood Athletic Complex would be displaced under this alternative, also. Therefore, impacts, mitigation, and unavoidable impacts would be the same as for Alternative 1 except that a lower on-site residential population (an estimated 396 residents vs. 594 for Alternative 1) would place lower demands on Lynnwood's parks and recreation facilities.

7. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 4—All Retail Alternative

The Lynnwood Athletic Complex would be displaced under this alternative, also. Therefore, impacts, mitigation, and unavoidable impacts would be the same as for Alternative 1 except no impacts would be generated by an on-site residential population.

8. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 5—No Action Alternative

The Lynnwood Athletic Complex would be displaced under this alternative, also. Therefore, impacts, mitigation, and unavoidable impacts would be the same as for Alternative 1 except a low level of impact would be generated by an on-site residential population of the nursing home.

H. Transportation

1. Overview of the Analysis

Traffic conditions in the area of the proposed development include high volumes of urban commuter and commercial traffic on a number of multi-lane urban arterials. Traffic in the study area is composed of trips to/from the adjacent Alderwood Mall regional shopping center and trips between Lynnwood residential areas and regional destinations reached via State Route (SR) 525 and I-5. Existing congestion levels at peak travel times are high at some locations resulting in excessive delay and LOS F.

Traffic forecasts for redevelopment of the high school site for each alternative were accomplished using the Lynnwood Traffic Model, a detailed computerized representation of the road network and land uses throughout Lynnwood and south Snohomish County. The City of Lynnwood uses this computerized model to plan for future traffic on roads throughout Lynnwood and adjacent parts of southwest Snohomish County. The model was calibrated in 2005 to generate traffic volumes from the 2005 land use inventory that match 2005 traffic counts with 94-percent accuracy overall. A long-range edition of the model exists for the year 2025 that includes planned growth throughout Lynnwood and Snohomish County consistent with adopted regional plans. For analysis of the impacts of the alternatives, a background forecast was developed by interpolation of land use growth trends to an intermediate year.

The assumed year of opening of the proposed development is 2012. Therefore, traffic analysis was based on forecasts of traffic conditions in that year, and traffic generated by each tested alternative was added to the baseline 2012 forecast (i.e., 2012 forecasts without development of the project site). This approach accounts for traffic increases due to background growth throughout the surrounding area of southwest Snohomish County, as well as within Lynnwood, while clearly identifying and separating the impacts of the alternatives from pre-existing conditions.

Redevelopment of the Lynnwood High School site would result in increased levels of trip generation at the site and increased traffic volumes on roads leading to/from the site. Modeling showed that this would also result in some redistribution of background traffic to various arterial routes throughout the City of Lynnwood, as some existing traffic on the roads near the site shifts to alternative routes in reaction to the increased congestion in the vicinity of the site and the availability of new roads crossing the site.

Mitigating measures for each alternative were identified to generally restore the level of service (LOS) and traffic operations on the affected road system to a level equivalent to the 2012 baseline conditions.

Initial analysis of Alternative 1 (Project Sponsor's Preferred Alternative with Office) considered the relationship of the site's traffic impacts to the City of Lynnwood's long-range plan for an extension of 33rd Avenue W from 184th Street SW northward around the west and north perimeter of the site, and connecting to Alderwood Mall Parkway as the

west extension of Maple Road. This road is referred to as the “bypass”, and would have five lanes in the City’s ultimate future configuration¹. Three alternative bypass concepts were tested with Alternative 1 to determine the best configuration of road improvements needed for access to the proposed development at the time of opening and consistent with the City’s long-range plan for the surrounding area.

Preliminary tests showed that there would be substantial adverse impacts on nearby Alderwood Mall Parkway and on Maple Road requiring environmentally-difficult mitigation², if the site were developed as proposed but without a complete bypass around the site. In light of those findings, the Proponent will construct a complete three-lane bypass and provide right-of-way sufficient for later expansion to five lanes. Although the Proponent will construct the three-lane bypass as part of the project, an alternative without the complete bypass is included in this analysis in order to fully document the basis for that decision.

Two alternative versions of a complete bypass were analyzed. These two versions differ in the manner of routing trips between nearby 179th Street SW and Alderwood Mall Parkway, with significant revisions to the operation and configuration of the key intersection at Alderwood Mall Parkway and Maple Road. The version with the bypass and 30th Place W retained is more preferable because it results in less citywide delay compared to the version with the bypass and 179th Street SW Extension to Alderwood Mall Parkway. The mitigation for Alternative 1—Project Sponsor's Preferred Alternative with Office is summarized in Tables 3-17 and 3-18.

Four other ‘build’ alternatives for the high school site (which includes the No Action Alternative) were similarly evaluated and compared to Alternative 1. Each has less total net trip generation than Alternative 1 (Alternative 2 has more total gross trips). However, the required traffic mitigation is nearly the same as for Alternative 1 in each case.

2. Affected Environment

The major impacts of the proposed development occur on city arterials and state highways bounded by 36th Avenue West on the west, Interstate 5 (I-5) on the east, 172nd Street SW on the north, and 204th Street SW on the south. Roads and intersections within this study area were evaluated systematically and in detail for traffic operations using *Trafficware's* SYNCHRO analysis software. Additional locations beyond this primary study area would be affected to a small degree by the proposed development, whether directly or indirectly, and are accounted for as a group rather than individually.

Traffic volumes and associated measures of traffic operations and safety are all based on the forecast year 2012 as the baseline.

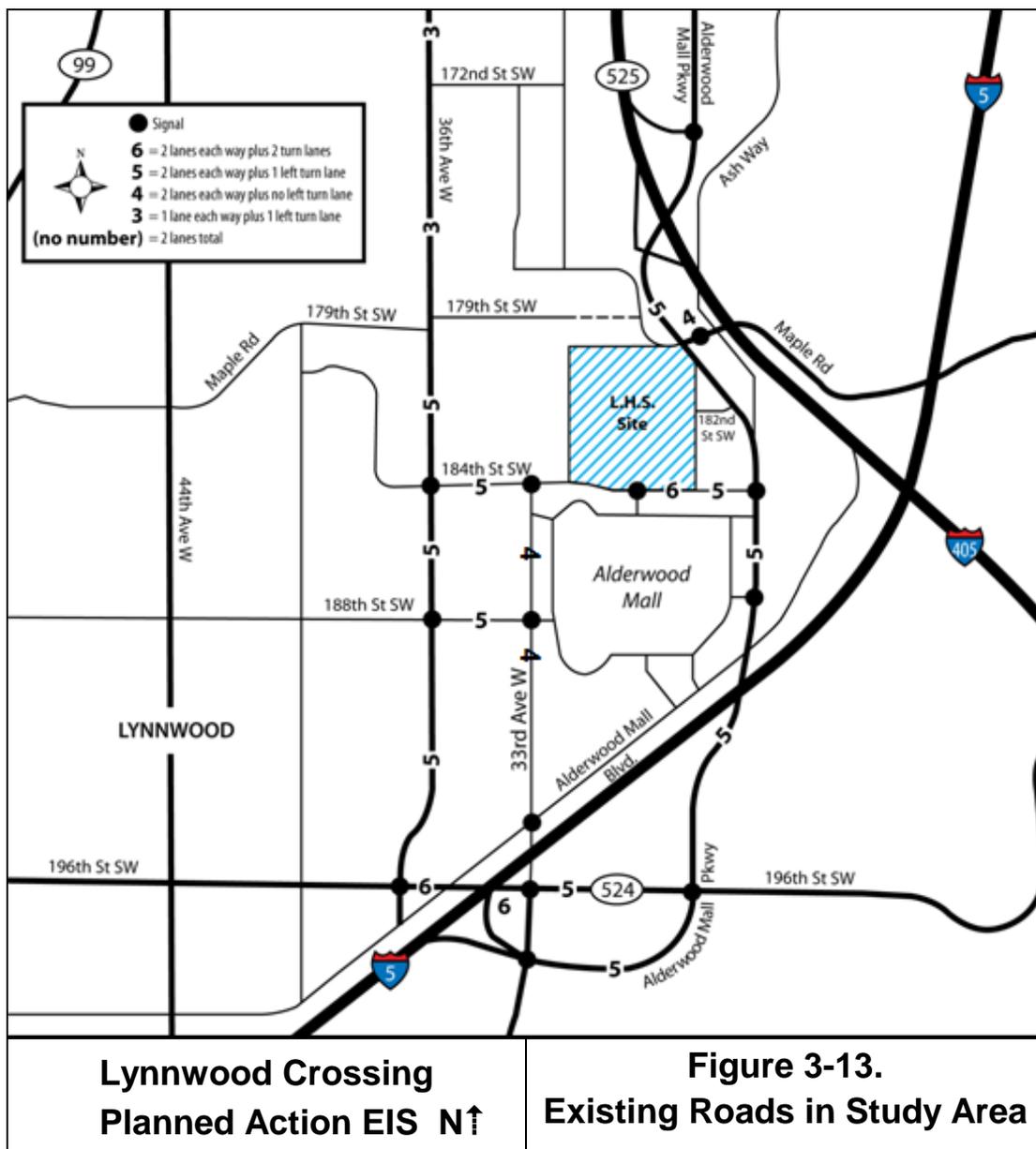
¹ The alignment of the north-south section of the bypass roadway (i.e., 33rd Avenue W extension) is coincident with the inferred location of 31st Place W. The east-west section of the roadway would be an extension of Maple Road.

² New right-of-way would potentially encroach on storm drainage swales, gas station property, and/or the project site (see later discussion in the impact analysis).

Street System in 2012

Figure 3-13 depicts the existing road network in the primary study area, and identifies key features of prominent intersections and roadways. This figure identifies intersections that are signalized, and shows the total number of lanes on each major road section, including the median left-turn lane, if any. Future roads considered in the analysis are also indicated.

Of particular importance to traffic operations are intersection controls, the number of lanes, and the length of storage for stopped vehicles in each lane and each turning pocket. Additional details of the road system not shown in Figure 3-13 are also considered in capacity analysis, especially at intersections.



The future road system used in the analysis of the alternatives is the same as the existing roads depicted in Figure 3-13, plus the additions described in the following paragraphs.

179th Street SW Extension

All alternatives include the extension of existing 179th Street SW eastward from its existing temporary terminus near 32nd Avenue W via an extension as 179th Street SW to a new terminus at 30th Place W. This extension is a street improvement to be constructed as part of a residential development (preliminary plat) that was approved by the City on October 8, 2007. When completed, this collector arterial will provide a new east-west connection across Lynnwood following Maple Road from 44th Avenue W eastward to 36th Avenue W, and then following 179th Street SW east of 36th Avenue W to 30th Place W. Continuing via existing 30th Place W southward and eastward, this route will provide a new east-west path to Alderwood Mall Parkway, terminating at the existing intersection with Maple Road. This new connection will serve traffic to/from SR 525, to/from areas east of I-5 via Maple Road, and to/from the Alderwood Mall regional shopping area. Although 179th Street SW Extension will not likely be completed by 2012, it is included as part of the network background assumptions for the analysis.

The 179th Street SW Extension would attract substantial east-west traffic that would travel via the intersection of 30th Place W and Maple Road. Without the 179th Street SW Extension, east-west traffic would instead use the bypass, 184th Street SW, and 36th Avenue W to reach its destination. It is expected more intersections along the bypass, 184th Street W, and 36th Avenue W would be affected by east-west traffic without the 179th Street SW Extension. The inclusion of the 179th Street SW Extension represents a worst-case condition for the intersection of 30th Place W and Maple Road and the intersection of Alderwood Mall Parkway and Maple Road due to the short distance between these two intersections. A three-lane segment for 30th Place W between the 179th Street SW Extension and the bypass is required due to expected large left-turn traffic from 30th Place W onto the bypass.

Improvements to the intersection of 36th Avenue W with Maple Road / 179th Street SW will be needed to manage the additional east-west traffic that results. A roundabout option and a signal option are currently being designed. However, the City of Lynnwood has not yet been made a final decision regarding which improvement is going to be constructed. For conservative analysis, no changes are accounted for in the baseline street system.

33rd Avenue W Extension

The baseline 2012 network analysis does not include the City's planned bypass route (33rd Avenue W Extension) around the site of the former Lynnwood High School. This route in the City's long-range plans is included in the City's impact fee program. For each 'build' alternative for site redevelopment, the bypass route is considered in relation to the site access plan and the off-site traffic mitigation needs. The Proponent has indi-

cated that they will reserve right-of-way for the City's ultimate five-lane configuration and will construct a three-lane configuration at the time of project opening; the right-of-way requirements would necessitate transfer of ownership of the right-of-way from the School District to the City.³

Other Planned Improvements

City of Lynnwood transportation plans include other future improvements in the study area and beyond. No other planned improvements were included because they would not be implemented by 2012.

Traffic Volumes in 2012

The 2012 forecast used for this analysis was created by interpolating 2005 baseline land use and the 2025 "with City Center" land use forecast for Lynnwood and the region. The 2025 forecast was developed at the peak of the economic boom at a straight-line growth rate of 1.5 percent per year. However, due to the current economic recession, no significant land use changes and slight decline in individual travel occurred between 2008 and 2012. The decline in travel is supported by current traffic count data that are generally equal to or lower than the 2006 - 2008 counts. It is expected that the same flat growth trend will be carried into 2012 and a new growth trend beginning in 2012 and beyond will occur.

The former Lynnwood High School was originally modeled as generating 171 PM peak-hour trips based on the school buildings' square footage and the trip generation rate described in the Institute of Transportation Engineers' (ITE) manual of Trip Generation. The trip generation (171 trips) was calibrated for the site in the Lynnwood Traffic Model in 2005; all forecasting of future changes removed that same amount at this site. The net impact of the alternatives is correctly represented by the modeled changes in future traffic conditions.

Forecast traffic volumes for the 2012 baseline situation in the study area are depicted in Figure 3-14. The baseline forecast does not include the bypass around the former high school site, but does include the 179th Street SW Extension. The modeled volumes represent the PM peak hour. This scenario of traffic flow and the associated level of service (LOS) and other operational conditions constitute the reference point for comparison of all alternatives.

³ The City's long-range transportation plan includes the link between 179th Street SW and the new bypass roadway, and the intersection of these two roadways. This intersection would be at a location further to the west than the intersections of 30th Place W and the bypass roadway that are evaluated in this EIS. Funding of the future 179th Street SW link and intersection as well as widening the bypass roadway to five lanes would be funded by a future LID (as one possible tool) that would require the property owner's participation. The LID would likely have a large, but as yet, unspecified benefit area. It is anticipated that the subject site and a number of others would be included and thereby expected to participate to the extent that each is benefited. As a condition of approval it is anticipated that the project proponents will be required to record a "no protest agreement" with regards to the future LID (s) as described.

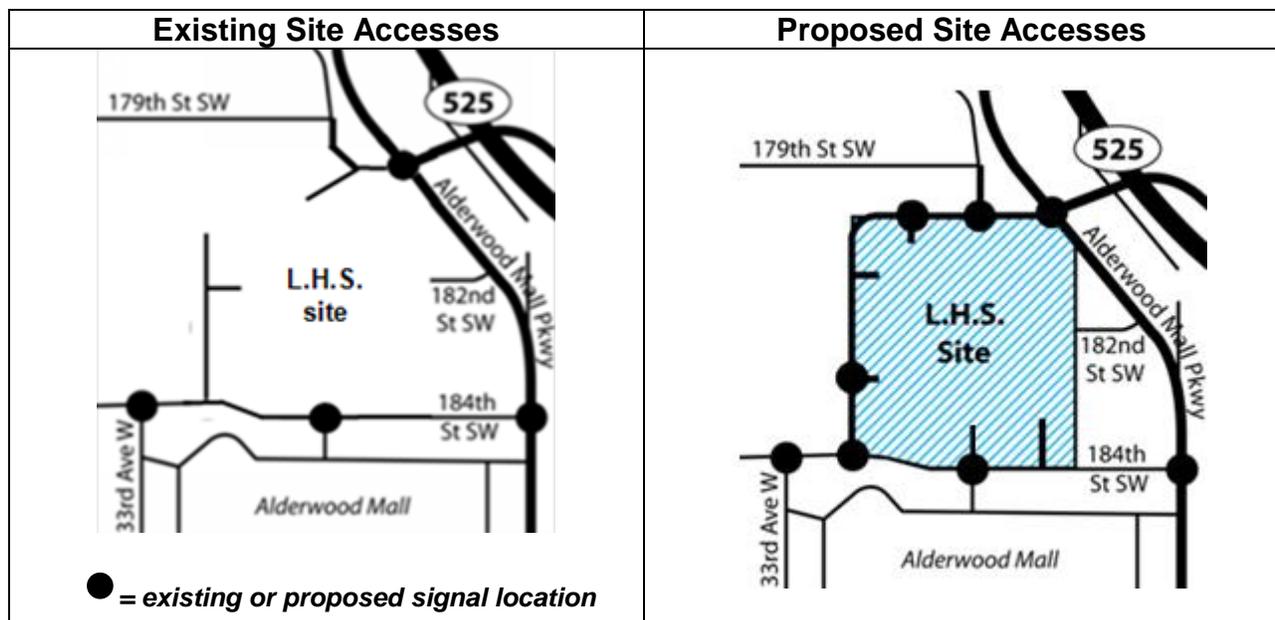
Site Access

Access to the local street system for the project site is currently provided at three locations:

- Unsignalized driveway access south to existing 184th Street SW in the approximate alignment of planned future bypass.
- Unsignalized driveway access east to existing 182nd Street SW, which connects to Alderwood Mall Parkway at an unsignalized intersection.
- Unsignalized driveway access north to existing 30th Place W approximately 200 feet west of Alderwood Mall Parkway.

All alternatives for development would modify these existing access points, and add several new access intersections to 184th Street SW and to the planned bypass route.

The following sketches show the existing site accesses and proposed site accesses for Alternative 1 with bypass and 30th Place W retained.



Traffic Safety

One intersection of importance to the site access plan has marginal sight distance conditions: the currently unsignalized intersection at 182nd Street SW and Alderwood Mall Parkway. The prospect of more turning movements at this location and possible signalization with the proposed development indicates that operational safety should be evaluated.

Existing sight distance at this location (380 feet) was measured by the City of Lynnwood staff. The current speed limit on Alderwood Mall Parkway is 35 miles per hour (mph). The safe stopping distance is 360 feet on level ground for a 35-mph posted speed, per the AASHTO “Green Book” (American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, Washington, D.C., 2004). However, the downward slope of Alderwood Mall Parkway going northward requires additional compensating distance, so the 380-foot measured sight distance is not adequate. The low accident experience at this location to date is attributed to the low level of existing turning volumes. The potential for increased accidents with increased turning volumes with future development is considered later.

No high accident locations are known to exist elsewhere in the study area.

Level of Service

Level of Service (LOS) is the term used by traffic engineers to describe the quality of traffic conditions experienced by motorists. The primary measure of delay in urban road networks is delay at intersections. As the average delay per vehicle increases, LOS changes from LOS A (excellent conditions with negligible delay) to LOS F (over-capacity conditions with extreme delay). LOS E represents very congested conditions but with steady traffic flow within capacity limits.

In the City’s Comprehensive Plan, the City has developed a level of service standard to measure the overall transportation system’s ability to move people and goods. The LOS standard is established differently for City Center arterials, state facilities, and the rest of the city.

The City’s LOS standards are as follows:

- LOS C for local streets at all times.
- LOS D for State Highways during the PM peak hour based on WSDOT’s LOS standard for urban arterials.
- LOS D for non-City Center arterials and non-State Highways during the PM peak hour.
- LOS E for City Center arterials during the PM peak hour.

It should be noted that LOS standards may not currently be met at a number of intersections throughout the community. In these cases, the LOS standard is used to aid in the design and funding of roadway and operational enhancements that would serve to meet them. The City of Lynnwood also allows 20 percent of the City’s signalized intersections to be deficient before the LOS concurrency standard is considered to be violated. There are 56 signals currently installed within the City, so a maximum of 11 signalized intersections are allowed to be deficient. If the analysis shows that the development does not cause more than 11 signalized intersections to fail (i.e., fall below the adopted LOS standard), then the development is consistent with the standard.

For the baseline 2012 forecast, Table 3-11 shows that six (6) study area intersections would operate at LOS E or LOS F, representing high levels of delay to affected traffic.

Two (2) of these congested intersections are signal-controlled. For this situation, all entering vehicles would be delayed on all approaches. Potential remedies to reduce congestion at such locations would include adding turn pockets or through lanes, alterations of the signal timing plan, or prohibition of movements if alternative routes can be provided.

Four (4) of the congested intersections are two-way stop controlled. Only the side-street approach traffic is stopped and affected by the delay, as the mainline traffic flows freely. Signalization may be a reasonable option to consider for mitigation of this delay.

In Table 3-11, the intersection at 179th Street SW and 36th Avenue W is depicted as having control delay of 9,999 seconds per vehicle. This result indicates the calculated delay exceeds the model's ability to compute a result, and the movement (typically a left turn) is essentially impossible during the peak hour. This high delay value indicates the over-capacity loading for stop-controlled approaches at these locations in the baseline forecast without improvements. The City has the 36th Avenue W Improvement Project underway and anticipates future improvements (either a signal or a roundabout) to this un-signalized intersection to correct the existing capacity deficiency.

The intersection at the SR 525 SB off-ramp and Alderwood Mall Parkway owned by WSDOT also has a control delay of 9,999 seconds per vehicle on the off-ramp approach. This result indicates the calculated delay exceeds the model's ability to compute a result and the movement (typically a left turn) is essentially impossible during the peak hour. The off-ramp traffic is adversely affected by the traffic on Alderwood Mall Parkway even in the 2012 baseline condition without the project. Signalization may be an option to resolve the deficiency.

The total number of deficient signalized intersections citywide is shown in Table 3-12. There are nine (9) signalized intersections that are deficient in the 2012 baseline condition, which is fewer than 11 signalized intersections or 20 percent of the citywide signalized intersections that are allowed to be deficient based on the City's concurrency LOS standard. The 2012 baseline condition does not violate the concurrency LOS standard.

Excess Queues

The intersection-based concurrency LOS methodology described above assumes that each intersection operates freely without interference effects from other intersections. However, traffic operations in congested urban networks sometimes experience blocking disruptions due to queues backing up from one intersection to another. In such situations, LOS calculations do not reflect the total delay actually experienced by drivers.

Table 3-11. Intersection LOS – 2012 Baseline Conditions

List No.	Name	Control Type	Volume	LOS ¹	Control Delay ²	V/C ³	Affected Movement ⁵	Queue Ratio ⁴
9145	SR 525 SB off-ramp & Alderwood Mall Pkwy	Two-Way Stop (WSDOT)	3085	F	9999	-	-	-
136	179 th Street & 36 th Ave W	Two-Way Stop	2344	F	9999	-	-	-
5010	179 th Extension & 30 th Pl.	Two-Way Stop	1041	B	11.3	-	-	-
891	Maple Road & Ash Way	Two-Way Stop	1583	F	356	-	-	-
894	182 nd Street SW & Alderwood Mall Pkwy	Two-Way Stop	3026	B	12	-	-	-
35	Mall Access & 33 rd Ave W	Two-Way Stop	929	C	17.8	-	-	-
9302	Beech Road & Alderwood Mall Pkwy	Two-Way Stop	2261	F	57.7	-	-	-
72	Maple Road & Alderwood Mall Pkwy	Signal	4233	E	60.4	1.03	EB	2.6
							WB	2.5
160	184 th St & 33 rd Ave W Ext	2-Way Stop	980	B	11.6	-	-	-
59	184 th St & Nordstrom Dr	Signal	1441	B	14.6	0.36	-	-
60	184 th Street & Alderwood Mall Parkway	Signal	3466	C	32.1	0.76	-	-
53*	188 th Street SW & 33 rd Ave W	Signal	1696	C	29.9	0.53	-	-
54*	188 th Street SW & 36 th Ave W	Signal	2926	D	37.3	0.67	EB	2.4
							WB	1.2
31	196 th Street & Alderwood Mall Pkwy	Signal	4708	F	155.8	1.16	NB	1.4
							SB	1.4
65	Alderwood Mall Pkwy & Poplar Way	Signal (WSDOT)	2849	C	24.5	0.68	EB	1.1
							WB	1.0
							WB	1.2
68	196 th Street & 30 th Pl. W	Signal	3374	D	36.8	0.76	NB	5.5
							SB	1.2
3*	196 th Street & 36 th Ave W	Signal (WSDOT)	4864	D	39	0.85	WB	1.1
58	184 th St SW and 33 rd Ave W	Signal	1128	C	25.4	0.41	WB	2.0

¹ LOS – Level of Service

² Control Delay is reported in seconds per vehicle

³ V/C – Volume to Capacity Ratio

⁴ Queue Ratio – Queue length to storage length

⁵ Directional movement with maximum queue exceeding storage length (example: NBL = northbound left turn)

* Intersection formerly within City Center Subarea; now part of the "Transition Area".

Table 3-12. Citywide Deficient Signalized Intersection LOS – 2012 Baseline Conditions

List No.	Name	Control Type	Volume	LOS	Control Delay	V/C
72	Maple Road & Alderwood Mall Pkwy	Signal	4233	E	60.4	1.03
15	188th St SW & SR 99	Signal	4202	E	58	0.97
31	196 th Street & Alderwood Mall Pkwy	Signal	4708	F	155.8	1.16
29	196th St & 40th Ave W	Signal	3820	F	89.4	1.05
4	196th St & 44th Ave W	Signal	4904	F	90.8	1.11
5	200th St SW & 44th Ave W	Signal	4764	E	62.2	0.98
18	208th St SW & SR 99	Signal	3766	E	71.2	0.91
64	212th St SW & 52nd Ave W	Signal	2508	E	61.5	0.93
19	212th St SW & SR 99	Signal	4112	E	59.5	0.95
Total numbers of deficient signalized intersections = 9 < 11, which is less than 20 percent of the City's 56 signalized intersections.						

To measure the risk of interference between intersections, and the associated breakdown of traffic flow through the network, Table 3-11 shows a Queue Ratio for each intersection in the study area. When there is adequate storage length for the queues that develop at an intersection, no interference with upstream intersections occurs. For simplicity, queue ratios below 1.0 are not listed or described. If the queue is longer than available storage, then overflows occur affecting adjacent intersections or parallel lanes, and traffic flow is disrupted. The actual delay at affected intersections will be worse than calculated, and the LOS is likely to be lower than computed.

Excess queues are identified at six of the intersections listed in Table 3-11. In some cases the overload is quite large (i.e., the queue ratio is greater than 1.25). These deficient conditions in the baseline forecast are acknowledged in the later analysis of impacts of the development alternatives.

Note that there is no direct correlation between the queue ratio and LOS. In these scenarios, long queues do not create a problem if there is adequate physical space to store all queued vehicles. The amount of storage space depends on the design of the approach streets at each location and not on the traffic operations at the intersection. Some intersections in Table 3-11 have a calculated LOS of "D", which is generally acceptable, but have a Queue Ratio greater than 1. This means that the intersection by itself operates satisfactorily in terms of delay, but inadequate storage length forces queues to spill back to upstream intersections. The upstream intersections are then unable to serve all of the traffic demand assumed in their respective LOS calculations, and actual delay in the system is higher than indicated by the LOS measures.

The excess queue problems in the 2012 baseline case are identified as pre-existing conditions. The development should take necessary mitigation that is at least adequate to restore to the pre-existing conditions in the 2012 baseline case.

Citywide Delay

An additional measure of citywide impacts of the proposed redevelopment was calculated as the direct sum of total intersection delay at all intersections monitored in the Lynnwood Traffic Model. Applied to the baseline case, this calculation results in 549 total hours of delay within the study area in each PM peak hour of operations. At all other intersections in Lynnwood, an additional 1,826 hours of delay were calculated. These numbers for the baseline forecast provide a point of reference against which to measure the net impact of each alternative considered later.

The economic value of changes in total delay is commonly used in transportation system planning to justify or prioritize major investments in capacity improvements. In economic cost/benefit analysis, the aggregate measure of time saved or time lost over many years would be converted to an equivalent economic value using a value of time derived from research. Such detailed economic analysis is not necessary to assess the relative benefits of alternatives for development under SEPA, but the underlying measure of aggregate citywide delay is useful as a comparison measure between alternatives.

Three (3) unsignalized intersections in the study area were omitted from the citywide aggregate measures because of existing extremely heavy delay that would otherwise add exorbitantly to the total delay for the study area. One of the intersections is currently out of the city limits. These locations are individually evaluated in the subsequent analyses of the impacts of alternatives. These three intersections and their 2012 baseline deficiencies are:

179th Street SW and 36th Avenue W: High volumes on 36th Avenue W would create high delay for vehicles entering from 179th Street SW after its extension to 30th Place W is opened, and east-west through travel would increase. Improvements (either a signal or a roundabout) at this intersection will be considered in the design of the 36th Avenue W corridor now underway.

Ash Way and Maple Road: High volumes on Maple Road would cause large delays on Ash Way and make left turns from Ash Way to Maple Road difficult. The large delay in all future development alternatives would distort the meaning of the area-wide delay measure. The actual number of left turns from Ash Way is, however, quite small.

SR 525 SB off-ramp and Alderwood Mall Parkway: High volumes on Alderwood Mall Parkway would cause large delays on the SR 525 SB off-ramp and make left turns and through traffic from the off-ramp difficult. Standard A (Signal Warrant 3: Peak Hour) in MUTCD was checked and it has been determined that Signal Warrant

3 is satisfied for the 2012 baseline condition. Signalization at this intersection may be the most likely resolution for the LOS deficiency. This intersection is currently out of the city limits and is a WSDOT controlled intersection.

3. Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Alternative 1 would add new points of access to existing arterials, and generate additional traffic on most roads in the study area. The site plan for Alternative 1 is shown in Figure 2-2.

Mitigation for traffic impacts depends on the configuration of the planned bypass around the high school site. This section evaluates Alternative 1 both without and with the complete bypass roadway. Three configuration alternatives for the bypass were evaluated.

The differences in mitigation requirements for these three bypass configurations are summarized later in this section in Tables 3-17 and 3-18.

The following section discusses the street system context for the bypass roadway and the configuration alternatives.

Street and Private Road System

Alternative 1 adds a new network of private roads within the site, new connections to adjacent arterials, and the bypass route. (See Figures 3-13 and 3-14 for the on-site street names used in the following text.) All on-site roads are proposed as two-lane roads with stop controls within the site. Access connections to adjacent arterials including the bypass would be configured with turn pockets and signalization where appropriate, as discussed later.

The bypass, referred to as 33rd Avenue W Extension, would contribute to the access plan for the redeveloped site. The extension would proceed from 184th Street SW northward along the site's west perimeter, bend around the site's northwest corner, and proceed northeastward to Alderwood Mall Parkway as a west extension of Maple Road. Existing 30th Place W turns into alignment with Maple Road as it approaches Alderwood Mall Parkway. This part of 30th Place W would be truncated and realigned to intersect with the bypass at a new intersection approximately 200 feet west of Alderwood Mall Parkway.

The City's purpose for the bypass (33rd Avenue W Extension) is to provide an additional route of access into the growing area to the south, and to remove traffic from Alderwood Mall Parkway south of Maple Road. The bypass would also accommodate the traffic from the Proposed Action. The City's long-range plans for 2025 indicate that future demand will require two through lanes in each direction plus left-turn provisions in this alignment. The City's long range plans also show the bypass linking to 33rd Ave-

nue W through a realigned intersection. This will then connect to an overpass over I-5 that links to the Poplar Way/I-5 interchange that is currently being designed. However, the 2012 analysis identifies the short-term need for only one through lane in each direction plus left-turn pockets at intersections or a continuous two-way, left-turn lane to specifically address the Proponent's development.

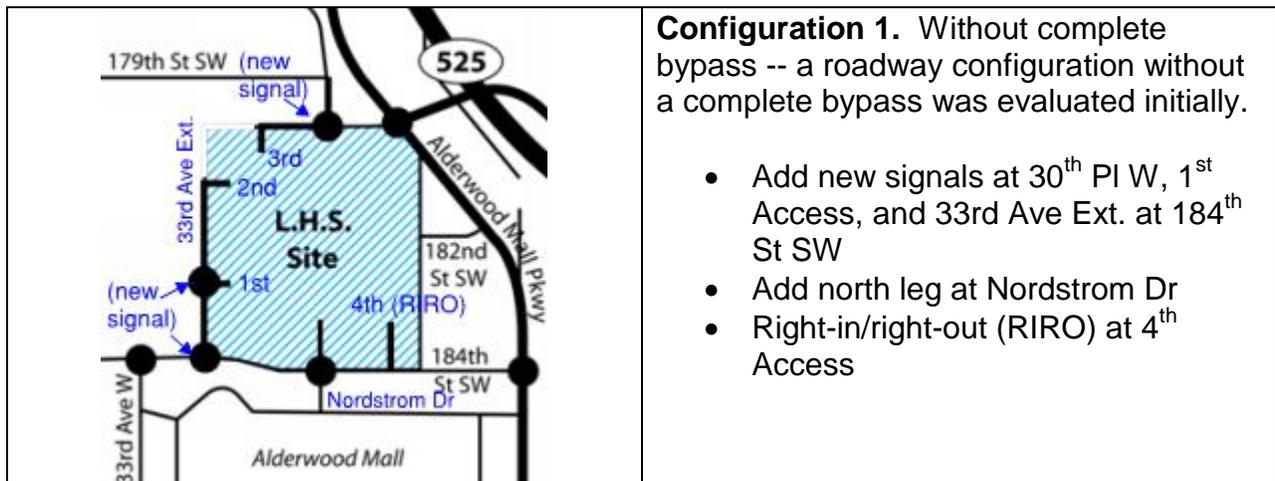
This bypass route would be constructed by the Proponent as a major element of the proposed development's traffic mitigation. The Proposed Action was first evaluated without the complete bypass.

Without Complete Bypass

This configuration would not complete the bypass route around the site. Site access roads would be at each end of this route, but not in the middle section. As demonstrated later, traffic impacts of this alternative require the highest level of capacity improvements (road widening and intersection improvements) north and east of the site. In particular, one additional lane would be needed on Maple Road east of Alderwood Mall Parkway and a signal would be required at 182nd Street SW and Alderwood Mall Parkway. There are significant implementation issues involving right-of-way acquisition and wetland replacement for the Maple Road improvement, and potential safety issues at the intersection of 182nd Street and Alderwood Mall Parkway.

Without the complete bypass, three new signals would be added on the bypass route; the on-site 4th access on 184th Street SW would be right-in and right-out control.

The following shows the configuration of the scenario without complete bypass.



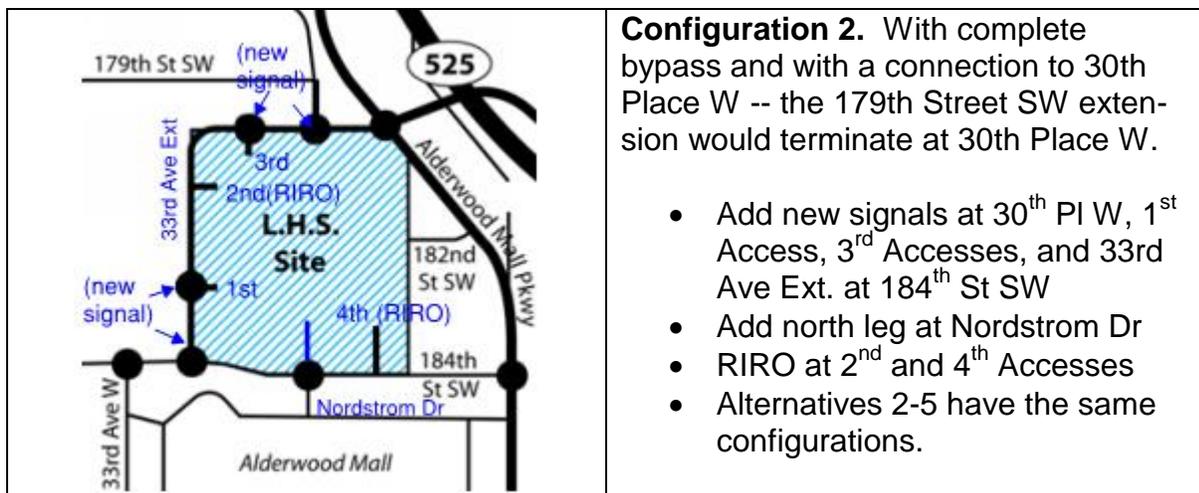
Bypass With 30th Place W Retained

Completing the bypass would draw significant levels of background traffic onto the bypass route and away from other off-site streets. As a result, intersection improvements at Maple Road and Alderwood Mall Parkway would be needed as part of the bypass

construction. The intersection improvements would include adding an additional lane on Maple Road between 30th Place W and Ash Way, and re-channelizing the eastbound and westbound approaches as one left-turn lane and two through and right-turn shared lanes. In addition, the southbound approach would need a separate right-turn pocket.

With the bypass and 30th Place retained, four new signals would be added on the bypass route; the 2nd access that is located on the bypass route and the 4th access on 184th Street SW would be right-in and right-out control.

The following shows the configuration of the scenario with complete bypass and 30th Place W retained.



Bypass With 179th Street SW Extended to Alderwood Mall Parkway

In addition to the complete bypass, the new extension of 179th Street SW, which is assumed to be completed before 2012, would be further extended eastward from 30th Place W to connect with Alderwood Mall Parkway. Simultaneously, 30th Place W would be closed between 179th Street SW and the bypass. This road configuration would not require widening of Maple Road east of Alderwood Mall Parkway.

With the complete bypass and 179th Street SW extended to Alderwood Mall Parkway, three new signals would be added on the bypass route and one new signal would be added on Alderwood Mall Parkway. The 2nd Access located on the bypass route and 4th Access on 184th Street SW would be right-in and right-out control.

The following shows the configuration of the scenario with complete bypass and 179th Street SW extended to Alderwood Mall Parkway.



Configuration 3. With complete bypass and with 179th Street SW extended to Alderwood Mall Parkway (AMP) -- 30th Place W would not connect to the bypass.

- Add new signals at AMP, 1st Access, 3rd Accesses, and 33rd Ave W Ext. at 184th St SW
- Add north leg at Nordstrom Dr
- RIRO at 2nd and 4th Accesses

Other Changes

Each of the tested bypass alternatives also modifies existing Alderwood Mall Parkway north of Maple Road, but in different ways (further described in later sections). With the first two configurations, the terminus of existing 30th Place W would become a “tee” intersection with the bypass route about 200 feet west of Alderwood Mall Parkway. This intersection would be eliminated with the third road configuration of 179th Street SW extended to Alderwood Mall Parkway. The northern entrance to the development site is located approximately 400 feet further west of 30th Place W. The close spacing of these intersections adjacent to Alderwood Mall Parkway is the key factor affecting traffic operations with the proposed development for which mitigation is required.

With the realignment of 30th Place W to intersect with the bypass route, the existing driveway access to the private residence west of 30th Place W would need to be relocated. With the third road configuration, relocation of this existing private driveway would not be needed.

Traffic Volumes in 2012

The traffic impacts of Alternative 1 are as follows.

Trip Generation

Trip generation calculations were made by Heffron Transportation, Inc., the Applicant's traffic consultant. Based on the Technical Memorandum of *Traffic Generation Estimates* provided by Heffron Transportation, Inc. in April 2011 (McBryan, Tod, 2011), Alternative 1 would generate a gross total of 2,971 PM peak-hour trips. Due to the mixed-use pattern of the site plan and the retail-oriented development, internalized trips, pass-by trips, and diverted-link trips, which were considered and estimated at 706 trips, 490 trips, and 454 trips, respectively, would be discounted. The net impact to/from from the site is 1,321 PM peak-hour trips. These net trips do not include the

existing high school trips. The existing trip generation for the high school and adjacent athletic fields was removed from the traffic model for all 'build' alternatives.

Trip Distribution—Without Complete Bypass

Without the bypass route, the trips generated by Alternative 1 would utilize several access points and distribute to the road network as depicted in Figure 3-15. The numerical values in Figure 3-15 depict the directional volumes on each side of each road. The line width is proportional to volume.



<p>Lynnwood Crossing Planned Action EIS N ↑</p>	<p>Figure 3-15. Trip Distribution for Alternative 1 without Complete Bypass</p>
--	--

The largest proportion of site-generated traffic would use the site's proposed extension of 33rd Avenue W, calculated at 388 total two-way PM peak-hour trips. The second

largest is the volume forecast to use existing 182nd Street SW, calculated at 374 total two-way PM peak-hour trips; the eastbound traffic on 182nd Street SW would have difficulty making left turns onto Alderwood Mall Parkway. The third largest is the volume forecast to use the access aligned with the Alderwood Mall access, calculated at 280 total two-way PM peak-hour trips. Relatively small volumes are forecast to use the '3rd Access' on the west end of Maple Road Extension and the '4th Access' west of the site's east boundary.

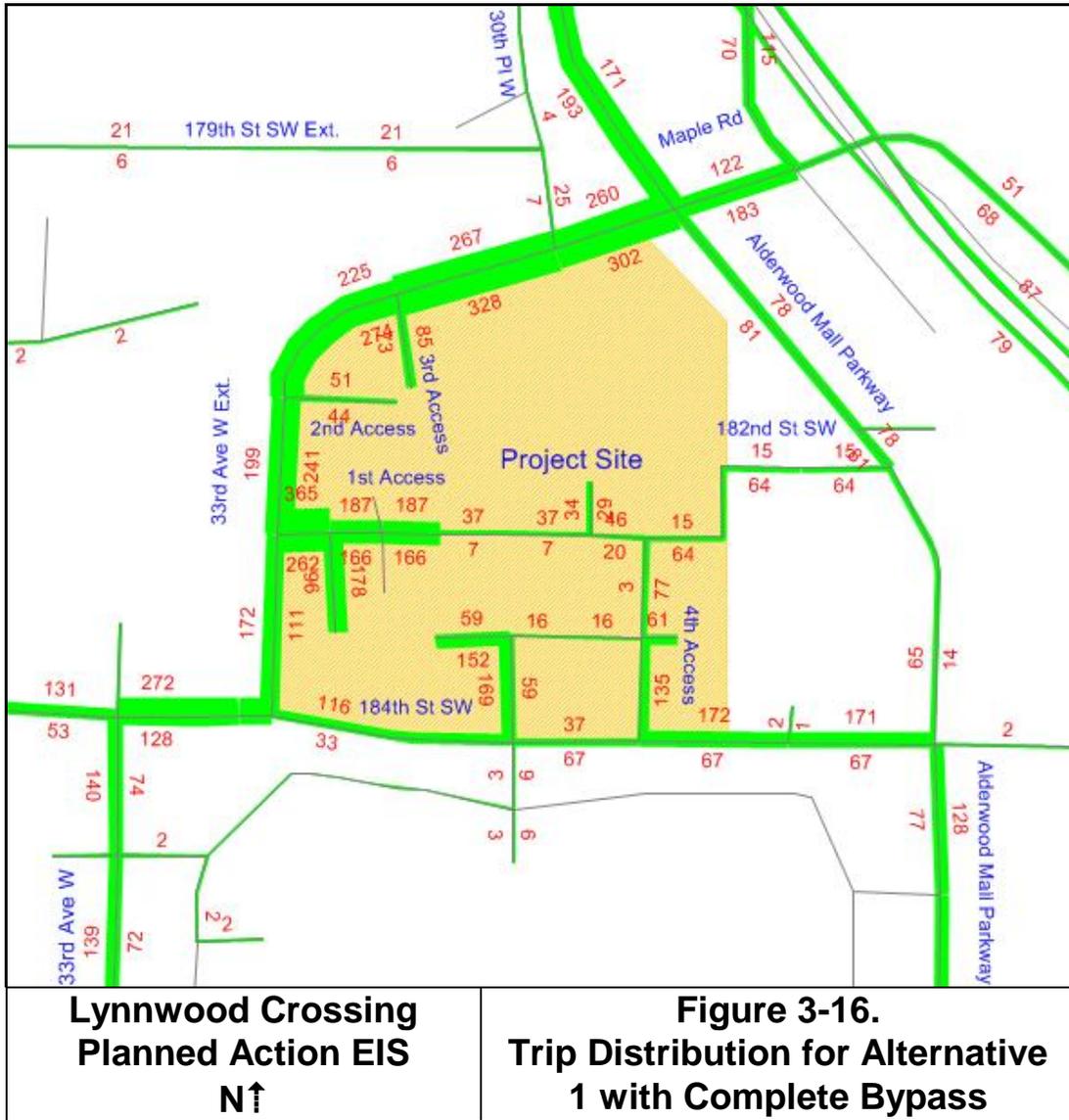
It is possible that less use could be made of the access on 182nd Street SW and greater use could be made of the accesses on 184th Street SW, depending on how all access points are configured, signed, and landscaped in the final design. The modeled results are based on the shortest-path access routes to and from the parking areas within the site according to preliminary site plans. With appropriate signage and landscape design features, the access aligned with the Alderwood Mall access could attract more drivers away from the other access points. Potential changes in the distribution of parking supply within the site could also influence the choice of access points by some drivers. Such a shift would be unlikely, however, to change design requirements for any access points from a traffic standpoint.

Trip Distribution—With Complete Bypass and 30th Place Retained

With the complete bypass and 30th Place W retained, additional site trips use the bypass as depicted in Figure 3-16. Traffic accessing the site is significantly shifted away from Alderwood Mall Parkway and 184th Street SW to the bypass compared to without completion of the bypass, which significantly reduces the traffic on 182nd Street SW.

The largest proportion of site-generated traffic would use the site's proposed '1st Access', calculated at 637 total two-way PM peak trips. The second largest is the volume forecast to utilize the access aligned with the Alderwood Mall access, calculated at 228 total two-way PM peak trips. The third largest is the volume forecast to utilize the '4th Access' west of the site's east boundary, calculated at 135 total two-way PM peak trips. Relatively small volumes are forecast to use the '2nd Access', the '3rd Access', and 182nd Street SW.

It is possible that less use could be made of the '1st Access' and greater use could be made of the accesses on 184th Street SW, depending on how all access points are configured, signed, and landscaped in the final design. The modeled results are based on the shortest-path access routes to and from the parking areas within the site according to preliminary site plans. With appropriate signage and landscape design features, the access aligned with Alderwood Mall access could attract more drivers away from the other access points. Potential changes in the distribution of parking supply within the site could also influence the choice of access points by some drivers. Such a shift would be unlikely, however, to change design requirements for any access points from a traffic standpoint.



Trip Distribution—With Complete Bypass and 179th Street SW Extended

The third bypass configuration, which eliminates 30th Place W and extends 179th Street SW to Alderwood Mall Parkway, results in a trip distribution pattern that is similar to the previous configuration of the bypass with 30th Place W retained, but the small volume of site-generated traffic that utilizes 30th Place W would shift to Alderwood Mall Parkway (Figure 3-17).



Lynnwood Crossing Planned Action EIS N ↑	Figure 3-17. Trip Distribution for Alternative 1 with Complete Bypass and 179th Extension to AMP
---	--

Trip Distribution—Off Site

Off-site, the largest volume is oriented to/from areas north and east of the site, via Alderwood Mall Parkway and Maple Road. The Alderwood Mall Parkway traffic north of Maple Road includes trips to/from SR 525 at the nearby interchange, and other traffic to 164th Street SW, Ash Way or I-5, and beyond. A majority of the Maple Road users traveling eastward follow Ash Way to/from the north to reach I-5 at 164th Street.

At the west side of the site, the majority of site trips would follow existing 33rd Avenue W southward to reach various destinations, including the City Center Subarea and

western areas of Lynnwood and beyond that are reached via 188th Street SW, 196th Street SW, and 200th Street SW.

Traffic added to Alderwood Mall Parkway south of 184th Street is oriented to areas east of Lynnwood via 196th Street SW or Locust Way, and south of Lynnwood via I-5.

Site Access and Circulation – Without Complete Bypass and With Complete Bypass

The distribution of on-site traffic is significantly different depending on whether the bypass is complete or not.

Without the complete bypass, Maple Road Extension would simply be an extension of the site's '3rd Access'. When the missing bypass segment is added from the '3rd Access' around the northwest corner to the '2nd Access', the point where the '3rd Access' joins the bypass (Maple Road Extension) would become a "tee" signalized intersection.

Similarly, without the bypass completed, the '2nd Access' would simply turn into the alignment of the 33rd Avenue W Extension. With the bypass completed, this location would become a "tee" intersection restricted to right-in/right-out movements.

The intersection of the '1st Access' with 33rd Avenue W Extension would be in all cases a "tee" intersection. Left-turn pockets are provided in the proposed site plan, and signalization is identified as a mitigation need.

A new intersection would be formed where 33rd Avenue W Extension connects with 184th Street SW. This location is identified in site plans as signalized and channelized for left turns. North of this intersection, a two-lane section suffices due to minimal left-turn activity into the site from the north at the '2nd Access' and the '1st Access'. This applies with or without the complete bypass.

The existing intersection giving access to Alderwood Mall on 184th Street SW, located west of the '4th Access', would be modified to include a new fourth leg on the north side, giving access to the site. Signal controls would be modified, and the site plan indicates two lanes in and two lanes out. Analysis indicates that two southbound lanes are desirable, to split left turns from right turns, but the inbound direction does not require two lanes to serve the relatively small inbound volume.

A new street intersection is proposed on 184th Street SW west of the site's east boundary, as the '4th Access'. This location would not be signalized and would provide only right-turn movements in and out, to avoid conflict with the existing all-turns access driveway to the retail property east of the site and the left-turn traffic to Alderwood Mall west of the '4th Access'.

Without the bypass, the site access connection to existing 182nd Street SW would result in a large increase in use of the unsignalized intersection at 182nd Street SW and Alderwood Mall Parkway (see additional discussion in the following section on Traffic Safety).

Within the site, one east-west road is proposed. The road would carry volumes requiring only one lane each way. The road would be designed in accordance with applicable City of Lynnwood design guidelines applied through the design review process. Most on-site intersections may be controlled by two-way stop signs; however, all-way stop control should be required at major on-site intersections as a traffic calming device to discourage through trips from using the site roads in lieu of adjacent arterials. Other traffic calming concepts should also be required in site road design.

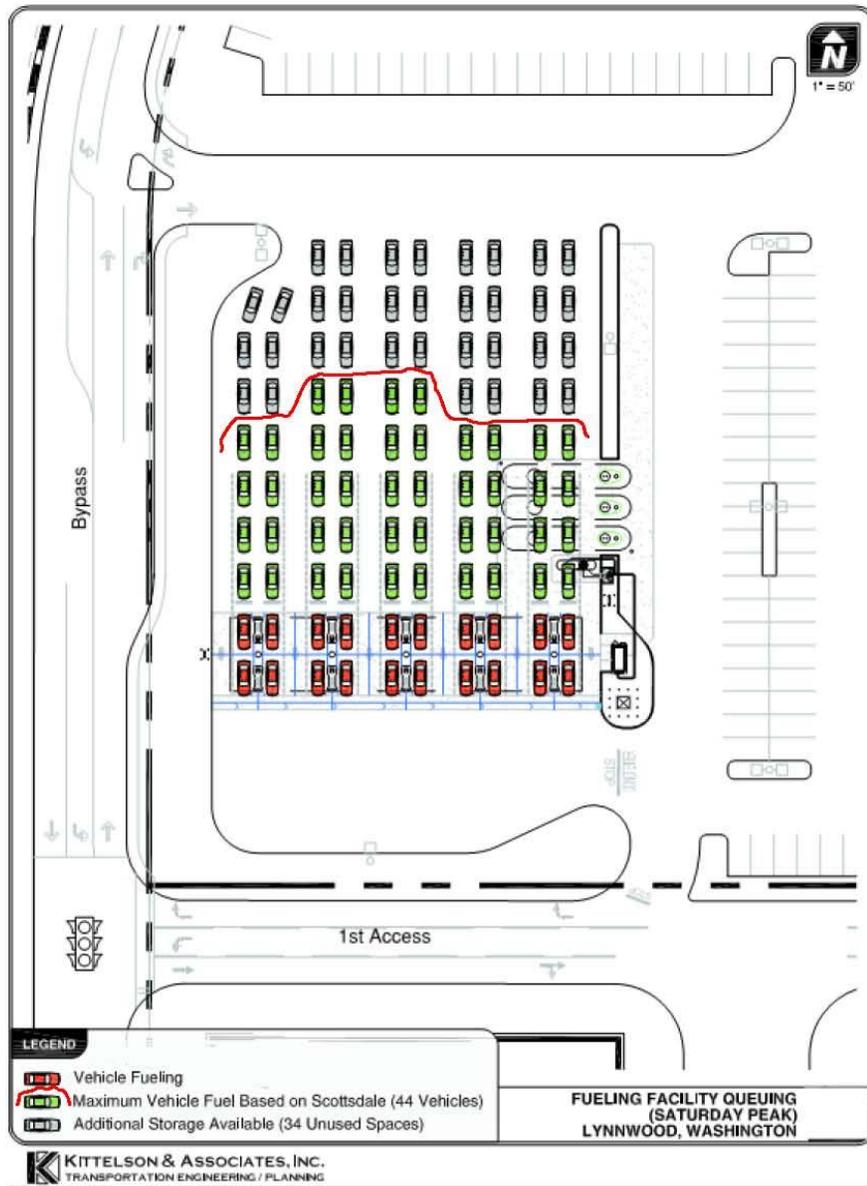
The Costco fueling station is located immediately east of the bypass between the '1st Access' and the '2nd Access'. Traffic waiting for fueling would not queue back onto the bypass based on the *Technical Memorandum of Lynnwood Costco Gasoline Fueling Facility Queuing* provided by Kittelson & Associates, Inc. on June 28, 2011. According to the Technical Memorandum, the proposed site plan provides five fueling islands, as shown on the sketch on the next page. Four of the five fueling islands provide eight fueling lanes with stacking for eight vehicles beyond the fueling position. One of the five fueling islands provides two fueling lanes with stacking for seven vehicles. The queuing studies conducted by Kittelson & Associates, Inc. concluded that the peak period of vehicle fueling queues occurs on mid-day Saturday, and a maximum queue of six vehicles would be expected in any given lane for the Costco site plan. The queues on all other days of the week in the PM peak hour should be six vehicles or less, which is less than the maximum queue storage of eight vehicles (provided for in four of the five islands) or seven vehicles (provided for in one of the five islands).

The queuing analysis conducted by Kittelson & Associates, Inc. assumed an average vehicle length of 20 feet and the fueling activity is mostly for passenger cars; diesel fuel will not be provided. The design review site plan should identify the truck route in and out of Costco loading docks; truck traffic in and out of the Costco site for fueling is expected to be minimal.

Traffic Safety

Signalization of the intersection at 182nd Street SW and Alderwood Mall Parkway would not be recommended due to limited sight distance south of the intersection, as previously described. Vehicles approaching from the south at the design speed may not be able to see the traffic signal in time to avoid colliding with a left-turning vehicle entering from 182nd Street SW.

An alternative would be to prohibit eastbound left turns from 182nd Street SW to the north and not signalize the intersection. Inbound left turns onto 182nd Street SW would continue to be possible. Most of the outbound site volume plus the existing outbound left turns would then switch to the site's south entrance at the access aligned with the Alderwood Mall access, increasing the impacts on the LOS and queue lengths at that



location. This alternative impact is further discussed with the operational analysis of cumulative impacts.

Accident totals everywhere will typically increase as traffic volumes increase; however, the overall accident rate per vehicle trip will not change unless congestion is significantly increased. Since traffic mitigation has been identified for each alternative such that overall congestion levels would not increase for the study area as a whole, the area-wide accident rate per se is not expected to change. Therefore, an increase in total future accidents is expected but is not a significant impact of the proposed redevelopment, for Alternative 1 or any other alternative.

Cumulative Impacts – Without Complete Bypass

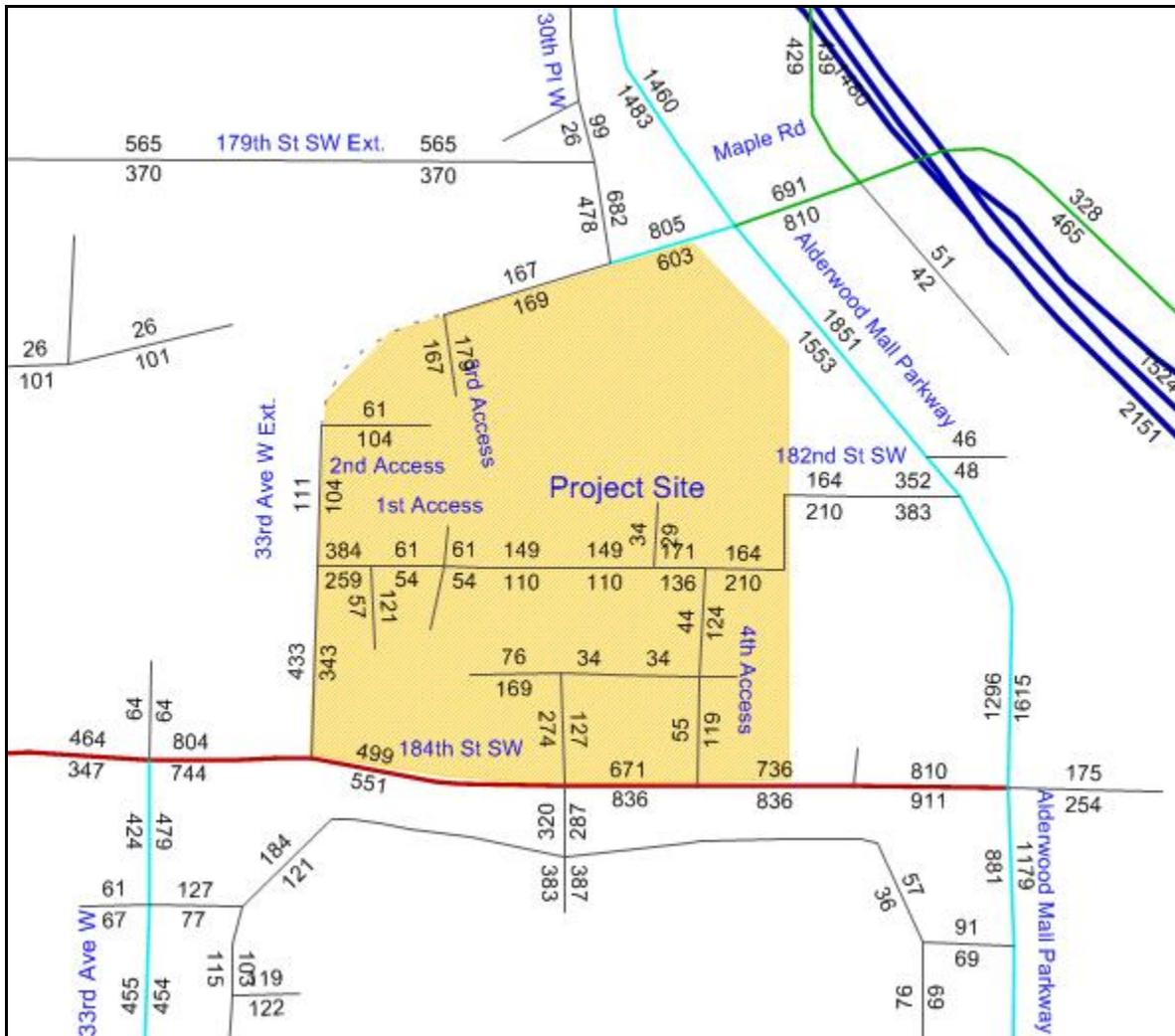
Traffic operations for the 2012 case were evaluated based on the results of a traffic model forecast that included the direct impacts of Alternative 1 discussed previously, plus other redistribution effects of those impacts that re-orient some baseline traffic to other routes. The traffic model forecasts that some baseline traffic that flows through the study area, especially on Alderwood Mall Parkway, will seek to avoid that route when the increased volumes generated by Alternative 1 are added to study area streets. Most of these diversions would utilize, instead, other study area streets and intersections, but some impacts would occur citywide. These local and citywide effects of the site's additional trip generation are significant due to the size of the proposed redevelopment plan, in combination with the degree of congestion already present in the baseline forecast. A combination of performance measures including LOS, queue lengths, and areawide delay are used next to account for all impacts of Alternative 1.

Forecast Volumes

Traffic volumes in 2012 are shown in Figure 3-18 for the comparison case without the complete bypass. This forecast accounts for the combination of 2012 baseline traffic, Alternative's 1 direct impacts, pass-by traffic, diverted-linked traffic, and the redistribution of some background traffic. Based on these volumes and associated intersection turn movements, the performance at all monitored intersections citywide was re-evaluated for comparison to baseline conditions.

Study Area Traffic Impacts

All intersections in the study area except one would have increased delay without the complete bypass, compared to the baseline, as shown in Table 3-13. The intersection with reduced delay is Alderwood Mall Parkway at Beech Road. That intersection delay would be slightly reduced (from 57.7 to 55.3 seconds per vehicle) but the LOS would remain at LOS F. The reduction is the result of redistribution effects shifting some users of that route to other routes in the study area.



**Lynnwood Crossing
Planned Action EIS**
N ↑

**Figure 3-18.
2012 Volumes –Alternative 1
without Complete Bypass**

For two-way stop intersections, the worst stop approach delay would represent the intersection delay. For over-capacity two-way stop intersections, the stop approach delay is not necessarily determined by the total intersection entering volumes, but instead is determined by the stop approach volumes and the uncontrolled movement volumes. A slight increase in the stop approach volumes and in the free-flow movement volumes at over-capacity two-way stop intersections could result in exponentially larger delay changes despite unchanged or decreased total intersection entering volumes. This phenomenon was shown in the analysis for the two-way stop intersections of Alternatives 1 through 5.

Several intersections would have significantly greater delay and larger queue ratios.

Table 3-13. Intersection Performance – 2012 Alternative 1 Without Complete Bypass

List No.	Name	Control Type	Volume	LOS ¹	Control Delay ²	V/C ³	Affected Movement ⁵	Queue Ratio ⁴
9145	SR 525 SB off-ramp & Alderwood Mall Pkwy	Two-Way Stop (WSDOT)	3253	F	9999	-	-	-
136	179 th Street & 36 th Ave W	Two-Way Stop	2380	F	9999	-	-	-
5010	179 th Extension & 30 th Pl.	Two-Way Stop	1059	B	11.7	-	-	-
891	Maple Road & Ash Way	Two-Way Stop	1619	F	411.4	-	-	-
894	182 nd Street SW & Alderwood Mall Pkwy	Two-Way Stop	3474	F	89.4	-	-	-
35	Mall Access & 33 rd Ave W	Two-Way Stop	1071	C	23.7	-	-	-
9302	Beech Road & Alderwood Mall Pkwy	Two-Way Stop	2277	F	55.3	-	-	-
72	Maple Road & Alderwood Mall Pkwy	Signal	4629	F	81.9	1.11	EB	2.4
							WB	4.5
5002	33rd Ave Ext. & 30th Pl	Signal (new)	1451	B	10	0.53	SB	1.2
5000	33rd Ave Ext. & 1st Access	Signal (new)	795	B	17.8	0.53	WB	1.96
160	184 th St & 33 rd Ave Ext.	Signal (new)	1677	B	14.3	0.44	EB	1.3
59	184 th St & Nordstrom Dr	Signal	1783	B	16.3	0.44	-	-
60	184 th St & Alderwood Mall Parkway	Signal	3558	D	35.6	0.78	-	-
53*	188 th Street SW & 33 rd Ave W	Signal	1834	C	32.7	0.57	-	-
54*	188 th Street SW & 36 th Ave W	Signal	3006	D	39	0.71	EB	2.6
							WB	1.9
31	196 th Street & Alderwood Mall Pkwy	Signal	4831	F	160.2	1.2	NB	1.4
							SB	2.8
65	Alderwood Mall Pkwy & Poplar Way	Signal (WSDOT)	2897	C	25.7	0.69	EB	1.2
68	196 th Street & 30 th Pl. W	Signal	3410	D	38.4	0.82	NB	5.3
							SB	1.2
3*	196 th Street & 36 th Ave W	Signal (WSDOT)	4922	D	46.3	0.89	WB	1.4
58	184th St SW & 33rd Ave W	Signal	1697	C	27.3	0.59	WB	2.7

¹ LOS – Level of Service ² Control Delay is reported in seconds per vehicle

³ V/C – Volume to Capacity Ratio ⁴ Queue Ratio – Queue length to storage length

⁵ Directional movement with maximum queue exceeding storage length (example: NBL = northbound left turn)

* Intersection formerly within City Center Subarea; now part of the "Transition Area".

Increased delay and queue ratios are especially pronounced at the intersection of Maple Road and Alderwood Mall Parkway, at 182nd Street SW and Alderwood Mall Parkway, and at Maple Road and Ash Way. Other locations affected by increased queue ratios are on 188th Street SW at 36th Avenue W, on 196th Street SW at 36th Avenue W and at Alderwood Mall Parkway, and on Alderwood Mall Parkway at Poplar Way. Design solutions to those intersection deficiencies are described next, primarily oriented to reducing queue lengths to match available storage between intersections. These improvements can reduce the total delay in the study area to the same or less than the delay for the baseline case.

To mitigate the deficiencies at Maple Road and Alderwood Mall Parkway, the initial tested improvements consist of adding a right-turn lane southbound on the north leg and adding a second left-turn lane on the eastbound and westbound approaches. This results in a six-lane cross-section on Alderwood Mall Parkway and a five-lane cross-section on Maple Road. Additional right-of-way would need to be acquired. Expansion of the east leg would impact a storm drainage swale on the south side and/or an existing gas station on the north side. Expansion of the other legs would affect a storm drainage swale in the northwest quadrant and/or property of the proposed development. The feasibility, cost, and environmental impacts of such an expansion have not been investigated. Should additional environmental impacts be identified at the time of design, additional environmental review will be required if not addressed in a planned action ordinance.

At Maple Road and Alderwood Mall Parkway, the queue length on the westbound approach would still be 50 feet longer than the space available to Ash Way. The maximum queue length on the eastbound approach (west leg) with the initial tested improvements would fit within the available space of the 200-foot distance to the intersection at Maple Road Extension and 30th Place W. The final recommended improvements would include a five-lane roadway on Maple Road and a six-lane roadway on Alderwood Mall Parkway.

Depending on the location of the intersection of 30th Place W with Maple Road, the private driveway off 30th Place W serving an existing residence may need to be relocated away from the new signalized intersection at Maple Road and 30th Place W. Options for driveway relocation include locations further north on 30th Place W, west on the Maple Road Extension, or north on the extension of 179th Street SW.

At 182nd Street SW and Alderwood Mall Parkway, the intersection is not recommended for signalization due to limited sight distance. For safety reasons, the City of Lynnwood prefers to prohibit eastbound left turns and not signalize that location. In that case, the prohibited left turns would largely shift to use the access aligned with the Alderwood Mall access on 184th Street SW, which would slightly increase the queue and delay at the intersection.

At unsignalized Maple Road and Ash Way, which is in close proximity to the major intersection with Alderwood Mall Parkway, queues become larger than for the baseline case. As the length of Ash Way to the next intersection is very long, the queue ratio remains below 1.0, but would result in delays. If this location is signalized to facilitate left turns, controls would need to be subordinated to the adjacent major intersection. Alternatively, without signalization, left turns might be prohibited, shifting baseline flows to other routes. 164th Street SW and Alderwood Mall Parkway would carry the bulk of travel demand that might be diverted from this location with the restriction of left turns.

At the intersection of 188th Street SW and 36th Avenue W, signal timing adjustments would need to be considered to alleviate increases in queue lengths, as that section of street is now fully developed.

Coordinated signal timing adjustments would need to be considered for the entire 196th Street SW corridor through the City Center Subarea including the intersection of 196th Street SW and 36th Avenue W, and the intersections of 196th Street SW and Alderwood Mall Parkway and at Alderwood Mall Parkway and Poplar Way where adjustments to signal timing or phasing to reduce the queue ratio would be needed. It is expected the City would periodically monitor and systematically adjust the signal timing for signalized intersections citywide to reduce the queues.

Intersections with no indicated queue ratios may have increased queues per se, but these would not exceed the available storage lengths.

At 179th Street SW and 36th Avenue W, the net change with this alternative would be negligible; however, this location is severely overloaded in the 2012 baseline case and the City is going to construct either a signal or a roundabout to correct the LOS deficiency.

Citywide Delay

The total study area delay without the complete bypass would be 646 vehicle-hours of delay per PM peak hour, an increase of 97 hours over the baseline case. In the remainder of the citywide system, the aggregate delay is 1,825 hours, which is a one-hour reduction from the baseline case. The combined total delay increase of 96 hours is the net impact.

If the major improvements described above for Maple Road and Alderwood Parkway and other study area intersections are included as mitigation, then the net citywide delay measure would be restored to less than the 2012 baseline case.

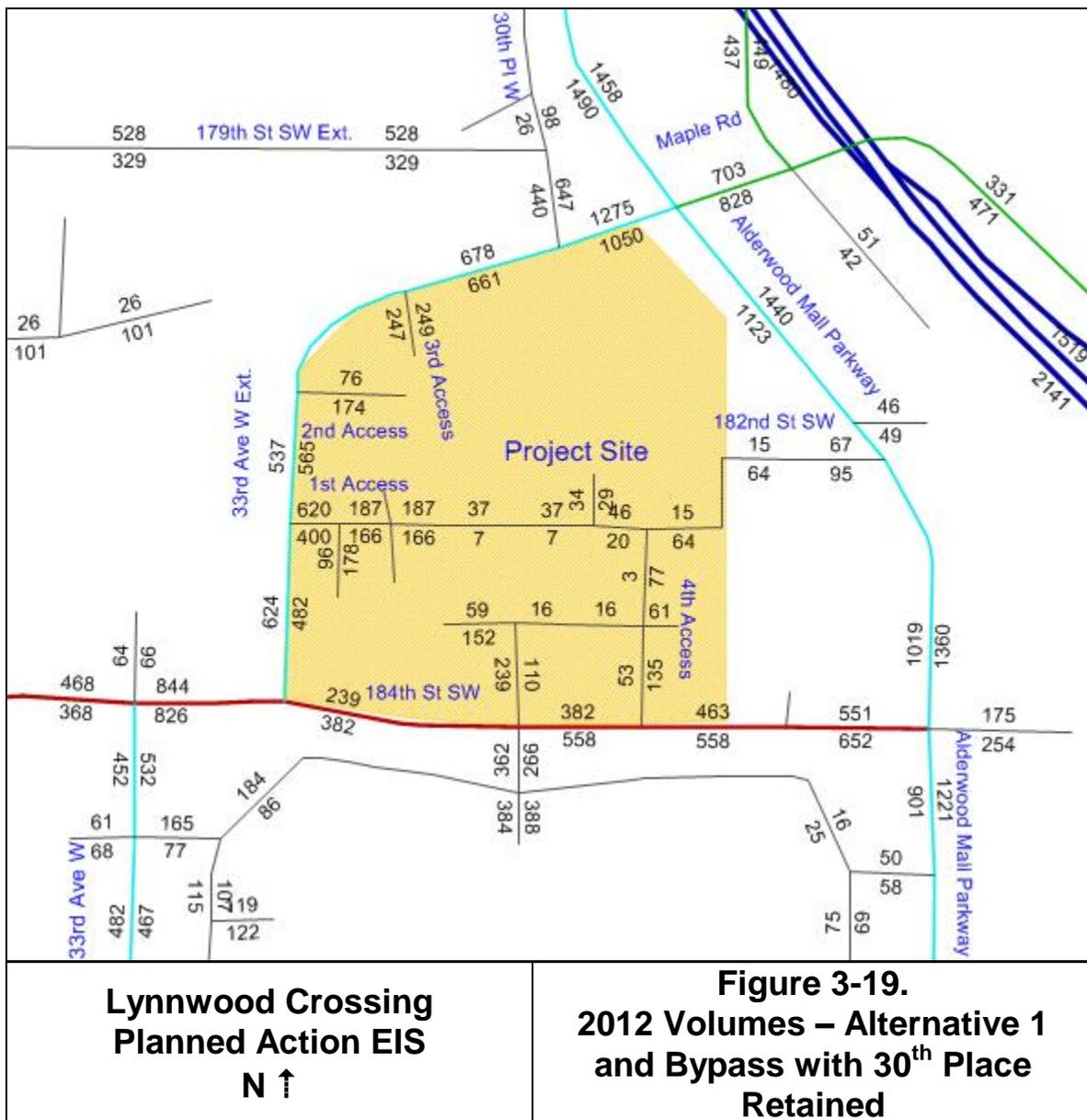
Cumulative Impacts – With Bypass and 30th Place Retained

Future traffic operations were re-evaluated based on completion of the bypass route. 33rd Avenue W was modeled with a northward extension beyond the '2nd Access' around the northwest corner of the high school site, then eastward to connect with the

west extension of Maple Road at the '3rd Access', with new intersections formed at each end. At the '2nd Access', the 33rd Avenue W Extension would be the through street, with stop and right-in/right-out control on the '2nd Access'. At the '3rd Access', a signalized intersection was assumed.

Forecast Volumes

Traffic volumes in 2012 are shown in Figure 3-19 for the case with the complete bypass. The added section of the bypass around the northwest corner of the site would carry a two-way total of 1,086 peak-hour vehicles, which is within the capacity of a two-lane (with center turn lane) facility.



The traffic model forecasts that traffic that flows throughout the study area would adjust to take advantage of this new route, giving relief to existing arterials, especially Alderwood Mall Parkway and 184th Street SW. There would be less diversion of traffic to other arterials citywide with this additional system capacity in the study area. The distribution of traffic to and from the site would change only in small details.

Based on the volumes in Figure 3-19 and associated intersection turn movements, the performance at all monitored intersections citywide was re-evaluated for comparison to baseline conditions.

Study Area Traffic Impacts

Compared to the baseline forecast without redevelopment, study area traffic operations would be slightly improved as measured by total delay in the system. Compared to the previous case without the complete bypass, operations would also be better overall. Specific impacts are both negative and positive depending on the location.

Traffic operations at the intersection of Maple Road and Alderwood Mall Parkway would significantly benefit from the initial tested improvements with completion of the bypass. Average delay per vehicle would be reduced from approximately 82 seconds to 43 seconds, and LOS would improve from “F” to “D”. Long queues would still be present on the eastbound approach, but would be within the available storage capacity on the westbound approach. Double left-turn lanes are needed on the eastbound approach but are eliminated on the westbound approach, as a large amount of former westbound left-turn activity would shift to westbound through movements.

The needed improvements at this location consist of one through lane added to the westbound approach (east leg), one right-turn lane added to the southbound approach (north leg), and double left-turn lanes and two through and right-turn shared lanes on the eastbound approach that form a six-lane cross-section on the west leg. Right-of-way would need to be acquired on both the east and west legs.

With the needed improvements at the intersection of Maple Road and Alderwood Mall Parkway, the queue length on the westbound approach would be reduced to fit within the space available to Ash Way. The maximum queue length on the eastbound approach (west leg) with the six-lane improvement would be reduced to fit the 200-foot distance to the intersection at Maple Road Extension and 30th Place W. Without the second left-turn lane, the maximum queue length for the eastbound left-turn movement would be over 428 feet and extend back to the intersection at 30th Place W.

As for the previous case without the complete bypass, the private driveway off 30th Place W serving an existing residence would need to be relocated away from the new signalized intersection at Maple Road Extension and 30th Place W.

As a result of diversions to the bypass, traffic volumes would be reduced on Alderwood Mall Parkway south of Maple Road, compared to the baseline case without site redevelopment. Delay at a majority of the intersections along Alderwood Mall Parkway would be reduced compared to the previous case without the complete bypass. Delay at approximately half of the intersections in the study area would also be less compared to the baseline case, and delay at the other half of the intersections would slightly increase without downgrading LOS, except at the intersection at Alderwood Mall Access and 33rd Avenue W where the LOS drops from LOS C to LOS D.

As a result of diversions to the bypass, traffic volumes would increase on 33rd Avenue W south of 184th Street SW. This impact is related more to regional travel using the bypass than to travel to/from the site. The unsignalized intersection at 33rd Avenue W that provides access to Alderwood Mall just south of 184th Street SW would be affected, with increased delay for trips exiting the mall as left turns to the south. The LOS for this approach would drop from “C” to “D”. This minor impact for users of the shopping center is offset elsewhere by reduced delay at the mall entrance off 184th Street SW, due to reduced through traffic volumes on 184th Street SW.

At Maple Road and Ash Way, delay for the Ash Way approach would be reduced compared to the previous case without the complete bypass, but would still be large, and the LOS would remain at “F”. At all other locations, the changes in delay and queue lengths (depicted in Table 3-14) would be small and not significantly different from the previous case without the complete bypass.

Citywide Delay

The total study area delay for this alternative would be 588 vehicle-hours of delay per PM peak hour - an increase of 39 hours compared to the baseline case. In the remainder of the citywide system, the delay would be 1,823 hours, which is 4 hours less than the baseline case. The combined total delay increase of 35 hours would be the net impact.

Cumulative Impacts – With Bypass and 179th Street SW Extended to Alderwood Mall Parkway

This section describes future traffic operations based on completion of the bypass route plus the extension of 179th Street SW from 30th Place W to Alderwood Mall Parkway, removal of 30th Place W between 179th Street SW and Maple Road Extension, and making no changes from the existing configuration at the intersection of Maple Road and Alderwood Mall Parkway. Additional improvements were found to be needed for satisfactory operation, and are described as mitigation.

**Table 3-14. Intersection Performance – 2012 Alternative 1 and Bypass
with 30th Place Retained**

List No.	Name	Control Type	Volume	LOS ¹	Control Delay ²	V/C ³	Affected Movement ⁵	Queue Ratio ⁴
9145	SR 525 SB off-ramp & Alderwood Mall Pkwy	Two-Way Stop (WSODT)	3247	F	9999	-	-	-
136	179 th Street & 36 th Ave W	Two-Way Stop	2309	F	9999	-	-	-
5010	179 th Extension & 30 th Pl.	Two-Way Stop	983	B	10.4	-	-	-
891	Maple Road & Ash Way	Two-Way Stop	1646	F	249.9	-	-	-
894	182 nd Street SW & Alderwood Mall Pkwy	Two-Way Stop	2500	B	14	-	-	-
35	Mall Access & 33 rd Ave W	Two-Way Stop	1150	D	29.9	-	-	-
9302	Beech Road & Alderwood Mall Pkwy	Two-Way Stop	2292	F	55.9	-	-	-
72	Maple Road & Alderwood Mall Pkwy	Signal	4683	D	43.4	0.90	EB	2.1
5002	33rd Ave Ext. & 30th Pl	Signal (new)	2375	B	13.7	0.73	SB	1.5
5011	33rd Ave Ext. & 3rd Access	Signal (new)	1460	B	16.7	0.69	-	-
5000	33rd Ave Ext. & 1st Access	Signal (new)	1588	C	28.6	0.85	WB	2.7
160	184 th St & 33 rd Ave Ext.	Signal (new)	1689	B	19	0.52	EB	2.6
59	184 th St & Nordstrom Dr	Signal	1270	B	19.5	0.33	-	-
53*	188 th Street SW & 33 rd Ave W	Signal	1874	C	34.1	0.59	-	-
54*	188 th Street SW & 36 th Ave W	Signal	2999	D	39.9	0.7	EB	2.7
							WB	1.8
60	184 th Street & Alderwood Mall Parkway	Signal	3066	C	30	0.67	-	-
31	196 th Street & Alderwood Mall Pkwy	Signal	4832	F	162.5	1.21	NB	1.4
							SB	2.8
65	Alderwood Mall Pkwy & Poplar Way	Signal (WSDOT)	2903	C	26	0.7	EB	1.2
							WB	1.0
68	196 th Street & 30 th Pl. W	Signal	3404	D	38.7	0.82	NB	5.4
							SB	1.2
3*	196 th Street & 36 th Ave W	Signal (WSDOT)	4917	D	47.3	0.89	WB	1.5
58	184th St SW & 33rd Ave W	Signal	1812	C	32.1	0.65	WB	3.0

¹ LOS – Level of Service

² Control Delay is reported in seconds per vehicle

³ V/C – Volume to Capacity Ratio

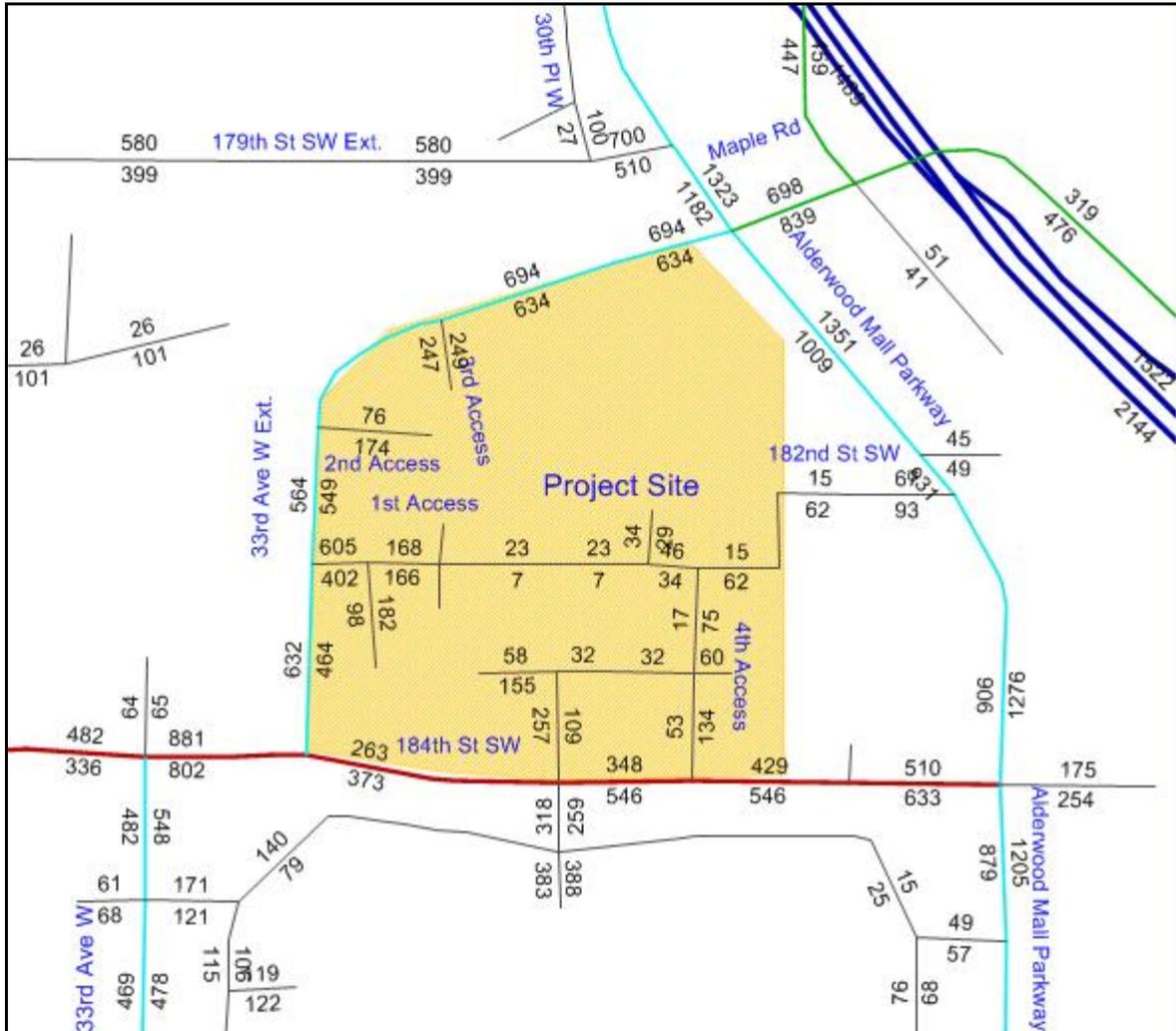
⁴ Queue Ratio – Queue length to storage length

⁵ Directional movement with maximum queue exceeding storage length (example: NBL = northbound left turn)

* Intersection formerly within City Center Subarea; now part of the "Transition Area".

Forecast Volumes

Traffic volumes in 2012 for this case are shown in Figure 3-20. The new extension of 179th Street SW would carry a two-way total of 1,210 PM peak-hour vehicles, which is within the capacity of a two-lane facility, but a three-lane configuration is assumed in order to store left turns.



**Lynnwood Crossing
Planned Action EIS
N ↑**

**Figure 3-20.
2012 Traffic Volumes –
Alternative 1 and Bypass with
179th Street Extended to
Alderwood Mall Parkway**

The principal effect of this alternative would be to remove traffic volumes from the intersection of Maple Road and Alderwood Mall Parkway. Compared to the previous case with the complete bypass, volumes would be lower on the bypass (Maple Road

Extension), and lower on Alderwood Mall Parkway both north and south. The reductions are explained in large part since trips between 179th Street SW and SR 525 or other points to the north via Alderwood Mall Parkway are able to leave the area without using the intersection at Maple Road and Alderwood Mall Parkway.

The distribution of traffic to and from the project site changes only slightly.

Based on the volumes in Figure 3-20 and associated intersection turn movements, the performance at all monitored intersections citywide was re-evaluated for comparison to baseline conditions.

Study Area Traffic Impacts

Compared to the baseline forecast (without redevelopment), study area traffic operations would be slightly worsened as measured by total delay in the system. Additional measures are described to mitigate this impact. Compared to the case without the complete bypass, operations would also be somewhat more congested until mitigated. Specific impacts are both negative and positive depending on the location.

Traffic operations at the intersection of Maple Road and Alderwood Mall Parkway would have a different pattern with this alternative, due to the removal of certain trips from the intersection. The reduction would not be enough to achieve satisfactory operations with the existing intersection configuration. The needed improvements include one additional through lane on the eastbound approach and one right-turn pocket on the southbound approach. This option would eliminate the need to expand Maple Road east of Alderwood Mall Parkway. With these improvements, the intersection average delay per vehicle would be 45 seconds. This is reduced from the 82 seconds in the initial case without the complete bypass, but is slightly higher than the 43 seconds recorded for the configuration with the complete bypass and 30th Place retained. The LOS would remain "D" with the tested assumptions.

At the intersection of Maple Road and Alderwood Mall Parkway, queue ratios are changed from other configurations because of the removal of 30th Place W and its intersection with Maple Road Extension. The storage length available for eastbound trips between this intersection and the '3rd Access' would increase from the 200 feet previously available to 450 feet. The resulting queues on the eastbound approach are within the storage capacity. The westbound queue ratio of 2.1 is much smaller than the initial case without the complete bypass, and is slightly improved compared to the baseline case without site redevelopment. The principal effect of this queue would be to inhibit turns at Ash Way and Maple Road.

The new signalized intersection resulting from the 179th Street SW Extension to Alderwood Mall Parkway would operate at LOS D but the queues on the eastbound, southbound, and northbound approaches exceed the available storage capacity. The northbound approach queues are long enough that they may spill back to and disrupt the Alderwood Mall Parkway and Maple Road intersection operation. The operation

would need to be closely monitored and coordinated with the intersection at Alderwood Mall Parkway and Maple Road.

The configuration of the Maple Road Extension (i.e., bypass) west of the original 30th Place W to the '3rd Access' was tested as three lanes, which suffices for operation of the '3rd Access' intersection. However, this should expand to four lanes approaching Alderwood Mall Parkway to account for the additional eastbound through lane suggested above.

Unlike the previous two test cases, the private driveway off 30th Place W serving an existing residence would not need to be relocated because the need for an intersection at 30th Place W would be avoided. Traffic volumes would be reduced on Alderwood Mall Parkway south of Maple Road, compared to previous cases. Delay at all intersections along Alderwood Mall Parkway would be reduced as well.

The unsignalized intersection at 182nd Street SW and Alderwood Mall Parkway, which provides access to/from the site, would remain at LOS B with small delays for eastbound left turns, as in the previous case with the complete bypass and 30th Place retained.

As with the previous case with the complete bypass, traffic volumes would increase on 33rd Avenue W south of 184th Street SW compared to the baseline case. The unsignalized intersection on 33rd Avenue W that provides access to Alderwood Mall just south of 184th Street SW would be adversely affected, with increased delay to trips exiting the mall as left turns to the south. The LOS for this approach would drop from "C" in the baseline condition to "E".

At Maple Road and Ash Way, delay for the Ash Way approach would be larger than for all previous versions including the baseline case. The LOS would remain "F". This is related to the absence of any additional lanes on Maple Road in this area.

At all other locations, the changes in delay and queue lengths depicted in Table 3-15 are small and not significantly changed from the previous bypass case.

Citywide Delay

The total study area delay for this alternative would be 576 vehicle-hours of delay per PM peak hour, an increase of 27 hours over the baseline case. This is an impact of moderate significance relative to the performance of the citywide system. In the remainder of the citywide system, the delay would be 1,891 hours, which is 64 hours greater than the baseline case. The combined total delay increase of 91 hours would be the net impact.

If the major expansion described above for Maple Road and Alderwood Mall Parkway and other intersections is included as mitigation, then the net citywide total delay measure would be restored to less than the 2012 baseline case.

**Table 3-15. Intersection Performance – 2012 Alternative 1 and Bypass
With 179th Street Extended to Alderwood Mall Parkway**

List No.	Name	Control Type	Volume	LOS ¹	Control Delay ²	V/C ³	Affected Movement ⁵	Queue Ratio ⁴
9145	SR 525 SB off-ramp & Alderwood Mall Pkwy	Two-Way Stop (WSDOT)	3225	F	9999	-	-	-
136	179 th St & 36 th Ave W	Two-Way Stop	2390	F	9999	-	-	-
5010	179 th Extension & 30 th Pl.	Two-Way Stop	1108	C	23.6	-	-	-
891	Maple Road & Ash Way	Two-Way Stop	1656	F	354.8	-	-	-
894	182 nd Street SW & Alderwood Mall Pkwy	Two-Way Stop	2300	B	14.6	-	-	-
35	Mall Access & 33 rd Ave W	Two-Way Stop	1197	E	39.5	-	-	-
9302	Beech Road & Alderwood Mall Pkwy	Two-Way Stop	2259	F	53.6	-	-	-
5020	179 th St. Extended & Alderwood Mall Pkwy	Signal (new)	3313	D	36.9	0.99	EB	5.0
							SB	1.1
							NB	2.9
72	Maple Road & Alderwood Mall Pkwy	Signal	3864	D	44.9	0.98	WB	2.1
5011	33rd Ave Ext. & 3rd Access	Signal (new)	1459	C	31.5	0.7	-	-
5000	33rd Ave Ext. & 1st Access	Signal (new)	1583	C	25.8	0.85	WB	2.2
160	184 th St & 33rd Ave Ext.	Signal (new)	1699	B	17.2	0.53	EB	2.5
59	184 th St & Nordstrom Dr	Signal	1239	B	19.4	0.31	-	-
60	184 th Street & Alderwood Mall Pkwy	Signal	2918	C	29.6	0.69	-	-
53*	188 th Street SW & 33 rd Ave W	Signal	1900	C	33.3	0.59	-	-
54*	188 th Street SW & 36 th Ave W	Signal	3051	D	40.6	0.67	EB	2.5
							WB	2.0
31	196 th Street & Alderwood Mall Pkwy	Signal	4876	F	164.7	1.23	NB	1.4
							SB	2.8
65	Alderwood Mall Pkwy & Poplar Way	Signal (WSDOT)	2899	C	26.1	0.69	EB	1.1
							WB	1.1
68	196 th Street & 30 th Pl. W	Signal	3475	D	39.5	0.83	NB	5.4
							SB	1.2
3*	196 th Street & 36 th Ave W	Signal (WSDOT)	4925	D	48.3	0.9	WB	1.5
58	184th St SW & 33rd Ave W	Signal	1831	B	13.7	0.59	WB	2.4

¹ LOS – Level of Service ² Control Delay is reported in seconds per vehicle

³ V/C – Volume to Capacity Ratio ⁴ Queue Ratio – Queue length to storage length

⁵ Directional movement with maximum queue exceeding storage length (example: NBL = northbound left turn)

* Intersection formerly within City Center Subarea; now part of the "Transition Area".

Summary of Deficient Signalized Intersections

Citywide, the total number of deficient signalized intersections for the three roadway configurations of Alternative 1 are shown in Table 3-16. The City's concurrency LOS standard allows 11 signalized intersections to be deficient. There are nine (9) signalized intersections that are deficient in the 2012 baseline condition, which is fewer than 11 signalized intersections. The three scenarios for Alternative 1 do not increase the number of the deficient signalized intersections compared to the baseline condition and the development would be consistent with the standard.

Table 3-16. Citywide Deficient Signalized Intersections—Alternative 1

List No.	Name	Control Type	2012 Baseline	Alternative 1		
				Without Bypass	With Bypass and 30 th PI Retained	With Bypass and 179 th Ext. to AMP
72	Maple Road & Alderwood Mall Pkwy	Signal	√	√	-	-
15	188th St SW & SR 99	Signal	√	√	√	√
31	196 th Street & Alderwood Mall Pkwy	Signal	√	√	√	√
29	196th St & 40th Ave W	Signal	√	√	√	√
4	196th St & 44th Ave W	Signal	√	√	√	√
5	200th St SW & 44th Ave W	Signal	√	√	√	√
18	208th St SW & SR 99	Signal	√	√	√	√
64	212th St SW & 52nd Ave W	Signal	√	√	√	√
19	212th St SW & SR 99	Signal	√	√	√	√
Total number of deficient intersections			9	9	8	8
Total number of citywide deficient signalized intersections is less than 11; i.e., 20 percent of citywide signalized intersections.						

4. Mitigating Measures for Alternative 1—Project Sponsor's Preferred Alternative with Office

Traffic mitigation to offset the impacts described above was developed for Alternative 1 so as to restore queue ratios and delay measures to the level existing with the baseline case before site redevelopment. Different levels of mitigation are required depending on the configuration of the bypass that is chosen. The following sections discuss the requirements according to the source of the mitigation.

Table 3-17 lists mitigation configuration requirements for Alternative 1 for each of the bypass configuration options; it accounts for all facilities around the perimeter of the

Table 3-17. Mitigation Requirements for Alternative 1 – Site-Related

Location	Without Complete Bypass	Bypass With 30 th Place Retained	Bypass With 179 th Street Extended to Alderwood Mall Parkway
Roadway Segments			
33 rd Ave W Extension, 184 th Street SW to '2 nd Access'	2 lanes, plus two-way left-turn lane in the median	← same	← same
33 rd Ave W Extension, '2 nd Access' to '3 rd Access'	Not included	2 lanes, plus two-way left-turn lane in the median	← same
Maple Road Extension, '3 rd Access' to 30 th Pl. W	2 lanes, plus two-way left-turn lane in the median	← same	← same
Maple Road Extension, 30 th Pl. W to Alderwood Mall Pkwy	5 lanes ¹	6 lanes	4 lanes
Intersections			
33rd Avenue W Extension & 184 th Street SW	New signalized intersection; 3 lanes x 5 lanes	← same	← same
33rd Avenue W Extension & '1 st Access'	Signalized, with LT storage on '1 st Access'	← same	← same
33rd Avenue W Extension & '2 nd Access'	Not an intersection	Unsignalized, right-in/right-out, 3 lanes x 2 lanes	← same
'3 rd Access' & Maple Road Extension	Not an intersection	Signalized, 3 lanes 3 lanes x 2 lanes	← same
30 th Pl. W & Maple Road Extension	Reconstruct as 3 lane x 5 lane signal coordinated with adjacent intersection(s) ¹	Reconstruct as 3 lane x 6 lane signal coordinated with adjacent intersection(s)	Not an intersection
182 nd Street SW & Alderwood Mall Pkwy	Prohibit left turns EB->NB, and no signal ²	← same	← same
'4 th Access' & 184 th Street SW	Right-in/right-out	← same	← same
'Alderwood Mall Access' & 184 th Street SW	Signal modifications for north leg; 2 SB lanes; 1 entering lane NB is OK on north leg	← same	← same

¹ Proponent's site plan shows a lower level of improvement than the requirements listed here.

² City of Lynnwood prefers unsignalized for safety reasons (see text).

site. For completeness, this includes (as part of site access) the Maple Road Extension west of Alderwood Mall Parkway, and includes the intersection at 182th Street SW and Alderwood Mall Parkway. These two locations are integral parts of site access even though they are not contiguous with the site.

Mitigating measures proposed by the Proponent include the construction of the complete three-lane bypass and reservation of right-of-way to accommodate the City's future five-lane configuration. At all other locations more distant from the site, begin-

ning with the intersection of Maple Road and Alderwood Mall Parkway, the Proponent did not propose mitigation. These locations are accounted for in Table 3-18 as off-site mitigation.

Measures Proposed by the Proponent

Table 3-17 lists all improvements required for site access and on-site operations, and indicates which features are the same for all versions of the bypass route, and which features change depending on the bypass configuration.

Each location in this table is accounted for in the Proponent's site plan, but some details differ. Three listed portions of the reconstruction of Maple Road Extension west of Alderwood Mall Parkway for site access are shown in Table 3-17 with a greater level of improvement than the Proponent's site plan indicates (see table footnote 1). The lesser configuration in the site plan would not provide acceptable traffic operations at the year of opening. The requirements in Table 3-17 also vary according to the bypass configuration.

The Proponent has incorporated into the site plan a right-of-way allowance to permit the future completion of the bypass route, by others, as a five-lane road. This is to comply with the City's long-range transportation plans. At the time of opening, the Proponent would construct three lanes.

Measures Required by Regulation

Table 3-18 lists all other mitigation that is required at off-site locations. The City of Lynnwood Comprehensive Plan Policy T-21.4 requires that development projects include measures to mitigate the traffic operational impacts of the development. In addition, the Comprehensive Plan states that mitigation goes beyond just meeting the LOS standard, and also includes maintaining traffic operations, adding capacity, making better use of the existing road network, reducing traffic by encouraging other modes, avoiding creation of new problems elsewhere, and adhering to accepted engineering standards and practices.

To fulfill these requirements, additional improvements not proposed by the Proponent are needed to mitigate the adverse operational traffic impacts away from the site. Most of the needs are driven by the requirement to manage queue lengths at congested intersections and to avoid queue backups that would disrupt upstream intersections and cause significantly greater delays in the citywide road network.

The off-site improvement needs vary depending on the bypass configuration, particularly at the intersection of Maple Road and Alderwood Mall Parkway and connecting roads. The option without the complete bypass would result in the highest delay hours in the study area and significant road expansion on three legs of the intersection of Maple Road and Alderwood Mall Parkway. This would require significant right-of-way acquisition, possible business relocation, and restoration of existing wetlands. The

Table 3-18. Mitigation Requirements for Alternative 1 – Off-site

Location	Without Complete Bypass	Bypass With 30th Place Retained	Bypass With 179th Street Extended to Alderwood Mall Parkway
Roadway Segments			
Maple Road, Alderwood Mall Pkwy to Ash Way	Add WB second LT lane	Add WB thru lane	Keep existing 4 lanes
179 th St. SW Ext'n, 30 th Pl. W to Alderwood Mall Pkwy	Not included	Not included	3 lanes
196 th Street Corridor, 36 th Ave W to Alderwood Mall Pkwy	Corridor signal timing adjustment*	←same	←same
188 th Street SW, 33 rd Ave W to 36 th Ave W	Corridor signal timing adjustment*	←same	←same
Intersections			
Private Access Driveway, west of 30 th Pl. W.	Relocate driveway	←same	Retain driveway in present location
Maple Road & Alderwood Mall Pkwy	Add EB, WB double LT lanes; Add SB right-turn lane; Add WB exiting lane	Add EB, WB thru lane and EB second left-turn; Add SB right-turn lane; add WB exiting lane	Add EB thru lane and SB right-turn lane; No WB exiting lane added
179 th St. Extension & 30 th Pl.	No change from Planned "Tee" Int'n, stem to west (2x2, No signal)	←same	Convert to "Tee" with stem to north (3x3, No signal)
Maple Road & Ash Way	Prohibit left turns, or signalize, or close the intersection	←same	←same
Alderwood Mall Access Intersection on 33 rd Avenue W, south of 184 th Street SW	No Action Required	Tolerate queues within Alderwood Mall site, or prohibit westbound left turns in peak hours	←same

* Corridor signal timing adjustment: Assumes the City will periodically monitor and systematically adjust signal timing for signalized intersections citywide.

complete bypass option would reduce study area delay hours but would not eliminate the need for additional improvements on the east leg of Maple Road. The east leg can be left untouched only with the third option, to extend 179th Street SW to Alderwood Mall Parkway.

With the 179th Street SW option, there would be no need to relocate the driveway to the existing residence west of 30th Place W. With the other two bypass options, that drive-

way would need to be relocated away from the new intersection of 30th Place W and Maple Road Extension.

At Maple Road and Ash Way, where the 2012 baseline situation is already inadequate, the impact of the Proposed Action depends on the bypass configuration. Without the complete bypass, this location would be severely overloaded and require extensive mitigation. With the bypass and with 30th Place W connected to the bypass, the result is less delay than for the baseline case, and some mitigation is needed. With the 179th Street SW option, delay is similar to the bypass with 30th Place W retained.

A proportional action to mitigate the impact of the Proposed Action on the intersection of Maple Road and Ash Way would be to prohibit left turns to and from Ash Way, or else accept the increased delay without mitigation. Complete mitigation of the situation including the baseline deficiencies requires a larger solution of a regional nature. That is beyond the scope of mitigation needed for the Proposed Action.

If it is determined that there are queue effects of increased traffic due to the Proposed Action for two off-site arterial corridors, 196th Street SW and 188th Street SW, a signal timing study should be required to minimize impacts. The City should periodically monitor and systematically adjust signal timing for signalized intersections citywide, which would help reduce the queues.

Additional Measures Needed to Reduce Impacts

There would be a moderate increase in delay at the unsignalized access intersection at Alderwood Mall shopping center on 33rd Avenue W south of 184th Street SW. This delay would affect westbound left turns from the shopping center with each configuration of the complete bypass but not with the incomplete bypass case. The situation should be monitored for possible future action. If the left-turn queues that develop in peak hours can be tolerated within the Alderwood Mall site, then no action is necessary. If queues become disruptive to circulation with the mall site, or if accidents arise due to left-turn conflicts, then the westbound left turns at this location should be prohibited, either in peak hours only, or potentially at all times.

Transportation Impact Fees

The City adopted a transportation impact fee program that went into effect on January 1, 2011. The City's Ordinance No. 2850, as amended, requires that new development in the City that creates additional demand for public transportation facilities must pay for a proportionate share of the cost (impact fees) of the new facilities to serve the growth. The impact fees are determined according to the fee structure listed in the City's impact fee schedule, or the Applicant may prepare and submit an independent fee calculation for the development when a building permit is requested.

The City assesses transportation impact fees based on two transportation impact fee zones, A and B. This project site is located in Zone A. Based on the fee rate per PM

peak-hour trip (\$5,107/trip) defined for Zone A, the net 1,321 PM peak-hour trips would result in approximately \$6.7 million in impact fees. However, the City discounted the impact fee rate by 20 percent per year from 2015 to 2011. The project is proposed to be opened in 2012; therefore, the impact fees would be reduced by 60 percent, which would equate to approximately \$2.7 million. Opening of the project later than 2012 would result in impact fee calculation according to the impact fee schedule for the appropriate year.

Impact fee credits may be awarded for the value of the system improvements included in the impact fee program, including contribution of land value, frontage improvements, roads/intersections improvements, and/or construction provided by the development. The 33rd Avenue W bypass is an impact fee project. Costs associated with the bypass would be eligible for credit.

5. Significant Unavoidable Adverse Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

The mitigation improvements described above would not eliminate all off-site queue storage issues, but in the unresolved cases there is no feasible way to further upgrade the affected roads. The same locations would be similarly affected by all versions of the bypass.

A further increase in queue lengths would result at these locations with existing queue storage deficiencies, because no practical mitigation exists:

- 196th Street SW and Alderwood Mall Parkway
- 196th Street SW and 30th Place W
- 196th Street SW and Poplar Way W

At the intersection of Beech Road SW and Alderwood Mall Parkway, a small increase in queue lengths for left-turn movements would result because signalization is not warranted and the available storage length is adequate to absorb the increase.

At the intersection of the SR 525 Southbound off-ramp and Alderwood Mall Parkway, the intersection demand in all cases is over capacity, and signalization may be the most likely resolution. Signal Warrant 3 is satisfied for the 2012 baseline condition.

Right-of-way acquisition on Maple Road and on Alderwood Mall Parkway would affect adjacent properties, including a portion of the project site in the southwest quadrant, existing wetlands in the southeast and northwest quadrants, and/or the existing gas station in the northeast quadrant of their intersection.

It should be noted that the recommended mitigation for the bypass configuration with 30th Place retained would result in the least citywide delay compared to the scenario without the bypass and the scenario with bypass and 179th Extension to Alderwood Mall Parkway. The scenario with the bypass and 30th Place W retained is the preferable

scenario; Alternatives 2 through 5 were evaluated with that same configuration (bypass and 30th Place W retained).

6. Impacts of Alternative 2—Project Sponsor's Preferred Alternative without Office

Alternative 2 was evaluated in comparison to Alternative 1 to identify the traffic consequences of the development most similar in type to Alternative 1 but with a slightly lower level of net trip generation. The study area off-site road system was the same as previously evaluated for the case of the complete bypass with a connection to 30th Place W. The site plan for Alternative 2 is shown in Figure 2-3.

Street System

Alternative 2 was evaluated assuming a similar network of new on-site roads as for Alternative 1 and with the bypass and 30th Place W retained.

The study area road network included the complete bypass version of improvements for 33rd Avenue W Extension and Maple Road Extension, as previously described for Alternative 1. In particular, the intersection of Maple Road and Alderwood Mall Parkway was initially tested as for Alternative 1 with a five-lane cross-section on Maple Road and a southbound right-turn lane added to Alderwood Mall Parkway.

For simplicity, this site development alternative was not evaluated with the other two road configurations that were considered with Alternative 1, as net traffic changes and differences in outcomes would be similar in all three cases and the total citywide delay is worse for the other two configurations.

Traffic Volumes in 2012

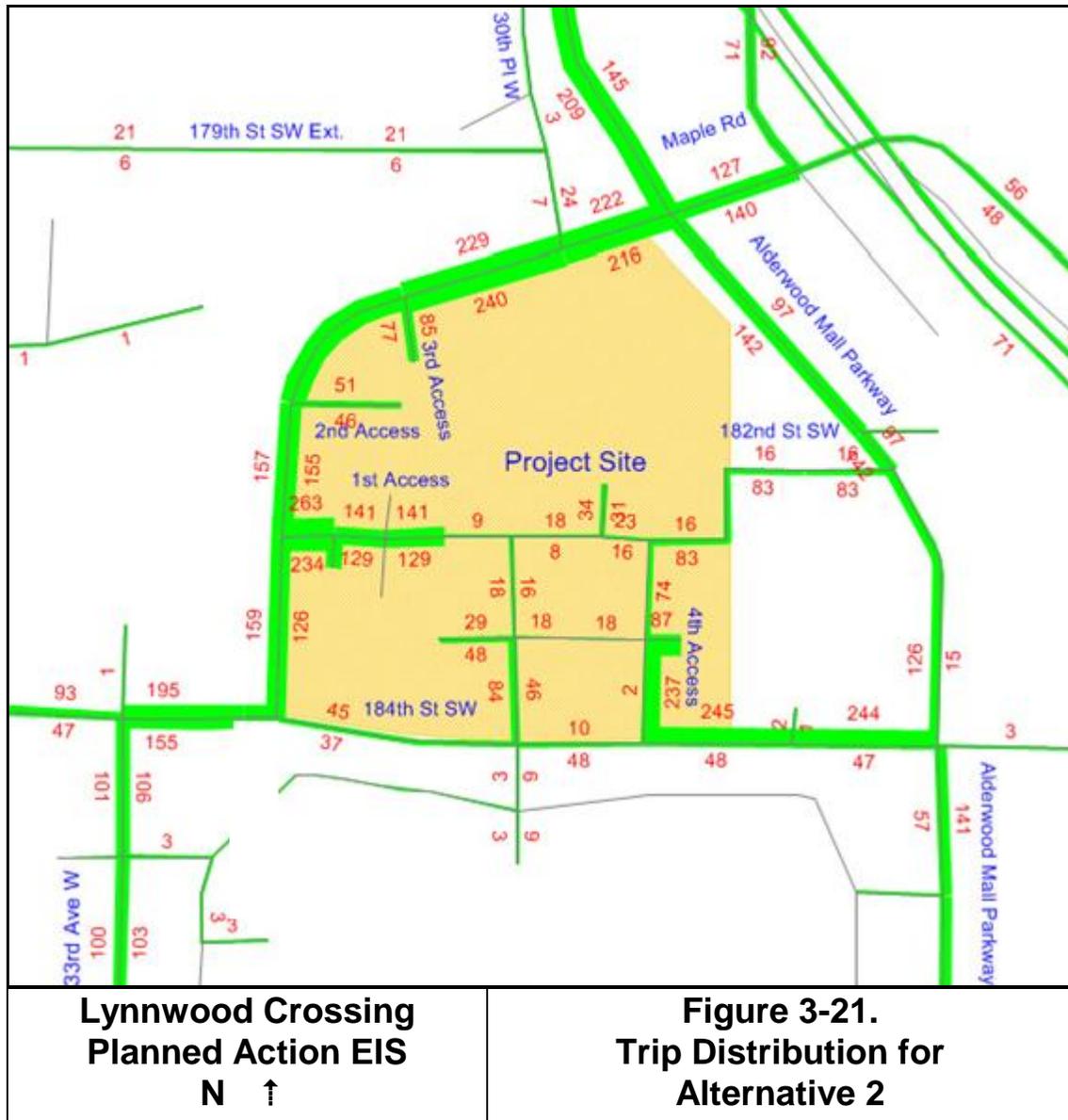
The traffic impacts of Alternative 2 are as follows.

Trip Generation

This alternative would generate a gross total of 3,177 trips in each weekday PM peak hour. Due to the mixed-use pattern of the site plan and retail-oriented development, internalized trips, pass-by trips, and diverted-linked trips were considered and estimated at 762 PM peak trips, 624 PM peak trips, and 568 PM peak trips, respectively. These trips are discounted from the gross total. The net impact to/from from the site is 1,223 PM peak-hour trips. These net trips do not include the existing high school trips.

Trip Distribution

The trips generated by Alternative 2 would utilize the same access points and distribute to the road network the same as in Alternative 1, but with slightly lower volumes as depicted in Figure 3-21. The numerical values in Figure 3-21 depict the directional volumes on each side of each road. The line width is proportional to volume. This pattern



is similar to Alternative 1, except for the two accesses on 184th Street SW. More traffic enters at the '4th Access' and more southbound traffic travels on the Alderwood Mall access.

Compared to the baseline volumes for 2012 without site redevelopment, the additional volumes amount to the following percentage impacts at selected locations:

- 29 percent of the site-generated trips are added to Alderwood Mall Parkway north of Maple Road
- 16 percent of the site-generated trips are added to Alderwood Mall Parkway south of 184th Street
- 29 percent of the site-generated trips are added to 184th Street west of the site

Site Access and Circulation

The details of most site traffic accesses are similar to Alternative 1, but the volumes on the '1st Access', the '4th Access', and the Alderwood Mall access are different from Alternative 1. The same on-site road network and intersection controls would be required, with one exception described below.

Similar to Alternative 1, the Costco fueling station is located immediately east of the bypass between the '1st Access' and the '2nd Access'. Based on the queuing studies conducted by Kittelson & Associates, Inc., traffic waiting for fueling would not queue back onto the bypass.

Traffic Safety

The same options exist as for Alternative 1 concerning the intersection at 182nd Street SW and Alderwood Mall Parkway. Signalization would not be recommended for safety reasons. The City of Lynnwood prefers to avoid signalization, due to sight distance limitations, and instead to prohibit eastbound left turns from 182nd Street. Site traffic to the north via 182nd Street SW would be re-routed to the Alderwood Mall access intersection, as it would in Alternative 1.

Cumulative Impacts – Bypass with 30th Place Retained

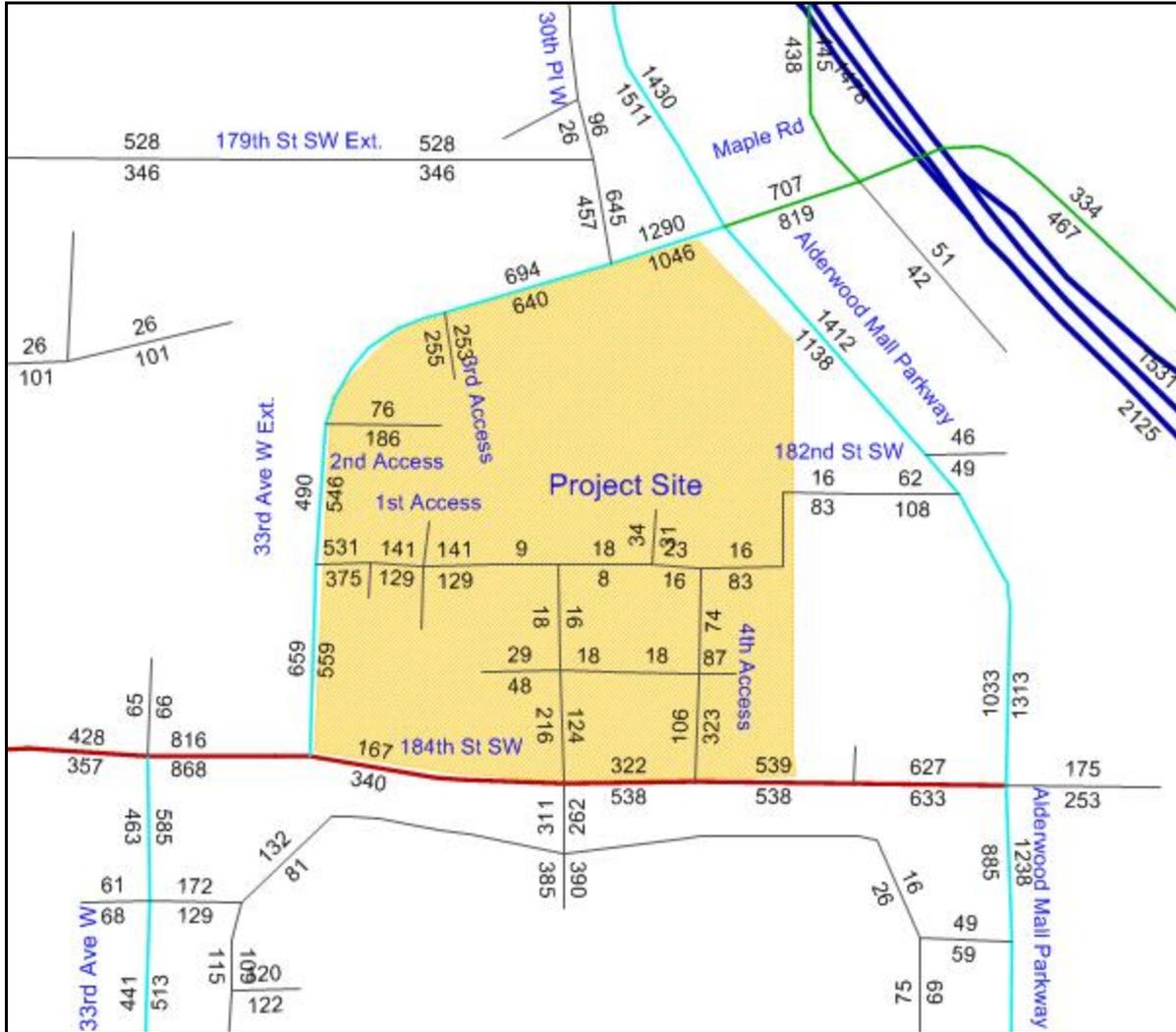
Traffic operations for the 2012 case were evaluated based on the results of a traffic model forecast for Alternative 2 using the complete bypass as part of the background assumptions. This forecast produced results very similar to Alternative 1. The net site trips are slightly less, but the pass-by trips and diverted-linked trips are slightly greater. With the combined volumes added to the background traffic volumes, slightly longer delay would occur at some intersections in Alternative 2 compared to Alternative 1, but deficiencies to be mitigated are approximately the same. The chief difference would be a reduction in delay values and queue lengths.

Forecast Volumes

Traffic volumes for Alternative 2 in 2012 are shown in Figure 3-22. This forecast accounts for the combination of 2012 baseline traffic, the alternative's direct impacts, pass-by traffic, diverted-linked traffic, and the redistribution of some background traffic, all in the context of the complete bypass.

Study Area Traffic Impacts

Some intersections in the study area would have improved traffic operations compared to Alternative 1 due to the reduced amount of traffic generated at the site (depicted in Table 3-19). However, some intersections would have slightly longer delay resulting from the pass-by trips and diverted-linked trips, or resulting from redistribution of back-



**Lynnwood Crossing
Planned Action EIS
N ↑**

**Figure 3-22.
2012 Volumes –
Alternative 2 and Bypass with
30th Place Retained**

ground traffic to various arterial routes throughout the City, as some existing traffic on the roads shifts to alternative routes in reaction to increased congestion. As a result, the total intersection entering volumes may slightly change from alternative to alternative. For two-way stop intersections, the worst stop approach delay would represent the intersection delay. For over-capacity two-way stop intersections, such as the intersection of Maple Road and Ash Way, the stop approach delay is not necessarily determined by the total intersection entering volumes, but instead is determined by the stop approach volumes and the uncontrolled movement volumes. A slight increase in the stop approach volumes and in the free-flow movement volumes at over-capacity two-

Table 3-19. Intersection Performance – 2012 Alternative 2 and Bypass with 30th Place Retained

List No.	Name	Control Type	Volume	LOS ¹	Control Delay ²	V/C ³	Affected Movement ⁵	Queue Ratio ⁴
9145	SR 525 SB off-ramp & Alderwood Mall Pkwy	Two-Way Stop (WSDOT)	3231	F	9999	-	-	-
136	179 th Street & 36 th Ave W	Two-Way Stop	2311	F	9999	-	-	-
5010	179 th Extension & 30 th Pl.	Two-Way Stop	998	B	10.6	-	-	-
891	Maple Road & Ash Way	Two-Way Stop	1642	F	263.2	-	-	-
894	182 nd Street SW & Alderwood Mall Pkwy	Two-Way Stop	2481	B	14.7	-	-	-
35	Mall Access & 33 rd Ave W	Two-Way Stop	1215	E	41.4	-	-	-
9302	Beech Road & Alderwood Mall Pkwy	Two-Way Stop	2294	F	58.9	-	-	-
72	Maple Road & Alderwood Mall Pkwy	Signal	4675	D	47.6	0.95	EB	2.2
5002	33rd Ave Ext. & 30 th Pl	Signal (new)	2386	B	14.5	0.76	SB	1.5
5011	33rd Ave Ext. & 3rd Access	Signal (new)	1457	B	16.5	0.67	-	-
5000	33rd Ave Ext. & 1st Access	Signal (new)	1580	C	34	0.9	WB	2.3
160	184 th St & 33rd Ave Ext.	Signal (new)	1695	B	16.6	0.58	WB	3.2
59	184 th St & Nordstrom Dr	Signal	1141	B	19.9	0.33	-	-
60	184 th Street & Alderwood Mall Pkwy	Signal	3081	C	30.6	0.65	-	-
31	196 th Street & Alderwood Mall Pkwy	Signal	4828	F	164.6	1.22	NB	1.4
							SB	2.8
65	Alderwood Mall Pkwy & Poplar Way	Signal (WSDOT)	2896	C	25.9	0.69	EB	1.2
							WB	1.1
53*	188 th Street SW & 33 rd Ave W	Signal	1877	C	34.1	0.6	-	-
54*	188 th Street SW & 36 th Ave W	Signal	2986	D	38.6	0.67	EB	2.7
							WB	1.5
68	196 th Street & 30 th Pl. W	Signal	3404	D	38.8	0.81	NB	5.4
							SB	1.2
3*	196 th Street & 36 th Ave W	Signal (WSDOT)	4889	D	44	0.88	WB	1.4
58	184th St SW & 33rd Ave W	Signal	1824	B	13.8	0.58	WB	2.3

¹ LOS – Level of Service

² Control Delay is reported in seconds per vehicle

³ V/C – Volume to Capacity Ratio

⁴ Queue Ratio – Queue length to storage length

⁵ Directional movement with maximum queue exceeding storage length (example: NBL = northbound left turn)

* Intersection formerly within City Center Subarea; now part of the "Transition Area".

way stop intersections could result in larger delay changes despite decreased total intersection entering volumes. Later analysis for Alternatives 3-5 also showed the same phenomenon for the two-way stop intersections. Nevertheless, the same general deficiencies would arise at most locations, as with Alternative 1.

At Maple Road and Alderwood Mall Parkway, the tested five-lane configuration for Maple Road was found to have an acceptable LOS D, but would still have excessive queue ratios eastbound and westbound. This result is the same as for Alternative 1, and indicates that a single left-turn lane is again not sufficient for the large eastbound to northbound movement. The opposing westbound left-turn movement, however, would not require a second lane.

The maximum queue length on the eastbound approach (west leg) with the tested improvements is 443 feet, which again would greatly exceed the 200-foot distance to the intersection at Maple Road Extension and 30th Place W. This length is, however, less than the distance to the '3rd Access' intersection so that intersection would not be adversely affected. This result is considerably better than was obtained for Alternative 1 with the five-lane section on the west leg. Additional mitigation would be needed, as for Alternative 1, leading to a six-lane cross-section on the west leg of the intersection, which would likely require additional right-of-way.

At 182nd Street SW and Alderwood Mall Parkway, the City of Lynnwood prefers not to signalize due to sight distance limitations. At all other locations in the study area, the forecast delay and queue length conditions are similar to Alternative 1. The similar magnitude of these impacts is not sufficient to allow any reduction of mitigation.

Bypass Configuration

The analysis of differences compared to Alternative 1 showed relatively small changes, based on the case with the complete bypass. The same relative comparisons would be expected with every other bypass alternative, so no evaluation of those cases was done.

Citywide Delay

The total study area delay for this alternative would be 578 vehicle-hours of delay per PM peak hour - an increase of 29 hours from the baseline case with the initial test improvement. In the remainder of the citywide system, the delay would be 1,830 hours, which is 4 hours greater the baseline case. The combined total delay increase of 33 hours would be the net impact.

7. Mitigating Measures for Alternative 2—Project Sponsor's Preferred Alternative without Office

Traffic mitigation for Alternative 2 is identical to the mitigation prescribed for Alternative 1. Differences in mitigation that depend on the bypass configuration should be the same as for Alternative 1.

With the bypass configuration with 30th Place W retained, there would be a need to relocate the driveway to the existing residence west of 30th Place W. Due to these right-of-way constraints on the west side of 30th Place W, the City and Proponent sought to evaluate the intersection performance with a signal installed at 30th Place W and 33rd Avenue W (also referred to as Maple Road Extension) using the existing right-of-way. The tested configuration includes a signal installed at 30th Place W and 33rd Avenue W, a six-lane roadway on 33rd Avenue W between 30th Place W and Alderwood Mall Parkway, a three-lane roadway between 30th Place W and Costco N Access (i.e., 3rd Access), and a signal installed at 33rd Avenue W and the 3rd Access. The three signals on 33rd Avenue W between 3rd Access and Alderwood Mall Parkway were set to be operated coordinately on the eastbound and westbound approaches so that queues can be minimized for these three closely-spaced intersections.

This analysis was conducted for Alternative 2 only as Alternative 2 would generate the greatest number of gross weekday PM peak-hour trips of the five alternatives. If the analysis were acceptable for Alternative 2 then, presumably, it would be acceptable for the other alternatives.

The results show that LOS D, LOS B, and LOS C would occur at Alderwood Mall Parkway and Maple Road, 30th Place W and 33rd Avenue W, and 33rd Avenue W and 3rd Access, respectively. The queues between intersections are manageable except the eastbound approach queues at the intersection of Alderwood Mall Parkway and Maple Road occasionally spill back to the upstream intersection.

It is expected that if this configuration is implemented, this intersection would be superseded by a long-term regional transportation network that would relocate this intersection further to the west. Such future roadway improvements would be funded by a future LID (as one possible tool) that would require the property owner's participation. The LID would likely have a large, but as yet, unspecified benefit area. It is anticipated that the subject site and a number of others would be included and thereby expected to participate to the extent that each is benefited. As a condition of approval it is anticipated that the project proponents will be required to record a "no protest agreement" with regards to the future LID (s) as described.

Transportation Impact Fees

Similar to Alternative 1, this alternative would be subject to the impact fee program that became effective on January 1, 2011. Based on the fee rate per PM peak-hour trip (\$5,107/trip) defined for Zone A, the net 1,223 PM peak-hour trips would result in ap-

proximately \$6.2 million in impact fees. However, the City discounted the impact fee rate by 20 percent per year from 2015 to 2011. The project is proposed to be opened in 2012; therefore, the impact fees would be reduced by 60 percent, which would equate to approximately \$2.5 million.

Impact fee credits may be awarded for the value of the system improvements included in the impact fee program, including contribution of land value, frontage improvements, roads/intersections improvements, and/or construction provided by the development. The 33rd Avenue W bypass is an impact fee project. Costs associated with the bypass would be eligible for credit.

8. Significant Unavoidable Adverse Impacts of Alternative 2—Project Sponsor's Preferred Alternative without Office

Similar unavoidable adverse impacts would arise for this alternative as for Alternative 1. The overall reduction of delay in the study area compensates for the unavoidable impacts more positively than in Alternative 1.

9. Impacts of Alternative 3—Lower Intensity Mixed Use Alternative

Alternative 3 was evaluated in comparison to Alternative 1. The traffic consequences of Alternative 3 are similar in type to Alternative 1 but with a lower level of development and trip generation. The study area road system was the same as previously evaluated for the case of the complete bypass with a connection to 30th Place W. The site plan for Alternative 3 is shown in Figure 2-4.

Street System

Alternative 3 was evaluated assuming the same network of new streets within the site as Alternative 1.

The study area road network included the complete bypass version of improvements for 33rd Avenue W Extension and Maple Road Extension, as previously described for Alternative 1. In particular, the intersection of Maple Road and Alderwood Mall Parkway was initially tested as for Alternative 1 with a five-lane cross-section on Maple Road and a southbound right-turn lane added to Alderwood Mall Parkway.

For simplicity, this site development alternative was not evaluated with the other two road configurations that were considered with Alternative 1, as net traffic changes and differences in outcomes would be similar in all three cases.

Traffic Volumes in 2012

The traffic impacts of Alternative 3 are as follows.

Trip Generation

This alternative generates fewer total gross trips compared to Alternative 1, or 2,432 trips in each weekday PM peak hour. Of these trips, an estimated 566 trips would be internalized due to the mixed-use pattern of the site plan, 426 trips would be pass-by trips, and 398 trips would be diverted-link trips at retail developments. These trips are discounted from the gross PM peak total. The net impact away from the site is 1,042 PM peak-hour trips. These net trips do not include the existing high school trips.

Trip Distribution

The trips generated by Alternative 3 would utilize the same access points and distribute to the road network the same as in Alternative 1, but with lower volumes as depicted in Figure 3-23. The numerical values in Figure 3-23 depict the directional volumes on each side of each road. The line width is proportional to volume.

Compared to the baseline volumes for 2012 without site redevelopment, the additional volumes amount to the following percentage impacts at selected locations:

- 30 percent of the site-generated trips are added to Alderwood Mall Parkway north of Maple Road
- 16 percent of the site-generated trips are added to Alderwood Mall Parkway south of 184th Street
- 27 percent of the site-generated trips are added to 184th Street west of the site

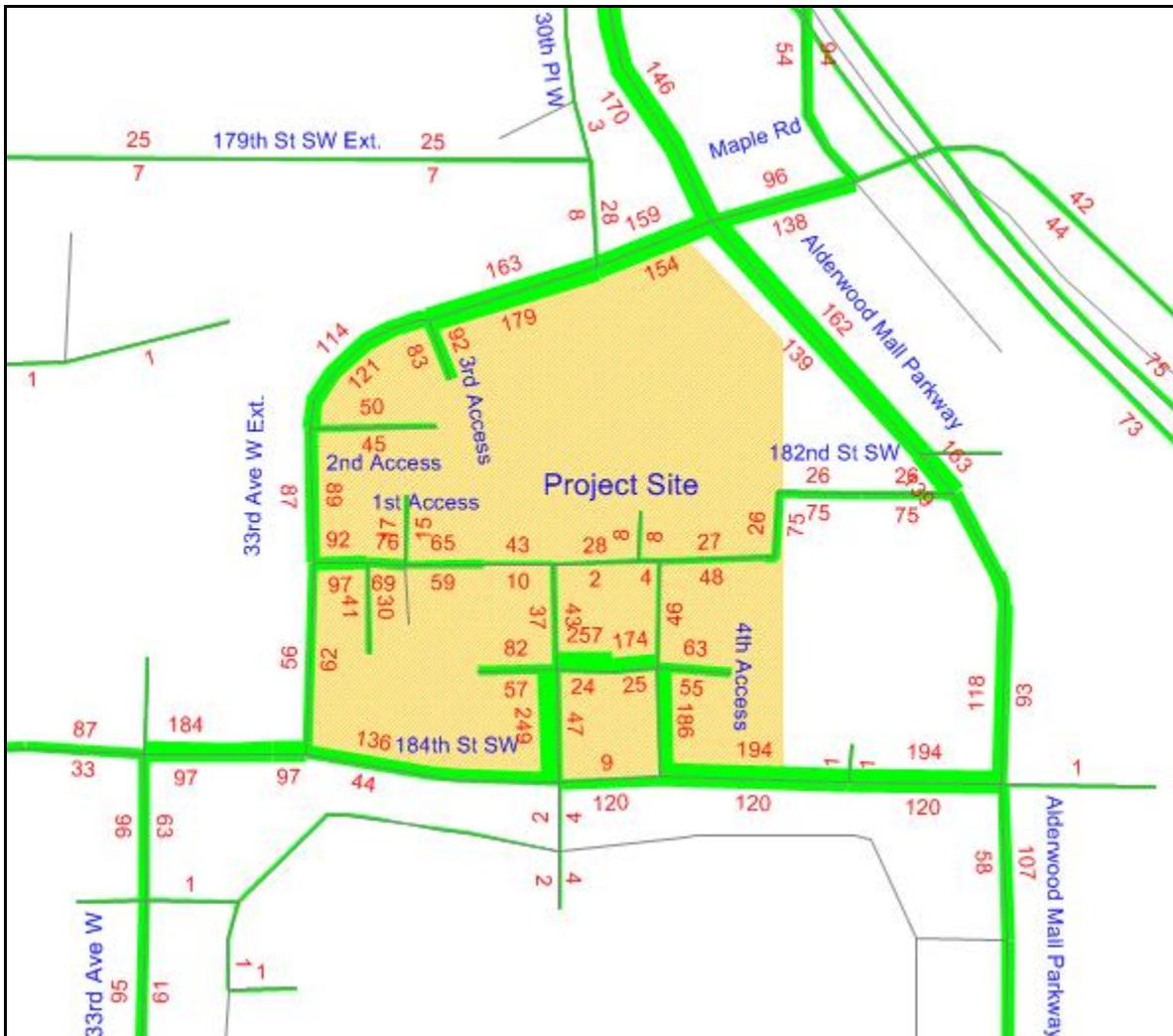
The details of most site traffic accesses are similar to Alternative 1, but the volumes on the bypass and at the accesses are smaller, and the two-directional volumes on the '4th Access' and the Alderwood Mall access are higher than in Alternative 1. The same on-site road network and intersection controls would be required, with one exception described later.

Site Access and Circulation

Similar to Alternative 1, the Costco fueling station is located immediately east of the bypass between the '1st Access' and the '2nd Access'. Based on the queuing studies conducted by Kittelson & Associates, Inc., traffic waiting for fueling would not queue back onto the bypass.

Traffic Safety

The same options exist as for Alternative 1 concerning the intersection at 182nd Street SW and Alderwood Mall Parkway. Signalization would not be recommended. For safety reasons the City of Lynnwood prefers to avoid signalization and instead prohibit east-bound left turns from 182nd Street. Site traffic to the north would be re-routed to use the access on 184th Street, as identified in Alternative 1.



<p>Lynnwood Crossing Planned Action EIS N ↑</p>	<p>Figure 3-23. Trip Distribution for Alternative 3 with Complete Bypass</p>
--	---

Cumulative Impacts – Bypass with 30th Place Retained

Traffic operations for the 2012 case were evaluated based on the results of a traffic model forecast for Alternative 3 using the complete bypass as part of the background assumptions. This forecast produced results very similar to Alternative 1. The smaller volumes generated by Alternative 3, when added to the background traffic volumes, generally produced better operating results than Alternative 1, but remaining deficiencies to be mitigated are approximately the same. The chief difference would be a reduction in delay values and queue lengths.

Forecast Volumes

Traffic volumes in 2012 are shown in Figure 3-24 for Alternative 3. This forecast accounts for the combination of 2012 baseline traffic, the alternative's direct impacts, and the redistribution of some background traffic, all in the context of the complete bypass.

Study Area Traffic Impacts

Intersections in the study area would generally have improved traffic operations compared to Alternative 1 due to the reduced volume of traffic generated at the site and reduced pass-by trips and diverted-linked trips (depicted in Table 3-20). Nevertheless, the same general deficiencies would arise at most locations, as with Alternative 1.

At Maple Road and Alderwood Mall Parkway, the tested five-lane configuration for Maple Road was found to have an acceptable LOS of "D", but would still have excessive queue ratios eastbound and westbound. This result is the same as for Alternative 1, and indicates that a single left-turn lane is again not sufficient for the large eastbound to northbound movement. The opposing westbound left-turn movement, however, would not require a second lane.

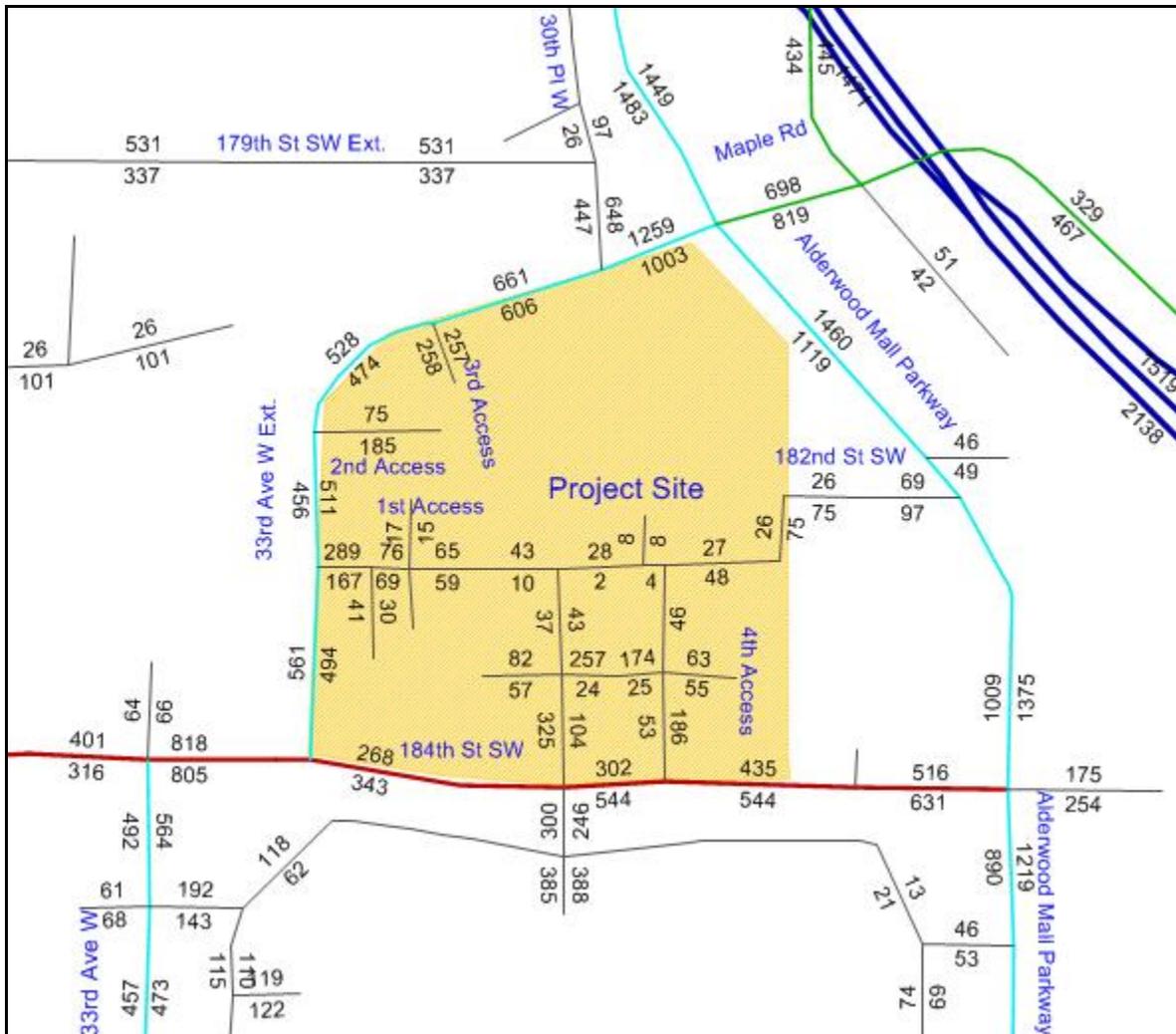
The maximum queue length on the eastbound approach (west leg) with the tested improvements is 467 feet, which again would greatly exceed the 200-foot distance to the intersection at Maple Road Extension and 30th Place W. This length is, however, less than the distance to the '3rd Access' intersection, so that intersection would not be adversely affected. This result is slightly worse than was obtained for Alternative 1 with the five-lane section on the west leg. Additional mitigation would be needed, as for Alternative 1, leading to a six-lane cross-section on the west leg.

At 182nd Street SW and Alderwood Mall Parkway, the same issue arises as in Alternative 1 regarding the tradeoff of signalization to serve eastbound left turns from the site, versus prohibiting left turns to preserve safety. Again, the City of Lynnwood prefers not to signalize, and to shift the eastbound left turns to the site's north access route via the '3rd Access'.

At all other locations in the study area, the forecast delay and queue length conditions are similar to Alternative 1 but less extensive. The reduced magnitude of these impacts is not sufficient to allow any reduction of mitigation.

Bypass Configuration

The analysis of differences compared to Alternative 1 showed relatively small changes, based on the case with the complete bypass. The same relative comparisons would be expected with the other bypass alternatives, so no evaluation of those cases was done.



**Lynnwood Crossing
Planned Action EIS
N ↑**

**Figure 3-24.
2012 Volumes –
Alternative 3 and Bypass with
30th Place Retained**

Citywide Delay

The total study area delay for this alternative would be 566 vehicle-hours of delay per PM peak hour - an increase of 17 hours from the baseline case with the initial tested improvements. In the remainder of the citywide system, the delay would be 1,812 hours, which is 14 hours less than the baseline case. The combined total delay increase of 3 hours would be the net impact.

Table 3-20. Intersection Performance – 2012 Alternative 3 and Bypass with 30th Place Retained

No.	Name	Control Type	Volume	LOS ¹	Control Delay ²	V/C ³	Affected Move- ⁵	Queue Ratio ⁴
9145	SR 525 SB off-ramp & Alderwood Mall Pkwy	Two-Way Stop (WSDOT)	3239	F	9999	-	-	-
136	179 th Street & 36 th Ave W	Two-Way Stop	2306	F	9999	-	-	-
5010	179 th Extension & 30 th Pl.	Two-Way Stop	992	B	10.5	-	-	-
891	Maple Road & Ash Way	Two-Way Stop	1634	F	277.8	-	-	-
894	182 nd Street SW & Alderwood Mall Pkwy	Two-Way Stop	2512	B	13.6	-	-	-
35	Mall Access & 33 rd Ave W	Two-Way Stop	1225	E	49.8	-	-	-
9302	Beech Road & Alderwood Mall Pkwy	Two-Way Stop	2273	F	55.8	-	-	-
72	Maple Road & Alderwood Mall Pkwy	Signal	4646	D	47	0.91	EB	2.3
5002	33rd Ave Ext. & 30 th Pl	Signal (new)	2332	B	14.1	0.74	SB	1.4
5011	33rd Ave Ext.& 3rd Access	Signal (new)	1393	C	31.1	0.67	-	-
5000	33rd Ave Ext.& 1st Access	Signal (new)	1239	B	15	0.64	-	-
160	184 th St & 33rd Ave Ext.	Signal (new)	1635	B	16.7	0.54	EB	2.7
59	184 th St & Nordstrom Dr	Signal	1216	C	20.4	0.34	-	-
60	184 th Street & Alderwood Mall Pkwy	Signal	3034	C	29.5	0.66	-	-
31	196 th Street & Alderwood Mall Pkwy	Signal	4804	F	159.7	1.2	NB	1.4
							SB	2.8
65	Alderwood Mall Pkwy & Poplar Way	Signal (WSDOT)	2879	C	25.3	0.69	EB	1.1
							WB	1.1
53*	188 th Street SW & 33 rd Ave W	Signal	1852	C	33.9	0.59	-	-
54*	188 th Street SW & 36 th Ave W	Signal	2964	D	38.2	0.68	EB	2.6
							WB	1.4
68	196 th Street & 30 th Pl. W	Signal	3388	D	38.2	0.81	NB	5.3
							SB	1.2
3*	196 th Street & 36 th Ave W	Signal (WSDOT)	4891	D	44.6	0.88	WB	1.4
58	184th St SW & 33rd Ave W	Signal	1764	B	13.4	0.58	WB	2.4

¹ LOS – Level of Service ² Control Delay is reported in seconds per vehicle

³ V/C – Volume to Capacity Ratio ⁴ Queue Ratio – Queue length to storage length

⁵ Directional movement with maximum queue exceeding storage length (example: NBL = northbound left turn)

* Intersection formerly within City Center Subarea; now part of the "Transition Area".

10. Mitigating Measures for Alternative 3—Lower Intensity Mixed Use Alternative

Traffic mitigation for Alternative 3 is identical to the mitigation prescribed for Alternative 1. Differences in mitigation that depend on the bypass configuration should be the same as for Alternative 1.

Transportation Impact Fees

Similar to Alternative 1, this alternative would be subject to the impact fee program that became effective on January 1, 2011. Based on the fee rate per PM peak-hour trip (\$5,107/trip) defined for Zone A, the net 1,042 PM peak-hour trips would result in approximately \$5.3 million in impact fees. However, the City discounted the impact fee rate by 20 percent per year from 2015 to 2011. The project is proposed to be opened in 2012; therefore, the impact fees would be reduced by 60 percent or would equate to approximately \$2.1 million.

Impact fee credits may be awarded for the value of the system improvements included in the impact fee program, including contribution of land value, frontage improvements, roads/intersections improvements, and/or construction provided by the development. The 33rd Avenue W bypass is an impact fee project. Costs associated with the bypass would be eligible for credit.

11. Significant Unavoidable Adverse Impacts of Alternative 3—Lower Intensity Mixed Use Alternative

The same unavoidable adverse impacts would arise for this alternative as for Alternative 1, although the overall magnitude of each impact would be less because the site trip generation would be less. The overall reduction of delay in the study area compensates for the unavoidable impacts more positively than in Alternative 1.

12. Impacts of Alternative 4—All Retail Alternative

Alternative 4 was evaluated in comparison to Alternative 1 to demonstrate the traffic consequences of single-use development. This alternative would result in development of 321,500 square feet of retail/shopping center and 8,000 square feet of restaurant, a development scenario substantially different from Alternative 1. The study area road system would be similar to the previous case of the complete bypass with a connection to 30th Place W. A south leg would be added to the intersection of Maple Road Extension and 30th Place W. The site plan for Alternative 4 is shown in Figure 2-5.

Street System

Alternative 4 was evaluated with a similar network of new streets around the site as Alternative 1, with the exception of an additional south leg added to the intersection of

Maple Road Extension and 30th Place W. The westbound left-turn movement is prohibited due to limited space between 30th Place W and Alderwood Mall Parkway.

The study area road network included the complete bypass configuration of improvements for 33rd Avenue W Extension and Maple Road Extension, similar to Alternative 1. However, the intersection of Maple Road and Alderwood Mall Parkway was initially tested with a five-lane cross-section on Maple Road and a southbound right-turn lane added to Alderwood Mall Parkway.

For simplicity, this site development alternative was not evaluated with the other two road configurations that were considered with Alternative 1, as net traffic changes and differences in outcomes would be similar in all three cases.

Traffic Volumes in 2012

The traffic impacts of Alternative 4 are as follows.

Trip Generation

This alternative is defined at a level of retail and restaurant development that would generate of 1,745 total gross trips in each weekday PM peak hour. Of these trips, no trips would be internalized, but 520 trips would be pass-by trips and 516 trips would be diverted-link trips, which are discounted from the gross PM peak-hour trips. The net impact away from the site would be 709 PM peak-hour trips. These net trips do not include the existing high school trips.

Trip Distribution

The net trips generated by Alternative 4 would utilize the same access points and distribute to the road network as Alternative 1, but with lower volumes as depicted in Figure 3-25. The numerical values in Figure 3-25 depict the directional volumes on each side of each road. The line width is proportional to volume. This pattern is generally similar to that of Alternative 1, except that pass-by trips and diverted-linked trips are distributed differently and the total volumes are lower when compared to Alternative 1.

Compared to the baseline volumes for 2012 without site redevelopment, the additional volumes amount to the following percentage impacts at selected locations:

- 28 percent of the site-generated trips are added to Alderwood Mall Parkway north of Maple Road
- 16 percent of the site-generated trips are added to Alderwood Mall Parkway south of 184th Street
- 20 percent of the site-generated trips are added to 184th Street west of the site



Lynnwood Crossing Planned Action EIS N ↑	Figure 3-25. Trip Distribution for Alternative 4
---	---

Site Access and Circulation

All details of site traffic access would be similar to Alternative 1, but with lower trip volumes. All of the same on-site road network and intersection controls would be required.

Traffic Safety

The same options exist as for Alternative 1 concerning the intersection at 182nd Street SW and Alderwood Mall Parkway. Signalization would not be recommended due to limited sight distance. For safety reasons the City of Lynnwood prefers to avoid signal-

ization and instead prohibit eastbound left turns from 182nd Street. Site traffic to the north would be re-routed to use the accesses on 184th Street SW.

Cumulative Impacts – Bypass with 30th Place Retained

Traffic operations for the 2012 case were evaluated based on the results of a traffic model forecast for Alternative 4 using the complete bypass as part of the background assumptions. This forecast produced results similar to Alternative 1. The smaller volumes associated with Alternative 4, when added to the background traffic volumes, generally produced better operating results than Alternative 1, but remaining deficiencies to be mitigated are all the same. The chief difference would be a small reduction in delay values and queue lengths.

Forecast Volumes

Traffic volumes in 2012 are shown in Figure 3-26 for Alternative 4. This forecast accounts for the combination of 2012 baseline traffic, the alternative's direct impacts, the pass-by and diverted-linked traffic, and the redistribution of some background traffic, all in the context of the complete bypass.

Study Area Traffic Impacts

Intersections in the study area would generally have similar traffic operations compared to Alternative 1 (depicted in Table 3-21). The same general traffic deficiencies arise at all locations as with Alternative 1.

Citywide Delay

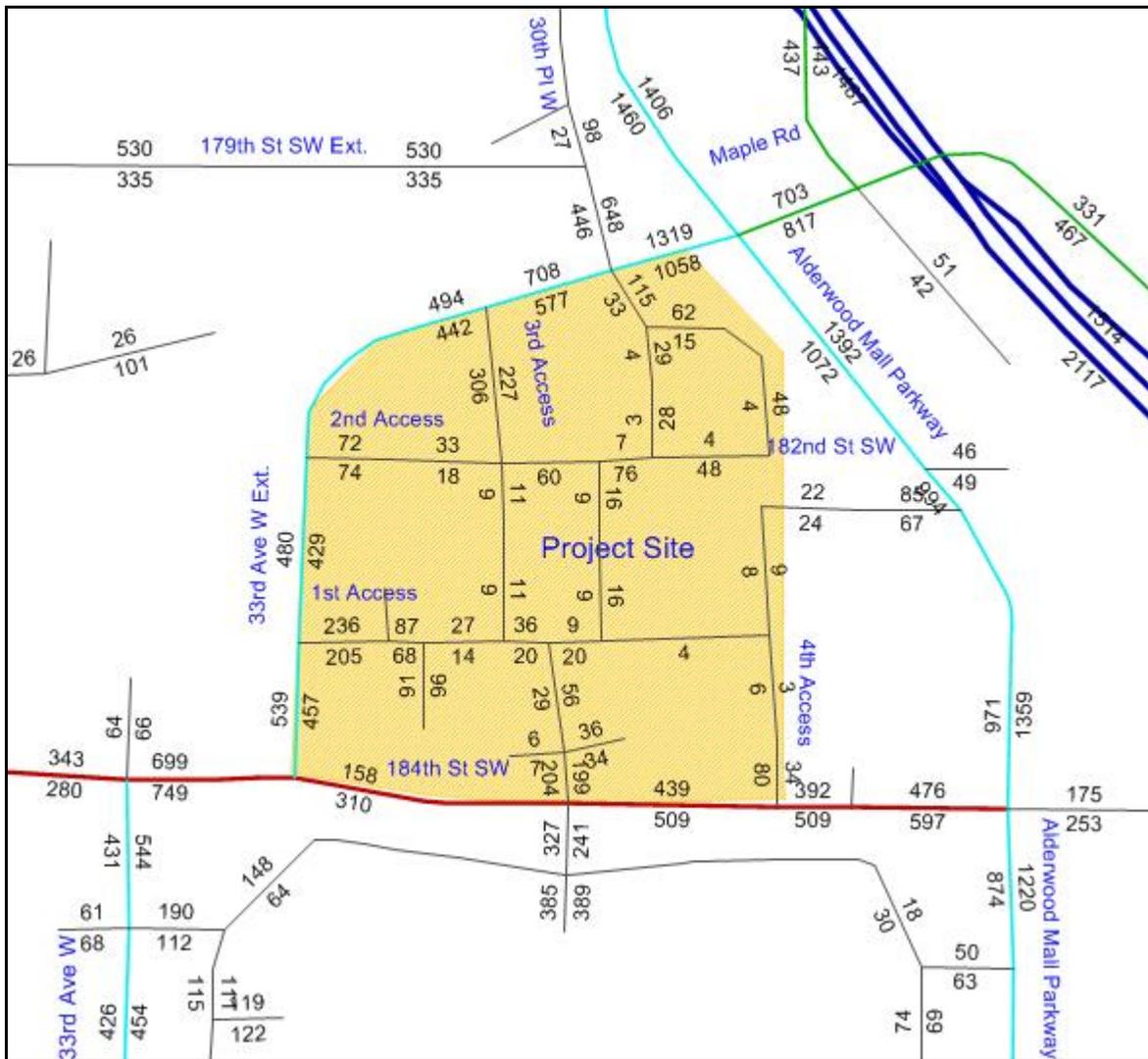
The total study area delay for this alternative would be 457 vehicle-hours of delay per PM peak hour, a reduction of 92 hours from the baseline case. In the remainder of the citywide system, the delay would be 1,805 hours, which is 21 hours less than the baseline case. The combined total delay reduction of 113 hours would be the net benefit.

13. Mitigating Measures for Alternative 4—All Retail Alternative

Traffic mitigation for Alternative 4 would be identical to the mitigation prescribed for Alternative 1. None of the locations with smaller impacts could be mitigated at a lesser level than was prescribed for Alternative 1. Differences in mitigation that depend on the bypass configuration should be the same as for Alternative 1.

Transportation Impact Fees

Similar to Alternative 1, this alternative would be subject to the impact fee program that became effective on January 1, 2011. Based on the fee rate per PM peak-hour trip (\$5,107/trip) defined for Zone A, the net 709 PM peak-hour trips would result in approximately \$3.6 million impact fees. However, the City discounted the impact fee rate by



**Lynnwood Crossing
Planned Action EIS
N ↑**

**Figure 3-26.
2012 Volumes for Alternative 4
and Bypass with 30th Place
Retained**

20 percent per year from 2015 to 2011. The project is proposed to be opened in 2012; therefore, the impact fees would be reduced by 60 percent or would equate to approximately \$1.4 million.

Impact fee credits may be awarded for the value of the system improvements included in the impact fee program, including contribution of land value, frontage improvements, roads/intersections improvements, and/or construction provided by the development. The 33rd Avenue W bypass is an impact fee project. Costs associated with the bypass would be eligible for credit.

**Table 3-21. Intersection Performance – 2012 Alternative 4 and Bypass
with 30th Place Retained**

List No.	Name	Control Type	Volume	LOS ¹	Control Delay ²	V/C ³	Affected Movement ⁵	Queue Ratio ⁴
9145	SR 525 SB off-ramp & Alderwood Mall Pkwy	Two-Way Stop (WSDOT)	3162	F	9999	-	-	-
136	179 th Street & 36 th Ave W	Two-Way Stop	2308	F	9999	-	-	-
5010	179 th Extension & 30 th Pl.	Two-Way Stop	993	B	10.5	-	-	-
891	Maple Road & Ash Way	Two-Way Stop	1636	F	274.8	-	-	-
894	182 nd Street SW & Alderwood Mall Pkwy	Two-Way Stop	2420	B	11.9	-	-	-
9302	Beech Road & Alderwood Mall Pkwy	Two-Way Stop	2272	F	57.6	-	-	-
72	Maple Road & Alderwood Mall Pkwy	Signal	4612	D	46.2	0.93	EB	2.3
5002	33rd Ave Ext. & 30 th Pl	Signal (new)	2523	C	25.9	0.83	SB	2.6
5011	33rd Ave Ext. & 3rd Access	Signal (new)	1377	B	17.9	0.69	-	-
5000	33rd Ave Ext. & 1st Access	Signal (new)	1172	B	12.4	0.61	-	-
160	184 th St & 33rd Ave Ext.	Signal (new)	1446	B	13.7	0.52	EB	2.1
59	184 th St & Nordstrom Dr	Signal	1193	B	19.2	0.32	-	-
60	184 th Street & Alderwood Mall Pkwy	Signal	2962	C	28.7	0.66	-	-
35	Mall Access & 33 rd Ave W	Two-Way Stop	1143	E	35.7	-	-	-
31	196 th Street & Alderwood Mall Pkwy	Signal	4773	F	98.8	1.19	NB	1.5
							SB	1.7
65	Alderwood Mall Pkwy & Poplar Way	Signal (WSDOT)	2862	C	24.2	0.68	EB	1.1
							WB	1.2
53*	188 th Street SW & 33 rd Ave W	Signal	1787	C	33.4	0.57	-	-
54*	188 th Street SW & 36 th Ave W	Signal	2912	D	36.9	0.67	EB	2.6
							WB	1.2
68	196 th Street & 30 th Pl. W	Signal	3368	C	24.7	0.81	NB	5.4
							SB	1.2
3*	196 th Street & 36 th Ave W	Signal (WSDOT)	4873	D	42.4	0.88	WB	1.4
58	184th St SW & 33rd Ave W	Signal	1588	B	12.8	0.53	WB	1.9

¹ LOS – Level of Service

² Control Delay is reported in seconds per vehicle

³ V/C – Volume to Capacity Ratio

⁴ Queue Ratio – Queue length to storage length

⁵ Directional movement with maximum queue exceeding storage length (example: NBL = northbound left turn)

* Intersection formerly within City Center Subarea; now part of the "Transition Area".

14. Significant Unavoidable Adverse Impacts of Alternative 4—All Retail Alternative

The same unavoidable adverse impacts would arise for this alternative as for Alternative 1, with minor differences. The overall reduction of delay in the study area with the recommended mitigation is slightly improved compared to Alternative 1; it would therefore compensate for the unavoidable impacts slightly more generously than in Alternative 1.

15. Impacts of Alternative 5—No Action Alternative

The development of Alternative 5 is different than Alternative 1. For purposes of this evaluation, the study area road system was the same as previously evaluated for the case of the complete bypass with a connection to 30th Place W. The site plan for Alternative 5 is shown in Figure 2-6.

Street System

Alternative 5 was evaluated with a similar network of new streets around the site as Alternative 1, with the exception of an additional south leg added to the intersection of Maple Road Extension and 30th Place W. The westbound left-turn movement is prohibited due to limited space between 30th Place W and Alderwood Mall Parkway.

The study area road network included the complete bypass configuration of improvements for 33rd Avenue W Extension and Maple Road Extension, similar to Alternative 1. In particular, the intersection of Maple Road and Alderwood Mall Parkway was initially tested as it was in Alternative 1, with a five-lane cross-section on Maple Road and a southbound right-turn lane added to Alderwood Mall Parkway.

For simplicity, this site development alternative was not evaluated with the other two road configurations that were considered with Alternative 1, as net traffic changes and differences in outcomes would be similar in all three cases. Whether this lower-intensity development could be successfully mitigated without completing the bypass was not evaluated.

Traffic Volumes in 2012

The traffic impacts of Alternative 5 are as follows.

Trip Generation

This alternative is defined as a combination of medical/dental office, daycare facility, and nursing homes. The trip generation attributed to this development scenario was calculated as 1,183 trips in each weekday PM peak hour. Of these, 44 trips would be internalized for mixed use and were discounted from the gross total. There are no

pass-by trips or diverted-link trips to be discounted. The net impact away from the site would be 1,139 PM peak-hour trips, which is lower than that was calculated for Alternative 1. These net trips do not include the existing high school trips.

Trip Distribution

As depicted in Figure 3-27, the net trips generated by Alternative 5 would utilize the same access points as Alternative 1 but would distribute to the road network somewhat differently. The numerical values in Figure 3-27 depict the directional volumes on each side of each road. The line width is proportional to volume.

Compared to the baseline volumes for 2012 without site redevelopment, the additional volumes amount to the following percentage impacts at selected locations:

- 30 percent of the site-generated trips are added to Alderwood Mall Parkway north of Maple Road
- 13 percent of the site-generated trips are added to Alderwood Mall Parkway south of 184th Street
- 25 percent of the site-generated trips are added to 184th Street west of the site

Site Access and Circulation

All details of site traffic access are similar to Alternative 1, but with lower trip volumes. The same on-site road network and intersection controls would be required, with one exception described later.

Traffic Safety

The same options exist as for Alternative 1 concerning the intersection at 182nd Street SW and Alderwood Mall Parkway. Signalization would still be necessary to serve the increase in left-turn movements with site redevelopment. However, for safety reasons the City of Lynnwood prefers to avoid signalization and instead prohibit eastbound left turns from 182nd Street. Site traffic to the north would be re-routed to the '3rd Access' as it would for Alternative 1.

Cumulative Impacts – Bypass with 30th Place Retained

Traffic operations for the 2012 case were evaluated based on the results of a traffic model forecast for Alternative 5 using the complete bypass as part of the background assumptions. This forecast produced results similar to Alternative 1 but with lower volumes and generally better operating results. However, similar to Alternative 4, the remaining deficiencies to be mitigated would be approximately the same.

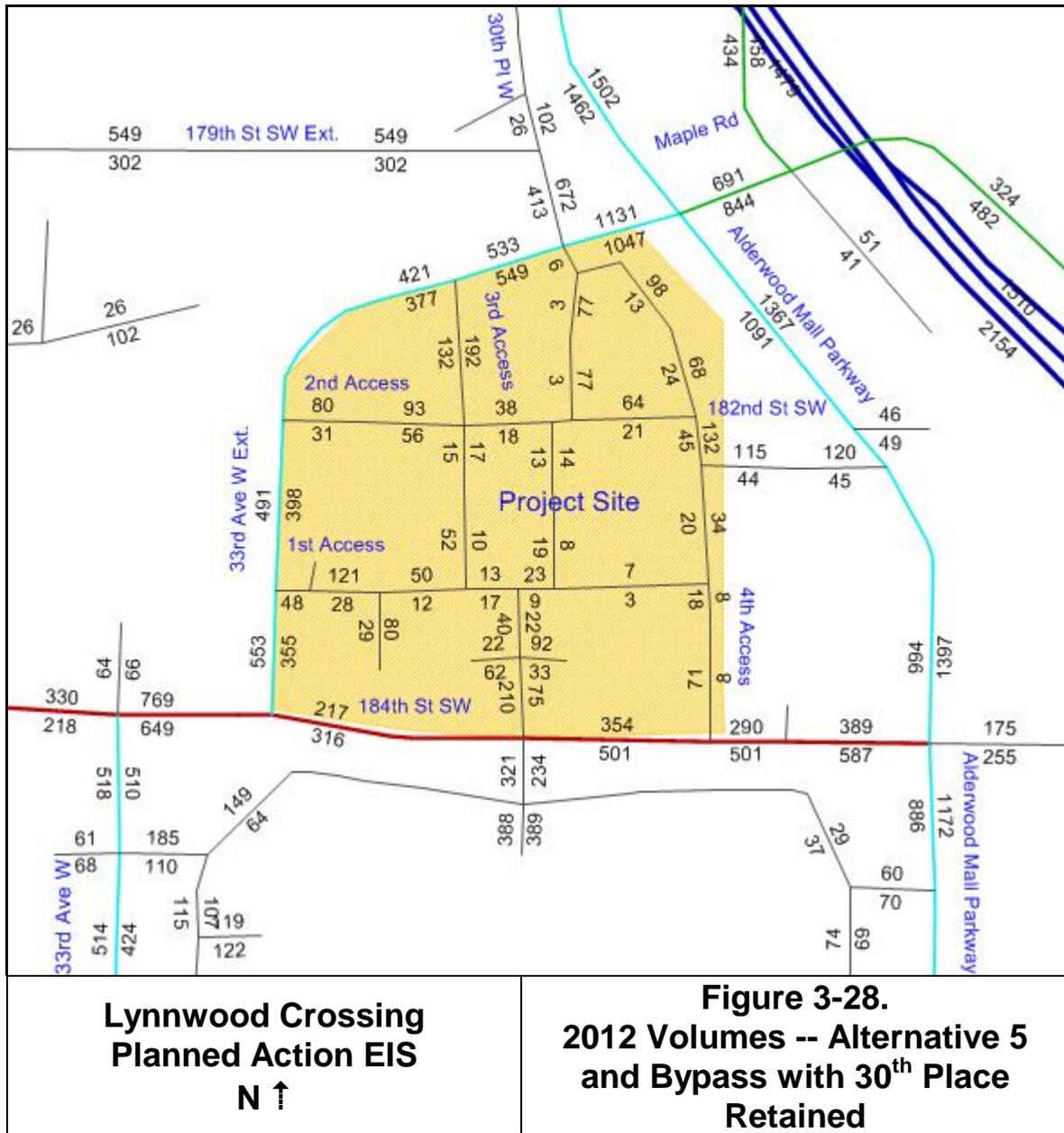


Lynnwood Crossing Planned Action EIS N ↑	Figure 3-27. Trip Distribution for Alternative 5 with Complete Bypass
---	--

Forecast Volumes

Traffic volumes in 2012 are shown in Figure 3-28 for Alternative 5. This forecast accounts for the combination of 2012 baseline traffic, the alternative’s direct impacts, and the redistribution of some background traffic, all in the context of the complete bypass.

Most intersections in the study area would generally have improved traffic operations compared to Alternative 1 due to the reduced amount of traffic generated at the site.



Nevertheless, the same general deficiencies would arise at most locations, similar to Alternative 1.

At Maple Road and Alderwood Mall Parkway, the tested five-lane configuration for Maple Road would have an acceptable LOS of “D”, but would still have excessive queue ratios eastbound. This result is the same as for Alternative 1 and indicates that a single left-turn lane again would not be sufficient for the large eastbound to northbound movement. The opposing westbound left-turn movement, however, would not require a second lane.

The maximum queue length on the eastbound approach (west leg) with the tested improvements would be 533 feet, which again greatly exceeds the 200-foot distance to the intersection at Maple Road Extension and 30th Place W. Similar to Alternative 1, this length would be less than the distance to the '3rd Access' intersection; therefore, that intersection would not be adversely affected. Additional mitigation would be needed, as for Alternative 1, leading to a six-lane cross-section on the west leg.

Study Area Traffic Impacts

At 182nd Street SW and Alderwood Mall Parkway, the same issue as for Alternative 1 arises regarding the tradeoff of signalization to serve eastbound left turns from the site, versus prohibiting left turns to preserve safety. Again, the City of Lynnwood prefers not to signalize, and to shift the eastbound left turns to the site's southern accesses on 184th Street SW. The resulting status of affected study area intersections is listed in Table 3-22.

At all other locations in the study area, the forecast delay and queue length conditions are similar to Alternative 1 but less extensive. The reduced magnitude of these impacts is not sufficient to allow any reduction of mitigation.

Bypass Configuration

The analysis of differences compared to Alternative 1 showed relatively small changes, based on the case with the complete bypass. The same relative comparisons would be expected with each other bypass alternative, so no evaluation of those cases was done.

Citywide Delay

The total study area delay for this alternative would be 572 vehicle-hours of delay per PM peak hour, an increase of 23 hours from the baseline case. In the remainder of the citywide system, the delay would be 1,827 hours, which is one hour greater than the baseline case. The combined total delay increase of 24 hours would be the net impact.

16. Mitigating Measures for Alternative 5—No Action Alternative

Traffic mitigation for Alternative 5 is identical to the mitigation prescribed for Alternative 1. None of the other locations requiring mitigation could be improved at a lesser level than the Proposed Action. Differences in mitigation that depend on the bypass configuration should be the same as for Alternative 1. Whether this lower-impact alternative could be successfully mitigated without the complete bypass was not evaluated.

Transportation Impact Fees

Similar to Alternative 1, this alternative would be subject to the transportation impact fee program that became effective on January 1, 2011. Based on the fee rate per PM

Table 3-22. Intersection Performance – 2012 Alternative 5 and Bypass with 30th Place Retained

List No.	Name	Control Type	Volume	LOS ¹	Control Delay ²	V/C ³	Affected Movement ⁵	Queue Ratio ⁴
9145	SR 525 SB off-ramp & Alderwood Mall Pkwy	Two-Way Stop (WSDOT)	3252	F	999	-	-	-
136	179 th Street & 36 th Ave W	Two-Way Stop	2291	F	9999	-	-	-
5010	179 th Extension & 30 th Pl.	Two-Way Stop	982	B	12.9	-	-	-
891	Maple Road & Ash Way	Two-Way Stop	1654	F	328.6	-	-	-
894	182 nd Street SW & Alderwood Mall Pkwy	Two-Way Stop	2455	B	10.1	-	-	-
9302	Beech Road & Alderwood Mall Pkwy	Two-Way Stop	2259	F	51.9	-	-	-
72	Maple Road & Alderwood Mall Pkwy	Signal	4567	D	51.3	0.94	EB	2.7
							WB	1.0
5002	33rd Ave Ext. & 30 th Pl	Signal (new)	2267	C	23.8	0.72	SB	2.4
5011	33rd Ave Ext. & 3rd Access	Signal (new)	1102	B	10.5	0.51	-	-
5000	33rd Ave Ext. & 1st Access	Signal (new)	999	B	14.5	0.43	-	-
160	184 th St & 33rd Ave Ext.	Signal (new)	1420	B	12.7	0.48	EB	1.6
59	184 th St & Nordstrom Dr	Signal	1113	B	19.3	0.31	-	-
60	184 th Street & Alderwood Mall Pkwy	Signal	2926	C	27.9	0.65	-	-
35	Mall Access & 33 rd Ave W	Two-Way Stop	1195	E	41.9	-	-	-
31	196 th Street & Alderwood Mall Pkwy	Signal	4824	F	157.9	1.2	NB	1.4
							SB	3.4
65	Alderwood Mall Pkwy & Poplar Way	Signal (WSDOT)	2899	C	25.5	0.69	EB	1.1
							WB	1.0
53*	188 th Street SW & 33 rd Ave W	Signal	1861	C	34.4	0.59	-	-
54*	188 th Street SW & 36 th Ave W	Signal	2972	D	39.1	0.67	EB	2.5
							WB	1.8
68	196 th Street & 30 th Pl. W	Signal	3410	D	38.6	0.82	NB	5.4
							SB	1.2
3*	196 th Street & 36 th Ave W	Signal (WSDOT)	4931	D	48.3	0.9	WB	1.5
58	184 th St SW & 33rd Ave W	Signal	1563	B	14.1	0.57	WB	2.2

¹ LOS – Level of Service ² Control Delay is reported in seconds per vehicle ³ V/C – Volume to Capacity Ratio ⁴ Queue Ratio – Queue length to storage length ⁵ Directional movement with maximum queue exceeding storage length (example: NBL = northbound left turn)

* Intersection formerly within City Center Subarea; now part of the "Transition Area".

peak-hour trip (\$5,107/trip) defined for Zone A, the net 1,139 PM peak-hour trips would result in approximately \$5.8 million in impact fees. However, the City discounted the impact fee rate by 20 percent per year from 2015 to 2011. The project is proposed to be opened in 2012; therefore, the impact fees would be reduced by 60 percent or would equate to approximately \$2.3 million.

Impact fee credits may be awarded for the value of the system improvements included in the impact fee program, including contribution of land value, frontage improvements, roads/intersections improvements, and/or construction provided by the development. The 33rd Avenue W bypass is an impact fee project. Costs associated with the bypass would be eligible for credit.

17. Significant Unavoidable Adverse Impacts of Alternative 5—No Action Alternative

The same unavoidable adverse impacts would arise for this alternative as for Alternative 1, although the overall magnitude of each impact would be less because the site trip generation would be less. The overall reduction of delay in the study area would compensate for the unavoidable impacts more positively than for Alternative 1.

18. Non-Motorized Transportation Elements

The City's Comprehensive Plan establishes the policies for a non-motorized transportation system to facilitate a safety-oriented pedestrian walkway and bicycle system, and provide mobility choices and convenient access to schools, recreational facilities, services, transit, and businesses.

According to the Comprehensive Plan, public sidewalks shall be required for new developments. The following design elements related to bicycle and pedestrian systems shall be required in the design and construction of the project:

- Curb, gutter, bike lanes, and sidewalks on the development side of the entire bypass roadway and five-foot shoulder on the other side of the entire bypass roadway.
- Curb, gutter, and sidewalks on the north side of 184th Street SW and sidewalk continuity to access Community Transit service on 33rd Avenue W.
- Pedestrian walkways connecting each building access through the entire site.
- Clearly delineated walkways in parking areas connecting the street frontage, parking stalls, and building access.
- Secure bicycle lockers or racks at each building entrance.

19. Summary of Mitigating Measures

The citywide total numbers of deficient signalized intersections for Alternatives 1 through 5 are shown in Table 3-23. The City's concurrency LOS standard allows 11 signalized intersections to be deficient. There are nine (9) signalized intersections that are deficient in the 2012 baseline condition and there are eight (8) signalized intersections that would be deficient for Alternatives 1 through 5. None of the alternatives would increase the number of the deficient signalized intersections compared to the baseline condition, the development is consistent with the standard.

Traffic mitigating measures are summarized for Alternatives 1 through 5 that would restore queue ratios and delay measures to the levels predicted with the baseline case before site redevelopment. Different levels of mitigation are required depending on the configuration of the bypass that is chosen. The following discusses the requirements according to the source of the mitigation.

Table 3-23. Citywide Deficient Signalized Intersections—All Alternatives

List No.	Name	Control Type	Alternatives					
			2012 Baseline	1	2	3	4	5
72	Maple Road & Alderwood Mall Pkwy	Signal	√	-	-	-	-	-
15	188th St SW & SR 99	Signal	√	√	√	√	√	√
31	196 th Street & Alderwood Mall Pkwy	Signal	√	√	√	√	√	√
29	196th St & 40th Ave W	Signal	√	√	√	√	√	√
4	196th St & 44th Ave W	Signal	√	√	√	√	√	√
5	200th St SW & 44th Ave W	Signal	√	√	√	√	√	√
18	208th St SW & SR 99	Signal	√	√	√	√	√	√
64	212th St SW & 52nd Ave W	Signal	√	√	√	√	√	√
19	212th St SW & SR 99	Signal	√	√	√	√	√	√
Total numbers of deficient intersections			9	8	8	8	8	8
Total numbers of citywide deficient signalized intersections are all smaller than 11, which is 20 percent of citywide signalized intersections.								

Table 3-24 lists the mitigation configuration requirements for Alternative 1 with and without the bypass configuration options, and for Alternatives 2 through 5 with the bypass configuration options, which account for all facilities around the perimeter of the site.

The site-related locations require mitigations similar to those proposed by the Proponent; that is, completion of the three-lane bypass and provision of right-of-way to accommodate the City's future five-lane configuration.

Table 3-24. Mitigation Requirements for Alternatives 1 through 5

Location	Without Bypass	With Bypass and 179th Street Extended to AMP	Alternatives (with Bypass and 30th Place W Retained)				
	Alternative 1	Alternative 1	1	2	3	4	5
Roadway Segments							
#33 rd Ave W Extension, 184 th Street SW to '2 nd Access'	2 lanes, plus two-way left-turn lane in the median	← same	← same	← same	← same	← same	← same
#33 rd Ave W Extension, '2 nd Access' to '3 rd Access'	Not included	2 lanes, plus two-way left-turn lane in the median	← same	← same	← same	← same	← same
#Maple Road Extension, '3 rd Access' to 30 th Pl. W	2 lanes, plus two-way left-turn lane in the median	← same	← same	← same	← same	← same	← same
#Maple Road Extension, 30 th Pl. W to Alderwood Mall Pkwy	5 lanes ¹	4 lanes	6 lanes	← same	← same	← same	← same
Maple Road, Alderwood Mall Pkwy to Ash Way	Add WB second LT lane	Keep existing 4 lanes	Add WB thru lane	← same	← same	← same	← same
179 th St. SW Ext'n, 30 th Pl. W to Alderwood Mall Pkwy	Not included	3 lanes	Not included	← same	← same	← same	← same
196 th Street Corridor, 36 th Ave W to Alderwood Mall Pkwy	Corridor signal timing adjustment*	← same	← same	← same	← same	← same	← same
188 th Street SW, 33 rd Ave W to 36 th Ave W	Corridor signal timing adjustment*	← same	← same	← same	← same	← same	← same
Intersections							
Private Access Driveway, west of 30 th Pl. W.	Relocate driveway	Retain driveway in present location	Relocate driveway	← same	← same	← same	← same
#33 rd Ave W Extension & 184 th Street. SW	New signalized intersection; 3 lanes x 5 lanes	← same	← same	← same	← same	← same	← same
#33 rd Ave W Extension & '1 st Access'	Signalized, with LT storage on '1 st Access'	← same	← same	← same	← same	← same	← same
#33 rd Ave W Extension & '2 nd Access'	Not an intersection	Unsignalized, Right-in/right-out 3 lanes x 2 lanes	← same	← same	← same	← same	← same
'3 rd Access' & Maple Road Extension	Not an intersection	Signalized, 3 lanes x 2 lanes	← same	← same	← same	← same	← same
#30 th Pl. W & Maple Road Extension	Reconstruct as 3 lane x 5 lane signal coordinated with adjacent intersection(s) ¹	Not an intersection	3 lane x 6 lane signal coordinated with adjacent intersection(s)	3 lane x 6 lane signal coordinated	3 lane x 6 lane signal coordinated	Reconstruct as 3 lane x 6 lane signal, Add south leg to	← same

Location	Without Bypass	With Bypass and 179th Street Extended to AMP	Alternatives (with Bypass and 30th Place W Retained)				
	Alternative 1	Alternative 1	1	2	3	4	5
				with adjacent intersection(s)	with adjacent intersection(s)	the intersection, WB left-turn prohibited.	
182 nd Street SW & Alderwood Mall Pkwy	Prohibit left turns EB->NB, and no signal ²	←same	←same	←same	←same	←same	←same
'4 th Access' & 184 th Street SW	Right-in/right-out	←same	←same	←same	←same	←same	←same
'Alderwood Mall Access' & 184 th Street SW	Signal modifications for north leg; 2 outbound lanes SB; 1 entering lane NB is OK on north leg	←same	←same	←same	←same	←same	←same
#Maple Road & Alderwood Mall Pkwy	Add EB, WB double LT lanes; Add SB right-turn lane; Add WB exiting lane	Add EB thru lane and SB right-turn lane; No WB exiting lane added	Add EB, WB thru lane and EB second left-turn; Add SB right-turn lane; add WB exiting lane	←same	←same	←same	←same
179 th Extension & 30 th Pl.	No change from Planned "Tee" Int'n, stem to west (2x2, No signal)	Convert to "Tee" with stem to north (3x3, No signal)	No change from Planned "Tee" Int'n, stem to west (2x2, No signal)	←same	←same	←same	←same
Maple Road & Ash Way	Prohibit left turns, or signalize, or close the intersection	←same	←same	←same	←same	←same	←same
#Alderwood Mall Access Intersection on 33 rd Avenue W, south of 184 th Street SW	No Action Required	Tolerate queues within Alderwood Mall site, or prohibit westbound left turns in peak hours	←same	←same	←same	←same	←same
Net Citywide delay (vehicle-hours)	96	91	35	33	3	-113	24
Impact Fees by 2012 (million dollars)	\$2.7	\$2.7	\$2.7	\$2.5	\$2.1	\$1.4	\$2.3

¹ Proponent's site plan shows a lower level of improvement than the requirements listed here.

² City of Lynnwood prefers unsignalized for safety reasons (see text).

Included in transportation impact fee project list

* Corridor signal timing adjustment: Assumes the City will periodically monitor and systematically adjust signal timings for the signalized intersection citywide.

At all off-site locations, most improvements are driven by the requirement to manage queue lengths at congested intersections to avoid queues spilling back to upstream intersections and resulting in significantly greater delays in the citywide road network.

The option without the complete bypass would result in the highest (96 vehicle-hours) net increase in citywide delay in the study area and in road expansion on three legs of the intersection of Maple Road and Alderwood Mall Parkway. This would require right-of-way acquisition, possible business relocation, and restoration of existing wetlands. In addition, significant site trips would access the site using the intersection of 182nd Street SW and Alderwood Mall Parkway, where potential safety issues exist due to inadequate sight distance. The City prefers not to install a signal at this intersection and prohibit the east-bound left-turn movement.

The complete bypass with the 179th Street extension to Alderwood Mall Parkway option would slightly reduce the net citywide delay to 91 vehicle-hours compared to the option without the bypass, but the net citywide delay is found to be the second highest among all options. This configuration relieves the delay at the intersection of Maple Road and Alderwood Mall Parkway, but results in more delay at other locations.

The net citywide delay for Alternatives 1 through 5 with the bypass and 30th Place W retained is estimated at 35, 33, 3, -113, and 24 vehicle-hours, respectively.

Generally, the mitigating measures for Alternatives 2 through 5 are similar to Alternative 1 with the bypass and 30th Place W retained. The key mitigating measures would include the three-lane roadway bypass construction, the intersection improvements on the bypass, and the intersection improvements at Maple Road and Alderwood Mall Parkway. The detailed mitigating measures are shown in Table 3-24.

The transportation impact fees estimated based on the impact fee rate per peak hour trip for Alternatives 1 through 5 are at \$2.7, \$2.5, \$2.1, \$1.4, and \$2.3 million, respectively. Some mitigated projects are included in the transportation impact fee project list. Impact fee credits may be awarded for the improvements provided by the Proponent for the transportation impact fee list project.

I. Water and Sewer

Development of any alternative under the Proposed Action would result in a substantial change in water demand and sewer flows compared to those associated with the former Lynnwood High School property. This section examines the potential impacts on the City of Lynnwood's water and sewer utilities as a result of this action.

1. Affected Environment

Existing Facilities and Programs

The City of Lynnwood provides water and sewer services within established service areas that include the property associated with the proposed development. Existing facilities serving this site are discussed below.

The former Lynnwood High School site is served by a single 8-inch water line entering the site from the west. Modeling of the water system during the development of the Water System Plan (Gray & Osborne, 2005) showed that water service to this site was limited by a fire flow deficiency at the high school. Per the City's standards, this site requires a fire flow of 5,000 gallons per minute (gpm), but with a single 8-inch line serving the site, the available fire flow is 3,500 gpm. In its Water System Plan, the City identified a need for a 12-inch water main that would come into the site from the south and create a looped system that would increase fire flow to above 5,000 gpm (modeling indicates this improvement would bring fire flow to over 6,000 gpm). The need for this improvement is identified in the City's water system capital improvement program (CIP) but it was not completed due to the prospective high school relocation. The estimated cost of this improvement in 2011 dollars is \$316,000.

Wastewater from the high school discharges to an 8-inch gravity sewer on the northeast corner of the site. This gravity sewer discharges to Lift Station No. 4. Analysis of future flows to this lift station in the City's Wastewater Comprehensive Plan (Gray & Osborne, 2006) showed that the lift station had a peak-hour capacity of 300 gpm and projected peak flows to this lift station for the year 2023 were 71 gpm. Therefore, no improvements to the lift station were proposed in the City's sewer system CIP.

Level of Service

The City of Lynnwood's level of service for its water system is based on the following:

1. Washington State Department of Health (DOH) standards, which address water quality, minimum pressure, and fire flow requirements (WAC 246-290, Group A Public Water Systems).
2. The City's agreement with the Alderwood Water and Wastewater District (AWWD), which supplies all potable water to the City of Lynnwood. The agreement between the City of Lynnwood and AWWD is based on a maximum de-

mand of 10 million gallons per day (mgd); above that rate the City is required to implement demand management.

Because the City purchases all of its potable water from the AWWD and the AWWD receives its water from the City of Everett's surface water filtration plant, the City of Lynnwood's responsibilities for testing and maintaining water quality are limited to testing for coliform bacteria, residual chlorine, and disinfection byproducts in the City's distribution system. The City currently has no water quality deficiencies associated with its water system.

Per DOH standards, the City must maintain a minimum pressure of 30 pounds per square inch (psi) in its distribution system during normal operations and 20 psi during fire flow events. The City of Lynnwood has adopted the International Fire Code (IFC) as its fire code. The IFC is based on the Insurance Services Office (ISO) Guide for Determination of Needed Fire Flow (ISO, May 2008). ISO guidelines utilize a formula for determining fire flow that considers factors such as building area, type of construction (including building height), type of occupancy, and the influence of adjoining and connected buildings. As discussed in the previous section, the existing system can provide a maximum fire flow of 3,500 gpm.

The City is not expected to exceed the 10 mgd maximum day limit within the planning period of its current Water System Plan (planning period ends 2023). Even with projected demands from the Alderwood Mall expansion and City Center development, year 2023 average day demand is projected to be 5.27 mgd.

The City of Lynnwood's level of service for its sewer system is based on the Washington Department of Ecology Criteria for Sewage Works Design (State of Washington, 1998). These criteria establish minimum design standards for sewage collection and treatment systems. As discussed in the previous section, the City has identified no deficiencies for its sewer system serving the existing Lynnwood High School site in its 2006 Wastewater Comprehensive Plan.

2. Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Potential water system impacts of Alternative 1 include a potentially high water demand due to additional consumptive water use as well as a potential for increased fire flow requirements. Potential sewer system impacts of Alternative 1 include higher wastewater flows from the site that would affect the downstream collection system.

Increased Water Demand

The estimated usage for the site based on a fully developed property is 267,000 gallons per day (gpd) on an average daily flow basis. Table 3-25 summarizes water demand based on the building use identified by the Proponent.

Table 3-25. Water Demand Projections

Area	ADD (gpd)	MDD (gpd)	PHD (gpd)	PHD (gpm)
Costco ⁽¹⁾	7,000	11,900	144,000	100
Retail ⁽²⁾	28,500	48,450	80,912	56
Amusement ⁽²⁾	31,500	53,550	89,429	62
Restaurant ⁽²⁾	50,000	85,000	141,950	99
Medical Office ⁽²⁾	75,000	127,500	212,925	148
Residential ⁽³⁾	73,920	125,664	209,859	146
Landscaping ⁽⁴⁾	1,200	1,200	14,400	10
Total	267,120	453,264	893,474	620

ADD=Average Daily Demand; MDD=Maximum Daily Demand;
PHD=Peak-Hour Demand

- (1) Average demand estimate based on information provided by Paul Ryan of T.E, Inc., Costco's Engineer, to Ken Alexander of Gray & Osborne.
- (2) Average demand estimate based on the 2008 Ecology publication *Criteria for Sewage Works Design*, Table G2-2. Retail/Amusement – 300 gpd/1,000 sq ft, Restaurant – 50 gpd/seat, 1 seat/20 sq ft, Medical office – 500 gpd/1,000 sq ft.
- (3) Average demand estimate based on the 2005 Lynnwood WSP ERU value of 224 gpd/ERU.
- (4) Landscaping estimates should be revisited when more information is known. Assumes 2,000 square feet of landscaped area.

From 1999 to 2003, total water consumption by all schools in the City's service area averaged 110,000 gpd, with the former Lynnwood High School being an unquantified component of that total. The City listed its 15 highest water users for calendar year 2003 in the 2005 Water System Plan; the lowest of the 15 highest users was a restaurant that recorded slightly less than 10,000 gpd in 2003. Edmonds Community College was the only educational facility among the top 15 users, with a recorded consumption of just over 11,000 gpd in 2003.

Based on DOH design guidelines of 25 gpd/pupil (for a school with a cafeteria and gymnasium), with a student population of 1,400 the former Lynnwood High School could be expected to have had an average water demand of 35,000 gpd. If we assume this is a reasonable estimate of previous water use at the school, the Proponent's water demand is expected to increase consumptive water use by approximately 232,000 gpd (average day basis). This level of consumptive use would not cause the City to exceed the 10 mgd limit.

As shown in Figure 3-29, the Proponent proposes to connect to the existing 12-inch ductile iron (DI) water line southwest of the project site and run a new 12-inch DI line on the southern perimeter of the project. The City has a project (D-1) in its Water System Plan Capital Improvement Plan (CIP) that was previously identified to boost the fire flow

from 3,500 gpm to 6,000 gpm as shown in Figure 3-30. The Proponent’s proposal for water system improvements will meet the intent of project D-1.

Fire Flow

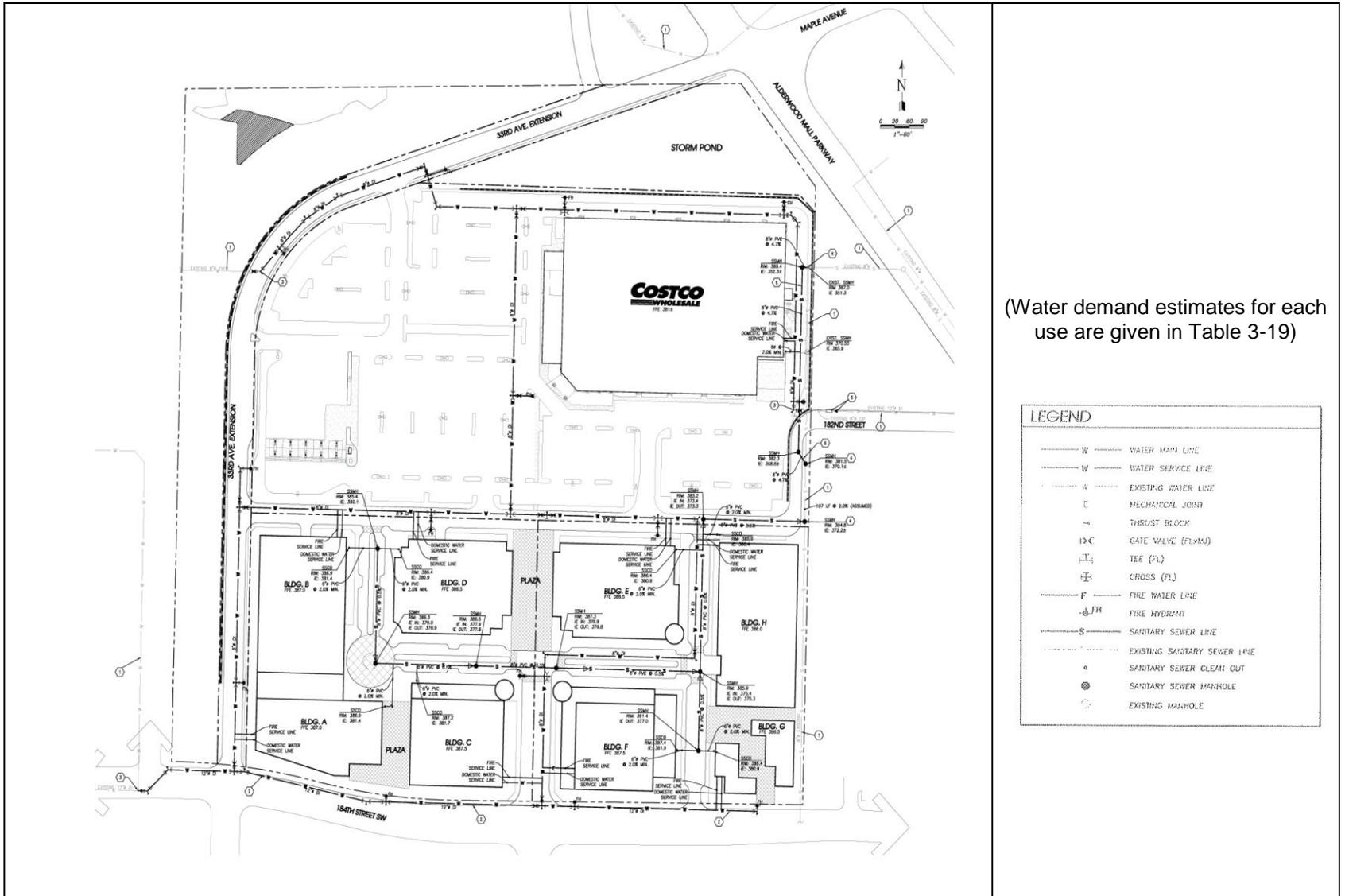
Fire flow requirements will depend on a number of factors, including the size and type of buildings constructed on the property. Using ISO guidelines, preliminary estimates of fire flow requirements per building were developed as shown in Table 3-26.

The highest potential fire flow requirement is for the new Costco Warehouse facility, at 9,500 gpm (compared to existing available fire flow of 3,500 gpm). Initial estimates of fire flow requirements for all other facilities were 8,000 gpm or less.

Table 3-26. Fire Flow Requirements ⁽¹⁾

Building		Needed Fire Flow (gpm)
	Costco	9,500
A	Medical Office	6,000
B	Retail	4,000
C	Health Club/Movie Theatre	6,000
D	Retail/Restaurant/Residential	8,000
E	Retail/Restaurant/Residential	8,000
F	Bowling/Retail	4,000
G	Restaurants	2,500
H	Retail	4,000

(1) These are estimated fire flow requirements by the City’s engineer using the ISO criteria. The Proponent did not estimate fire flows

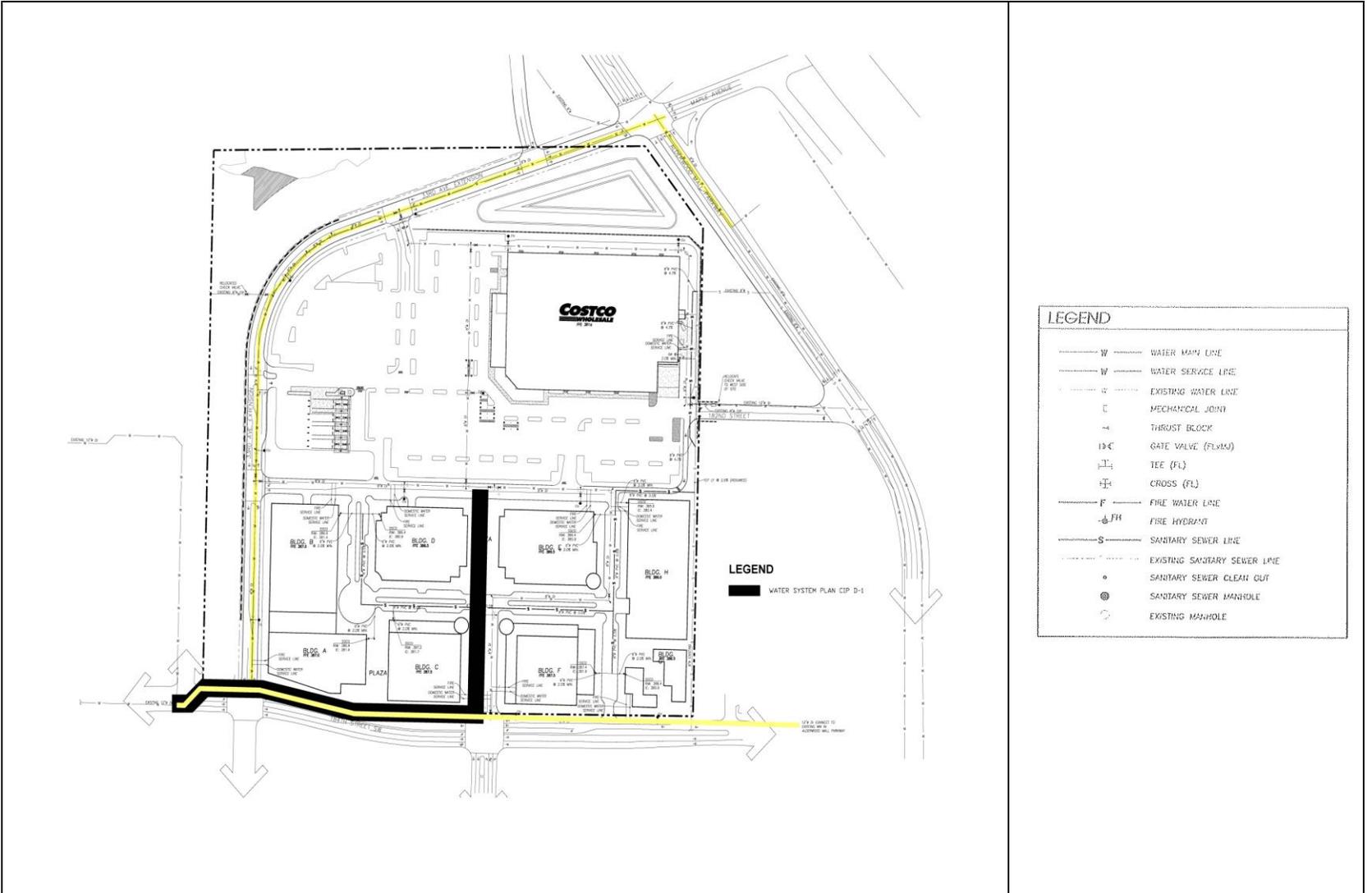


(Water demand estimates for each use are given in Table 3-19)

LEGEND	
—W—	WATER MAIN LINE
- - -W-	WATER SERVICE LINE
.....W	EXISTING WATER LINE
C	MECHANICAL JOINT
T	THRUST BLOCK
G	GATE VALVE (FLX/M)
T	TEE (FL)
X	CROSS (FL)
F	FIRE WATER LINE
FH	FIRE HYDRANT
S	SANITARY SEWER LINE
- - -S-	EXISTING SANITARY SEWER LINE
C	SANITARY SEWER CLEAN OUT
M	SANITARY SEWER MANHOLE
M	EXISTING MANHOLE

Lynnwood Crossing Planned Action EIS

Figure 3-29. Utility Plan



Lynnwood Crossing Planned Action EIS

Figure 3-30. Water System Plan CIP Fire Flow Improvements

A preliminary analysis indicates redevelopment of the site may result in fire flow requirements as high as 9,500 gpm. The additional water line identified in the City's 2005 Water System Plan could provide for up to 6,000 gpm of fire flow to the site. However, additional improvements, potentially including a booster station, would be needed to go beyond 6,000 gpm.

The fire flow requirement could potentially be reduced if fire resistive construction meeting Construction Class 5 criteria is used for the Costco facility and the structures designated as Buildings D and E (Retail/Restaurant/Residential). Consultation with the engineers for the Costco facility (Robert Schildgen/Dowl HKM) indicates that they are planning to construct with fire resistive materials that would meet Construction Class 5. The revised fire flow requirements with fire resistive construction are listed in Table 3-27.

TABLE 3-27. Fire Flow Requirements – Fire Resistive Construction

Building		Needed Fire Flow (gpm)
	Costco	6,000 ⁽¹⁾
A	Medical Office	6,000
B	Retail	4,000
C	Health Club/Movie Theatre	6,000
D	Retail/Restaurant/Residential	5,000 ⁽²⁾
E	Retail/Restaurant/Residential	5,000 ⁽²⁾
F	Bowling/Retail	4,000
G	Restaurants	2,500
H	Retail	4,000

(1) Construction Class 5, F=0.6 verified with Engineers NW

(2) Construction Class 5, F=0.6 assumed

The design of the Costco building and other buildings on the development will be subject to the City of Lynnwood's design review process. Building materials are considered during this process. The outcome of the design review process may affect whether the needed fire flow can be achieved through use of fire resistive materials.

Water Quality

Water quality issues could arise if water service to the property is not designed to minimize stagnation caused by dead ends; this would be a particular concern for the multi-story buildings. Depending on water uses, cross connection control systems may be required to prevent contamination of the City's water supply. These requirements would be determined when the applicant submits a building permit application. The Proponent proposes to provide a loop around the development to minimize stagnation and improve fire flow.

Water Service Pressure

The seven-story Medical Office building would present potential issues with water service pressure. The high school site is served by the 573 pressure zone. The pressure in this zone is set by the elevation in the City's two reservoirs. Currently, the highest water service connection in the 573 zone is 490 feet and the reservoir is operated to maintain 30 psi at that connection. The proposed development is at an average elevation of the 400 feet. The City is responsible for maintaining 30 psi at the service meter (ground level); however, it is the building owner's responsibility to provide adequate pressure to all levels within the structure. An analysis of pressure adequacy will be required prior to issuing a building permit. Depending on the height of the building's uppermost floor, it may be necessary for the Proponent to construct a small booster station to achieve adequate pressure throughout the building.

Increased Sewer Discharges

An analysis of impacts to the sewer system considered the following issues:

1. Increased wastewater generation from the development site.
2. Increased wastewater generation from development in surrounding areas that was not considered in the City's 2006 Wastewater Comprehensive Plan.

Impacts to two lift stations, Lift Stations No. 4 and No. 8, were evaluated in the analysis. Lift Station No. 4 is the lift station that receives all the flows from the former high school site. The contributions from the proposed development are summarized in Table 3-28.

Additional wastewater contributions to Lift Station No. 4 will come from other developments including a proposed 250-room hotel and some residential development, as shown in Table 3-29. System upgrades are proposed to increase capacity regardless of the redevelopment of the former Lynnwood High School property.

The capacity of Lift Station No. 4 is identified as 300 gpm in Table 7-3 of the City's 2006 Wastewater Comprehensive Plan. The projected peak-hour flow to this lift station was previously projected to be 0.102 mgd (70.8 gpm) and, therefore, no improvements to this lift station have been identified in the City's Sewer CIP.

Alternative 1 is estimated to produce a peak-hour flow of 413 gpm for the entire development. This would exceed the existing capacity of the lift station by 113 gpm. When other wastewater contributions are added to the projected flow from the new development, the total peak-hour flow is 500 gpm, which is 200 gpm over the existing lift station capacity.

Table 3-28. Wastewater Contributions to Lift Station 4 from Alternative 1

Area	Average Day (gpd)	Peaking Factor	Peak Hour (gpd)	Peak Hour (gpm)
Costco ⁽¹⁾	6,300	2	12,600	9
Retail ⁽²⁾	28,500	2	57,000	40
Amusement ⁽²⁾	31,500	2	63,000	44
Restaurant ⁽²⁾	50,000	1.5	75,000	52
Medical Office ⁽²⁾	75,000	3	225,000	156
Residential ⁽³⁾	53,790	3	161,370	112
Not Associated with High School ⁽⁴⁾	80,290		125,260	87
Total	325,380		719,230	500

(1) Average day flow based on 90% of average water demand estimate provided by Paul Ryan of T.E, Inc., Costco's Engineer, to Ken Alexander of Gray & Osborne.

(2) Average day flow estimate based on the 2008 Ecology publication *Criteria for Sewage Works Design*, Table G2-2. Retail/Amusement – 300 gpd/1,000 sq ft, Restaurant – 50 gpd/seat, 1 seat/20 sq ft, Medical office – 500 gpd/1,000 sq ft.

(3) Average day flow based on 2006 Wastewater Comprehensive Plan value of 163 gpd/ERU.

(4) See Table 3-23.

In the 2006 City of Lynnwood Wastewater Comprehensive Plan, it was determined that Lift Station No. 8 had a capacity of 600 gpm and did not have sufficient capacity to handle future predicted peak-hour flow of 1.5 mgd (1,040 gpm). The 1.5-mgd projected peak-hour flow assumed a peak flow from Lift Station No. 4 of approximately 90 gpm. As a result of the redevelopment within the Lift Station No. 4 basin, the capacity of Lift Station No. 8 would need to be increased by approximately 410 gpm (0.590 mgd) to approximately 2.1 mgd.

According to City staff, Lift Station No. 8 improvements are under design to address needed system improvements. The additional flows from Lift Station No. 4 will need to be considered in the upgrades to Lift Station No. 8.

**Table 3-29.
Wastewater Contributions to Lift Station 4 from Other Developments**

Area	Average Day (gpd)	Peaking Factor	Peak Hour (gpd)	Peak Hour (gpm)
Hotel ⁽¹⁾	35,750	1.5	53,625	37
Restaurant ⁽²⁾	13,750	1.5	20,625	14
Existing Residential (SF) ⁽³⁾	4,565	3	13,695	10
Future Residential (SF) ⁽⁴⁾	5,545	3	16,635	12
Inflow and Infiltration ⁽⁵⁾	20,680	NA	20,680	14
Total	80,290		125,260	87

- (1) Average day flow based on the 2008 Ecology publication *Criteria for Sewage Works Design*, Table G2-2. Motels - 130 gpd/room for 275 rooms.
- (2) Average day flow estimate based on the 2008 Ecology publication *Criteria for Sewage Works Design*, Table G2-2. Restaurant – 50 gpd/seat for 275 seats.
- (3) Average day flow based on 2006 Wastewater Comprehensive Plan value of 163 gpd/ERU for 28 single family residences.
- (4) Average day flow based on 2006 Wastewater Comprehensive Plan value of 163 gpd/ERU for 34 single family residences (City Planning Department, 2008)
- (5) I&I estimate based 1,100 gpad over residential component of area (18.8 acres).

Lift Station No. 10 is downstream of Lift Station No. 8. Lift Station No. 10 has a capacity of 6,000 gpm. The additional flows from Alternative 1 would represent about 7 percent of Lift Station No. 10's current capacity. The City is currently evaluating three alternatives to address future capacity requirements at Lift Station No. 10. These alternatives include upgrading Lift Station No. 10, building a new lift station at Scriber Lake, and building a new lift station at 188th Street SW and Highway 99. The latter two alternatives involve the construction of a new lift station that would allow flows to be diverted from Lift Station No. 10 so that it can continue to operate within its existing capacity of 6,000 gpm without an upgrade. Preliminary cost estimates indicate that these three alternatives are all comparable in cost (between \$5.8 and \$6.2 million in 2011 dollars).

Flows from Alternative 1 will significantly impact the design of each of the three Lift Station 10 alternatives and, therefore, are anticipated to increase the costs of each. The City will need to perform a detailed cost-benefit analysis to determine which of the three alternatives would be the most cost-effective solution when the additional flows from Alternative 1 are considered in the design. System improvements are needed regardless

of the development alternative and the incremental demands created from the development of the former Lynnwood High School property.

Alternative 1 would place additional demands on Lift Stations No. 4 and No. 8 that exceed their capacities. Both lift stations would need to be upgraded to serve both Alternative 1 as well as other planned developments in the same sewer basin.

3. Mitigating Measures for Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Measures Proposed by the Project Sponsor

The project sponsor understands that capacity improvements to the system are needed to accommodate redevelopment of the former Lynnwood High School property. The Proponent has identified improvements to the water system that will potentially meet the City's requirements. However, no improvements to the sewer system have been proposed by the Proponent pending further analysis.

Measures Required by Regulation

In order to provide fire flow to the site, improvements would be needed. The proposed improvements to bring water service to the site will bring fire flow capacity up to 6,000 gpm. The water line would also create a loop to serve the site. Depending on the type and size of the structure, additional water system improvements may be needed to achieve higher fire flows (as high as 9,500 gpm) and achieve adequate pressures for tall structures. Fire resistive building materials and building fire suppression systems such as sprinklers would potentially be needed to reduce fire flow requirements to 6,000 gpm or less. A water booster station may be needed to achieve minimum pressures in tall buildings.

In order to support the additional sewer flows expected from the site, improvements to two lift stations (No. 4 and No. 8) would be needed. The additional flows from Lift Station No. 4 would also need to be considered in evaluating alternatives to address capacity issues in Lift Station No. 10.

The City would need to consult with the Washington State Departments of Health and Ecology to verify that no amendments are needed to the 2005 Water System Plan and the 2006 Wastewater Plan to cover the proposed development. Since the City can serve this development within its existing agreement with AWWD and no additional water rights are required, limited regulatory oversight is anticipated. However, the City may be required to provide an engineering report to DOH showing how water service can be provided to the new development to maintain proper system pressures and fire flow.

The City would impose appropriate water and sewer connection fees for the development. The City and the Proponent would need to equitably partition the costs of offsite

water and sewer improvements based on the incremental capacity requirements and resulting benefits of the improvements.

Because some of the sewer improvements would be needed to support other system development within the Lift Station No. 4 basin, cost partitioning would need to involve the Proponent(s) for other development(s) within the basin. Cost partitioning would also need to be assessed for the Lift Station No. 8 and No. 10 improvements.

4. Significant Unavoidable Adverse Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

If appropriate improvements are made to the water system and sewer system as described in the previous analysis, there would be no adverse impacts to the City's water and sewer system infrastructure.

5. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 2—Project Sponsor's Preferred Alternative without Office

The proposed water system improvements for Alternative 2 would follow the same conceptual layout as Alternative 1.

The new water main would connect to the City system in the points indicated on the utility plan for Alternative 1 (Figure 3-29). The total water demand would be slightly greater under this alternative; it is estimated to be approximately 292,000 gallons per day.

The proposed public sanitary sewer system improvements for Alternative 2 would follow the same conceptual layout as the points of connection into the existing sanitary sewer main. Alternative 2 would have a peak-hour flow rate of approximately 470 gallons per minute for the entire development.

Pending availability of more detailed design data for the facilities, the existing fire flow at the site does not appear adequate to meet the City's requirement, which is estimated to be as much as 9,500 gpm. There may also be issues with water service pressure depending on actual building heights.

Because water demand estimates are more than for the existing facilities, additional wastewater is expected to be generated at the site, which would affect downstream collection systems. These impacts would need to be quantified and considered in developing a cost-sharing plan for the upgrades to Lift Stations 4, 8, and 10. It would be necessary to obtain additional information, such as other users' wastewater contributions and the potential contributions of inflow and infiltration (I/I) to these pump stations, to evaluate the impacts of Alternative 2 on the water and sewer infrastructure. The City re-

cently performed an I/I evaluation of the City's collection system and some opportunities for I/I reduction exist that, if pursued, could also impact flows to these pump stations.

All water system and sanitary sewer design and construction would be per the City of Lynnwood Public Works standards.

6. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 3—Lower Intensity Mixed-Use Alternative

The proposed water system and sanitary sewer system improvements for Alternative 3 would follow the same conceptual layout as Alternative 1.

The new water main would connect to the City system in the points indicated on the utility plan for Alternative 1 (Figure 3-29). The points of connection into the existing sanitary sewer main would be the same for this alternative.

Alternative 3 would have an estimated water demand of approximately 165,500 gallons per day. The total peak-hour sewer flow rate is estimated to be approximately 246 gallons per minute for the entire development.

Pending availability of more detailed design data for the facilities, the existing fire flow at the site does not appear adequate to meet the City's requirement, which is estimated to be as much as 9,000 gpm for the largest residential facility. There may also be issues with water service pressure depending on actual building heights.

Because water demand estimates are more than for the existing facilities, additional wastewater is expected to be generated at the site, which would affect downstream collection systems. These impacts would need to be quantified and considered in developing a cost-sharing plan for the upgrades to Lift Stations 4, 8, and 10. It would be necessary to obtain additional information, such as other users' wastewater contributions and the potential contributions of inflow and infiltration (I/I) to these pump stations, to evaluate the impacts of Alternative 2 on the water and sewer infrastructure. The City recently performed an I/I evaluation of the City's collection system and some opportunities for I/I reduction exist that, if pursued, could also impact flows to these pump stations.

All water system and sanitary sewer design and construction would be per the City of Lynnwood Public Works standards.

7. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts Alternative 4—All Retail Alternative

The proposed water system improvements for Alternative 4 would generally follow the same conceptual layout as Alternative 1 in terms of connection points to the existing water system and the design and layout for the 12-inch water main extension in 184th Street SW. The routing of the on-site 8-inch water mains would likely differ from the Alternative 1 utility plan. Additional main would be required in order to provide domestic

water and fire service lines for the buildings and to provide adequate fire hydrant coverage.

The total water demand numbers would be significantly lower under this alternative compared to Alternative 1. Alternative 4 is estimated to have a water demand of approximately 116,000 gallons per day.

An initial evaluation of the fire flow requirements indicates that up to 8,500 gpm of fire flow could be needed. Therefore, the existing fire flow available at the site (3,500 gpm) would be inadequate for this alternative.

The proposed public sanitary sewer system for Alternative 4 would generally follow the same conceptual layout as Alternative 1. Additional 8-inch main line beyond what is shown on Alternative 1 would be routed through the site to accommodate the building layout. It is anticipated that each proposed building would have at least one separate 6-inch side sewer.

Alternative 4 would have a peak-hour sewer flow rate of approximately 155 gallons per minute for the entire development. With additional flows from other sources (87 gpm from Table 3-28), the projected flow to this lift station is estimated to be 242 gpm. Therefore, no improvements to Lift Station No. 4 would be required with this alternative.

All water system design and construction would be per the City of Lynnwood Public Works standards.

8. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 5—No Action Alternative

The proposed water system improvements for Alternative 5 would generally follow the same concepts as Alternative 1 in terms of connection points to the existing water system and the design and layout for the 12-inch water main extension in 184th Street SW. The routing of the on-site 8-inch water mains would likely differ from the Alternative 1 utility plan. Additional main would be required in order to provide domestic water and fire service lines for the buildings and to provide adequate fire hydrant coverage.

The total water demand numbers would be slightly less under this alternative compared to Alternative 1. Water demand is estimated to be approximately 258,000 gallons per day.

Pending availability of more detailed design data for the facilities, the existing fire flow at the site does not appear adequate to meet the City's requirement, which is estimated to be as much as 5,000 gpm for this alternative.

The proposed public sanitary sewer system for Alternative 5 would generally follow the same conceptual layout as Alternative 1. Alternative 5 is estimated to have a peak-hour sewer flow rate of approximately 320 gallons per minute for the entire development.

Because water demand estimates are more than for the existing facilities, additional wastewater is expected to be generated at the site, which would affect downstream collection systems. These impacts would need to be quantified and considered in developing a cost-sharing plan for the upgrades to Lift Stations 4, 8, and 10. It would be necessary to obtain additional information, such as other users' wastewater contributions and the potential contributions of inflow and infiltration (I/I) to these pump stations, to evaluate the impacts of Alternative 2 on the water and sewer infrastructure. The City recently performed an I/I evaluation of the City's collection system and some opportunities for I/I reduction exist that, if pursued, could also impact flows to these pump stations.

All water system and sanitary sewer design and construction would be per the City of Lynnwood Public Works standards.

J. Light and Glare

1. Affected Environment

The project site is currently undeveloped vacant land; the prior use on the property consisted of a high school and the Lynnwood Athletic Complex and associated lighting, including athletic field lighting. Properties in the project vicinity include a mixture of urban residential uses, Alderwood Mall, and other major commercial centers. There are currently residences approximately 50 feet west of the western property line. Most of these uses produce varying amounts of light and glare associated with exterior lighting, security lighting and interior lighting visible through windows and skylights. The proposal under Alternatives 1 – 3 includes a mixed-use component in the southern portion of the site and, therefore, would contain residential uses.

The City of Lynnwood has lighting requirements in the *Lynnwood City-wide Design Guidelines* (September 2001). As the proposed development will be subject to the Project Design Review process (Lynnwood Municipal Code Chapter 21.25), it will need to comply with the guideline's lighting requirements, which are intended to ensure that lighting contributes to the character of the site and does not disturb adjacent developments and residences.

Specifically, the Citywide design guidelines state:

“LIGHTING

To ensure that lighting contributes to the character of the site and does not disturb adjacent developments and residences.

- 1. Lighting should complement other lighting elements use throughout and surrounding the site, such as pedestrian pathway lighting, and lighting used in adjacent developments and the public right-of-way.*
- 2. All lighting should be shielded from the sky and adjacent properties and structures, either through exterior shields or through optics within the fixture.*
- 3. The use of accent lighting is encouraged but should be combined with functional lighting to highlight special focal points, building/site entrances, public art and special landscape features.*
- 4. Lighting used should contribute to the overall character of the surrounding community, site architecture or other site features.*
- 5. Lighting used in parking lots shall not exceed a maximum of 30 feet in height. Pedestrian scale lighting shall be a maximum of 16 feet in height.*
- 6. Lighting design should comply with the Illuminating Engineering Society of North America's Recommended Practices and Design Guidelines, latest editions, for each applicable lighting type (i.e., Parking Lot, Walkways, etc.).”*

For parking areas, Section 21.18.600 (entitled “Parking Lot Illumination”) of the Lynnwood Municipal Code (Title 21 – Zoning) states:

“Lighting off-street parking areas shall be arranged so as to not constitute a nuisance or hazard to passing traffic. Where lots share a common boundary with any “R” classified property, and where any RM zone lot shares a boundary with an RS zone, the illumination shall be directed away from the more restrictively classified property.”

The Project site shares boundaries with “R” classified properties and is subject to the requirements of LMC 21.18.600.

2. Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Whenever commercial uses are located directly adjacent to residential neighborhoods, there is the potential for light intrusion into homes. Night-time glare from non-residential development can illuminate the sky unlike areas occupied by residential uses.

A detailed lighting plan for Alternative 1 has not been prepared; however, a plan will be included as part of the submittal for the Design Review Process. The lighting plan will be designed so that no measureable foot-candles would be broadcast onto the adjoining properties to avoid significant impacts.

Lighting would be installed along the internal roadways and parking lots, and well as at building entrances and the fueling facility canopy. Street lighting for the 33rd Avenue W extension would most likely be located more than 80 feet from the west property line and approximately 160 feet from the residential homes. Street lights for the northern portion of 33rd Avenue W extension near the intersection with Alderwood Mall Parkway may be within 10 feet of the property line depending on final City of Lynnwood approval and design. Lighting for the 33rd Avenue W extension would be designed according to City of Lynnwood Public Works standards, which will be determined during the site review phase. Based on discussions with City of Lynnwood staff, street light types will be determined during Design Review.

Private site lighting that is not part of the new 33rd Avenue W extension would be set back a minimum of 200 feet from the west property line. Proposed lighting along the private roadways would be in concert with the City’s required lighting style to maintain continuity throughout the site. Roadway and parking lot lighting design would likely include metal halide light sources with initial light levels in the 2- to 5-foot-candle¹ range. The roadway and parking lot lights would be cut off luminaires on poles with a maximum height of 30 feet.

¹ A foot-candle is referred to as the amount of measureable light at a given spot.

Lighting proposed for the mixed-use portion of the site includes pedestrian, security, and plaza lighting. Pedestrian lighting and pedestrian-scale lighting in plaza areas would not exceed 16 feet in height. Some lighting attached to buildings (and structured parking as needed) is also proposed. Shielded lighting fixtures would be proposed on the top of the parking structure. For Alternatives 1 – 3, there would be no top floor parking as the parking structures would be 2 to 3 floors underneath the mixed-use building. In general, the proposed finish-floor elevations of the mixed-use buildings would be between approximately 380 and 390 feet and the existing grades along the west property line near the residential development are approximately 430 feet and greater.

Costco Wholesale lighting for the fueling facility canopy lighting, building mounted lighting, and parking lot lighting would be approximately 200 feet from the north property line based on preliminary design. Lighting associated with the fueling facility would be semi-recessed into the canopy and provide lighting both during operating hours and a lower level of security lighting after hours. Costco Wholesale's fueling facilities are typically open from 6:00 am until 9:00 pm Monday through Friday and 7:00 am until 7:00 pm on the weekends. When the facility is closed, 80 percent of the lighting would be turned off, leaving 20 percent of the lighting on as a security measure.

The Costco Wholesale building entrances would be lighted to a minimum of 5-foot candles at ground level. Lighting fixtures would also be located on the building exterior at intervals of approximately 40 feet. Lighting fixtures for the parking lot and around the perimeter of Costco Wholesale would be of a "shoe-box" style."

Costco Wholesale's signage will be similarly sensitive to the residential neighborhood located several hundred feet to the northwest as it relates to light and glare. The finished floor elevation of Costco Wholesale is anticipated to be approximately 381 feet, as stated previously; the elevation of the nearest residential development is approximately 430 feet. Costco Wholesale will not have a lighted freestanding sign. They will also not have any internally illuminated signs on their building. All signs that Costco Wholesale proposes will be illuminated by light fixtures directed at the signs, which will reduce light spillage and minimize glare.

Lamp sizes throughout the site are anticipated to vary from 250 to 1,000 watts. Luminaires will be equipped with full cut-off fixtures and shielding/reflectors where applicable to assure that light will not emit above the bottom horizontal surface (90 degrees) of the fixture and to eliminate glare or light trespass. This would shield lighting from residential areas to the west and north that are located above this horizontal surface.

The proposed materials for buildings in the mixed-use portion of the development will include exterior commercial finishes including: wood, brick, concrete masonry units, concrete, metal, composite panels, and glass. The metal finish will be brushed, colored, or muted to minimize reflectance and glare. Additionally, no mirrored glass will be used on the buildings.

Costco Wholesale intends to use multiple materials with varying colors, textures and patterns with the intent of creating an architecturally interesting and functional building. Typical materials include finished concrete, masonry units, structural steel, metal siding panels, and stucco type finishes. Earth tone and muted colors would be used, which would minimize reflection and glare.

An increase in vehicular lights would be noticed by surrounding properties. Impacts from vehicular lights would primarily be noticeable during winter months when there are fewer hours of daylight

3. Mitigating Measures for Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

Prior to the issuance of any building permit, the buildings/site will be required to comply with the City's Project Design Review process. Lighting and building materials will be evaluated as part of the Project Design Review process to ensure that lighting does not disturb adjacent developments and residences, and that glare impacts are minimized.

As part of the Project Design Review process, lighting design will need to demonstrate compliance with the Illuminating Engineering Society of North America's *Recommended Practices and Design Guidelines* for each applicable lighting type. Mitigation proposed in this DEIS includes shielding of lights, the directing of light toward the ground, internal lighting of signs, and automatic lighting cut-offs in areas of intermittent use. Photometric analysis will be provided to the City for review during the Project Design Review phase.

Costco Wholesale uses a remote energy management controller. All lighting can be monitored and controlled from this central location, or by onsite controls. Thirty-foot tall parking lot lights are proposed and are designed in order to provide even light distribution while utilizing 20 percent less energy when compared to a greater number of fixtures at lower heights. The use of metal halide lamps provide a color-corrected white light and a higher level of perceived brightness with less energy than other lamps such as high pressure sodium.

All site lighting will use either metal halide or low-pressure sodium lights with cut-off fixtures. Luminaires will be fully shielded so the installed fixture at angles above the horizontal plane emits no light rays onto adjacent properties. The effectiveness of luminaires will be certified by a photometric test report to minimize up-light and light-pollution to adjoining properties and night sky. The use of the low-pressure sodium light may cause the need to add additional lights to the parking area, but will significantly reduce the glare from the development.

Canopy lighting for the proposed fueling facility will be fully shielded so no light rays are emitted by the installed fixtures at angles above the horizontal plane of the canopy as is certified by a photometric test report.

4. Significant Unavoidable Adverse Impacts of Alternative 1—Project Sponsor's Preferred Alternative with Office

No significant unavoidable adverse earth impacts are expected to occur. All impacts are expected to be minor and would be mitigated with the above referenced mitigating measures. There will be “night sky” illumination effects even with mitigating measures.

5. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 2—Project Sponsor's Preferred Alternative without Office

Lighting impacts for Alternative 2 would be similar to Alternative 1.

Mitigating Measures

Mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse impacts are expected.

6. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 3—Lower Intensity Mixed Use Alternative

Lighting impacts for Alternative 3 would be similar to Alternative 1.

Mitigating Measures

Mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse impacts are expected.

7. Impacts, Mitigation Measures, and Significant Unavoidable Adverse Impacts of Alternative 4—All Retail Alternative

Lighting impacts for Alternative 4 would be similar to Alternative 1. There may be an increase in parking lot lighting due to the greater amount of surface parking.

Mitigating Measures

Mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse impacts are expected

8. Impacts, Mitigating Measures, and Significant Unavoidable Adverse Impacts of Alternative 5—No Action Alternative

Lighting impacts for Alternative 5 would be similar to Alternative 1. There may be an increase in parking lot lighting due to the greater amount of surface parking.

Mitigating Measures

Mitigation would be the same as for Alternative 1.

Significant Unavoidable Adverse Impacts

No significant adverse impacts are expected.