

Chapter 3: Affected Environment, Environmental Impacts, Mitigation Measures, and Significant Unavoidable Adverse Impacts

3.1 Earth

This section of the Environmental Impact Statement describes the geology, soils, topography, hazardous areas, and potential impacts that could occur from the No Action Alternative and Alternatives 1 and 2.

3.1.1 State and Local Regulations

Earth resources are regulated by a combination of state and local regulations. The regulations described below could potentially apply and will be reviewed for compliance. Additional details may be incorporated during design of the transfer station, and the permitting and approval process.

3.1.1.1 State

The Washington State Growth Management Act requires that counties and local jurisdictions adopt development regulations that protect the functions and values of critical areas, including geologically hazardous areas. Geologically hazardous areas are defined as:

“areas that because of their susceptibility to erosion, sliding, earthquake, or other geological events, are not suited to the siting of commercial, residential, or industrial development consistent with public health or safety concerns.”

[Revised Code of Washington 36.70A.030(9)]

3.1.1.2 Local

City and county critical areas codes regulate activities that may impact critical or environmentally sensitive resources, such as geologically hazardous areas. The local regulations may vary, but critical areas codes generally specify buffer widths for critical areas, identify those activities requiring permits, and mitigation measures.

The No Action Alternative and the Alternative 2 sites are located in the City of Algona. Activities that may impact geologically hazardous areas are regulated by the Algona Municipal Code Chapter 16.18 (Critical Areas) and Chapter 15.22 (Grading and Filling of Land). Algona regulates geologically hazardous areas including erosion, landslide, seismic and volcanic hazards, and other geologic conditions such as mass wasting and rock falls (City of Algona 2015a).

The Alternative 1 site is located in the City of Auburn. Activities that have the potential to impact geologically hazardous areas at the site would be regulated according to Auburn Municipal Code Chapter 16.10, Critical Areas and Chapter 15.74, Land Clearing, Filling and Grading. Auburn regulates geologically hazardous areas including erosion, landslide, seismic, and volcanic hazards (City of Auburn 2015a).

3.1.2 Affected Environment

3.1.2.1 No Action Alternative

Geology

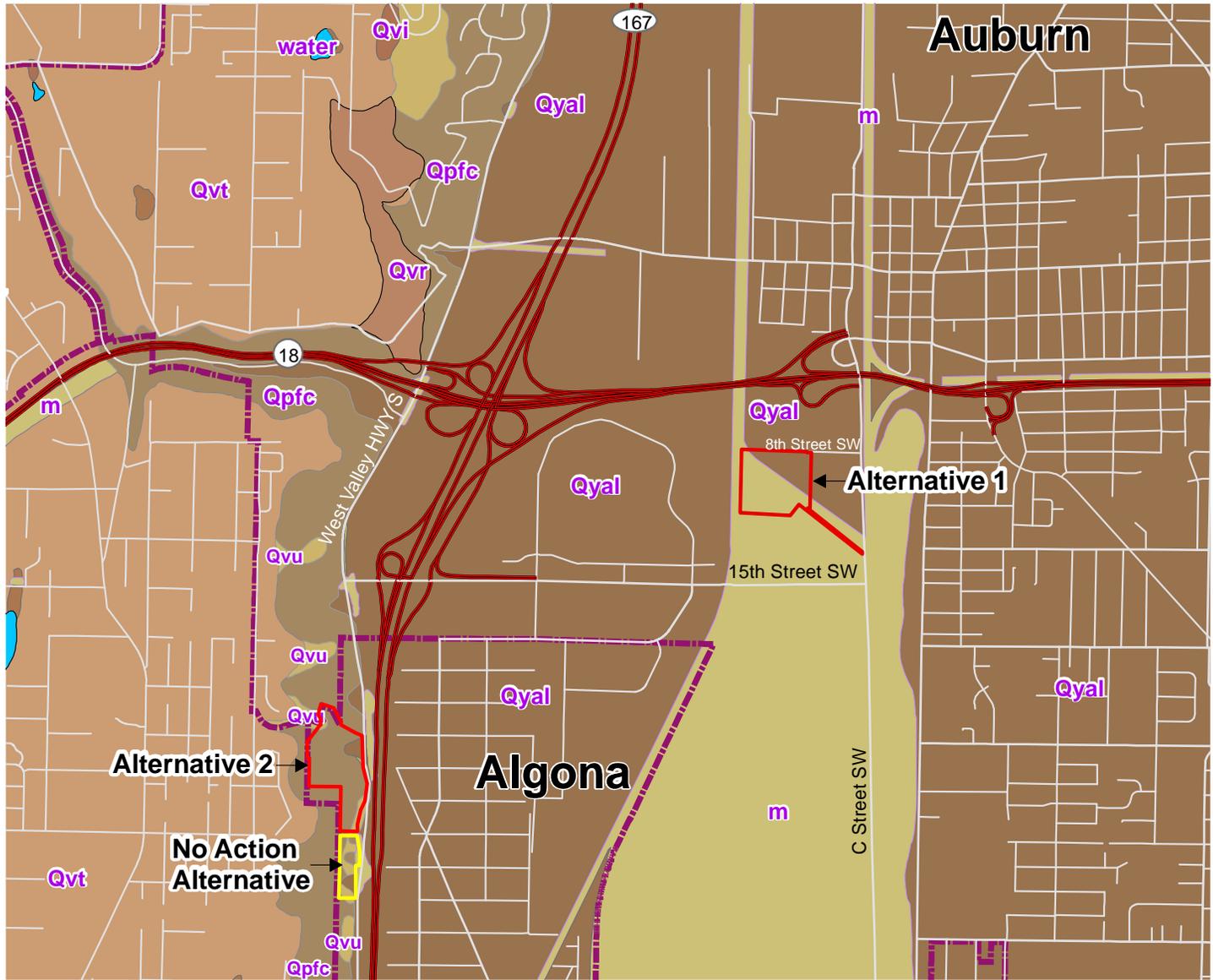
The 4.4-acre No Action Alternative site is situated within the Puget Lowland, which is an elongated structural depression nested between the Cascade Mountains to the east and the Olympic Mountains to the west. During the Quaternary Period, the Puget Lowland was at times overlain by 3,000 to 5,000 feet of ice as the Cordilleran ice sheet cycled through phases of advancement and retreat (Jones 1999). Consequently, the region is generally characterized by rolling topography and underlain by complex sequences of glacial and interglacial sediments.

According to the Geologic Framework for the Puget Sound Aquifer System, the region is comprised mainly of Vashon advance outwash deposits (Qva) (Figure 3.1-1). Qva consist of mostly well-sorted, fine grained sand with lenses of coarser sand and gravel. Vashon Till (Qvt) is predominantly fine- to coarse-grained deposits of unsorted and unstratified sediments. The site is comprised of undifferentiated deposits (Qvu), coarse-grained deposits (Qpfc) and younger alluvium (Qyal). The site is bounded to the west by Qvt. To the east, alluvium deposits (Qal) are mapped on the site and consist of mostly silt to fine sand and are commonly found in streambeds (Jones 1999).

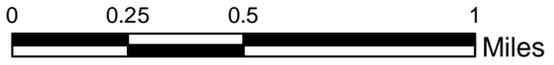
Valley wall bluffs up to 300 feet high mark the boundary between the valley and the uplands to the west. The upland is generally capped with glacial till that overlies advanced outwash from the Vashon Stage of the Fraser Glaciation. Underlying the till cap and advanced outwash, exposed on some valley wall bluffs south of Peasley Canyon, are a complex sequence of Pre-Vashon glacial and non-glacial sediments. North of Peasley Canyon, exposures are largely restricted to small gullies (Booth et. al. 2004).

Based on review of well logs from the Washington State Department of Ecology (Ecology) in the general vicinity, the underlying geologic unit is alluvial deposits (Ecology 2015). The site is underlain by discontinuous deposits of sand, gravel and silt (i.e., alternating layers of loose silty sands and soft to firm sandy silts). The more permeable sand and gravel deposits transmit groundwater. The finer, silt deposits impede infiltration resulting in perched groundwater.

Hong Consulting Engineers, Inc. performed a geotechnical study at the No Action Alternative site in 1988 and borings encountered 3 to 12 feet of existing fill consisting generally of medium dense silty sand overlying interbedded alluvial fan deposits and Green River Alluvium (ABKJ 1997). Two shallow 15-foot borings were completed at the Algona Transfer Station in January 1999 by the King County Department of Transportation for a pavement study. Groundwater depth in these borings along West Valley Highway South ranged from 3 to 10 feet below the roadway. Groundwater appears to be relatively close to the surface along West Valley Highway South.



- Legend**
- Action alternatives
 - No action alternative
 - City boundary
- USGS Surface Geology**
- Qpfc Coarse-grained deposits
 - Qvi Ice-contact deposits
 - Qvr Recessional outwash
 - Qvt Till
 - Qvu Undifferentiated deposits
 - Qw Wetland deposits
 - Qyal Younger alluvium
 - m Modified land
 - water Water



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Surficial Geologic Units Source:
 United States Geological Survey (USGS)
 Date: 6/21/2013



Figure 3.1-1
USGS Surficial Geologic Units

Groundwater was observed in one of the borings at 12 feet below ground surface (bgs) and not encountered in the second boring at the time of drilling. Six borings were drilled on West Valley Highway South near 15th Street SW (Landau Associates 2003).

The Puget Sound lowlands are considered a seismically active region. The boundary between two major tectonic plates (the Juan de Fuca and the North American plates) is located west of the Washington Coast. The Juan de Fuca plate is moving northeastward with respect to the North American plate at a rate of about 1.5 inches per year.

As it collides with the North American plate, the Juan de Fuca plate thrusts beneath the North American plate and sinks into the earth's mantle (DNR 2015). As a result of this tectonic activity, the project vicinity is seismically active and experiences periodic earthquakes. The most frequent earthquakes are low magnitude (on the order of 2.5 to 5.5). However, deeper more powerful earthquakes located in the descending Juan de Fuca plate are also recorded. Recorded events with magnitudes exceeding 6.5 have occurred in 1949, 1965, and 2001 (PNSN 2015).

There is evidence that two additional types of strong earthquakes have affected the project vicinity in the past. The first type is a subduction zone earthquake. The geologic record indicates that subduction zone earthquakes (up to magnitude 9) have occurred on 400- to 600-year intervals and the most recent event occurred approximately 300 years ago. The other type of earthquake occurs along the Seattle fault zone. The Seattle fault zone trends east to west across Puget Sound and the adjacent lowlands. Earthquakes along this zone are shallow and may be on the order of magnitude 7 or greater. There is evidence that the most recent earthquake along the Seattle fault zone occurred about 1,100 years ago, and the interval between strong earthquakes is about 500 years (PNSN 2015).

Soils

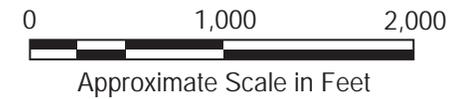
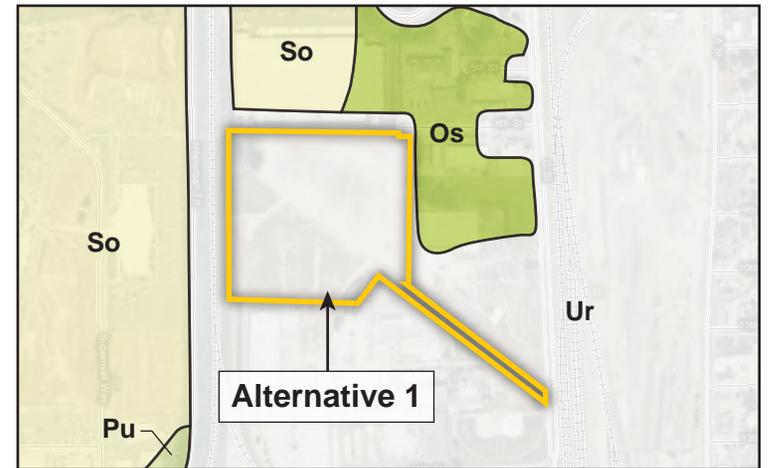
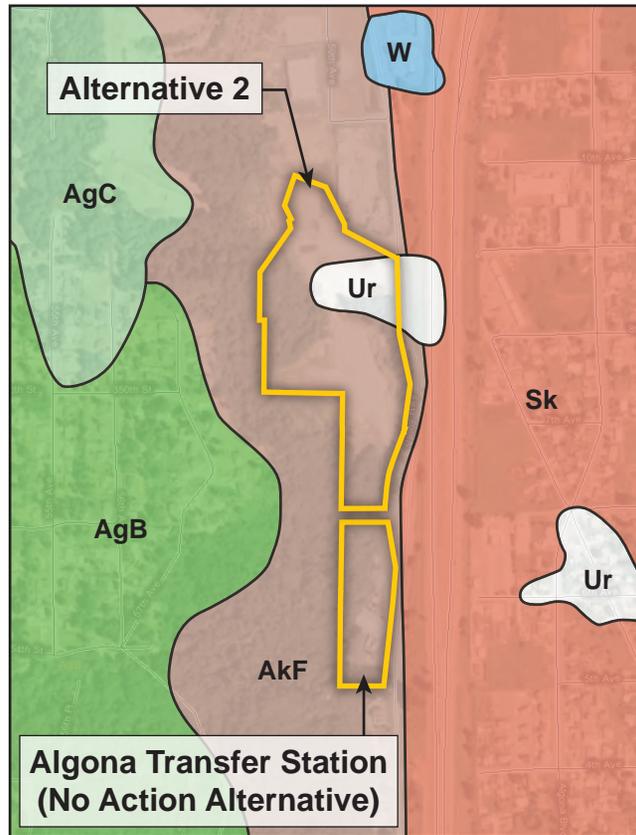
According to the National Resources Conservation Service (NRCS), the western majority of the site (where the existing structures at the Algona Transfer Station are primarily located) is underlain by Alderwood and Kitsap soils (AkF) (Figure 3.1-2). Eastern portions of the site, in the vicinity of West Valley Highway South, are underlain by Seattle Muck.

Alderwood soils contain gravel, sand, and loam; and Kitsap soils contain silt loams. These soils are moderately well drained, have a very low capacity to retain water, and are commonly found on slopes of 25 to 70 percent. The soil is classified as Hydrologic Soil Group B and is considered not prime farmland (NRCS 2015).

Seattle Muck is described as a stratified mucky peat to muck derived from grassy organic material. This soil is poorly drained, has a relatively high water capacity, and is commonly found on slopes of 0 to 1 percent. This soil is classified as Hydrologic Soil Group B/D and can be used as prime farmland if drained (NRCS 2015).

Legend

AgB	Alderwood gravelly sandy loam, 0 to 6 percent slopes
AgC	Alderwood gravelly sandy loam, 6 to 15 percent slopes
AkF	Alderwood and Kitsap soils, very steep
No	Norma sandy loam
Os	Oridia silt loam
Pu	Puget silty clay loam
Sk	Seattle muck
So	Snohomish silt loam
Ur	Urban land
W	Water



Source: Custom Soil Resource Report for King County, Washington, USDA, NRCS, June 18, 2013

Prepared for King County by URS Corporation Consultants



Figure 3.1-2
NRCS Surface Soils

Topography

Based on a review of the U.S. Geological Survey (USGS) topographic maps, the elevation of the site is 80 to 85 feet above mean sea level (MSL). The site slopes downward to the northeast and is relatively flat. There are steep slopes west of the existing transfer station that are typical of the bluffs at the outer edges of the valley.

Geologically Hazardous Areas

The steep slope portions of the site are susceptible to landslides and erosion. Shallow landslides have occurred in the vicinity of existing Algona Transfer Station due to past excavation at the toe of the slope and natural processes of weathering and sloughing during heavy rainfall. Slide zones have been up to between 80 to 100 feet wide and extended 100 to 120 feet up the slope.

Larger slides occurred in 1989 and 1991 during heavy rainfall, but smaller slide zones have occurred more recently (King County 1991; ABKJ 1997). Landslide activity has historically occurred near the site, and there is a potential for future landslides to occur. The principle mode of slope instability is expected to be shallow sloughing extending to depths of 3 to 6 feet. Shallow slides are typically triggered by weathering and excavations at the toe of slopes.

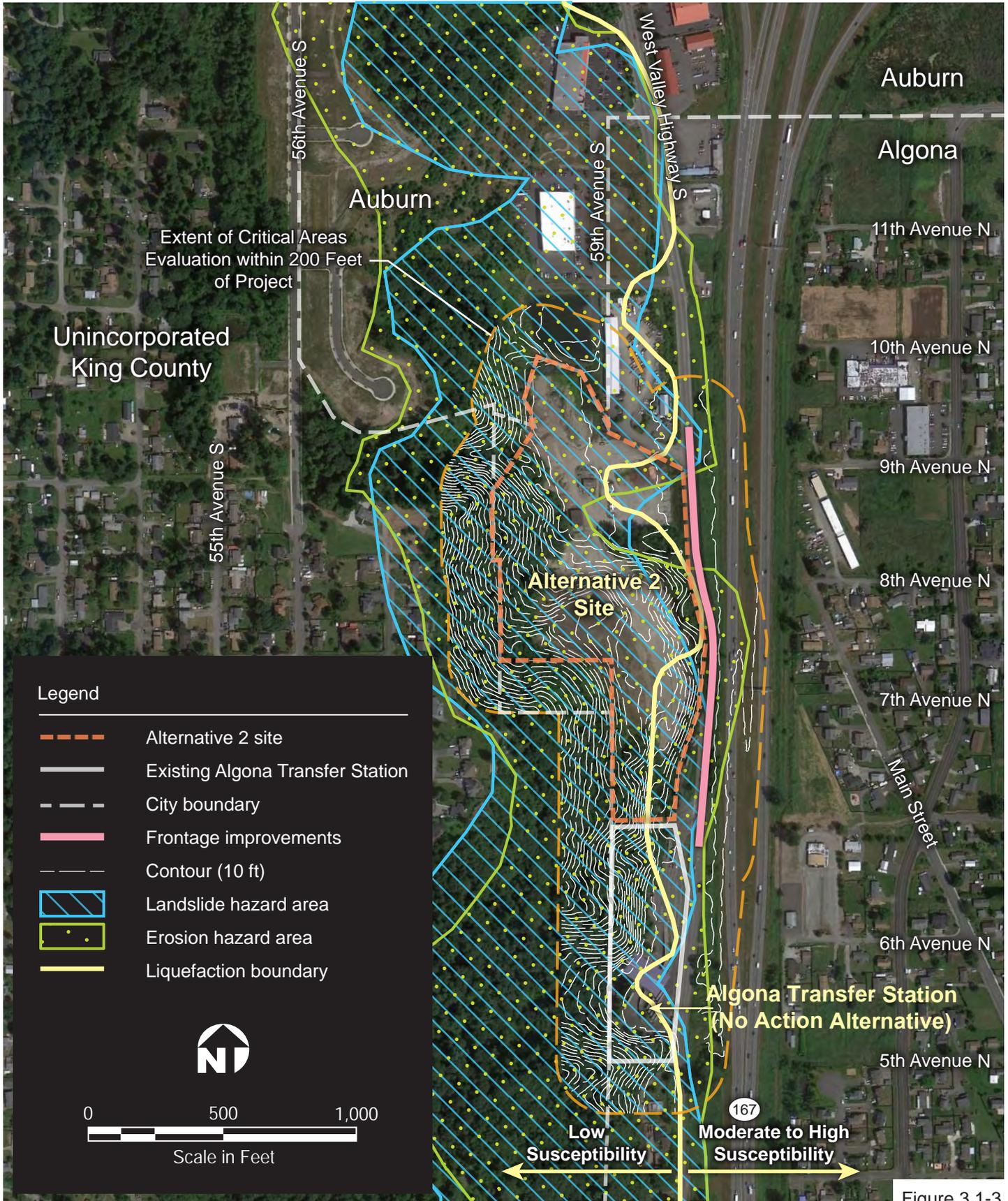
Seismic hazardous areas are subject to risk of ground shaking, and subsidence or liquefaction of soils during earthquakes. Based on a review of the seismic setting and the subsurface conditions anticipated, the site would be subject to liquefaction. Liquefaction is a process by which water-saturated sediment temporarily loses strength and acts as a fluid. Liquefaction can be induced by the shaking associated with earthquakes and can result in damage to the foundations of structures. Liquefaction hazards areas are more common east of West Valley Highway South. According to the Washington Interactive Geologic Map, some parts of the property west of West Valley Highway South have a moderate to high liquefaction susceptibility, but these locations are approximate and based on regional geologic mapping (DNR 2007).

Geologically hazardous areas within 200 feet of the site include erosion, landslide, and seismic hazards (Figure 3.1-3).

3.1.2.2 Alternative 1

Geology

Under Alternative 1, the affected environment would be similar to that described for the No Action Alternative except where noted in this section. Based on review of USGS mapping, portions of the 18.7-acre site may be underlain by alternating layers of loose silty sands and soft to firm sandy silts (Figure 3.1-1). The site is comprised of Qyal and portions of the site are underlain by discontinuous deposits of sand, gravel, and silt (Booth et. al. 2004). Based on a review of Ecology well logs in the general vicinity, the site is underlain by discontinuous deposits of sand, gravel, and silt (Ecology 2015). The more permeable sand and gravel deposits transmit groundwater. The finer silt deposits impede infiltration resulting in perched groundwater.



Source: Google Earth Pro, imagery date: 5/4/2013

Prepared for King County by URS Corporation Consultants

Figure 3.1-3
**No Action and Alternative 2 Site
 Geologically Hazardous Areas**

No borings or test pit data were found for the Alternative 1 site. Six borings were drilled for a proposed Wendy's Restaurant approximately 0.25-mile to the southwest (Mayes Testing Engineers 1999), the groundwater table was between 8.5 to 14 feet below the ground surface.

Soils

According to the NRCS (2015), the site is underlain by Urban soil (Ur), a soil of mixed composition and mixed textures (Figure 3.1-2). Based on winter/spring 2013 and October 2015 field observations and aerial photography interpretation, it was determined that the soils exposed at the site are likely not native to the site and are likely imported granular fill. No borings or test pits have been identified at the Alternative 1 site. The depth of the imported fill is not known. The site is not prime farmland.

Topography

Based on a review of the USGS topographic maps, the elevation of the site is 80 to 85 feet above MSL. The site is relatively flat and slopes gently downward to the northwest.

Geologically Hazardous Areas

The Alternative 1 site is located in a Class I/low landslide hazard area with slopes below 15 percent. Erosion hazard areas are also low on-site due to minimal slopes and soil characteristics. The alluvial soils underlying the site are subject to liquefaction during a strong earthquake, and on-site structures would be at risk of damage during such an event. The alluvial soils may also be highly prone to settlement due to consolidation under building loads. According to the Washington Interactive Geologic Map, the entire site has a moderate to high liquefaction susceptibility, but these locations are approximate and based of regional geologic mapping (DNR 2007).

3.1.2.3 Alternative 2

Geology

Under Alternative 2 the earth resources would be similar to that described for the No Action Alternative except where noted in this section. Based on review of USGS mapping, portions of the 18.9-acre site may be underlain by dense to very dense soils and some areas with loose silty sands and soft to firm sandy silts (Figure 3.1-1). The site is comprised of Qpfc and Qyal. Portions of the site are underlain by discontinuous deposits of sand, gravel, and silt (Booth et. al. 2004). The more permeable sand and gravel deposits transmit groundwater. The finer, silt deposits impede infiltration resulting in perched groundwater.

No Ecology boring or well data were identified within the Alternative 2 site (Ecology 2015). As described previously, Hong Consulting Engineers, Inc. performed a geotechnical study at the existing Algona Transfer Station south of the Alternative 2 site in 1988 and borings encountered 3 to 12 feet of existing fill (ABKJ 1997). Six borings were drilled on West Valley Highway South near 15th Street SW (Landau Associates 2003). Groundwater depth in these borings along West Valley Highway South ranged from 3 to 10 feet below the roadway. Seepage was observed coming out of hillside slope near the eastern boundary of the project at West Valley Highway

South in winter/spring 2013 and September 2015 field visits. Though the western boundary of the Alternative 2 site is several feet higher in elevation than West Valley Highway South, perched groundwater is anticipated to underlie the site at the interface of the upper coarse grained Qpfc and underlying finer nonglacial Qpon deposits.

Soils

According to the NRCS, approximately 95 percent of the site (where the existing structures are primarily located) is underlain by AkF (Figure 3.1-2). Alderwood soils contain gravel, sand, and loam; and Kitsap soils contain silt loams. These soils are moderately well drained, have a very low capacity to retain water, and are commonly found on slopes of 25 to 70 percent. The soil is moderately corrosive to concrete, and highly corrosive to steel. The soil is classified as Hydrologic Soil Group B and is not considered prime farmland (NRCS 2015).

Approximately 5 percent of the site is underlain by Ur, a soil of mixed composition and mixed textures. The soils exposed at the site are likely not native but imported granular fill due to the existing and past uses of the site. Based on a review of well logs performed in the vicinity, the site may be underlain by discontinuous deposits of sand, gravel, and silt (Ecology 2015). The more permeable sand and gravel deposits transmit groundwater. The site is not prime farmland.

Topography

Based on a review of the USGS topographic maps, the elevation of the site is 90 to 300 feet above MSL. The site is mostly gently sloping, with steep slopes on the bluff to the west and southwest and near West Valley Highway South to the southeast. These steep slopes on the western side of the site have an approximate grade in excess of 40 percent and are typical of the bluffs at the outer edges of the valley.

The potential risks from landslides and erosion hazards would require mitigation identified by a critical areas report to be conducted during design of the SCRTS. Per Chapter 16.18E of the Algona Municipal Code, alterations of geologically hazardous areas or associated buffers must only occur for activities that will not increase the threat of the geological hazard to adjacent properties beyond pre-development conditions on a long-term basis, and that will not adversely impact other critical areas. A minimum buffer that is equal to the height of the slope or 50 feet, whichever is greater, is required and setbacks are typically 15 feet from the edge of critical area buffers (City of Algona 2015a).

Geologically Hazardous Areas

Under Alternative 2, the affected environment would be similar to that described for the No Action Alternative. Geologically hazardous areas within 200 feet of the site per the Algona Municipal Code include erosion, landslide, and seismic hazards (Figure 3.1-3). According to the Washington Interactive Geologic Map, the western side of the site has a moderate to high liquefaction susceptibility, but these locations are approximate and based of regional geologic mapping (DNR 2007).

3.1.3 Environmental Impacts

3.1.3.1 Direct Impacts

No Action Alternative

Construction

No construction activities are anticipated for the No Action Alternative.

Operation

Under the No Action Alternative, the alluvial soils underlying the eastern portion of the site where the transfer station is located could be subject to liquefaction during a strong earthquake, and on-site structures are at risk of damage during such an event. The adjacent steep slopes would also be prone to landslide during a strong earthquake event. Damage to the existing transfer station could be measurable and may render it unusable.

Alternative 1

Construction

There would be an increased risk of erosion during construction as a result of vegetation clearing and ground disturbance. Erosion during construction would be minimized by implementing best management practices (BMPs) including the Stormwater Pollution Prevention Plan that would be developed to comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit, and a Temporary Erosion and Sedimentation Control plan.

Filling and grading would be required as part of site grading and development at the site, as well as for building foundation preparation, construction of retaining walls and installation of the stormwater system and other utilities. Based off of conceptual site planning for a new transfer station, approximately 95,000 cubic yards of cut and 35,000 cubic yards of fill could be needed at the site. Fill material may be brought to the site and would be obtained from a local, commercial source approved by the County and in accordance Auburn Municipal Code 15.74 (Land Clearing, Filling and Grading).

The maximum amount of excavation needed could be around 20 feet deep. Shoring, flattening of slopes, and/or dewatering may be needed depending on the depth of excavation. At the Alternative 1 site, groundwater is anticipated to be present at depths of 8.5 to 14 feet below the ground surface. The presence of soft or liquefiable soils may result in the need for deep foundations.

Operation

The project would not result in geologic impacts to the site during operation. Adhering to the requirements of the International Building Code and following the recommendations of the geotechnical study would minimize the potential for disruption to the transfer station should an earthquake occur.

Decommissioning and Deconstruction

It is anticipated that decommissioning, and possible deconstruction, of the existing Algona Transfer Station would occur after the SCRTS is constructed and operating. If the existing station is deconstructed minimal ground disturbance is anticipated, with none occurring in steep slope areas. Limited on-site grading to maintain proper site drainage would occur. Minor erosion could occur as a result of activities associated with deconstruction. Erosion would be minimized by implementing BMPs, including temporary erosion and sediment controls. The existing gabion wall would remain in place at the base of the steep slope.

Alternative 2

Construction

There would be an increased risk of erosion during construction as a result of vegetation clearing and ground disturbance. The steep forested slopes along the western edge of the site primarily occur outside the potential site development area. The steep slopes may be prone to landslide during a strong earthquake event. Invasive plants and weeds that grow out of disturbed soils and fill material could be removed. The presence of Algona Creek Tributary 09.0054A would require a 150-foot buffer to prevent erosion during construction. Erosion would be minimized during construction by implementing BMPs including the Stormwater Pollution Prevention Plan that would be developed to comply with the requirements of the NPDES Construction Stormwater General Permit and a Temporary Erosion and Sedimentation Control plan.

Filling and grading would be required for grading and development at the site, as well as for building foundation preparation, construction of retaining walls, installation of the stormwater other utilities, possible filling of Wetlands A and B, and re-alignment of Tributary 09.0054A. Based on conceptual site planning for a new transfer station, approximately 95,000 cubic yards of cut and 35,000 cubic yards of fill could be needed during construction at the site.

As sand and gravel were previously mined at the site, it is anticipated that some of the cut material would be used as suitable fill on-site. Additional fill material would be brought to the site and would be obtained from a local, commercial source approved by the County and in accordance Algona Municipal Code 15.22 (Grading and Filling of Land). The maximum amount of excavation needed could be around 20 feet deep. Shoring, flattening of slopes, and/or dewatering may be needed depending on the depth of excavation. At the Alternative 2 site, groundwater is anticipated present at depths of 3 to 10 feet below the ground surface. The presence of soft or liquefiable soils may result in the need for deep foundations.

Operation

The project would not result in geologic impacts to the site during operation. The critical areas report would identify and mitigate geologically hazardous areas that may affect the new transfer station and adjacent areas, and performance and design standards would be followed. Adhering to the International Building Code and following the recommendations of the

geotechnical study would minimize the potential for disruption to the transfer station should an earthquake occur.

Decommissioning and Deconstruction

The decommissioning and possible deconstruction impacts described above for Alternative 1 would also apply to Alternative 2.

West Valley Highway South Frontage and Overlay Improvements

Minor erosion could occur as a result of vegetation clearing and ground disturbance associated with construction of the West Valley Highway South frontage improvements. Erosion would be minimized by implementing BMPs, including temporary erosion and sediment controls and a Stormwater Pollution Prevention Plan.

Approximately 10,000 cubic yards of cut and 6,000 cubic yards of fill would be needed for West Valley Highway South frontage improvements. Fill material would be brought to the site and would be obtained from a local, commercial source approved by the County and in accordance with the Algona Municipal Code 15.22 (Grading and Filling of Land).

No erosion is anticipated during pavement overlays on West Valley Highway South.

3.1.3.2 Indirect and Cumulative Impacts

No Action Alternative

No indirect or cumulative impacts on geologic and soil conditions are anticipated to occur.

Alternative 1

No indirect or cumulative impacts on geologic and soil conditions are anticipated to occur.

Alternative 2

No indirect or cumulative impacts on geologic and soil conditions are anticipated to occur.

3.1.4 Mitigation Measures

3.1.4.1 No Action Alternative

No mitigation measures are required.

3.1.4.2 Alternative 1

Construction

During construction, Alternative 1 will comply with the requirements of permits issued by the City of Auburn, including a geologic hazards report, Stormwater Pollution Prevention Plan required by the NPDES Construction Stormwater General Permit, and Temporary Erosion and Sedimentation Control plan. The geologic hazards report per the Auburn Municipal Code Chapter 16.10 will identify and evaluate potential geological hazards, comply with performance standards, and propose mitigation.

The division will conduct an evaluation of site response and liquefaction potential including sufficient subsurface exploration to provide a site coefficient for use in the static lateral force design procedure described in the International Building Code (City of Auburn 2015a). The detailed geotechnical study will be undertaken during the design process to determine any special foundation or construction techniques that may be necessary to reasonably minimize the potential for damage during an earthquake. Special foundation or construction techniques may include: preloading of the site, deep over-excavation, and soil improvement techniques such as stone columns or dynamic compaction or deep foundations.

Each of these plans will have specific measures intended to reduce or eliminate potential earth impacts during construction. These measures may include:

- Installing silt fencing, straw bales, check dams, or similar sediment containment facilities prior to site work.
- Using matting or mulch to control erosion of exposed soils.
- Requiring the construction contractor to minimize the extent of soils exposed at any given time.
- Using crushed rock or equivalent to stabilize temporary access and staging/mobilization areas.
- Covering material stockpiles when not in use.
- Keeping storm drain inlets and discharges clear of obstructions and/or sediment.
- Spraying disturbed areas with water during dry periods to control dust.
- Re-vegetating (e.g., hydroseeding) exposed areas as soon as practical following disturbance.
- Controlling construction stormwater discharges from the site.
- Conducting earthwork during dry months of the year as much as practical.

Operation

The constructed stormwater conveyance, detention, and treatment system will mitigate the potential for erosion. Approved landscaping and ground cover in compliance with City of Auburn permit requirements will be installed and aid in controlling erosion.

3.1.4.3 Alternative 2

Construction

The mitigation measures described for Alternative 1 would also apply to Alternative 2, except compliance will be required with permits issued by the City of Algona. The Alternative 2 site includes steep slopes and related risks from landslides and erosion that will require additional mitigation. The critical areas report will identify geologically hazardous areas within 200 feet of the project and will be conducted during design of the SCRTS.

The assessment will include site and construction plans, characteristics, minimum buffer and setback recommendations, and proposed mitigation to provide long-term hazards reduction (City of Algona 2015a). The critical areas report will include information for each of the hazardous areas identified, including:

- Erosion and landslide hazard areas will include a site plan, a hazards analysis, geotechnical engineering report, Temporary Erosion and Sedimentation Control plan, drainage plan, mitigation plans, and monitoring of surface waters.
- Seismic hazard areas will include a site map of known faults, a hazards analysis of the potential impacts of seismic activity, and a geotechnical engineering report.

The hazards analysis will demonstrate that alterations of the erosion and landslide hazard areas or their buffers will not increase surface water discharge or sedimentation from the site, decrease slope stability on adjacent properties, or adversely affect other critical areas (City of Algona 2015a).

If required, mitigation for geologically hazardous areas will include:

- Drilling bores near the toe of the existing slope to assess extent of vulnerability to seismic shaking effects.
- Installing steel cable fencing or catchment walls along toe of bluff, if appropriate, to catch any debris.
- Installing a wall made of soldier piles and lagging or drilled piles if warranted by geotechnical analysis and location of facilities.

Alternative 2 and road frontage improvements will follow the more stringent of City of Algona Public Works Standards (2015) and King County Road Design and Construction Standards (2007) to minimize erosion.

Operation

The constructed stormwater conveyance, detention, and treatment system will mitigate potential for erosion.

Approved landscaping and ground cover in compliance with City of Algona permit requirements will be installed and aid in controlling erosion.

3.1.5 Significant Unavoidable Adverse Impacts

3.1.5.1 No Action Alternative

No significant unavoidable adverse impacts to earth resources are anticipated.

3.1.5.2 Alternative 1

No significant unavoidable adverse impacts to earth resources are anticipated.

3.1.5.3 Alternative 2

No significant unavoidable adverse impacts to earth resources are anticipated.

3.2 Air, Odor, and Greenhouse Gases

This section of the Environmental Impact Statement describes the existing air quality, odors, and greenhouse gases (GHGs) and potential impacts that could occur from the No Action Alternative and Alternatives 1 and 2.

3.2.1 Local Regulations and Policies

3.2.1.1 Air Quality Standards

Air quality is generally 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. Air quality in the project area is regulated by the U.S. Environmental Protection Agency (EPA), the Washington State Department of Ecology (Ecology) and the Puget Sound Clean Air Agency (PSCAA). These agencies have established ambient air quality standards for a group of air pollutants commonly referred to as criteria pollutants (Ecology 2013a; EPA 2014). More details for ambient air quality standards adopted by Washington State are available in Chapter 173-476 Washington Administrative Code (WAC). Criteria pollutants that are relevant to municipal solid waste transfer stations are summarized in Table 3.2.1 and include the following:

- Inhalable particulate matter or PM₁₀ and fine particulate matter or PM_{2.5}, which are present in engine exhaust and fugitive dust produced when vehicles and equipment operate on paved surfaces.
- Sulfur dioxide (SO₂), nitrogen dioxide (NO_x), and carbon monoxide (CO), which are present in the exhaust emissions from transfer station-related vehicles and equipment.
- Ozone (O₃), which is produced in the atmosphere when NO_x and volatile organic compounds (VOCs) react in the presence of sunlight.

In order to measure existing air quality, Ecology and PSCAA maintain a network of monitoring stations throughout the Puget Sound region. Based on monitoring information, Ecology and EPA designate the air quality status within regions as being either “attainment” or “nonattainment” for particular air pollutants. Attainment status is therefore a measure of whether air quality in an area complies with the National Ambient Air Quality Standards (NAAQS).

All project alternatives are located within an area designated by the EPA as an attainment area for all criteria pollutants. This designation is given to areas within which the ambient standards have been met over a period of time. The project alternatives are in a maintenance area in King County for carbon monoxide. A maintenance area was designated nonattainment for one of the criteria pollutants but later met the standard and was re-designated to attainment. The EPA requires states to develop Maintenance State Implementation Plans that include control strategies to maintain NAAQS. Plans may involve engine and fuel standards for diesel trucks and construction equipment that have been adopted by EPA and voluntary diesel emission reductions (Ecology 2014a).

**Table 3.2-1
Ambient Air Quality Standards Applicable in the Puget Sound Region**

Pollutant/Concentration	National Primary Standard (EPA)	National Secondary Standard (EPA)	Washington State Standard (Ecology)
Inhalable Particulate Matter (PM₁₀)			
24-hour (µg/m ³)	150 ¹	150 ¹	150 ¹
Fine Particulate Matter (PM_{2.5})			
Annual average (µg/m ³)	12 ²	15 ²	12 ²
24-hour (µg/m ³)	35 ³	35 ³	35 ³
Sulfur Dioxide (SO₂)			
Annual (ppm)	-	-	0.02 ⁵
24-hour (ppm)	-	-	0.14 ⁵
3-hour (ppm)	-	0.5 ⁵	0.5 ⁵
1-hour (ppb)	75 ⁶	-	75 ⁶
Carbon Monoxide (CO)			
8-hour average (ppm)	9 ⁵	-	9 ⁵
1-hour average (ppm)	35 ⁵	-	35 ⁵
Ozone (O₃)			
8-hour (ppm)	0.075 ⁷	0.075 ⁷	-
Nitrogen Dioxide (NO₂)			
Annual average (ppb)	53 ⁵	53 ⁵	53
1-hour average (ppb)	100 ⁸	-	100 ⁸

Sources: Ecology 2013a; EPA 2014.

Notes:

µg/m³ = micrograms per cubic meter

ppm = parts per million

ppb = parts per billion

¹ Not to be exceeded more than once per year on average over 3 years.

² Annual mean, averaged over 3 years.

³ 98th percentile, averaged over 3 years.

⁴ Not to be exceeded.

⁵ Not to be exceeded more than once per year.

⁶ 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.

⁷ Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.

⁸ 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years.

3.2.1.2 Odors Standards

PSCAA Regulation 1, Section 9.11 addresses odor strictly as a nuisance and responds to the issues on a complaint basis; the regulation states:

- (a) *It shall be unlawful for any person to cause or allow the emission of any air contaminant in sufficient quantities and of such characteristics and duration as is, 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.*
- (b) *With respect to odor, the Agency (PSCAA) may take enforcement action under this section if the Control Officer or a duly authorized representative has documented all of the following:*

(1) *The detection by the Control Officer or a duly authorized representative of an odor at a level 2 or greater, according to the following odor scale:*

level 0 – no odor detected.

level 1 – odor barely detected.

level 2 – odor is distinct and definite, any unpleasant characteristics recognizable.

level 3 – odor is objectionable enough or strong enough to cause attempts at avoidance.

level 4 – odor is so strong that a person does not want to remain present.

(2) *An affidavit from a person making a complaint that demonstrates that they have experienced air contaminant emissions in sufficient quantities and of such characteristics and duration so as to unreasonably interfere with their enjoyment of life and property.*

(3) *The source of the odor.*

(c) *Nothing in this Regulation shall be construed to impair any cause of action or legal remedy of any person, or the public for injury or damages arising from the emission of any air contaminant in such place, manner or concentration as to constitute air pollution or a common law nuisance (PSCAA 1999).*

Per Auburn Municipal Code Chapter 18.31, the emission of odorous gases or matter that is readily detectable at any point beyond the property line of the use creating the odor is prohibited (City of Auburn 2015a).

Per Algona Municipal Code Chapter 22.30, on-site activities shall conform to all applicable federal, state, county, and city regulations pertaining to odors; more specific regulations regarding odors are not provided (City of Algona 2015a).

3.2.1.3 Greenhouse Gas Emission Standards and Climate Change

King County requires that projects evaluate greenhouse gas (GHG) emissions according to the following policies, codes, and regulations:

- State Environmental Policy Act (SEPA) (Revised Code of Washington 43.21C; WAC 197-11), whose analyses consider environmental impacts, including those from GHGs. Ecology provides guidance for including GHG emissions in SEPA reviews (Ecology 2011). The guidance states that new emissions that are expected to average 10,000 metric tons of CO₂ equivalent per year are required to be disclosed.
- The *2015 Update of the King County Strategic Climate Action Plan*, approved by the King County Council, states that King County will reduce GHG emissions and prepare for the effects of climate change (King County 2015c). By 2020, 100 percent of King County projects are to achieve Platinum certification or better, using LEED, the Sustainable Infrastructure Scorecard, or approved alternative rating system. By 2030, 100 percent of

King County projects achieve certifications that demonstrate a net zero greenhouse gas emissions footprint for new facilities and infrastructure.

- King County Green Building and Sustainable Development Ordinance (Ordinance 17709), which requires all eligible new construction projects to strive for Leadership in Energy and Environmental Design (LEED) Platinum Certification. Implement minimum performance requirements including:
 - Meet Strategic Climate Action Plan and Energy Plan requirements for emission and energy reductions.
 - 80% C&D diversion rate by 2016, 85% C&D diversion rate by 2025, and zero waste of resources with economic value by 2030.
- Emissions estimates would be calculated using *SEPA GHG Emissions Worksheet Version 1.7* during design of the transfer station (Ecology 2011). If additional GHG calculators are needed, the King County Greenhouse Gas Calculator and Mitigation Guidelines Manual is available.
- King County Code Title 18 Environmental Sustainability Programs, which deals with green building, environmental preferable product procurement, the strategic climate action plan and reporting.

Climate can be affected by many factors, including changes in atmospheric composition due to GHG emissions. Other factors include variations in solar irradiance, volcanic activity, ocean circulation changes, and variations in earth's orbital parameters. GHGs, and in particular carbon dioxide (CO₂), are emitted by a vast number of sources, both natural and man-made, in amounts ranging from trivial to massive. These emissions mix rapidly and uniformly in the atmosphere. They contribute equally to global concentrations no matter where they are emitted.

3.2.2 Affected Environment

3.2.2.1 No Action Alternative

Air Quality and Odor

The existing Algona Transfer Station is open-sided without a mechanical (i.e. fan) ventilation system. This allows wind to enter the transfer station and dust to freely exit the waste tipping building. Dust is controlled by spraying the waste manually using a hose. This method is not as convenient as a typical modern dust control misting system, does not respond quickly to dust clouds, and is not as effective as the typical modern dust control misting system used in newer transfer stations. Typical operating equipment within the site includes a diesel yard tractor used to maneuver trailers around the site and waste transfer truck-trailers. Waste is delivered to the existing station by self-haul vehicles such as pickup trucks, small trailers, and cars, garbage collection company trucks, and various trucks used by businesses and institutions to haul waste. These vehicles travel on West Valley Highway South to reach the existing Algona Transfer Station. During peak times, traffic can back up from the station onto West Valley Highway South, causing idling time along the highway and on the Algona Transfer Station site, which is a

primary source of avoidable vehicle emissions. Traffic back-ups are due to the small size of the existing Algona Transfer Station as it has relatively few unloading stalls compared to more modern transfer stations.

Typical existing sources of air pollution near the existing Algona Transfer Station include automobile and truck traffic traveling on West Valley Highway South, State Route 167, and local roads. Pollutant emissions from diesel sources (used in most heavy-duty truck engines) include PM_{2.5}, CO, NO_x, VOCs, and a variety of toxic air pollutants. Gasoline vehicle emissions are comprised primarily of CO, but also include small amounts of SO₂, toxic air pollutants, and both VOCs and NO_x. Residential wood burning nearby also occurs and produces a variety of air contaminants, including relatively large quantities of fine particulate matter (PM₁₀ and PM_{2.5}) and toxic air pollutants. Vehicles emit PM₁₀ and PM_{2.5} directly in their exhaust and indirectly as a function of their tires acting on paved and unpaved surfaces; but the amounts of particulate matter generated by individual vehicles are small compared with other sources such as wood-burning stoves.

As the existing waste tipping building is open-sided, odors can freely exit. The transfer station has no method to dispense chemicals to neutralize or mitigate odors, and must rely on tarping waste-filled trailers and removing them quickly from the site as part of its method of odor control.

Greenhouse Gases

GHG emissions at the existing Algona Transfer Station and the surrounding area are primarily in the form of on-site and nearby automobile and truck traffic on West Valley Highway South and State Route 167. Occasional use of equipment to move landscaping materials by the landscaping supplier to the north of the existing Algona Transfer Station produces some GHG emissions.

3.2.2.2 Alternative 1

Air Quality and Odor

There are no existing operations on the Alternative 1 site. Dust could be produced by wind erosion and by potential vehicles traveling on the site. There are no other sources of air pollution or odors on-site.

Surrounding businesses include warehouses, a hotel, a City of Auburn maintenance facility, a park, and an Auburn School District Transportation Center. Typical existing sources of air pollution near the Alternative 1 site include automobile and truck traffic associated with these businesses traveling on C Street SW, 15th St SW and State Route 18. No noticeable odors are known to exist off-site in the vicinity of the Alternative 1 site.

Greenhouse Gases

GHG emissions at the Alternative 1 site and surrounding area are primarily in the form of nearby automobile and truck traffic on C Street SW, 15th St SW and State Route 18.

3.2.2.3 Alternative 2

Air Quality and Odor

The Alternative 2 site contains an active landscaping materials supplier. As the site is unpaved and landscaping materials such as rocks, gravel, bark and soil are stored outdoors, dust may be produced by wind erosion, vehicular traffic on-site, and material movement as part of business operations. Some landscaping materials may produce odors but these are not likely noticeable off-site. Equipment exhaust is also emitted by vehicles and equipment. Current traffic on-site is related to the existing landscaping supplier and includes trucks and passenger vehicles.

Commercial and retail businesses occupy the properties to the north of the site. To the south is the existing Algona Transfer Station. Typical existing sources of air pollution near the Alternative 2 site include automobile and truck traffic associated with local businesses and vehicles on West Valley Highway South and State Route 167. Residential wood burning nearby also occurs and produces a variety of air contaminants. Effects of vehicle emissions associated with traffic and wood-burning due to proximity of nearby residences are described under the No Action Alternative.

Greenhouse Gases

GHG emissions at the Alternative 2 site and surrounding area are primarily in the form of on-site and nearby automobile and truck traffic on West Valley Highway South and State Route 167. Occasional use of equipment to move landscaping materials that are associated with the on-site landscaping supplier produces some GHG emissions.

3.2.3 Environmental Impacts

3.2.3.1 Direct Impacts

No Action Alternative

Construction

No construction activities are anticipated for the No Action Alternative.

Operation

Under the No Action Alternative, the King County Solid Waste Division (division) would continue to operate the existing Algona Transfer Station. Air quality effects that would continue include potential uncontrolled dust and odor due to operations, vehicle emissions from traffic, and on-site queuing. There would continue to be a wait time to unload due to insufficient on-site capacity, traffic backups onto West Valley Highway South, and associated vehicle idling. Impacts to air quality, odors, and GHG emissions would be similar to existing levels.

The No Action Alternative site has residential neighbors on the bluff above and to the west. The horizontal and vertical distances of these residences from the existing Algona Transfer Station as well as the prevailing winds reduce possible impacts of dust and odor. No change in impacts is anticipated to residences during continued operation.

Because the existing Algona Transfer Station does not have the ability to compact waste effectively, approximately 30 percent more truck trips are required to haul the waste to the landfill compared to a modern transfer station handling the same tonnage of waste, resulting in greater amounts of vehicle emissions.

Alternative 1

Construction

Air Quality

Exhaust from vehicles and engine-driven equipment that would be used on-site during construction, such as generators and compressors, contains particulate matter (PM₁₀ and PM_{2.5}), CO, NO_x, and other air pollutants. The sources of particulate matter may be fugitive dust from clearing, excavation and grading, uncovered stockpiles, and/or diesel smoke. These emissions could negatively impact short-term air quality near the site during construction, but their volume and duration would likely be considerably smaller than those produced by normal vehicle traffic on nearby public roadways.

There would be minor increases in local traffic due to construction that could negatively impact short-term air quality at some intersections. Construction of the new transfer station is anticipated to require approximately 6,500 construction trips to transport excavation and fill to/from the site over 4.5 months of work. See Section 3.12 Transportation for more information. With appropriate construction best management practices (BMPs), emissions related to construction would be short-term and minor.

Odor

Possible odor emissions during construction may include small amounts of volatile vapors from activities that use paints, coatings, solvents, and adhesives. Odors may also be released by short-term activities such as paving that use tar and asphalt, although these are typically of relatively short duration and unlikely to impact adjacent uses. With appropriate construction BMPs, odor emissions would be short-term and minor.

Operation

Air Quality and Odor

Emissions during operation of Alternative 1 could result from the combustion of fossil fuels released in the exhaust of vehicles and equipment. Vehicles are used to transport recyclables and waste to and from the transfer station. Diesel-powered loaders would be used to handle and move the waste within the transfer station. Air quality impacts are anticipated to be negligible.

With design and operational features, dust and odor impacts are anticipated to be negligible on-site and to the surrounding area.

Because the Seattle/Tacoma area is an EPA designated maintenance area for carbon monoxide, a general conformity analysis relative to emissions may be required as part of federal permitting requirements. If the project is not exempt from conformity analyses altogether, it may conform to a categorical hot-spot finding based on the range of project parameters.

Off-site Traffic Emissions

There would be vehicle emissions due to traffic traveling to and from the Alternative 1 site. As described in Section 3.12, Transportation, the 2040 trip generation for Alternative 1 may result in 60 additional trips in the AM peak hour, 48 additional trips in the PM peak hour, and 187 additional trips in the Saturday peak hour. Some intersections are anticipated to have a degraded level of service (LOS) by 2040 during peak weekday hours with or without Alternative 1, which equates to longer idling times at the affected intersections, but effects would be reduced by implementing transportation improvement projects.

With the use of compactors, the average transfer trailer would leave the site with approximately 26 tons of compacted waste compared to the average of 17 tons from the existing Algona Transfer Station. This increased operational efficiency would likely reduce the number of trailer loads leaving the site, resulting in less vehicular emissions. Additionally, the Alternative 1 site would be designed to provide efficient on-site traffic flows to reduce vehicle queuing. Compacted waste is hauled to the landfill in fully-contained transfer trailers, which substantially reduces the release of dust and odors.

Off-site traffic-related impacts from operation of Alternative 1 are anticipated to be minor.

GHG Emissions

The transfer station's potential contribution to global climate change would be through emission of GHG, primarily CO₂. A preliminary estimate of new emissions resulting from construction and operation of the Alternative 1 site using the *SEPA GHG Emissions Worksheet Version 1.7*, and assuming a 50-year lifespan for the transfer station, would be in a range of 1,300 to 2,000 metric tons of CO₂ equivalents (MTCO₂e) per year, a level that falls under the official threshold for reporting to Ecology.¹ The emissions calculations use conservative assumptions for construction materials used, pavement area, and operations based on the number of employees for the building type. There would be a minor decrease in GHG emissions due to a smaller number of transfer trailer trips to the landfill.

Decommissioning and Deconstruction

It is anticipated that decommissioning, and possible deconstruction, of the existing Algona Transfer Station would occur after a new transfer station is constructed and operating. There would be temporary and minor dust and emissions related to construction trucks and equipment if deconstruction occurs. Truck and equipment engines would emit air pollutants that could slightly degrade local air quality temporarily. Dust from limited grading could contribute temporarily to ambient concentrations of suspended particulate matter in the

¹ Reporting is required if annual GHG emissions are equal to or greater than 10,000 MTCO₂e annually from a stationary source (Ecology 2011).

project vicinity. Contractors would be required to comply with the EPA and the PSCAA regulations concerning the safe removal and disposal of any asbestos-containing materials, if applicable.

Alternative 2

Construction

Construction-related impacts on air quality and odors for Alternative 1 would also apply to Alternative 2.

During construction at the Alternative 2 site, existing buildings would potentially be deconstructed. Dust from deconstruction could contribute temporarily to ambient concentrations of suspended particulate matter in the immediate vicinity. Contractors would be required to comply with the EPA and PSCAA regulations concerning the safe removal and disposal of any asbestos-containing materials, if applicable.

With appropriate construction BMPs, emissions related to construction would be short-term and minor. As a result, no significant air quality impacts are expected from construction.

Operation

Operation-related impacts for Alternative 1 would also apply to Alternative 2.

There would be vehicle emissions due to traffic traveling to and from the Alternative 2 site. The 2040 trip generation would result in similar additional trips as Alternative 1. Some intersections are anticipated to have a degraded LOS by 2040 during peak weekday and weekend hours with or without Alternative 2, which equates to longer idling times at the affected intersections, but effects would be reduced by implementing transportation improvement projects. Despite the same trip generation for Alternatives 1 and 2, the percent impact for Alternative 2 during the Saturday peak hour is anticipated to be higher because of lower traffic volumes on West Valley Highway South.

Decommissioning and Deconstruction

Decommissioning and possible deconstruction impacts described above for Alternative 1 would also apply to Alternative 2.

West Valley Highway South Frontage and Overlay Improvements

Temporary and minor dust and emissions could result from construction trucks and equipment during road frontage and overlay improvements but would be minimized by implementing BMPs. Because there would be a small and temporary increase in the amount of traffic on West Valley Highway South, long-term emissions are not anticipated to increase.

3.2.3.2 Indirect and Cumulative Impacts

No Action Alternative

No indirect or cumulative impacts to air quality, odors or GHG emissions are anticipated.

Alternative 1

Indirect Impacts

Adding recycling services that are not available at the existing Algona Transfer Station may indirectly reduce GHG emissions through increasing recycling. However, residences likely use existing recycling services in the vicinity including the Auburn Wastemobile at the Outlet Collection, Puget Sound Recycling, and other nearby stationary and mobile recycling options.

Cumulative Impacts

No cumulative impacts to air quality, odors or GHG emissions are anticipated.

Alternative 2

Indirect Impacts

Adding recycling services that are not available at the existing Algona Transfer Station may indirectly reduce GHG emissions through increasing recycling. However, residences likely use existing recycling services in the vicinity including the Auburn Wastemobile at the Outlet Collection, Puget Sound Recycling, and other nearby stationary and mobile recycling options.

Cumulative Impacts

No cumulative impacts to air quality, odors or GHG emissions are anticipated.

3.2.4 Mitigation Measures

3.2.4.1 No Action Alternative

No mitigation measures are required.

3.2.4.2 Alternative 1

Design

The transfer station would be designed to minimize dust and odor emissions. Operational features to reduce and control emissions of dust and odor would include:

- Enclosed transfer building design in which most waste unloading, compaction, and loading activities occur. The building openings are generally limited to the vehicle entrances and exits, and ventilation openings.
- Larger transfer buildings to allow more vehicles to unload simultaneously. This reduces the amount of time vehicles spend idling while waiting in line to access the transfer station and unload.
- Active mechanical ventilation systems that utilize motorized fans.
- High pressure, low flow water misting systems that use tiny water droplets to capture dust. These misting systems also have the inherent capability to dispense an odor-neutralizing agent that can mitigate objectionable odors.

- Waste compaction inside an enclosed hydraulic machine which reduces the number of tractor-trailer trips required to haul the waste out of the transfer station.
- Capacity to load an entire day's waste into containers, minimizing overnight storage of waste on the tipping floor and reducing odors.
- Scales that allow dedicated express weighing of commercial garbage trucks, thus reducing the diesel exhaust fumes they would have produced while waiting in line with self-haul customers.

The potential to generate odors would be further minimized by use of fully enclosed, sealed transfer trailers.

As required by King County's Green Building Ordinance and King County Code Chapter 18.17, the transfer station will be designed and built to utilize relevant green building and sustainable construction criteria. The division will pursue a LEED Platinum-level certification for the project. These standards were developed by the U.S. Green Building Council to set a rating system for high-performance green buildings. LEED standards for the new transfer station may include use of the following:

- Energy-efficient planning, design, and management.
- Water-efficient planning, design, and management.
- "Environmentally preferable products" whenever practicable. Environmentally preferable products are products that have a lesser or reduced effect on human health and the environment when compared with competing products that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product.
- Preservation and maintenance of natural on-site features, whenever possible.
- Construction BMPs, such as minimizing disturbance to on-site vegetation.
- Planting trees and other native vegetation impacted during development as a means of maintaining carbon storage to maximize carbon sequestration.

Energy-efficient design would contribute to the minimization in GHG emissions. In addition, adding recycling services that are not available at the existing Algona Transfer Station is a potential carbon offset benefit that can outweigh the energy usage of this type of facility.

Construction

Under PSCAA Regulation I, Section 9.15, contractor(s) will be required to comply with applicable regulations, and take all reasonable precautions to avoid or minimize fugitive dust and emissions during construction. These precautions and control measures may include:

- Spraying exposed soil with water or other suppressant to reduce emissions of particulate matter

- Street cleaning and wheel washing of trucks to prevent dirt, mud, and other debris deposits on paved roadways open to the public
- Limiting the amount of time construction trucks are allowed to idle on-site

The construction contractor will be required to comply with the PSCAA regulations requiring the control of odorous emissions so as to prevent undue interference with nearby uses (Regulation 1, Section 9.11).

The following BMPs will be implemented as appropriate at the site during construction to minimize impacts to air quality, odors, and GHG emissions:

- Use water to limit dust generation
- Cover or dampen truckloads of earth and clean vehicle tires and undercarriages before vehicles leave the site
- Cover dirt, gravel, or debris piles as needed to reduce fugitive dust and wind-blown debris
- Sweep streets adjacent to the site to prevent dirt, mud, and other debris deposits on paved roadways open to the public
- Install paved vehicle exit aprons or cover exit aprons with riprap
- Maintain construction machinery in good working order
- Preserve or replant trees that are removed during construction as a means of maintaining carbon storage
- Route and schedule construction vehicles to reduce delays to traffic during peak travel times to reduce potential air pollution caused by a reduction in traffic speeds

Operation

The types of waste accepted at a transfer station are strictly controlled by the division through King County Public Rule PUT 7-1-4(PR), *Waste Acceptance Policy* (King County 2009). This rule prohibits disposal of hazardous or dangerous waste, burning or smoldering material, infectious waste, excessively odorous or dusty material, and various other materials. Household hazardous waste is exempt from regulation as hazardous waste.

The following measures will be implemented at the site during operations to minimize air quality and odor impacts²:

- Clean the transfer station on a regular basis, reducing the potential for odors
- Equip the transfer building with a ventilation system
- Provide efficient on-site traffic flows to minimize vehicle queuing, reducing emissions
- Maintain transfer trailer doors and seals
- Restrict odorous and dusty waste loads

² King County policy at: <http://www.kingcounty.gov/operations/policies/rules/utilities/put715pr.aspx>

- Employ misting systems to control dust
- Use an odor neutralizer as needed

The following measures will be implemented at the site during operations to minimize GHG effects:

- Minimize vehicle idling per King County policy.³
- Compact loads to reduce the number of transfer trailer trips
- Operate the energy efficient LEED certified building efficiently

3.2.4.3 Alternative 2

Design, construction and operation mitigation measures for Alternative 1 would also apply to Alternative 2.

3.2.5 Significant Unavoidable Adverse Impacts

3.2.5.1 No Action Alternative

No significant unavoidable adverse impacts to air quality, odors or GHGs are anticipated.

3.2.5.2 Alternative 1

No significant unavoidable adverse impacts to air quality, odors or GHGs are anticipated.

3.2.5.3 Alternative 2

No significant unavoidable adverse impacts to air quality, odors or GHGs are anticipated.

³ King County policy at: <http://www.kingcounty.gov/operations/policies/aep/facilitesaep/fes125aep.aspx>

3.3 Water Resources

This section of the Environmental Impact Statement describes the existing groundwater, streams and floodplains, stormwater, and water quality and potential impacts that could occur from the No Action Alternative and Alternatives 1 and 2.

3.3.1 Federal, State, and Local Regulations

3.3.1.1 Federal

The Clean Water Act (CWA) promotes the protection of surface water. Section 402 of the CWA prohibits the discharge of pollutants into waters of the U.S. without a National Pollutant Discharge Elimination System (NPDES) permit. Section 401 of the CWA directs each state to certify that proposed in-water activities do not adversely affect state water-quality laws, and Section 3.3 regulates water quality standards and plans. Executive Order 11988-1977 Floodplain Management managed under the Federal Emergency Management Agency (FEMA) requires federal agencies to avoid (to the extent possible) impacts associated with the occupancy and modification of floodplains.

The Safe Drinking Water Act (SDWA) ensures the quality of Americans' drinking water. Under the SDWA, the Environmental Protection Agency (EPA) sets standards for drinking water quality and oversees state, local, and private water suppliers who implement those standards.

Sole source aquifers are designated by EPA under the SDWA to offer protection for aquifers that are the sole or principal source of drinking water for an area. The EPA can designate an aquifer as sole source if it supplies 50 percent or more of drinking water to a given service area, and there are no reasonable alternative sources available should the aquifer become contaminated (EPA 1995).

3.3.1.2 State

At the state level, Washington Department of Ecology (Ecology) manages the discharge impacts to surface and groundwater of the NPDES Municipal and Construction Stormwater General Permit under WAC 173-220, oversees the Toxic Cleanup Program of contaminated groundwater under WAC 173-340, and assures water supplies are protected for both human and aquatic interests under WAC 173-154. Ecology also administers the Section 401 Water Quality Certification program. Floodplains are managed under the Flood Control Zone Act (WAC 173-158) by Ecology in partnership with other state agencies including the Division of Emergency Management.

The Washington Department of Health (DOH) protects groundwater supply impacts to either water quantity or quality associated through management of wellhead protection under WAC 246-290. As part of the SDWA, states are required to protect groundwater-fed public water systems by establishing wellhead protection programs. DOH regulations (WAC 246-290-135) require Group A Public Water Systems to establish sanitary control areas (SCAs) and wellhead protection areas (WHPAs) for each of their groundwater-based sources. The SCAs and WHPAs provide a method of preventing contamination of the surface or subsurface area around a

public water supply well or spring by effectively managing potential contamination sources within the recharge area of the public water supply. SCAs generally have a radius of 100 feet for a well and 200 feet for a spring.

In Washington State, WHPAs are delineated by the individual owners of public water systems. WHPAs are based on capture zones that describe the area of an aquifer that can contribute water to the well within a given period of time. Group A WHPA capture zones are typically mapped with the 6-month, 1, 5, and 10-year time of travel boundaries. The default calculated radius WHPAs for Group A wells is a 220-foot buffer for the 6-month, 310-foot buffer for the 1-year, 700-foot buffer for the 5-year, and 980-foot buffer for the 10-year.

The DOH (WAC 246-290-135) also requires Small Public Water Systems Group B to have SCAs that have a radius of 100 feet for a well, and 200 feet for a spring. The default WHPA for a Group B well is a 600-foot buffer (WAC 246-291-100(2)(e)).

Washington has also developed a program to protect and manage groundwater by identifying and designating five groundwater management areas under the administration of Ecology. The program provides important guidelines that encourage local and state agencies to develop groundwater regulations and programs.

3.3.1.3 Local

At the local level, county and city critical areas codes regulate activities that may impact water quality and quantity. The King County Solid Waste Division (division) is required to operate its recycling and transfer stations in compliance with the King County Board of Health Solid Waste Regulations (Title 10), and provide pollution control measures to protect surface and ground water. The local regulations generally specify which activities require permits and indicate mitigation for impacts to these resources.

The No Action Alternative and Alternative 2 sites are located in the City of Algona and are regulated by the Algona Municipal Code Chapter 16.18, Critical Areas. The Alternative 1 site is located in the City of Auburn and activities that may impact water quality and quantity is regulated by Auburn Municipal Code Chapter 16.10, Critical Areas.

The Growth Management Act (GMA) requires counties and cities to designate and protect public drinking water supplies by protecting areas with a critical effect on recharge. The City of Auburn established groundwater protection areas to protect aquifer sources of drinking water as described in the *Water Resource Protection Report* (Pacific Groundwater Group 2000). Auburn also regulates streams and flood hazard areas under Critical Areas. The City of Algona addresses critical aquifer recharge areas, streams, and floodplains in the City of Algona Municipal Code Chapter 16.18, Critical Areas.

3.3.2 Affected Environment

3.3.2.1 No Action Alternative

Groundwater

Hong Consulting Engineers, Inc. performed a geotechnical study at the No Action Alternative site in 1988 and borings encountered groundwater at depths ranging from about 7 to 17 feet below ground surface (bgs) (ABKJ 1997). Two shallow 15-foot borings were completed at the Algona Transfer Station in January 1999 by the King County Department of Transportation for a pavement study. Groundwater was observed in one of the borings at 12 feet bgs and not encountered in the second boring at the time of drilling. Six borings drilled along West Valley Highway South near 15th Street SW (Landau Associates 2003) indicate groundwater ranged from 3 to 10 feet below the highway.

The direction of groundwater flow is anticipated to be east from the No Action Alternative site to the valley Qal aquifer. Once groundwater reaches the Qal aquifer in the valley, it is anticipated to generally flow in the northern direction (Luzier 1969). The Qal aquifer is a shallow unconfined aquifer that is found in the water bearing portions of alluvium.

The site would be located outside SCA boundaries for both Group A and Group B area wells. A private well is located to the northwest of the site (Figure 3.3-1). The site would not fall within designated WHPAs (Figure 3.3-2) (King County 2015d).

Streams

No streams have been identified on the No Action Alternative site.

The site is located in Washington Resource Inventory Area (WRIA) 9 in the Duwamish-Green River Basin. A jurisdictional ditch is located on the east side of West Valley Highway South and drains north from a wetland to Algona Creek Tributary 09.0054. The wetland is connected to the existing Algona Transfer Station by a culvert (Figure 3.3-3).

Floodplains

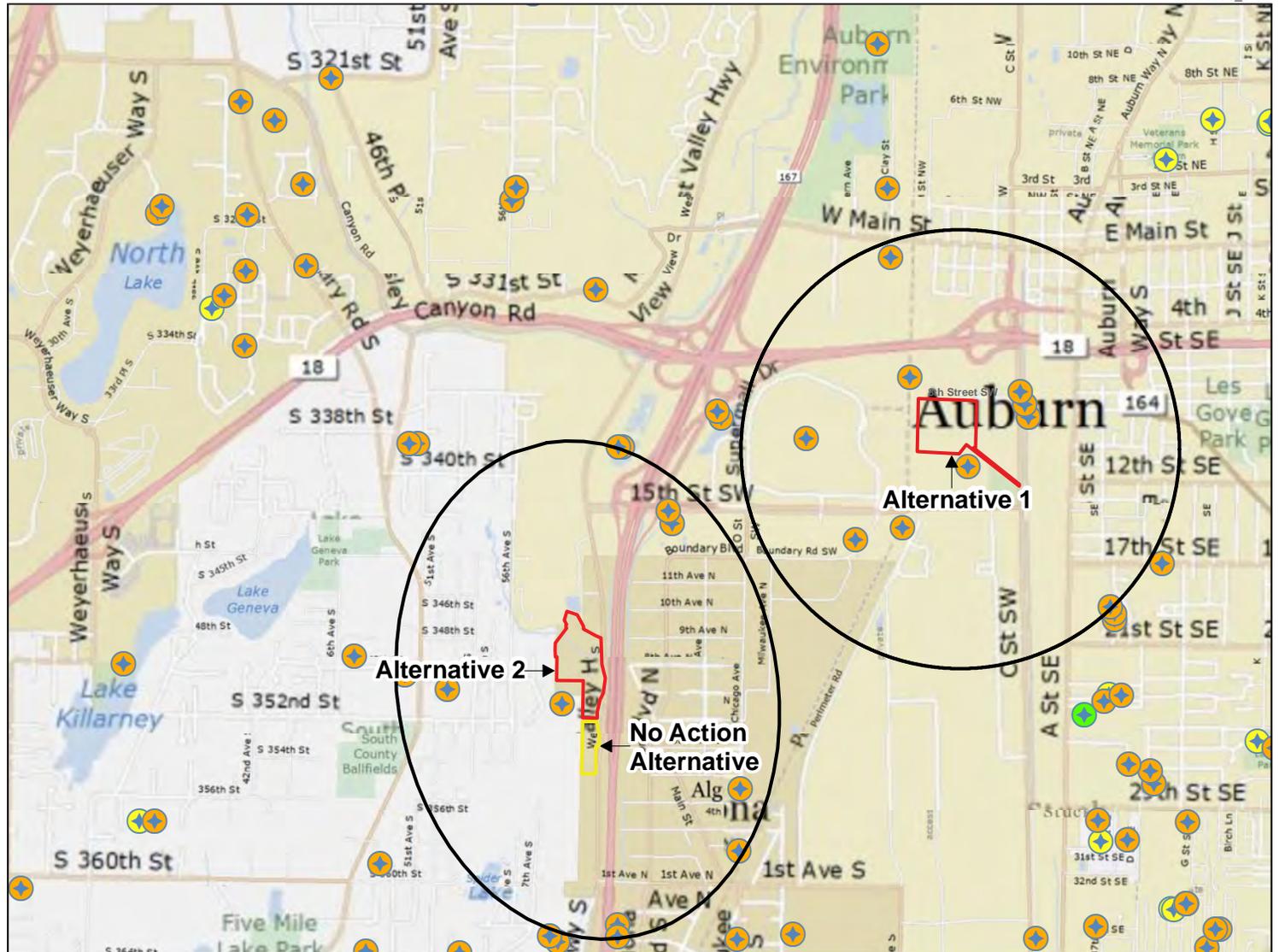
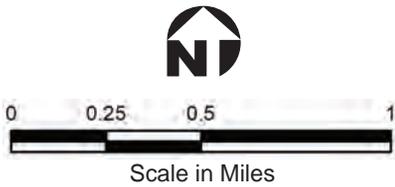
The site is approximately 1.6 miles south from the Mill Creek floodplain.

Stormwater and Water Quality

The existing Algona Transfer Station site is approximately 4.4 acres. Approximately 2.3 acres of the site is vegetated to the west, southwest and northwest. A total of about 2.1 acres or 47 percent of the site currently consists of impervious surfaces. Impervious surfaces on the site include structures, asphalt and compacted gravel.

Stormwater runoff is the only source of water runoff at the existing Algona Transfer Station. Runoff is collected on-site in catch basins and conveyed in a pipe system to an underground detention tank. The flow is discharged from the tank to downstream pipes and catch basins before crossing in a culvert under West Valley Highway South where it outfalls to the vegetated area sloping down to the wetland and jurisdictional ditch on the west side of State Route 167. Runoff from the paved area where full transfer trailers are parked drains to the sanitary sewer.

- Legend
-  Group A wells
 -  Group B wells
 -  Private wells
 -  Action alternatives
 -  No action alternative
 -  Approximate half-mile alternative study area boundary



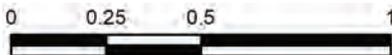
Water System Locations Data Source:
 Washington State Department of Health
 Date: 7/11/2013

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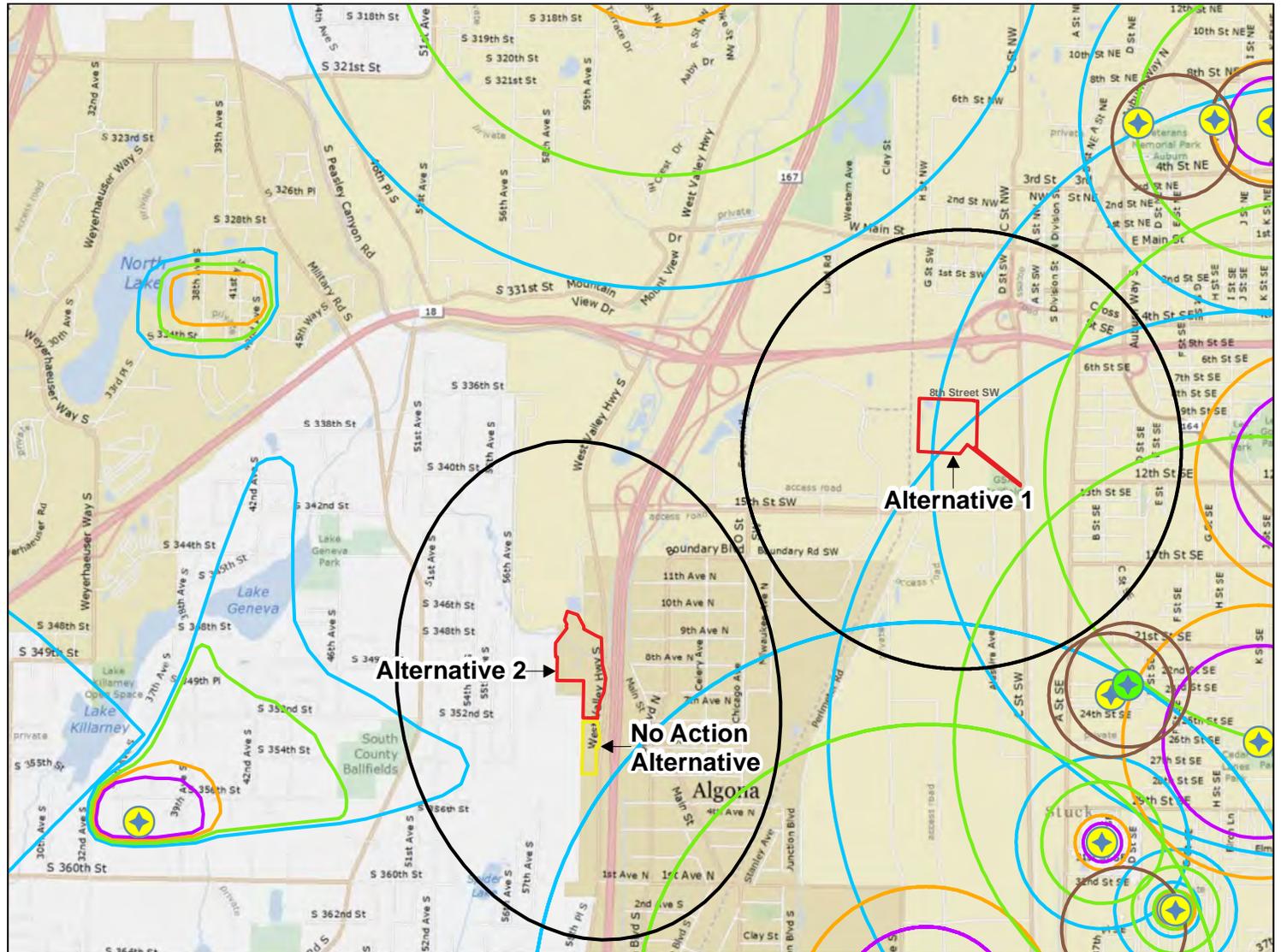
Figure 3.3-1
Water System Locations

Legend

-  Group A wells
-  Group B wells
-  Group A wells
6 mo time-of-travel
-  Group A wells
1 yr time-of-travel
-  Group A wells
5 yr time-of-travel
-  Group A wells
10 yr time-of-travel
-  Group B wells
default WHPP
-  Action alternatives
-  No action alternative
-  Approximate half-mile
alternative study area
boundary



Scale in Miles

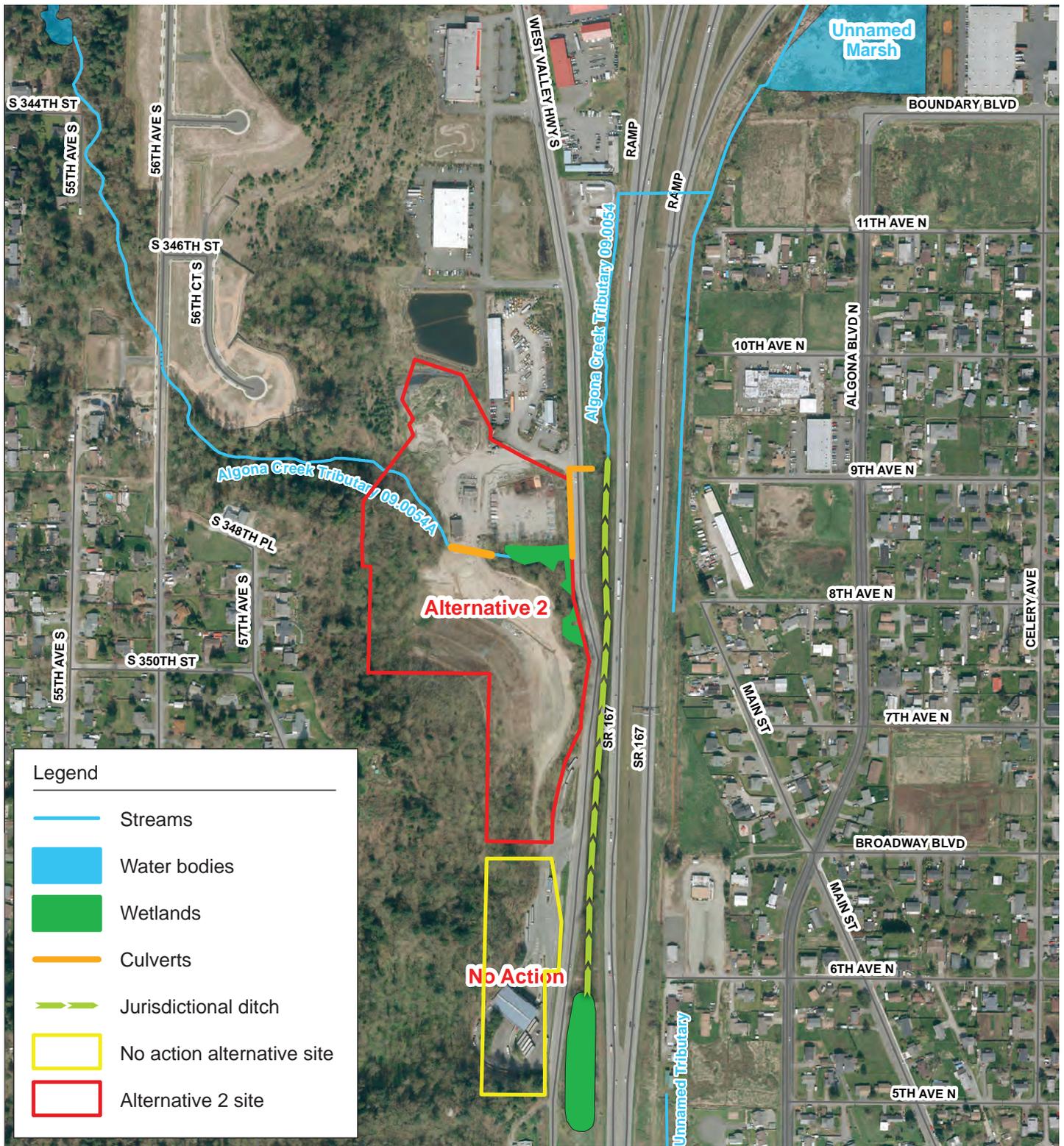


Wellhead Protection Data Source:
Washington State Department of Health

Date: 6/25/2013

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Figure 3.3-2
Wellhead Protection Areas



Data Source: King County GIS

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Figure 3.3-3
No Action and Alternative 2 Site Streams

Surface water management at the transfer station has been upgraded to meet the requirements of King County's Phase I Municipal Stormwater Permit and the transfer station operates under the Stormwater Pollution Prevention Plan and *King County Solid Waste Division and Transfer Facilities* (King County 2012a). The nearest waterbody identified as impaired on Ecology's 303(d) list is a Mill Creek segment, roughly 1.3 miles northwest of the site (Ecology 2012b).

3.3.2.2 Alternative 1

Groundwater

No borings or test pits have been identified at the Alternative 1 site (Ecology 2015). The closest available subsurface information is for properties in the general project vicinity. Based on test pits excavated for a planned warehouse on the adjacent property to the north (Earth Consultants 1997) groundwater seepage was typically encountered between 3 and 6 feet bgs, though no actual groundwater level was noted in the test pit logs. From logs of six borings drilled for a proposed Wendy's Restaurant approximately 0.25-mile to the southwest (Mayes Testing Engineers 1999), the groundwater table was between 8.5 feet and 15 feet bgs. Seasonal groundwater level fluctuations in this upper unconfined aquifer can range up to 10 feet (Luzier 1969).

The Alternative 1 site would be located outside SCA boundaries for both Group A and Group B area wells (DOH 2010). There are private wells but no Group A or Group B wells within 0.5-mile of the Alternative 1 site (Figure 3.3-1). The Alternative 1 site would fall within designated Group A WHPAs for the 10-year time-of-travel (Figure 3.3-2).

Chemicals released in the past from the Auburn Boeing Plant may have contaminated the groundwater underlying the Alternative 1 site in the intermediate and deep zones 40 to 100 feet below ground surface. Contaminants detected in the groundwater at this location are below concentration levels for public drinking water (see Section 3.8, Hazardous Materials). The site may require additional subsurface testing of the soils and groundwater due to chemicals released by the Auburn Boeing Plant.

The City of Auburn established groundwater protection areas to protect aquifer sources of drinking water as described in the *Water Resource Protection Report* (Pacific Groundwater Group 2000). Based on WHPAs designations, the Alternative 1 site falls within Groundwater Protection Zone 3 per the Auburn Municipal Code Chapter 16.10, because the site overlies the region between the 5-year and 10-year time-of-travel zone of wells owned by the City of Auburn (Figure 3.3-2). Zone 3 prohibits hazardous waste treatment, storage and disposal or recycling facilities that accept, store or use hazardous materials (City of Auburn 2015a).

King County identifies potential areas of concern for critical aquifer recharge, known as "areas susceptible to groundwater contamination." Alternative 1 is within the high groundwater contamination area (King County 2015d).

Streams

The site is located in WRIA 10 in the Puyallup-White River Basin. No streams have been identified within 0.5-mile of the Alternative 1 site. An unnamed tributary originates

approximately 0.6-mile south of the Alternative 1 site (Figure 3.3-4). When water is present seasonally, it likely flows south to Puyallup-White River.

Observations were made in winter/spring 2013 and October 2015 from the 8th Street SW public right-of-way, the Interurban Trail, the parking area near the Regal Auburn Stadium 17 at the eastern end of the Outlet Collection Seattle, and from aerial photography. A wetland and a stormwater pond are located in the northwest corner of the site but no discharges have been observed. A depressional area vegetated primarily with reed canarygrass (*Phalaris arundinacea*) was identified adjacent to the western property boundary of the Alternative 1 site. It is not known if stormwater discharges from the site to this depression. The remainder of the site is flat and consists of dry uplands comprised of fill material.

Floodplains

The Alternative 1 site is approximately 0.5-mile west from the mapped FEMA floodplain and the City of Auburn Flood Hazard Areas that drain to Mill Creek (Figure 3.3-4). Mill Creek is approximately 0.75-mile west of the Alternative 1 site.

Stormwater and Water Quality

The site for Alternative 1 is approximately 18.7 acres. A stormwater pond and wetland conservation easement located in the northwest corner of the site cover about 2 acres. A total of about 16.4 acres or 88 percent of the site currently consists of impervious surfaces. Impervious surfaces on the site are likely compacted gravel, including a private gravel roadway on the eastern side that connects with 8th Street SW to the north.

The site is relatively flat and topography indicates that surface water drains to the west. There is an existing stormwater pond in the northwest corner of the site, which is assumed to capture most of the surface water from the site (Figure 3.3-5). An open storm channel, a ditch, flows north between the western site boundary and the Union Pacific Railroad. It is unknown if surface water from the site outfalls to the ditch, but the length of this ditch and its minimal gradient provide additional opportunities for detention and retention of stormwater discharge.

The *City of Auburn Comprehensive Drainage Plan* (Brown and Caldwell 2011) identifies drainage basins, priorities for drainage basin improvements, high-priority drainage problems within the city, priorities for drainage infrastructure and risk-based priorities for storm drainage pipes, and recommendation projects for addressing drainage issues. This drainage report does not describe any specific drainage issues in the immediate vicinity of the Alternative 1 site. The report does indicate off-site flow is likely directed to a stormwater detention site about 700 feet to the north, near State Route 18, and/or to an area on Old West Main Street near State Route 167, which is described as having flooding issues.

The nearest waterbody identified as impaired on Ecology's 303(d) list is a segment of Mill Creek, roughly 1.5 miles northwest of the Alternative 1 site in a separate drainage basin (Ecology 2012b).



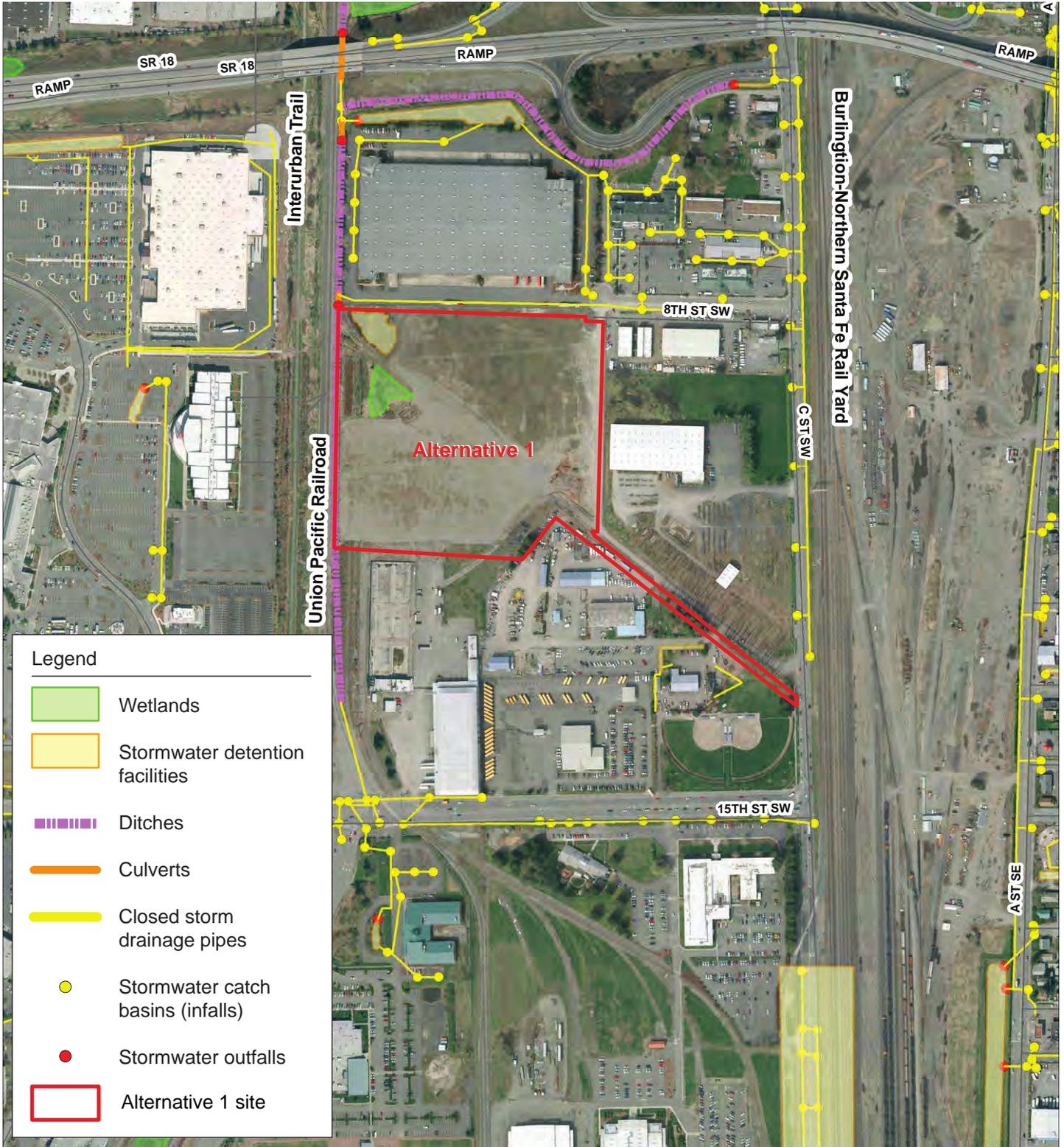
Alternative 1 Streams and Floodplains
Data Source: King County GIS

Date: 7/17/2013



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Figure 3.3-4
Alternative 1
Site Streams and Floodplains



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Alternative 1 Stormwater
Data Source: King County GIS
Date: 7/22/2013



Figure 3.3-5
**Alternative 1
Site Stormwater**

3.3.2.3 Alternative 2

Groundwater

No borings or test pits have been identified at the Alternative 2 site (Ecology 2015). Hong Consulting Engineers, Inc. performed a geotechnical study at the existing Algona Transfer Station south of the Alternative 2 site in 1988 and borings encountered groundwater at depths ranging from about 7 to 17 feet below ground surface (bgs) (ABKJ 1997). Subsurface information was identified from six borings drilled along West Valley Highway South near 15th Street SW and groundwater depth ranged from 3 to 10 feet bgs (Landau Associates 2003).

Heavy seepage has been identified coming out of a hillside slope near the eastern boundary of the Alternative 2 site at West Valley Highway South. Though the western boundary of the Alternative 2 site is higher in elevation than West Valley Highway South, significant perched groundwater is anticipated to underlie the site at the interface of the upper Qpfc deposits and underlying finer Qpon nonglacial deposits.

The direction of groundwater flow is anticipated to be east from the site to the valley Qal aquifer. Once groundwater reaches the Qal aquifer in the valley, it is anticipated to generally flow in the northern direction (Luzier 1969).

The Alternative 2 site would be located outside SCA boundaries for both Group A and Group B area wells and would not fall within designated Group A WHPAs (DOH 2010) (Figure 3.3-2). There are no Group A or Group B wells within 0.5-mile of the Alternative 2 site, but there is a private well located to the southwest (Figure 3.3-1) (King County 2015d).

Chemicals released in the past from the Auburn Boeing Plant are approximately 0.3 mile east of the Alternative 2 site and State Route 167 near the intersection of Algona Boulevard N and 11th Avenue N. The plume is migrating to the northwest and groundwater flow and data do not indicate that contamination in groundwater reaches the West Valley Highway South area adjacent to the Alternative 2 site.⁴

The City of Algona addresses the issue of critical aquifer recharge areas in the Algona Municipal Code Chapter 16.18, Critical Areas. Critical aquifer recharge area designations include: wellhead protection areas in the 10-year time of groundwater travel, sole source aquifers, susceptible groundwater management areas, special protection areas, moderately or highly vulnerable aquifers recharge areas, or moderately or highly susceptible aquifers recharge areas (City of Algona 2015a).

King County identifies potential areas of concern for critical aquifer recharge, known as “areas susceptible to groundwater contamination.” The site is within an area with high susceptibility for groundwater contamination. The Alternative 2 site also lies adjacent to a critical aquifer recharge area which is located to the west on the steep bluffs (King County 2015d).

⁴ Robin Harrover, Hazardous Waste Specialist, Ecology, PDEIS scoping comment email, November 10, 2015.

Streams

The site is located in WRIA 9 in the Duwamish-Green River Basin. A mapped stream is located on the Alternative 2 site, flowing generally west-to-east and bisecting the site. This stream is known as Tributary 09.0054A (King County 1987) and comprises one of the headwater streams of Algona Creek (Figure 3.3-3). A second headwater stream is mapped as Tributary 09.0054 (Williams et al. 1975) and is located on the valley floor east of State Route 167 where it flows north. Tributary 09.0054A joins Tributary 09.0054 just east of the site via a culvert. Both channels are referred to as Algona Creek, a tributary to Mill Creek. A jurisdictional ditch flows north from a wetland adjacent to the existing Algona Transfer Station and connects to Tributary 09.0054 just east of the Alternative 2 site at the culvert.

Stream Type and Riparian Buffer

Streams are addressed in the Algona Municipal Code Chapter 16.18, Critical Areas under riparian habitat areas (Chapter 16.18C.040). Riparian habitat areas are defined as habitats that include aquatic and terrestrial ecosystems that mutually benefit each other and that are located adjacent to rivers, perennial or intermittent streams, seeps, and springs. Tributary 09/0054A (which flows through Wetland A) is a Type 3 water defined as a perennial or fish-bearing stream that is less than 5 feet wide and requires a 150-foot buffer.

Floodplains

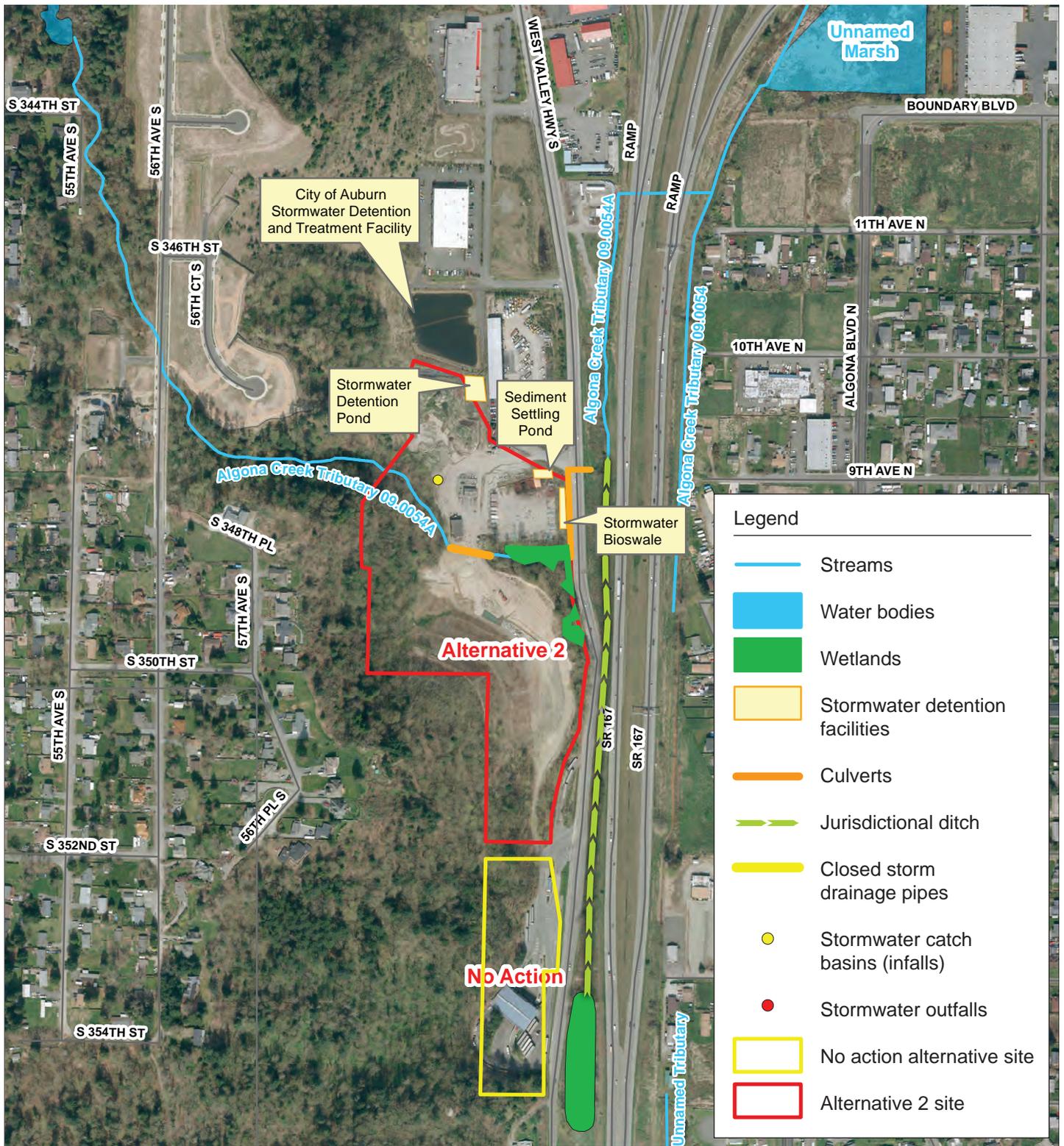
Alternative 2 is not located in a mapped floodplain. The closest FEMA floodplain is approximately 0.25-mile or more northeast of the site associated with marshes and Mill Creek.

Stormwater and Water Quality

The site for Alternative 2 consists of approximately 18.9 acres. Compacted dirt and gravel surfaces cover a large portion of the site from current and past land uses. A total of about 4.7 acres or 25 percent of the site currently consists of impervious surfaces. Impervious surfaces are primarily gravel roads and packed earthen materials. Other areas have been cleared of native vegetation but contain herbaceous plants or weeds, or are vegetated with mature mostly native plants.

The site features steep hill slopes on the bluff to the west and southwest (and near West Valley Highway South to the southeast), causing surface water and stormwater to generally drain west-to-east. The site topography has been manipulated substantially during the previous gravel mining operations on the site, which ceased in 2012, and natural drainage patterns have been disrupted. The stormwater system appears to have been installed and utilized as part of the recent gravel mining activity.

Stormwater is captured in several places on the Alternative 2 site (Figure 3.3-6). At the north central property boundary there is a small stormwater pond, divided into two cells. Although no outlet is visible, information received from a previous property owner indicates that the pond's outlet flows by pipe to the north. A small sediment settling pond is located near the property boundary in the northeast portion of the site.



0 500 1,000 Feet



Data Source: King County GIS

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Figure 3.3-6
Alternative 2
Site Stormwater

A bio-filtration swale lies parallel to West Valley Highway South along the eastern property boundary in the northeastern portion of the site. When its capacity is reached excess water is pumped upslope to a depression gravel area in the middle of the site, south of Tributary 09.0054A. This depressed ponding area overflows to a 12-inch diameter pipe and the stormwater is conveyed to the north to a catch-basin located near the northwest corner of the current landscaping business office. The conveyance continues in a northeasterly direction from this catch basin, and discharges to the two-celled pond.

There is a short shallow ditch on the south side of Iowa Drive (along the north property line) which enters a culvert and flows to a catch basin located near the southwest corner of the intersection of West Valley Highway South and Iowa Drive.

This catch basin is the point where Algona Creek Tributary 09.0054A, flowing from the south in a 30-inch diameter culvert, turns easterly and crosses under West Valley Highway South in a culvert.

The nearest waterbody identified as impaired on Ecology's 303(d) list, is Mill Creek approximately 1-mile northwest of the site (Ecology 2012b). Tributary 09.0054A is located within the Alternative 2 site. Water quality data is not available for this stream. Since it is not identified as impaired on Ecology's 303(d) list, it is either not monitored or does not exceed state water quality standards.

3.3.3 Environment Impacts

3.3.3.1 Direct Impacts

No Action Alternative

Construction

No construction activities are anticipated for the No Action Alternative.

Operation

Under the No Action Alternative, the division would continue to operate the existing Algona Transfer Station.

Groundwater

Groundwater recharge quality could be affected by potential pollutants associated with spills and leaks at the existing transfer station that are released to soil, surface water, or stormwater. The *Hazardous Materials Emergency Response Plan* in the *Algona Transfer and Recycling Station Operating Plan* (King County 2010a) addresses spill containment and cleanup procedures. Though spills and leaks are possible, leaks would likely be local and minimal. No groundwater impacts are anticipated.

Streams

No streams have been identified at the existing Algona Transfer Station. The jurisdictional ditch on the east side of West Valley Highway South would not be affected. Erosion would be minimized by implementing BMPs, and it would not leave the site nor drain to Wetland C.

Floodplains

The site is approximately 1.6 miles south from the Mill Creek FEMA floodplain. No floodplain impacts would occur due to the continued operation of the existing Algona Transfer Station.

Stormwater and Water Quality

The existing Algona Transfer Station would remain under the Stormwater Pollution Prevention Plan during continued operations and no water quality impacts are anticipated.

Alternative 1

Construction

Groundwater

Alternative 1 would comply with water source protection requirements and recommendations under EPA, DOH, King County Health Department, and other federal and state regulations.

The Alternative 1 site is relatively level and almost entirely stripped of topsoil and vegetation. Erosion would be controlled on-site by best management practices (BMPs) during construction, but runoff could occur. Potential impacts to groundwater from clearing and grading are none to negligible.

Heavy equipment would be utilized for site preparation and building construction. The Spill Prevention Control and Countermeasures plan and BMPs during construction would minimize potential spills or leaks that could affect groundwater quality. Groundwater impacts from spills or leaks would likely be local and negligible.

Dewatering may be needed for excavation of utility trenches, storm drainage systems, and building structures. If well points or other methods of dewatering are utilized, then the water table could be lowered temporarily in the immediate vicinity of the well points. Potential impacts to groundwater recharge would likely be local and minor.

The Alternative 1 site falls within Groundwater Protection Zone 3 per the Auburn Municipal Code Chapter 16.10 because the site overlies the region between the 5-year and 10-year time-of-travel zone of wells owned by the city. Zone 3 prohibits hazardous waste treatment, storage and disposal or recycling facilities that accept, store or use hazardous materials (City of Auburn 2015a). The division would work with Auburn to determine whether household hazardous waste (HHW) processing may be allowed at the new transfer station.

Streams

There are no streams on or immediately adjacent to the Alternative 1 site. An unnamed tributary originates approximately 0.6-mile south of the Alternative 1 site. No impacts to streams from construction of the transfer station are anticipated.

Floodplains

The Alternative 1 site is approximately 0.5-mile west from the mapped FEMA floodplain and the City of Auburn Flood Hazard Areas that drain to Mill Creek. No impacts to floodplains from construction of the transfer station are anticipated.

Stormwater and Water Quality

There could be temporary affects to water quality from runoff and erosion during construction clearing and grading and development of the site. A NPDES Construction Stormwater General Permit would be required and would include a Temporary Erosion and Sediment Control plan and BMPs that would be implemented in accordance with the Stormwater Pollution Prevention Plan. There is also potential for leaks and spills from heavy equipment but a Spill Prevention Control and Countermeasures plan would be developed to minimize these risks. Negligible stormwater or water quality impacts are anticipated during construction.

A total of about 16.4 acres or 88 percent of the site currently consists of impervious surfaces. Impervious surfaces on the site would range between an estimated 5 and 6 acres and would replace existing impervious surfaces mostly in the central portion of the site. Pervious areas on the site would be designed to maximize infiltration, if possible. A new stormwater management system with flow control and water quality treatment would be designed to meet Auburn's *Surface Water Management Manual* (2014) requirements. The stormwater system would be designed to minimize the potential effects from new pollution-generating impervious surfaces. It would be designed to incorporate existing stormwater facilities, where practicable, and to enhance the flood storage and water quality functions that the wetland provides. Treatment and detention of stormwater would be consistent with regional efforts to protect and improve water quality and salmonid habitat conditions in the surface waters downstream of the site.

Operation

Groundwater

Alternative 1 would comply with water source protection requirements and recommendations under EPA, DOH, King County Health Department, and other federal and state regulations.

Private wells are located within 0.5-mile to the east, south, and northeast of the Alternative 1 site (Figure 3.3-1). The site is also located within the wellhead protection areas under the 10-year time-of-travel for two City of Auburn Group A wells located approximately 0.75-mile to the southeast (Figure 3.3-2). Since groundwater flow direction from the Alternative 1 site is anticipated to be northerly and known wells are not within the near vicinity, no impacts from operation are anticipated to private wells or water systems.

Streams

There are no streams on or immediately adjacent to the Alternative 1 site. An unnamed tributary originates approximately 0.6-mile south of the Alternative 1 site. No impacts to streams from operation of the transfer station are anticipated.

Floodplains

The Alternative 1 site is approximately 0.5-mile west from the mapped FEMA floodplain and the City of Auburn Flood Hazard Areas. No impacts to floodplains from operation of the transfer station are anticipated.

Stormwater and Water Quality

The facility's design and operation will be reviewed by Ecology for compliance with the NPDES. The transfer station would operate under either King County's Phase I Municipal Stormwater Permit, which regulates discharges to larger municipal separate storm sewer systems, or Ecology's Industrial Stormwater General Permit, a statewide permit that applies to facilities conducting industrial activities that discharge stormwater to a surface waterbody or to a storm sewer system. These permits are administered by Ecology as part of the NPDES. Requirements would meet or exceed the requirements in the City of Auburn's Phase II Municipal Stormwater Permit. It is anticipated that stormwater management would improve relative to existing conditions.

Decommissioning and Deconstruction

It is anticipated that decommissioning, and possible deconstruction, of the existing Algona Transfer Station would occur after a new transfer station is constructed and operating. Deconstruction would occur in the developed portion of the existing Algona Transfer Station site and streams would not be affected. The jurisdictional ditch on the east side of West Valley Highway South would not be affected. Erosion and sedimentation would be minimized by implementing BMPs and would not leave the site or drain into the jurisdictional ditch. The stormwater system would remain in place to handle site runoff. No water resource impacts are anticipated during decommissioning and deconstruction of the existing Algona Transfer Station.

Alternative 2

Construction

Groundwater

Alternative 2 would comply with water source protection requirements and recommendations under EPA, DOH, King County Health Department, and other federal and state regulations.

The Alternative 2 site contains steep slopes to the west and southwest and near West Valley Highway South to the southeast. Minor erosion could occur as a result of vegetation clearing and ground disturbance during construction. Erosion would be controlled on-site by BMPs during construction, but runoff could occur. Potential impacts to groundwater from clearing and grading are none to negligible.

Heavy equipment would be utilized for site preparation and building construction. The Spill Prevention Control and Countermeasures plan and BMPs during construction would minimize potential spills or leaks that could affect groundwater quality. The potential for groundwater impacts from spills or leaks is low and would be negligible.

Dewatering may be needed for excavation of utility trenches, storm drainage systems and building structures. If well points or other methods of dewatering are utilized, then the water table could be lowered and the quantity to the local groundwater system reduced temporarily. Potential impacts to groundwater recharge would likely be local and minor.

Since the Alternative 2 site is located in an area with high susceptibility to groundwater contamination per King County GIS (King County 2015d), a critical areas report would likely be required as described in Algona Municipal Code Chapter 16.18D.050. The code states that activities may only be permitted in a critical aquifer recharge area if the proposed activity will not cause contaminants to enter the aquifer and that it will not adversely affect the recharging of the aquifer (City of Algona 2015a).

Development of the site would result in impervious surfaces on more than 5 percent of the site and surface waters would be diverted or altered. A level two assessment would likely be required and this is described under mitigation.

Effects to Algona Creek Tributary 09.0054A and wetlands on-site could impact local groundwater recharge at the site. Groundwater recharge impacts are anticipated to be temporary and minor.

Streams

The site would be designed to avoid stream impacts to the extent practicable. This is described further under mitigation. Due to the topography at the site, the majority of the transfer station would likely be located on the northeast portion of the site where Algona Creek Tributary 09.0054A and its 150-foot buffer are located. A portion of Tributary 09.0054A within the site development area would likely either be placed in a larger culvert or relocated. The existing culvert would be widened or replaced to comply with regulatory requirements and allow for fish passage.

There may be a potential loss of open channel habitat of an unknown length of stream channel. This portion of Tributary 09.0054A is located in a previously disturbed area with impervious surfaces and is of poor habitat quality. If a segment of the stream is relocated or realigned, it would be designed to provide improved habitat features that could include the use of streambed gravel appropriate for fish, stream-bank stabilization, or installation of large woody debris and/or other habitat features. Existing wetland and stream vegetation would be cleared to the minimum necessary to accommodate the transfer station. Impacts to Tributary 09.0054A during construction would be moderate and after mitigation may be enhanced; overall impacts are anticipated to be negligible to minor.

Floodplain

The closest FEMA floodplain is approximately 0.25-mile or more northeast of the site associated with marshes and Mill Creek. There would be no impacts to floodplains during construction.

Stormwater and Water Quality

There could be temporary affects to water quality from runoff and erosion during construction clearing and grading and development of the site. BMPs would be implemented to protect Algona Creek Tributary 09.0054A from stormwater discharges and to minimize runoff and erosion from steep slopes. A NPDES Construction Stormwater General Permit would be required and would include a Temporary Erosion and Sediment Control plan and BMPs that would be implemented in accordance with the Stormwater Pollution Prevention Plan. There is also potential for leaks and spills from heavy equipment but a Spill Prevention Control and Countermeasures plan would be developed to minimize these risks. Minor stormwater or water quality impacts are anticipated during construction.

A total of about 4.7 acres or 25 percent of the site currently consists of impervious surfaces. Proposed impervious surfaces on the site would range between an estimated 5 and 6 acres and would replace existing impervious surfaces mostly on the northeast portion of the site. A new stormwater management system with flow control and water quality treatment would be designed to meet Ecology's *Stormwater Management Manual for Western Washington* (2012a) requirements. The stormwater system would be designed to minimize the potential affects from new pollution-generating impervious surfaces. It would be designed to incorporate existing stormwater facilities, where practicable, and to protect functions of Tributary 09.0054A and its buffer. The design of stormwater facilities would be limited by the steep slopes and the stream on-site.

Since Algona Creek is over 3 miles from the impaired portion of Mill Creek, no potential water quality impacts are anticipated to Mill Creek during construction.

Operation

Groundwater

Alternative 2 would comply with water source protection requirements and recommendations under EPA, DOH, King County Health Department, and other federal and state regulations.

A private well is located within 1,200 feet to the southeast of the Alternative 2 site. The site is located outside wellhead protection areas under the 10-year time-of-travel for Group A wells located approximately 1.5 miles to the southeast (Figure 3.3-2). Since groundwater flow direction from the Alternative 2 site is anticipated to be northerly and known wells are not within the near vicinity, no impacts are anticipated to private wells or water systems during operation.

Streams

It is anticipated that Algona Tributary 09.0054A would be enhanced after mitigation at the Alternative 2 site. The stormwater system would be designed to minimize potential affects to Tributary 09.0054A and its buffer. Potential impacts to Tributary 09.0054A would be negligible to minor during operation of the SCRTS.

Floodplain

The closest FEMA floodplain is approximately 0.25-mile or more northeast of the site associated with marshes and Mill Creek. There would be no impacts to floodplains during operation.

Stormwater and Water Quality

The facility's design and operation will be reviewed by Ecology for compliance with the NPDES. The transfer station would operate under either King County's Phase I Municipal Stormwater Permit, which regulates discharges to larger municipal separate storm sewer systems, or Ecology's Industrial Stormwater General Permit, a statewide permit that applies to facilities conducting industrial activities that discharge stormwater to a surface waterbody or to a storm sewer system. It is anticipated that stormwater management would improve relative to existing conditions.

Since Algona Creek is over 3 miles from the impaired portion of Mill Creek, no potential water quality impacts are anticipated to Mill Creek during operation.

Decommissioning and Deconstruction

The impacts associated with the decommissioning and possible deconstruction of the existing Algona Transfer Station described above for Alternative 1 would also apply to Alternative 2.

West Valley Highway South Frontage and Overlay Improvements

Short-term, temporary dewatering may be needed for widening and realignment of West Valley Highway South adjacent to the Alternative 2 site and related storm drainage systems. Changes to groundwater recharge would be temporary and localized.

Algona Creek Tributary 09.0054A runs in a culvert on the west side of West Valley Highway South in the area of the road frontage improvements. Work could involve relocation of sections of the stream and its crossing under West Valley Highway South. There is a jurisdictional ditch between West Valley Highway South and State Route 167 that carries flow to Algona Creek Tributary 09.0054 that would not be affected (Figure 3.3-3). Stream impacts from road frontage improvements are anticipated to be temporary and minor. There would be no impacts to floodplains.

Stormwater runoff from the impervious travel lanes, shoulders and sidewalk is the only source of water runoff anticipated. West Valley Highway South frontage improvements would also add approximately 20,000 square feet of impervious surfaces. The road frontage improvements would be designed to meet Ecology's *Stormwater Management Manual for Western Washington* (2012a) requirements. No stormwater or water quality impacts are anticipated.

No water resource impacts are anticipated from pavement overlays on West Valley Highway South.

3.3.3.2 Indirect and Cumulative Impacts

No Action Alternative

Indirect Impacts

Since there are no changes to existing operations, no indirect impacts on water resources are anticipated.

Cumulative Impacts

No cumulative impacts to water resources are anticipated.

Alternative 1

Indirect Impacts

No indirect impacts on water resources are anticipated.

Cumulative Impacts

The area surrounding the Alternative 1 site is already developed with existing commercial and industrial uses. There are no anticipated reasonably foreseeable future projects in the vicinity that contain water resources. No cumulative impacts to water resources are anticipated.

Alternative 2

Indirect Impacts

There may be indirect impacts to Algona Creek and other downstream surface water bodies from the potential relocation or realignment of a segment of Tributary 09.0054A. These indirect impacts will be considered in project design and in mitigation for critical areas.

Cumulative Impacts

The area surrounding the Alternative 2 site is largely developed with existing commercial uses and heavily used West Valley Highway South and State Route 167. There are no reasonably foreseeable future projects in the vicinity. No cumulative impacts to water resources are anticipated.

3.3.4 Mitigation Measures

3.3.4.1 No Action Alternative

No mitigation measures are required.

3.3.4.2 Alternative 1

Design

Low Impact Development (LID) features and Leadership in Energy and Environmental Design (LEED) design criteria will be considered and implemented, if appropriate, to reduce the amount of runoff entering the stormwater system and may include:

- Rooftop rainwater harvesting
- Pervious pavement on driveways or walking surfaces
- Engineered rain gardens
- Bio-infiltration swales

Construction and Operation

Alternative 1 will comply with measures for a Groundwater Protection Zone 3 and prepare a mitigation plan per the Auburn Municipal Code Chapter 16.10 (City of Auburn 2015a). If the underlying soils and groundwater are found to have significant contamination on the site, additional mitigation measures may be required during construction for handling and disposal of excavated spoils and groundwater from dewatering.

Construction activities that impact water quality will comply with requirements in the NPDES Construction Stormwater General Permit issued by Ecology. A new stormwater management system with flow control and water quality treatment will be designed to meet Auburn's *Surface Water Management Manual* (City of Auburn 2014).

BMPs to minimize effects to water resources during construction and operation may include:

- Preserving existing vegetation to the extent practicable
- Stabilizing exposed soils with a vegetative cover or other erosion control treatment
- Erosion control from the use of mulch, silt barriers, containment systems, interim stormwater controls, and cover measures (straw or plastic)
- Re-vegetating areas disturbed by construction activities with native vegetation
- Landscaping to control erosion once construction is complete
- Preventing oil, fuels, or chemicals from being discharged to surface waters

3.3.4.3 Alternative 2

Design

Opportunities to improve stream habitat conditions or otherwise mitigate for impacts to streams would be explored during site design. At a minimum, the existing on-site culvert could be replaced with a structure meeting current environmental requirements. If the stream is relocated or re-aligned, it would be designed with appropriate habitat features that could include the use of streambed gravel suitable for fish, stream-bank stabilization, or installation of large woody debris and/or other habitat features.

Construction and Operation

A level two assessment would likely be required for critical aquifer recharge areas per Chapter 16.18D of the Algona Municipal Code. The level two assessment must include: historic water quality data, a groundwater monitoring plan, effects of the proposal on groundwater quality and quantity, a spill plan, and requirements for a level one hydrogeological assessment (City of Algona 2015a).

Construction activities that impact water quality will comply with requirements in the NPDES Construction Stormwater General Permit issued by Ecology. A new stormwater management system with flow control and water quality treatment will be designed to meet Ecology's *Stormwater Management Manual for Western Washington* (2012a) requirements. BMPs, LID, and LEED design described for Alternative 1 would also apply to Alternative 2.

BMPs that will minimize erosion on the steep slopes at the Alternative 2 site may include:

- Identifying and delineating steep slopes and clearing limits
- Drilling bores near the toe of the existing slope to assess extent of vulnerability to seismic shaking effects
- Installing steel cable fencing or catchment walls along toe of bluff, if appropriate, to catch any debris
- Installing a wall made of soldier piles and lagging or drilled piles if warranted by geotechnical analysis and location of facilities
- Conducting earthwork during dry months of the year as much as practical
- Installing silt fencing, straw bales, check dams or similar sediment containment facilities prior to demolition and site work
- Using matting or mulch to control erosion of exposed soils
- Requiring the construction contractor to minimize the extent of soils exposed at any given time

3.3.5 Significant Unavoidable Adverse Impacts

3.3.5.1 No Action Alternative

No significant unavoidable adverse impacts to water resources are anticipated.

3.3.5.2 Alternative 1

No significant unavoidable adverse impacts to water resources are anticipated.

3.3.5.3 Alternative 2

No significant unavoidable adverse impacts to water resources are anticipated.

3.4 Vegetation and Wetlands

This section of the Environmental Impact Statement describes the existing vegetation and wetlands, and potential impacts that could occur from the No Action Alternative and Alternatives 1 and 2.

3.4.1 Federal, State and Local Regulations

Vegetation and wetlands are regulated by a combination of federal, state and local regulations. The regulations described below could potentially apply and will be reviewed for compliance. Additional details may be incorporated during design of the transfer station and the permitting approval process. Wetland rating forms for the alternative sites are provided in Appendix A.

3.4.1.1 Federal

At the federal level under Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers regulates the placement of dredged or fill material in “waters of the United States,” which are generally known as streams and wetlands. The U.S. Fish and Wildlife Service (USFWS) regulates threatened and endangered plants and designates critical habitat areas under the Endangered Species Act (ESA).

3.4.1.2 State

Section 401 of the CWA directs each state to certify that proposed in-water activities (including activities in wetlands) do not adversely affect state water-quality laws. Washington State Department of Ecology (Ecology) administers the Section 401 Water Quality Certification program. The Natural Area Preserves Act (Chapter 79.70 Revised Code of Washington (RCW)) established the Washington Natural Heritage Program within the Washington State Department of Natural Resources to manage site-specific vegetation and species/ecosystem-specific information on priority species and ecosystems that are rare or have very limited distribution.

The project must also comply with the Washington State noxious weed law (Chapter 17-10 RCW, Chapter 16-750 Washington Administrative Code (WAC)). The King County Noxious Weed Control Board administers the Washington State noxious weed law in King County. Each year, the Board adopts the King County Noxious Weed List, which specifies which noxious weeds property owners are required to control in the County. The County weed list includes additional species that landowners are not required to control but for which control is recommended.

3.4.1.3 Local

City and county critical areas codes that are established under the Washington State Growth Management Act regulate activities that may impact critical or environmentally sensitive resources, such as wetlands or vegetation. The local regulations may vary, but critical areas codes generally specify buffer widths for critical areas, identify those activities requiring permits, and indicate mitigation ratios for impacts to these resources. Buffers can vary widely and are determined in local codes to provide an additional measure of protection for resources.

The No Action Alternative and the Alternative 2 sites are located in the City of Algona. Activities that have the potential to impact wetlands or vegetation at those sites would be regulated according to Algona Municipal Code Chapter 16.18, Critical Areas, Chapter 15.22 Grading and Filling of Land, and Chapter 13.46, Stormwater Management Regulations and Requirements.

The Alternative 1 site is located in the City of Auburn. Activities that have the potential to impact wetlands or vegetation at the site would be regulated according to Auburn Municipal Code Chapter 16.10, Critical Areas and Chapter 15.74, Land Clearing, Filling and Grading.

3.4.2 Affected Environment

3.4.2.1 No Action Alternative

Vegetation

The No Action Alternative site consists of the existing transfer station and a narrow portion of greenbelt habitat that extends offsite to the west, southwest, and northwest. The developed portion of the site is fully paved and built-out. The undeveloped portion of the site steeply rises immediately from the edge of the developed area into an extensive mixed deciduous-conifer forest greenbelt. The forested greenbelt is dominated by black cottonwood (*Populus balsamifera*), big-leaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), western red cedar (*Thuja plicata*), and red elderberry (*Sambucus racemosa*). The urban greenbelt is mapped by WDFW as a Priority Habitat Biodiversity Area and Corridor (Figure 3.4-1) (WDFW 2015a) and recognized in the King County Comprehensive Plan Open Space System 2012 Map (King County 2012b).

To the east of the No Action Alternative site is West Valley Highway South, State Route 167, and commercial and retail properties. These areas contain shrubby habitats dominated by Himalayan blackberry (*Rubus armeniacus*) and non-native grasses and weeds.

Wetlands

A review of the existing national and King County wetland inventories did not indicate the presence of wetlands on the site (King County 2015d; USFWS 2015a). No indicators of potential wetlands (e.g., ponded surface water or wetland vegetation) have been observed during winter/spring 2013 and September 2015 site visits within the existing Algona Transfer Station property. Wetland C is near the existing Algona Transfer Station on the east side of West Valley Highway South (Figure 3.4-2). See Alternative 2, Wetlands (Section 3.4.2.3) for more information.

3.4.2.2 Alternative 1

Vegetation

The Alternative 1 site is relatively flat and the ground surface is a combination of asphalt, gravel and compacted soil (Figure 3.4-3).



Sources: Google Earth Pro, imagery date: 7/5/2012; and WDFW 2015

Figure 3.4-1

No Action and Alternative 2 Site Priority Habitat Biodiversity Area and Corridor

Prepared for King County by URS Corporation Consultants

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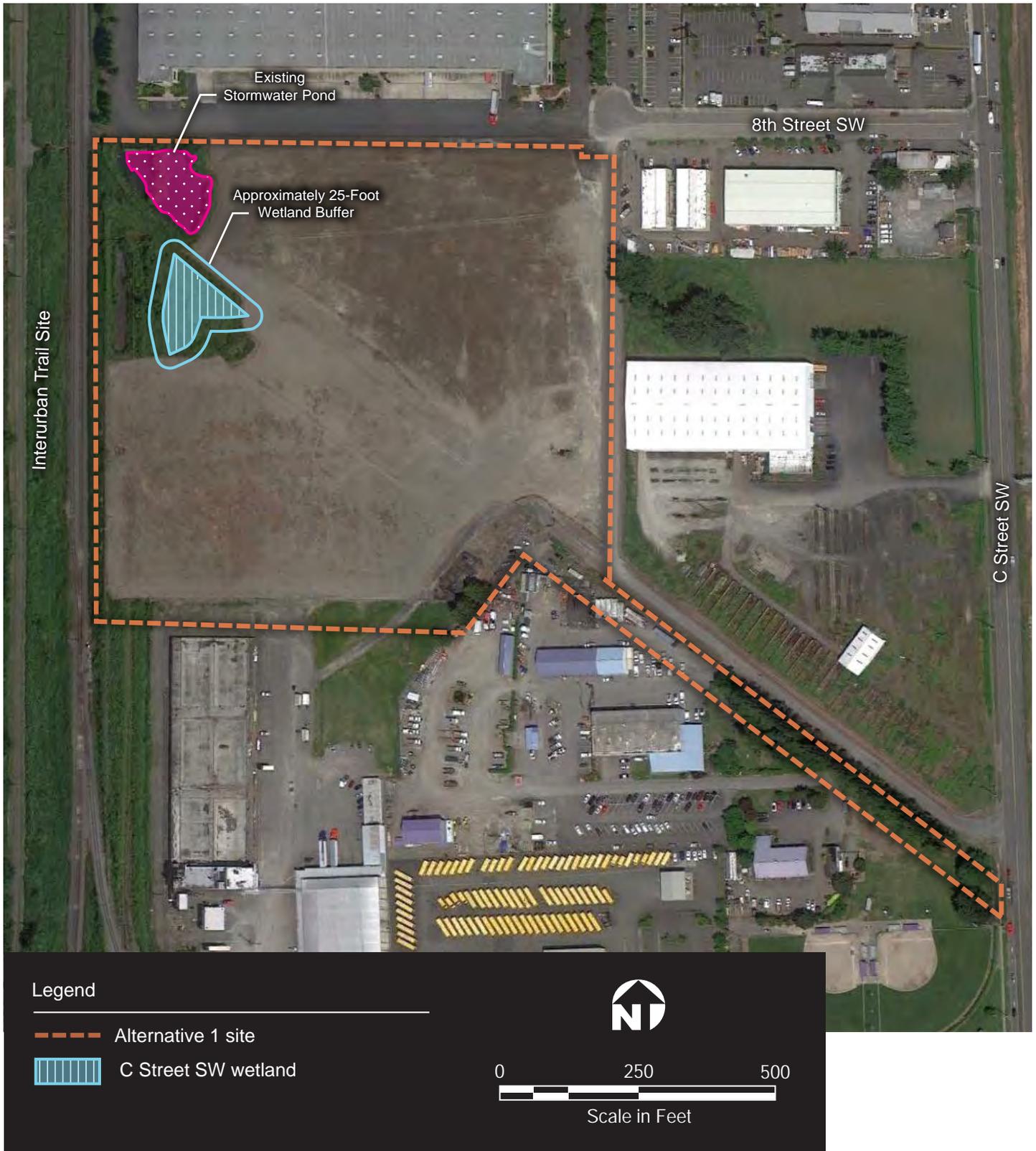


Source: Google Earth Pro, imagery date: 5/4/2013

Prepared for King County by URS Corporation Consultants

Figure 3.4-2
No Action and Alternative 2 Wetlands

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Source: Google Earth Pro, imagery date: 7/5/2012

Figure 3.4-3
Alternative 1 Site Wetlands

Prepared for King County by URS Corporation Consultants

The C Street SW Wetland and a stormwater pond are located at the northwest corner of the site where vegetation includes reed canarygrass (*Phalaris arundinacea*), willow species (*Salix* spp.), cattail (*Typha latifolia*), red alder, salmonberry (*Rubus spectabilis*), and red osier dogwood (*Cornus sericea*). Whitebark pine (*Pinus albicaulis*) is the only candidate plant species eligible for protection under ESA that occurs in King County (50 CFR 17.11 and 17.12). Whitebark pine was not observed on the site during field visits and is more common at higher elevations in King County (USFWS 2011).

Wetlands

The C Street SW Wetland is approximately 0.35 acre and is located on the northwest portion of the Alternative 1 site (Figure 3.4-3). The National Wetland Inventory shows a small Palustrine Emergent (PEM) wetland in approximately the same location as the wetland. No other wetland features are shown on-site (USFWS 2015b).

Observations of the wetland in winter/spring 2013 and October 2015 were made from the 8th Street SW public right-of-way, the Interurban Trail, the parking area near Regal Auburn Stadium 17 at the eastern end of the Outlet Collection Seattle, and from aerial photography.

The wetland was rated using the *Washington State Wetland Rating System for Western Washington* (Ecology 2014b). Because the rating system groups a range of scores into the same wetland category, the wetland category can be estimated without being able to answer every question. The rating system is not intended to substitute for a full assessment of wetland function, but a general characterization of the level of wetland function can be made using the rating system. The rating system generates individual scores for water quality, hydrologic, and habitat function. Those scores are added together to determine the category of the wetland.

The C Street SW Wetland appears to be Category IV (Appendix A). It rates moderate (six points) for water quality function, moderate (six points) for hydrologic function, and low (three points) for habitat function. Category IV wetlands contain low levels of function.

Table 3.4-1 provides a summary of the C Street SW Wetland on the Alternative 1 site. The wetland would likely require a 25-foot buffer per the Auburn Municipal Code Chapter 16.10 Critical Areas (City of Auburn 2015a). The approximate size of the wetland was determined from Auburn Geographic Information Systems data and aerial photography analysis.

**Table 3.4-1
Summary of Wetland on Alternative 1 Site**

Wetland Name	Wetland Rating	Wetland Buffer	HGM Classification ¹	Cowardin Classification ²	Approximate Size
C Street SW Wetland	IV	25 feet	Depressional	PEM, PSS	0.35-acre

Notes:

¹Hydrogeomorphic approach to assessing wetland functions.

²A hierarchical classification system developed for coastal and inland wetlands.

3.4.2.3 Alternative 2

Vegetation

The Alternative 2 site contains both native and invasive vegetation species in upland and wetland areas. Some noxious weeds on the site are recommended for control by the King County Noxious Weed Board, but none of the weeds identified require control under state law. No rare or endangered plants or ecosystems have been identified on the site. Whitebark pine has not been identified on the site.

Upland Vegetation

The upland vegetation varies throughout the site. Along the riparian corridor of Algona Creek (at the northwestern portion of the site), the riparian vegetation consists of primarily native trees and shrubs, with some invasive Himalayan blackberry. The tree canopy coverage in these areas is between 50 to 75 percent. The dominant trees in the riparian corridor are big leaf maple, red alder, western red cedar, black cottonwood, and Douglas fir (*Pseudotsuga menziesii*).

Outside the riparian corridor to the south of Wetland B and adjacent to West Valley Highway South, similar native trees and shrubs, with some Himalayan blackberry exist. On the northern side of the property, the vegetation grows on stockpiled fill material and consists primarily of weeds and groundcover. Vegetation identified on the King County non-regulated noxious weed list grows in these areas of fill, including knotweed (*Polygonum* spp.) and scotch broom (*Cytisus scoparius*).

The naturally steep slopes on the west side of the property are covered primarily by shrubs and trees, similar to the species found in the riparian corridor. The artificially compacted steep slopes are covered with an erosion-control grass mix.

There are vegetated stormwater facilities on the northern side of the property and on the eastern side adjacent to West Valley Highway South. Cattail and sedges (*Carex* spp.) grow in the stormwater ponds. Table 3.4-2 lists vegetation species identified on the site in upland areas.

**Table 3.4-2
Upland Vegetation on Alternative 2 Site**

Species	Dominant Species	Species Type
Trees		
Big leaf maple (<i>Acer macrophyllum</i>)	Yes	Native
Red alder (<i>Alnus rubra</i>)	Yes	Native
Birches (<i>Betula</i> spp.)	No	Native or Non-Native ¹
Black cottonwood (<i>Populus balsamifera</i>)	Yes	Native
Douglas fir (<i>Pseudotsuga menziesii</i>)	Yes	Native
Western red cedar (<i>Thuja plicata</i>)	Yes	Native
Western hemlock (<i>Tsuga heterophylla</i>)	No	Native
Shrubs		
Red osier dogwood (<i>Cornus sericea</i>)	No	Native
Indian plum (<i>Oemleria cerasiformis</i>)	Yes	Native
Knotweeds (<i>Polygonum</i> spp.)	No	Non-Regulated Noxious Weed ²

**Table 3.4-2 (Continued)
Upland Vegetation on Alternative 2 Site**

Species	Dominant Species	Species Type
Himalayan blackberry (<i>Rubus armeniacus</i>)	Yes	Non-Regulated Noxious Weed
Salmonberry (<i>Rubus spectabilis</i>)	Yes	Native
Willows (<i>Salix</i> spp.)	No	Native
Herbs/Groundcover		
Butterfly bush (<i>Buddleja</i> spp.)	No	Non-native
Morning glory (<i>Calystegia sepium</i>)	No	King County Weed of Concern
Slough sedge (<i>Carex obnupta</i>)	No	Native
Thistles (<i>Cirsium</i> spp.)	No	Non-Regulated Noxious Weed
Scotch broom (<i>Cytisus scoparius</i>)	No	Non-Regulated Noxious Weed
Giant horsetail (<i>Equisetum telmateia</i>)	Yes	Native
Reed canarygrass (<i>Phalaris arundinacea</i>)	No	Non-Regulated Noxious Weed
Common plantain (<i>Plantago major</i>)	No	Non-native
Sword fern (<i>Polystichum munitum</i>)	Yes	Native
Creeping buttercup (<i>Ranunculus repens</i>)	No	King County Weed of Concern
Red elderberry (<i>Sambucus racemosa</i> var. <i>pubens</i>)	No	Native
Common tansy (<i>Tanacetum vulgare</i>)	No	Non-Regulated Noxious Weed
Fringecup (<i>Tellima grandiflora</i>)	No	Native
Cattail (<i>Typha latifolia</i>)	No	Native
Stinging nettle (<i>Urtica dioica</i>)	Yes	Native

Notes:

¹ It was not possible to determine exactly which species of birch was present at the time of site visits, as the tree was without the leaves.

² Control of Bohemian, Japanese, giant and Himalayan knotweed is required per the King County Noxious Weed Control Board in aquatic area buffers on the Green River and its tributaries upstream of the Auburn City Limits. This requirement to control knotweed is contingent upon the noxious weed program or program partners providing knotweed control services in the selected area for affected private landowners who request assistance

Wetland Vegetation

Two wetlands exist on the site, as described below under the Wetland section (Figure 3.4-2). The vegetation within these wetlands is one indicator of a wetlands existence. Types of wetland vegetation can be classified into five indicator groups according to the plant's affinity for wetland areas (Reed 1988):

- Obligate Wetland (OBL) Species: occur almost always (estimated probability greater than 99 percent) under natural conditions in wetlands.
- Facultative Wetland (FACW) Species: usually occur in wetlands (estimated probability 67 to 99 percent), but occasionally found in non-wetlands.
- Facultative (FAC) Species: equally likely to occur in wetlands and non-wetlands (estimated probability 34 to 66 percent).
- Facultative Upland (FACU) Species: usually occur in non-wetlands (estimated probability 67 to 99 percent), but occasionally found in wetlands (estimated probability 1 to 33 percent).

- Obligate Upland (UPL) Species: occur in wetlands in another region, but occur almost always (estimated probability less than 99 percent) under natural conditions in non-wetlands in the region specified.

Aerial photography on Figure 3.4-2 depicts the general location of vegetation on the Alternative 2 site. Table 3.3-3 and Table 3.4-4 show the vegetation species that have been identified in Wetlands A and B and the indicator group or wetland indicator status of each species. Wetland A.

Wetland A is approximately 0.28 acre and contains a combination of scrub-shrub and forested vegetation classes. The tree canopy coverage (dominated by red alder) is estimated to be approximately 60 percent. Big leaf maples and western red cedars provide additional canopy coverage to the wetland; however, they are rooted outside the wetland and not included in Table 3.4-3.

**Table 3.4-3
Vegetation in Wetland A on Alternative 2 Site**

Common Name (Scientific Name)	Dominant Species	Wetland Indicator Status	Species Type
Trees			
Red alder (<i>Alnus rubra</i>)	Yes	FAC	Native
Shrubs			
Red osier dogwood (<i>Cornus sericea</i>)	No	FACW	Native
Reed canarygrass (<i>Phalaris arundinacea</i>)	No	FACW	Non-Regulated Noxious Weed
Salmonberry (<i>Rubus spectabilis</i>)	Yes	FAC	Native
Trailing blackberry (<i>Rubus ursinus</i>)	No	FACU	Native
Herbs/Groundcover			
Lady fern (<i>Athyrium filix-femina</i>)	No	FAC	Native
Giant horsetail (<i>Equisetum telmateia</i>)	No	FACW	Native
Sword fern (<i>Polystichum munitum</i>)	No	FACU	Native
Small-fruited bulrush (<i>Scirpus microcarpus</i>)	No	OBL	Native
Piggy-back plant (<i>Tolmiea menziesii</i>)	No	FAC	Native

Wetland B

Wetland B is approximately 0.10 acre and contains a combination of scrub-shrub and emergent vegetation classes. Big leaf maples provide approximately 50 percent canopy coverage to the wetland; however, they are rooted outside the wetland and not included in Table 3.4-4.

**Table 3.4-4
Vegetation in Wetland B on Alternative 2 Site**

Species	Dominant Species	Wetland Indicator Status	Species Type
Shrubs			
Indian plum (<i>Oemleria cerasiformis</i>)	No	FACU	Native
Salmonberry (<i>Rubus spectabilis</i>)	Yes	FAC	Native
Trailing blackberry (<i>Rubus ursinus</i>)	No	FACU	Native
Salix willow (<i>Salix sitchensis</i>)	No	FACW	Native
Herbs/Groundcover			
Giant horsetail (<i>Equisetum telmateia</i>)	Yes	FACW	Native
Reed canarygrass (<i>Phalaris arundinacea</i>)	No	FACW	Non-Regulated Noxious Weed
Stinging nettle (<i>Urtica dioica</i>)	Yes	FAC	Native

Wetlands

Two wetlands were identified at the Alternative 2 site by the King County Department of Transportation’s Roads Services staff in winter/spring 2013. A follow-up visual assessment of the wetlands was performed in September 2015 and found that conditions had not changed. The visual assessment verified that the wetland vegetation, hydrology and soil indicators noted in 2013 were still present. Wetland A is associated with Algona Creek Tributary 09.0054A and Wetland B is located in a depression adjacent to West Valley Highway South. Wetland C was identified near the existing Algona Transfer Station during the September 2015 field visit. See Figure 3.4-2 for the locations of wetlands.

The wetlands were rated using the guidance in the *Washington State Wetland Rating System for Western Washington* (Ecology 2014b). Alternative 1, Wetlands provides a general overview of the rating system. Wetlands A and B are summarized in Table 3.4-5 and shown in Figure 3.4-2.

The Algona Municipal Code, Chapter 16.18B Wetlands, requires buffers that are based on the category of the wetland and the habitat score of between three and nine per the *Washington State Wetland Rating System for Western Washington* (Ecology 2014b). Wetland buffer widths range from 40 feet for category IV wetlands to 225 feet for Category I wetlands with eight to nine habitat points.

Wetland A, as a Class III would be required to have a 165-foot buffer and Wetland B would be required to have a 105-foot buffer. A description of the Wetland A and B ratings and their buffers are provided below.

**Table 3.4-5
Summary of Wetlands on Alternative 2 Site**

Wetland Name	Wetland Rating	Wetland Buffer	HGM Classification ¹	Cowardin Classification ²	Approximate Size
Wetland A	III	165 feet	Riverine or Depressional	PFO, PSS	0.28-acre
Wetland B	III	105 feet	Depressional	PEM, PSS	0.10-acre

Notes:

¹Hydrogeomorphic approach to assessing wetland functions.

²A hierarchical classification system developed for coastal and inland wetlands.

Wetland A

Wetland A is an approximately 0.28-acre Category III depressional/riverine wetland (Appendix A). Wetlands that are a combination of depressional and riverine are rated as depressional. Wetland A rates moderate for water quality function (seven points) because it has the opportunity to improve water quality by filtering Algona Creek, which drains residential areas and untreated stormwater discharged to the wetland. The wetland rates moderate for hydrologic function (six points) because it is small (0.28-acre) when compared to the overall Algona Creek basin (about 100 acres), has an inlet and outlet, and does not have a lot of potential to attenuate flood waters. It rates moderate for habitat function (six points) because of its buffer area and disturbed connections to other vegetated corridors. Because the wetland scored six habitat points, a 165-foot buffer width is anticipated to be required (Algona Municipal Code 16.18B.040).

Wetland B

Wetland B is an approximately 0.10-acre Category III wetland and is classified as depressional (Appendix A). Wetland B rates moderate for water quality function (seven points) because it has the opportunity to improve untreated stormwater that discharges into this wetland. Wetland B rates moderate for hydrologic function (seven points) because it does not have the opportunity to reduce flooding and erosion. It is not a headwater wetland and does not appear to drain to a stream with flooding problems. It rates moderate for habitat function (five points) because it does not have vegetated buffers, connections to other vegetated areas, and the habitat complexity is limited. Because the wetland scored five habitat points, a 105-foot buffer width is anticipated to be required (Algona Municipal Code 16.18B.040).

Wetland C (Off-site Wetland)

A 0.98-acre wetland is located in a depression near the existing Algona Transfer Station. The wetland boundaries were estimated for purposes of rating the wetland (Appendix A). Wetland C appears to receive surface flow from a culvert under West Valley Highway South, as well as subsurface flow. Areas of deep ponding (up to 3 feet) were present at the time of the investigation. Organic soils were also present in the interior of the wetland. Water flows north from the wetland into a constructed ditch that eventually discharges into Algona Creek Tributary 09.0054. Wetland C is dominated by reed canarygrass, with significant patches of cattail.

Wetland C rates as a Category III wetland. Wetland C rates high (eight points) for water quality function, moderate (six points) for hydrologic function, and low (three points) for habitat function. Because the wetland scored three habitat points, a 60-foot buffer width is anticipated to be required (Algona Municipal Code 16.18B.040).

3.4.3 Environmental Impacts

3.4.3.1 Direct Impacts

No Action Alternative

Construction

No construction activities are anticipated for the No Action Alternative.

Operation

Under the No Action Alternative, normal operation and maintenance activities would continue in developed areas. No vegetation or wetland impacts would occur by the continued operation of the existing Algona Transfer Station.

Alternative 1

Construction

Vegetation

The Alternative 1 site is relatively flat and accessible from multiple points and development of the transfer station would likely be primarily sited in the central portion of the site. It is anticipated that vegetation within the C Street SW Wetland would be avoided. There is the potential that a portion of the vegetated wetland buffer may not be avoided during construction but impacts to vegetation would be minimized through mitigation. The remaining portion of the site has minimal to no vegetation and no impacts are anticipated. Construction-related impacts to the wetland vegetation are anticipated to be minor to none.

Wetlands

The C Street SW Wetland would be clearly marked and avoided during construction of the new transfer station. There is the potential that a portion of the wetland buffer may not be avoided during construction. Water quality and other impacts would be minimized through implementation of best management practices (BMPs). Construction-related impacts to the wetland are anticipated to be minor to none.

Operation

A new stormwater management system would be designed to meet the needs of the new transfer station and in compliance with Auburn's *Surface Water Management Manual* (2014) requirements. The stormwater design and management at the site is anticipated to minimize or eliminate impacts to the C Street SW Wetland. No impacts are anticipated to the wetland, its buffer, and associated vegetation due to operation of the transfer station.

Decommissioning and Deconstruction

It is anticipated that decommissioning, and possible deconstruction, of the existing Algona Transfer Station would occur after a new transfer station is constructed and operating. Deconstruction would occur in the developed portion of the existing Algona Transfer Station away from the greenbelt habitat to the south, west, and northwest. No wetlands have been observed during winter/spring 2013 and September 2015 site visits at the existing Algona Transfer Station. Wetland C on the east side of West Valley Highway South is within 50 feet of the site but would not be affected by deconstruction. Erosion would be minimized by implementing BMPs, and it would not leave the site nor drain to Wetland C. No vegetation or wetland impacts are anticipated.

Alternative 2

Construction

Vegetation

Development of the transfer station would likely be primarily sited in the northeast portion of the site due to steep topography on other portions of the site. Alternative 2 and West Valley Highway South frontage improvements are anticipated to remove or alter up to approximately 1.3-acres of wetland and stream vegetation from Wetlands A and B and Algona Creek Tributary 09.0054A. It is assumed that both wetlands would need to be permanently filled (0.38-acre) and that up to 600 linear feet of stream could be partially or fully filled and relocated or piped in addition to existing culverts. The types of wetland vegetation that may be removed or altered in Wetlands A and B and the non-piped riparian corridor of Algona Creek Tributary 09.0054A are shown in Tables 3.4-3 and 3.4-4.

Up to a total of approximately 1.3 acres of upland vegetation may be disturbed or removed by the project primarily south of Wetland B for site and road frontage improvements. Vegetation may also be disturbed or removed, to a lesser extent, on the northern side of the property outside the riparian areas. The types of upland vegetation that may be removed or altered south of Wetland B and adjacent to West Valley Highway South and on the northern side of the property are shown in Table 3.4-2.

Clearing limits will be implemented outside the potential site development area to minimize wetland and stream vegetation clearing. Impacts to vegetation could be permanent and minor to moderate.

Construction would likely involve the export of material with non-regulated or regulated noxious weeds. Any material with these species would need to be hauled off-site and disposed of appropriately according to the King County Noxious Weed Control Program.

Wetlands

It is assumed that all of Wetland A would need to be permanently filled (0.28-acre) to accommodate the transfer station. Construction-related activities including clearing, grading, and filling could also result in permanent filling of all of Wetland B (0.10-acre). Wetlands filled

during construction would be mitigated in accordance with federal, state and local regulations. Because Wetlands A and B have moderate function and value it is anticipated that mitigation would be an improvement over existing conditions. Measures to compensate for wetland and buffer impacts will be implemented and are described under mitigation.

Operation

A new stormwater management system would be designed for the new transfer station and in compliance with Ecology's *Stormwater Management Manual for Western Washington* (2012a). The stormwater design and management at the site is anticipated to minimize impacts to any vegetation and wetlands remaining on-site. No impacts are anticipated to the wetlands, buffers, and associated vegetation due to operation of the transfer station.

Decommissioning and Deconstruction

Decommissioning and possible deconstruction impacts described above for Alternative 1 would also apply to Alternative 2.

West Valley Highway South Frontage and Overlay Improvements

Work would also occur within Wetlands A and B and their buffers due to the clearing, grading and straightening the curve in West Valley Highway South. Wetlands filled during construction would be mitigated in accordance with federal, state and local regulations. Because Wetlands A and B have moderate function and value it is anticipated that mitigation would be an improvement over existing conditions. Measures to compensate for wetland and buffer impacts will be implemented and are described under mitigation.

No vegetation or wetland impacts are anticipated from pavement overlays on West Valley Highway South.

3.4.3.2 Indirect and Cumulative Impacts

No Action Alternative

Indirect Impacts

The existing Algona Transfer Station does not offer separate collection of yard waste, but does accept yard waste as garbage. Indirect impacts to existing vegetation by continued operation of the transfer station could include the introduction of non-native plants from yard waste. The risk of non-native plants spreading from yard waste onto adjacent properties is not likely because yard waste is collected in a covered area and King County Code (10.12.040) and Washington State Law (RCW 46.61.655) requires that both self-haulers and commercial haulers secure and cover loads. Covering loads of yard waste minimizes the spread of non-native plants during transport.

Cumulative Impacts

No cumulative impacts to vegetation or wetlands are anticipated.

Alternative 1

Indirect Impacts

Indirect impacts to existing vegetation surrounding the transfer station could include the introduction of non-native plants from yard waste as described under the No Action Alternative.

Cumulative Impacts

The area surrounding the Alternative 1 site is already developed with existing commercial and industrial uses. There are no reasonably foreseeable future projects in the vicinity that contain substantial vegetation or wetlands. No cumulative impacts to vegetation or wetlands are anticipated.

Alternative 2

Indirect Impacts

Indirect impacts to existing vegetation surrounding the transfer station could include the introduction of non-native plants from yard waste as described under the No Action Alternative.

Effects to Wetlands A and B and their buffers are likely to occur and would require mitigation. If off-site wetland mitigation occurs, there may be indirect impacts to vegetation and hydrology at the mitigation site. Minor indirect impacts to Algona Creek and surrounding vegetation could occur but would be minimized through on-site mitigation.

Cumulative Impacts

The area surrounding the Alternative 2 site is largely developed with existing commercial uses and heavily used West Valley Highway South and State Route 167. There are no reasonably foreseeable future projects in the vicinity. No cumulative impacts to vegetation or wetlands are anticipated.

3.4.4 Mitigation Measures

3.4.4.1 No Action Alternative

No mitigation measures are required.

3.4.4.2 Alternative 1

The C Street SW Wetland and associated vegetation would be clearly marked and avoided during construction and operation of the new transfer station to minimize impacts. The wetland would likely require a 25-foot buffer per the Auburn Municipal Code Chapter 16.10 Critical Areas (City of Auburn 2015a). Potential impacts to the wetland buffer will comply with the code. Buffer width averaging may be allowed under several conditions, including if there are not adverse impacts to wetland functional values. The buffer width may be reduced by up to 35 percent if measures are taken to enhance or restore the buffer. The restoration or

enhancement may include planting of native trees or shrubs and increasing the diversity of plant cover types or replacement of exotic species with native species.

BMPs during construction will include a Temporary Erosion and Sediment Control plan, Stormwater Pollution Prevention Plan, and Spill Prevention, Control and Countermeasures plan. Utilizing BMPs for stormwater and erosion would minimize the potential for drainage and water quality impacts during construction. Clearing limits will be implemented outside the potential site development area. Planting plans will include native plants in landscaped areas and revegetation after construction. Revegetated areas will be maintained during operation.

3.4.4.3 Alternative 2

Potential wetland and buffer impacts and mitigation would be further refined during design and preparation of the critical areas report. The critical areas report would include identification and characterization of wetlands and other critical areas on-site and within 300 feet of the project, wetland ratings, impacts, and avoidance, minimization, and compensation mitigation (City of Algona 2015a).

Compensatory mitigation will be provided for wetland and buffer impacts that cannot be minimized or avoided per the Algona Municipal Code, Chapter 16.18B Wetlands (City of Algona 2015a). Mitigation for wetland impacts typically requires replacing wetland function and area at a higher ratio than the impact area.

The amount and type of compensatory mitigation required is defined by a combination of federal, state, and local codes. Mitigation for wetland impacts typically requires replacing wetland function and area at a higher ratio than the impacted area. The Category III wetland replacement ratios under the Algona Municipal Code are shown in Table 3.4-6. Ratios vary based on the type of mitigation. For example, creating replacement wetlands requires a lower ratio than enhancing an existing wetland.

**Table 3.4-6
Algona Municipal Code (16.18B) – Wetland Mitigation Ratios**

Wetland Class	Wetland Replacement Ratio		
	Creation or Reestablishment	Rehabilitation	Enhancement
Category III	2:1	4:1	8:1

Algona may allow buffer width averaging if additional resource protection and the total buffer area on-site remains the same. Algona specifies that replacement at a ratio of 1:1 is required when an approved project alters a buffer (City of Algona 2015a).

The mitigation ratio would be determined in coordination with Algona during the permitting process. The preference in-order of mitigation actions by Algona are 1) restoration of wetlands, 2) creation of wetlands on disturbed upland sites, 3) enhancement of significantly degraded wetlands in combination with restoration or creation, and 4) preservation of high quality wetlands (City of Algona 2015a). The mitigation report will include description of the

compensatory mitigation site and a description of the proposed actions for compensation of wetland and upland areas affected by development.

On-site wetland mitigation options are limited but the assumed on-site relocation of Algona Creek Tributary 09.0054A would provide a new source of hydrology that may be able to support the creation of an additional wetland area on the site. Detailed hydrologic analysis would have to be conducted in conjunction with the transfer station layout design, the critical areas report, and the compensatory mitigation report. Reasonable efforts would also be made to identify other potential wetland mitigation options within the City of Algona.

If wetland mitigation options on-site or within the Algona city boundary are not feasible, potential off-site locations in the same drainage sub-basin (Duwamish) would be reviewed. Some off-site mitigation options in the same drainage sub-basin include:

- Implementing one of the wetland and floodplain restoration projects identified in the *Green/Duwamish and Central Puget Sound Watershed Salmon Habitat Plan* (WRIA 9 Steering Committee 2005).
- Implementing one of the projects in the *Mill Creek Special Area Management Plan* (Mill Creek Interagency Committee 2000).

The County could also purchase in-lieu fee mitigation credits through the King County Mitigation Reserves Program. The Mitigation Reserves Program offers some permit applicants an option to purchase mitigation credits from King County to fully satisfy mitigation obligations associated with projects that result in unavoidable impacts to wetlands, rivers, streams or buffers. King County then uses collected mitigation fees to implement mitigation projects that make up for impacts to aquatic resources.

Utilizing BMPs for stormwater and erosion will minimize the potential for drainage and water quality impacts during construction. Clearing limits will be implemented outside the potential site development area. Planting plans will include native plants in landscaped areas and revegetation after construction. Revegetated areas will be maintained during operation.

3.4.4.4 Decommissioning and Deconstruction

Temporary erosion and sediment controls during possible deconstruction of the existing Algona Transfer Station will be followed to minimize or eliminate impacts to Wetland C.

3.4.5 Significant Unavoidable Adverse Impacts

3.4.5.1 No Action Alternative

No significant unavoidable adverse impacts to vegetation and wetlands are anticipated.

3.4.5.2 Alternative 1

No significant unavoidable adverse impacts to vegetation and wetlands are anticipated.

3.4.5.3 *Alternative 2*

Considering the current moderate function and value of Wetlands A and B, and with implementation of proposed mitigation, no significant unavoidable adverse impacts to vegetation and wetlands are anticipated.

3.5 Wildlife and Fish

This section of the Environmental Impact Statement describes the existing wildlife and fish habitats, including federal and/or state-listed and candidate species, and potential impacts that could occur from the No Action Alternative and Alternatives 1 and 2.

3.5.1 Federal, State and Local Regulations

Wildlife, fish, and their habitats are regulated by a combination of federal, state and local regulations. The regulations described below could potentially apply and will be reviewed for compliance. Additional details may be incorporated during design of the transfer station and the permitting approval process.

3.5.1.1 Federal

The U.S. Fish and Wildlife Service (USFWS) regulates species and habitats under the following regulations:

- Endangered Species Act (ESA) (Section 7 and Section 4(d); 50 CFR, Part 402)
- Migratory Bird Treaty Act (16 U.S.C. 703-712 and 50 C.F.R. 10.12-13)
- Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c and 50 CFR 10, 13, and 22.26)

The National Marine Fisheries Service (NMFS) regulates species and habitats under the following regulations:

- ESA (Section 7 and Section 4(d); 50 CFR, Part 402)
- Magnuson-Stevens Fishery and Conservation Act (as amended by the Sustainable Fisheries Act of 1996, Public Law 104-267)

The U.S. Army Corps of Engineers regulates the placement of dredged or fill material in “waters of the United States,” which are generally known as streams and wetlands under Section 404 of the Clean Water Act (CWA). Streams and wetlands provide habitat for wildlife and fish.

3.5.1.2 State

The Washington Department of Fish and Wildlife (WDFW) regulates species and habitats under Chapter 75.20 Revised Code of Washington (RCW) and Chapter 220-110 Washington Administrative Code (WAC). The Natural Area Preserves Act (Ch. 79.70 RCW) established the Washington Natural Heritage Program within the Washington State Department of Natural Resources to manage site-specific vegetation and species/ecosystem-specific information on priority species and ecosystems including those that are rare or have very limited distribution. The Washington State Department of Ecology (Ecology) regulates water quality, which provides habitat for wildlife and fish under the following:

- National Pollutant Discharge Elimination System (NPDES) – Construction Stormwater General Permit (CWA 90.48 RCW; Chapter 176-226 WAC)
- Section 401 of the CWA under the Water Quality Certification program

Washington State Solid Waste Handling Standards Chapter 173-350-310 WAC addresses vector wildlife that may be a nuisance (e.g., rodents, insects, gulls, pigeons, crows) and requires operators to demonstrate how waste will be managed to control vectors.

3.5.1.3 Local

The King County Solid Waste Code regulates vector wildlife that may be a nuisance through control of litter and municipal waste (King County Code 10.04.040 and 10.04.080).

City and county critical/environmentally sensitive area codes that are established under the Washington State Growth Management Act regulate activities that may impact wildlife, fish, and their habitats. The local regulations vary from jurisdiction -to-jurisdiction, but these codes generally specify buffer widths, which activities require permits, and indicate mitigation ratios for impacts to these resources.

The No Action Alternative and Alternative 2 sites are located in the City of Algona, and activities that have the potential to impact wildlife and fish or their habitat at those sites are regulated according to Algona Municipal Code Chapter 16.18, Critical Areas. The Alternative 1 site is located in the City of Auburn, and activities that have the potential to impact wildlife and fish or their habitat at the site is regulated according to Auburn Municipal Code Chapter 16.10, Critical Areas.

3.5.2 Affected Environment

3.5.2.1 No Action Alternative

Wildlife and Habitat

The existing Algona Transfer Station site is approximately 4.4 acres. The No Action Alternative site consists of the existing transfer station and a narrow portion of the immediately adjacent greenbelt habitat to the south, west, and northwest (Figure 3.5-1). Approximately 2.3 acres within the site is vegetated to the west, southwest and northwest. A total of about 2.1 acres or 47 percent of the site currently consists of impervious surfaces. The developed portion of the site was excavated into the base of steep slopes on the west edge of the historic floodplain. This portion of the site is fully paved and built-out. The undeveloped portion of the site steeply rises immediately from the edge of the developed area into an extensive mixed deciduous-conifer forest greenbelt. The forested greenbelt is dominated by black cottonwood (*Populus balsamifera*), big-leaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), western red cedar (*Thuja plicata*), and red elderberry (*Sambucus racemosa*).

Connectivity to other open space or wildlife habitat is limited eastward of the site due to West Valley Highway South, State Route 167, and commercial and retail properties. Areas east of the No Action Alternative site contain shrubby habitats dominated by Himalayan blackberry (*Rubus armeniacus*) and non-native grasses and weeds.



Source: Google Earth Pro, imagery date: 7/5/2012

Prepared for King County by URS Corporation Consultants

Figure 3.5-1

No Action Alternative Site

Limited wildlife habitat features are located at the No Action Alternative site. Wildlife species observed at the site during winter/spring 2013 field visits include European starling (*Sturnus vulgaris*), the house sparrow (*Passer domesticus*), and the American crow (*Corvus brachyrhynchos*).

An urban greenbelt, recognized in the King County Comprehensive Plan, runs along the steep forested slopes immediately west of and adjacent to the No Action Alternative site (King County 2012b). WDFW also maps this urban greenbelt as a Priority Habitat Biodiversity Area and Corridor (Figure 3.4-1) (WDFW 2015a). The forested greenbelt that extends onto the site is characterized as lowlands conifer-hardwood forest.

Vector wildlife that may be a nuisance (e.g. rodents, insects, gulls, pigeons, crows) is controlled at the existing Algona Transfer Station. Best management practices (BMPs) and operational procedures defined by regulatory codes and solid waste industry practices control nuisance wildlife.

Fish

No streams, wetlands or aquatic resources are located at the No Action Alternative site. No fish or fish habitat are present on-site.

The Mill Creek basin supports populations of chum (*Oncorhynchus keta*), coho (*Oncorhynchus kisutch*), cutthroat (*Oncorhynchus clarki*) and resident rainbow trout (*Oncorhynchus mykiss*) (WDFW 2015b). A jurisdictional ditch flows north to Algona Creek Tributary 09.0054 from a wetland connected to the existing Algona Transfer Station by a culvert. Tributary 09.0054 is located on the valley floor east of State Route 167 where it flows north. Algona Creek in turn is a tributary to Mill Creek. Mill Creek drains into the Green River at river mile 23.7 at the confluence. It is the first significant tributary of the Green River which provides unrestricted salmonid access. The next significant tributary is Soos Creek, which is 33 miles upstream from the confluence of Mill Creek and Green River.

Special Status Species

Table 3.5-1 shows federal- and/or state-listed and candidate wildlife and fish species that have the potential to occur near the No Action Alternative and Alternative 2 sites (USFWS 2015a). Chinook salmon (*Oncorhynchus tshawytscha*), winter steelhead (*Oncorhynchus mykiss*), and western pond turtle (*Actinemys marmorata*) may have suitable habitat near, but not on, the sites.

The Mill Creek basin described under the Fish section above also supports populations of Chinook salmon (*Oncorhynchus tshawytscha*) and winter steelhead (*Oncorhynchus mykiss*) (WDFW 2015b).

The western pond turtle requires relatively unaltered or undisturbed lakes and ponds as a major component of its habitat requirement. Western pond turtles were most recently identified in or near some King County urban lakes and waterways as recently as 1992 (Hays et al. 1999). They have limited suitable habitat in the vicinity of the site, however the very low

population potential in western Washington makes it unlikely for this species to occur at the No Action Alternative site.

**Table 3.5-1
Federal and State Listed and Candidate
Wildlife Species near the No Action Alternative and Alternative 2 Sites**

Common Name	Federal Status	State Status	Useable Habitat in the Project Vicinity	Potential to occur in the Project Vicinity
Chinook salmon, Puget Sound Distinct Population Segment (DPS)	Threatened	Species of Concern	Yes	Yes
Steelhead, Puget Sound DPS	Threatened	None	Yes	Yes
Pacific (Western) pond turtle	Species of Concern	Endangered	None	Limited

3.5.2.2 Alternative 1

Wildlife and Habitat

The Alternative 1 site is approximately 18.7 acres. The site is an undeveloped commercial and industrial lot graded flat, surfaced with compacted gravel and surrounded by a chain-link fence (Figure 3.5-2). A total of about 16.4 acres or 89 percent of the site currently consists of impervious surfaces. Grasses grow sporadically across the property. A wetland and a stormwater pond are located in the northwest corner of the site. The vegetation at the wetland and stormwater pond includes reed canarygrass (*Phalaris arundinacea*), willow species (*Salix* spp.), cattail (*Typha latifolia*), red alder, salmonberry (*Rubus spectabilis*), and red osier dogwood (*Cornus sericea*).

Commercial and industrial developments surround the Alternative 1 site, except along the western boundary and to the southeast. The Union Pacific Railroad and the paved recreational Interurban Trail are located adjacent to the western boundary. A narrow vegetated strip dominated by Himalayan blackberries and non-native weeds occupies the space along the railroad and trail. The GSA Park is located to the southeast and contains tree canopy along the south side of the shared driveway. Other limited greenspace available for wildlife in the surrounding landscape is comprised of mowed lawns and small landscaped spaces.

Wildlife observed at the Alternative 1 site during winter/spring 2013 field visits include American robin (*Turdus migratorius*), killdeer (*Charadrius vociferous*), American crow, dark-eyed junco (*Junco hyemalis*), white-crowned sparrow (*Zonotrichia leucophrys*), violet-green swallow (*Tachycineta thalassina*), mallard (*Anas platyrhynchos*), and Pacific treefrog (*Pseudacris regilla*).

The site has limited connectivity to other suitable wildlife habitat. Existing commercial and industrial spaces, road and railroad right-of-way, and the chain-link creates barriers for wildlife accessing and using the site.



Source: Google Earth Pro, imagery date: 7/5/2012

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Figure 3.5-2
Alternative 1 Site

Under the Auburn Municipal Code Chapter 16.10, Critical Areas, the site would be considered tertiary habitat since it does not support diverse wildlife communities and contains manmade water features.

Fish

The existing wetland and stormwater pond are located in the northwest corner of the site and it is unknown if fish species are present. The remainder of the site is flat and appears to consist of dry uplands with no fish habitat. No streams have been identified within 0.5-mile of the Alternative 1 site. There is an unnamed tributary present seasonally originating approximately 0.6-mile south of the Alternative 1 site which likely flows south to Puyallup-White River.

Special Status Species

The Puyallup-White River Basin supports Chinook salmon, winter steelhead, and bull trout (*Salvelinus confluentus*) (WDFW 2015b). Chinook salmon and winter steelhead are described in Table 3.5-1 under the No Action Alternative. Bull trout has a federal status of threatened and a state status of species of concern. These fish species do not have useable habitat nor are they likely to occur near the Alternative 1 site. The unnamed tributary 0.6-mile south of the Alternative 1 site likely flows south to Puyallup-White River.

3.5.2.3 Alternative 2

Wildlife and Habitat

The Alternative 2 site is approximately 18.9 acres and 25 percent of the site currently consists of impervious surfaces. The site was previously operated as a gravel quarry and processing facility. The quarry bottom is sparsely vegetated with herbaceous weed species and the quarry walls are vegetated with a variety of grasses and weeds. The remaining developed portion of the site is currently leased by King County to a landscaping supplier. Piles of topsoil, fill soil, pallets of landscape rock, a small office building, a garage, and driveway occupy the non-quarry developed section of the site.

The undeveloped portion of the Alternative 2 site steeply rises immediately from the edge of the developed area into an extensive forest to the south, west, and northwest (Figure 3.5-3). The forested greenbelt that extends onto the site is a lowlands conifer-hardwood forest. The forest is dominated by black cottonwood, big-leaf maple, red alder, western red cedar, and red elderberry. This urban greenbelt is mapped by WDFW as a Priority Habitat Biodiversity Area and Corridor (Figure 3.4-1) (WDFW 2015a) and recognized in the King County Comprehensive Plan Open Space System 2012 Map (King County 2012b).

Wildlife observed at the Alternative 2 site during winter/spring 2013 field visits include red-winged blackbird (*Agelaius phoeniceus*), American robin, violet-green swallow (*Tachycineta thalassina*), song sparrow (*Melospiza melodia*), American crow, Anna's hummingbird (*Calypte anna*), killdeer, red-tailed hawk (*Buteo jamaicensis*), bullfrog (*Rana catesbeiana*), and Pacific treefrog.



Source: Google Earth Pro, imagery date: 7/5/2012

Prepared for King County by URS Corporation Consultants

Figure 3.5-3

Alternative 2 Site

Wildlife also observed at the Alternative 2 site and in the wooded slopes immediately to the west during winter/spring 2013 field visits include glaucous-winged gull (*Larus glaucescens*), bufflehead (*Bucephala albeola*), mallard, black-capped chickadee (*Poecile atricapilla*), American goldfinch (*Carduelis tristis*), golden-crowned kinglet (*Regulus satrapa*), winter wren (*Troglodytes troglodytes*), Stellar's jay (*Cyanocitta stelleri*), common raven (*Corvus corax*), bushtit (*Psaltriparus minimus*), dark-eyed junco (*Junco hyemalis*), bald eagle (*Haliaeetus leucocephalus*), and brown creeper (*Certhia americana*).

There was evidence (e.g. nests, scat, and tracks) observed during winter/spring 2013 field visits of coyote (*Canis latrans*), black-tailed deer (*Odocoileus hemionus ssp. columbianus*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and marsh wren (*Cistothorus palustris*) on the wooded slopes immediately adjacent to the Alternative 2 site.

Riparian vegetation occurs in Wetland A associated with Algona Creek Tributary 09.0054A and Wetland B located in a depression adjacent to West Valley Highway South. Riparian areas are those where vegetation grows adjacent to sources of water and are thought to be hotspots of biological diversity. Although they occupy a small portion of the landscape, a higher proportion of plant and animal species occur at higher levels than in the surrounding uplands (Kauffman et al. 2001).

Commercial and retail businesses occupy the properties to the north, south, and east of the Alternative 2 site. The wildlife connectivity of this site is limited to the east because of the presence and use of West Valley Highway South and State Route 167. There is wildlife connectivity to the west in the large urban greenbelt immediately adjacent to and upslope of the Alternative 2 site.

The Algona Municipal Code Chapter 16.18C addresses wildlife habitat conservation areas which are described under mitigation measures in Section 3.5.4.

Fish

On the site Algona Creek Tributary 09.0054A flows west-to-east (Figure 3.3-3). A second headwater stream is mapped as Tributary 09.0054 (Williams et al. 1975) and is located on the valley floor east of State Route 167 where it flows north. Tributary 09.0054A joins Tributary 09.0054 just east of the site via a culvert. Both channels are referred to as Algona Creek, a tributary to Mill Creek.

No fish were observed on-site during field visits in winter/spring 2013 and September 2015, although Algona Creek Tributary 09.0054A and wetlands have the potential to support resident and anadromous fish. Fish habitat is currently limited due to the low number and low quality of pool habitats. A fish passage barrier (culvert) occurs in the central portion of the site. Fish access to Algona Creek from Mill Creek may also be currently blocked by one or more culverts, some of which may be fish-passage barriers. The closest documented occurrence of salmonids (Coho salmon) is approximately 4,000 feet downstream (WDFW 2015b).

The Algona Municipal Code Chapter 16.18C addresses fish habitat conservation areas which are described under mitigation measures in Section 3.5.4.

Special Status Species

The federal- and/or state-listed and candidate wildlife and fish species that have the potential to occur in near the No Action Alternative and Alternative 2 sites are shown in Table 3.5-1 and described under the No Action Alternative. Tributary 09.0054A runs through the Alternative 2 site and outlets into Algona Creek which in turn is a tributary to Mill Creek. Mill Creek drains into the Green River at river mile 23.7 at the confluence.

3.5.3 Environmental Impacts

3.5.3.1 Direct Impacts

No Action Alternative

Construction

No construction activities are anticipated for the No Action Alternative.

Operation

Under the No Action Alternative, the King County Solid Waste Division would continue to operate the existing Algona Transfer Station. The existing level of noise and other activities would continue to occur but are not anticipated to affect wildlife or fish. There is a minor amount of vector wildlife (e.g., rodents, insects, gulls, pigeons, crows) which occur at the existing Algona Transfer Station. BMPs and operational procedures described in the *Algona Transfer and Recycling Station Operating Plan (2010)* would continue to control vector wildlife. Wildlife would continue to actively use and pass between the No Action Alternative site and the WDFW Biodiversity Area and Corridor immediately west of the site. No impacts to wildlife or fish are anticipated.

Alternative 1

Construction

Construction is anticipated to last approximately 24 months. The Alternative 1 site contains scattered weeds and provides very limited wildlife habitat for cover, forage, and nesting opportunities. There are likely no fish present at this site. Development of the Alternative 1 site would minimize, to the extent practicable, clearing of vegetation in the wetland buffer on the site. Because habitat and wildlife use is limited, negligible impacts to wildlife and associated tertiary habitat are anticipated.

Construction noise would occur per the Auburn Municipal Code within the existing background noise levels at this location from traffic on State Route 18, C Street SW, 15th Street SW, and railroads. Short-term construction activities that produce noises such as equipment use, truck traffic, pile driving or steel riveting could cause temporary disturbance and/or dispersal of wildlife away from the site. Construction noises would be temporary and any wildlife on-site or nearby would have sufficient space to disperse. Negligible wildlife impacts are anticipated from construction noise.

There would be an increased risk for erosion and runoff and temporary affects to water quality during construction clearing and grading and development of the site. A NPDES Construction Stormwater General Permit would be required and would include a Temporary Erosion and Sedimentation Control plan and BMPs that would be implemented in accordance with the Stormwater Pollution Prevention Plan. These plans would include measures to control dust that could affect wildlife. There is also potential for leaks and spills from heavy equipment that could affect wildlife, but a Spill Prevention Control and Countermeasures plan would be developed to minimize these risks. Negligible wildlife and fish impacts are anticipated from erosion and runoff during construction.

Special status fish species do not have useable habitat nor are they likely to occur near the Alternative 1 site. The unnamed tributary 0.6-mile south of the Alternative 1 site would not be affected by the project. No impacts to special status species are anticipated.

Operation

Noise and activity levels from transfer station operations would likely be less than the existing background levels from heavy train traffic, freight delivery trucks, and adjacent commercial operations. There may be a small increase in vector wildlife at the Alternative 1 site during operation, but they would be controlled in a manner prescribed by transfer station operating plans and industry standard practices as required by the WAC and King County Code. No wildlife or fish impacts from operation are anticipated.

A new stormwater management system would be designed to meet the needs of the new transfer station and in compliance with Auburn's *Surface Water Management Manual* (2014). Stormwater treatment at the site is anticipated to minimize or eliminate impacts to the wetland and any associated wildlife habitat. No operational impacts to wildlife or fish are anticipated from stormwater runoff.

Decommissioning and Deconstruction

It is anticipated that decommissioning, and possible, deconstruction of the existing Algona Transfer Station would occur after a new transfer station is constructed and operating. Deconstruction would occur in the developed portion of the existing Algona Transfer Station, away from the greenbelt habitat to the south, west, and northwest. Short-term negligible impacts to wildlife could occur during deconstruction from equipment and truck noise but wildlife would have sufficient space to disperse into the neighboring wooded areas. Wetland C on the east side of West Valley Highway South would not be affected. Erosion and sedimentation would be minimized by implementing BMPs, and it would not leave the site nor drain to Wetland C.

Alternative 2

Construction

Construction of the SCRTS is anticipated to last approximately 24 months. Development of the Alternative 2 site would minimize, to the extent practicable, vegetation clearing on-site that

may provide habitat to wildlife. Up to a total of approximately 1.3 acres of upland vegetation may be disturbed or removed by the project primarily south of Wetland B for site and road frontage improvements. Any vegetation clearing would occur during the non-breeding season for birds.

Alternative 2 and West Valley Highway South frontage improvements could remove or alter up to approximately 1.3-acres of vegetation from Wetlands A and B and Algona Creek Tributary 09.0054A. A portion of Algona Creek Tributary 09.0054A within the site development area would likely either be placed in a larger culvert or relocated. The existing culvert would be widened or replaced with a more suitable and durable structure that would be fish-passable. There may be a potential loss of open channel habitat or an unknown length of stream channel. This portion of Tributary 09.0054A is located in a disturbed area with impervious surfaces and is of poor habitat quality. If the stream is relocated or realigned, it would be designed with improved habitat features that could include the use of streambed gravel appropriate for fish, stream-bank stabilization, or installation of large woody debris and/or other habitat features.

Vegetation within and surrounding Wetlands A and B would also be removed or altered. Because Wetlands A and B have moderate function and value it is anticipated that mitigation would be an improvement over existing conditions. Measures to compensate for wetland and buffer impacts will be implemented and are described under Vegetation and Wetlands mitigation for Alternative 2. There could be minor to moderate impacts to wildlife and fish habitat during construction; overall impacts are anticipated to be negligible to minor.

Disturbances to wildlife by construction would be limited because of the topography and upland vegetation characteristics on-site. The topographic constraints would minimize clearing and building into the WDFW Biodiversity Area and Corridor forest located immediately west and upslope of the site. Construction-related wildlife impacts from clearing of vegetation would be negligible to minor.

Construction noise would occur per the Algona Municipal Code regulations within the existing background noise levels at this location from West Valley Highway South and State Route 167 to the east. Short-term construction activities that produce noises such as equipment use, truck traffic, pile-driving, or steel erection and connection could cause temporary disturbance and/or dispersal of wildlife away from the site. Construction noises would be temporary and wildlife would have sufficient space to disperse into the neighboring wooded areas. Negligible wildlife impacts are anticipated from construction noise.

There would be an increased risk for erosion and runoff and temporary affects to water quality during construction clearing and grading and development of the site. A NPDES Construction Stormwater General Permit would be required and would include a Temporary Erosion and Sedimentation Control plan and BMPs that would be implemented in accordance with the a Stormwater Pollution Prevention Plan. These plans would include measures to control dust that could affect wildlife. There is also potential for leaks and spills from heavy equipment that could affect wildlife and fish but a Spill Prevention Control and Countermeasures plan would be developed to minimize these risks. Negligible to minor wildlife and fish impacts are anticipated from erosion and runoff during construction.

Special status fish species may have suitable habitat near, but not on, the Alternative 2 site. Effects to special status species from the potential relocation or realignment of a segment of Tributary 09.0054A would be considered in project design and in mitigation for critical areas. No impacts to special status species are anticipated.

Operation

Operational noise would be within the existing background levels from traffic on West Valley Highway South and State Route 167. Wildlife is present at the existing Algona Transfer Station immediately to the south and actively uses the landscaping and wildlife habitat surrounding that site. There may be a small increase in vector wildlife at the Alternative 2 site during operation, but they would be controlled by current transfer station operating plans and industry standard practices as required by the WAC and King County Code. Negligible wildlife impacts are anticipated during operation. No impacts to fish are anticipated from transfer station operations at the Alternative 2 site.

Decommissioning and Deconstruction

Decommissioning and possible deconstruction impacts described above for Alternative 1 would also apply to Alternative 2.

West Valley Highway South Frontage and Overlay Improvements

Work would occur within Wetlands A and B, Algona Creek Tributary 09.0054A, and their buffers due to the clearing, grading and straightening the curve in West Valley Highway South. There is a jurisdictional ditch between West Valley Highway South and State Route 167 that carries flow to Algona Creek Tributary 09.0054 that would not be affected. Because Wetlands A and B have moderate function and value it is anticipated that mitigation would be an improvement over existing conditions. There could be minor to moderate impacts to wildlife and fish habitat during construction; overall impacts are anticipated to be negligible to minor.

No wildlife or fish impacts are anticipated from pavement overlays on West Valley Highway South.

3.5.3.2 Indirect and Cumulative Impacts

No Action Alternative

Indirect Impacts

No indirect impacts to wildlife or fish are anticipated.

Cumulative Impacts

Cumulative impacts to wildlife and fish are not anticipated.

Alternative 1

Indirect Impacts

No indirect impacts to wildlife or fish are anticipated.

Cumulative Impacts

The area surrounding the Alternative 1 site is already developed with existing commercial and industrial uses and limited vegetation and water resources. There are no reasonably foreseeable future projects in the vicinity that would affect wildlife or fish. Cumulative impacts are not anticipated.

Alternative 2

Indirect Impacts

There may be indirect impacts to Algona Creek and other downstream surface water bodies from the potential relocation or realignment of a segment of Tributary 09.0054A that may affect fish and wildlife habitat. These indirect impacts will be considered in project design and in mitigation for critical areas.

Cumulative Impacts

The area surrounding the Alternative 2 site is largely developed with existing commercial uses and heavily used West Valley Highway South and State Route 167. The Vista Point subdivision was built in 2014 above the WDFW Biodiversity Area and Corridor to the northwest on top of the slope. No cumulative impacts are anticipated.

3.5.4 Mitigation Measures

3.5.4.1 No Action Alternative

No mitigation measures are required.

3.5.4.2 Alternative 1

Under the Auburn Municipal Code Chapter 16.10, Critical Areas, the site would be considered tertiary habitat since it does not support diverse wildlife communities and contains manmade water features. Since the site is not critical or secondary habitat, performance standards are not required but will be implemented where applicable (City of Auburn 2015a).

The existing wetland and associated habitat will be clearly marked and avoided during construction and operation of the new transfer station to minimize impacts to wildlife. A qualified wildlife biologist will survey the site prior to vegetation clearing to determine the presence of protected habitat and species. Planting plans will include native plants in landscaped areas and revegetation after construction that may benefit wildlife.

3.5.4.3 Alternative 2

The Algona Municipal Code Chapter 16.18C addresses fish and wildlife habitat conservation areas and a critical areas report will be completed. The report will identify all designated areas and other critical areas and buffers within 300 feet of the project. Fish and wildlife habitat conservation area buffers must consist of an undisturbed area of native vegetation and the width reflect the sensitivity of the habitat type and intensity of human activity proposed (City of Algona 2015a).

A habitat assessment will be conducted and include: a detailed description of vegetation on-site and within 300 feet of the project; identification of designated species and associated primary habitat; a discussion of any federal, state, or local habitat management recommendations; direct and indirect potential impacts on habitat; measures including avoidance; minimization and mitigation to preserve existing habitat; and ongoing management practices that will protect habitat (City of Algona 2015a).

Vegetation removal is not anticipated from the urban greenbelt in the western portion of the Alternative 2 site. Construction BMPs will be used to minimize any impacts to existing vegetation. Revegetation will be completed in wetland and stream areas, where practicable, to enhance stream and wetland habitat to benefit wildlife and fish. Planting plans will include native plants in landscaped areas and revegetation after construction that may benefit wildlife. Mitigation measures will be further refined during preparation of the critical areas report and habitat assessment.

The following measures will be implemented during design and construction to minimize the impacts to wildlife and fish as applicable:

- A qualified wildlife biologist will survey the site prior to vegetation clearing to determine the presence of protected habitat and species.
- An on-site assessment of streams and adjacent ditches for potential salmonid presence or viable habitat will be conducted prior to construction.
- Culverts will be designed to meet fish passage criteria.
- Impacts to wetlands will be minimized to maintain a greater diversity of wildlife and wildlife habitat. This measure will be implemented during the engineering site design and project permitting process.

3.5.5 Significant Unavoidable Adverse Impacts

3.5.5.1 No Action Alternative

No significant unavoidable adverse impacts to wildlife and fish are anticipated.

3.5.5.2 Alternative 1

No significant unavoidable adverse impacts to wildlife and fish are anticipated.

3.5.5.3 Alternative 2

No significant unavoidable adverse impacts to wildlife and fish are anticipated.

3.6 Energy and Natural Resources

This section of the Environmental Impact Statement describes the existing use of energy and natural resources and potential impacts that could occur from the No Action Alternative and Alternatives 1 and 2.

3.6.1 Local Regulations

3.6.1.1 King County

King County promotes the conservation of energy and natural resources through both voluntary and regulatory means. Leadership in Energy and Environmental Design (LEED) is considered a voluntary program, yet LEED defines criteria and provides guidance that has been adopted by King County through legislation. The LEED rating system provides credits for sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, innovation and design process, and regional priority. Analysis of the project design yields a score by which the project is rated as certified silver, gold or platinum. The King County Solid Waste Division (division) will seek to attain a platinum LEED certification for the new transfer station in accordance with King County Title 18 Environmental Sustainability Program and King County Green Building and Sustainable Development Ordinance (Ordinance 17709).

King County has adopted several plans and regulations related to energy and natural resources. The *2010 King County Energy Plan* guides the County in minimizing its environmental footprint of its operations and supporting efforts in the broader community to improve environmental sustainability (King County 2010b). The *2015 King County Strategic Climate Action Plan* also addresses energy conservation (King County 2015c).

3.6.1.2 City of Algona

The Algona Public Works Department promotes water conservation. The city has also adopted the Washington State Energy Code per the Algona Municipal Code Chapter 15.04.

3.6.1.3 City of Auburn

Through education and outreach to its residents and businesses, the City of Auburn promotes the voluntary efficient use and conservation of natural resources (e.g., water and energy conservation, waste reduction, and recycling) but does not have conservation policy that would affect the siting and development of the transfer station. The City of Auburn addresses energy efficiency and management of natural resources as an objective of its comprehensive plan (City of Auburn 2011). The city has also adopted the Washington State Energy Code per the Auburn Municipal Code Chapter 15.08A.

3.6.2 Affected Environment

This section describes the existing use of energy and natural resources for the No Action Alternative and Alternatives 1 and 2. Energy and natural resources common to all alternatives are described in Section 3.6.2.1.

3.6.2.1 Energy and Natural Resources Common to all Alternatives

Energy

Electricity

Puget Sound Energy (PSE) is the largest energy utility in Washington State, providing electric power to more than one million customers, including those in King County, from a variety of renewable and nonrenewable sources including hydroelectric, natural gas, biomass, coal and wind.

PSE has approximately 3,000 Megawatts (MW) of power-generating capacity at their own plants. PSE purchases additional power supply from a variety of other utilities, independent power producers and energy marketers across the western United States and Canada. In 2013 PSE customers consumed approximately 22.9 million MW hours of electricity (PSE 2013).

Average electricity usage (or use) is expected to grow at an average annual rate of 2 percent per year; from 2,437 average MW in 2012 to 3,719 average MW by 2033 (PSE 2013). PSE will continue to purchase additional power supply, as needed, in the future.

South King County PSE Transmission

PSE's main transmission network generally follows the Interstate-5/Interstate-405 corridor through PSE's service territory. In addition, in King and Pierce counties, facilities parallel State Route 167 between Renton and Puyallup. Most 115-kilovolt (kV) lines in this corridor are designed to carry upwards of 200 MWs (PSE 2005).

In November 2011, PSE completed construction of a new transmission line in the vicinity of the Algona Transfer Station and alternative sites to increase reliability and meet current and future energy needs in Auburn. PSE installed a new 2-mile, 115 kV transmission line between the Christopher substation, located southeast of the intersection of 37th Street NW and State Route 167, and the existing transmission line on 51st Avenue S in Auburn. The Christopher substation was also upgraded with an additional breaker to accommodate the new line. The new transmission line increased electric capacity and reliability to customers in Auburn, as well as reducing power outages now and in the future (PSE 2008).

Natural Gas

PSE also operates the state's largest natural-gas distribution system serving more than 750,000 gas customers in six counties covering 2,900 square miles.

Natural gas is supplied to the area through large interstate pipelines then PSE distributes the gas through more than 21,000 miles of PSE-owned gas mains and service lines. PSE purchases 100 percent of the natural-gas supplies needed to serve their customers.

Natural gas use is expected to grow at an average rate of 1.4 percent per year between 2012 and 2033, from 119 trillion British thermal units (BTUs) in 2012, to just under 150 trillion BTUs in 2033 (PSE 2013).

King County and Bio Energy Washington work in coordination at the Cedar Hills Landfill to turn the public's garbage into natural gas. The Cedar Hills Landfill is the ultimate destination of the garbage carried from transfer stations in the county's system. The Cedar Hills Landfill generates 15.4 million therms of renewable natural gas each year, of which 15 million kilowatt hours (kWh) of electricity is generated for the facility's electricity use (King County 2015e).

Transportation-related and Other Equipment Fuels

Vehicles, heavy machinery, and independently powered equipment (e.g., generators) associated with construction and operations of the transfer station are typically powered by petroleum-based fuels such as diesel, gasoline, and compressed natural gas.

Numerous commercial outlets in the project vicinity provide petroleum products, including vehicle and equipment gasoline and diesel fuels (e.g., biodiesel), and machinery lubricants.

Natural Resource Supply

Construction materials used in the construction of a recycling and transfer station typically include sand, gravel, steel, aluminum, copper, concrete, gypsum, and asphalt. Several gravel pits and quarries are located near both alternative sites. Water for construction would be obtained from a local source with valid water rights. Concrete would be purchased from existing suppliers located near the project vicinity.

3.6.2.2 No Action Alternative

Energy

PSE supplies electricity for the existing Algona Transfer Station and surrounding area. The existing Algona Transfer Station consumes electricity for the administrative building (for lighting, office equipment, break room/lunchroom appliances, cooling and heating), computers and electronic scales, as well as lighting for the transfer building, driveway, and parking lot. Electric energy use is estimated at approximately 267,000 kilowatt hours (kWh) annually (based on average usage 2009 to 2013). The energy demand at the transfer station can be accommodated by the PSE supply.

Energy use in the surrounding vicinity is typical for residential, commercial, institutional, and community uses. No unusual sources of electrical demand are present in the local area.

The existing Algona Transfer Station does not currently use natural gas.

The existing transfer station operates diesel-powered backhoes, and yard tractors. Vehicles operated by the King County Solid Waste Division (division) to haul containers to/from the Cedar Hills Landfill, commercial haulers, and private vehicles enter and exit the transfer station. These vehicles and equipment use a variety of fuels including diesel, gasoline, and electricity (i.e., electric-hybrid and electric-only vehicles).

Natural Resources

No substantial quantities of natural resources are consumed from the operation of the existing Algona Transfer Station. Natural resources such as gravel, asphalt, wood, and aluminum have been used in the past during renovations and improvements. Current natural resource consumption at this site does not affect regional supplies.

3.6.2.3 Alternative 1

Energy

The Alternative 1 site is currently undeveloped and has no energy usage. Adjacent properties surrounding the site have electric and natural gas supply and the site is within PSE's electric and natural gas service territory.

There are no known uses of transportation-related energy at the undeveloped site.

Natural Resources

The Alternative 1 site is undeveloped and there is no current natural resource usage or availability on site.

3.6.2.4 Alternative 2

Energy

The Alternative 2 site is mostly undeveloped and used for storage of bulk landscaping materials by a private landscaping supplier. Electric transmission to the site and energy use is typical of a commercial electrical service. Natural gas is not currently used at the site. Adjacent properties surrounding the site have electric and natural gas supply and the site is within PSE's electric and natural gas service territory.

Other energy usage at the site includes fuel for vehicular traffic on-site and equipment to move landscaping materials that are associated with the on-site landscaping supplier.

Natural Resources

Natural resources stored at the site include rocks, gravel, bark and soil. These natural resources are routinely removed from and replenished at the site as part of the landscaping business operations.

3.6.3 Environmental Impacts

3.6.3.1 Direct Impacts

No Action Alternative

Energy

The existing Algona Transfer Station would continue to operate with the same energy requirements described in Section 3.6.2.2. No impacts to energy supplies are anticipated.

Because the existing Algona Transfer Station does not have the ability to compact waste effectively, approximately 30 percent more truck trips are required to haul the waste to the landfill than with a modern transfer station resulting in greater amounts of diesel fuel used annually.

Transfer station equipment that use diesel fuel or gasoline includes front end loaders, backhoes, forklifts, and yard tractors. Emergency (i.e., backup) generators also use diesel fuel.

Natural Resources

The existing transfer station would continue to operate with the same natural resource requirements described in Section 3.6.2.2.. Future maintenance could require natural resources but these are unlikely to affect regional supplies. No natural resource impacts are anticipated.

Alternative 1

Construction

Energy

Construction of the SCRTS would consume energy during manufacture of construction materials, transportation of materials to the site, and operation of machinery. Energy in the form of electricity and fuel would be consumed during construction, which would be expected to last approximately 24 months. The energy use during construction is expected to be a negligible impact relative to the overall energy availability and use in the region.

Natural Resources

Natural resources used during construction of the transfer station would include sand, gravel, steel, aluminum, copper, concrete, gypsum and asphalt. None of these natural resources would be used in substantial quantities. Impacts to supplies in the region would be negligible.

Renewable resources would be used to the greatest extent practicable for LEED certification of the transfer station. To the extent practicable, the new transfer station would incorporate recycled content materials, such as recycled steel, asphalt, gypsum, countertops, and other finish materials.

Operation

Energy

The four major uses of energy at the new transfer station would be waste compaction, space conditioning (heating and cooling), lighting, and vehicle and equipment fuel. Energy requirements would be in the form of electricity, diesel, gasoline, natural gas, or other alternative fuels.

Solid waste compactors are the largest consumer of electrical energy at a transfer station. A typical compactor is powered by electric motors. Compactor motors run intermittently during the hours the transfer station is operating. Electrical consumption can be reduced by the use of

variable speed drives, which turn the motors only when there is an instantaneous demand for power.

Electricity is typically used to heat and cool worker spaces such as the administration building and the scale house. Natural gas could be used for heating. The transfer building would not be heated or cooled. Electricity is also used for lighting administrative spaces and the transfer building. Modern transfer stations make extensive use of skylights and translucent wall panels to reduce the use of electric lights for much of the year.

Based on the energy consumption at the division's two newest transfer stations, Shoreline and Bow Lake, estimated electric energy use for the site would be approximately 800,000 kWh annually. This is a marginal fraction of a percent of the annual energy consumption by PSE customers.

It is anticipated that diesel would be used to power front end loaders, backhoes and yard tractors in the transfer station. Where alternative fuels or power may be used for equipment, the division would consider the long-term benefit of operational costs and maintenance when purchasing the equipment for the transfer station. Emergency (i.e., backup) generators also use diesel fuel.

Vehicles operated by the division hauling transfer trailers, commercial haulers, and private vehicles entering and exiting the station would use a variety of fuels including diesel, gasoline and electricity (i.e., electric-hybrid and electric-only vehicles).

Alternative 1 would incorporate operational efficiencies including technology for compaction of solid waste to reduce the number of transfer station hauler trips to and from the site. The number of hauler trips would initially be reduced after the compaction improvements are completed. As the tonnage of waste processed increases in the future, the number of transfer hauler trips would begin to increase.

The development of Alternative 1 would be consistent with the division's environmental focus, King County's Green Building Initiative and the LEED rating system, that promotes the use of environmentally responsible construction practices. These practices include preferences for lower-energy consuming products and procedures.

No impacts to energy supplies in the region are anticipated from operation of Alternative 1.

Natural Resources

Nonrenewable resources for maintenance during operation of the transfer station may include gravel, concrete, and asphalt. No impacts to natural resource supplies in the region are anticipated.

Applying requirements of the King County Green Building and Sustainable Development Ordinance (Ordinance 17709) are expected to result in lower energy use annually during operations.

Decommissioning and Deconstruction

It is anticipated that decommissioning, and possibly deconstruction, of the existing Algona Transfer Station would occur after a new transfer station is constructed and operating.

Energy

The use of energy at the existing Algona Transfer Station would cease after decommissioning. Temporary and negligible electricity, diesel and gasoline use would be required during possible deconstruction.

Natural Resources

Additional fill (gravel or with cementitious grout from an approved source) may be placed in void spaces left by the piles if removed during deconstruction. No impacts to natural resources are anticipated during deconstruction.

Alternative 2

Construction

Energy

Construction impacts from energy use described above for Alternative 1 would also apply for Alternative 2. Negligible impacts to energy supplies are anticipated from construction of Alternative 2.

Natural Resources

Construction impacts from natural resources use described above for Alternative 1 would also apply for Alternative 2. Negligible impacts to natural resource supplies are anticipated from construction of Alternative 2.

Operation

Energy

Operation impacts from energy use described above for Alternative 1 would also apply for Alternative 2. No impacts to energy supplies are anticipated from operation.

Natural Resources

Operation impacts from natural resources use described above for Alternative 1 would also apply for Alternative 2. No impacts to natural resource supplies are anticipated from operation.

Decommissioning and Deconstruction

Decommissioning and possible deconstruction impacts described above for Alternative 1 would also apply to Alternative 2.

West Valley Highway South Frontage and Overlay Improvements

Temporary diesel and gasoline use would be required during road frontage and overlay improvements to West Valley Highway South for trucks, excavators, grinders, cement trucks, and other equipment. No impacts to energy supplies are anticipated.

3.6.3.2 Indirect and Cumulative Impacts

No Action Alternative

Indirect Impacts

Energy efficiency is a key component of implementing the 2010 King County Energy Plan and King County Green Building and Sustainable Development Ordinance (Ordinance 17709) in the operations and development of new transfer stations. In the absence of a new transfer station, the existing transfer station would not benefit from increased energy efficiency.

Cumulative Impacts

King County would continue to encourage private, voluntary energy and natural resource conservation. For example, as reported in February 2013, Waste Management (one of the private haulers serving the division) is transitioning their entire collection fleet of over 18,000 vehicles to natural gas. Of those, 300 are in the Pacific Northwest area. Every collection truck that is transitioned eliminates the use of 8,000 gallons of diesel per year (Auburn Reporter 2013). It is anticipated that there would be additional gains to energy and natural resource conservation in the remaining operating life of the existing Algona Transfer Station.

Alternative 1

Indirect Impacts

The ability to compact solid waste loads prior to transport from the new transfer station would reduce the resources and cost required to transfer solid waste to the Cedar Hills Landfill or to future disposal facilities, as compared to the existing Algona Transfer Station.

Cumulative Impacts

Alternative 1 would benefit from the waste management transition of its collection fleet to natural gas. It is anticipated that there would be additional gains to energy and natural resource conservation during the operating life of a new transfer station. Alternative 1 would represent a small incremental contribution to an overall increase in electricity demand and consumption within the region. The magnitude of this increase would not be significant in the context of local utility supply and demand.

Alternative 2

Indirect Impacts

The indirect impacts described above for Alternative 1 would also apply for Alternative 2.

Cumulative Impacts

The cumulative impacts described above for Alternative 1 would also apply for Alternative 2.

3.6.4 Mitigation Measures

3.6.4.1 No Action Alternative

No mitigation measures are required.

3.6.4.2 Alternative 1

The overall project goals related to energy and natural resource mitigation are to:

- Minimize operational resource use
- Maximize reuse and recycling
- Choose products and services that have low environmental impacts
- Increase the efficiency of division vehicles and minimize their GHG emissions

Design

Measures to be considered during design of the transfer station to reduce energy usage will include the following:

- In accordance with King County Green Building and Sustainable Development Ordinance (Ordinance 17709), the division will seek to achieve LEED Platinum certification for the SCRTS. As part of this certification, the division will consider sustainable site design; water efficiency; energy and atmosphere; materials and resources; indoor environmental quality; innovation in design process; and regional priority.
- The division will work with PSE to maximize financial incentives available from the utility company such as energy savings and rebates for using high-efficiency applications.
- Orient the transfer building and building openings in a manner that captures prevailing winds for cross-ventilation, thereby reducing energy consumption for mechanical ventilation.
- Design energy-efficient fans in the transfer building to operate in conjunction with natural ventilation.
- Install translucent panels in the roof and sides of the transfer building in order to reduce the need for artificial lighting.
- Install daylight sensors in the tipping floor area to eliminate the use of lights during periods when natural light is sufficient.
- Use energy-efficient systems such as lighting, heating, ventilation, air conditioning, and operable windows which allow natural ventilation to minimize energy consumption.
- Consider a photovoltaic generation system and/or the use of green power (renewable energy purchased from the electrical utility provider) as part of the sustainable building features evaluated during design to help achieve the goal of a LEED Platinum rating.

Construction

In order to advance the county's energy efficiency goals, the division would implement measures to reduce energy consumption during construction:

- Recycling and reusing materials (recycling lowers the need to use energy for activities such as extraction of raw materials, transportation, and manufacturing)
- Elimination of waste (thus reducing energy required to process the waste)
- Efficient material-handling procedures (such as on-site staging areas and careful operation).
- Efficient routing of construction vehicles in order to reduce congestion, idling time, and long periods of non-use.

Operation

In order to advance the county's energy efficiency goals, the division would implement measures to reduce energy consumption during operation:

- Idling time of vehicles will be limited on-site
- Fuel efficient maintenance vehicles and equipment will be selected
- Recycled materials will be used where practicable
- Vehicles will be maintained for maximum efficiency
- Division-owned equipment will use alternative fuels, to the extent practicable, and the division will seek to use hybrid or alternative-fueled vehicles as technology and funding allows
- Consumer-generated recyclable materials will be sorted and recycled as feasible (recycling typically requires less energy than creating new products from virgin materials)

Alternative 1 would comply with the energy conservation requirements of applicable codes and regulations.

Decommissioning and Deconstruction

Proposed measures to reduce and control energy impacts will include energy conservation in material-handling procedures, such as on-site staging areas and careful operation and routing of construction vehicles, which would reduce congestion, idling time and long periods of non-use.

3.6.4.3 Alternative 2

The mitigation measures proposed for Alternative 1 would also apply to Alternative 2. Proposed measures during decommissioning and possible deconstruction would also apply to West Valley Highway South frontage and overlay improvements.

3.6.5 Significant Unavoidable Adverse Impacts

3.6.5.1 No Action Alternative

No significant unavoidable adverse energy and natural resource impacts are anticipated.

3.6.5.2 Alternative 1

No significant unavoidable adverse energy and natural resource impacts are anticipated.

3.6.5.3 Alternative 2

No significant unavoidable adverse energy and natural resource impacts are anticipated.

3.7 Noise

This section of the Environmental Impact Statement describes the existing noise sources and potential impacts that could occur from the No Action Alternative and Alternatives 1 and 2.

3.7.1 State and Local Regulations

3.7.1.1 State

While Washington State establishes sound level limits and general noise control provisions in the Washington Administrative Code (WAC) Chapter 173-60, it delegates enforcement of noise control regulations to local governments. Local noise ordinances can either conform to the requirements defined in WAC 173-60, or alternative ordinances otherwise approved by Washington State Department of Ecology (Ecology). Local noise control ordinances, as approved by Ecology, are used to assess environmental regulatory compliance.

3.7.1.2 Local

The Algona and Auburn Municipal Codes do not quantify sound level limits. The criteria for assessing regulatory compliance is the King County Noise Ordinance (King County Code Chapter 12.88) as shown in Table 3.7-1. These thresholds are applied at the property line of the receiving property (King County 1977).

The following adjustments are applied to the sound level limit values in Table 3.7-1 as a reduction in allowable level:

- 10 dB reduction in rural and residential zones between 10 PM and 7 AM on weekdays, and 10 PM and 9 AM on weekends and legal holidays
- 5 dB reduction for noise sources that are periodic, tonal, or impulsive in nature

For short-term sound events, the following sound level limit increases also apply to the permissible sound levels:

- 5 dB for 15 minutes in any 1-hour period
- 10 dB for 5 minutes in any 1-hour period
- 15 dB for 0.5- to 1-minute in any 1-hour period

The King County Noise Ordinance also exempts specific noise sources from the sound level limits shown in Table 3.7-1. Exemptions applicable to equipment expected to be used in the project are:

- Safety and protective devices if noise suppression would impede the intent of the device
- Warning devices not operated continuously for more than 30 minutes per incident
- Emergency equipment and emergency work necessary in the interest of law enforcement or of the health, safety, or welfare of the community
- Unamplified human voices
- Motor vehicles operated off public highways when not received in a rural or residential zones

**Table 3.7-1
Maximum Permissible Sound Levels, dBA**

Zoning Source Property	Zoning of Receiving Property			
	Rural	Residential	Commercial	Industrial
Rural	49	52	55	57
Residential	52	55	57	60
Commercial	55	57	60	65
Industrial	57	60	65	70

Note:
Maximum permissible sound levels can increase during construction which is described below.

A 25 dB increase in permissible levels is applied to heavy construction equipment (e.g., crawlers, bulldozers, loaders, graders, pneumatic-powered equipment) between the hours of 7 AM and 7 PM on weekdays, and 9 AM and 7 PM on weekends and legal holidays. For very loud construction activities such as pile driving and pavement breaking, average sound levels are allowed to reach 90 dBA for the full hour, 93 dBA for 30 minutes in an hour, 96 dBA for 15 minutes in an hour, and 99 dBA for 7.5 minutes in an hour between 8 AM and 5 PM on weekdays, and 9 AM and 5 PM on weekends and legal holidays. For all other construction activities, operating hours are between 7 AM and 10 PM on weekdays and between 9 AM and 8 PM on weekends.

Sound emissions from individual motor vehicles operated on public highways are regulated under King County Code 12.90 and not subject to the sound level limits described above.

Algona Municipal Code

The Algona Municipal Code addresses noise as a nuisance, with no quantified sound level limits. It prohibits, in general, “loud, raucous, frequent or continuous sounds which have the capacity of disturbing the occupants of more than one dwelling unit and/or commercial structure.” The code also prohibits construction activities between 6 PM and 7:30 AM on weekdays, and between 6 PM and 9 AM on weekends and legal holidays (City of Algona 2015a).

Noise-related, prescriptive development standards defined for the C-3 Heavy Commercial zone also apply to the project, requiring noise sources within the C-3 zone to conform to applicable county and city regulations. Meeting the King County and Algona codes would meet this requirement.

Auburn Municipal Code

Noise emissions within the City of Auburn are regulated under Auburn Municipal Code Chapter 8.28 (City of Auburn 2015a). The code addresses noise as a nuisance with similar language as the Algona Municipal Code. The Auburn code prohibits construction activities between 10 PM and 7 AM on weekdays and Saturdays, and between 10 PM and 9 AM on Sundays.

In addition to the Auburn Municipal Code, city development standards also apply to the project. Performance Standards in the Auburn code require that:

...the noise emanating from the premises of commercial or industrial activities shall be muffled so as not to become objectionable due to intermittent beat, frequency or shrillness, and shall not exceed those standards as determined by Chapter 173-60 WAC, as amended (State of Washington 1975).

3.7.2 Affected Environment

3.7.2.1 Characteristics of Noise

General Principles

The auditory response to sound is a complex process that occurs over a wide range of levels. Decibel levels (dB) are a form of shorthand that compresses this broad range of levels with a convenient numerical scale. The decibel scale is logarithmic. For example, using the decibel scale, a doubling of energy causes the sound level to increase by 3 dB. A dB of 3 is generally considered to be the minimum increase perceptible to a human observer. However, a 3-dB increase does not double the perceived loudness. Six (6) to 10 times the energy is needed to result in a perceived doubling of loudness, which is an increase of between 8 and 10 dB.

The human ear has a unique response to sound pressure. It is less sensitive to those sounds falling outside the speech frequency range. Sound level meters and monitors utilize a filtering system to approximate human perception of sound. Measurements made utilizing this filtering system are referred to as A-weighted and are called dBA.

Noise is generally defined as unwanted sound and is a subjective response to a particular sound source or environment. Noise effects identify an expectation that a particular sound source or group of sound sources may negatively affect noise-sensitive receptors within an existing environment. This is largely dependent on the existing sound environment and the acoustical characteristics of the new sound sources.

Common sound levels are shown in Table 3.7-2 (HUD 1972).

Noise Modeling Methodology

Existing sound levels (ambient noise) were measured at four locations (Figures 3.7-1 through 3.7-3). Long-term monitoring was conducted at three locations, one for each alternative, for not less than 62 hours per location, with a total of 313 hours of data collected. Figure 3.7-1 shows Location LT-NA south of the No Action Alternative; Figure 3.7-2 shows Location LT-1 northeast of the Alternative 1 site; and Figure 3.7-3 shows Location LT-2 southwest of the Alternative 2 site. An additional single short-term monitoring location was selected northwest of the Alternative 2 site as shown on Figure 3.7-3 to capture lower ambient sound levels away from West Valley Highway South and State Route 167 (data was collected at this location for 15 minutes). Long term daytime ambient noise monitoring data are provided in Appendix B Tables B-1 through B-3.

Equipment used during the monitoring included Rion NL-32 and Rion NL-52 sound level meters, wind screens, and acoustic calibrators to calibrate the sound level meters and verify calibration after the measurements were complete. Reference source sound levels used to model

operational sound emissions from the conceptual site layouts are provided in Appendix B Tables B-4 and B-5.

**Table 3.7-2
Common Sound Levels, dBA**

Sound	Sound Level	Approximate Relative Loudness ¹
Jet Plane @ 100 feet	130	128
Rock Music with Amplifier	120	64
Thunder, Danger of Permanent Hearing Loss	110	32
Boiler Shop, Power Mower	100	16
Orchestral Crescendo @ 25 feet	90	8
Busy Street	80	4
Interior of Department Store	70	2
Ordinary Conversation @ 3 feet	60	1
Quiet Car at Low Speed	50	1/2
Average Office	40	1/4
City Residence, Interior	30	1/8
Quiet Country Residence, Interior	20	1/16
Rustle of Leaves	10	1/32
Threshold of Hearing	0	1/64

Notes:

¹ As compared to ordinary conversation at 3 feet.

Equipment used during the monitoring included Rion NL-32 and Rion NL-52 sound level meters, wind screens, and acoustic calibrators to calibrate the sound level meters and verify calibration after the measurements were complete. Reference source sound levels used to model operational sound emissions from the conceptual site layouts are provided in Appendix B Tables B-4 and B-5.

Transfer Station sound emissions during peak traffic periods adjacent to the stations (4 PM to 5 PM on weekdays, and 12 PM to 1 PM on Saturday) were used for both action alternatives to assess regulatory compliance and assess increases to existing conditions based on trip generation estimates for the 2020 and 2040 horizon years.

Two analysis scenarios are included: one for regulatory compliance assessment and another for noise impact assessment. The regulatory compliance assessment scenario includes sound level predictions at nearby receiving property lines, excluding contributions from noise sources exempt from code compliance, such as on-site vehicle traffic, back-up alarms, and traffic on public roadways. The noise impact scenario assesses increases to existing sound levels where ambient noise monitoring was performed, and includes contributions from code-exempt sources excluded from the regulatory compliance scenario. Traffic on State Route 167 was not included in the noise model due to negligible anticipated increases in sound emission levels due to the project (see Appendix B Figures B-1 through B-4).

Assessment of increases to existing sound levels are presented at locations where ambient noise monitoring was performed and include sound emissions from all on-site traffic, back-up

alarms, and increased traffic on public roadways that is associated with the use of the transfer station. For more information about the noise modeling methodology see Appendix B.

3.7.2.2 No Action Alternative

The site was developed as the existing Algona Transfer Station in the mid-1960s, and has been in use as a transfer station for approximately 50 years. The site is zoned C-3 Heavy Commercial (City of Algona 2015b). Surrounding land uses include single-family residences to the west (on top of slope) and south, vacant land and a landscape supplier (the Alternative 2 site) to the north, and West Valley Highway South and State Route 167 to the east.

The closest residential structure to the south is approximately 140 feet from the No Action Alternative property line and approximately 400 feet from the transfer station. Residential properties to the west are significantly elevated above the existing Algona Transfer Station, on top and set back from the ridge of a large bluff. The closest residential structure to the west is approximately 580 feet from the No Action Alternative property line and approximately 825 feet from the transfer station. Residential structures farther east are separated from the existing Algona Transfer Station by West Valley Highway South and State Route 167.

Existing noise sources in the vicinity of the existing Algona Transfer Station include traffic on West Valley Highway South and State Route 167, aircraft, birdsong, and operations at the existing transfer station. Measurements of existing hourly sound levels at the southern edge of the site (see location LT-NA on Figure 3.7-1) typically ranged between 68 and 70 dBA (see Appendix B Table B-1). During peak traffic periods adjacent to the Algona Transfer Station, which are 4 PM to 5 PM on weekdays and 12 PM to 1 PM on Saturdays, average sound levels recorded near the site was 69 dBA. Existing average hourly sound levels exceeded the daytime code limit of 60 dBA between commercial properties 100 percent of the time, predominantly due to traffic on West Valley Highway South and State Route 167.

3.7.2.3 Alternative 1

This site is currently undeveloped, vacant, and zoned M-2 Heavy Industrial (City of Auburn 2015b). Surrounding land uses include the Union Pacific Railroad and Interurban Trail to the west, light industrial properties to the north, commercial properties to the northeast, light industrial and maintenance properties to the east, GSA Park to the southeast, and the Auburn School District Transportation Center and a grocery distributor to the south.

The closest residential structure to the northeast is approximately 650 feet from the Alternative 1 property line and approximately 1,100 feet from the preliminary building footprint. Residential structures to the east are separated from the Alternative 1 site by C Street SW and the Burlington Northern Santa Fe rail yard. Residential structures farther north are separated from the Alternative 1 site by State Route 18. Commercial and industrial properties are dominant to the west and south.



Source: Google Earth Pro, imagery date: 7/5/2012
 Zoning information from City of Algona, 2015; King County, 2015

Figure 3.7-1

No Action Alternative, Ambient Noise Monitoring Location and Nearby Zoning

Prepared for King County by URS Corporation Consultants

Field investigations documented existing noise sources as industrial and manufacturing activities such as metalworking, distant traffic on State Route 18, and rail and horn noise from nearby railroad traffic. Existing hourly sound levels during daytime hours near the northeast corner of the site (see location LT-1 on Figure 3.7-2) generally ranged between 58 and 61 dBA (see Appendix B Table B-3). During peak traffic periods adjacent to the station, existing average hourly sound levels were between 57 and 61 dBA. Sound levels measured near the site did not exceed the daytime code limit of 65 dBA between industrial and commercial properties.

3.7.2.4 Alternative 2

This site is largely vacant but contains a landscape supply business that is currently in operation. The site is zoned C-3 Heavy Commercial and Open Space/Critical Areas (City of Algona 2015b). Surrounding land uses include residential properties to the west on top of the slope, commercial properties to the north, West Valley Highway South and State Route 167 and residential to the east, and the existing Algona Transfer Station to the south.

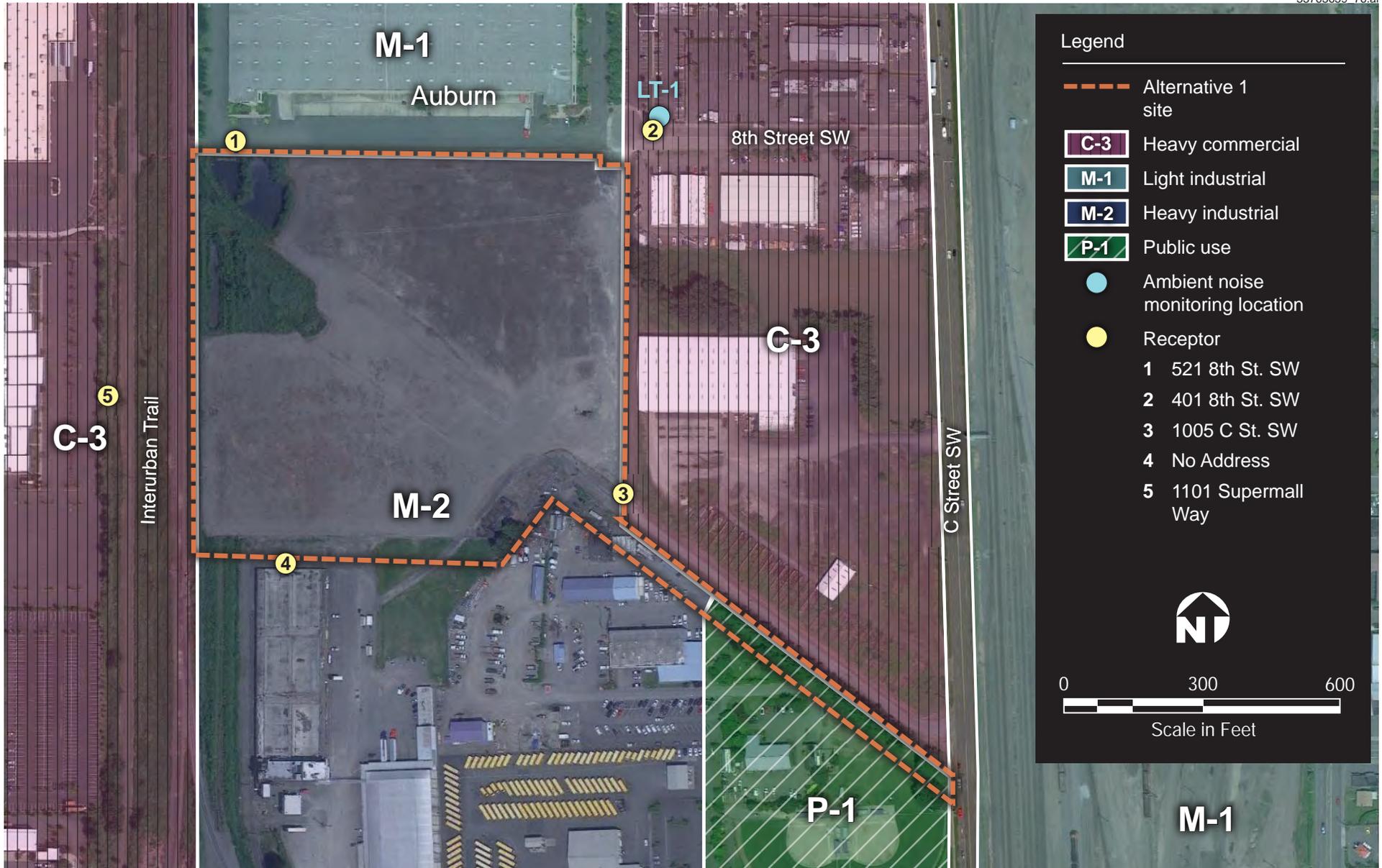
Residential properties to the west are significantly elevated above the Alternative 2 site, on top and set back from the ridge of a large bluff. The closest residential structure to the west is approximately 250 feet from the Alternative 2 property line and about 600 feet from the preliminary building footprint. Residential structures to the east are approximately 370 feet from the Alternative 2 property line at the closest distance and approximately 700 feet or more from the preliminary building footprint, with a significant noise source (State Route 167) in between the Alternative 2 site and these eastern residential receivers.

Existing noise sources observed near the site included traffic on State Route 167 and West Valley Highway South, aircraft, and birdsong. It is likely that operations at the landscape supply facility also contribute to existing sound levels at surrounding properties. Measured hourly daytime sound levels near the western portion of the site (see location LT-2 on Figure 3.7-3) were generally between 61 and 63 dBA (see Appendix B Table B-3), dominated by traffic on State Route 167 and West Valley Highway South. During expected periods of peak use at the transfer station, average hourly sound levels were measured typically between 59 and 62 dBA. Existing average hourly sound levels during daytime hours exceeded the code limit of 57 dBA between commercial and residential properties 100 percent of the time, most likely due to traffic on State Route 167 and West Valley Highway South. Short-term sound levels measured west of the site (see location ST-2 on Figure 3.7-3) on a weekday between 4 PM and 5 PM were 46 dBA. The lower ambient sound level at this short-term location was due to increased distance from State Route 167.

3.7.3 Environment Impacts

3.7.3.1 Direct Impacts

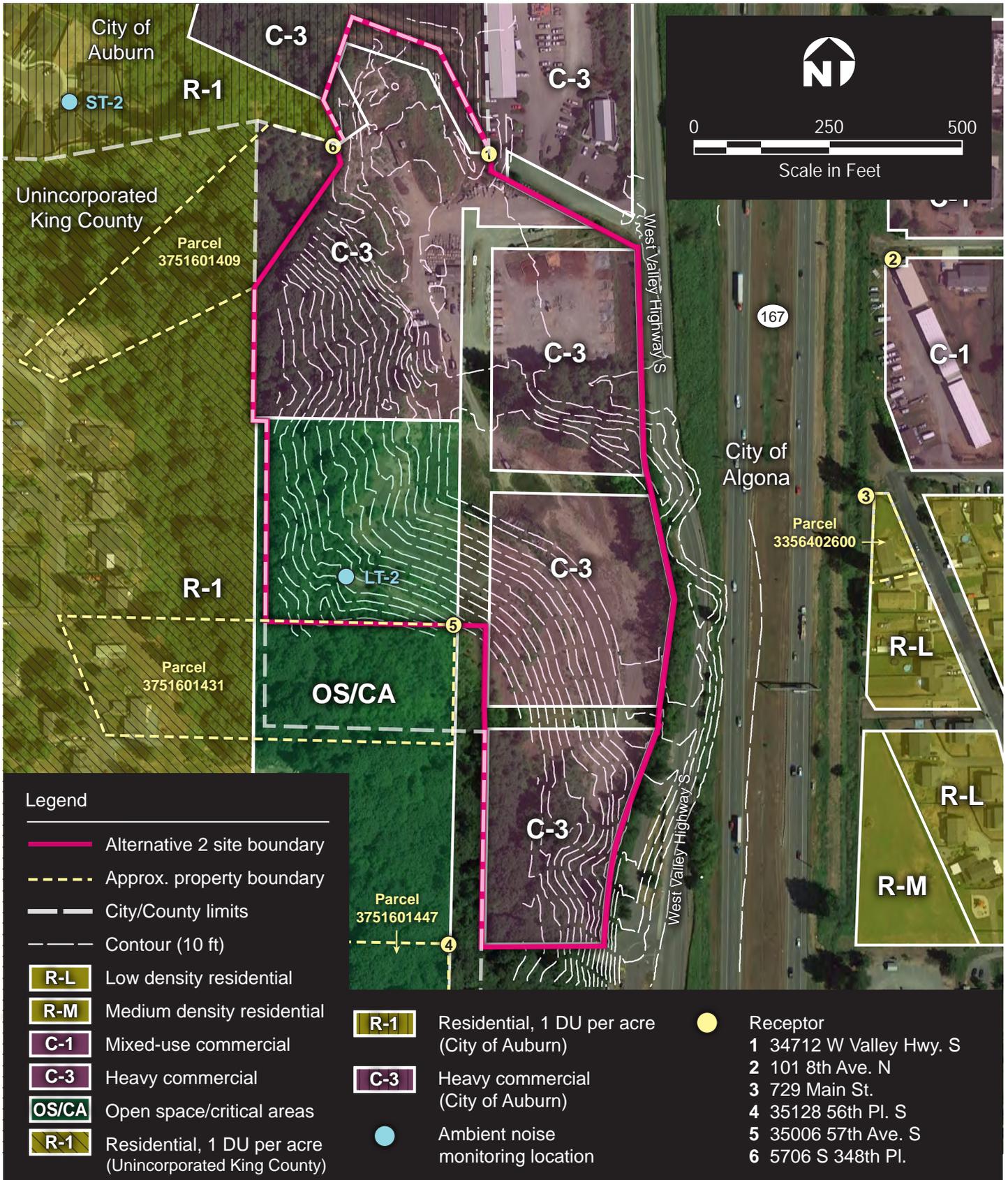
No Action Alternative



Source: Google Earth Pro, imagery date: 7/5/2012
 Zoning information from City of Auburn, 2015

Figure 3.7-2
Alternative 1, Ambient Noise Monitoring Locations, Receptors and Nearby Zoning

Prepared for King County by URS Corporation Consultants



Source: Google Earth Pro, imagery date: 7/10/2014
Zoning information from City of Algona, October 2015;
City of Auburn, December 2011; King County, 2015

Figure 3.7-3

Alternative 2, Ambient Noise Monitoring Locations, Receptors and Nearby Zoning

Prepared for King County by URS Corporation Consultants

Construction

No construction activities are anticipated for the No Action Alternative.

Operation

Under the No Action Alternative, the existing Algona Transfer Station would continue to operate. Dominant noise sources in the area including State Route 167 and West Valley Highway South would likely continue to dominate the existing noise environment.

Alternative 1

Construction

Construction is anticipated to last approximately 24 months. Permits for construction would be required from the City of Auburn. In order to comply with the Auburn Municipal Code, construction could not start before 7 AM on weekdays and Saturday, and 9 AM on Sundays, and must finish prior to 10 PM during any day of the week. Work outside these hours would require a noise variance from Auburn.

The following heavy equipment may be used during grading, excavation, paving, and erection of the Alternative 1 site: jackhammers, trucks, cranes, and backhoes. These pieces of equipment typically generate maximum sound levels between 80 and 85 dBA (FHWA 2006, Spec 721.560) at 50 feet. Increases to existing sound levels would be restricted to daytime hours per the Auburn Municipal Code.

Since no night work is anticipated, increases to existing sound levels would be restricted to daytime hours and similar to past construction projects in the area, and sound emissions would be governed by the King County Noise Ordinance. Minor and temporary construction noise impacts are anticipated.

Operation

At this time, it is assumed that Alternative 1 would operate for approximately 9.5 hours per day, opening not earlier than 6 AM on weekdays and not earlier than 8 AM on weekends, and closing not later than 6 PM on any day (the current operating hours at Algona are weekdays 7 AM to 4:30 PM, and weekends 8:30 AM to 5:30 PM).

Sound sources related to the transfer station would include vehicular traffic, mobile and stationary equipment, and dumping and offloading activities on the tipping floor. Sound levels used in the analysis are shown in Table 3.7-3.

**Table 3.7-3
Common Transfer Operational Sound Levels (dBA)**

Sound Source	Sound Level at 50 feet
Vehicles	
Commercial Haul	84 ¹
Residential Haul	65 ¹
Stationary Equipment	
Compactor	102 ²
Compactor Power Pack	90 ²
Compactor Radiator	96 ²
Mobile Equipment	
Backup Alarm	85 ³
Yard Truck (Goat)	94 ⁴
Tipping Floor Activities	
Front End Loader	91 ¹
Dump Truck	104 ¹
Pickup Truck	85 ⁵

Notes:

¹ FHWA Specification 721.560

² City of Seattle South Transfer Station measurements (Greenbusch 2013)

³ Greenbusch historical data

⁴ Algona Transfer Station measurements (Greenbusch 2013)

⁵ FHWA Specification 721.560 + 10 dB

Predicted sound levels for Alternative 1 are summarized in Tables 3.7-4 and 3.7-5. Receiver locations in the noise model are shown in Figure 3.7-2. As shown in Table 3.7-4, compliance with the King County Noise Ordinance is anticipated.

**Table 3.7-4
Predicted Sound Levels for the Operation of Alternative 1, dBA**

Receptor Number and Address (Zoning)	2020		2040		Code Limit
	Weekdays	Saturday	Weekdays	Saturday	
1 – 521 8th St SW (Industrial)	57	57	57	57	70
2 – 401 8th St SW (Commercial)	54	54	54	54	65
3 – 1005 C St SW (Commercial)	60	60	60	60	65
4 – No Address (Industrial)	67	67	67	67	70
5 – 1101 Supermall Way (Commercial)	60	60	60	60	65

While regulatory compliance is anticipated under Alternative 1, unmitigated project levels are expected to increase existing conditions by as much as 6 dB, which would result in a moderate impact to the nearby environment (Table 3.7-5). The dominant sound source for Alternative 1 at monitoring location LT-1 would be noise from equipment and activities at the transfer station (Figure 3.7-2). Sound levels from equipment and activities are not anticipated to substantially change between 2020 and 2040. With project mitigation, minor to no noise impacts are anticipated under Alternative 1.

**Table 3.7-5
Impact Analysis for Alternative 1, dBA**

Description of Long Term Monitoring Location LT-1	2020		2040	
	Weekdays	Saturday	Weekdays	Saturday
Unmitigated Project Sound ¹	62	62	62	62
Existing Ambient ²	61	57	61	57
Cumulative Sound Level ³	65	63	65	63
Increase above Existing Sound Level ⁴	4	6	4	6

Notes:

¹ Sound levels from the SCRTS operations without mitigation.

² Existing background sound level present at the site.

³ Unmitigated project sound plus cumulative sound level

⁴ Difference between cumulative sound level and exist ambient sound level.

Equivalent sound level contours are provided in Appendix B Figures B-1 and B-2, one reporting the results of the regulatory compliance noise model (excluding code-exempt noise sources from the site) and another of the impact analysis noise model results (including all noise sources from the site).

Decommissioning and Deconstruction

It is anticipated that decommissioning, and possible deconstruction, of the existing Algona Transfer Station would occur after a new transfer station is constructed and operating. There could be temporary noise related to construction trucks and equipment. If support pilings were to be removed using a vibratory hammer, there would be additional localized temporary noise and vibration. Should the Algona Transfer Station be deconstructed, the work would be restricted to daytime hours per the Algona Municipal Code. Negligible and temporary noise impacts are anticipated during deconstruction.

Alternative 2

Construction

Construction is anticipated to last approximately 24 months. In order to comply with Title 8, Health and Safety, of the Algona Municipal Code, use of heavy machine driven equipment could not start before 7:30 AM on weekdays, and 9 AM on weekends and holidays and must finish prior to 6 PM during any day of the week. Work outside these hours would require a noise variance from the City of Algona.

Equipment and construction activities would be similar to Alternative 1. Since no night work is anticipated, increases to existing sound levels would be restricted to daytime hours and similar to past construction projects in the area, and sound emissions would be governed by the King County Noise Ordinance. Minor and temporary construction noise impacts are anticipated.

Operation

Operating hours and sound sources shown in Table 3.7-3 would be similar to Alternative 1. Predicted sound levels for the Alternative 2 site from commercial and residential property lines are summarized in Tables 3.7-6 and 3.7-7. Receiver locations in the noise model are depicted in

Figure 3.7-3. As shown in Table 3.7-6, compliance with the King County code is not anticipated under Alternative 2.

**Table 3.7-6
Predicted Sound Levels for the Operation of Alternative 2, dBA**

Receptor Number and Address (Zoning)	2020		2040		Code Limit
	Weekdays	Saturday	Weekdays	Saturday	
1 – 34712 W Valley Hwy S (Commercial)	72*	72*	72*	72*	60
2 – 101 8th Ave N (Commercial)	62*	62*	62*	62*	60
3 – 729 Main St (Residential)	61*	59*	60*	60*	57
4 – 35128 56th Pl S (Residential)	61*	55	57	56	57
5 – 35006 57th Ave S (Residential)	57	54	55	55	57
6 – 5706 S 348TH Pl (Residential)	67*	69*	68*	71*	57

Note: * Indicates exceedance of code limit, see Section 3.7.4 for discussion of mitigation options.

Even though increases to existing conditions are expected to be below 5 dB (Table 3.7-7), regulatory compliance is not anticipated under Alternative 2, which would result in a moderate impact to the nearby environment. If the container/chassis area, where loaded material is staged prior to transport out of the site, is located adjacent to a residential-zoned parcel, perimeter noise walls may be required to reduce noise impacts to this residentially zoned parcel. If mitigation was included in the design to satisfy code limits at nearby property lines, the level of impact would be reduced. If the container/chassis area is not located adjacent to a residential parcel, perimeter walls may not be necessary to mitigate noise effects. With project mitigation, minor to no noise impacts are anticipated under Alternative 2.

**Table 3.7-7
Impact Analysis for Alternative 2, dBA**

Predicted Sound Levels at Nearest Property Lines	2020		2040	
	Weekdays	Saturday ⁵	Weekdays	Saturday ⁵
Long Term Monitoring Location LT-2				
Unmitigated Project Sound ¹	56	55	55	55
Existing Ambient ²	60	62	60	62
Cumulative Sound Level ³	61	63	61	63
Increase above Existing Sound Level ⁴	1	1	1	1
Short Term Monitoring Location ST-2				
Unmitigated Project Sound ¹	49	47	48	48
Existing Ambient ²	46	48	46	48
Cumulative Sound Level ³	51	51	50	51
Increase above Existing Sound Level ⁴	5	3	4	3

Notes:

¹ Sound levels from the SCRTS operations without mitigation.

² Existing background sound level present at the site.

³ Unmitigated project sound plus cumulative sound level

⁴ Difference between cumulative sound level and exist ambient sound level.

⁵ Saturday ambient sound level estimated based on 2 dB difference between weekday and Saturday sound levels at LT-2.

Equivalent sound level contours are provided in Appendix B Figures B-3 and B-4, one reporting the results of the regulatory compliance noise model (excluding Code-exempt noise sources from the site) and another of the impact analysis noise model results (including all noise sources from the site).

Decommissioning and Deconstruction

Decommissioning and possible deconstruction impacts described above for Alternative 1 would also apply to Alternative 2.

West Valley Highway South Frontage and Overlay Improvements

Temporary and minor noise impacts could result from construction trucks and equipment during road frontage and overlay improvements. During road frontage and overlay improvements, the work would be restricted to daytime hours per the Algona Municipal Code. Minor and temporary noise impacts are anticipated during construction.

3.7.3.2 Indirect and Cumulative Impacts

No Action Alternative

No indirect or cumulative noise impacts are anticipated.

Alternative 1

No indirect or cumulative noise impacts are anticipated.

Alternative 2

No indirect or cumulative noise impacts are anticipated.

3.7.4 Mitigation Measures

3.7.4.1 No Action Alternative

No mitigation measures are required.

3.7.4.2 Alternative 1

The following mitigation measures would be considered in the design, construction and operations of the transfer station, and decommissioning and possible deconstruction of the existing Algona Transfer Station, to reduce the scale of impact and achieve compliance with regulatory requirements:

Design

- Incorporate sound attenuating design features for the compactor hydraulic power pack and radiator to reduce offsite sound emissions.
- Install absorptive acoustical treatment within the transfer station building to reduce reverberant build-up of interior sound levels.
- Utilize wing walls near transfer station building openings, where needed.
- Design on-site traffic routes to reduce the need for trucks to use back-up alarms.

These measures have been shown to be effective at other facilities (Houghton Sound Wall Test Report, 2011 and North Transfer Station Noise Analysis for Final Design, 2013). Design mitigation measures considered for the project will depend on the geometry of the site developed during final design. Potential noise impacts will vary depending on the relative distance between dominant noise sources on the site, nearest point of regulatory compliance (i.e. property line), and the location of the noise sensitive receptor. However, as shown in Tables 3.7-4 and 3.7-5, predicted increases to existing sound levels at monitoring location LT-1 are 6 dB or less. Therefore, increases to existing conditions (after mitigation to comply with regulatory requirements) are expected to be less, with an impact range of minor to none.

Construction

Mitigation measures that will be implemented to comply with the Auburn Municipal Code and King County Noise Ordinance will include:

- Restrict construction activities to daytime hours when traffic noise is likely the highest
- Limit the use of equipment, as needed, to meet regulated noise levels.

Operation

Mitigation measures that will be implemented to comply with the Auburn Municipal Code and King County Noise Ordinance will include:

- Ensure all on-site equipment is fitted with adequate exhaust muffling devices.
- Minimize idle duration of on-site operations vehicles.
- Utilize rubber-tired vehicles in lieu of track loaders and dozers.
- Install ambient-sensing broadband back-up alarms on all equipment that remains on-site, such as goat trucks (small diesel trucks used to move containers around the container/chassis area) and loaders.

Decommissioning and Deconstruction

- The noise provisions of the Algona Municipal Code Title 8, Health and Safety, will be followed if transfer station is deconstructed.
- Restrict construction activities to daytime hours when traffic noise is likely the highest.

3.7.4.3 Alternative 2

Mitigation measures for Alternative 1 would also apply to Alternative 2 to comply with the Algona Municipal Code and King County Noise Ordinance.

Design

Design mitigation measures considered for Alternative 2 will depend on the geometry of the site developed during final design. Potential noise impacts will vary depending on the relative distance between dominant noise sources on the site, nearest point of regulatory compliance (i.e. property line), and the location of the noise sensitive receptor. However, as shown in Tables 3.7-6 and 3.7-7, predicted increases to existing sound levels at monitoring locations LT-2

and ST-2 (without mitigation) are 5 dB or less. Therefore, increases to existing conditions (after mitigation to comply with regulatory requirements) are expected to be less, with an impact range of minor to none.

Solid walls may be included at the perimeter of the site, where required, to reduce noise impacts to the adjacent residentially-zoned property. The King County Solid Waste Division will work with an acoustical consultant during the design process to determine if and where walls are needed.

West Valley Highway South Frontage and Overlay Improvements

- The noise provisions of the Algona Municipal Code Title 8, Health and Safety, will be followed during road frontage and overlay improvements.
- Restrict construction activities to daytime hours when traffic noise is likely the highest on West Valley Highway South and State Route 167.

3.7.5 Significant Unavoidable Adverse Impacts

3.7.5.1 No Action Alternative

No significant unavoidable adverse impacts due to noise are anticipated.

3.7.5.2 Alternative 1

No significant unavoidable adverse impacts due to noise are anticipated.

3.7.5.3 Alternative 2

No significant unavoidable adverse impacts due to noise are anticipated.

3.8 Hazardous Materials

This section of the Environmental Impact Statement describes the existing potential hazardous materials and potential impacts that could occur from the No Action Alternative and Alternatives 1 and 2.

3.8.1 Federal, State, and Local Regulations

3.8.1.1 Federal

The U.S. Environmental Protection Agency (EPA) oversees several programs related to hazardous materials:

- The Superfund program
- The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
- The Resource Conservation and Recovery Act (RCRA)
- The Toxics Substances Control Act (TSCA)
- The Asbestos National Emission Standards for Hazardous Air Pollutants program

3.8.1.2 State

The regulatory requirements that apply to hazardous materials in Washington State include:

- Model Toxics Control Act (MTCA) and Cleanup Regulation (Revised Code of Washington [RCW] 70.105D and Washington Administrative Code [WAC] 173-340)
- Dangerous Waste Regulations (RCW 70.105 and 15.54, WAC 173-303)
- Solid Waste Disposal (RCW 36.58) and Solid Waste Handling Standards (WAC 173-350)
- Underground storage tank (UST) Statute and Regulations (RCW 90-76, WAC 173-360)
- General Occupational Health Standards – Asbestos (RCW 49.17 and 49.26, WAC 296-62 Part I-1).
- Safety Standards for Construction Work – Lead (RCW 49.17, WAC 296-155-176)
- Puget Sound Clean Air Agency (PSCAA) – Asbestos, Regulations 1-3

3.8.1.3 Local

The Local Hazardous Waste Management Program in King County was established to develop and implement a plan to address hazardous waste (RCW 70.105.220). The program operates under the *Local Hazardous Waste Management Plan Update* (2010). Industrial waste rules and regulations (King County Code 28.84.060) describes notification requirements for hazardous waste.

The types of waste accepted at a transfer station are strictly controlled by the King County Solid Waste Division (division) through King County Public Rule PUT 7-1-4(PR), *Waste Acceptance Policy* (King County 2009). This rule prohibits disposal of hazardous or dangerous waste,

burning or smoldering material, infectious waste, excessively odorous or dusty material, and various other materials. Household hazardous waste (HHW) is exempt from regulation as hazardous waste.

3.8.2 Affected Environment

3.8.2.1 No Action Alternative

Historical and Existing Conditions

Site visits in winter/spring 2013 to the No Action Alternative, the existing Algona Transfer Station, identified and verified potential environmental concerns related to the presence of hazardous materials or wastes from historical and existing conditions. An interview with Transfer Station Operator Tracy Greene was also conducted on April 29, 2013. A summary of the historical improvements and existing conditions is shown in Figures 3.8-1 and 3.8-2.

Structures and Improvements

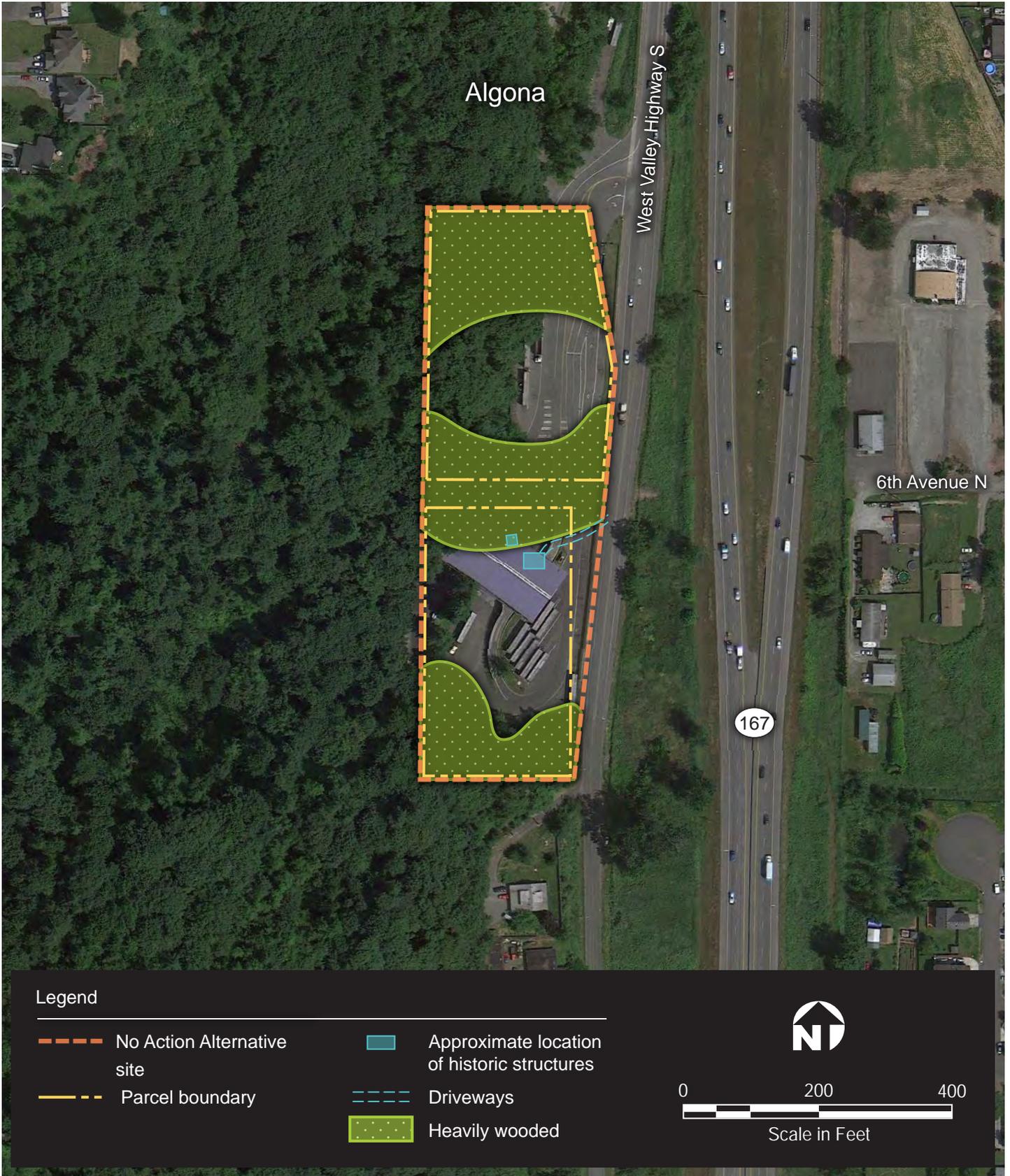
As early as 1912, the No Action Alternative site was developed with a single-family residence. In 1940, a barn and two lean-to's were added to the property. Between 1964 and 1965, the single-family residence, barn, and lean-to's were torn down. The site was developed with a solid waste transfer station in 1966. The site was improved with a main gate structure (which was replaced with a new structure in 2004), truck scales, and asphalt parking and driving areas. The perimeter of the transfer station is fully fenced and the main gate has locking mechanisms that restrict access when the transfer station is closed. Access to the main gate of the transfer station is provided from West Valley Highway South. Improvements were made to the scale house from 2002 through 2004.

Operations and Use

From 1912 until 1966, the site was owned by an individual and was developed with a residence. Since 1966 it has operated as the Algona Transfer Station.

The 4.4-acre transfer station was designed for the collection of municipal solid waste from commercial and self-haul vehicles. The types of solid waste accepted include garbage, rubbish, yard waste and limited construction and demolition, waste. Solid waste must comply with the *Waste Acceptance Rule for King County Solid Waste Division Solid Waste Handling Facilities* (King County 2005). Recyclables collection service is not offered at the transfer station.

Commercial vehicles and self-haul vehicles dump or drop their solid waste into transfer trailers parked in tunnels under openings in the receiving floor. Packers mounted above these openings compact the trash in the transfer trailers below.



Source: Google Earth Pro, imagery date: 7/5/2012

Figure 3.8-1
**No Action Alternative Site
 Historic Features**

Prepared for King County by URS Corporation Consultants



Source: Google Earth Pro, imagery date: 7/5/2012

Figure 3.8-2
**No Action Alternative Site
 Existing Features**

Prepared for King County by URS Corporation Consultants

Throughout the day the floor is routinely cleaned of debris. Water is also used frequently to wash down the floor and the wash-water is directed into the floor openings. Drains located on and below the receiving floor collect the waste wash-water (leachate) for discharge to the sanitary sewer via on-site oil/water separators. Three of the oil/water separators have a 25-gallon capacity and the fourth oil/water separator has a 50-gallon capacity.

Identified Environmental Concerns

Historical data from Environmental Data Resources, Inc. (EDR) and a winter/spring 2013 site visits identified the following hazardous materials and waste concerns:

- Small holes (likely associated with the historic location of piping) were observed on the north end of the building near the northern pit. Evidence of etching was observed on the concrete surface surrounding both the holes and the floor drains located adjacent to the holes. The cause of the etching is unknown but may have resulted from contact with waste wash-water that was impacted by a corrosive substance.
- Exterior areas were primarily utilized for trailer parking and storing as well as entering and exiting the transfer station. Minor staining was observed on the asphalt surface and was likely the result of the small leaks from parked trucks or vehicles. No evidence of bulk hazardous material and/or waste was observed within the exterior areas. No exterior disposal areas were observed at the site.
- The transfer station maintains a 1,400-gallon, diesel fuel, concrete pad-mounted aboveground storage tank (AST) installed in 2012 to supply fuel to the on-site generator, and an empty 1,400-gallon AST which is situated below the diesel fuel AST and provides secondary containment for the diesel fuel in the event of a release. No evidence of staining was observed on the concrete pad, nor was distressed vegetation observed in the immediate vicinity. The AST replaced a 500-gallon AST installed in 2002; no ASTs were on-site prior to 2002.
- The transfer station maintains two hydraulic power units (HPUs), which power the trash packers. The two HPUs are located below the receiving floor and are equipped with 55-gallon ASTs containing hydraulic fluid. Secondary containment for the two 55-gallon ASTs is provided by the on-site oil/water separators connected to the sanitary sewer system.
- Empty and full trailer parking areas drain to a wet well which is connected to a force main that pumps collected wastewater to the sanitary sewer main.

No evidence of other historical ASTs or USTs have been reported or observed at the site.

Regulatory Review

Previous Reports

Reports reviewed include the *Phase I Environmental Site Assessment (ESA)* of the existing Algona Transfer Station (AMEC 2014), the *Algona Transfer and Recycling Station Operating Plan*

(Operating Plan) (King County 2010a), and the *Stormwater Pollution Prevention Plan, King County Solid Waste Division Transfer Facilities* (King County 2012a).

AMEC Environment & Infrastructure, Inc. (AMEC) conducted a Phase I ESA of the existing Algona Transfer Station in 2014. The investigation included a site visit; interviews with individuals familiar with conditions and operations at the property; and a review of readily available historical records including title and regulatory documents, aerial photographs, Sanborn Fire Insurance maps, and topographic maps.

According to the ESA, there are three ASTs at the existing Algona Transfer Station, including a 1,400-gallon diesel tank associated with the site emergency backup generator and two, 150-gallon hydraulic oil tanks beneath the transfer building used for the site packers. The sanitary sewer system at the site also includes three, 25-gallon and one, 50-gallon oil/water separators. Electrical or hydraulic equipment that could contain polychlorinated biphenyl (PCB) was visually observed by AMEC on Puget Sound Energy pole-mounted electrical transformers, but AMEC could not confirm the presence or absence of PCBs. No USTs, unusual odors, drums, or other hazardous substances or petroleum products containers were identified at the site. AMEC concluded that recognized environmental conditions were not identified at the site during the Phase I ESA.

The Operating Plan for the existing Algona Transfer Station includes waste acceptance, handling, and control measures. Hazardous or dangerous wastes that inadvertently enter the waste stream are subject to the requirements of the Dangerous Waste Regulations (WAC 173-303). Hazardous materials and safety and emergency plans are also in the Operating Plan and include information for spill response, containment, and cleanup. Routine and periodic inspections are performed by regulatory agencies and the division to ensure operational and facility compliance with environmental, public health, and waste management regulations.

The current Stormwater Pollution Prevention Plan and Spill Prevention Control and Countermeasures plan are maintained to ensure compliance with the National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit. There are no permits or other conditions that prescribe or require stormwater sampling for the Algona Transfer Station. Visual inspections are conducted weekly by the division's Wastewater Unit. Within a 3-year period prior to the Stormwater Pollution Prevention Plan, the Algona Transfer Station had no reportable spills (greater than 25 gallons). One spill of hydraulic oil was reported by a customer to be about 25 gallons but the location was not identified. BMPs included in the Stormwater Pollution Prevention Plan and Spill Prevention Control and Countermeasures plan have been designed to eliminate sources of stormwater contamination.

Database and Agency Review

The review of the EDR report, Washington State Department of Ecology (Ecology) databases and winter/spring 2013 field visits found relevant on-site and adjacent records.

The site was identified as a facility that stores, handles, and/or generates waste and is subject to inspection and reporting requirements as part of these activities. According to the EDR report and the records maintained by Ecology, with the exception of a reported restroom sewer

backup, there were no reported violations, spills, or releases associated with the Algona Transfer Station.

Adjacent listings for Valley Topsoil, Inc. and Interwest Development NW Inc. are described under the Alternative 2 site and screening results are shown in Table 3.8-1.

Screening Results

Table 3.8-1 shows the screening results for the No Action Alternative site.

**Table 3.8-1
No Action Alternative Site Screening Results**

Name	Location	Site Category	Justification
Algona Transfer Station	No Action Alternative site	Low Impact	There are minimal staining and reported spills on-site. The potential for releases to stormwater or groundwater is low at the site.
Valley Topsoil Inc./Interwest Development NW Inc.	Adjacent to the north	Low Impact	There are not substantial reported effects and groundwater generally flows to the east and north.

3.8.2.2 Alternative 1

Historical and Existing Conditions

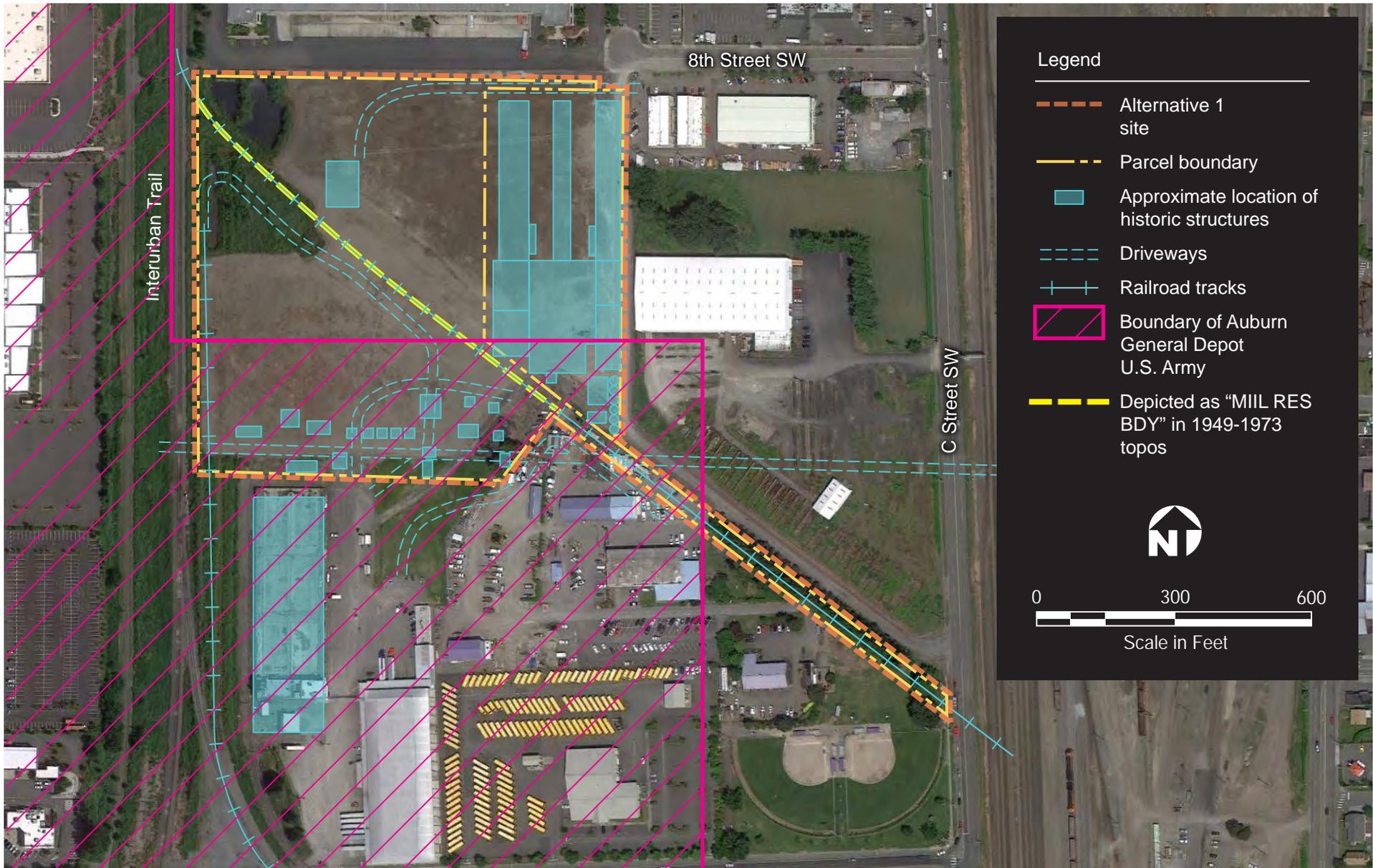
A visit was conducted to identify and verify potential environmental concerns related to the presence of hazardous materials or wastes from historical and existing conditions. Observations were made from public rights-of-way including 8th Street SW and the Interurban Trail in winter/spring 2013. A summary of the historical improvements and existing conditions is shown in Figures 3.8-3 and 3.8-4.

Structures and Improvements

Historically, the Alternative 1 site consisted of parcels 2421049001 (4.9 acres), 2421049054 (4.4 acres) and a portion of 2421049068 (9.4 acres). Parcel 2421049068 was historically part of the Auburn General Depot, owned and maintained by the U.S. Army. As early as 1936, a railroad spur was documented on the Alternative 1 site. It extended from the existing Union Pacific Railroad (UPRR) located at the northwestern corner of the property diagonally to intersect with C Street SW and Burlington Northern Santa Fe (BNSF) rail yard. Historically, this railroad spur crossed through all three parcels.

Historical records for the parcels include:

- 2421049001: the parcel was merged with 2421049054 in 1965. Historical improvements associated with the parcel were on file with 2421049054.
- 2421049054: from 1954 through 1963, it was improved with multiple hay storage and cattle shelters, a cattle feed mill, and six grain silos. By 1988 the majority of the feed lot buildings were demolished.



Source: Google Earth Pro, imagery date: 7/5/2012

Figure 3.8-3
Alternative 1 Site
Historic Features

Prepared for King County by URS Corporation Consultants



Source: Google Earth Pro, imagery date: 7/5/2012

Figure 3.8-4
Alternative 1 Site
Existing Features

Prepared for King County by URS Corporation Consultants

- 2421049068: as early as 1936, approximately 18 structures were located on the portion in the Alternative 1 site. In the mid-1940s, three buildings were constructed on 2421049068 including a 56,500-square-foot cold storage plant (with an oil burner heater), a 400-square-foot salt storage building, and a 1,360-square-foot battery shop (with an oil burner heater). In the late 1960s and early 1970s, the parcel was improved with catch basins, a UST, and spur tracks. With the exception of the spur tracks, none of these structures were located on the portion of the parcel associated with the site.

Operations and Use

The southwest portion of the Alternative 1 site (historically a northern portion of 2421049068) was owned by National Lumber Distributors (as early as 1927). In the late 1920s, right-of-way was sold to David Hart, Inc., Chicago, Milwaukee & St. Paul Railway, and Oregon-Washington Railroad and Navigation Company for a spur from the main track. This spur bisected the Alternative 1 site into northern and southern halves, diagonally.

- South Half of Alternative 1 site: in 1936, the portion of parcel 2421049068 situated within the boundaries of the site was developed with approximately 18 structures and an unimproved access road that appeared to be part of a farmstead (surrounded by large areas of agricultural fields). By the mid-1940s, the parcel was redeveloped with industrial structures and railroad spurs. With the exception of a railroad spur (located on the western boundary) none of the improvements were located on the site. During this time the parcel was designated as part of the Auburn General Depot. The military/U.S. Army boundary aligned with the railroad spur that cut diagonally across the site.

The southern half of the site remained cleared, unimproved land from the mid-1940s until 2001. In 2001, the lot lines for parcels 2421049068 and 2421049001 were adjusted to create the current parcel boundary configuration and a cyclone fence was installed.

- North Half of Alternative 1 site: the north portion of the site (2421049001) was merged with parcel 2421049054 in 1965 for construction of the Ardell Feed Lot. Improvements associated with the Ardell Feed Lot were first documented on parcel 2421049054 in 1954. Feed lot operations continued on the northern half of the site until the early 1980s. In 1981, the parcels were sold and by 1988 the majority of the buildings were gone.

The 18.7-acre site was cleared and graded and improved by 2005. Improvements included an open-water feature with vegetation on the northwest corner of the property and drainage piping that discharged to a depression along the western boundary.

Parcels 2421049001 and 2421049054 are currently owned by Segale Properties LLC (King County 2015d). No information pertaining to historical USTs, ASTs, septic, or the storage and handling of hazardous materials were identified in the ownership records.

Identified Environmental Concerns

Historical data from EDR and the winter/spring 2013 site visits identified the following hazardous materials and waste concerns:

- A UST was installed on parcel 2421049068 in the late 1960s/early 1970s. The location of the UST was not documented in the assessment records reviewed but it is unlikely that it was located on the Alternative 1 site.
- No evidence of historical ASTs or USTs was reported or observed on the Alternative 1 site. No evidence of current hazardous material and waste storage, treatment, generation or disposal was observed on the site from the public rights-of-way.

Regulatory Review

Previous Reports

No previous investigative studies or regulatory environmental reports were available for review.

Database and Agency Review

The review of the EDR report, Ecology databases, and winter/spring 2013 field visits found relevant on-site and adjacent records.

The Alternative 1 site was developed with structures that were likely associated with the surrounding agricultural activities. The diagonal railroad spur facilitated the operations of a cattle-shipping business but it has been removed and the ground has been graded. The site was identified in the EDR report as owned La Pianta LP. The Ecology databases indicate the site maintains a Non-Major NPDES permit for cattle feed lot operations. Ecology has monthly data from historic water quality testing events that indicates that the stormwater pond on-site has been tested weekly for pH and turbidity from 2006 to 2015 with no water quality violations. The results of the records search indicated that there were no large quantities of hazardous materials or waste stored or used as part of the historic cattle feed lot operations.

Adjacent facilities include Auburn School District Transportation Center and City of Auburn Maintenance and Operations, Boeing, the BNSF rail yard, and Puget Sound Recyclers. Potential hazardous materials identified on these properties include:

- Auburn School District Transportation Center is located on the adjacent property to the south. The EDR report identified a release in 1997 during the removal of two USTs (one diesel and one gasoline). Soils were impacted and a No Further Action determination was issued to the facility on January 12, 2012.
- Auburn Maintenance and Operations is also located immediately to the south. Four USTs were removed in April 1995. During the UST removal activities, petroleum-contaminated soil was identified above regulated cleanup levels, triggering a remedial investigation and subsequent cleanup action. Ecology issued a No Further Action determination on December 16, 2011. The facility operates with three USTs and has no reported violations (Ecology 2013b).

The Auburn Boeing Plant is about 1,000 feet south of the Alternative 1 site. At least two releases have resulted in groundwater contamination above applicable state cleanup standards. Boeing was required to conduct a remedial investigation which identified two

contamination plumes (identified as Plume 1 and Plume 2). Groundwater monitoring in December 2012 identified trichloroethylene (TCE) in both plumes. TCE is a volatile organic compounds used primarily as an industrial solvent.

Plume 1 has migrated north-northwest and TCE was detected in the groundwater of wells located adjacent to the Alternative 1 site along the western and northern boundaries and within the driveway. TCE was not detected in the shallow groundwater zone (2 to 30 feet below ground surface [bgs]) at the Alternative 1 site, but was detected in both the intermediate and deep (40 to 100 feet bgs) zones. TCE detected in the groundwater was below concentration levels for public drinking water. The federal drinking water Maximum Contaminant Level under the Safe Drinking Water Act is 5 parts per billion (ppb). Concentrations of TCE in groundwater at this location are about 1 ppb and would likely be below final clean up levels.⁵ The risk of encountering detectable groundwater during construction of the Alternative 1 site was determined to be low to moderate.

Plume 2 has migrated northwest approximately 1,000 feet from the Alternative 1 site. TCE was detected in both the shallow and intermediate zones. It is unlikely that Plume 2 is an environmental concern to the Alternative 1 site. More information is available at: <http://www.ecy.wa.gov/programs/hwtr/cleanupSites/boeing-fabn/index.html>.

- The BNSF rail yard has been located about 850 feet east of the site since at least 1936. In 1989 four USTs were removed from the rail yard and initial groundwater and soil sampling prompted further subsurface investigations. Groundwater sampling detected contaminants at concentrations that exceed cleanup levels at a monitoring well approximately 1,300 feet northeast of the site. Ecology stated in 2009 that BNSF has been actively remediating the roundhouse and surrounding areas.
- Puget Sound Recycling is located approximately 1,300 feet northeast of the site and in the rail yard. Ecology information indicates that a spill resulted in petroleum-contaminated soil above cleanup levels in 2008 which is still awaiting cleanup (Ecology 2013b).

Screening Results

Table 3.8-2 shows the screening results for the Alternative 1 site.

⁵ Robin Harrover, Hazardous Waste Specialist, Ecology, PDEIS scoping comment email, November 10, 2015.

**Table 3.8-2
Alternative 1 Site Screening Results**

Name	Location	Site Category	Justification
Alternative 1 (including the listing for the Ardell Feed Lot/La Pianta LP Auburn)	Alternative 1 site	Low to Moderate Impact	There are no reported spills, hazardous material storage and use, or NPDES violations on-site. There is a low-risk from known historical farming and railroad on-site. The presence of contaminated groundwater in the intermediate and deep zones poses a moderate risk.
Auburn School District Transportation Center	Adjacent to the south	Low Impact	There are no reported groundwater effects and a No Further Action determination was issued indicating that soil cleanup met requirements.
Auburn Maintenance and Operations	About 1,000 feet south	Low Impact	There are no reported groundwater effects and a No Further Action determination was issued indicating that soil cleanup met requirements.
Boeing Commercial Airplanes Group (Auburn Boeing)	About 1,000 feet south	Low to Moderate Impact	Groundwater monitoring has indicated that there is no contaminated groundwater in the shallow zone at Alternative 1 site but TCE has been detected in the intermediate and deep zones. Remediation efforts are ongoing.
BNSF Rail Yard	About 850 feet east	Low Impact	There are active remediation efforts and affected groundwater is at a cross-gradient location.
Puget Sound Recycling	About 1,300 feet northeast	Low Impact	There are active remediation efforts in the vicinity and affected groundwater is at a cross-gradient location.

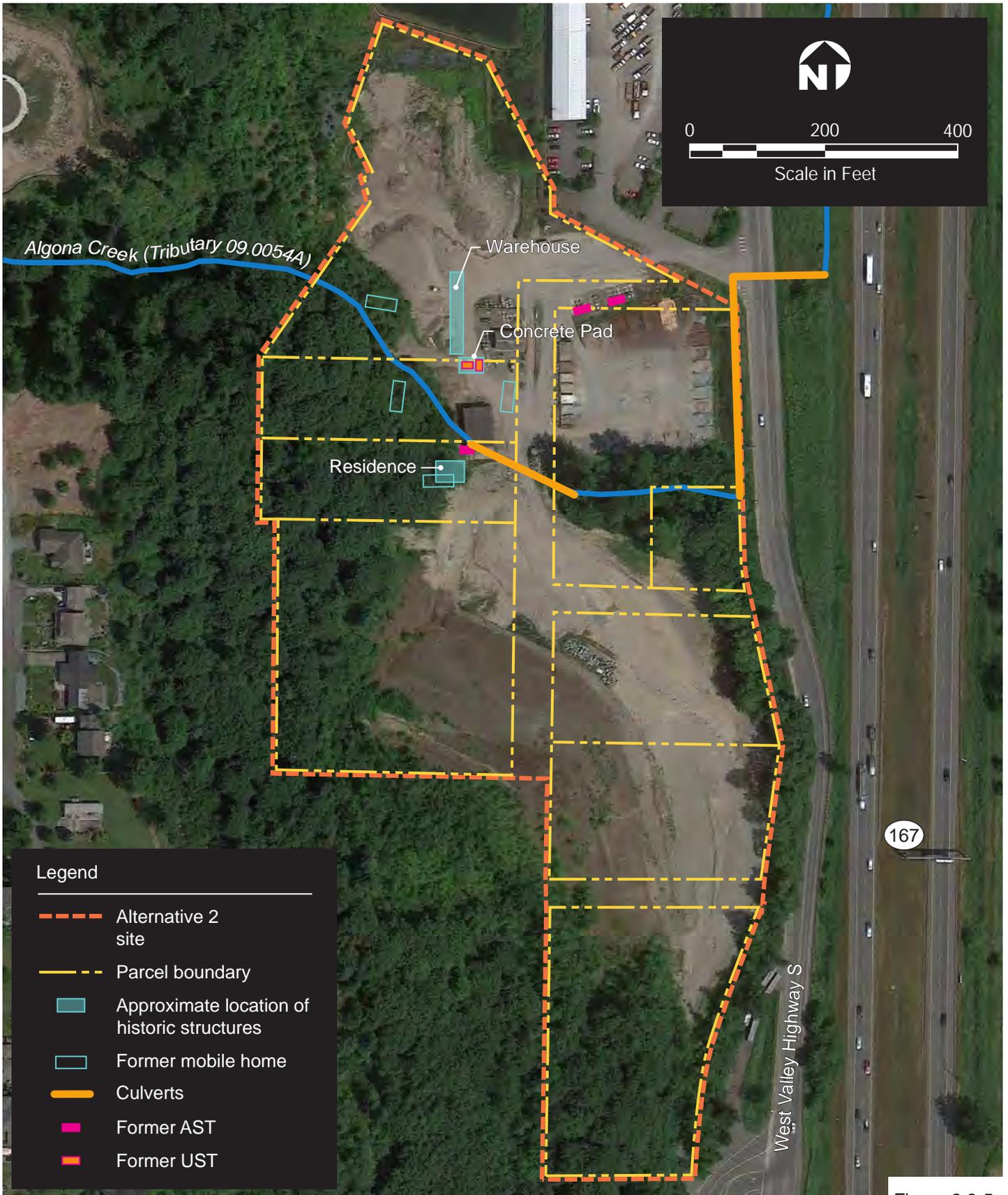
3.8.2.3 Alternative 2

Historical and Existing Conditions

Site visits in winter/spring 2013 identified and verified potential environmental concerns related to the presence of hazardous materials or wastes from historical and existing conditions. An interview with an on-site employee, Trish Kersey, was also conducted on March 19, 2013. A summary of the historical improvements and existing conditions is shown in Figures 3.8-5 and 3.8-6.

Structures and Improvements

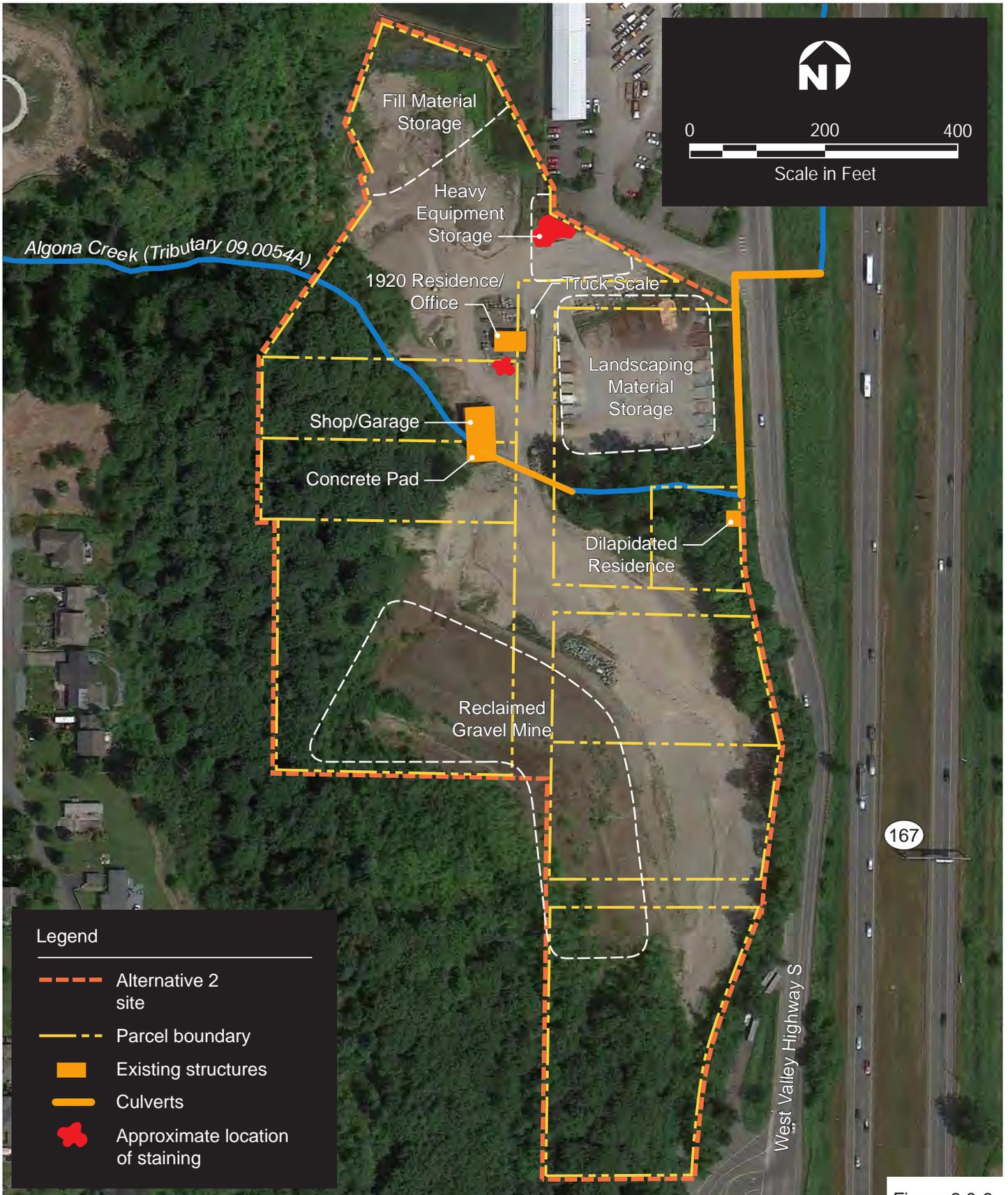
Historically, four of the nine parcels have been improved with structures as early as 1920, including 3751601414, 3751601416, 3751601419, and 3356407925. No improvements were identified from records reviewed for the remaining five parcels.



Source: Google Earth Pro, imagery date: 7/5/2012

Figure 3.8-5
**Alternative 2 Site
 Historic Features**

Prepared for King County by URS Corporation Consultants



Source: Google Earth Pro, imagery date: 7/5/2012

Figure 3.8-6

Alternative 2 Site Existing Features

Prepared for King County by URS Corporation Consultants

- 3751601414: the earliest structure on record at the Alternative 2 site is a residence built in 1920. Later improvements on this parcel included a warehouse built in 1950, one or more mobile homes placed as early as the mid-1960s and a detached shop/garage built in 1987. The last record of a mobile home on the property was dated October 1989. Two of these improvements continue to exist including the 1920 residence and the 1987 detached shop/garage. Sometime around the late 1980s or early 1990s, the 1920 residence was converted to commercial use as office space for the landscape supply business that currently operates at the site. The assessment records also indicate that a 1,000-gallon tank was present on the site in 1985 but the location is unknown.
- 3751601416: the parcel to the south, 3751601416, was historically improved with two mobile homes. Records indicated that the mobile homes were placed on the parcel in approximately 1963 and removed around 1987.
- 3751601419: the parcel was historically developed with a residence built in 1941 and a mobile home in approximately 1980. The records did not indicate the demolition date of the residence but the mobile home was removed by 1987.
- 3356407925: this parcel was located on the north half of the site along West Valley Highway South and was developed with a 320-square-foot residential structure in 1956. The residential structure remains on-site in a dilapidated state.

The nine parcels associated with the 18.9-acre Alternative 2 site are currently owned by King County.

Operations and Use

The Alternative 2 site was used as a residence between approximately 1920 and the 1980s. Beginning around 1980, clearing and grading activities occurred on the southern portion of the site while residential structures continued to occupy the northern portion. The mobile homes that had occupied unspecified locations on three parcels were removed by 1989.

The 1920 residence was converted to office space and the property became commercial. Extensive clearing and grading associated with sand and gravel mining occurred throughout the 1990s. Mine reclamation was underway by 1998 and the property use changed from active mining to materials storage by 2006. The source of fill material used in mine reclamation activities is unknown. Stormwater treatment and/or flow-control facilities were constructed on and adjacent to the site during the early 2000s. The current use is materials storage for 410 Quarry, LLC, a landscaping supply business.

Identified Environmental Concerns

Historical data from EDR and winter/spring site visits identified the following hazardous materials and waste concerns:

- One 500-gallon gasoline UST and one 1,000- or 1,500-gallon waste oil UST were present on parcel 3751601414 from approximately the mid-1980s until their removal in 1994.

Site assessments performed during removal did not confirm a release for the gasoline UST, but a release was confirmed for the waste oil tank (Ecology 1994).

Remedial excavation was conducted subsequently and bottom and sidewall soil samples indicated that residual levels of petroleum hydrocarbons in soil were below applicable cleanup levels. Soil samples did not contain detectable levels of PCBs or lead concentrations. Detectable levels of petroleum hydrocarbons were not present in shallow groundwater collected during tank removal. Ecology categorized the property as “cleanup started” and later noted that soil and groundwater characterization was incomplete and that the status remained unchanged. No indications of the former USTs, including piping, soil staining, surface water sheens, distressed vegetation, or pavement patches were observed during winter/spring 2013 site visits.

- Two ASTs, each containing Armor Seal Pavement Sealer, were situated along the northern boundary of parcel 3356407915. The portion of the site with the ASTs was leased to another company who sold the Armor Seal. The dates these ASTs were in operation is unknown, however, they are visible in aerial photos as early as 2002 and possibly as late as 2007. An undated Ecology inspection report noted that the secondary containment around the ASTs may not have been sufficient and the area should be covered to prevent stormwater contact with Armor Seal that has been spilled onto the ground. No remaining evidence of the ASTs was identified during the winter/spring 2013 site visits.
- A propane AST was formerly located on a concrete pad immediately south of the detached shop/garage and was used to fuel a space heater. The dates of operation, size and condition of this AST are unknown. The only remaining evidence of the AST during the winter/spring 2013 site visits were the presence of the space heater inside the detached shop/garage and aboveground product piping.
- Several small areas of staining were observed on the ground surface during the winter/spring 2013 site visits and are believed to be associated with oil leakage from equipment stored on-site.
- Due to the age of the structures it is likely that hazardous substances may have been used in construction or in subsequent modifications. Historical structures may have also contained asbestos, lead-based paint, PCBs (ballasts) or mercury (switches and/or fluorescent bulbs).
- The detached shop/garage is likely primarily used for supply storage. No vehicles or large equipment were observed in the garage during the winter/spring 2013 site visits. Hazardous materials observed included several dozen 1- to 5-gallon containers of sealants, paints, and epoxies. Four 5-gallon gasoline cans were observed in the garage, only one of which contained product. A partially full 800- to 1,000-gallon trailer-mounted diesel tank was identified in the garage.
- Sand and gravel mining occurred at the site from the late 1970s or early 1980s through the 1990s. Mine reclamation was underway by the late 1990s but the source of fill used to backfill the pit was unknown.

Regulatory Review

Previous Reports

Prior to purchasing the parcels comprising the Alternative 2 site in 2012, the division retained AMEC to conduct a Phase I ESA (AMEC 2012). AMEC concluded that recognized environmental conditions were present with respect to former USTs and ASTs at the property. In particular, the possibility for shallow soil impacts from minor spills or leaks exists at the property and AMEC recommended that King County notify any contractor of the possibility of encountering petroleum-contaminated soils prior to disturbing soils at the property.

Database and Agency Review

The review of the EDR report, Ecology databases, and winter/spring 2013 field visits found relevant on-site and adjacent records. The Alternative 2 site was identified in the regulatory database as Valley Top Soil Inc. and Interwest Development NW Inc.

- Valley Topsoil Inc. removed a 500-gallon unleaded gasoline UST and a 1,500-gallon waste oil UST in 1994. Soil samples collected during the removal of the gasoline UST did not contain detectable levels of petroleum hydrocarbons. A release was confirmed during removal of the waste oil tank and over-excavation was conducted to remove all visually impacted soil. On June 1, 1995, Ecology designated the status of release as “cleanup started.” In May 2001, Ecology further noted that soil and groundwater characterization were incomplete and that the status remained unchanged.
- Interwest Development NW Inc. had a NPDES Sand and Gravel General Stormwater Permit before closure. Ecology records indicated that the facility historically accepted manure and sludge, yard waste, and owned and operated an AST that contained Armor Seal Pavement Sealer. An undated Ecology inspection report noted that the secondary containment around the AST may not have been sufficient and the area surrounding the AST should have been covered to prevent stormwater contact with Armor Seal that had been spilled onto the ground.

Based on the EDR report and EPA database, the only adjacent off-site property that had the potential to affect the Alternative 2 site was the existing Algona Transfer Station. Review of available records and field observations for the existing Algona Transfer Station are described under the No Action Alternative site. The plume from the Auburn Boeing Plant is approximately 0.3 mile east of the Alternative 2 site and is migrating to the northwest.

Screening Results

Table 3.8-3 shows the screening results for the Alternative 2 Site.

**Table 3.8-3
Alternative 2 Site Screening Results**

Name	Location	Site Category	Justification
Valley Top Soil Inc. and Interwest Development NW Inc.	Alternative 2 site	Low to Moderate Impact	There are potential soil and groundwater effects from reported soil and groundwater impacts (USTs and ASTs), historic storage and use of pavement sealer, and observed staining.

3.8.3 Environmental Impacts

3.8.3.1 Direct Impacts

No Action Alternative

Construction

No construction activities are anticipated for the No Action Alternative.

Operation

Under the No Action Alternative, the division would continue to operate the existing Algona Transfer Station. There is an ongoing potential for spills or leaks, improper handling of wastes at the transfer station, and effects to stormwater runoff. There are also potential effects from ageing infrastructure at the transfer station including cracks in the oil/water separators and damaged piping and asphalt surfacing below the tipping floor. Routine maintenance and repairs would continue. Structural integrity testing of the AST on-site occurs every 5 years, mostly recently in 2012. Because the Operating Plan, Stormwater Pollution Prevention Plan and Spill Prevention Control and Countermeasures plan would continue to be implemented during operations, no impacts are anticipated.

Alternative 1

Construction

As shown in the screening results in Table 3.8-2, potential hazardous materials risks are unlikely on the Alternative 1 site. There are no reported spills, hazardous material storage and use, or NPDES violations on-site. There is a low risk from known historical farming and railroad use on-site. There is the potential that undocumented ASTs, USTs, or hazardous material storage areas have occurred on the property in the past, and that there is unknown contamination. If soil or groundwater contamination is detected, construction could be delayed until the contaminated media is characterized and managed properly.

There are risks associated with adjacent properties but most were also determined to be low. The Auburn School District Transportation Center and Auburn Maintenance and Operations to the south both received No Further Action determinations from Ecology. The BNSF rail yard and

Puget Sound Recycling to the east and northeast are at cross-gradient locations where groundwater movement is unlikely. The BNSF rail yard has active remediation efforts while remediation at Puget Sound Recycling is inactive. No hazardous materials impacts are anticipated.

TCE has been detected in the groundwater of wells located adjacent to the Alternative 1 site along the western and northern boundaries and within the driveway. TCE was detected at the intermediate and deep groundwater zones which range from 40 to 100 feet bgs but were below regulated concentration levels for public drinking water. The risk of encountering detectable levels of TCE in groundwater during construction of the Alternative 1 site was determined to be low to moderate. Additional groundwater investigations and monitoring may be required before purchase of the property and construction at the site. If groundwater is encountered during excavation activities, dewatering would likely require groundwater testing. If groundwater is found to be contaminated, it may have to be treated prior to being discharged into the sanitary sewer. It is unlikely that Plume 2 associated with the Auburn Boeing Plant is an environmental concern to the Alternative 1 site. There could be low to moderate impacts during construction depending on whether potential soil and groundwater contamination are encountered on-site.

An aboveground fuel station would likely be installed during construction. Mitigation measures would minimize potential impacts from the fuel station.

A NPDES Construction Stormwater General Permit would be required and would include BMPs that would be implemented in accordance with the Stormwater Pollution Prevention Plan. There is some risk of hydraulic fluid, anti-freeze, gasoline, and diesel spills/leakage from heavy equipment during construction. Provided BMPs are effectively implemented during construction, no impacts are anticipated.

Operation

There would be the potential for spills or leaks during operations. Hydraulic fluid, anti-freeze, gasoline, and diesel spills/leakage could occur from division and private vehicles during operation. Routine maintenance and repairs would continue, as needed. The new transfer station would have an Operating Plan and a Stormwater Pollution Prevention Plan. Implementation of proper stormwater management and spill prevention measures would prevent entry of waste materials into ground or surface waters. No operation impacts are anticipated.

The division would develop and implement a Spill Prevention Control and Countermeasures plan. Provisions of the plan are described under mitigation measures.

A contaminated media contingency plan (soil and groundwater) will be implemented to address issues such as field screening methods, notification requirements, soil stockpile management, and appropriate disposal methods and facilities. This plan would also contain the means and methods to address the discovery and removal of a UST.

Because municipal solid waste would be typically stored at the site for a single day or less, the potential for spontaneous combustion would be low. The risk of explosion associated with dust would be low because of the design of the transfer building and ventilation systems. Screening of incoming wastes would reduce the potential for explosion of compressed vessels.

If HHW processing is offered at the new transfer station, it would be stored in specialized containers on-site. High-hazard (Group H) occupancy requirements per the IBC would be applicable to specific portions of the HHW facility, and adequate design criteria would be developed to achieve compliance. Group H occupancy includes:

...the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in control areas constructed and located as required in Section 414 of the IBC (IBC 2009).

Petroleum products, solvents, paints, and other potentially hazardous liquids would also be stored in a secured location with secondary containment on-site. Vector wildlife control (e.g., rodents, insects, nuisance birds) would be implemented based on regulatory procedures and industry BMPs and could include rat poison and other substances, if required. There is a potential of illegal dumping of toxic or hazardous materials at the site.

The division has a *Hazardous Materials Emergency Response Plan* that is maintained at each transfer station (King County 2013b). This plan describes the procedures and resources used by the division to respond to hazardous materials emergencies at transfer facilities should they occur. The division would also have an Operating Plan that would describe inspection requirements, including routine and periodic inspections performed by regulatory agencies and the division through self-audit. Employees are trained in emergency response procedures, including emergency contacts, as part of implementation of the Spill Prevention Control and Countermeasures plan described in mitigation measures. The division also retains an emergency response contractor on a 24-hour-per-day, 7-day-per week basis that would respond to spills or accidental discharges of petroleum products and hazardous wastes at the transfer station, if they were to occur. The division also cooperates with other local emergency service providers.

Decommissioning and Deconstruction

It is anticipated that decommissioning, and possible deconstruction, of the existing Algona Transfer Station would occur after a new transfer station is constructed and operating. The existing Algona Transfer Station does not accept household hazardous waste. While AMEC concluded that recognized environmental conditions were not identified at the site during the Phase I ESA, there is also a risk of encountering soil contamination and asbestos containing materials and lead based paints from structures. There is also some risk of hydraulic fluid, anti-freeze, gasoline and diesel spills/leakage from heavy equipment during deconstruction. No impacts are anticipated with appropriate BMPs described for Alternatives 1 and 2.

Alternative 2

Construction

As shown in the screening results in Table 3.8-3, potential hazardous materials exist at the Alternative 2 site but are unlikely off-site.

The EDR report and Ecology records indicated that Valley Topsoil Inc. removed a 500-gallon unleaded gasoline UST, and a 1,500-gallon waste oil UST in 1994 and that soil and groundwater characterization were incomplete. Interwest Development NW Inc. historically accepted manure and sludge, yard waste, and owned and operated an AST that contained Armor Seal Pavement Sealer without sufficient secondary containment. AMEC concluded in the Phase I ESA that recognized environmental conditions were present from former USTs and ASTs on-site.

The possibility for shallow soil impacts from minor spills or leaks exists at the site and AMEC recommended that King County notify any contractor of the possibility of encountering petroleum-contaminated soils prior to disturbing soils at the property. There are also potential effects to groundwater from reported USTs and ASTs and risk of encountering asbestos-containing materials and lead-based paints from structures that may be demolished. There could be low to moderate impacts during construction depending on potential soil and groundwater contamination on-site.

An aboveground fuel station would likely be installed during construction. Mitigation measures would minimize potential impacts from the fuel station.

No potential hazardous materials risks associated with adjacent properties were identified. Based on the EDR report and Ecology databases, the only adjacent off-site property that has the potential to affect the Alternative 2 site is the existing Algona Transfer Station. While there are minimal staining and reported spills at the existing Algona Transfer Station, the potential for releases to stormwater or groundwater are low. No hazardous materials impacts are anticipated. A NPDES Construction Stormwater General Permit would be required and would include BMPs that would be implemented in accordance with the Stormwater Pollution Prevention Plan. There is some risk of hydraulic fluid, anti-freeze, gasoline, and diesel spills/leakage from heavy equipment during construction. Provided BMPs are effectively implemented during construction, no impacts are anticipated.

Operation

There would be the potential for spills or leaks during operations. Hydraulic fluid, anti-freeze, gasoline, and diesel spills/leakage could occur from division and private vehicles during operation. Routine maintenance and repairs would continue, as needed. The new transfer station would have an Operating Plan and Stormwater Pollution Prevention Plan. Proper stormwater management and spill prevention measures would prevent entry of waste materials into ground or surface waters. No impacts are anticipated.

The division would develop and implement a Spill Prevention Control and Countermeasures plan. Provisions of the plan are described under mitigation measures.

A contaminated media contingency plan (soil and groundwater) will be implemented to address issues such as field screening methods, notification requirements, soil stockpile management, and appropriate disposal methods and facilities. This plan would also contain the means and methods to address the discovery and removal of a UST.

Because municipal solid waste would be typically stored at the site for a single day or less, the potential for spontaneous combustion would be low. The risk of explosion associated with dust would be low because of the design of the transfer station building and ventilation systems. Screening of incoming wastes would reduce the potential for explosion of compressed vessels.

If HHW processing is offered at the new transfer station, it would be stored in specialized containers on-site as described under Alternative 1.

Petroleum products, solvents, paints, and other potentially hazardous liquids would also be stored in a secured location with secondary containment on-site. Vector wildlife control (e.g., rodents, insects, nuisance birds) would be implemented based on regulatory procedures and industry BMPs and could include rat poison and other substances, if required. There is a potential of illegal dumping of toxic or hazardous materials at the site.

The division has a *Hazardous Materials Emergency Response Plan* that is maintained at each transfer station (King County 2013b). This plan describes the procedures and resources used by the division to respond to hazardous materials emergencies at transfer stations should they occur. Employees are trained in emergency response procedures, including emergency contacts, as part of implementation of the Spill Prevention Control and Countermeasures plan. The division would also have an Operating Plan that would describe inspection requirements, including routine and periodic inspections performed by regulatory agencies and the division through self-audit. The division also retains an emergency response contractor on a 24-hour-per-day, 7-day-per week basis that would respond to spills or accidental discharges of petroleum products and hazardous wastes at the transfer station, if they were to occur. The division also cooperates with other local emergency service providers.

Decommissioning and Deconstruction

Decommissioning and possible deconstruction impacts described above for Alternative 1 would also apply to Alternative 2.

West Valley Highway South Frontage and Overlay Improvements

There is some risk of hydraulic fluid, anti-freeze, gasoline and diesel spills/leakage from heavy equipment during road frontage and overlay improvements work. No impacts are anticipated with appropriate BMPs described for Alternative 2.

3.8.3.2 Indirect and Cumulative Impacts

No Action Alternative

Indirect Impacts

No indirect hazardous materials impacts are anticipated.

Cumulative Impacts

The area surrounding the No Action Alternative site is already developed with existing commercial and industrial uses. There are no anticipated reasonably foreseeable future projects in the vicinity. Any new development would likely improve potential hazardous materials in the vicinity due to investigations, remediation, and monitoring regulations.

Alternative 1

Indirect Impacts

Construction activities including dewatering at the Alternative 1 site could result in migration of the existing TCE groundwater contamination in Plume 1. Additional groundwater investigations and monitoring would likely be required before purchase of the property and construction at the site.

A recycling and transfer station at the site may affect collection at surrounding waste disposal sites including Auburn Wastemobile at the Outlet Collection, Puget Sound Recycling located northeast of the site on A Street SE, and other nearby stationary and mobile options.

Cumulative Impacts

The area surrounding the Alternative 1 site is already developed with existing commercial and industrial uses. There are anticipated reasonably foreseeable future nonindustrial projects in the vicinity and any new development could reduce levels of potential hazardous materials in the vicinity due to investigations, remediation, and monitoring regulations.

Alternative 2

Indirect Impacts

There could be soil or groundwater contamination encountered during construction at the site. It is not anticipated that any cleanup or remediation would be substantial or affect the presence of hazardous materials in the vicinity.

A recycling and transfer station at the site may affect collection at surrounding waste disposal sites including Auburn Wastemobile at the Outlet Collection, Puget Sound Recycling located northeast of the site on A Street SE, and other nearby stationary and mobile options.

Cumulative Impacts

The area surrounding the Alternative 2 site is already developed with existing commercial and industrial uses. There are no anticipated reasonably foreseeable future projects in the vicinity. Any new development could reduce levels of potential hazardous materials in the vicinity due to investigations, remediation, and monitoring regulations.

3.8.4 Mitigation Measures

3.8.4.1 No Action Alternative

No mitigation measures are required.

3.8.4.2 *Alternative 1*

A Spill Prevention Control and Countermeasures plan will be implemented to mitigate impacts to soil, surface water, and groundwater as a result of hazardous materials and waste spills.

Provisions of the plan may include:

- Storage of petroleum products, solvents, paints, and other potentially hazardous liquids in a secured location with secondary containment
- Maintenance of emergency response contact information on-site
- Maintenance of spill response materials and equipment in a readily accessible location
- Training of all workers in spill control and emergency response procedures
- Designation of a specific individual as primary on-site contact for emergency response to spills
- Regular maintenance of heavy equipment and vehicles to prevent leakage of fuel or lubricants
- Immediate cleanup of spills, in accordance with established procedures
- Adherence with established reporting procedures for all spills

Other mitigation measures proposed for hazardous materials include:

- Pre-construction soil characterization will occur to address soil management and disposal requirements.
- A contaminated media contingency plan (soil and groundwater) will be implemented to address issues such as field screening methods, soil stockpile management, and appropriate disposal methods and facilities. A Temporary Erosion and Sedimentation Control plan will be implemented to mitigate potential impacts to surface waters as a result of excavation, stockpiling, and other construction work.
- Prior to construction, the contractor will be required to prepare a Health and Safety Plan that describes emergency procedures that would be implemented in the event of encountering hazardous materials. This would include measures to be incorporated into the work plan to avoid on-site accidents and provide rapid response in case of accidents that may occur on the site.

These plans will present procedures, including BMPs, which will be employed at the site.

Measures will be in accordance with hazardous material requirements outlined in the Auburn Municipal Code. The Alternative 1 site falls within Groundwater Protection Zone 3 per the Auburn Municipal Code Chapter 16.10 because the site overlies the region between the 5-year and 10-year time-of-travel zone of wells owned by the city. Zone 3 prohibits hazardous waste treatment, storage and disposal or recycling facilities that accept, store or use hazardous materials. The division will work with Auburn to determine whether HHW processing may be allowed at the new transfer station.

Storage facilities for fuel will be designed with comprehensive safety features to comply with requirements of the International Building Code (IBC), the International Fire Code, and state and local ordinances. The aboveground fuel station will be sited away from the wetland and its buffer to the extent practicable.

3.8.4.3 *Alternative 2*

The same mitigation measures proposed for Alternative 1 would also apply to Alternative 2. There would also be an abatement plan for potential lead-based paint, asbestos-containing materials, and PCBs prior to the potential deconstruction of structures on-site.

Measures will be in accordance with hazardous material requirements outlined in the Algona Municipal Code. Chapter 16.18D.070 in the Algona Municipal Code, Critical Aquifer Recharge Areas states that vehicle repair and servicing must be conducted over impermeable pads and within a covered structure. Chemicals must be stored to protect from weather and provide containment should leaks occur. Application of household pesticides, herbicides, and fertilizers shall not exceed times and rates specified on the packaging.

A critical areas report for critical aquifer recharge areas will be prepared per Chapter 16.18D.070 in the Algona Municipal Code. If groundwater is encountered during excavation activities, dewatering would likely require groundwater testing. If groundwater is found to be contaminated, it may have to be treated prior to being discharged into the sanitary sewer.

The Algona Municipal Code also states that storage tanks located in critical aquifer recharge areas must comply with local building code requirements and follow specific performance standards for USTs and ASTs. USTs will be designed and constructed to prevent releases, protect against corrosion, and be constructed with material that is compatible with the substances to be stored. ASTs will be designed and constructed to not allow the release of hazardous substances, have a primary containment area enclosing or underlying the tank, and a secondary containment system either built into the tank structure or dike system built outside.

3.8.5 Significant Unavoidable Adverse Impacts

3.8.5.1 *No Action Alternative*

No significant unavoidable adverse hazardous materials are anticipated.

3.8.5.2 *Alternative 1*

No significant unavoidable adverse hazardous materials are anticipated.

3.8.5.3 *Alternative 2*

No significant unavoidable adverse hazardous materials are anticipated.

3.9 Land Use

This section of the Environmental Impact Statement describes the existing land uses, zoning, and land use plans and policies and potential impacts that could occur from the No Action Alternative and Alternatives 1 and 2.

3.9.1 State and Local Regulations

3.9.1.1 Zoning

The Washington State Growth Management Act (GMA) requires that counties and cities adopt zoning and other development regulations that are consistent with, and implement their adopted Comprehensive Plans. Zoning regulations contain requirements and standards that govern the use and development of land within that zone. Zoning ordinances generally include uses permitted, lot sizes and density, building height and setbacks, size of buildings, parking requirements, landscaping requirements, and permitting processes. Additional standards may cover issues such as buffering incompatible uses and signs. The classification of each parcel of land is typically indicated on the jurisdictions' official zoning map.

3.9.1.2 Growth Management Act

To protect the quality of life in the Pacific Northwest, the Washington State Legislature passed the GMA in 1990. The GMA directs the state's most populous and fastest-growing counties and their cities to prepare comprehensive land use plans that anticipate growth over a 20-year horizon. Comprehensive plans adopted in accordance with the GMA must manage growth to direct development to designated urban areas and away from rural areas.

The GMA requires local plans to both plan for, and not preclude, the siting of essential public facilities, stating that:

The comprehensive plan of each [GMA] county and city shall include a process for identifying and siting essential public facilities [which] include those facilities that are typically difficult to site, such as airports, state education facilities and state or regional transportation facilities as defined in Revised Code of Washington (RCW) 47.06.140, state and local correctional facilities, solid waste handling facilities, and in-patient facilities including substance abuse facilities, mental health facilities, group homes, and secure community transition facilities [...] No local comprehensive plan or development regulation may preclude the siting of essential public facilities (RCW 36.70A.200(1) and (5)).

3.9.1.3 King County Comprehensive Plan

The county adopted its first comprehensive plan under the GMA in 1994. The King County comprehensive plan provides a legal framework for making decisions about land use in unincorporated King County. The comprehensive plan also establishes boundaries for urban growth pursuant to the GMA. Portions of the King County comprehensive plan that address land use policies pertinent to a solid waste transfer station are described below.

Chapter 8, Section II, Subsection G of the King County comprehensive plan addresses Essential Public Facilities. It states:

The region will work cooperatively to site essential public facilities in an equitable manner. Essential public facilities are defined in the Growth Management Act and include large, usually difficult to site facilities such as prisons, solid waste facilities, wastewater facilities, and airports.

This section of the comprehensive plan includes the following policies:

F-226: *Proposed new or expansions to existing essential public facilities should be sited consistent with the King County comprehensive plan. Listed existing essential public facilities should be preserved and maintained until alternatives or replacements for such facilities can be provided.*

F-227: *King County and neighboring counties, if advantageous to both, should share essential public facilities to increase efficiency of operation. Efficiency of operation should take into account the overall value of the essential public facility to the region and the county and the extent to which, if properly mitigated, expansion of an existing essential public facility located in the county might be more economical and environmentally sound.*

F-228: *King County should strive to site essential public facilities equitably so that no racial, cultural, or socio-economic group is unduly impacted by essential public facility siting or expansion decisions. No single community should absorb an inequitable share of these facilities and their impacts. Siting should consider equity, environmental justice and environmental, economic, technical and service area factors. The net impact of siting new essential public facilities should be weighed against the net impact of expansion of existing essential public facilities, with appropriate buffering and mitigation. Essential public facilities that directly serve the public beyond their general vicinity shall be discouraged from locating in the Rural Area.*

F-229: *A facility shall be determined to be an essential public facility if it has one or more of the following characteristics [the proposed project meets the following criteria for all alternatives]:*

- a. The facility meets the Growth Management Act definition of an essential public facility;*
- b. The facility is on a state, county or local community list of essential public facilities;*
- c. The facility serves a significant portion of the county or metropolitan region or is part of a countywide service system; or*
- d. The facility is the sole existing facility in the county for providing that essential public service.*

F-230: *Siting analysis for proposed new or expansions to existing essential public facilities shall consist of the following [the siting process used to identify alternatives met the following requirements]:*

- a. An inventory of similar existing essential public facilities in King County and neighboring counties, including their locations and capacities;*
- b. A forecast of the future needs for the essential public facility;*
- c. An analysis of the potential social and economic impacts and benefits to jurisdictions receiving or surrounding the facilities;*
- d. An analysis of the proposal's consistency with policies F-226 through F-229;*
- e. An analysis of alternatives to the facility, including decentralization, conservation, demand management and other strategies;*
- f. An analysis of economic and environmental impacts, including mitigation, of any existing essential public facility, as well as of any new site(s) under consideration as an alternative to expansion of an existing facility;*
- g. Extensive public involvement; and*
- h. Consideration of any applicable prior review conducted by a public agency, local government, or citizen's group.*

Chapter 8, Section II, Subsection J of the King County comprehensive plan addresses management of solid waste. It includes the following policies related to transfer stations:

F-266: *Solid waste should be collected, handled, processed, and disposed of ways that reduce waste, conserve resources, and protect public health and the environment.*

F-268: *Solid waste management should be planned, and transfer and disposal capacity provided, on a regional basis.*

F-269: *King County shall operate a transfer system that is dispersed throughout the county to ensure access to safe, reliable, efficient, and affordable solid waste services.*

F-271: *King County shall encourage sustainable development and provide consumer education in the public and private sectors regarding green building practices, product stewardship, recycling, purchasing, and consumption in order to reduce the amount of waste disposed.*

3.9.1.4 Solid Waste Facility Siting Plan – Appendix C to the Transfer Plan

The King County Solid Waste Division (division) prepared the Transfer Plan, which was approved by the King County Council in December 2007. The Transfer Plan presents recommendations to guide the future of solid waste management, including the renovation of the urban transfer system. Appendix C to the Transfer Plan comprises the Siting Plan. A Final Environmental Impact Statement under State Environmental Policy Act (SEPA) was performed in 2001 for the

2001 Solid Waste Management Plan; and a Final Supplemental Environmental Impact Statement was completed in 2006 for the Transfer Plan.

The Siting Plan provides basic siting criteria, including both exclusionary criteria and siting requirements specific to transfer stations. Although it predates the County's equity and social justice ordinance, the plan requires that transfer stations be equitably distributed and requires the public be given an opportunity to understand and participate in the siting process. The Siting Plan recognizes that transfer stations are essential public facilities but are not viewed as desirable neighbors. Per the Siting Plan, the following features related to land use tend to make a site more suitable for development:

Zoning: *The most advantageous situation would occur if the use of a site for a transfer station were consistent with that site's zoning. Consistency with zoning would increase the probability of obtaining necessary land use permits and minimize land use impacts.*

In most jurisdictions transfer stations are considered an unclassified use because they are sited infrequently. However, transfer stations are most compatible with light industrial or commercial uses and least compatible with residential uses.

State or National Parks: *Transfer stations should be located no closer than 1,000 feet to any state or national park [note that while this feature does not refer to local and regional parks, such parks were reviewed during the siting process].*

Residential Neighbors: *A transfer station is a light industrial or commercial use facility and has substantial transportation-related needs. Transfer stations have been located in many types of settings; most commonly in commercial, industrial, or rural areas. Depending on land use patterns, these areas may be in proximity to residential areas.*

Vicinity land use is an important consideration because some land uses are associated with activities that are more susceptible to impacts from a transfer station than others. An industrial land use would be most compatible with a transfer station. The least compatible land uses would be residential land; those with sensitive receptors, such as schools, nursing homes or hospitals; and recreational land. The type of recreational use that would be sensitive in this context is activity-oriented recreation with concentrated use patterns. Potential sites that impact these uses would be considered less desirable.

3.9.2 Affected Environment

3.9.2.1 No Action Alternative

Existing Land Use

The 4.4-acre site was developed as the existing Algona Transfer Station in the mid-1960s, and has been in use as a transfer station for about 50 years. It includes an open-sided transfer station with commercial and self-haul areas, one scale house, and limited room for truck parking.

There is a steep, vegetated slope with single-family residences west and south of the site. North of the site is vacant, undeveloped land and a landscape supplier (Alternative 2 site). West Valley Highway South and State Route 167 are located to the east. Farther east, across State Route 167, are single-family residences and a church. To the south are single-family residences.

Existing Zoning

Zoning designations in the vicinity of the No Action Alternative site are shown in Figure 3.9-1. According to the City of Algona Zoning Map, this site is zoned as C-3 Heavy Commercial (City of Algona 2015b). The C-3 zone is intended to provide for more intensive retail trade and commercial services, including the outside sales of vehicles, motorcycles, boats, recreational vehicles, or heavy and light machinery. Generally, areas west of State Route 167 in the City of Auburn are zoned as C-3. Per Algona Municipal Code Chapter 22.30, the building height limit in the C-3 zone is 50 feet (City of Algona 2015a).

Properties in the surrounding areas are zoned and have the following uses:

- Properties to the north and south are in the City of Algona and are zoned as C-3 Heavy Commercial and Open Space/Critical Area (OS/CA).
- Areas east of the site, across State Route 167, are zoned as R-L Low Density Residential. Uses permitted in the R-L zone include single-family residences, day cares, adult family homes, and community residential uses (City of Algona 2015a).
- Areas immediately west of the site are City of Algona zoning OS/CAs.
- Properties farther west of the site are in unincorporated King County and are zoned as R-1 Urban Residential. This zone is generally applied to urban residential land on or adjacent to sensitive areas, wildlife habitat areas, or regionally and locally significant resource areas.

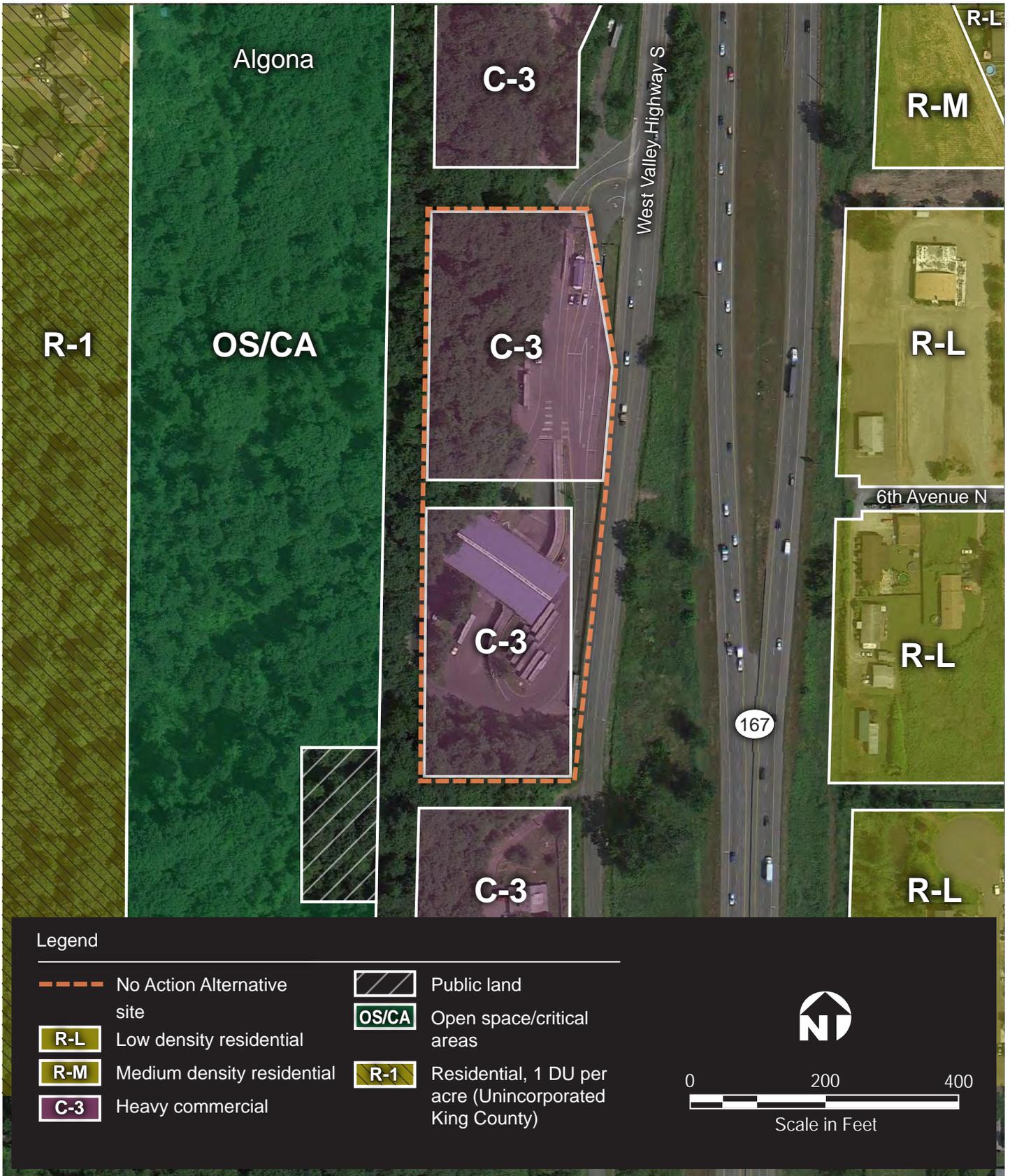
Land Use Plans and Policies

King County Comprehensive Plan

Per King County's Open Space System 2012 Map, the vegetated slope west of the existing transfer station is designated as other public lands. This designation is applied to areas of the county that are owned and managed by federal agencies, the state, and other local jurisdictions that manage the land for environmental protection, resource production, or a wide range of recreational opportunities. King County's comprehensive plan contains policies relating to the priorities, acquisition, and coordination of other public lands (King County 2012b).

City of Algona Comprehensive Plan

The City of Algona's comprehensive plan is a 20-year policy plan that articulates a vision for how Algona will accommodate growth over the next 20 years, while promoting the values of its citizens. The city first adopted the plan in 1995 in response to the GMA and the most recent update was adopted by Algona in 2015 (City of Algona 2015b). Algona's comprehensive plan includes seven elements to meet the GMA including land use, housing, parks and recreation,



Source: Google Earth Pro, imagery date: 7/5/2012
 Zoning information from City of Alguna, 2015; King County, 2015

Figure 3.9-1
No Action Alternative Site Zoning and Comprehensive Land Use Map

Prepared for King County by URS Corporation Consultants

economic development, capital facilities, utilities, and transportation. The comprehensive plan is described further under Alternative 2 in Section 3.9.2.3.

Zoning and comprehensive land use plan designations are described for the No Action Alternative under existing zoning and shown in Figure 3.9-1 (City of Algona 2015b).

3.9.2.2 Alternative 1

Existing Land Use

This 18.7-acre site owned by Segale Properties, LLC is currently undeveloped and vacant.

The active Union Pacific Railroad and the paved Interurban Trail and Puget Sound Energy right-of-way are located adjacent to the site on the west side. Farther west are various commercial uses including Regal Auburn Stadium 17, Wal-Mart, and the Outlet Collection Seattle.

The Auburn 18 Distribution Center, north of this site, is in use as a 285,000-square-foot distribution warehouse. Tenants include Comcast, Danzas, and Gargoyles, Inc. The areas northeast and east of the site are developed with various commercial uses, including the Best Western Plus Peppertree Auburn Inn, Longhorn Barbecue, Ink Werks Tattoo and Piercing, Wally's Quick Lube, Western Washington Auto Glass Service, and Marvel Food & Deli. Farther northeast is a car detailing shop (Details on the Go), a commercial and industrial painting company (Scott Coatings LLC), Suburban Floor Covering, A-Co Transmission, and four single-family residences.

Uses east of the Alternative 1 site include the City of Auburn Maintenance and Operations facility and the Marmon/Keystone warehouse and distribution center. The General Services Administration (GSA) Park, a 6.1-acre city park, is located southeast of this site. The land for GSA Park was donated to the City of Auburn by the U.S. GSA. The park contains two youth baseball and softball fields, a greenhouse, and park maintenance shops.

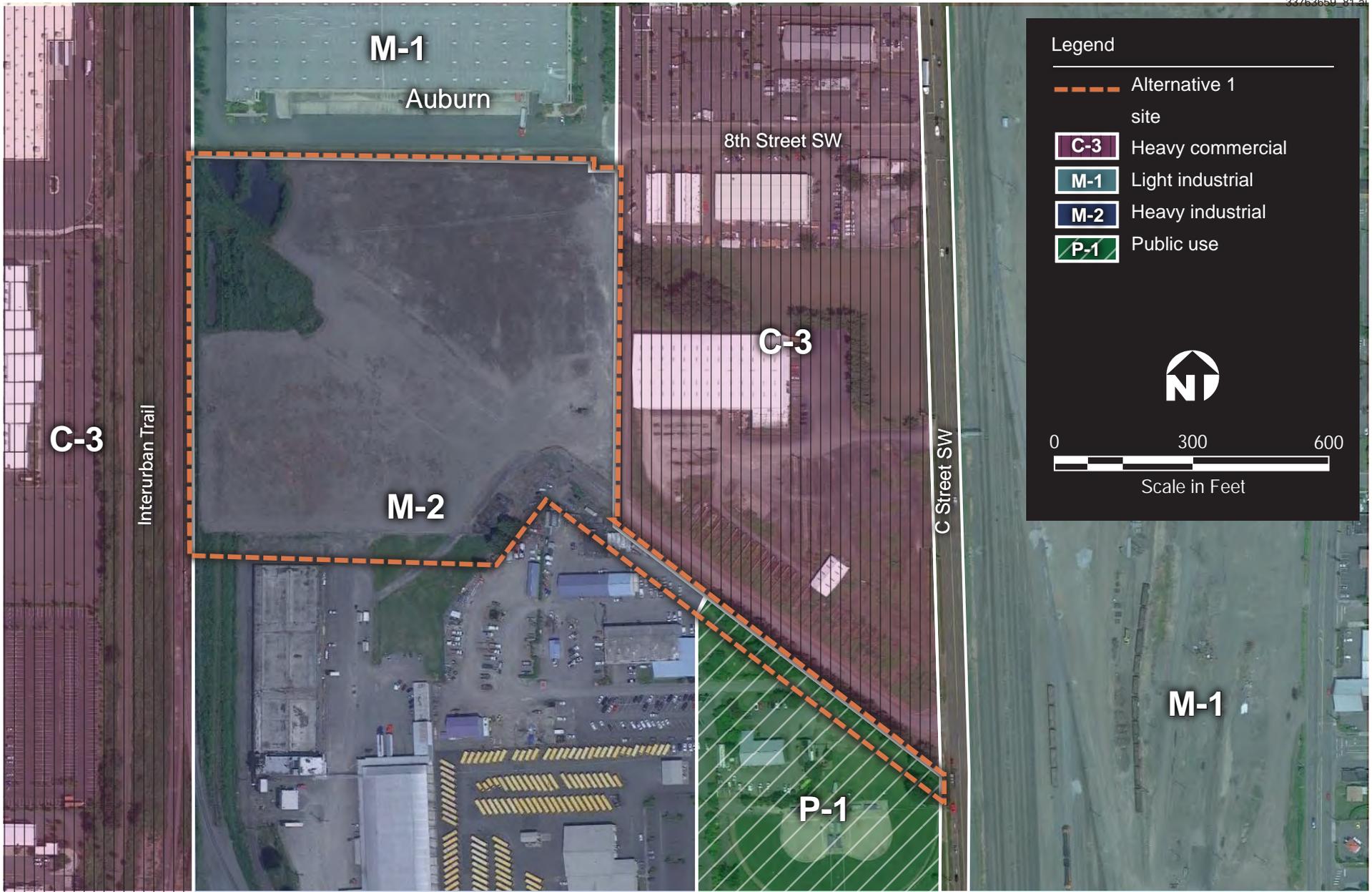
The Auburn School District Transportation Center and a grocery distributor, Supervalu, are located south of the Alternative 1 site. Farther south, across 15th Street SW, are the U.S. GSA, Boeing, and the Auburn Valley YMCA.

Existing Zoning

All current zoning designations in the vicinity of the Alternative 1 site are shown in Figure 3.9-2. According to the City of Auburn Comprehensive Zoning Map, this site is zoned as M-2 Heavy Industrial (City of Auburn 2015b).

Properties surrounding the site are zoned M-1 Light Industrial to the north, C-3 Heavy Commercial to the west and east, M-2 Heavy Industrial to the south, and P-1 Public Use to the southeast.

The M-2 zone is intended to provide for general manufacturing and processing, and grouping of industrial uses involving manufacturing, assembling, fabrication and processing, bulk handling of products, large amounts of storage and warehousing, outdoor storage, processing, and other



Source: Google Earth Pro, imagery date: 7/5/2012

Zoning information from City of Auburn, 2015

Prepared for King County by URS Corporation Consultants

Figure 3.9-2

Alternative 1 Site Zoning Map

related uses (City of Auburn 2015a). Many essential public facilities would be compatible uses in the M-2 zone (City of Auburn 2011).

Per Auburn Municipal Code Chapter 18.34 M-2 Heavy Industrial, solid waste processing stations in this zone would require a Conditional Use Permit. There are no lot coverage standards in the M-2 zone (City of Auburn 2015a).

There is a 45-foot height limit for buildings. Greater height limits may be allowed for proposed structures in excess of 45 feet if an additional foot of setback is provided for each foot the structure exceeds 45 feet (City of Auburn 2015a).

This Alternative 1 site is also within Auburn's Innovation Partnership Zone (IPZ). The area east of the Interurban Trail and west of C Street SW as shown in Figure 3.9-2 is within the IPZ. In 2007 Washington State established these zones as a unique economic development effort that partners research, workforce training, and private sector participation in close geographic proximity to promote cluster development and collaboration in a research-based effort that will lead to new technologies, marketable products, company formation, and job creation. There are 15 IPZs established in Washington State (Choose Washington 2011). Auburn's IPZ is referred to as the Urban Center for Innovative Partnerships, and is focused toward sustainable industrial redevelopment.

This has resulted in the development of businesses such as ecosystem and rainwater management; aeronautic technologies; manufacturing; construction; green technologies; alternative energy producers; retail businesses; professional groups; medical services and suppliers; and automotive businesses. The majority of Auburn's commercial and industrially-zoned properties (excluding the Outlet Collection vicinity) are in the IPZ.

Properties in the surrounding areas are zoned and have the following uses:

- Areas to the south are zoned as M-2 Heavy Industrial.
- Areas north of this site are zoned as M-1 Light Industrial. Uses allowed in the M-1 zone include vehicle sales, service and repair, banks, construction contractor services, equipment sales and storage, lumber yards, and mini-storage warehouses.
- Areas northeast and east of the site are zoned as C-3 Heavy Commercial, which allows for commercial uses which may involve on premise retail but also includes outdoor activities and display, fabrication, assembling, and service features.
- The GSA Park property to the southeast is zoned as P-1 Public Use, which provides for the location and development of public uses that serve cultural, educational, recreational, and public service needs.

Land Use Plans and Policies

City of Auburn Comprehensive Plan

Originally adopted in 1986 and amended in 1995 to comply with the requirements of the GMA, Auburn's comprehensive plan is the overall guiding policy document for how Auburn manages

growth and development. The comprehensive plan also serves as the basis for adoption of implementing development regulations such as zoning. The current plan includes revisions through December 2011.

Auburn's comprehensive plan contains the five elements required by the GMA including land use, housing, capital facilities, utilities, and transportation. Additional chapters cover economic development, the environment, historic preservation, parks, recreation, open space, and urban design.

The Capital Facilities element contains policies for essential public facilities, including transfer stations. Policy CF-70 (1-8) includes provisions for the Essential Public Facility Siting Process, which is a nine-step process. Essential public facilities of a regional, countywide, statewide or national nature are reviewed through the special area plan process, which follow the comprehensive plan amendment process and include multiple opportunities for public involvement. Portions of the comprehensive plan that address land use policies pertinent to a solid waste transfer station, including where they should be located and what areas should be served, are described below:

Policy CF-71: *The Planning Director shall make a determination as to whether a development application will result in a significant change of use or a significant change in the intensity of use of an existing essential public facility. If the Planning Director determines that the proposed changes are significant, the proposal will be subject to the essential public facility siting process as defined in Policy CF-65. If the Planning Director determines that the proposed changes are insignificant, the application shall be reviewed through the City's standard development review procedures. The Planning Director's determination shall be based upon the following*

- a. The proposal's impacts on the surrounding area.*
- b. The likelihood that there will be future additions, expansions, or further activity related to or connected with the proposal.*

Policy CF-72: *Essential public facilities shall be allowed in those zoning districts in which they would be compatible and impacts can be mitigated. In situations where specific development standards cannot be met, but there is a determination that the facility can be made compatible, the City Council can waive those specific standards with the requirement that appropriate mitigation is provided. The M-2 Zoning district should include broad use categories that allow all essential public facilities that are difficult to site as permitted or conditional uses as appropriate.*

Policy CF-73: *Essential public facilities should be equitably located throughout the City, county and state. No jurisdiction should absorb a disproportionate share.*

Policy CF-74: *Essential public facilities of a regional, countywide, statewide or national nature should be restricted to the Region Serving Area of Auburn. Such facilities should be located in relationship to transportation facilities in a manner appropriate to their transportation needs. Extensive buffering from adjacent uses may be required. Facilities*

which generate a significant amount of truck traffic should be located on major arterial streets.

The comprehensive land use map (Figure 3.9-3), which is part of the plan, designates the Alternative 1 site as heavy industrial (City of Auburn 2011). The purpose of the heavy industrial designation is to “provide a place for needed heavy industrial uses in areas appropriately sited for such uses.” This land use designation is implemented by the M-2 Heavy Industrial zone.

Properties to the west are designated open space, which is used to preserve and protect important open space resources, and heavy commercial, which is used to provide local and regional automobile-oriented commercial areas.

The area north of the site is designated light industrial, which is used to reserve quality industrial lands for activities of an industrial or business park character. Areas northeast and east of the site are designated heavy commercial.

Properties to the southeast are designated public and quasi-public, providing for uses such as developed parks, schools, and churches. Properties south of the site are designated heavy industrial. Farther south, across 15th Street SW, areas are designated heavy commercial and heavy industrial.

3.9.2.3 Alternative 2

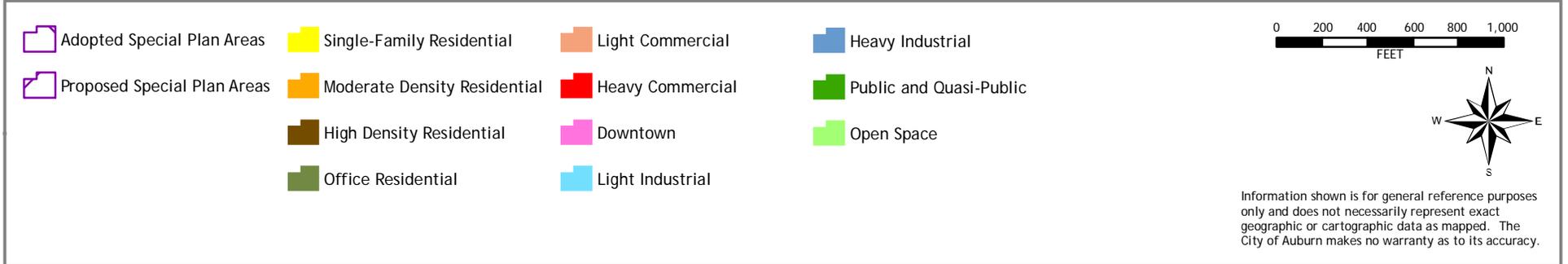
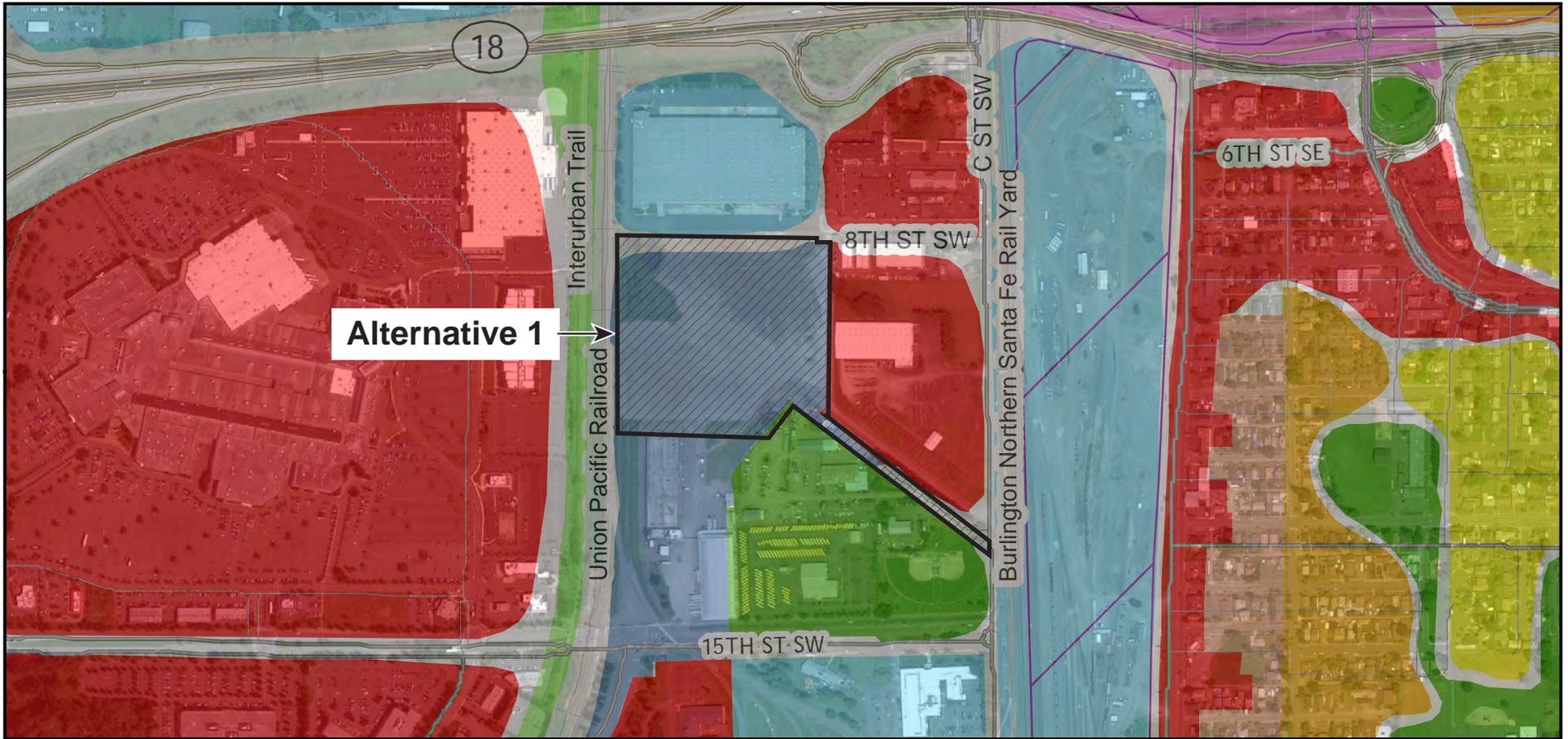
Existing Land Use

This 18.9 acre site is largely vacant but it contains a landscape supplier that is still in operation. It was purchased by King County in 2012.

West of the site is a steep, heavily vegetated slope with single-family residences farther west, on top of the slope. North of the site is Terra Dynamics, a landscape construction contractor, and the City of Auburn Vista Pointe Stormwater Facility. Farther north are commercial uses, including Allsports Cages & Netting, The Mustang Shop, Peltram Plumbing, Hinshaw’s Motorcycle Store, Speedi Transmissions, JFC Racing and Del’s Farm Supply. West Valley Highway South and State Route 167 are located to the east. Across State Route 167 are single-family residences and limited commercial uses. The existing Algona Transfer Station is located to the south.

Existing Zoning

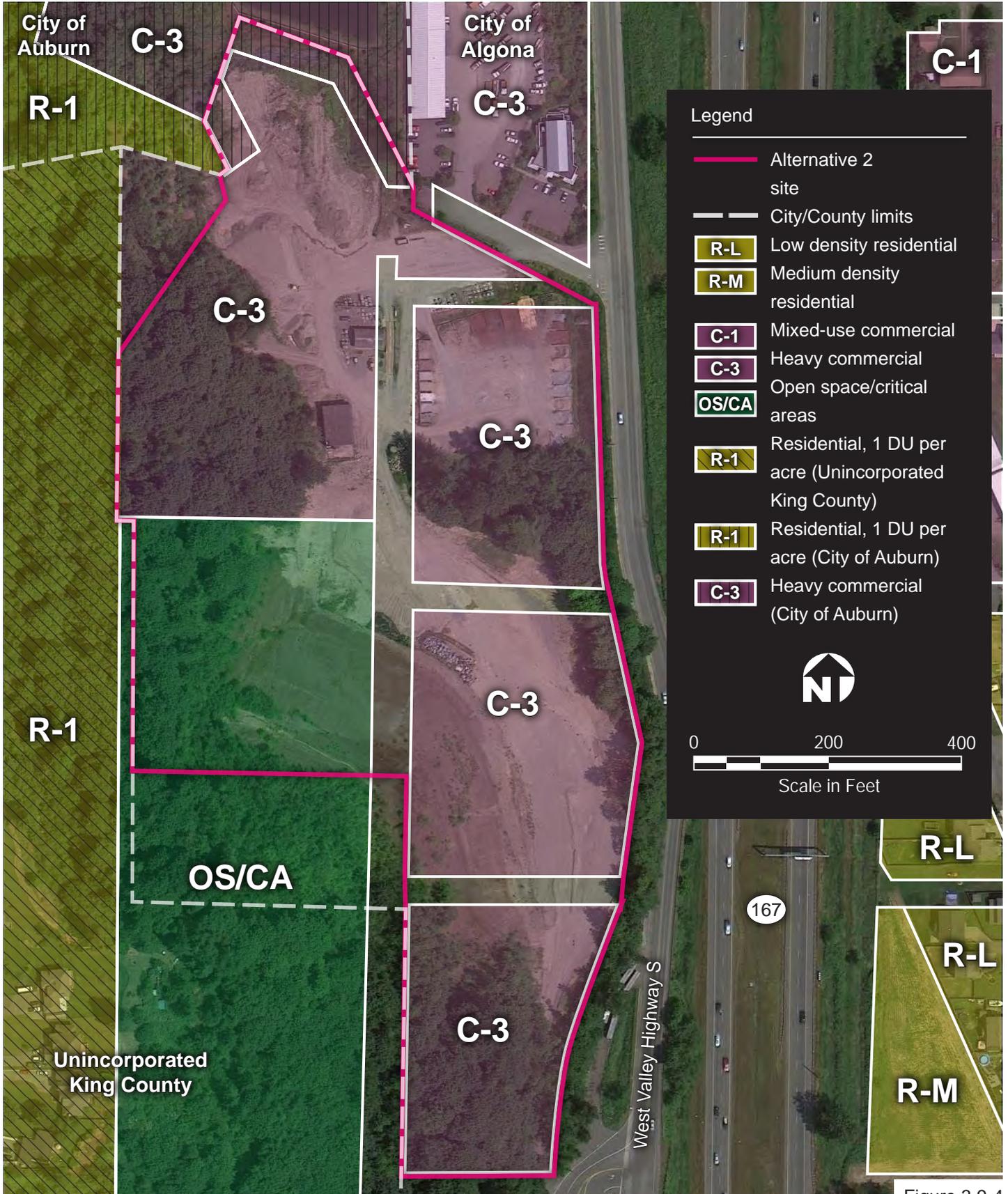
Zoning designations in the vicinity of the Alternative 2 site are shown in Figure 3.9-4. According to the City of Algona Zoning Map, this site is zoned as C-3 Heavy Commercial and OS/CA (City of Algona 2015b). The C-3 zone is intended to provide for more intensive retail trade and commercial services, including the outside sales of vehicles, motorcycles, boats, recreational vehicles, or heavy and light machinery (City of Algona 2015a). Per Algona Municipal Code Chapter 16.18 Critical Areas, critical areas and their buffers including those on-site are to be classified in a critical areas report (City of Algona 2015a). There are also areas of undeveloped public right-of-ways running through the site.



Source: City of Auburn (2011), Google Earth Pro

Prepared for King County by URS Corporation Consultants

Figure 3.9-3
Alternative 1 Site Comprehensive Land Use Map



Source: Google Earth Pro, imagery date: 7/5/2012
 Zoning information from City of Algona, 2015;
 City of Auburn, 2015; King County, 2015
 Prepared for King County by URS Corporation Consultants

Figure 3.9-4
**Alternative 2 Site Zoning and
 Comprehensive Land Use Map**

Essential public facilities, including solid waste transfer stations, would require a Conditional Use Permit in this zone (City of Algona 2015a). Conditional Use Permits are granted by the Algona Planning Commission.

Surrounding properties are zoned as follows:

- Properties east of the Alternative 2 site, across State Route 167, are in the City of Algona and are zoned as R-L Residential and R-M Medium Density Residential. Uses allowed in the R-L zone include single-family residences at a density of five to seven dwelling units per acre, and related accessory uses. Uses allowed in the R-M zone include single-family manufactured homes, publically owned buildings, home-based day care, adult family homes, and other uses identified in the code.
- Properties to the northeast are in the City of Algona, and are also zoned as C-3 Heavy Commercial.
- South of the site, in Algona, properties are zoned as C-3 Heavy Commercial and OS/CA.
- Areas west of the site are in King County and are zoned as R-1 Urban Residential. This zone is generally applied to urban residential land on or adjacent to sensitive areas, wildlife habitat areas or regionally and locally significant resource areas.

Land Use Plans and Policies

King County Comprehensive Plan

Per King County's Open Space System 2012 Map, the vegetated slope west of the Alternative 2 site is designated as other public lands. This designation is applied to areas of the county that are owned and managed by federal agencies, the state, and other local jurisdictions that manage the land for environmental protection, resource production, or a wide range of recreational opportunities. King County's comprehensive plan contains policies relating to the priorities, acquisition, and coordination of other public lands (King County 2012b).

City of Algona Comprehensive Plan

The City of Algona's comprehensive plan is described under the No Action Alternative in Section 3.9.2.1. One of the comprehensive plan's seven elements is Transportation, which states that:

“The City's top priority is reconstruction of the West Valley Highway as part of the possible construction of a new King County Solid Waste Transfer Station. The road is currently in poor condition and susceptible to landslides. The increased commercial traffic anticipated with the transfer station improvement requires mitigation measures to meet the concurrency requirements of GMA and to ensure the long term structural integrity of the road. These will be analyzed as part of the county's environmental review, the essential public facility (EPF) analysis, and review of a future Conditional Use Permit request by the county to the city.”

Algona has adopted the King County planning policies for an EPF, including policy CFP 4.5, guidelines for proposed plan amendments and requests for new development or redevelopment. These guidelines for EPF analysis include whether the project would:

- a. *Contribute to a condition of public hazards.*
- b. *Exacerbate any existing condition of public facility capacity deficits.*
- c. *Generate public facility demands that exceed capacity increase planning in the Six-Year Schedule of improvements.*
- d. *Conform to future land uses as shown on the future land use map of the Land Use Element.*
- e. *Accommodate public facility demands based upon adopted LOS standards and attempt to meet specified measurable objectives, when public facilities are developer-provided.*
- f. *Demonstrate financial feasibility, subject to this element, when public facilities are provided, in part or whole, by the City.*
- g. *Affect state agencies' facilities plans and siting of essential public facilities.*

The Algona Municipal Code provides for EPF approval through the Conditional Use Permit process (City of Algona 2015a).

Zoning and the comprehensive land use plan designations are described for Alternative 2 under existing zoning and shown in Figure 3.9-4 (City of Algona 2015b).

3.9.3 Environmental Impacts

3.9.3.1 Direct Impacts

No Action Alternative

Construction

No construction activities are anticipated for the No Action Alternative.

Operation

Under the No Action Alternative, the division would continue to operate the existing Algona Transfer Station. No impacts to surrounding land uses are anticipated.

Alternative 1

Construction

Construction and installation of the following on-site elements would occur:

- Scale house and scales
- Enclosed transfer building for waste handling, sorting and processing
- Waste compactor

- Recycling and material staging areas
- Administration and staff area
- Transfer station perimeter fence
- Above-ground fuel tank and fueling station
- Roadways for customers and division vehicles
- Outdoor parking for full and empty waste transfer trailers
- Optional area for future household hazardous waste collection
- Stormwater management
- Landscaping

Construction is anticipated to last approximately 24 months. Permits for construction would be required from the City of Auburn.

Short-term impacts to adjacent land uses could occur due to construction activities resulting in minor, localized increases in noise, dust, odors, traffic and emissions.

Operation

The land use at the site would change from vacant to industrial. The following activities and services would be provided at the new transfer station:

- Disposal and transfer of garbage from self-haul and commercial customers
- Acceptance of source separated waste from self-haul customers
 - Co-mingled recyclables (curb-side mix of paper, cardboard, tin, aluminum, plastic containers, glass bottles and jars)
 - Cardboard
 - Household sharps
 - Mixed yard and food waste
 - Clean wood
 - Plastic film
 - Expanded polystyrene (Styrofoam)
 - Scrap metal
 - Mercury lighting (fluorescent tubes and compact fluorescent bulbs)
 - Large appliances (refrigerant and non-refrigerant)
 - Small appliances (anything with a cord)
 - Additional recyclables, which may include bicycles and bicycle parts, CD/DVD/VCR players, rigid plastics, textiles, mattresses, carpet, gypsum wallboard, aggregates (bricks, pavers, porcelain sinks and toilets), asphalt shingles and other construction and demolition waste; and other materials targeted for diversion from disposal

- Potential removal of recyclables from mixed loads and/or construction and demolition waste loads
- Potential mixed waste sorting and processing
- Potential transfer of commercial yard waste and curbside recyclables
- Potential on-site organics sorting and processing
- Potential HHW service

If HHW service to collect Moderate Risk Waste is offered at the new transfer station, those materials would be stored in specialized containers on the site.

Operating hours are set by county ordinance. It is assumed that the new transfer station would operate 9.5 hours per day, opening not earlier than 6 a.m. on weekdays and not earlier than 8 a.m. on weekends, and closing no later than 6 p.m. on any day. Staffing would depend on the day of the week, season of the year, and services provided. The assumption is that employees based at the transfer station on any given day (e.g., scale operators, transfer station operators, and on-site supervision) would range from 6 to 15 with truck drivers, maintenance, and other staff as needed.

No operational land use impacts are anticipated.

Decommissioning and Deconstruction

It is anticipated that decommissioning, and possible deconstruction, of the existing Algona Transfer Station could occur after a new transfer station is constructed and operating. Deconstruction would occur in the developed portion of the existing Algona Transfer Station site. No land use impacts are anticipated.

Compatibility with Existing Land Use

There are no residences adjacent to the Alternative 1 site. The transfer station would be compatible with the light industrial uses to the north, east, and south. The active Union Pacific Railroad tracks and the Interurban Trail are located adjacent to the site on the west side. The site is large enough to provide a buffer zone that could include shrubs, trees, and walls or fencing between the transfer station and surrounding uses on all four sides of the site. The transfer station would not operate 24-hours a day.

Consistency with Zoning

Use of the Alternative 1 site as a recycling and transfer station is consistent with Auburn's Zoning Code, as the M-2 zone allows for essential public facilities, including solid waste transfer stations, through a Conditional Use Permit (City of Auburn 2015a). The City of Auburn considers Conditional Use Permit as a Type III decision, which are quasi-judicial final decisions made by the hearing examiner following a staff recommendation.

The decision criteria for Conditional Use Permits are listed below with an analysis of this project site's consistency with the criteria.

- a. *The use will have no more adverse effect on the health, safety or comfort of persons living or working in the area and will be no more injurious, economically or otherwise, to property or improvements in the surrounding area than would any use generally permitted in the district. Among matters to be considered are traffic flow and control, access to and circulation within the property, off-street parking and loading, refuse and service area, utilities, screening and buffering, signs, yards and other open spaces, height, bulk, and location of structures, location of proposed open space uses, hours and manner of operation, and noise, lights, dust, odor, fumes and vibration.*

Response: Use of the Alternative 1 site as a transfer station would be similar in scale and size as any industrial use permitted in the M-2 zone for the following reasons:

- The site is large enough to provide on-site queuing to reduce access impacts to surrounding businesses or back-ups onto C Street SW.
- Parking and loading areas would be contained on-site.
- Utilities are expected to be readily available and connections would be the responsibility of the division.
- Building heights would conform to Auburn Municipal Code Chapter 18.34 M-2 Heavy Industrial zone, which allows for a building height of 45 feet. Structures in excess of 45 feet are allowed with additional setbacks.
- Landscaping and screening in accordance with Auburn Municipal Code Chapter 18.50 would be included in the new transfer station.
- Signage would conform to Auburn Municipal Code Chapter 18.56.
- Fences in accordance with Auburn Municipal Code Chapter 18.31.020 would be installed.
- It is assumed that the new transfer station would operate 9.5 hours per day, opening not earlier than 6 a.m. on weekdays and not earlier than 8 a.m. on weekends, and closing not later than 6 p.m. on any day.
- Exterior building lights would project downward to minimize off-site spillover or glare. LED luminaires would be used throughout the site consistent with LEED guidelines.
- The transfer building would be enclosed to minimize migration of odors and dust from the building.
- Closed, end-loaded containers will be used for solid waste, reducing the potential for spillage of waste and litter about the site.
- Vibrations from operations are not anticipated to extend to adjacent properties.

- b. *The proposal is in accordance with the goals, policies and objectives of the comprehensive plan.*

Response: Use of the Alternative 1 site as a transfer station is consistent with Auburn's Comprehensive Plan, as the M-2 zone allows for essential public facilities (City of Auburn 2015a).

- c. *The proposal complies with all requirements of this title.*

Response: The proposal and application would comply with Auburn Municipal Code Chapter 18.64 Administrative and Conditional Use Permits.

- d. *The proposal can be constructed and maintained so as to be harmonious and appropriate in design, character, and appearance with the existing or intended character of the general vicinity.*

Response: The transfer station would be designed to a visual character in fitting with its surrounding areas and would be similar to other light industrial structures in the vicinity. Structural materials and colors would be selected to be compatible with the setting of the transfer station. A range of materials, textures, and colors would be incorporated into the exterior areas of the station. As feasible, rooftop equipment would be limited and painted to match the roof color.

- e. *The proposal will not adversely affect the public infrastructure.*

Response: Alternative 1 is not anticipated to impact public services or utilities. Public services and utilities impacts from the transfer station are described in Section 3.13. Transportation impacts from the transfer station are described in Section 3.12.

- f. *The proposal will not cause or create a public nuisance.*

Response: Alternative 1 is not anticipated to cause or create a public nuisance. Closed, end-loaded containers would be used for the transfer of solid waste, reducing the potential for spillage of waste and litter on-site. Noisy activities would mostly be done within the enclosed transfer building. All waste delivered to the transfer station would be removed or placed in an enclosed container by the end of the day, and the receiving floor would be washed daily. Perimeter landscaping and fencing would be installed to trap any litter.

Consistency with Comprehensive Plan

Use of the Alternative 1 site as a recycling and transfer station is consistent with Auburn's Comprehensive Plan, as the M-2 zone allows for essential public facilities (City of Auburn 2015a). In addition, any essential public facility in the City of Auburn would have to follow the special area plan process set forth in Comprehensive Plan Policy CF-70 (City of Auburn 2011).

The following criteria are used to evaluate all applications to site-essential public facilities in the City of Auburn:

- a. *Whether there is a public need for the facility.*

Response: As discussed in the Transfer Plan, regardless of how the county disposes of its solid waste an improved transfer station network is required. There are two primary drivers in designing an efficient and effective network of transfer stations. One is to upgrade the transfer stations to meet current industry standards, including the use of solid waste compactors. Compacting solid waste at the transfer stations will minimize both short and long-haul trips, thereby reducing travel costs and traffic on the road network. The other is to ensure that transfer stations are dispersed strategically throughout the county to serve both self-haul and commercial customers.

Existing transfer stations were assessed using 16 criteria that fell into the following categories: LOS to users, transfer station capacity to handle solid waste and recyclables, and local and regional effects of the transfer station. The ultimate goal of assessing the existing transfer stations was to allow the county to determine when a transfer station needs to be upgraded in place, when a transfer station needs to be relocated to a more appropriate location, or when additional transfer stations need to be built to adequately serve the region's growing population.

The Algona Transfer Station failed to meet 13 of the 16 criteria. The transfer station cannot accommodate waste compaction or provide recycling services required by the Transfer Plan. The transfer station does not meet safety goals, requiring additional effort from staff and management to operate the transfer station safely, which reduces system efficiency. Algona failed five of the six criteria relating to transfer station capacity and only the hours of operation were sufficient, it did not meet goals for traffic impacts on local streets.

Replacement of the Algona Transfer Station is recommended as part of the Transfer Plan. The new transfer station would meet all of the LOS criteria, would be strategically placed to minimize traffic on the road network, would serve both self-haul and commercial users, would have a low long-term operating cost, and would provide waste compaction to have cost-effective short- and long-haul disposal costs. Transfer station construction and closure would be phased to minimize disruption to customers. The existing Algona Transfer Station would remain open as a full-service facility until the new transfer station is open (King County 2007).

- b. *The impact of the facility on the surrounding uses and environment, the City and the region.*

Response: At the Alternative 1 site, a transfer station would be compatible with the surrounding light industrial or commercial uses. The purpose of a transfer station dictates that it be sited near where solid waste is generated, often in the more densely populated areas of the county (King County 2007).

- c. *Whether the design of the facility or the operation of the facility can be conditioned, or the impacts mitigated, in a similar manner as with a traditional private development, to make the facility compatible with the affected area and the environment.*

Response: Design features of the transfer station, such as an enclosed building, perimeter buffers, landscaping and screening would reduce effects and would be similar to how another light industrial development would be designed. Hours of operation of the transfer station would be compatible with the surrounding area and similar with existing surrounding uses. In addition, mitigation measures would be implemented to reduce potential effects from traffic and noise from customer and employee vehicles to commercial uses to the northeast. Traffic flow into the transfer station would be able to queue on-site, minimizing access impacts to adjacent land uses.

- d. *Whether a package of mitigating measures can be developed that would make siting the facility within the community more acceptable.*

Response: Mitigation measures proposed for Alternative 1 identified in the Noise, Transportation, and Visual Quality sections would provide effective mitigation to surrounding properties and the community as a whole.

- e. *Whether the factors that make the facility difficult to site can be modified to increase the range of available sites or to minimize impacts on affected areas and the environment.*

Response: A transfer station requires a site that is approximately 15 to 20 acres to allow for buffers between adjacent properties and a site that is located in an urban or suburban service area. The purpose of a transfer station dictates that it be sited near where solid waste is generated, often in the more densely populated areas of the county. Transfer stations will, by their nature, be distributed within the county, but that distribution is heavily weighted to the more developed areas. Transfer stations also require a certain type of zoning, such as industrial, commercial or manufacturing. Such available space is limited in the south county area.

- f. *Whether the proposed essential public facility is consistent with the Auburn Comprehensive Plan.*

Response: Use of the Alternative 1 site as a transfer station is consistent with Auburn's comprehensive plan, as the M-2 zone allows for essential public facilities (City of Auburn 2015a).

- g. *Essential public facilities shall comply with any applicable state siting and permitting requirements (e.g., hazardous waste facilities).*

Response: The siting process developed and used for the project followed U.S. Environmental Protection Agency (EPA) guidance for siting a transfer station (EPA 2002). Permitting requirements required by EPA and Washington State Department of Ecology for transfer stations and the optional HHW operations would be followed.

- h. *Whether the State proves by clear, cogent, and convincing evidence that 1) a sufficient and reasonable number of alternative sites have been fully, fairly, and competently considered; and 2) such sites were found to be unsuitable for an SCTF for reasons other than the cost of property.*

Response: The division conducted a search for potential sites for this essential public facility in and around the cities of Auburn, Algona, Pacific, and Federal Way in 2012 that would be suitable for replacing the existing Algona Transfer Station. The Siting Process is described in Section 1.3 of this Environmental Impact Statement.

- i. *Whether careful analysis has been completed to show that siting of the facility will have no undue impact on any one racial, cultural, or socio-economic group, and that there will not be a resulting concentration of similar facilities in a particular neighborhood, community, jurisdiction or region.*

Response: During the siting process, racial and cultural groups and socio-economic groups (i.e., low-income) were considered in the review. In addition, other essential public facilities and similar facilities were reviewed to ensure that this transfer station would not cause undue impact to any particular neighborhood, community, jurisdiction, or region.

Alternative 2

Construction

Construction impacts under Alternative 2 would be the same as those described for Alternative 1. There could be minor and short-term impacts to surrounding land uses. In addition, existing structures (e.g., administrative building and storage sheds) may be demolished. Permits for construction would be required from the City of Algona.

Operation

If Alternative 2 were selected, it would change the land use of this 18.9-acre site from primarily vacant land with a portion used as a landscape supplier to a transfer station. The activities and services listed in Alternative 1 operation would be provided on-site. Operational land use impacts are not anticipated.

Decommissioning and Deconstruction

Decommissioning and possible deconstruction impacts described above for Alternative 1 would also apply to Alternative 2.

West Valley Highway South Frontage and Overlay Improvements

The West Valley Highway South frontage and overlay improvements would not change land uses on-site or in the surrounding area. No land use impacts are anticipated.

Compatibility with Existing Land Use

The nearest residences are located approximately 600 feet west of the Alternative 2 site, on top of the steep vegetated slope. The transfer station would be compatible with uses to the north that are commercial in nature and mostly auto-oriented. There is room on-site to provide a buffer zone that could include shrubs, trees, retaining walls, and/or fencing between the transfer station and uses on all sides of the site. The transfer station would not operate 24-hours a day.

Consistency with Zoning

Use of the Alternative 2 site as a recycling and transfer station would be consistent with Algona's Zoning Code, as essential public facilities, including solid waste transfer stations, are allowed in the C-3 Heavy Commercial zone through a Conditional Use Permit. Algona Municipal Code Chapter 22.44 Conditional Uses lists required conditional use criteria. These criteria are listed below along with responses as to how the project would meet the criteria:

1. *The proposed use conforms generally to the objectives of the comprehensive plan and the intent of this title;*

Response: The new transfer station would generally meet the objectives of the comprehensive plan and zoning code.

2. *The conditional use meets the overall density, coverage, yard height and all other regulations of the district in which they are located;*

Response: The transfer station would likely be designed to meet all regulations of the C-3 zone; including density, lot coverage, landscaping and screening. As the projected height of the structure, from the daylight "basement" lower level to the roof peak, would be up to approximately 70 feet tall, it may not meet the maximum building height of 50 feet in this zone. The county would work with Algona on the building height variance process.

3. *The conditional use is designed in a manner which is compatible with the character and appearance with the existing or proposed development in the vicinity of the subject property;*

Response: The transfer station would be designed to a visual character in fitting with its surrounding areas. Structural materials and colors would be compatible with the setting of the transfer station. A range of materials, textures, and colors would be used in exterior areas of the transfer station.

4. *The location, size and height of buildings, structures, walls and fences, and screening vegetation for the conditional use shall not hinder neighborhood circulation or discourage the permitted development or use of neighboring properties;*

Response: The transfer station would be fully contained within the site and would not hinder neighborhood circulation. Properties to the north are fully developed. Future development is not anticipated to be affected. It is possible that if the existing Algona Transfer Station is deconstructed, additional property could be used for commercial uses.

5. *The conditional use is designed in a manner that is compatible with the physical characteristics of the subject property;*

Response: The transfer station would be designed to preserve much of the on-site features, including vegetation and possibly existing grades. Retaining walls would be used wherever feasible to minimize impacts to existing natural forested areas to the west and south. Design of the transfer station would be consistent with its surrounding area.

6. *Requested modifications to standards are limited to those which will mitigate impacts in a manner equal to or greater than the standards of this title;*

Response: At this time, only modifications to height limit standards may be needed.

7. *The conditional use is not in conflict with the health and safety of the community;*

Response: Use of the Alternative 2 site as a transfer station would not affect the health and safety of the community. The existing Algona Transfer Station is located immediately south of this site and has not affected health and safety.

8. *The conditional use is such that pedestrian and vehicular traffic associated with the use will not be hazardous or conflict with existing and anticipated traffic in the neighborhood;*

Response: West Valley Highway South in the vicinity of the Alternative 2 site is currently being used for traffic associated with the existing Algona Transfer Station. Traffic associated with Alternative 2 would likely increase based on the

expanded capacity of the transfer station and tonnage projections. However, effects would be minimized in part due to more efficient compaction and loading processes and road frontage and overlay improvements. See Section 3.12, Transportation for more information.

9. *The conditional use will be supported by adequate public facilities or services and will not adversely affect public services to the surrounding area or conditions can be established to mitigate adverse impacts on such facilities; and*

Response: Adequate public facilities and services are in place to serve the use.

10. *A public hearing has been held thereon by the planning commission after the required legal notices have been given and the public has been given a chance to be heard on the matter (City of Algona 2015a).*

Response: If Alternative 2 site is selected, as part of the permit process a public hearing would be held. A public hearing would be held when the Draft Environmental Impact Statement is published.

Consistency with Comprehensive Plan

Use of Alternative 2 as a recycling and transfer station is consistent with Algona's comprehensive plan. Per that plan, "the city's top priority is reconstruction West Valley Highway as part of the possible construction of a new King County Solid Waste Transfer Station (City of Algona 2015b)." The Algona Municipal Code provides for EPF approval through the Conditional Use Permit process (City of Algona 2015a).

3.9.3.2 Indirect and Cumulative Impacts

No Action Alternative

Indirect Impacts

No indirect land use impacts are anticipated.

Cumulative Impacts

No reasonably foreseeable future projects have been identified in the vicinity. Cumulative impacts are not anticipated.

Alternative 1

Indirect Impacts

The area surrounding the Alternative 1 site is built-up with existing commercial and industrial uses. It is unlikely that construction of a transfer station at this location would result in intensification of land uses in the vicinity of this site. No indirect land use impacts are anticipated.

Cumulative Impacts

Three reasonably foreseeable future projects have been identified in the vicinity:⁶

- Two current vacant retail properties along 15th Street SW at the Outlet Collection Seattle approximately 1,800 feet southwest from the Alternative 1 site have finalized building permit applications.
- Big I Fam (three-story chapel/reception hall/office building) located on C Street SW north of 8th Street SW and approximately 800 feet northeast from the Alternative 1 site has submitted a building permit application.
- Burlington Northern Santa Fe Rail yard has submitted a building permit application for a 12,000-square-foot office building in the rail yard approximately 1,200 feet east from the Alternative 1 site.
- A building permit application has been submitted for a brewpub near the corner property at C Street SW and 8th Street SW approximately 650 feet east from the Alternative 1 site.

It is not anticipated that these reasonably foreseeable future projects would impact development at the Alternative 1 site. Both vacant properties at the Outlet Collection Seattle and the rail yard are separated from the site by railroad right-of-way and would likely use separate road access to potential construction sites. The Big I Fam site is separated from the Alternative 1 site by commercial and industrial properties and would likely use C Street SW for construction activities. A brewpub would be separated from the site by commercial properties and construction is anticipated to be complete prior to construction of the SCRTS. It is not anticipated that reasonably foreseeable future projects would affect public services and utilities or transportation in the vicinity. No cumulative impacts are anticipated.

Alternative 2

Indirect Impacts

The area surrounding the Alternative 2 site is built up with existing commercial and auto-oriented sales uses. It is unlikely that construction of a transfer station at this location would result in intensification of land uses in the vicinity of this site. No indirect land use impacts are anticipated.

Cumulative Impacts

No reasonably foreseeable future projects have been identified in the vicinity. Cumulative impacts are not anticipated.

⁶ Gary Yao, Planner, City of Auburn, email communication, December 16, 2015.

3.9.4 Mitigation Measures

3.9.4.1 No Action Alternative

No mitigation measures are required.

3.9.4.2 Alternative 1

No mitigation measures are required.

3.9.4.3 Alternative 2

No mitigation measures are required.

3.9.5 Significant Unavoidable Adverse Impacts

3.9.5.1 No Action Alternative

No significant unavoidable adverse impacts to land use are anticipated.

3.9.5.2 Alternative 1

No significant unavoidable adverse impacts to land use are anticipated.

3.9.5.3 Alternative 2

No significant unavoidable adverse impacts to land use are anticipated.

3.10 Visual Quality

This section of the Environmental Impact Statement describes the existing visual quality and aesthetics and potential impacts that could occur from the No Action Alternative and Alternatives 1 and 2.

3.10.1 State and Local Regulations

3.10.1.1 State

The State Environmental Policy Act (SEPA) requires that all major actions sponsored, funded, permitted, or approved by state or local agencies undergo planning to ensure environmental considerations such as aesthetics and visual quality are given due weight in decision-making. SEPA seeks to provide safe, healthful, productive, and aesthetically and culturally pleasing surroundings.⁷

3.10.1.2 Local

Both the cities of Algona and Auburn zoning codes contain provisions that govern aesthetics; including bulk and density standards, landscaping, screening, fencing and signage. The project is anticipated to adhere to applicable zoning requirements. Potential variances to these requirements would follow appropriate development review procedures with the applicable jurisdiction.

City of Algona

In areas zoned as C-3 Heavy Commercial in Algona, a minimum of 5 percent of the gross site area is required to be landscaped, and a minimum screening of 5 feet wide is required around the site perimeter. Landscaped areas are required to include evergreen or deciduous trees and shrubs, perennial or annual flowers, ground cover, lawn, or a combination. Landscaping with trees and shrubs is also required in parking lots. Outdoor storage yards, loading docks, and permanent equipment storage areas that are visible from public rights-of-way are required to provide screening through the use of vegetation, fencing, or a combination (City of Algona 2015a).

Building height limits are limited to 50 feet. Per Algona Municipal Code, building height is measured from the average elevation of the proposed finish grade from all four corners of a building; to the highest point of a flat roof, the deck line of a mansard roof, and the mean height between eaves and ridge for gable, hip, and gambrel roofs (City of Algona 2015a).

City of Auburn

In the M-2 Heavy Industrial zone in the City of Auburn, a minimum of 10 percent of a lot is required to be landscaped with a 10-foot-wide landscaped area around the perimeter when abutting a street. Landscaped areas must contain a mixture of trees, shrubs, and groundcover plants. Building and site design are required to include the use of landscaping against buildings

⁷ SEPA, RCW 43.21C.020 2b, assures "for all people of Washington safe, healthful, productive, and aesthetically and culturally pleasing surroundings."

to visually break up expanses of wall, soften appearances, and create visual interest. Outdoor storage areas must be screened from view from adjacent streets by a minimum 6-foot-wide landscape buffer. For parking lots with 13 to 75 parking stalls, at least 7 percent of the surface parking area must contain landscaping with a minimum planter width of 6 feet, and at least 1 tree per planter and/or 1 per 100 square feet of planter. Fencing is optional. Up to four signs are permitted for any one business with a maximum height of 30 feet and area of 125 square feet per face (City of Auburn 2015a).

The minimum setbacks are 30 feet in the front and 20 feet from the street side in the M-2 zone; there are no required rear or interior side setbacks. The maximum building height is 45 feet. Structures in excess of this are allowed if 1 additional foot of setback is provided for each foot the structure exceeds 45 feet. In the City of Auburn, building height is the vertical distance measured from the finished grade⁸ to the highest point of the roof for flat roofs, to the deck line of mansard roofs, and to the mean height between eaves and ridge for gable, hip, and gambrel roofs (City of Auburn 2015a).

3.10.2 Affected Environment

3.10.2.1 Methodology

Viewpoints were established for the project based on the following:

- Public comments received during scoping
- Review of aerials, topographic maps, and street-view images prior to site visits
- In-person observation and assessment of the site and surrounding areas during site visits conducted on April 22 and May 29, 2013, and on April 17, 2015

Viewpoints were selected to provide varying distances from the site. All viewpoints were confined to publically accessible locations within the rights-of-way or on public property. Photographs were taken from each viewpoint toward the alternative site. In some cases, the alternative sites were not visible from the rights-of-way at a viewpoint but may be visible from upper floors of nearby residences or businesses.

King County and the cities of Algona and Auburn do not have established visual quality assessment methodologies. A visual quality analysis for the project was performed in accordance with Washington State Department of Transportation's (WSDOT) Visual Impact Analysis standards to provide a quantitative method of assessing visual quality impacts under SEPA (WSDOT 2012).

Visual Evaluation Criteria

Three criteria were used to evaluate landscape visual quality:

- **Vividness:** the memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern.

⁸ Grade means the average of the finished ground level at the center of all exterior walls of a building (Auburn Municipal Code 18.04.420).

- Intactness: the integrity of visual order in the natural and built landscape, and the extent to which the landscape is free from visual encroachment.
- Unity: the degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or intercompatibility between landscape elements.

Each of these three categories is subdivided into distance zones:

- Foreground: the area that is most prominent, nearest to and in front of the viewer and having greatest visual prominence.
- Mid-ground: the area that is in the middle distance range from the viewer having less visual prominence than foreground and more than background.
- Background: the area that is least prominent, farthest from and in considerable distance from the viewer; having the least visual prominence.

Each distance zone was first evaluated for alterations to the view from that viewpoint. Next, each distance zone was evaluated to determine a visual quality rating. The rating was based on:

- Landform: features of the earth's topography, created by man-made or natural conditions.
- Vegetation: trees, shrubs, groundcover, and grasses.
- Man-made elements: site features including structures, paving, and site furnishings.

Ratings can range from 0 (very low) to 7 (very high). The change in visual quality is an average of the existing visual quality ratings, compared to the anticipated visual quality after project completion. A substantial change is that equal to or greater than 1; a non-substantial change is a change of less than 1.

Assumptions

As the transfer station would not undergo detailed design until a location has been selected, the following assumptions regarding building height and size are made for the Draft EIS: building height of up to approximately 70 feet above the lower level; building length of approximately 300 feet; and building width of approximately 175 feet. The building footprint would be approximately 60,000 square feet with 10,000 square feet for future expansion capabilities. Final building heights would be as allowed by either the City of Algona or the City of Auburn, depending upon which alternative is selected pursuant to their respective site development review procedures.

Although specific design features have not been established, it is likely that the transfer station's exterior would include a combination of metal, concrete or concrete masonry, and translucent panels similar to the designs for other King County transfer station projects, such as the Factoria Recycling and Transfer Station replacement project (see Figure 3.10 -1) or the Shoreline Recycling and Transfer Station (see Figure 3.10-2).

Figure 3.10-1: Factoria Recycling and Transfer Station Conceptual Design



Figure 3.10-2: Shoreline Recycling and Transfer Station Photograph



Design of both action alternatives would utilize the Leadership in Energy and Environmental Design (LEED) certification process in order to integrate appropriate green building and sustainable design features. For example, a gray or white roof color that is visually neutral is planned; solar panels and day lighting panels may be installed. Signage at the transfer station self-haul entry and exit, as well as a potential recycling and household hazardous waste area, would present information in a clear manner and be consistent with the project's architectural themes. Project designs considerations for LEED certification are expected to have a positive influence on the aesthetics of buildings and site development, including protecting or restoring site habitat, maximizing open space, minimizing heat island roofs, reducing light pollution, and providing building daylighting and views through the innovation and design process.

In 1973, King County adopted legislation creating the "1% for Art program," which requires that 1 percent of funds from capital construction projects be set aside for public artwork. The artwork would be integrated at the transfer station and would reflect a solid waste or recycling

focus. Experience from previous King County projects has shown that investments in public art benefit the community in many ways, from deterring vandalism to turning public facilities into more attractive neighbors and eventually community assets.

3.10.2.2 No Action Alternative

Existing Conditions

This 4.4-acre site has been in use as a transfer station for about 50 years. The existing transfer station includes an open-sided transfer station with commercial and self-haul areas, one scale house, and limited room for truck parking.

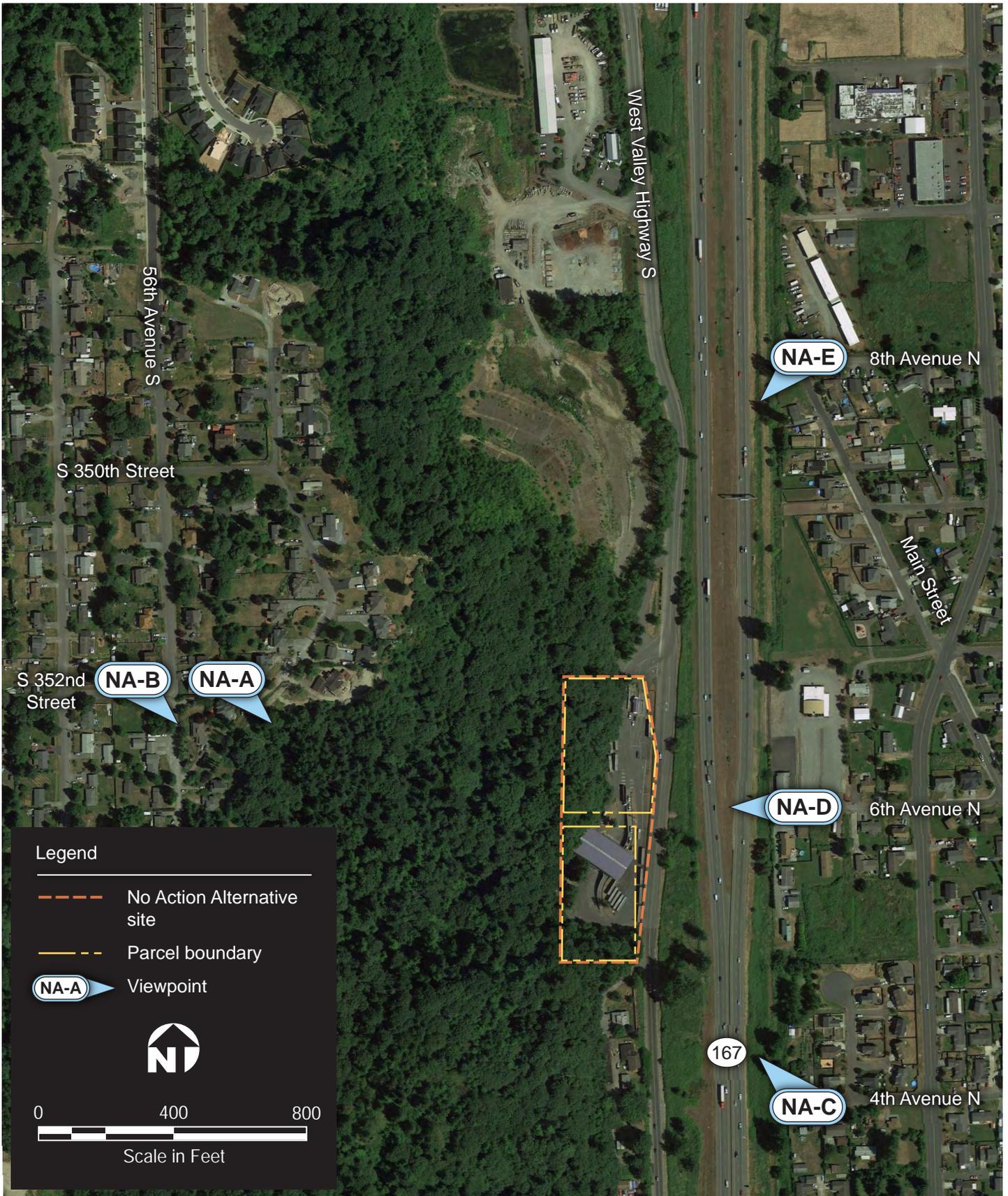
There is a steep, vegetated slope with single-family residences to the west and south of the site. North of the site is vacant, undeveloped land and a landscape supplier (Alternative 2 site). West Valley Highway South and State Route 167 are located to the east. Farther east, across State Route 167, are single-family residences and commercial uses.

Identified Viewpoints

Table 3.10-1 identifies the five viewpoints that were established for the No Action Alternative (Figure 3.10-3). These viewpoints were selected in order to provide a general overview from all cardinal locations around the site. The No Action Alternative site is not visible from the rights-of-way to the west, including Viewpoints NA-A, NA-B, and NA-C. Inclusion of these viewpoints provides a framework for all views to the site. A summary of the existing view from each viewpoint is provided in the following sections.

**Table 3.10-1
Viewpoints from the No Action Alternative**

Viewpoint	Location	Jurisdiction	Viewing Direction
NA-A	Southern terminus of 57th Avenue S	Unincorporated King County	East-southeast
NA-B	S 352nd Street and 56th Avenue S	Unincorporated King County	East
NA-C	Western terminus of 4th Avenue N	City of Algona	Northwest
NA-D	Western terminus of 6th Avenue N	City of Algona	West
NA-E	Main Street and 8th Avenue N	City of Algona	Southwest



Source: Google Earth Pro, imagery date: 7/5/2012

Prepared for King County by URS Corporation Consultants

Figure 3.10-3
No Action Alternative Site Viewpoints

Viewpoint NA-A

Viewpoint NA-A is in the Jovita Heights neighborhood, on top of the bluff west of the existing Algona Transfer Station. In the mid-ground, views to the east-southeast are screened by existing vegetation. Potential viewers include surrounding residents.

Viewpoint NA-A, No Action Alternative



Viewpoint NA-B

Viewpoint NA-B is also in the Jovita Heights neighborhood, on top of the bluff west of the existing Algona Transfer Station. In the mid-ground, views to the east are blocked by existing single-family residences and vegetation. Potential viewers include surrounding residents.

Viewpoint NA-B, No Action Alternative



Viewpoint NA-C

Viewpoint NA-C is southeast of the transfer station, across State Route 167. A chain-link fence is in the foreground. In the mid-ground is State Route 167. The existing Algona Transfer Station is in the background. Potential views include surrounding residents.

Viewpoint NA-C, No Action Alternative



Viewpoint NA-D

Viewpoint NA-D is due east of the transfer station, across State Route 167. A chain-link fence, row of blackberries, and sign are in the foreground. In the mid-ground is the existing Algona Transfer Station. Trees are in the background. Potential viewers include nearby residents and drivers on Frontage Road and Algona Boulevard N looking west on 6th Avenue N.

Viewpoint NA-D, No Action Alternative



Viewpoint NA-E

Viewpoint NA-E is northeast of the transfer station, across State Route 167. A utility box and residential yard are in the foreground. In the mid-ground are a chain-link fence, blackberries, and trees. Trees and a portion of the existing Algona Transfer Station (largely screened by trees in the mid-ground) are in the background. Potential viewers include surrounding residents.

Viewpoint NA-E, No Action Alternative



3.10.2.3 Alternative 1

Existing Conditions

This 18.7-acre site is currently undeveloped, contains no structures, and is largely un-vegetated. The site is surrounded by chain-link fence and is partially paved in some areas with asphalt and concrete. There is a wetland and detention pond in the northwest corner that contains some vegetation, mostly grasses, and small shrubs.

Surrounding land uses include the Union Pacific Railroad (UPRR) and Interurban Trail to the west, light industrial properties to the north, commercial properties to the northeast, light industrial and maintenance properties to the east, General Services Administration (GSA) Park to the southeast, and the Auburn School District Transportation Center and a grocery distributor to the south.

Identified Viewpoints

Table 3.10-2 identifies the six viewpoints that were established for the Alternative 1 site (Figure 3.10-4). These viewpoints were selected in order to provide a general overview from all cardinal locations around the site. A summary of the existing view from each viewpoint is provided in the following sections.

**Table 3.10-2
Viewpoints from Alternative 1**

Viewpoint	Location	Jurisdiction	Viewing Direction
1-A	Parking lot at the south-eastern entrance to The Outlet Collection Seattle	City of Auburn	East-northeast
1-B	Interurban Trail entrance between Wal-Mart and Regal Auburn Stadium 17	City of Auburn	Southeast
1-C	Interurban Trail, between State Route 18 and 15th Street SW	City of Auburn	East
1-D	GSA Park (15th Street SW and C Street SW)	City of Auburn	Northwest
1-E	Western terminus of 8th Street SW	City of Auburn	Southwest
1-F	A Street SE, between 8th and 9th Street SE	City of Auburn	West



Source: Google Earth Pro, imagery date: 7/5/2012

Prepared for King County by URS Corporation Consultants

Figure 3.10-4

Alternative 1 Site Viewpoints

Viewpoint 1-A

Viewpoint 1-A is at the eastern entrance to the Outlet Collection, southwest of the Alternative 1 site, across the UPRR and the Interurban Trail. A parking lot and landscaping are in the foreground. The mid-ground includes parking, landscaping and Regal Auburn Stadium 17. The Alternative 1 site and the Marmon/Keystone building are visible in the background. Potential viewers include people entering and exiting the Outlet Collection or people who park in this area.

Viewpoint 1-A, Alternative 1



Viewpoint 1-B

Viewpoint 1-B is near an entrance to the Interurban Trail, northwest of the Alternative 1 site, across the UPRR. The entrance to the Interurban Trail and landscaping are in the foreground. The UPRR is in the mid-ground. In the background are the Alternative 1 site and several buildings. Potential viewers include recreationists entering the trail at this location.

Viewpoint 1-B, Alternative 1



Viewpoint 1-C

Viewpoint 1-C is along the Interurban Trail, west of the Alternative 1 site. Blackberries and a utility pole are visible in the foreground. In the mid-ground is the UPRR. The Alternative 1 site and several buildings are in the background. Potential viewers include recreationists traveling along the trail.

Viewpoint 1-C, Alternative 1



Viewpoint 1-D

Viewpoint 1-D is in the GSA Park southeast of the Alternative 1 site. A grassy field is in the foreground. The park's restrooms, trees, shrubs, and outdoor storage of benches and tables are in the mid-ground. The background is obscured by these features. Potential viewers include recreationists and other users of GSA Park.

Viewpoint 1-D, Alternative 1



Viewpoint 1-E

Viewpoint 1-E is directly northeast of the Alternative 1 site. In the foreground is the terminus of 8th Street SW (paved area). The Alternative 1 site is in the mid-ground. In the background are a vegetated bluff and the Regal Auburn Stadium 17. Potential viewers include employees and customers of the businesses in this area, such as the hotel to the northeast.

Viewpoint 1-E, Alternative 1



Viewpoint 1-F

Viewpoint 1-F is east of the Alternative 1 site, across the Burlington North Santa Fe (BNSF) rail yard. In the foreground is A Street SE. The BNSF rail yard is in the mid-ground. In the background is a vegetated bluff. Potential viewers include residents living along A Street SE in the vicinity of 8th and 9th Streets SE and drivers using A Street SE.

Viewpoint 1-F, Alternative 1



3.10.2.4 Alternative 2

Existing Conditions

This 18.9-acre site formerly housed a gravel mining operation. A portion of the site is currently leased to a landscape company. The site contains some structures (one small landscaping supply building and one larger storage building) and mature vegetation, both deciduous and evergreen. Also on-site are outdoor storage spaces for supplies, including gravel and bark dust.

Surrounding land uses include residential properties to the west on top of the slope, commercial properties to the north, West Valley Highway South and State Route 167 to the east, and the existing Algona Transfer Station to the south.

Identified Viewpoints

Table 3.10-3 identifies the four viewpoints that were established for Alternative 2 (Figure 3.10-5). These viewpoints were selected in order to provide a general overview from all cardinal locations around the site. The Alternative 2 site is not visible from the rights-of-way to the west, including Viewpoints 2-A and 2-B. Inclusion of these viewpoints provides a framework for all views to the site. It is possible that the site may be visible from upper floors of residences near these viewpoints. A summary of the existing view from each viewpoint is provided in the following sections.

**Table 3.10-3
Viewpoints from Alternative 2**

Viewpoint	Location	Jurisdiction	Viewing Direction
2-A	S 346th Street and 56th Court S	City of Auburn	East-southeast
2-B	57th Avenue S and S 352nd Street	Unincorporated King County	Northeast
2-C	Main Street and Algona Boulevard N and Frontage Road	City of Algona	Northwest
2-D	Western terminus of 8th Avenue N	City of Algona	West



Source: Google Earth Pro, imagery date: 7/10/2014

Prepared for King County by URS Corporation Consultants

Figure 3.10-5

Alternative 2 Site Viewpoints

Viewpoint 2-A

Viewpoint 2-A is in the Vista Pointe subdivision on the bluff northwest of the Alternative 2 site. In the foreground is a chain-link fence. Trees and shrubs along the bluff are in the mid-ground. In the background are State Route 167 and the City of Algona. Potential viewers include surrounding residents.

Viewpoint 2-A, Alternative 2



Viewpoint 2-B

Viewpoint 2-B is in the Jovita Heights neighborhood, on top of the bluff southwest of the Alternative 2 site. In the foreground is a residential yard. Ornamental trees are in the mid-ground. In the background are the cities of Algona and Auburn. Potential viewers include surrounding residents.

Viewpoint 2-B, Alternative 2



Viewpoint 2-C

Viewpoint 2-C is east-southeast of the Alternative 2 site. In the foreground are single-family residences. Commercial businesses west of State Route 167 are in the mid-ground. In the background is a vegetated bluff. Potential viewers include nearby residents and drivers on Frontage Road and Algona Boulevard N looking northwest along Main Street.

Viewpoint 2-C, Alternative 2



Viewpoint 2-D

Viewpoint 2-D is east of the Alternative 2 site. In the foreground are a lawn, fire hydrant, sign, and a bank of blackberries. Commercial businesses and the Alternative 2 site, west of State Route 167, are in the mid-ground. In the background are a vegetated bluff and the Vista Point subdivision. Potential viewers include nearby residents and drivers on Frontage Road looking west along 8th Avenue N.

Viewpoint 2-D, Alternative 2



3.10.3 Environmental Impacts

3.10.3.1 Direct Impacts

No Action Alternative

Construction

No construction activities are anticipated for the No Action Alternative.

Operation

Under the No Action Alternative, the King County Solid Waste Division (division) would continue to operate the existing Algona Transfer Station. Normal operation and maintenance activities would occur. The existing visual quality from identified viewpoints would remain. The visual analysis matrix of ratings can be found in Appendix C.

Alternative 1

Construction

Temporary alterations to views due to construction equipment and activities would occur for all viewpoints except for Viewpoint 1-D, as views from GSA Park to the Alternative 1 site are obscured by an existing building and vegetation. These effects would be short-term as construction would last approximately 24 months. Impacts from construction would be temporary and minor.

Demolition at the Alternative 1 site would not occur. In the City of Auburn, construction activities in the M-2 Heavy Industrial zone are allowed from 7 AM to 10 PM Monday through Saturday, and from 9 AM to 10 PM on Sundays. Lighting associated with construction activities is permitted during hours of construction; any lighting left on overnight must be downward-directed and may not extend beyond the property line. Per Auburn Municipal Code, construction activity may be permitted outside these hourly limits only upon application and approval (City of Auburn 2015a). Criteria for approval include project remoteness, undue hardship, or other reasonable standards. At this time, construction outside of the hours set by the city is not anticipated.

Vegetation around and within the wetland and stormwater pond would remain to the extent practicable. Vegetation along the right-of-way extending southeast towards C Street SW would also remain. No impacts are anticipated.

Operation

It is assumed that Alternative 1 would operate for approximately 9.5 hours per day, opening not earlier than 6 AM on weekdays and not earlier than 8 AM on weekends, and closing not later than 6 PM on any day (the current operating hours at the existing Algona Transfer Station are weekdays 7 AM to 4:30 PM and weekends 8:30 AM to 5:30 PM).

The City of Auburn reviews essential public facility proposals that largely serve a countywide need and that are included within an adopted regional plan through the special area plan process. The essential public facility must be developed through an appropriate public process, have undergone SEPA review, have a clear policy statement, and siting guidelines. In the M-2 Heavy Industrial zone where the Alternative 1 site is located, many essential public facilities are considered compatible uses (City of Auburn 2011).

The Auburn Municipal Code provides for approval of essential public facilities through the Conditional Use Permit process (City of Auburn 2015a). For conditional use criteria and responses see Section 3.9 Land Use.

Building heights would conform to Auburn Municipal Code 18.34, M-2 Heavy Industrial zone. The M-2 zone allows for a building height of 45 feet and structures in excess of 45 feet are allowed with additional setbacks. The division could require a building height variance per Auburn Municipal Code 18.70.015 which is authorized from the following criteria: "additional height shall be minimal necessary to afford relief, that the variance will not alter the character of the neighborhood or be detrimental to surrounding properties, and/or that the approval will be consistent with the purpose of this title and the zoning district in which it is located" (City of Auburn 2015a).

Landscaping and screening in accordance with Auburn Municipal Code Chapter 18.50 would be included in the project. Signage would conform to Auburn Municipal Code Chapter 18.56. Fences in accordance with Auburn Municipal Code Chapter 18.31.020 would be installed (City of Auburn 2015a). As the site is currently vacant and undeveloped, the addition of a new landscaped and screened transfer station could provide a visual amenity above existing levels.

The City of Auburn requires a lighting plan for projects that include exterior lighting. In addition to this plan requirement, Auburn Municipal Code Chapter 18.55 Outdoor Lighting contains requirements for shielding, lighting fixture height limits, levels of illumination allowed, accent lighting, periods of illumination and prohibited lights. Lighting at the transfer station would conform to these requirements (City of Auburn 2015a).

Changes in visual quality would likely occur at several viewpoints for Alternative 1. The scoring of visual quality from identified viewpoints is described in Appendix C.

Viewpoint 1-A: the general area of change is outlined in red. Portions of the new transfer station building may be visible in the background from this viewpoint by people entering and exiting The Outlet Collection. The transfer station may be more visible in the winter months, when deciduous trees have dropped their leaves. The change in visual quality is anticipated to be 0.95 (non-substantial).

General Area of Change of Viewpoint 1-A, Alternative 1



Viewpoint 1-B: the general area of change is outlined in red. The new transfer station would be visible in the mid-ground from this location by users accessing the Interurban Trail. Views of the transfer station may be present depending upon the activity of the users. The transfer station may be more visible in the winter months, when deciduous trees have dropped their leaves. Change in visual quality is anticipated to be 0.77 (non-substantial).

General Area of Change of Viewpoint 1-B, Alternative 1



Viewpoint 1-C: the general area of change is outlined in red. The new transfer station would be visible in the mid-ground from this location by Interurban Trail users. Views may be glancing and intermittent, depending upon the activity of the users. Change in visual quality is anticipated to be 0.72 (non-substantial).

General Area of Change of Viewpoint 1-C, Alternative 1



Viewpoint 1-D: the new transfer station would not be visible from GSA Park as it would be blocked by existing vegetation and the park's restroom building; a change in visual quality would not occur.

Viewpoint 1-E: the general area of change is outlined in red. The new transfer station would be visible in the mid-ground from this location by customers and employees of the various businesses along 8th Street SW. The transfer station would likely block views of the vegetated bluff to the southwest and is likely to dominate the view. In addition, it would increase the level of development in the view as a recycling and transfer station is a more intensive use than is existing (vacant land). Change in visual quality is anticipated to be 1.61 (substantial).

General Area of Change of Viewpoint 1-E, Alternative 1



Viewpoint 1-F: the general area of change is outlined in red. The new transfer station would be visible in the background from this location by people who live, drive, or walk along A Street SE near the intersection with 8th and 9th Streets SE. Views may be intermittent based on traffic along A Street SE and the BNSF rail yard, and ancillary buildings to the BNSF rail yard that currently blocks views. The transfer station would block some views of the bluff to the west.

Existing vegetation in the mid-ground would remain. Change in visual quality is anticipated to be 0.28 (non-substantial).

General Area of Change of Viewpoint 1-F, Alternative 1



A substantial change of visual quality would occur in the mid-ground and background of Viewpoint 1-E. All other viewpoints would have non-substantial changes to the existing view because their changes in visual quality ratings would be less than 1.

Decommissioning and Deconstruction

It is anticipated that decommissioning, and possible deconstruction, of the existing Algona Transfer Station would occur after a new transfer station is constructed and operating. The existing Algona Transfer Station would be deconstructed by removing and hauling off above-ground structures, including the scale complex and the transfer building. These structures would no longer be visible from West Valley Highway South and surrounding areas. No visual quality impacts are anticipated.

Alternative 2

Construction

Temporary alterations to the view due to construction equipment and activities would occur from Viewpoints 2-E and 2-F; all other viewpoints are obscured by existing buildings or vegetation. These effects would be short-term as construction would last approximately 24 months.

Impacts from construction would be temporary and minor. In Algona, construction is permitted weekdays from 7:30 AM to 6 PM and from 9 AM to 6 PM on weekends or holidays. Existing structures on-site may be demolished. A substantial amount of vegetation may be removed from the site at the wetlands, Algona Creek Tributary 09.0054A, along West Valley Highway South, and from disturbed soils and fill material. Re-vegetation would be limited by the site development area. Impacts on visual quality are anticipated to be minor.

Operation

Operating hours would be similar to Alternative 1. While design of the transfer station has not been initiated, it is likely that color sections for the building would include natural hues or browns and grays intended to be subtle and complimentary with the natural tree scape of the surrounding vegetated slope. Project design considerations for LEED certification are expected to have a positive influence on the aesthetics of buildings and site development, including protecting or restoring site habitat and maximizing open space.

The City of Algona has adopted the King County planning policy guidelines for reviewing essential public facilities. The guidelines include conforming to the future land use map, accommodating facility demand, demonstrating financial feasibility and consideration of the effects to state agencies' facility plans and siting (City of Algona 2015b). The Algona Municipal Code provides for approval of essential public facilities through the Conditional Use Permit process (City of Algona 2015a). For conditional use criteria and responses see Section 3.9 Land Use.

Building heights would comply with Algona Municipal Code Chapter 22.30 C-3 Heavy Commercial zone, which allows for building heights up to 50 feet. Since the overall height of the new transfer station building would be up to approximately 70 feet above the lower level, the division would work through the Algona's variance process as outlined in Chapter 2.14.050 Powers and Duties of the Algona Municipal Code and in Table 3.10-4.

**Table 3.10-4
Building Height Variance Process**

Board of Adjustment Condition	Consistency of Alternative 2
The variance shall not constitute a grant of special privilege inconsistent with the limitation upon uses of other properties in the vicinity and zone in which the property on behalf of which the application was filed is located.	The new transfer station is an essential public facility that would meet the solid waste transfer facility standards for service, efficiency and safety. No limitations to other properties in the vicinity would occur.
That such variance is necessary because of special circumstances relating to the size, shape, topography, location, or surroundings of the subject property, to provide it with use, right and privileges permitted to other properties in the vicinity and in the zone in which the subject property is situated.	The building height is required for commercial garbage trucks to tip without hitting the misting, fire sprinkler, ventilation and other overhead systems inside the transfer station building. The steep bluff to the west of the site provides a substantial back drop for the project which would diminish the visual scale of the transfer station.
That the granting of such variance will not be materially detrimental to the public welfare or injurious to the property or improvements in the vicinity and zone in which the subject property is situated.	The new transfer station would be separated from residents by West Valley Highway South and State Route 167 to the east and a steep bluff to the west. West Valley Highway South frontage improvements will improve transportation safety and access by straightening out the curve and providing curb, gutter and sidewalk.
The reasons set forth in the application justify the granting of the variance and that the variance is the minimum variance that would make possible a reasonable use of the land, buildings or structures.	As described above, the building height variance is required as the minimum height for safe operation of commercial garbage trucks entering the transfer station.

**Table 3.10-4 (Continued)
Building Height Variance Process**

Board of Adjustment Condition	Consistency of Alternative 2
The granting of the variance will be in harmony with the general purpose and intent of this title and will not be injurious to the neighborhood or otherwise be detrimental to the public welfare.	The variance is only required for the building height, which is necessary for clean, efficient and safe operations for the public. West Valley Highway South and steep slopes to the west diminish the visual scale of the transfer station.
Under no circumstances shall the board of adjustment grant any variance to allow a use that is not permissible in the district involved. Variances apply only to yards, signs, height, coverage, or parking requirements, but not to use of land or structures.	The new transfer station is an essential public facility that is allowed under the C-3 Heavy Commercial zone with a Conditional Use Permit. The variance would only apply to the building height of up to approximately 70 feet on the site.

Landscaping in accordance with Algona Municipal Code Chapter 22.60 would be included in the project. Signage would conform to Algona Municipal Code Chapter 22.64. Fences in accordance with Algona Municipal Code Chapter 22.62 would be installed (City of Algona 2015a). As the site contains large gravel deposits and outdoor storage areas, the addition of a new landscaped and screened transfer station could provide a visual amenity above existing levels.

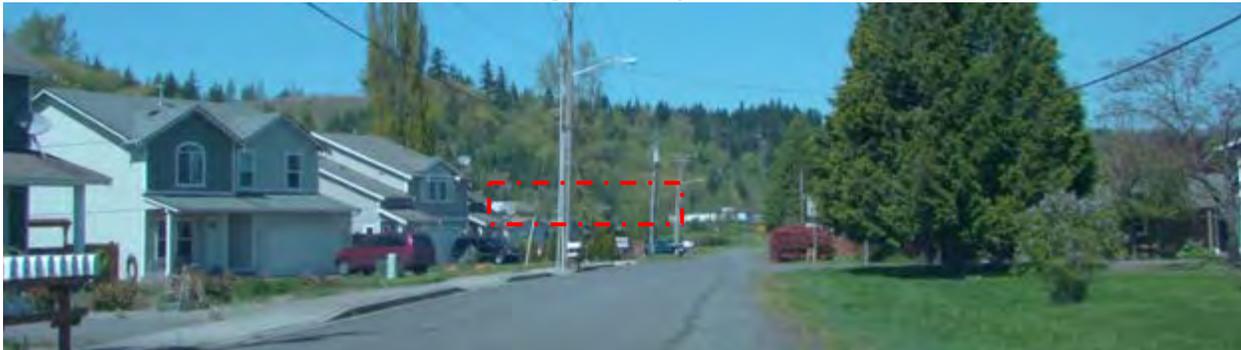
While the Algona Municipal Code does not have requirements for outdoor lighting, credit for minimizing light pollution would likely be pursued by King County under LEED, emphasizing the use of appropriately downward-directed lighting at the transfer station.

Changes in visual quality would likely occur at two viewpoints for Alternative 2. The scoring of visual quality from identified viewpoints is described in Appendix C.

Viewpoints 2-A and 2-B: along the rights-of-way, views of the Alternative 2 site are obscured by vegetation and existing residences at these two viewpoints. A change in visual quality is not anticipated.

Viewpoint 2-C: the general area of change is outlined in red. Portions of the new transfer station building may be visible in the background from this viewpoint, although existing residences may obscure part of the transfer station. The transfer station may be more visible in the winter months, when deciduous trees have dropped their leaves. Change in visual quality is anticipated to be 0.16 (non-substantial). A change in visual quality may occur from upper floors of private homes near these viewpoints if the transfer station were visible.

General Area of Change of Viewpoint 2-C, Alternative 2



Viewpoint 2-D: the general area of change is outlined in red. Portions of the new recycling and transfer station building may be visible from this location in the mid-ground. The transfer station may be more visible in the winter months, when deciduous trees have dropped their leaves. Change in visual quality is anticipated to be 0.56 (non-substantial). A change in visual quality may occur from upper floors of private homes near these viewpoints if the transfer station were visible.

General Area of Change of Viewpoint 2-D, Alternative 2



There would be no impacts to viewpoints 2-A and 2-B. Minor impacts would occur to the background and mid-ground of Viewpoints 2-C and 2-D.

Decommissioning and Deconstruction

Decommissioning and possible deconstruction impacts described above for Alternative 1 would also apply to Alternative 2.

West Valley Highway South Frontage and Overlay Improvements

West Valley Highway South adjacent to the site is a two-lane road with narrow shoulders and no turn lanes. Road frontage improvements would include realignment of the curve bordering the site, widening the roadway width, frontage modifications, channelization via turn lanes for access into and out of the site, and curb, gutter and sidewalk, and related drainage improvements. It is anticipated that road frontage improvements would improve the visual quality of the highway adjacent to the Alternative 2 site. Overlay improvements would have no impacts on visual quality.

3.10.3.2 Indirect and Cumulative Impacts

No Action Alternative

Indirect Impacts

The division would continue to operate the existing Algona Transfer Station. Continued operation is not anticipated to affect visual quality in the vicinity of this site. The area surrounding the No Action Alternative site is built-up with existing commercial and industrial uses. No indirect visual impacts are anticipated.

Cumulative Impacts

No reasonably foreseeable future projects have been identified in the vicinity. No cumulative visual impacts are anticipated.

Alternative 1

Indirect Impacts

The site is located among other industrial and commercial buildings, and the surrounding vicinity is well built-out. It is unlikely that construction of a recycling and transfer station at this location would result in intensification of land uses in the vicinity of this site and resulting degradation of visual quality.

Cumulative Impacts

No cumulative visual impacts are anticipated.

Alternative 2

Indirect Impacts

The site is located among other industrial and commercial buildings, and the surrounding vicinity is well built-out. It is unlikely that construction of a recycling and transfer station at this location would result in intensification of land uses in the vicinity of this site and resulting degradation of visual quality.

Cumulative Impacts

No cumulative visual impacts are anticipated.

3.10.4 Mitigation Measures

3.10.4.1 No Action Alternative

No mitigation measures are required.

3.10.4.2 Alternative 1

Design

- The transfer station will be designed to fit with its surrounding areas.
- Structural materials and colors will be selected to be compatible with the setting of the transfer station, considering existing vegetation, background, and surrounding buildings or features.
- A range of materials, textures, and colors will be incorporated in exterior areas of the transfer station for aesthetic interest.
- Artwork will be installed in accordance with King County's "1% for Art program."

- Exterior building lights will project downward to minimize off-site spillover or glare; this is consistent with the LEED credit for light pollution reduction.
- Native plants will be used as much as possible.
- Mature vegetation that may be removed near the wetland buffer will be replaced with vegetation that would grow to similar heights over time as appropriate for safety considerations and in accordance with the Auburn Municipal Code.
- The site will be landscaped in a manner that enhances the natural characteristics of the site.
- Mature plant material located at the site perimeter will be protected during construction to maintain maximum screening of the site.
- A vegetated buffer will be provided around the perimeter of the site, as feasible.

Operation

- Fully enclosed, end-loaded containers will be used for solid waste, reducing the potential for spillage of waste and litter at the site.

3.10.4.3 Alternative 2

The mitigation measures proposed for Alternative 1 would also apply to Alternative 2. It is anticipated that a substantial amount of vegetation would be removed within the Alternative 2 site development area and for West Valley Highway South frontage improvements. Vegetation will be replaced, where possible, with vegetation that would grow to similar heights over time as appropriate for safety considerations and in accordance with the Algona Municipal Code.

3.10.5 Significant Unavoidable Adverse Impacts

3.10.5.1 No Action Alternative

No significant unavoidable adverse impacts to visual quality are anticipated.

3.10.5.2 Alternative 1

Development of the Alternative 1 site as a recycling and transfer station would result in a substantial change to the visual quality in this area and in the mid-ground and background of Viewpoint 1-E (identified and described in Section 3.10.2.1). Adherence with zoning standards, review processes, and mitigation measures would reduce effects. In the context of surrounding industrial and commercial land uses, significant unavoidable impacts are not anticipated.

3.10.5.3 Alternative 2

Development of the Alternative 2 site as a recycling and transfer station is not anticipated to result in a substantial change to visual quality from any viewpoint due to on-site and surrounding topography and the landscaping scale; no significant unavoidable impacts are anticipated.

3.11 Cultural Resources

This section of the Environmental Impact Statement describes the existing cultural resources and potential impacts that could occur from the No Action Alternative and Alternatives 1 and 2.

3.11.1 Federal, State and Local Regulations

Cultural resources, which include archaeological, ethnographic, and historical resources, are protected by a variety of federal, state, and local laws and regulations.

3.11.1.1 Federal

Section 106 of the National Historic Preservation Act of 1966 (NHPA) is the federal law regulating projects with a federal nexus such as funding, licenses, or permits. The Washington State Department of Archaeology and Historic Preservation (DAHP) and affected Tribes must be consulted when projects are subject to review under the NHPA. This act requires that all federal agencies take into account the effect of its actions on historic properties. DAHP and affected Tribes are consulted to help determine if the Area of Potential Effects (APE) has been inventoried, if there are identified cultural resources within or adjacent to the APE, and if the resource is listed or eligible for listing on the National Register of Historic Places (NRHP). If projects will adversely affect property that meets NRHP criteria, DAHP will participate in finding acceptable ways to avoid or mitigate that adverse effect. The federal agency involved is responsible for initiating and completing the Section 106 review.

Under Section 106, inventories are designed to identify and evaluate any property (e.g., districts, archaeological sites, buildings, structures, and objects) that may be considered eligible for listing in the NRHP. To be eligible for the NRHP, properties must be 50 years old (unless they have special significance) and have national, state, or local significance in American history, architecture, archaeology, engineering, or culture. They also must possess integrity of location, design, setting, materials, workmanship, feeling, and association; and meet at least one of four criteria for evaluation listed in 36 C.F.R. § 60.4:

- Criterion A: association with important historical events or trends
- Criterion B: association with important people
- Criterion C: retain important characteristics of style, type or have artistic value
- Criterion D: have yielded or have the potential to yield important information

No federal funding or federal lands are anticipated for this project. However, a possible federal nexus would be for a federal permit, such as a Clean Water Act Section 404 wetlands permit from the United States Army Corps of Engineers.

3.11.1.2 State

The State Environmental Policy Act (SEPA) (Washington Administrative Code (WAC) 197-11, WAC 468-12) requires that impacts to cultural resources be considered during the public environmental review process. Under SEPA, the King County Solid Waste Division (division) is the lead agency tasked with obtaining technical expertise in regard to cultural resources; and providing that information to the public, Tribes, and appropriate agencies.

3.11.1.3 Local

At the local level, the division is required to have qualified staff screen projects for inventory or monitoring recommendations as soon as possible in the review process. If an inventory is recommended, then it must to comply with Section 106 of the NHPA and King County Historic Preservation Program (KCHPP) requirements. King County is also required to implement an Unanticipated Discovery Plan for Cultural Resources and Human Remains during construction.

The City of Auburn regulates cultural resources under Historic Preservation, Chapter 15.75 of the Auburn Municipal Code. The City of Algona does not currently have ordinances related to cultural resources but may deny a permit or approval under SEPA.

3.11.2 Affected Environment

3.11.2.1 Methodology

Literature and Documents Review

A search of records was conducted using the DAHP Washington Information System for Architectural and Archaeological Records Data (WISAARD) database in April 2013. This restricted-access, searchable Geographic Information Systems database depicts locations of previously recorded archaeological sites, cultural resource surveys conducted after 1995, historic registered properties, historic property inventories, and cemeteries. The WISAARD Historic Property Inventory (HPI) also includes imported information from county assessor building records, which highlight above-ground historic properties built before 1969 (excluding existing resources already identified through field inventory). The data included in HPI forms originate from the county assessor building records that were imported by DAHP into WISAARD in 2011. The only information available is the build date, alteration date, and its current use. The WISAARD HPI provides an estimation of historic-era resources but they may not have yet been field-verified or formally documented. Only properties within the immediate vicinity (0.25-mile) of the alternative sites are described due to the extensive number of pre-1969 buildings and structures present in the vicinity.

King County maintains their own database and Historic Resource Inventory (HRI) that has additional information on ethnographic site locations, above-ground historic properties, and reports of archaeological finds including human remains. KCHPP reviewed their database and provided a preliminary review for both alternatives. The information provided in the KCHPP screening reports (KCHPP 2013a, 2013b, 2013c) and that found on WISAARD are the primary sources of cultural resources information available.

Ethnographic reports (Hilbert et al. 2001), historical maps, and historical aerial photographs were also used to identify cultural resources. Historical maps were reviewed to determine the historical land uses in the area and potential presence of cultural resource features such as roads, buildings, and homesteads. Historical and more recent aerial photographs were also reviewed for each alternative site, and spanned the years 1936 to 2011.

A public comment was received during the scoping process that noted the important role of the railroads and farms in the history of the communities within and surrounding the alternative sites.

Windshield Survey

No field inventory was conducted as part of this review. The sites were observed and documented from publicly accessible spaces, adjacent surface streets, and parking lots as part of a windshield survey. The windshield survey provided photographs of all structures and buildings, standing or collapsed visible from public rights-of-ways. These were reviewed by cultural resources personnel and aided the desktop cultural assessment for each site by providing an overview of existing conditions for above-ground historic properties and potential associated archaeological remains.

3.11.2.2 Ethnographic Context

The project vicinity was traditionally inhabited by the Yilalkoamish Indians, who represent one of over 50 Southern Coast Salish tribal groups that traditionally frequented the Puget Sound Basin, and who fall within the Southern Lushootseed language group (Suttles and Lane 1990). The Yilalkoamish Indians generally resided at the confluence of the Green and White Rivers, which prior to 1906¹ merged at a confluence northeast of present-day Auburn. An ethnographic village was located at this historic confluence and was known as *ʔlʔlʔq^wuʔ*, or striped water. The village was described as large and populous (Hilbert et al. 2001; Hoyt et al. 2008). Once merged, the river flowed north and eventually joined the Duwamish River. In the Auburn area are eight additional place names that refer to geographic features or natural resources; examples include a place associated with strawberries (*t³i'lakwEts*), a wolf-shaped rock of traditional importance (*bst1k³ai'yu*), and a bend in the river associated with water lilies (*sqwobsti*) (Hilbert et al. 2001). Other nearby native peoples included the Skopamish, residing in the upper reaches of the Green River; and the Smulkamish, residing along the upper White River (Suttles and Lane 1990). These people practiced their way of life of hunting, fishing, and gathering for thousands of years prior to contact with Euro-American people (Ruby and Brown 1992; Suttles and Lane 1990).

Southern Coast Salish tribal territory contained at least one primary village, such as *ʔlʔlʔq^wuʔ*, usually located on a waterway or drainage adjacent to important resource areas. Principally occupied in winter, these villages contained several large plank houses, a cemetery, smokehouses, and other associated outbuildings. Southern Coast Salish tribal territory contained three types of plank houses (shed-roof, gable-roof, and gambrel-roof), although shed-roofs were the most common - and most likely once the only type. Most plank houses were constructed as dwellings that sheltered extended families and were principally occupied in winter. Temporary housing in the warmer months were set up at campsites and consisted of a gabled roof pole structure covered with housemats (Suttles and Lane 1990). The Southern Coast Salish dispersed into smaller family groups during the spring, summer, and fall to hunt,

¹ In 1906, engineers diverted the White River away from its historic channel, cutting off its connection to the Green River and instead diverted the river into the Stuck River (Bagley 1929; Stein 1999; Merrill et al. 2010), located south of Auburn to continue its flow into the Puyallup River.

fish, and gather food for immediate consumption as well as for winter storage (Suttles and Lane 1990). Men were responsible for woodworking using tools such as stone mauls, wedges of elk antler and yew wood, and adzes to create plank houses and canoes. Women made clothing, cordage, mats, baskets, and blankets from cedar bark and cattail fiber; and traded hemp, mountain goat wool, dog wool, bird down, and game hide (Suttles and Lane 1990).

The Southern Coast Salish subsistence practices centered primarily on fishing for salmon and other fish as the primary food source taken from both fresh and salt water; vegetable foods and land game were also utilized (Suttles and Lane 1990). Unlike the Coastal Salish, the inland Salish such as the Yilalkoamish, Skopamish, Smulkamish, and Stkamish did not live on the shores of the Puget Sound, but rather a few miles inland along rivers. Even so, salmon fishing was extremely important to their economy and diets (Ruby and Brown 1992). Weirs and traps, trawl nets, dip nets, gaff hooks, harpoons, and leisters were used in rivers to trap fish. Important game mammals included black tail deer and elk. Hunting practices included the use of bow and arrow, driving deer and elk into pitfalls, and snaring or chasing them into water to be clubbed. The inland Salish also travelled eastward to trap goats in the Cascade Mountains and used their wool to make blankets and burial robes (Ruby and Brown 1992). Waterfowl such as ducks and seagulls were also hunted and trapped. Edible plant resources included berries, roots, bulbs, and nuts. The most important bulb and root resources were bracken, camas, and wapato. A variety of important berries included salmonberry, salal berry, elderberry, huckleberry, and blackberry. Cedar trees were of importance for clothing, basketry, and canoes (Suttles and Lane 1990).

3.11.2.3 Historic Context

The first non-native group to enter Puget Sound was a British expedition under the command of George Vancouver in 1792. Peter Puget, from whom the area derives its name, was one member of this expedition. Vancouver traded with the Southern Coast Salish while exploring the many inlets of the Puget Sound and in 1841 Charles Wilkes, an American explorer, surveyed the inlets that Vancouver had not (Murphy et al 2001; Wilkes 1845). During the next 100 years, native populations plummeted due to introduced diseases such as influenza, small pox, and typhoid fever (Boyd 1985; Suttles and Lane 1990).

In the 1820s to 1830s, the Hudson's Bay Company had established trading posts along the Fraser and Nisqually rivers (Suttles and Lane 1990); Fort Nisqually was established at the southern end of Puget Sound approximately 25 miles southwest from the Green River Valley. In 1846, the United States and Great Britain negotiated the northern boundary of the now United States, and delineated the Oregon Territory, with the provision that Indian Lands not be taken without Indian consent (Tulalip Tribe 2009). Encouragement to settle the new territory came with the 1850 Oregon Donation Land Claim Law and settlement of the Puget Lowland proceeded. By 1852, settlements had been established on traditional lands belonging to tribes within the Puget Sound area (Suttles and Lane 1990).

In 1853, Washington Territory was established as a separate entity from Oregon Territory with the provision that the United States had the right to regulate Indian land, property, and other rights (Tulalip Tribe 2009). Treaties with the Indians were established shortly thereafter. In 1854 and 1855, the treaties of Medicine Creek were signed, creating the basis for the Muckleshoot Reservation, though it was not officially established until 1857 by executive order. Point Elliott and Point No Point were assigned for fishing rights and land reservations; many of these tracks of land later became Indian Reservations (Suttles and Lane 1990), however, dissatisfaction with the treaties and the breaking of treaties by the U.S. Government led to the Indian Wars of 1855/1856. The Auburn area witnessed the White River Massacre in which eight Americans, including members of entire families, were killed (Ruby and Brown 1992; Flewelling 2005). After the Treaty Wars, the Indian population continued to be removed to reservations. The Skopahmishes (Green River Indians) and the Smulkamishes were assigned to the Muckleshoot Reservation, located between the Green and White Rivers along an irregular stretch of land (Ruby and Brown 1992). The Treaty of Point Elliott grouped together all the native people of Lake Washington and Duwamish River Watershed which included the Green and White Rivers as Duwamish. Today, the Muckleshoot Indian Tribe identifies their descendants from the Duwamish and Upper Puyallup peoples (Muckleshoot Indian Tribe 2013).

In the early 1850s, Euro-Americans began to permanently settle the Algonia/Auburn area. They built houses and farms until October of 1855, when the first skirmishes of the Treaty Wars took place. Many settlers fled the valley to Fort Steilacoom to the south and Seattle to the north. They returned 1-year later to continue resettling the area (Merrill et al. 2010).

The town of Auburn was platted by Dr. Levi Ballard in 1886. The town was originally named Slaughter after Lieutenant William Alloway Slaughter, who was killed near the town site during the Treaty Wars. A few years later in 1891, the unfavorably sounding town name was changed to Auburn (Flewelling 2005). Hop farming was Auburn's early industry, lasting not quite a decade; in 1890, an aphid infestation destroyed the crops (Bagley 1929; Hoyt et. al. 2008). Dairy and berry farming increased after that time and have remained important to the local economy up to the present. Based on the historic maps and aerial photographs review, all of the Alternative sites were historically agricultural settings and were developed with rural residences or outbuildings by the early 20th century.

Japanese emigrants, many of whom took up farming, began to settle the region as early as the 1890s, and emerged as an important ethnic group in the Seattle region, including in Bellevue, and along the White River and Puyallup valleys, and on a number of Puget Sound islands. By the 1920s, these farmers supplied 75 percent of Seattle and King County's vegetables, and half of the milk supply (Takami 1998). Japanese truck farms were typically small, averaging 5 to 15 acres, had few amenities and involved the entire family for its operation. More than half of all Japanese farms in the state were found in the White River Valley. Japanese truck farmers began selling their produce at Pike Place Market in 1912, just 5 years after its founding; by World War I, they occupied 70 percent of the market stalls. However, in 1921 the Alien Land Law was passed by Washington state legislators, restricting property ownership by Japanese and other immigrants, and hindering growth of their farms. About 20 years later, Japanese-Americans were sent to internment camps during World War II, and many of their truck farms were

forcibly sold; few Japanese-American farmers returned to their farms after the war (Takami 1998).

Integral to Auburn's urban growth were railroads, specifically the Puget Sound Electric railway, which provided Auburn with numerous economic opportunities that enabled farmers to travel north to Seattle and sell their goods at markets, such as Pike Place Market. In addition, the Northern Pacific Railroad chose Auburn as its freight terminus in 1913, creating major job opportunities for the residents of Auburn as well as creating a draw for new residents (Hoyt et al. 2008). Increased industrialization consequently occurred, and Auburn grew with the establishment of companies like the Borden Condensed Milk Company and the Northern Clay Company. However, the Great Depression of the 1930s took its toll on many residents and limited growth of the region.

When World War II erupted, the U.S. Army Air Force Auburn General Depot was constructed southeast of the city limits, and resulted in a boom to the local economy. The U.S. Army Air Force depot opened in 1943 and handled Lend Lease aircraft parts and equipment used to supply airbases in Alaska and the Pacific Northwest (Denfeld 2013). Wartime concerns of local residents were not with the depot but rather with the internment of Japanese-American farmers (GSA 2013). The Auburn depot went on a closure list in 1960, and the GSA took over the facility, which now houses the GSA Northwest/Arctic Region Headquarters. In 1962, a nearly 300-acre portion of the depot was sold to private interests (Denfeld 2013); this would include a portion of the Alternative 1 site.

The City of Auburn grew during a post-war period of increased industrialization and suburbanization, and would have a population of about 112,992 in 1960. The railroad was replaced by new transportation systems, including the Seattle-Tacoma International Airport, and new freeways; industrial plants and warehouses transformed Auburn into a distribution center serving Puget Sound (GSA 2013). In 1963, the Boeing Company constructed a large facility to mill sheet metal skin for jet liners. Federal agencies like the Federal Aviation Administration and GSA built facilities in the Auburn area, and a community college was established. As a result of all the new business and commerce, large tracts of farming land were converted to commercial and industrial use (Stein 1999; Rooke and Gerrish 2012). This commercial and industrial setting surrounds the alternative sites.

3.11.2.4 Previous Cultural Resources Investigations

Records on file with the WISAARD database and the KCHPP are summarized in Tables 3.11-1 through 3.11-6. In total, two previous inventories have been completed within a 1-mile radius of the No Action Alternative site, 13 for the Alternative 1 site and 4 for the Alternative 2 site. However, none of these previous investigations overlap the alternative sites (Table 3.11-1).

**Table 3.11-1
Previous Cultural Resource Investigations within
1-Mile Radius of the Alternative Sites**

Survey Report No.	Primary Author	Date	Report Title	Alternative Site
1334576	Norman, Leslie	1995	Letter Report to Rob Whitlam: Regarding Emerald Downs construction monitoring	Alternative 1
1339734	Norman, Leslie	1995	Letter Report to Rob Whitlam: Regarding Monitoring for cultural resources at Emerald Downs and follows previous work documented in a letter report submitted June 14, 1995	Alternative 1
1339889	Letourneau, Philippe	2001	Results of Archaeological Field Inspection and Testing at Auburn Commuter Rail Station Garage	Alternative 1
1339893	Letourneau, Philippe	2001	Results of Archaeological Testing and Monitoring at Auburn Commuter Rail Station Garage (45KI498)	Alternative 1
1349151	Schwab, Leslie	2007	West Main Street Improvement Project Cultural Resources Survey	Alternative 1
1349947	Sundberg, Kent	1997	Historic Resources Survey and Inventory Update for the City of Auburn	Alternative 1
1350650	Chobot, Katherine	2007	Cultural Resources Survey for the A Street NW Extension Project, Auburn	Alternative 1
1350991	Schumacher, James	2008	Cultural Resources Survey fir Warde Street & Washington Boulevard Improvements, Algona	Alternative 2, No Action Alternative
1352187	Hoyt, Bryan	2008	Cultural Resources Survey of the Auburn Environmental Park Birding Tower Project	Alternative 1
1352584	Chambers, Jennifer	2009	Letter to Kelly McLain Aardal Regarding: Cultural Resources Assessment of the Geodecke Site for the Mohawk Plastics Wetland Mitigation Project, Auburn	Alternative 2
1353334	Sharpe, James	2009	DRAFT: M Street SE Grade Separation Project Historic, Cultural and Archaeological Resources Discipline Report	Alternative 1
1354439	Montgomery, Marcia	2009	Cultural Resources Assessment for the S. Division Street Promenade Project, Auburn	Alternative 1
1681150	Merrill, Christie	2010	Cultural Resources Assessment of the West Valley Highway Improvement Project, King County, Washington	Alternative 1
1681329	Hartmann, Glenn	2011	Cultural Resources Assessment for the Maksimchuk Grade and Fill Project, Algona	Alternative 1, Alternative 2, No Action Alternative
1682122	Phillips, S. Colby	2011	Archaeological Monitoring for the S. Division Street Promenade Project, Auburn	Alternative 1

**Table 3.11-1 (Continued)
Previous Cultural Resource Investigations within
1-Mile Radius of the Alternative Sites**

Survey Report No.	Primary Author	Date	Report Title	Alternative Site
1682790	Rooke, Lara	2012	Cultural Resources Assessment for the Former Standard Oil Service Station and Former Owl Service Station Properties, Auburn	Alternative 2

One archaeological site is within 1-mile of the Alternative 1 site, a multi-component historic site with pre-contact materials (Table 3.11-2). No archaeological sites are adjacent to or within 0.5-mile of the alternative sites.

**Table 3.11-2
Previously Recorded Archaeological Sites within
1-Mile Radius of the Alternative Sites**

Site Number	Site Type	NRHP Status	Attributes	Date Recorded	Report Number	Alternative Site	Within/Distance to Alternative
45KI498	Multi-Component Historic Objects, and Pre-contact Lithic Material	Unevaluated	The site consists of numerous historic artifacts and infrequent possible prehistoric lithic artifacts in disturbed context. Artifacts include three CCS flakes, centerfire cartridge case, glass bottle base, wire nails, clear bottle glass, terracotta tile, coal and utility ceramics.	4/13/2001	1339893	Alternative 1	No (0.5-mile)

Two cemeteries are within 1-mile of the Alternative 1 site but none are adjacent to or within the sites (Table 3.11-3). Because the nearest cemetery is over 0.3-mile from the Alternative 1 site, these resources are not considered within the impacts analysis for the project.

**Table 3.11-3
Previously Recorded Cemeteries within
1-Mile Radius of the Alternative Sites**

Site Number	Name	Attributes	Date Recorded	Associate Report	Alternative Site	Within/ Distance to Alternative
45KI850	Mountain View Cemetery	The cemetery was established in 1890. Status is active. The Mountain View Cemetery Association was formed for the purpose of purchasing land well removed from the White River's annual floods which were damaging Slaughter Precinct Cemetery (Auburn Pioneer Cemetery). Many graves were relocated here from the Auburn Pioneer Cemetery - with one of the earliest markers dated 1864.	7/15/2010	None given	Alternative 1	No (1.0-mile)
45KI981	Skeleton and Mandible	No other information is given.	No date given	None given	Alternative 1	No (.33-mile)

There are 10 above-ground historic properties within the immediate vicinity (0.25-mile) of the alternative sites. Properties were documented by WISAARD, most of which were imported from county tax assessor data (Table 3.11-4). Of the 10 above-ground historic properties, only one is found within an alternative site. A residence built in 1920 and remodeled in 1950 is located in the Alternative 2 site and has not been formally evaluated for significance.

**Table 3.11-4
Previously Identified Above-Ground Historic Properties
within the Immediate Vicinity (0.25-Mile) of the Alternative Sites**

Historic Name or Common Name/Address	Description	Eligibility Status	Alternative Site	Within/ Distance to Alternative
905 C St SW, Auburn	The building was built in 1943 and is a single-family dwelling. The building has a single-family form.	Unevaluated	Alternative 1	No (0.1-mile)
1005 C St SW, Auburn	The building was built in 1964 and is a warehouse. The structure was remodeled in 1990. The 1-story building has a commercial form.	Unevaluated	Alternative 1	No (0.1-mile)

**Table 3.11-4 (Continued)
Previously Identified Above-Ground Historic Properties
within the Immediate Vicinity (0.25-Mile) of the Alternative Sites**

Historic Name or Common Name/Address	Description	Eligibility Status	Alternative Site	Within/Distance to Alternative
701 15th St SW, Auburn	The building was built in 1944 and is an industrial storage. The structure was remodeled in 1944. The one-story building has an industrial form.	Unevaluated	Alternative 1	No (0.1-mile)
1419 A St SE, Auburn	The building was built in 1966 and is a professional building. The structure was remodeled in 1966. The one-story building has a commercial form.	Unevaluated	Alternative 1	No (0.1-mile)
1401 C St SW, Auburn	The building was built in 1944 and is one story. The structure was remodeled in 1970.	Unevaluated	Alternative 1	No (0.1-mile)
Waugh, James B. and Gertrude, House 332 4th St SW, Auburn	The building was built in 1910 and is a single family dwelling. The building has a single-family form. Vernacular house type associated with the population growth and physical development of the Early Regionalization Era of development.	Unevaluated	Alternative 1	No (0.2-mile)
509 C St SW, Auburn	The building was built in 1918 and is a single family dwelling. The building has a single-family form.	Unevaluated	Alternative 1	No (0.2-mile)
35019 West Valley Hwy S, Algona	The building was built in 1920 and was remodeled in 1950. The one-story building has a commercial form.	Unevaluated	Alternative 2	Yes
35417 West Valley Hwy S, Algona	The building was built in 1903 and is a single-family dwelling. The building has a single-family form with an attached garage.	Unevaluated	No Action Alternative	No (0.1-mile)
35409 West Valley Hwy S, Algona	The building was built in 1922 and is a single-family dwelling. The building has a single-family form.	Unevaluated	No Action Alternative	No (0.1-mile)

Above-ground historic properties that have already been listed in the Washington Heritage Register (WHR)/NRHP are found at least 0.75-mile from the nearest site (Table 3.11-5). These are not likely to be impacted by the project due to intervening topography, vegetation, distance and/or highway traffic in the urban/industrial setting that characterizes the sites.

**Table 3.11-5
Previously Identified Registered Historic Properties
within 1-Mile of the Alternative Sites**

Register Name/Address	Description	Listing Status	Alternative Site	Within/ Distance to Alternative
Auburn Public Library 306 Auburn Ave, Auburn	The library was constructed in 1914 with money from Andrew Carnegie. Its significance derives from its importance in the intellectual and social history of Auburn. It is a very pure and fine example of a typical Carnegie Library.	WHR and National Register (Listed 1982)	Alternative 1	No (0.75-mile)
Blomeen, Oscar, House 324 "B" Street NE, Auburn	Built in 1913 to 1914 by a Swedish immigrant, the House is a significant example of vernacular post-Victorian residential architecture in Auburn and reflects both Craftsman idiom of the period and elements drawn from late Victorian picturesque house styles.	WHR and National Register (Listed 1991)	Alternative 1	No (1.0-mile)
Jovita Land Company Model Home – Corbett House 4600 South 364th Street	The house was constructed in 1908 and was built promote suburban residential development in the Jovita and Jovita Heights additions. The house is significant for its association with early 20th century suburban residential development spurred by the construction of Interurban Railway service; the growth of automobile oriented commuter patterns in rural areas of the county; and as a particularly rare and early example of a model home with Craftsman-inspired architectural features and details.	WHR and National Register (Listed 1982)	No Action Alternative	No (1.0-mile)
U.S. Post Office 100 Auburn Ave, Auburn	The post office is significant under Criterion A and C, as it was constructed under the national work relief program sponsored by the Public Works; and because it embodies the distinctive characteristics of federal post office buildings designed by the Federal Supervising Architect in the Starved Classical style. The building was constructed in 1937.	WHR and National Register (Listed 2000)	Alternative 1	No (0.75-mile)

Table 3.11-6 lists ethnographic places on file at KHPP that are within 1-mile of the alternative sites that include traditional fishing areas.

**Table 3.11-6
Previously Identified Ethnographic Places
within 1-Mile of the Alternative Sites**

Site Number	Name	Alternative Site	Within/ Distance to Alternative
KC #7084	Fishing Area	Alternative 2	No (0.9-mile)
KC #7159	Fishing Area	Alternative 2	No (0.9-mile)

3.11.2.5 No Action Alternative

Cultural Resources

Structures and Improvements

As early as 1912, the No Action Alternative site was developed with a single-family residence. In 1940, a barn and two lean-tos were added to the property. Between 1964 and 1965, the single-family residence, barn, and lean-tos were torn down. The site was developed with a solid waste transfer station in 1966. The site was improved with a main gate structure (which was replaced with a new structure in 2004), truck scales, asphalt parking, and driving areas. The perimeter of the transfer station is fully fenced and the main gate has locking mechanisms that restrict access when the transfer station is closed. Access to the main gate of the transfer station is provided from West Valley Highway South. Improvements were made to the scale house from 2002 through 2004.

Operations and Use

From 1912 until 1966, the site was owned by an individual and was developed with a residence. Since 1966 it has operated as the existing Algona Transfer Station.

Previous On-site Cultural Resources Investigations

The results of the record search indicate that within the No Action Alternative site, no cultural resource surveys have been conducted, no archaeological sites have been recorded, and no historic properties have been inventoried.

Previous Cultural Resources Investigations within 1 Mile of the No Action Alternative Site

The results of the record search indicate that within a 1-mile radius of the No Action Alternative site, two cultural resource inventories have been conducted (Table 3.11-1), and 215 above-ground historic properties have been inventoried. Of those inventoried, two are located in the immediate vicinity (within 0.25-mile) of the site and consist of two single-family buildings constructed in 1903 and 1922 that have not been evaluated for significance (Table 3.11-4). One property within the 1-mile radius, the Jovita Land Company House, has been placed in the NRHP and the state WHR but is 1-mile from the site and therefore not likely to be affected (Table 3.11-5).

Ethnographic Data

No ethnographic data was found for this site.

Historical Maps

The United States General Land Office (GLO) map dated 1869 does not depict any cultural features at this site. USGS topographic maps were provided by Environmental Data Resources, Inc. (EDR) for the Tacoma and Poverty Bay quadrangles, dated 1900; 1949; 1961; 1968; 1973; 1981; 1994; and 1997. Other than a steep grade, no site-specific features were depicted on the 1900 and 1949 topographic maps. On the 1961 map, a small building (typically marking a residential structure) was depicted centrally on the site. The small structure was replaced with a large structure in 1968. The symbols on the site remained unchanged in the 1973, 1981, 1994, and 1997 topographic maps.

Historic Aerial Photographs

As early as 1936, the southern half of the No Action Alternative site appeared to be predominately developed with grassy areas and a square structure. Clearing and grading activities were visible on the central portion of the property. Wooded areas were observed throughout the remainder of the site including the western, southern, and northern boundaries. The site appeared relatively unchanged through the early 1940s. By 1956, the evidence of clearing and grading in the central area was replaced with an access road and grassy areas.

In 1965, evidence of clearing and grading activities were observed throughout the majority of the southern half of the site. By 1972 a large structure and paved driving surfaces were observed on the southern half of the property, with paved driving areas extending onto the northern half of the site. These improvements appear to be consistent with the existing Algona Transfer Station configuration, constructed in the mid-1960s. The remainder of the site contained wooded areas.

From 1980 through 1991, with the exception of parked trailers, the site appeared relatively unchanged. In the 2005 and 2006 aerial photographs, a small structure was visible on the north end of the site, in the location of the present day gatehouse. In the 2009 and 2011 aerial photographs, the site appeared relatively unchanged.

Windshield Reconnaissance

No other buildings or structures were observed besides the Algona Transfer Station during the reconnaissance.

Archaeological Resources

County assessor's records show that a single-family residence was present from 1912 until about the time the Algona Transfer Station was constructed. Historical and modern aerial photographs of the site depict the transfer station under construction in 1965 and completed by 1968. Prior to 1965, the site was still forested.

There is a low probability that historic-period sites may be present because of previous disturbances from construction and operation of the existing Algona Transfer Station. No archaeological inventory has been conducted to date at this site.

3.11.2.6 Alternative 1

Cultural Resources

Structures and Improvements

Historically, the Alternative 1 site consisted of parcels 2421049001 (4.95 acres), 2421049054 (4.41 acres), and a portion of 2421049068 (remaining 9.36 acres). Parcel 2421049068 was historically part of the Auburn General Depot, owned and maintained by the U.S. Army. As early as 1936, a railroad spur was documented, extending from the existing Union Pacific Railroad (UPRR) (at the northwestern corner of the property) diagonally across the site to intersect with both C Street SW and the Burlington Northern Santa Fe (BNSF) rail yard. Historically, this railroad spur crossed through all three parcels.

Historical records were reviewed for parcels 2421049001, 2421049054, and 2421049068. Records indicated the following:

- 2421049001: the parcel was merged with parcel 2421049054 in 1965. Historical improvements associated with 2421049001 were on file with 2421049054.
- 2421049054: from 1954 through 1963, 2421049054 was improved with multiple hay storage and cattle shelters, a cattle feed mill, and six grain silos. By 1988 the majority of the feed lot buildings were demolished.
- 2421049068: as early as 1936, approximately 18 structures were located on the portion of 2421049068 situated within the site boundaries. In the mid-1940s three buildings were constructed on 2421049068: a 56,500-square-foot cold storage plant, a 400 square foot salt storage building and a 1,360-square-foot battery shop. In the late 1960s and early 1970s, the parcel was provided with catch basins, an underground storage tank (location unspecified), and spur tracks. With the exception of the spur tracks, none of these structures were located on the portion of 2421049068 associated with the Alternative 1 site.

Operations and Use

The southwest portion of the site (historically the northern portion of 2421049068) was owned by National Lumber Distributors (as early as 1927). In the late 1920s, right-of-way was sold to David Hart, Inc., Chicago, Milwaukee & St. Paul Railway, and Oregon-Washington Railroad and Navigation Company for a spur from the main track. This spur bisected the site into northern and southern halves, diagonally.

- South Half of Alternative 1 site: in 1936, the portion of parcel 2421049068 situated within the boundaries of the site was developed with approximately 18 structures and an unimproved access road that appeared to be part of a farmstead (surrounded by

large areas of agricultural fields). By the mid-1940s, the parcel was redeveloped with industrial structures and railroad spurs. With the exception of a railroad spur (located on the western boundary) none of the improvements were located on the site. During this time the parcel was designated as part of the Auburn General Depot U.S. Army. The military/U.S. Army boundary aligned with the railroad spur that cut diagonally across the site.

- North Half of Alternative 1 site: the north portion of the site (2421049001) was merged with parcel 2421049054 in 1965 for construction of the Ardell Feed Lot. Improvements associated with the Ardell Feed Lot were first documented on parcel 2421049054 in 1954. Feed lot operations continued on the northern half of the site until the early 1980s. In 1981 the parcels were sold and by 1988 the majority of the buildings were gone.

The Alternative 1 site was cleared and graded and improved by 2005. Improvements included an open-water feature with vegetation on the northwest corner of the property and drainage piping that discharged to a depression along the western boundary.

Previous On-site Cultural Resources Investigations

The results of the record search indicated that within the Alternative 1 site, no cultural resource surveys have been conducted, no archaeological sites have been recorded, and no historic properties have been inventoried.

Previous Cultural Resources Investigations within 1-Mile of the Site

The results of the record search indicate that within a 1-mile radius of the Alternative 1 site, 15 cultural resource inventories have been conducted (Table 3.11-1), one archaeological site recorded (Table 3.11-2), two cemeteries inventoried (Table 3.11-3) and 511 above-ground historic properties inventoried. Of those properties inventoried, seven are located within 0.25-mile of the site (Table 3.11-4) and have not been evaluated for significance. These consist of four single-family buildings constructed between 1910 and 1943 and three commercial buildings constructed between 1944 and 1966. There are three resources listed in the NRHP and the state WHR at least 0.75-mile from the site, including a library, residence, and post office (Table 3.11-5).

Ethnographic Data

According to records on file at KCHPP (2013a), no previously documented ethnographic places are found within or adjacent to the site. Several ethnographic places are found within 1.5 miles, including named geographic features, an Indian house, a burial, and a salmon fishing location.

Historical Maps

No features of historical interest are present on the 1868 or 1869 GLO maps. Sanborn maps (1929 and 1943) show the site as empty space with tracks of the Chicago, Milwaukee, St. Paul, Pacific Railroad, and the Oregon-Washington Railroad and Navigation Company running along the western boundary of parcel 2421049001. The Alternative 1 site is not included on earlier

Sanborn Maps, but the rail lines are shown on the 1910 maps labeled as Chicago, Milwaukee, and Puget Sound.

The results of the historical map review reveal that there is one structure located within the site on the 1949 USGS map. The 1949 map depicts the site and its vicinity as an industrial area with two rail lines running north-to-south along to the west and east of the site vicinity (now the UPRR to the west and the BNSF rail yard to the east). To the north is State Route 18, with its entire exit interchanges, and to the south is a large area with numerous industrial-sized buildings with rail sidings entering the complex. This is the only occurrence that a structural feature is located on-site.

Historic Aerial Photographs

As early as 1936, evidence of a railroad spur was visible on-site, running from the existing UPRR (at the northwestern corner of the property) diagonally across the site to intersect with both C Street SW and the BNSF rail yard. Based on the parcel overlay provided by King County iMap (King County 2015d), the railroad spur appeared to align with the existing driveway that connects the site to C Street SW. In the 1936 aerial photograph, the site was primarily developed with maintained agricultural pastures. An unimproved access road was observed on the southern end of the site, connecting to both C Street SW and the railroads located east and west of the site. Many buildings of various sizes were observed along the access road in the 1936 aerial photograph, which appeared to be consistent with farmsteads of the early 1900s. An unimproved access road was also observed along the northern boundary of the site.

In 1957, the maintained agricultural areas were no longer visible on-site and appeared to be replaced with one large commercial structure and three smaller-attached structures on parcel 2421049054 (northeast of the railroad spur) and grassy areas and unimproved access roads on parcel 2421049001. Based on the configuration of unimproved access roads/driveways on the portion of the site located south of the railroad spur, this portion appeared to be connected to commercial/industrial facilities located on adjacent properties to the south.

In 1965, access roads were observed on either side of the road spur, connecting to structures located on-site, structures located on the adjacent property to the south and to C Street SW. The commercial building previously observed on parcel 2421049054 had expanded to fill the entire parcel. A new structure was observed north of the railroad spur on parcel 2421049001. Evidence of a new railroad spur was located on the western boundary. The remainder of the property consisted of open grassy areas.

From 1972 through 1985, the built configuration remained virtually unchanged. In 1990, evidence of the tracks associated with the railroad spur crossing diagonally across the site was no longer visible. The structures that previously occupied parcel 2421049054 were no longer visible, although cleared areas were observed where the buildings historically stood. The access roads that historically connected the southern adjacent property were no longer visible and were replaced with grassy areas. The structure historically located north of the railroad spur on parcel 2421049001 and the railroad spur located on the western boundary of the site were still visible in 1990.

By 1998, no evidence of structures was visible on-site. In the 2011 aerial photograph, the bulk of the site appeared cleared and graded, with the exception of the northwest corner. Two ponds and an area of standing water, surrounded by grassy areas, were observed on the northwest corner.

Windshield Reconnaissance

No historic buildings or structures were observed during the reconnaissance.

Archaeological Resources

No previous archaeological survey is available for the Alternative 1 site, and no previously documented archaeological resources are within the site. However, hundreds of inventoried above-ground resources, mostly residences and industrial buildings, have been identified in the vicinity. During the windshield survey, the site was vacant.

There is a moderate to high probability that historic-period archaeological sites may be present on the Alternative 1 site. Archaeological remains associated with numerous buildings (about 10 to 18 associated with a possible farmstead complex ca. 1936 [razed by 1949]; one building ca. 1949 [razed in the 1990s]); and several features related to cattle operations, like silos or cattle shelters (ca. 1950s-1960s) may be expected, unless modern site clearing and grading activities have obscured or destroyed such evidence.

The site was located adjacent to and partially within the WWII-era Auburn Army Depot, and military related artifacts or features could be present. The site is also adjacent to railroad corridors having historic antecedents, and was bisected by a historical spur. Dumps or features related to the railroad could be present. Historical use of the site appears to have been mostly associated with agricultural and rural-residential uses.

Prehistoric-period archaeological sites may be present on the Alternative 1 site. No archaeological inventory has been conducted to date at this site.

3.11.2.7 Alternative 2

Cultural Resources

Structures and Improvements

Historically, four of the nine parcels have been improved with structures as early as 1920, including 3751601414, 3751601416, 3751601419, and 3356407925. No improvements were noted on the records reviewed for the remaining five parcels. Records indicated the following:

- 3751601414: the earliest structure on record is a residence built in 1920 on parcel 3751601414. Later improvements on this parcel included a warehouse built in 1950, one or more mobile homes placed as early as the mid-1960s and a detached shop/garage built in 1987. Two of these improvements continue to exist including the 1920 residence and the 1950 detached shop/garage. Sometime around the late 1980s or early 1990s, the 1920 residence was converted to commercial use as office space for the landscape

supply business that currently operates. The last record of a mobile home on the property was dated October 1989.

- 3751601416: the parcel to the south was historically improved with two mobile homes. Records indicated that the mobile homes were placed on the parcel in approximately 1963 and removed around 1987.
- 3751601419: The parcel located south of 37510601416, identified as 37510601419, was historically developed with a residence built in 1941 and a mobile home placed in approximately 1980. The records did not indicate the demolition date of the residence. A note on the tax card indicates that the mobile home was removed from the parcel by 1987.
- 3356407925: This parcel was located on the north half of the site along West Valley Highway South, and was developed with a 320-square-foot residential structure in 1956. The residential structure remains on-site in a dilapidated state.

Operations and Use

The Alternative 2 site was used as a residence between approximately 1920 and the 1980s. Beginning around 1980, clearing and grading activities occurred on the southern portion of the site while residential structures continued to occupy the northern portion. The mobile homes that had occupied unspecified locations on three parcels were removed by 1989.

The 1920 residence was converted to office space sometime around the late 1980s or early 1990s and the property became commercial. Extensive clearing and grading associated with sand and gravel mining occurred throughout the 1990s. Mine reclamation was underway by 1998 and the property use changed from active mining to materials storage by 2006. The source of fill material used in mine reclamation activities is unknown. Stormwater treatment and/or flow-control facilities were constructed on and adjacent to the site during the early 2000s. The current use is materials storage for 410 Quarry, LLC, a landscaping supply business.

Previous On-site Cultural Resources Investigations

The results of the record search indicate that within the site, no cultural resource surveys have been conducted and no archaeological sites have been recorded. One above-ground historic resource is noted on the WISAARD database on-site (Table 3.11-4). The building at 35019 West Valley Highway South has not been field verified. According to the county assessor, the one-story building was constructed in 1920 and was remodeled in 1950, with its current use listed as commerce/trade - professional. This building is still present at the site and was observed during the windshield reconnaissance.

Previous Cultural Resources Investigations within 1-Mile of the Alternative 2 Site

The results of the record search indicate that within a 1-mile radius of the site, four cultural resource inventories have been conducted (Table 3.11-1), and 172 above-ground historic properties have been inventoried. No resources are in the immediate vicinity of the site (within 0.25-mile).

No other buildings within 0.25-mile have been inventoried in the KCHPP database. Other older properties are at least 0.25-mile distant and either on the plateau above the site or across West Valley Highway South and State Route 167 (2013b).

Ethnographic Data

According to information on file at KCHPP (2013b), two traditional fishing areas (KC# 7084 and 7159) are within 0.9-mile of the site (Table 3.11-6). No ethnographic places are within or in the immediate vicinity of the site.

Historical Maps

GLO maps (1868 and 1869) were reviewed and depict a Military and Telegraph Road alignment (1868) 0.75-mile west of the site. No features of historic interest are on-site. An 1897 USGS map depicts a building at the southern end, adjacent to the north-to-south running arterial road.

USGS topographic maps were provided by EDR for the Tacoma and Poverty Bay quadrants. The earliest USGS topographic map for the Alternative 2 vicinity that was available through EDR is dated 1900. Due to the map scale of the 1900 topographic map, specific details were not depicted. The general topography of the area was dominated by steep hillsides that border the White River Valley. An unlabeled road, that coincides with the present-day West Valley Highway South, was depicted the toe of the slope between the river valley and upland terrain. All along this road, the map depicted small buildings.

In the 1949 map, two small structures were depicted on-site. West Valley Highway South was unlabeled on this map and is color coded as a primary highway. The 1961 map depicted two structures although their relative locations were slightly different than those shown on the 1949 map. A light duty road was depicted extending from West Valley Highway South to the north of the two structures. A structure also appeared near the southern boundary, on property that is now occupied by the existing Algona Transfer Station.

In the 1968 map, the features of the site remained relatively unchanged when compared to the 1961 map. A larger structure, oriented on the bias, was depicted on the adjacent property to the south. The location, orientation, and size of this structure, and date indicate that the structure is the existing Algona Transfer Station.

On the 1981 map, the features of the site remained relatively unchanged when compared to the 1968 and 1971 maps. State Route 167 is depicted as under construction immediately east of West Valley Highway South.

On the 1994 map, two structures were depicted on-site, although at least one of the structures appeared to be in a different location than on previous maps. A gravel pit was labeled on the site, and another gravel pit was depicted immediately north. To the east, State Route 167 was depicted as a primary highway and West Valley Highway South was color coded as a paved light duty road. On the adjacent property to the south, the northern of the two structures on the transfer station was not shown on the 1994 map.

On the 1994 and 1997 maps, the site and the immediate surrounding area appeared relatively unchanged when compared to the previous maps.

Historic Aerial Photographs

The 1936 aerial photograph depicted agricultural land east of West Valley Highway South and heavily wooded land with sparse development to the west. The wooded area contained a clearing at the site with at least one structure, likely the residence built in 1920. An access road was visible connecting the structure and West Valley Highway South, approximately in line with 9th Avenue N right-of-way alignment.

Resolution on the 1941 aerial photograph was poor. The 1920 residence and its access road appeared unchanged.

The 1957 aerial photograph contained a new clearing, located near the southeast corner of the site. In the 1965 aerial photograph, a dilapidated residence was visible in the southeast corner of the site.

In the 1972 aerial photograph, evidence of construction activities associated with State Route 167 was visible, but the remainder of the site and vicinity appeared unchanged. In the 1978 aerial photograph, no changes were observed on-site and construction of State Route 167 continued.

In the 1980 aerial photograph, additional clearing and grading activities were on the southern portion of the site and access appeared to be from the south, immediately north of the existing Algona Transfer Station. A significant increase in the level of residential development on the top of the slope west of the site was visible.

The 1985 through 1998 aerial photographs appeared to show increasing levels of clearing and grading activities. Increased residential development on the top of the slope continued throughout these years. Conditions observed on the 2009 and 2011 aerial photographs were largely representative of current conditions.

Windshield Reconnaissance

The site is approximately 18.9 acres and is located at the western edge of Auburn-Green River Valley. Steep slopes occupy the western portions of the site, while grades across the eastern portion of the site are low to moderate.

Three buildings were observed on the site during the reconnaissance. The northern portion of the site is currently improved with one office building constructed in 1920 (formerly used as a residence), and a detached garage/shop that was constructed in 1987. The structures are used as part of a landscaping material retail business operated by 410 Quarry, LLC. Additional site features include a truck scale, a material storage yard for landscaping supplies, a material storage area for clean fill, a hillside that has been reclaimed post-sand and gravel mining and two stormwater treatment and/or flow-control facilities. The third structure was a severely dilapidated residence, built in 1956 and located on parcel 3356407925.

Most of the ground surface on the developed portion of the site is compacted gravel, with some grass-covered areas and a concrete pad immediately south of the garage. Algona Creek bisects the site.

Archaeological Resources

There have been at least three historic structures located on the Alternative 2 site. Buildings were constructed at the southern end by 1897, at the northern end by 1949 and at the southwestern corner with a road leading to it by 1961. Later aerial photographs beginning in 1968 show the southern part of the site as being increasingly cleared. There is one above-ground historic property, the 1920 residence (WISAARD HPI# 35019 West Valley Highway South) now used as a business office, and an abandoned, dilapidated residence built in 1956.

There is a moderate to high probability that historic-period archaeological sites may be present on the Alternative 2 site. Historical use of the site appears to be agricultural and rural-residential. Prehistoric-period archaeological sites may be present on the Alternative 2 site although the probability is low in areas previously disturbed. No archaeological inventory has been conducted to date at this site.

3.11.3 Environmental Impacts

3.11.3.1 Direct Impacts

No Action Alternative

Construction

No construction activities are proposed for the No Action Alternative.

Operation

Continued operation of the existing Algona Transfer Station would not pose any impacts to any known or suspected cultural resources. The transfer station will meet the federal and state 50-year age threshold for recordation as a historic resource in 2016. No impacts to cultural resources are anticipated.

Alternative 1

Construction

Effects to archaeological resources could result from construction-related impacts because there is a potential for pre-contact and historic-era archaeological resources to be present. Construction impacts to undiscovered archaeological sites are possible for those areas subject to ground-disturbing construction. Additional investigations would be conducted prior to construction to help define the potential presence of resources, but some resources could be undetected and may not be avoided. Mitigation measures including an inadvertent discovery plan would minimize potential impacts.

Operation

No operational impacts are anticipated as no further ground disturbance is anticipated.

Decommissioning and Deconstruction

Prior to deconstruction the existing Algona Transfer Station would be evaluated for historic significance. Previous development within the existing Algona Transfer Station has not discovered archaeological or historic resources to date, and the extent of previous ground disturbances has been extensive throughout much of the transfer station. Effects to cultural resources, while possible, are not anticipated.

Alternative 2

Construction

Effects to archaeological resources could result from construction-related impacts because there is a potential for pre-contact and historic-period archaeological resources. Construction impacts to undiscovered archaeological sites are possible for those areas subject to ground-disturbing construction. Additional investigations would be conducted prior to construction to help define the potential presence of resources, but some resources could be undetected and may not be avoided. Mitigation measures including an inadvertent discovery plan would minimize potential impacts.

Above-ground historic properties are present on-site and construction may require their deconstruction. These include an office building (constructed in 1920 and formerly used as a single-family residence) and a severely dilapidated residence (built in 1956).

Operation

No operational impacts are anticipated as no further ground disturbance is anticipated.

Decommissioning and Deconstruction

Decommissioning and possible deconstruction impacts described above for Alternative 1 would also apply to Alternative 2.

West Valley Highway South Frontage and Overlay Improvements

Effects to archaeological resources could result from construction-related impacts because there is a potential for pre-contact and historic-period archaeological resources. Construction impacts to undiscovered archaeological sites are possible for those areas subject to ground-disturbing construction. Additional investigations would be conducted prior to construction to help define the potential presence of resources, but some resources could be undetected and may not be avoided. Construction has the potential to cause direct impacts to cultural resources. However, mitigation measures will minimize potential impacts. No cultural resource impacts would occur as a result of pavement overlays on West Valley Highway South.

3.11.3.2 Indirect and Cumulative Impacts

No Action Alternative

Indirect Impacts

No indirect impacts to cultural resources are anticipated.

Cumulative Impacts

No cumulative cultural resource impacts are anticipated.

Alternative 1

Indirect Impacts

Indirect impacts are not anticipated for seven above-ground historic properties located within 0.25-mile that are the closest to the site.

Cumulative Impacts

No cumulative cultural resource impacts are anticipated.

Alternative 2

Indirect Impacts

Indirect impacts are not anticipated since no above-ground historic properties are located near the site.

Cumulative Impacts

No cumulative cultural resource impacts are anticipated.

3.11.4 Mitigation Measures

3.11.4.1 No Action Alternative

No mitigation measures are required.

3.11.4.2 Alternative 1

Mitigation measures will be defined in consultation with the State Historic Preservation Officer (SHPO), King County Historic Preservation Officer, and other consulting parties. Mitigation measures may include:

- Subsurface testing, shovel probing and data recovery prior to and monitoring during construction will occur in areas of the site that were previously undisturbed.
- An above-ground historic property inventory will occur prior to construction and any resources identified will be documented and evaluated for significance.
- An inadvertent discovery plan will be prepared by King County and approved by SHPO prior to construction.

- If cultural resources are encountered during construction, work would stop immediately and DAHP would be consulted. Any resources encountered would be documented and evaluated for significance.

3.11.4.3 Alternative 2

Proposed mitigation measures for Alternative 1 would also apply to Alternative 2 and West Valley Highway South frontage improvements.

3.11.5 Significant Unavoidable Adverse Impacts

3.11.5.1 No Action Alternative

No significant unavoidable adverse impacts to cultural resources are anticipated.

3.11.5.2 Alternative 1

There are no structures on this site; no significant unavoidable adverse impacts are anticipated. With implementation of proposed mitigation measures, no significant unavoidable adverse impacts to archaeological resources are anticipated.

3.11.5.3 Alternative 2

There would be no significant unavoidable adverse impacts to buildings or structures. With implementation of proposed mitigation measures, no significant unavoidable adverse impacts to archaeological resources are anticipated.

3.12 Transportation

3.12.1 Methodology

This section of the Environmental Impact Statement describes the analysis methodology and approach for evaluating the transportation impacts that could occur from the No Action Alternative and Alternatives 1 and 2.

A total of 23 study area intersections have been defined that encompass a study area appropriate for both Alternatives 1 and 2. In assessing the impacts associated with each alternative, consideration is given to the alternative's overall trip generation and differential in traffic volume impacts at study area intersections between the traffic levels associated with the existing facility, and the projected traffic with each alternative. In addition to a change in overall traffic levels, distribution patterns through the intersections are expected to vary between alternatives. This change in traffic volumes and traffic distribution will impact the Level of Service (LOS) at each study area intersection. For that reason, LOS results for all study area intersections are reported for all alternatives.

3.12.1.1 Overview of Elements Considered

The primary transportation elements to be addressed in this study include street system, traffic volumes, traffic operations, and traffic safety. The transportation analysis focuses on existing (2015), 2020, and 2040 conditions within the study area. The 2020 conditions represent the year the project is anticipated to be fully constructed and operating, and 2040 provides an understanding of the project's long-term impacts on the transportation system. Mitigation measures, if necessary, are based on consideration of the 2020 horizon year results. The general approach to evaluation of these elements is described below.

Street System

The evaluation of street system impacts includes:

- Inventory of existing roadway infrastructure to determine the current condition of the street system.
- Identification of future transportation projects that would be constructed prior to project completion.
- Evaluation of street system impacts considering changes to the street network proposed or required as a result of Alternatives 1 and 2.

Traffic Volumes

The evaluation of traffic volume impacts includes:

- Collecting existing study intersection turning movement counts to understand current traffic volumes within the study area, including travel patterns and volumes associated with the Auburn School District Transportation Center.

- Forecasting future 2020 and 2040 traffic volumes based on anticipated growth from the Puget Sound Regional Council (PSRC) travel demand model and the addition of anticipated pipeline development (i.e., approved but not yet constructed development) within the study area. This forecast forms the basis of the No Action Alternative analysis.
- Determining the trip generation for Alternatives 1 and 2 based on tonnage forecasts provided by the King County Solid Waste Division (division) and characteristics of the existing facility.

Traffic Operations

The traffic operations analysis includes a review of intersection and corridor LOS to identify impacts related to the alternatives. Corridor LOS is only conducted for corridors defined by the City of Auburn. Intersection and corridor LOS is calculated based on the procedures presented in Highway Capacity Manual (HCM) 2000 (Transportation Research Board 2000). Additional detail regarding the traffic operations methodology is provided in the Analysis Techniques (Section 3.12.1.4) discussion below.

Traffic Safety

The evaluation of traffic safety impacts includes:

- Review of the most recent 3-year collision data for the study intersections for locations with fatalities and collisions involving pedestrians or bicyclists.
- Calculation of the collision rate for each intersection. The collision rate is representative of the number of collisions per million entering vehicles (MEV) at each intersection. Intersections with a rate greater than 1.0 collision per MEV are typically flagged for further investigation to determine whether an adverse condition exists.
- Observed and critical crash rates at each study intersection were compared to identify where observed rates were higher than the calculated critical rate. The study intersections were grouped into three categories for calculating critical crash rates: traffic signals, side-street stop-control, and all-way stop-control intersections. This is consistent with guidance provided in Chapter 4 of the *Highway Safety Manual* (AASHTO 2010).
- Determination of the potential for safety issues as a result of the alternatives.

3.12.1.2 Study Area

Based on the anticipated travel patterns of vehicles to and from the two alternative sites, and coordination with King County and City of Algona and Auburn staff, the study area includes the following intersections and corridors:

Study Intersections

- | | |
|----------------------------------|------------------------------|
| 1. W Valley Hwy N/W Main St | 13. Market St/15th St SW |
| 2. W Valley Hwy N/SR 18 WB Ramps | 14. Supermall Way/15th St SW |

- | | |
|-------------------------------------|----------------------------------|
| 3. W Valley Hwy N/SR 18 EB Ramps | 15. Perimeter Rd/15th St SW |
| 4. W Valley Hwy S/Peasley Canyon Rd | 16. C St SW/15th St SW |
| 5. C St SW/E Main St | 17. W Valley Hwy/1st Ave N |
| 6. C St SW/SR 18 WB Ramps | 18. W Valley Hwy/Ellingson Rd |
| 7. C St SW/SR 18 EB Ramps | 19. SR 167 SB Ramps/Ellingson Rd |
| 8. C St SW/8th St SW | 20. SR 167 NB Ramps/Ellingson Rd |
| 9. W Valley Hwy/15th St SW | 21. C St SW/GSA Access |
| 10. SR 167 SB Ramps/15th St SW | 22. C St SW/Safeway Access |
| 11. SR 167 NB Ramps/15th St SW | 23. C St SW/Ellingson Rd |
| 12. O St/15th St SW | |

Figure 3.12-1 illustrates the location of these study intersections relative to the alternative sites. In addition to the intersections listed above, the site access for each alternative was studied.

Study Corridors

The City of Auburn uses corridor LOS as its primary measurement of transportation system impacts. Through coordination with city staff, the following corridors were identified for evaluation:

- 15th Street SW – West Valley Highway South to C Street SW
- C Street SW – Ellingson Road to SR 18
- West Valley Highway South – W Main Street to Southern City Limits

3.12.1.3 Analysis Periods

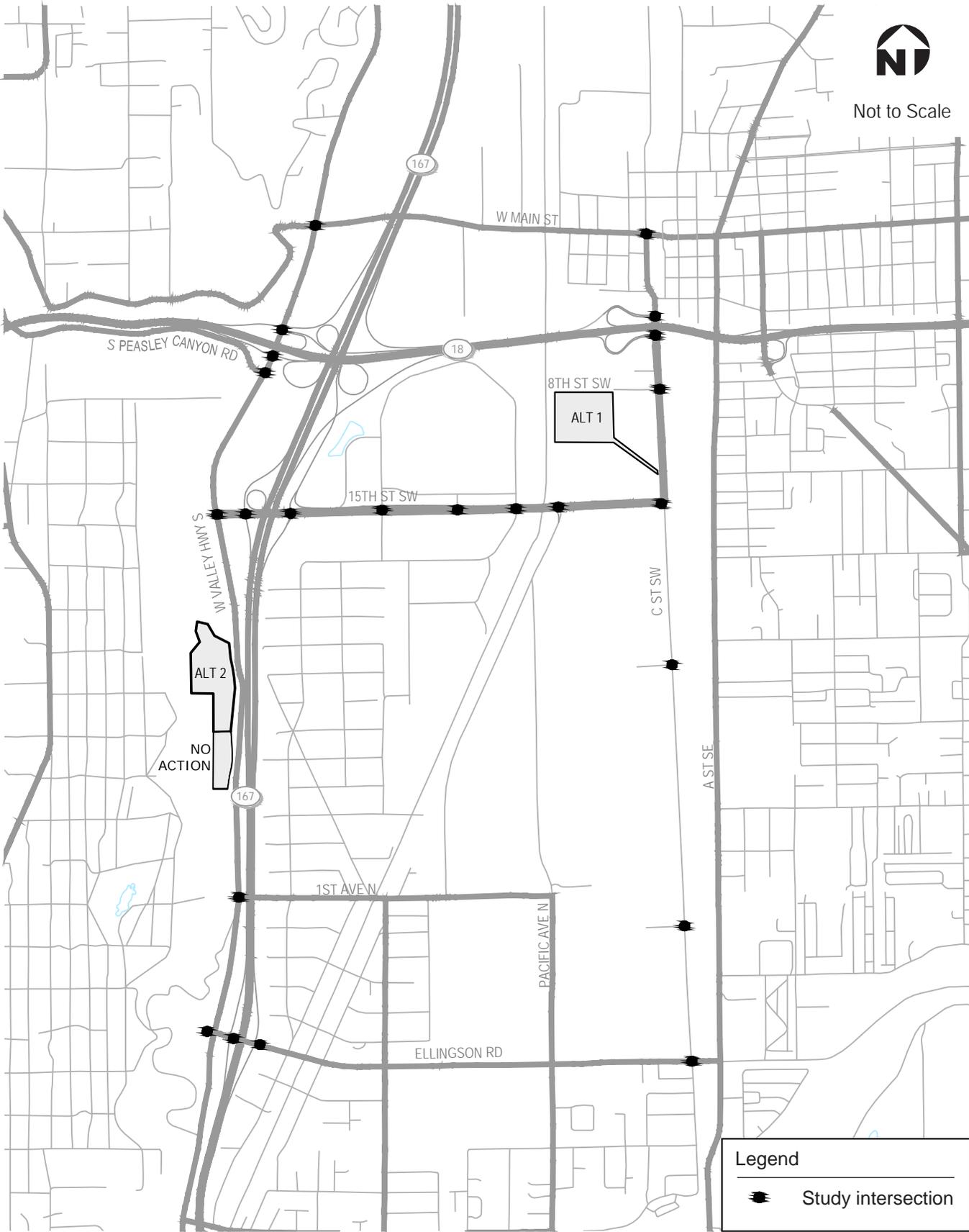
The time period for the traffic operations analysis was determined by reviewing available daily traffic volumes for weekday and weekend conditions provided by the City of Auburn for C Street SW and West Valley Highway South. The intent of the analysis was to determine the timeframe representing the maximum cumulative (i.e., existing plus project) traffic volumes for evaluating transportation impacts of the alternatives. The most appropriate roadway segment or location where the project would have the highest traffic volume impact was selected for each Action Alternative. Project trip generation was added to the existing traffic volumes to assess cumulative traffic volumes and determine the analysis period.

Comparison of Saturday and Sunday

Saturday traffic volumes were approximately 15 percent higher than Sunday traffic volumes along West Valley Highway South between 15th Street SW and the southern city limits. Based on the existing Algona Transfer Station operations, Saturday traffic to and from the site is approximately 5 percent higher than Sunday. Given these weekend traffic volume characteristics, Saturday was used to represent weekend conditions.



Not to Scale



Source: Transpo Group

Figure 3.12-1

Site Vicinity and Study Intersections

Comparison of Weekday and Weekend (Saturday)

The Saturday and weekday PM peak hours were selected for evaluation of the off-site impacts because the weekday PM peak hour has the highest off-site traffic volumes and the Saturday peak has the highest traffic at the station which will be shown in greater detail in the Alternatives trip generation sections. This is also consistent with the recent Transfer Plan review environmental analysis.

The site accesses were evaluated for the weekday AM and PM peak hours and the Saturday peak hour.

3.12.1.4 Analysis Techniques

The analysis techniques employed in this study are consistent with industry standards. Detail related to intersection and corridor operations analyses are provided below.

Intersection Level of Service

The operational performance of an intersection was determined by calculating the intersection LOS based on the procedures presented in HCM 2000, rather than the most recent HCM 2010. The use of HCM 2000 is due to limitations related to the HCM 2010 methodology for some conditions, analysis software coding bugs, a desire to apply a consistent methodology throughout the study area, and long-term acceptance of the previous HCM results. Specific limitations of the HCM 2010 methodology include restrictions related to signal phasing that result in the inability to model some of the study area signalized locations. As a consistent approach to measuring intersection and corridor performance, the LOS analysis was completed using the HCM (2000) methodologies as implemented in the Synchro version 9 software program (Synchro).

At signalized and all-way stop-controlled intersections, LOS is measured in average delay per vehicle for all vehicles at the intersection. At two-way stop-sign-controlled intersections, LOS is reported for the worst operating approach of the intersection. Traffic operations for an intersection can be described alphabetically with a range of LOS values (LOS A through F), with LOS A indicating free-flowing traffic and LOS F indicating extreme congestion and long vehicle delays. Intersection LOS incorporate several intersection characteristics including signal timing, signal phasing, intersection channelization, traffic volumes, and pedestrian volumes. The City of Auburn does not define a LOS standard for individual intersections; however, the City generally recognizes LOS E and F as poor operations. The Washington State Department of Transportation (WSDOT) has identified an LOS D standard for all urban Highways of Statewide Significance, which includes SR 18 and SF 167 within the study area and King County has identified an LOS E standard. The City of Algona's intersection level of service standard is defined as LOS D per the 2005 comprehensive plan.

Table 3.12-1 summarizes the LOS criteria for signalized and unsignalized intersections.

**Table 3.12-1
Level of Service Criteria**

LOS ¹	Average Signalized Delay ²	Average Unsignalized Delay ²	General Description ²
A	< 10 seconds	< 10 seconds	Free Flow
B	10 - 20 seconds	10 - 15 seconds	Stable Flow (slight delays)
C	20 - 35 seconds	15 - 25 seconds	Stable Flow (acceptable delays)
D	35 - 55 seconds	25 - 35 seconds	Approaching Unstable Flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	55 - 80 seconds	35 - 50 seconds	Unstable Flow (intolerable delay)
F	> 80 seconds	> 50 seconds	Forced Flow (jammed)

Notes:

1. LOS = level of service
2. *Highway Capacity Manual*, Transportation Research Board, Special Report 209, 2000.

Corridor Level of Service

The performance measure used for analyzing and assessing the corridors are focused on a travel time based LOS. Consistent with the intersection LOS as well as the City of Auburn Comprehensive Transportation Plan, adopted December 2009, the operational performance of a corridor was determined by calculating LOS based on the procedures presented in HCM 2000. LOS analysis was completed using the HCM (2000) methodologies as implemented in the Synchro version 9 software program (build 902).

HCM presents clear guidelines on quantifying travel-time-based LOS. Table 3.12-2 summarizes the HCM travel time LOS definitions based on travel speeds.

**Table 3.12-2
Urban Street Level of Service**

LOS ¹	Description ²
A	Describes primarily free-flow operations at average travel speeds, usually about 90 percent of the free flow speed (FFS) for the given street class. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal.
B	Describes reasonably unimpeded operations at average travel speeds, usually about 70 percent of the FFS for the street class. The ability to maneuver within the traffic stream is only slightly restricted, and control delays at signalized intersections are not significant.
C	Describes stable operations, however, ability to maneuver and change lanes in mid-block locations may be more restricted than LOS B, and longer queues, adverse signal coordination, or both may contribute to lower average travel speeds of about 50 percent of the FFS for the street class.
D	Borders on a range in which small increases in flow may cause substantial increases in delay and decreases in travel speed. LOS D may be due to adverse signal progression, inappropriate signal timing, high volumes, or a combination of these factors. Average travel speeds are about 40 percent of FFS.

**Table 3.12-2 (Continued)
Urban Street Level of Service**

LOS ¹	Description ²
E	Characterized by significant delays and average travel speeds of 33 percent or less of the FFS. Such operations are caused by a combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.
F	Characterized by urban street flow at extremely low speeds, typically one-third to one-fourth of the FFS. Intersection congestion is likely at critical signalized locations, with high delays, high volumes, and extensive queuing.

Notes:

1. LOS = level of service
2. *Highway Capacity Manual*, Transportation Research Board, Special Report 209, 2000.

The travel speed along a corridor is dependent on running speed between signalized intersections and the amount of control delay incurred at signalized intersections. Table 3.12-3 summarizes descriptions that characterize travel time based LOS on urban streets.

The study corridors were assigned an Urban Street Class designation. The Urban Street Class designation is used to develop an LOS value for the corridor based on the average travel time. Urban Street Class is a classification system used by the HCM 2000 to reflect the unique combinations of street function and design. The functional component is separated into two categories: principal arterials and minor arterials. The design component is separated into four categories: high-speed, suburban, intermediate, or urban (see Chapters 10 and 15 of the HCM 2000 for a complete discussion on urban street concepts and travel time LOS methodology). Urban Street Class was assigned based on travel speed data and coordination with City of Auburn staff. 15th Street SW and West Valley Highway South (15th Street to the southern City limit) were assigned Class III and West Valley Highway South (15th Street NW to the northern City limit) and C Street SW were assigned Urban Street Class II.

The City of Auburn has designated LOS standards for each corridor. The LOS standard is primarily LOS D with the exception of some corridors that may operate as LOS E or F. The LOS standards for the study corridors are LOS D for 15th Street SW and C Street SW and LOS E for West Valley Highway.

**Table 3.12-3
Level of Service for Urban Streets**

Urban Street Class	I	II	III	IV	I
Range of Free Flow Speed ¹ (mph)	55 - 45	45 - 35	35 - 30	35 - 25	55 - 45
Typical Free Flow Speed (mph ⁴)	50	40	35	30	50
LOS ²	Average Travel Speed ³				
A	>42	> 35	> 30	> 25	>42
B	> 34 – 42	> 28 – 35	> 24 – 30	> 19 – 25	> 34 – 42
C	> 27 – 34	> 22 – 28	> 18 – 24	> 13 – 19	> 27 – 34
D	> 21 – 27	> 17 – 22	> 14 – 18	> 9 – 13	> 21 – 27
E	> 16 – 21	> 13 – 17	> 10 – 14	> 7 – 9	> 16 – 21
F	<= 16	<= 13	<= 10	<= 7	<= 16

Notes:

1. The free flow speed is the average speed of the traffic stream when traffic volumes are sufficiently low that drivers are not influenced by the presence of other vehicles and when intersection traffic controls are not present or is sufficiently distant as to have no effect on speed choice.
2. LOS = level of service
3. Highway Capacity Manual, Transportation Research Board, 2000, Exhibit 15-2.
4. mph = miles per hour

3.12.2 Affected Environment

This section describes the existing transportation conditions within the study area relative to the street system, traffic volumes, traffic operations, and traffic safety. The study area evaluated encompasses the transportation network in the vicinity of the two alternatives within the Cities of Auburn and Algona.

3.12.2.1 Street System

Regional access to the study area is provided primarily via SR 167 and SR 18. Roadways in the immediate vicinity of the three site locations consist mainly of arterials. Table 3.12-4 summarizes the characteristics of major corridors within the study area, highlighting the roadway classification, speed limit, number of lanes, and general characterization of the non-motorized facilities. The characterization of on-street parking, sidewalks, and bicycle facilities is representative of the area in the immediate vicinity of the two alternative sites and highlights the characteristics in the immediate vicinity of these sites and study intersections.

The primary arterial routes providing north-south vehicular access to the study area are West Valley Highway South and C Street SW. East-west circulation is provided via Main Street, 15th Street SW, 1st Avenue N, and Ellingson Road. Transit service is provided along major corridors within the study area including 15th Street NW, SR 167, SR 18, C Street SW, 15th Street SW, and Main Street. The Auburn Transit Center and Park-and-Ride is located south of Main Street at A Street SW and 2nd Street SW.

**Table 3.12-4
Existing Street System Summary**

Roadway	Classification	Speed Limit	Number of Lanes	Parking? ¹	Sidewalks? ¹	Bicycle Facilities? ¹
Main St	Minor Arterial	35 - 25 mph	4	Yes	Yes	Yes
W Valley Hwy S	Principal Arterial	40 - 25 mph	2 to 4	No	Yes	Yes
S Peasley Canyon Rd	Principal Arterial	40 mph	2	No	No	No
15th St SW	Principal Arterial	40 mph	4 to 7	No	Yes	Yes ²
Perimeter Rd	Private Street	35 mph	5	No	Yes ³	No
C St SW	Principal/Minor Arterial ⁴	30 - 45 mph	4	No	Yes	No
8th St SW	Local Street	25 mph	2	Yes	Yes	No
Ellingson Rd	Minor Arterial	35 mph	4	No	Yes	No
1st Ave N	Minor Arterial	25 mph	2	Yes	Yes	No

Notes:

1. Indicates whether or not there is parking, sidewalks, or bicycle facilities in the immediate vicinity of the alternative sites.
2. Bicycle lanes are provided east of the Interurban Trail to C Street SW.
3. Pedestrian trail on the west side of the roadway.
4. C Street SW is a Principal Arterial from SR 18 to 15th Street SW and a Minor Arterial S of 15th Street SW.

3.12.2.2 Traffic Volumes

Existing weekday PM and Saturday peak hour intersection turning movements were collected in March 2015 at the study intersections. Figure 3.12-2 and Figure 3.12-3 illustrate the existing weekday PM and Saturday peak hour turning movements at the study intersections, respectively. The detailed traffic counts are provided in Appendix D.

The highest traffic volumes during the weekday PM peak hours in the study area are along West Valley Highway South, 15th Street SW, and C Street SW north of 15th Street SW in the City of Auburn. Weekday PM peak hour traffic volumes along West Valley Highway South range from approximately 2,500 vehicles per hour (vph) near 15th Street SW and the SR 167/SR 18 interchanges to approximately 650 vph in the most southern portion of the study area. The weekday PM peak hour traffic volume along 15th Street SW is as high as 2,000 vph. Along C Street SW, weekday PM peak hour traffic volumes range from approximately 1,300 vph south of 15th Street SW, to 2,100 vph between 15th Street SW and SR 18, and 800 to 1,300 vph north of SR 18.

Traffic volumes during the Saturday peak hour are generally lower than during the weekday PM peak hour, with the exception of along 15th Street SW within the vicinity of the Outlet Collection. The Saturday peak hour traffic volume along 15th Street SW is as high as 2,500 vph – approximately 500 vph higher than during the weekday PM peak hour.

Pedestrian and bicycle volumes were recorded during the intersection turning movement counts and reflected in the technical analyses. The data indicates that pedestrian and bicycle volumes are relatively low at the study area intersections. The highest pedestrian and bicycle volumes were recorded at the C Street SW/Main Street intersection during the weekday PM peak hour with approximately 50 pedestrians and four bicyclists. The highest pedestrian and bicyclist counts during the Saturday peak hour also occurred at the C Street SW/Main Street intersection with approximately 15 pedestrians and two bicyclists.

Given the overall evaluation approach, considering the anticipated increase in activity associated with the new transfer station within the study area, data was also collected at the existing transfer station. The purpose of this information was to determine the existing level of activity at the site, so that existing activity levels at the study area intersections can be estimated. This is critical in assessing the change in operations and the true “impact” of the site alternatives. Table 3.12-5 provides a summary of the weekday AM and PM and Saturday peak hour traffic volumes.

**Table 3.12-5
Existing Algona Transfer Station Peak Hour Traffic Volumes**

	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Commercial-haul ¹	2	2	4	3	3	6	0	0	0
Self-haul ¹	11	13	24	14	23	37	67	73	140
Haul Away ¹	1	1	2	1	1	2	1	1	2
Total²	14	16	30	18	27	45	68	74	142

Notes:

1. Split between Commercial-haul, Self-haul, and Haul Away based on annual average of 2014 (Jan 2014-Dec 2014) transaction data provided by King County.
2. Based on March 2015 site access traffic counts.

As shown in Table 3.12-5, the Saturday peak hour volume is more than three times the weekday peak hour volume. The weekday PM peak hour is also shown to be larger than the weekday AM peak hour.

Note that the on-site volumes were based on counts conducted at the site driveways. No adjustment factor was applied to increase the existing on-site volumes to the 90th percentile. By reviewing the 2014 (January 2014 through December 2014) transaction data provided by King County, March (the month of data collection) was shown to be at the 45 percentile of transactions for the year.

In addition to the traffic counts at the existing site access shown in Table 3.12-5, the annual trend at the Algona transfer station was reviewed based on 2014 transactions provided by King County. This showed that during the weekday peaks (8 to 9 AM and 4 to 5 PM) the weekday AM peak hour had higher volumes relative to the PM peak hour. The Saturday hourly peak occurred between 12 to 1 PM, consistent with the traffic counts shown in Table 3.12-5. Also consistent with the traffic counts, the Saturday peak hour was more than three times the weekday peak hours.

3.12.2.3 Traffic Operations

The following section summarizes the existing traffic operations within the study area including intersection and corridor LOS.

Intersection

Signal timing and phasing information was obtained from WSDOT, King County, and the City of Auburn at the signalized intersections. Lane geometrics and traffic control were confirmed in the field.

Table 3.12-6 summarizes the LOS results for existing weekday PM and Saturday peak hours. As shown in the table, all intersections operate at LOS D or better with the exception of the West Valley Highway South and SR 167 Southbound Ramp along Ellingson Road. The West Valley Highway South/Ellingson Road intersection is shown to operate at LOS F during the weekday PM peak hour, and the SR 167 Southbound Ramp/Ellingson Road intersection is shown to operate at LOS F during both the weekday PM and Saturday peak hours. These two intersections are two-way stop-controlled intersections, stopped along the east leg at the West Valley Highway South/Ellingson Road intersection and along the north leg at the SR 167 Southbound Ramp/Ellingson Road intersection. Poor operations during the weekday PM and Saturday peak hours are due to the high turning volumes at the stopped approaches with few gaps for vehicles to enter the main street.

**Table 3.12-6
Existing Weekday PM and Saturday Peak Hour LOS Summary**

Intersection	Jurisdiction	Weekday PM Peak Hour			Saturday Peak Hour		
		LOS ¹	Delay ²	V/C ³ or WM ⁴	LOS	Delay	V/C or WM
1. W Valley Hwy N/Main St	Auburn	B	14.9	0.57	A	9.6	0.24
2. W Valley Hwy N/SR 18 WB Ramps	WSDOT	B	10.3	0.58	A	7.6	0.33
3. W Valley Hwy N/SR 18 EB Ramps	WSDOT	C	26.0	0.59	C	21.7	0.44
4. W Valley Hwy S/Peasley Canyon Rd	WSDOT	C	27.8	0.86	C	25.1	0.66
5. C St SW/Main St	Auburn	B	17.8	0.69	B	11.3	0.40
6. C St SW/SR 18 WB Ramps	WSDOT	B	18.4	0.51	B	15.1	0.25
7. C St SW/SR 18 EB Ramps	WSDOT	C	32.2	0.88	B	15.5	0.65
8. C St SW/8th St SW	Auburn	A	4.1	0.53	A	4.3	0.43
9. W Valley Hwy/15th St SW	Auburn	B	19.4	0.80	B	15.7	0.66
10. SR 167 SB Ramps/15th St SW	WSDOT	B	10.5	0.54	B	12.5	0.75
11. SR 167 NB Ramps/15th St SW	WSDOT	B	12.1	0.53	B	13.8	0.68
12. O St/15th St SW	Auburn	C	21.7	0.42	C	21.8	0.60
13. Market St/15th St SW	Auburn	C	22.1	0.30	B	15.2	0.45
14. Supermall Way/15th St SW	Auburn	D	47.8	0.58	D	43.2	0.92
15. Perimeter Rd/15th St SW	Auburn	B	11.0	0.53	A	8.7	0.50
16. C St SW/15th St SW	Auburn	D	43.2	0.88	C	20.0	0.86
17. W Valley Hwy/1st Ave N	Algona	A	7.1	0.67	A	5.0	0.16
18. W Valley Hwy/Ellingson Rd	Pacific	F	67.4	WBL ⁵	B	12.0	WBL
19. SR 167 SB Ramps/Ellingson Rd	WSDOT	F	>80	SBL ⁶	F	55.8	SBL
20. SR 167 NB Ramps/Ellingson Rd	WSDOT	A	8.6	0.41	A	7.6	0.25
21. C St SW/GSA Access	Auburn	A	4.8	0.46	A	2.9	0.20
22. C St SW/Safeway Access	Auburn	A	4.3	0.43	A	4.2	0.21
23. C St SW/Ellingson Rd	Auburn	C	31.0	0.76	C	25.4	0.69

Notes:

1. Level of service, based on 2000 *Highway Capacity Manual* methodology.
2. Average delay in seconds per vehicle.
3. V/C = Volume-to-Capacity ratio.
4. Worst Movement reported for side-street stop-controlled intersections.
5. Westbound left-turn movement
6. Southbound left-turn movement

Corridor

Table 3.12-7 summarizes the corridor LOS results for existing weekday PM and Saturday peak hours. As shown in the table, both north-south corridors operate at LOS D or better, which meets the city's LOS standards; however, the east-west corridor (15th St SW) operates at LOS E in both directions during the weekday PM peak hour and at LOS E in the westbound direction during the Saturday peak hour, below the city's LOS standard. The 15th Street SW corridor is the corridor providing access to the Outlet Collection and is identified for planned improvements in the future as discussed below.

**Table 3.12-7
Existing Weekday PM and Saturday Peak Hour Corridor Operations and Speeds**

Corridor	Urban Street	Weekday PM Peak Hour				Saturday Peak Hour			
		LOS ¹		Speed ²		LOS		Speed	
East-West Corridors	Class	EB	WB	EB	WB	EB	WB	EB	WB
15th St SW (W Valley Hwy to C St)	II	E	E	17	16	D	E	19	16
North-South Corridors	Class	NB	SB	NB	SB	NB	SB	NB	SB
C St SW (Ellingson Rd to SR 18)	II	C	D	24	18	C	C	25	27
W Valley Hwy S (W Main St to South City Limits ³)	II	C	D	23	18	C	D	23	20

Notes:

1. LOS based on the *Highway Capacity Manual*, Transportation Research Board, 2000 methodology for urban arterials.
2. Arterial speed in miles per hour which includes the average speed delay encountered at each signalized intersection along the corridor as well as delays at mid-block sections.
3. South City Limit is at 15th Street SW.
4. EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound.

3.12.2.4 Traffic Safety

Collision records were reviewed within the study area to document existing traffic safety issues. The most recent summary of collision data from WSDOT is for the 3-year period between January 1, 2012, and December 31, 2014. A historical review of collisions was conducted at study intersections. One fatality occurred at a study intersection, the SR 18 Eastbound Ramps/C Street SW intersection. The fatality was the result of a driver of a truck under the influence of drugs making a northbound left turn and hitting another truck traveling southbound through the intersection. In addition, there were no locations with a high amount of pedestrian or bicycle collisions. There were a total of two reported pedestrian collisions and three bicyclist collisions. The two pedestrian collisions occurred at the C Street SW/Main Street and Supermall Way/15th St SW intersections. The three bicyclist collisions occurred at the O Street SW/15th Street SW intersections and at the GSA Access and W Main Street intersections along 15th Street SW. A summary of the total and average annual number of reported collisions as well as the collisions rate at each study intersection is provided in Table 3.12-8.

**Table 3.12-8
3-Year Collision Summary – 2012-2014**

Intersection	Jurisdiction	Number of Reported Collisions					Collisions per MEV ¹
		2012	2013	2014	Total	Avg.	
1. W Valley Hwy N/Main St	Auburn	2	1	3	6	2.0	0.48
2. W Valley Hwy S/SR 18 WB Ramps	WSDOT	1	2	2	5	1.7	0.31
3. W Valley Hwy S/SR 18 EB Ramps	WSDOT	15	17	13	45	15.0	1.81
4. W Valley Hwy S/Peasley Canyon Rd	WSDOT	12	10	7	29	9.7	0.88
5. C St SW/Main St	Auburn	9	5	12	26	8.7	1.45
6. C St SW/SR 18 WB Ramps	WSDOT	2	3	1	6	2.0	0.30
7. C St SW/SR 18 EB Ramps	WSDOT	5	4	4	13	4.3	0.46
8. C St SW/8th St SW	Auburn	5	3	3	11	3.7	0.46
9. W Valley Hwy/15th St SW	Auburn	7	7	12	26	8.7	0.87
10. SR 167 SB Ramps/15th St SW	WSDOT	3	7	5	15	5.0	0.63
11. SR 167 NB Ramps/15th St SW	WSDOT	8	3	4	15	5.0	0.59
12. O St/15th St SW	Auburn	3	7	5	15	5.0	0.64
13. Market St/15th St SW	Auburn	1	0	0	1	0.3	0.08
14. Supermall Way/15th St SW	Auburn	2	4	1	7	2.3	0.31
15. Perimeter Rd/15th St SW	Auburn	5	4	1	10	3.3	0.45
16. C St SW/15th St SW	Auburn	2	4	2	8	2.7	0.28
17. W Valley Hwy/1st Ave N	Algona	4	2	3	9	3.0	0.69
18. W Valley Hwy/Ellingson Rd	Pacific	3	5	1	9	3.0	0.75
19. SR 167 SB Ramps/Ellingson Rd	WSDOT	2	1	3	6	2.0	0.48
20. SR 167 NB Ramps/Ellingson Rd	WSDOT	1	0	0	1	0.3	0.06
21. C St SW/GSA Access	Auburn	0	0	1	1	0.3	0.07
22. C St SW/Safeway Access	Auburn	0	2	3	5	1.7	0.34
23. C St SW/Ellingson Rd	Auburn	3	4	7	14	4.7	0.49

Notes:

1. MEV = million entering vehicles

The collision rate shown in Table 3.12-8 is representative of the number of collisions per MEV at each intersection. As described in the methodology section, intersections with a rate greater than 1.0 collision per MEV are typically flagged for further investigation to determine whether an adverse condition exists. As shown in the table, the annual average number of collisions at the study intersections is generally minimal, consistent with good to average intersection operations reported in the previous LOS tables. The West Valley Highway South/SR 18 Eastbound Ramp and the C Street SW/Main Street intersections are the only locations with a collision rate higher than 1.0. For the West Valley Highway South/SR 18 Eastbound Ramp intersection, the most frequent collision type is sideswipe collisions followed by rear-end collisions. The most frequent collision type at the C Street SW/Main Street intersection is approach turns followed by angled collisions.

In addition to analyzing intersections based on the collisions per MEV at each intersection, further review of safety in the study area was completed. The observed and critical crash rates at each study intersection were compared to identify where observed rates were higher than the calculated critical rate. The study intersections were grouped into two categories for

calculating critical crash rates traffic signals and side-street stop-control intersections. This is consistent with guidance provided in Chapter 4 of the *Highway Safety Manual* (AASHTO 2010).

Table 3.12-9 shows the four locations in the study area that are identified for potential safety issues based on the observed crash rate.

**Table 3.12-9
Intersections with Collisions Exceeding the Critical Crash Rate**

Intersection	PM Peak Hour TEV ¹	Intersection Control	Observed Crash Rate ²	Weighted Average Crash Rate ³	Critical Crash Rate ⁴
3. W Valley Hwy S/SR 18 EB Ramps	2,275	Signalized	1.81	0.59	0.87
4. W Valley Hwy S/Peasley Canyon Rd	3,020	Signalized	0.88	0.59	0.83
5. C St SW/Main St	1,635	Signalized	1.45	0.59	0.92
9. W Valley Hwy S/15th St SW	2,725	Signalized	0.87	0.59	0.84

Notes:

1. Total Entering Vehicles (March 2015).
2. Crashes per MEV.
3. Calculated according to Equation 4-10 in the Highway Safety Manual, 2010.
4. Calculated according to Equation 4-11 in the Highway Safety Manual, 2010.

As shown in the table, four study intersections have an observed crash rate higher than the intersection's critical crash rate. All of the intersections exceeding the critical crash rate are signalized. Two of the four intersections were shown to have a MEV greater than 1.0 which was previously discussed. Three of the four intersections with collisions also exceeded the critical crash rate along West Valley Highway South from SR 18 to 15th Street SW. Table 3.12-10 provides a summary of collision types observed at the four study intersections identified for potential safety issues.

**Table 3.12-10
Collision Types for Intersections Exceeding the Critical Crash Rate**

Intersection	Type of Collision							Severity		
	Rear-End	Turning	Fixed Object	Angle	Sideswipe	Ped/Bike	Other	PDO ¹	Injury	Fatality
3. W Valley Hwy S/SR 18 EB Ramps	10	7	0	4	24	0	0	34	11	0
4. W Valley Hwy S/Peasley Canyon Rd	12	5	0	6	5	0	1	20	9	0
5. C St SW/Main St	4	8	4	6	2	2	0	17	9	0
9. W Valley Hwy S/15th St SW	10	2	1	2	8	0	3	21	5	0

Notes:

1. Property Damage Only

As shown in Table 3.12-10, the most frequent type of collision at the three signalized study intersections along West Valley Highway South were rear-end collisions. This type of collision is common at signalized intersections, where there is frequent stop-and-go traffic and when drivers may rapidly alter vehicle speeds while approaching the intersection in response to signal timing changes or turning vehicles. The most frequent collision types at the C Street SW/Main Street intersection were turning collisions and angle collisions. This intersection is currently operated as permissive northbound and southbound left turns rather than protected which is consistent with a high number of angled and turning collisions. This intersection phasing is anticipated to be upgraded to protected northbound and southbound left turns by 2020.

Approximately 75 percent of the collisions resulted in property damage only, and the remaining 25 percent of collisions resulted in injuries. None of the collisions resulted in fatalities.

3.12.3 Environmental Impacts

3.12.3.1 Direct Impacts

No Action Alternative

Construction

No construction activities are anticipated for the No Action Alternative.

Operation

Under the No Action Alternative, normal operation and maintenance activities would continue.

Street System

A review of local and regional capital improvement programs and long-range transportation plans was conducted to determine planned funded and unfunded transportation projects that would affect the study area within the horizon years identified for this analysis, both 2020 and 2040. The review included, but was not limited to, transportation plans from the WSDOT, King County, City of Auburn, and the City of Algona. The following projects were identified within the study area to be completed by 2020:

- **Main Street Signal Upgrades** – Reconstruct the existing C Street and Main Street traffic signal. Provide protected left-turn phasing for C Street and additional safety improvements related to railroad preemption. This project also includes upgrades to A Street and Auburn Way, which are not included in the study area.
- **15th Street SW Reconstruction** – Evaluate improvements to the Union Pacific at grade rail crossings as well as the vertical sight distance to the Interurban Trail crossing to the west of the tracks.
- **A Street SE Non-Motorized and Access Improvements** – Preliminary design of improvements to A Street SE between the White River Bridge and 41st Street SE, including a signalized pedestrian crossing and access management.

- **W Main Street Multimodal Corridor and Intelligent Transportation Systems (ITS) Improvements** – Convert the existing four-lane road section along W Main Street from the interurban trail to West Valley Highway South to a three-lane section with a two-way center left-turn lane, new bike lanes, new sidewalks, new LED lighting, and streetscape improvements. ITS improvements will be made along W Main Street, West Valley Highway South, 15th Street SW, C Street SW including interconnecting and coordinating traffic signals at 16 signalized intersections.

Of the transportation projects described above, only the Main Street Signal Upgrades and the W Main Street Multimodal Corridor and ITS Improvements were included in the 2020 analysis. The other projects identified above could affect the study area but were not included in the analysis as the timing is uncertain.

The projects identified within the study area to be completed by 2040 included:

- **A Street SE/C Street SW/Ellingson Road** – Coordinate the A Street and C Street traffic signals along Ellingson Road and provide an additional westbound through at A Street and southbound left-turn lane at C Street. Provide sidewalks on all legs of both intersections.
- **West Valley Highway South (15th Street SW to SR 18)** – Widen West Valley Highway South to two lanes each direction and provide sidewalks on both sides between Main Street and SR 18, as well as bicycle lanes on both sides or a non-motorized trail on one side.

Both 2040 projects identified were included in the analysis in addition to the Main Street Signal Upgrades and W Main Street Multimodal Corridor and ITS Improvements described above included in the 2020 analysis.

Traffic Volumes

The No Action Alternative traffic volumes were forecasted by applying an annual growth to existing 2015 traffic counts and adding traffic from pipeline development in the study area. Based on a review of the PSRC travel demand model forecasts for 2020 and 2040, traffic volumes are generally anticipated to grow by approximately 1 to 2 percent per year. This forecast includes growth anticipated with the Auburn Gateway project along S 277th Street and Auburn Way N. Per discussions with City of Auburn staff a 2 percent per year growth rate was applied to the existing counts to forecast future 2020 and 2040 traffic volumes. In addition, traffic from seven pipeline projects in the project vicinity were also included in the No Action Alternative volume forecasts including:

1. **Merrill Gardens**, with access along 2nd Street SE west of A Street SE
2. **All Service Glass**, located on the northwest corner of the D Street NW/2nd Street NW intersection
3. **Outlet Collection**, located north of 15th Street SW between Market Street and O Street

4. **Omega Industries**, located on the NW corner of the West Valley Highway North/37th Street NW intersection
5. **Westridge**, located south of the 61st Avenue S/S 300th Street intersection
6. **Wyncrest Division II**, with access along S 300th Street at S 62nd Street and 64th Avenue S
7. **Assemblage**, located at the SE corner of the 46th Place S/S 321st Street intersection

The No Action on-site volumes were not anticipated to change compared to existing conditions. This is due to no change in transfer station capacity. As described under the existing traffic volumes section, the on-site volumes analyzed were shown to be approximately at the 45th percentile based on the 2014 transaction data provided by King County for March.

Figure 3.12-4 through 3.12-7 in Appendix D illustrate the No Action Alternative weekday PM and Saturday peak hour traffic volumes for 2020 and 2040. Comparing the existing traffic volumes to the No Action Alternative conditions, weekday traffic volumes would increase by approximately 12 percent by 2020 during the weekday PM peak hour and by approximately 13 percent during the Saturday peak hour. Traffic volumes from the existing to 2040 No Action conditions are anticipated to increase by approximately 65 percent during both the weekday PM peak and Saturday peak hours.

Traffic Operations

The following section summarizes the 2020 and 2040 No Action Alternative traffic operations within the study area including intersection and corridor LOS.

Intersection

For all study intersections, lane geometrics and traffic control remained consistent with existing conditions for both 2020 and 2040 conditions except for the inclusion of the transportation improvement projects noted in the Street System section above. Signal timing was optimized for the long-term (2040) analysis; optimizing the traffic signal timing takes into consideration the actuated nature of the signals and changes that would occur with growth in traffic volumes. Table 3.12-11 summarizes the LOS results for the No Action Alternative weekday PM peak hour for the off-site intersections and the weekday AM and PM peak hours at the site access.

**Table 3.12-11
No Action Weekday Peak Hour LOS Summary**

Intersection	Jurisdiction	2020			2040		
		LOS ¹	Delay ²	V/C ³ or WM ⁴	LOS	Delay	V/Cor WM
Weekday PM Peak Hour							
1. W Valley Hwy N/Main St	Auburn	C	20.8	0.56	C	27.9	0.78
2. W Valley Hwy N/SR 18 WB Ramps	WSDOT	B	12.0	0.56	E	59.7	0.8
3. W Valley Hwy N/SR 18 EB Ramps	WSDOT	D	43.6	0.7	F	>80	1.01
4. W Valley Hwy S/Peasley Canyon Rd	WSDOT	D	53.5	0.98	F	>80	>1.2
5. C St SW/Main St	Auburn	D	36.4	0.85	F	>80	1.16
6. C St SW/SR 18 WB Ramps	WSDOT	B	19.3	0.51	C	24.6	0.74
7. C St SW/SR 18 EB Ramps	WSDOT	C	31.6	0.93	F	>80	>1.2
8. C St SW/8th St SW	Auburn	A	6.1	0.6	B	14.1	0.76
9. W Valley Hwy/15th St SW	Auburn	C	20.1	0.84	C	25.6	0.82
10. SR 167 SB Ramps/15th St SW	WSDOT	B	11.6	0.57	C	21.0	0.86
11. SR 167 NB Ramps/15th St SW	WSDOT	B	13.5	0.5	C	22.5	0.8
12. O St/15th St SW	Auburn	C	24.7	0.44	D	43.3	0.59
13. Market St/15th St SW	Auburn	B	12.9	0.31	B	17.4	0.51
14. Supermall Way/15th St SW	Auburn	C	34.7	0.79	E	63.2	1.04
15. Perimeter Rd/15th St SW	Auburn	A	9.5	0.48	B	15.2	0.65
16. C St SW/15th St SW	Auburn	C	27.0	0.84	F	>80	1.15
17. W Valley Hwy/1st Ave N	Algona	A	8.5	0.73	C	33.1	0.97
18. W Valley Hwy/Ellingson Rd	Pacific	F	>80	WBL ⁵	F	>80	WBL
19. SR 167 SB Ramps/Ellingson Rd	WSDOT	F	>80	SBL ⁶	F	>80	SBL
20. SR 167 NB Ramps/Ellingson Rd	WSDOT	A	9.2	0.48	B	15.1	0.74
21. C St SW/GSA Access	Auburn	A	5.0	0.5	A	8.7	0.67
22. C St SW/Safeway Access	Auburn	A	4.2	0.46	A	6.4	0.64
23. C St SW/Ellingson Rd	Auburn	D	37.8	0.83	E	62.7	0.97
A. No Action Alternative Site Access	Algona	D	31.5	EB ⁷	F	>80	EB
Weekday AM Peak Hour							
A. No Action Alternative Site Access	Algona	B	14.2	EB	C	19.5	EB

Notes:

1. Level of service, based on 2000 *Highway Capacity Manual* methodology.
2. Average delay in seconds per vehicle.
3. V/C = Volume-to-Capacity ratio.
4. Worst Movement reported for side-street stop-controlled intersections.
5. Westbound left-turn movement
6. Southbound left-turn movement
7. Eastbound

As shown in Table 3.12-11, under 2020 No Action Alternative conditions during the weekday PM peak hour, all intersections are anticipated to operate within the respective agencies' LOS standard with the exception of the West Valley Highway South/Ellingson Road and SR 167 Southbound Ramp/Ellingson Road intersections. Both intersections were shown to operate at LOS F under existing conditions. These two intersections are two-way stop-controlled intersections, stopped along the east leg at the West Valley Highway South/Ellingson Road and along the north leg at the SR 167 Southbound Ramp/Ellingson Road. Poor operations during the

weekday PM peak hour are due to the high turning volumes at the stopped approaches with few gaps for vehicles to enter the main street. The site access is shown to operate at LOS D.

As shown in Table 3.12-11 under 2040 No Action Alternative conditions during the weekday PM peak hour, due to increases in traffic associated with background growth, three off-site study intersections are anticipated to degrade to LOS E, and seven off-site study intersections operating at LOS F, not meeting the current LOS standards for the respective road authority. The anticipated site access operations are also shown in Table 3.12-11, for both the weekday AM and PM peak hours for 2020 and 2040 No Action Alternative conditions. The table shows that the site access is forecast to meet the LOS standard for Algona with the exception of during the weekday PM peak hour under 2040 conditions, which is forecast to operate at LOS F. The existing transfer station is accessed at a two-way stop-controlled intersection along West Valley Highway South, south of 15th Street SW. Table 3.12-12 summarizes the LOS results for the No Action Alternative Saturday peak hour for the off-site intersections as well as at the site access.

**Table 3.12-12
No Action Saturday Peak Hour LOS Summary**

Intersection	Jurisdiction	2020			2040		
		LOS ¹	Delay ²	V/C ³ or WM ⁴	LOS	Delay	V/C or WM
1. W Valley Hwy N/Main St	Auburn	B	15.8	0.22	B	17.9	0.3
2. W Valley Hwy N/SR 18 WB Ramps	WSDOT	B	10.8	0.37	D	43.3	0.52
3. W Valley Hwy N/SR 18 EB Ramps	WSDOT	C	23.8	0.52	C	30.0	0.63
4. W Valley Hwy S/Peasley Canyon Rd	WSDOT	C	25.7	0.7	F	>80	1.13
5. C St SW/Main St	Auburn	C	23.7	0.46	C	27.7	0.65
6. C St SW/SR 18 WB Ramps	WSDOT	B	19.5	0.22	C	23.4	0.32
7. C St SW/SR 18 EB Ramps	WSDOT	B	18.6	0.65	C	32.7	0.94
8. C St SW/8th St SW	Auburn	A	4.0	0.47	A	7.3	0.68
9. W Valley Hwy/15th St SW	Auburn	B	14.1	0.63	C	31.2	0.87
10. SR 167 SB Ramps/15th St SW	WSDOT	B	14.2	0.75	E	61.4	1.08
11. SR 167 NB Ramps/15th St SW	WSDOT	C	20.0	0.64	D	39.8	0.96
12. O St/15th St SW	Auburn	C	25.1	0.59	D	35.1	0.82
13. Market St/15th St SW	Auburn	B	14.7	0.44	C	26.0	0.59
14. Supermall Way/15th St SW	Auburn	D	47.3	0.86	F	>80	>1.2
15. Perimeter Rd/15th St SW	Auburn	A	7.1	0.43	A	8.1	0.61
16. C St SW/15th St SW	Auburn	C	23.9	0.88	F	>80	>1.2
17. W Valley Hwy/1st Ave N	Algona	A	5.0	0.17	A	5.8	0.26
18. W Valley Hwy/Ellingson Rd	Pacific	B	12.7	WBL ⁵	C	17.1	WBL
19. SR 167 SB Ramps/Ellingson Rd	WSDOT	F	>80	SBL ⁶	F	>80	SBL
20. SR 167 NB Ramps/Ellingson Rd	WSDOT	A	7.7	0.29	A	9.8	0.51
21. C St SW/GSA Access	Auburn	A	2.8	0.22	A	3.6	0.33
22. C St SW/Safeway Access	Auburn	A	4.2	0.23	A	4.9	0.34
23. C St SW/Ellingson Rd	Auburn	C	29.9	0.77	E	56.8	0.91
A. No Action Alternative Site Access	Algona	B	12.6	EB ⁷	C	15.4	EB

Notes:

1. Level of service, based on 2000 *Highway Capacity Manual* methodology.
2. Average delay in seconds per vehicle.

3. V/C = Volume-to-Capacity ratio.
4. Worst Movement reported for side-street stop-controlled intersections.
5. Westbound left-turn movement
6. Southbound left-turn movement
7. Eastbound

As shown in Table 3.12-12, under 2020 No Action Alternative conditions during the Saturday peak hour, all intersections are anticipated to operate within the respective agencies' LOS standard with the exception of the SR 167 Southbound Ramp/Ellingson Road intersection. This intersection was shown to operate at LOS F under existing conditions. The SR 167 Southbound Ramp/Ellingson Road intersection is two-way stop-controlled intersection, stopped along the north leg at the SR 167 Southbound Ramp/Ellingson Road intersection. Poor operations during the Saturday peak hour are due to the high turning volumes at the stopped approaches with few gaps for vehicles to enter Ellingson Road. The site access is shown to operate at LOS B under 2020 conditions.

As shown in Table 3.12-12, under 2040 No Action Alternative conditions during the Saturday peak hour, due to increases in traffic associated with background growth, two intersections are anticipated to degrade to LOS E and four intersections operating at LOS F, not meeting the current LOS standards for the respective road authority. The site access is shown to operate at LOS C under 2040 conditions.

Corridor

Table 3.12-13 summarizes the corridor LOS results for 2020 and 2040 No Action weekday PM and Saturday peak hour conditions. As shown in the table, all corridors would meet the City of Auburn LOS standard during both the weekday PM and Saturday peak hours under 2020 No Action conditions with the exception of southbound along West Valley Highway South during the weekday PM peak hour. By 2040 during the weekday PM peak hour, only West Valley Highway South and C Street SW in the northbound direction would meet the city's LOS standard. All other roadway segments and directions of travel would operate at LOS E or F. During the Saturday peak hour in 2040, the C Street SW corridor would meet the city's LOS standard in both directions as well as the northbound travel along the West Valley Highway South corridor. The remaining segments and directions of travel would operate at LOS E or F during the Saturday peak hour in 2040.

Traffic Safety

As traffic volumes increase, the potential for traffic safety issues increases proportionately. The overall vehicular and non-motorized traffic in the area under 2020 and 2040 conditions are anticipated to be higher than that which occurs under existing conditions.

Alternative 1

The following describes the potential impacts for Alternative 1. The site is located at 901 C Street SW in the City of Auburn and access is assumed to be at the C Street SW/8th Street SW intersection, south of SR 18.

**Table 3.12-13
No Action Alternative Weekday PM and Saturday Peak Hours Corridor Operations
and Speeds**

Corridor	Urban Street	Weekday PM Peak Hour				Saturday Peak Hour			
		LOS ¹		Speed ²		LOS		Speed	
2020									
East-West Corridors	Class	EB	WB	EB	WB	EB	WB	EB	WB
15th St SW (W Valley Hwy to C St)	II	D	D	21	19	D	D	21	18
North-South Corridors		NB	SB	NB	SB	NB	SB	NB	SB
C St SW (Ellingson Rd to SR 18)	II	C	C	24	23	C	C	24	25
W Valley Hwy (W Main St to South City Limits ³)	II	D	F	22	13	C	D	23	22
2040									
East-West Corridors	Class	EB	WB	EB	WB	EB	WB	EB	WB
15th St SW (W Valley Hwy to C St)	II	F	E	12	14	E	F	16	11
North-South Corridors		NB	SB	NB	SB	NB	SB	NB	SB
C St SW (Ellingson Rd to SR 18)	II	D	F	22	13	C	D	23	18
W Valley Hwy (W Main St to South City Limits ³)	II	D	F	20	6	D	E	22	16

Notes:

1. LOS based on the *Highway Capacity Manual*, Transportation Research Board, 2000 methodology for urban arterials.
2. Arterial speed in miles per hour which includes the average speed delay encountered at each signalized intersection along the corridor as well as delays at mid-block sections.
3. South City Limit is at 15th Street SW.
4. EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound

Construction

Construction impacts related to the street system would be concentrated along C Street SW. The most noticeable of the traffic-related impacts would be due to the earthwork for the proposed project. The construction of the new transfer station is anticipated to require approximately 95,000 cubic yards (cy) of cut and up to 35,000 cy of fill. Assuming 20 cy capacity per dump truck and pup trailer this would likely require 4,750 round trips (trucks) of excavation and 1,750 trucks of compaction. This assumes no overlap of cut being used as fill. Assuming an 8-hour work day, the roadway excavation would take approximately 64 days assuming 75 trucks per day, consistent with WSDOT production rate standards for roadway excavation (WSDOT 2013a). Similarly, the roadway compaction would take approximately 21 days assuming 84 trucks per day, consistent with WSDOT production rate standards for embankment compaction (WSDOT 2013b). This is a total of approximately 4.5 months of work to complete the earthwork for the new transfer station. This would equate to approximately 150 to 170

daily one-way truck trips over the 4.5-month period. Taken as an average over 8 hours per day, approximately 20 truck trips per hour (approximately one trip per 3 minutes) would be required to complete the earthwork for the new transfer station.

The construction of the proposed transfer station would result in an increase in traffic volumes due to workers traveling to and from the site, delivery of material, and truck hauling. Impacts to traffic are anticipated to be minor and temporary. The construction would be locally managed with traffic control plans. There could be potential roadway wear and tear during construction from heavy equipment and truck hauling.

Operation

This section summarizes the future conditions within the study area under the Alternative 1. The transportation elements described within this section are consistent with those previously described for the affected environment and No Action Alternative.

Street System

Planned improvements are anticipated to be consistent with No Action conditions previously described. The following projects were included in the analysis:

- **Main Street Signal Upgrades** – Reconstruct the existing C Street and Main Street traffic signal. Provide protected left-turn phasing for C Street and additional safety related to railroad preemption. This project also includes upgrades to A Street and Auburn Way, which are not included in the study area. This project is anticipated to be completed by 2020 and is included in both the 2020 and 2040 analysis.
- **W Main Street Multimodal Corridor and Intelligent Transportation Improvements (ITS) Improvements** – Convert the existing four-lane road section along W Main Street from the interurban trail to West Valley Highway South to a three-lane section with a two-way center left-turn lane, new bike lanes, new sidewalks, new LED lighting, and streetscape improvements. ITS improvements will be made along W Main Street, West Valley Highway South, 15th Street SW, and C Street SW including interconnecting and coordinating traffic signals at 16 signalized intersections. This project is anticipated to be completed by 2020 and is included in both the 2020 and 2040 analysis.
- **A Street SE/C Street SW/Ellingson Road** – Coordinate the A Street and C Street traffic signals along Ellingson Road and provide an additional westbound through at A Street and southbound left-turn lane at C Street. Provide sidewalks on all legs of both intersections. This project is anticipated to be completed by 2040 and is included in the 2040 analysis.
- **West Valley Highway South (37th Street NW to north city limits and 15th Street SW to SR 18)** – Widen West Valley Highway South to two lanes each direction and provide sidewalks on both sides between Main Street and SR 18, as well as bicycle lanes on both sides or a non-motorized trail on one side. This project is anticipated to be completed by 2040 and is included in the 2040 analysis.

Trip Generation

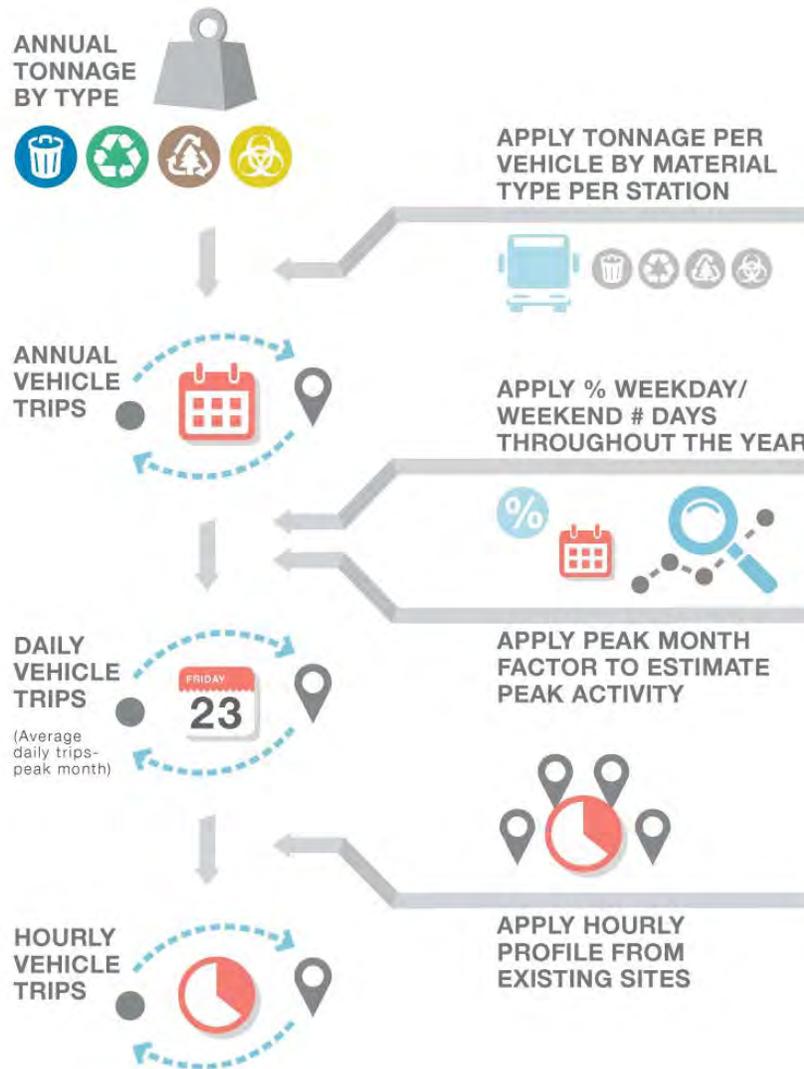
A multi-step process was utilized to estimate the peak hour demand trip generation for each alternative. The forecasting process relied on annual tonnage forecasts provided by division staff. The process used to develop the peak hour trip generation forecasts are shown in Figure 3.12-2, and generally consider the following:

- Annual tonnage by type (e.g., garbage, recycle, yard waste, household hazardous waste)
- Average load (in tons) per vehicle for all material
- Weekday/weekend allocation
- Consideration of peak month and seasonal variations. Division targets the 90th percentile demand for purposes of evaluating station capacity.
- Weekday and weekend hourly distribution of traffic for commercial-haul, self-haul, transfer trailers, and recyclables haul vehicles.

As noted in the list above, the average daily vehicle demands were adjusted to represent the 90th percentile volumes. The 90th percentile factor was calculated from data provided from King County. In order to get a large sample set to more accurately determine the 90th percentile, the hourly transactions for the existing Algona Transfer Station were provided by King County for the period that included January 2014 to December 2014. This information included customer type (i.e., if the customer was a self-haul or commercial vehicle). The hourly transactions were summarized by daily totals as well as weekday and weekend transaction totals. From this data set, the 90th percentile and 50th percentile (or median) transactions per day were calculated for commercial and self-haul separately as well as combined as the total daily transactions.

Peak demand factors are typically used in the industry as it provides a reasonable worst-case of peak conditions. When preparing traffic studies or parking studies for new developments, peaking characteristics are accounted for in terms of 85th percentile parking demand rates from the Institute of Transportation Engineers (ITE) for peak hour factors from a traffic analysis perspective (ITE 2010). The use of the 90th percentile factor accounts for the seasonal nature of the facilities and helps ensure that traffic volumes do not exceed the station capacity and impact adjacent city streets on a regular basis. Furthermore, the division designs the facilities for the 90th percentile demand, so it is appropriate that the traffic analysis applies a similar standard.

Figure 3.12-2: Trip Generation Process



Trip generation estimates considered the local factors such as tonnage per vehicle and hourly distribution patterns to estimate peak hour activity. Detailed forecasts and description of the calculation factors are provided for the alternatives below.

Table 3.12-14 provides a summary of the estimated Saturday peak hour, weekday AM, and PM peak hour trip generation for the existing and 2020 and 2040 Alternative 1 conditions. Also shown in the table is the existing trip generation for purposes of assessing a net new increase with respect to the LOS calculations and existing traffic levels.

**Table 3.12-14
Alternatives 1 and 2 Trip Generation Summary**

	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Existing Total¹	14	16	30	18	27	45	68	74	142
2020²									
Commercial-haul	7	7	14	3	2	5	0	0	0
Self-haul	31	31	62	25	25	50	122	122	244
Haul Away	3	2	5	1	1	2	3	3	6
Total	41	40	81	29	28	57	125	125	250
Net New Project Trips (2020 – Existing)	27	24	51	11	1	12	57	51	108
2040²									
Commercial-haul	8	8	16	3	2	5	0	0	0
Self-haul	58	58	116	47	47	94	212	212	424
Haul Away	5	4	9	3	3	6	7	6	13
Total	71	70	141	53	52	105	219	218	437
New Project Trips (2040 – 2020)	30	30	60	24	24	48	94	93	187

Notes:

1. Based on Traffic Counts March 2015. Does not factor to 90th percentile.
2. Based on tonnage data provided by King County Department of Natural Resources and Parks, Solid Waste Division. Factored to 90th percentile.

As shown in Table 3.12-14, the 2020 trip generation for Alternative 1 is anticipated to increase when compared to the existing site based on the expanded capacity of the facility and tonnage projections provided by King County. In the AM peak hour, 51 additional trips are estimated (27 entering and 24 exiting). In the PM peak hour, an additional 12 trips are estimated (11 entering and 1 exiting). In the Saturday peak hour, an additional 108 trips are estimated (57 entering and 51 exiting).

Under 2040 conditions, the trip generation for Alternative 1 is anticipated to increase when compared to the 2020 trip generation. In the AM peak hour, 60 additional trips are estimated (30 entering and 30 exiting). In the PM peak hour, 48 additional trips are estimated (24 entering and 24 exiting). In the Saturday peak hour, an additional 187 trips are estimated (94 entering and 93 exiting).

Trip Distribution and Assignment

Distinct trip distribution patterns for the commercial, self-haul, transfer trailers, and recyclables haul vehicles were developed based on available data. Travel patterns for self-haul were based on zip code data for patrons of the existing transfer station. Commercial travel patterns were based on the existing haul routes for the commercial-haulers for the inbound distribution. Outbound commercial hauling was distributed to the commercial hauler home-base facility located in Auburn. Transfer trailers and recyclables haul trip distribution were based on the location of the facility where recycling and landfill material would be hauled. The distribution of the transfer trailers and recyclables haul truck traffic is based on blended weighting for landfill-destined and recycling-destined trips. The travel patterns for each of the vehicle categories are

summarized in Appendix D Figures 3.12-9 through 3.12-11. Specific trip assignment to the study intersections was based on the travel patterns shown and coordination with staff from the division and the Cities of Algona and Auburn. The net new project trip assignment is shown in Appendix D Figures 3.12-12 through 3.12-15 for 2020 and 2040 horizon years for the weekday PM and Saturday peak hours.

Traffic Volumes

The net new increase in traffic, reflecting increased levels and revised distribution patterns, was assigned to the study area intersections. The Alternative 1 2020 and 2040 weekday PM and Saturday peak hour traffic volumes and weekday AM peak hour traffic volumes at the site access are shown in Appendix D Figures 3.12-16 through 3.12-19.

Figures 3.12-16 through 3.12-19 in Appendix D illustrate the Alternative 1 weekday PM and Saturday peak hour traffic volumes for 2020 and 2040. Alternative 1 has minimal impact on the off-site intersections. Comparing the No Action Alternative traffic volumes to the Alternative 1 conditions, weekday traffic volumes would increase by less than 1 percent by 2020 during both the weekday PM and Saturday peak hours. Traffic volumes from the No Action Alternative to 2040 Alternative 1 conditions are anticipated to increase by less than 1 percent during the weekday PM peak hour and increase approximately 1 percent during the Saturday peak hour. There could be potential roadway wear and tear from traffic during operations.

Traffic Operations

The following section summarizes the 2020 and 2040 Alternative 1 traffic operations within the study area including intersection and corridor LOS.

Intersection

For all study intersections, lane geometrics and traffic control remained consistent with existing conditions for both 2020 and 2040 conditions except for the inclusion of the transportation improvement projects noted in the street system section above. Signal timing was optimized for the long-term (2040) analysis; optimizing the traffic signal timing takes into consideration the actuated nature of the signals and changes that would occur with growth in traffic volumes. Table 3.12-15 and Table 3.12-16 summarize the LOS results for the Alternative 1 weekday PM peak hour for the off-site intersections and the weekday AM and PM peak hours at the site access for the 2020 and 2040 conditions, respectively.

As shown in Table 3.12-15, there is little to no change comparing No Action Alternative and Alternative 1 2020 conditions with less than 1 second of added delay at any study intersection. Under 2020 Alternative 1 conditions during the weekday PM peak hour, all intersections are anticipated to operate within the respective agencies' LOS standard with the exception of the West Valley Highway South/Ellingson Road and SR 167 Southbound Ramp/Ellingson Road intersections. Both intersections were shown to operate at LOS F during the weekday PM peak hour under existing conditions as well as under No Action 2020 conditions. These two intersections are two-way stop-controlled intersections, stopped along the east leg at the West Valley Highway South/Ellingson Road intersection and along the north leg at the SR 167 Southbound Ramp/Ellingson Road intersection. Poor operations during the weekday PM peak

hour are due to the high turning volumes at the stopped approaches with few gaps for vehicles to enter the main street. Table 3.12-15 shows that there is little to no change comparing No Action and Alternative 1 conditions with less than 1 second of added delay at any study intersection.

The anticipated site access operations for Alternative 1 are also shown in Table 3.12-15 for both the weekday AM and PM peak hours for 2020 at the C Street SW/8th Street SW intersection. The table shows that the site access is forecast to meet the LOS standard under both the weekday AM and PM peak hours. This proposed access is at an existing signalized intersection. During the weekday PM peak hour there was less than 1 second of added delay from No Action to Alternative 1 conditions at the site access.

**Table 3.12-15
Alternative 1 – 2020 Weekday Peak Hour LOS Summary**

Intersection	Jurisdiction	No Action (2020)			Alternative 1 (2020)		
		LOS ¹	Delay ²	V/C ³ or WM ⁴	LOS	Delay	V/C or WM
Weekday PM Peak Hour							
1. W Valley Hwy N/Main St	Auburn	C	20.8	0.56	C	20.9	0.56
2. W Valley Hwy N/SR 18 WB Ramps	WSDOT	B	12.0	0.56	B	12.0	0.56
3. W Valley Hwy N/SR 18 EB Ramps	WSDOT	D	43.6	0.7	D	43.2	0.69
4. W Valley Hwy S/Peasley Canyon Rd	WSDOT	D	53.5	0.98	D	51.9	0.97
5. C St SW/Main St	Auburn	D	36.4	0.85	D	36.5	0.86
6. C St SW/SR 18 WB Ramps	WSDOT	B	19.3	0.51	B	19.6	0.51
7. C St SW/SR 18 EB Ramps	WSDOT	C	31.6	0.93	C	32.1	0.94
8. C St SW/8th St SW (Alternative 1 Site Access)	Auburn	A	6.1	0.6	A	7.0	0.62
9. W Valley Hwy/15th St SW	Auburn	C	20.1	0.84	B	19.8	0.83
10. SR 167 SB Ramps/15th St SW	WSDOT	B	11.6	0.57	B	11.6	0.57
11. SR 167 NB Ramps/15th St SW	WSDOT	B	13.5	0.5	B	13.3	0.5
12. O St/15th St SW	Auburn	C	24.7	0.44	C	24.7	0.44
13. Market St/15th St SW	Auburn	B	12.9	0.31	B	12.9	0.31
14. Supermall Way/15th St SW	Auburn	C	34.7	0.79	C	34.7	0.79
15. Perimeter Rd/15th St SW	Auburn	A	9.5	0.48	A	9.5	0.48
16. C St SW/15th St SW	Auburn	C	27.0	0.84	C	27.0	0.84
17. W Valley Hwy/1st Ave N	Algona	A	8.5	0.73	A	8.4	0.72
18. W Valley Hwy/Ellingson Rd	Pacific	F	>80	WBL ⁵	F	>80	WBL
19. SR 167 SB Ramps/Ellingson Rd	WSDOT	F	>80	SBL ⁶	F	>80	SBL
20. SR 167 NB Ramps/Ellingson Rd	WSDOT	A	9.2	0.48	A	9.2	0.48
21. C St SW/GSA Access	Auburn	A	5.0	0.5	A	5.0	0.5
22. C St SW/Safeway Access	Auburn	A	4.2	0.46	A	4.2	0.46
23. C St SW/Ellingson Rd	Auburn	D	37.8	0.83	D	38.0	0.83
Weekday AM Peak Hour							
8. C St SW/8th St SW (Alternative 1 Site Access)	Auburn	-	-	-	A	5.2	0.45

Notes:

1. Level of service, based on 2000 *Highway Capacity Manual* methodology.
2. Average delay in seconds per vehicle.

3. V/C = Volume-to-Capacity ratio.
4. Worst Movement reported for side-street stop-controlled intersections.
5. Westbound left-turn movement
6. Southbound left-turn movement

As shown in Table 3.12-16, under 2040 Alternative 1 conditions during the weekday PM peak hour, due to increases in traffic associated with background growth, three intersections are anticipated to degrade to LOS E and seven intersections operating at LOS F, not meeting the current LOS standards for the respective road authority.

The anticipated site access operations for Alternative 1 are also shown in Table 3.12-16 for both the weekday AM and PM peak hours for 2020 and 2040 at the C Street SW/8th Street SW intersection. The table shows that the site access is forecast to meet the LOS standard under all conditions. This proposed access is at an existing signalized intersection.

**Table 3.12-16
Alternative 1 – 2040 Weekday Peak Hour LOS Summary**

Intersection	Jurisdiction	No Action (2040)			Alternative 1 (2040)		
		LOS ¹	Delay ²	V/C ³ or WM ⁴	LOS	Delay	V/Cor WM
Weekday PM Peak Hour							
1. W Valley Hwy N/Main St	Auburn	C	27.9	0.78	C	27.9	0.78
2. W Valley Hwy N/SR 18 WB Ramps	WSDOT	E	59.7	0.8	E	58.3	0.8
3. W Valley Hwy N/SR 18 EB Ramps	WSDOT	F	>80	1.01	F	>80	1.01
4. W Valley Hwy S/Peasley Canyon Rd	WSDOT	F	>80	>1.2	F	>80	>1.2
5. C St SW/Main St	Auburn	F	>80	1.16	F	>80	1.18
6. C St SW/SR 18 WB Ramps	WSDOT	C	24.6	0.74	C	25.8	0.76
7. C St SW/SR 18 EB Ramps	WSDOT	F	>80	>1.2	F	>80	>1.2
8. C St SW/8th St SW (Alternative 1 Site Access)	Auburn	B	14.1	0.76	B	16.7	0.8
9. W Valley Hwy/15th St SW	Auburn	C	25.6	0.82	C	24.9	0.81
10. SR 167 SB Ramps/15th St SW	WSDOT	C	21.0	0.86	C	21.2	0.86
11. SR 167 NB Ramps/15th St SW	WSDOT	C	22.5	0.8	C	22.5	0.8
12. O St/15th St SW	Auburn	D	43.3	0.59	D	43.3	0.59
13. Market St/15th St SW	Auburn	B	17.4	0.51	B	17.4	0.51
14. Supermall Way/15th St SW	Auburn	E	63.2	1.04	E	63.2	1.04
15. Perimeter Rd/15th St SW	Auburn	B	15.2	0.65	B	15.2	0.65
16. C St SW/15th St SW	Auburn	F	>80	1.15	F	>80	1.16
17. W Valley Hwy/1st Ave N	Algona	C	33.1	0.97	C	32.6	0.97
18. W Valley Hwy/Ellingson Rd	Pacific	F	>80	WBL ⁵	F	>80	WBL
19. SR 167 SB Ramps/Ellingson Rd	WSDOT	F	>80	SBL ⁶	F	>80	SBL
20. SR 167 NB Ramps/Ellingson Rd	WSDOT	B	15.1	0.74	B	15.2	0.75
21. C St SW/GSA Access	Auburn	A	8.7	0.67	A	8.7	0.67
22. C St SW/Safeway Access	Auburn	A	6.4	0.64	A	6.5	0.64
23. C St SW/Ellingson Rd	Auburn	E	62.7	0.97	E	63.4	0.98
Weekday AM Peak Hour							
8. C St SW/8th St SW (Alternative 1 Site Access)	Auburn	-	-	-	A	7.7	0.67

Notes:

1. Level of service, based on 2000 *Highway Capacity Manual* methodology.
2. Average delay in seconds per vehicle.

3. V/C = Volume-to-Capacity ratio.
4. Worst Movement reported for side-street stop-controlled intersections.
5. Westbound left-turn movement
6. Southbound left-turn movement

Table 3.12-17 and Table 3.12-18 summarize the LOS results for the Alternative 1 Saturday peak hour for the off-site intersections as well as at the site access for the 2020 and 2040 conditions, respectively.

**Table 3.12-17
Alternative 1 – 2020 Saturday Peak Hour LOS Summary**

Intersection	Jurisdiction	No Action (2020)			Alternative 1 (2020)		
		LOS ¹	Delay ²	V/C ³ or WM ⁴	LOS	Delay	V/C or WM
1. W Valley Hwy N/Main St	Auburn	B	15.8	0.22	B	15.9	0.23
2. W Valley Hwy N/SR 18 WB Ramps	WSDOT	B	10.8	0.37	B	10.7	0.36
3. W Valley Hwy N/SR 18 EB Ramps	WSDOT	C	23.8	0.52	C	24.5	0.51
4. W Valley Hwy S/Peasley Canyon Rd	WSDOT	C	25.7	0.7	C	24.5	0.69
5. C St SW/Main St	Auburn	C	23.7	0.46	C	24.0	0.48
6. C St SW/SR 18 WB Ramps	WSDOT	B	19.5	0.22	C	20.1	0.25
7. C St SW/SR 18 EB Ramps	WSDOT	B	18.6	0.65	B	18.9	0.67
8. C St SW/8th St SW (Alternative 1 Site Access)	Auburn	A	4.0	0.47	A	6.8	0.57
9. W Valley Hwy/15th St SW	Auburn	B	14.1	0.63	B	13.3	0.6
10. SR 167 SB Ramps/15th St SW	WSDOT	B	14.2	0.75	B	15.8	0.75
11. SR 167 NB Ramps/15th St SW	WSDOT	C	20.0	0.64	B	19.2	0.64
12. O St/15th St SW	Auburn	C	25.1	0.59	C	25.5	0.59
13. Market St/15th St SW	Auburn	B	14.7	0.44	B	14.8	0.44
14. Supermall Way/15th St SW	Auburn	D	47.3	0.86	D	47.2	0.86
15. Perimeter Rd/15th St SW	Auburn	A	7.1	0.43	A	7.1	0.44
16. C St SW/15th St SW	Auburn	C	23.9	0.88	C	24.8	0.89
17. W Valley Hwy/1st Ave N	Algona	A	5.0	0.17	A	5.1	0.15
18. W Valley Hwy/Ellingson Rd	Pacific	B	12.7	WBL ⁵	B	12.0	WBL
19. SR 167 SB Ramps/Ellingson Rd	WSDOT	F	>80	SBL ⁶	F	>80	SBL
20. SR 167 NB Ramps/Ellingson Rd	WSDOT	A	7.7	0.29	A	7.7	0.28
21. C St SW/GSA Access	Auburn	A	2.8	0.22	A	2.8	0.23
22. C St SW/Safeway Access	Auburn	A	4.2	0.23	A	4.2	0.24
23. C St SW/Ellingson Rd	Auburn	C	29.9	0.77	C	31.2	0.78

Notes:

1. Level of service, based on 2000 *Highway Capacity Manual* methodology.
2. Average delay in seconds per vehicle.
3. V/C = Volume-to-Capacity ratio.
4. Worst Movement reported for side-street stop-controlled intersections.
5. Westbound left-turn movement
6. Southbound left-turn movement

As shown in Table 3.12-17, there is little to no change comparing No Action Alternative and Alternative 1 2020 conditions with approximately 3 seconds or less of added delay at any study intersection. Under 2020 Alternative 1 conditions during the Saturday peak hour, all intersections are anticipated to operate within the respective agencies' LOS standard with the exception of the SR 167 Southbound Ramp/Ellingson Road intersection. This intersection was

shown to operate at LOS F under existing conditions as well as under No Action conditions. The SR 167 Southbound Ramp/Ellingson Road intersection is two-way stop-controlled intersection, stopped along the north leg at the SR 167 Southbound Ramp/Ellingson Road. Poor operations during the Saturday peak hour are due to the high turning volumes at the stopped approaches with few gaps for vehicles to enter Ellingson Road. The site access is shown to operate at LOS A under 2020 conditions.

**Table 3.12-18
Alternative 1 – 2040 Saturday Peak Hour LOS Summary**

Intersection	Jurisdiction	No Action (2040)			Alternative 1 (2040)		
		LOS ¹	Delay ²	V/C ³ or WM ⁴	LOS	Delay	V/C or WM
1. W Valley Hwy N/Main St	Auburn	B	17.9	0.3	B	18.2	0.32
2. W Valley Hwy N/SR 18 WB Ramps	WSDOT	D	43.3	0.52	D	37.7	0.51
3. W Valley Hwy N/SR 18 EB Ramps	WSDOT	C	30.0	0.63	C	30.8	0.63
4. W Valley Hwy S/Peasley Canyon Rd	WSDOT	F	>80	1.13	F	>80	1.14
5. C St SW/Main St	Auburn	C	27.7	0.65	C	29.0	0.7
6. C St SW/SR 18 WB Ramps	WSDOT	C	23.4	0.32	C	23.5	0.37
7. C St SW/SR 18 EB Ramps	WSDOT	C	32.7	0.94	D	37.2	0.98
8. C St SW/8th St SW (Alternative 1 Site Access)	Auburn	A	7.3	0.68	C	20.0	0.95
9. W Valley Hwy/15th St SW	Auburn	C	31.2	0.87	C	27.0	0.84
10. SR 167 SB Ramps/15th St SW	WSDOT	E	61.4	1.08	E	65.8	1.09
11. SR 167 NB Ramps/15th St SW	WSDOT	D	39.8	0.96	D	42.6	0.98
12. O St/15th St SW	Auburn	D	35.1	0.82	D	35.5	0.82
13. Market St/15th St SW	Auburn	C	26.0	0.59	C	25.6	0.59
14. Supermall Way/15th St SW	Auburn	F	>80	>1.2	F	>80	>1.2
15. Perimeter Rd/15th St SW	Auburn	A	8.1	0.61	A	8.0	0.62
16. C St SW/15th St SW	Auburn	F	>80	>1.2	F	>80	>1.2
17. W Valley Hwy/1st Ave N	Algona	A	5.8	0.26	A	5.8	0.25
18. W Valley Hwy/Ellingson Rd	Pacific	C	17.1	WBL ⁵	C	16.1	WBL
19. SR 167 SB Ramps/Ellingson Rd	WSDOT	F	>80	SBL ⁶	F	>80	SBL
20. SR 167 NB Ramps/Ellingson Rd	WSDOT	A	9.8	0.51	A	9.8	0.51
21. C St SW/GSA Access	Auburn	A	3.6	0.33	A	3.6	0.34
22. C St SW/Safeway Access	Auburn	A	4.9	0.34	A	5.0	0.36
23. C St SW/Ellingson Rd	Auburn	E	56.8	0.91	E	63.0	0.93

Notes:

1. Level of service, based on 2000 *Highway Capacity Manual* methodology.
2. Average delay in seconds per vehicle.
3. V/C = Volume-to-Capacity ratio.
4. Worst Movement reported for side-street stop-controlled intersections.
5. Westbound left-turn movement
6. Southbound left-turn movement

As shown in Table 3.12-18, under 2040 Alternative 1 conditions during the Saturday peak hour, due to increases in traffic associated with background growth, two intersections are anticipated to degrade to LOS E and four intersections operating at LOS F, not meeting the current LOS standards for the respective road authority. The intersections operating below the respective city's LOS standard are consistent with No Action conditions. The site access is shown to operate at LOS C under 2040 conditions.

Corridor

Table 3.12-19 summarizes the corridor LOS results for 2020 and 2040 Alternative 1 weekday PM and Saturday peak hour conditions. As shown in the table, all corridors would meet the City of Auburn LOS standard during both the weekday PM and Saturday peak hours under 2020 Alternative 1 conditions with the exception of southbound along West Valley Highway South during the weekday PM peak hour, consistent with No Action Alternative conditions. By 2040 during the weekday PM and Saturday peak hours, only West Valley Highway South and C Street SW in the northbound direction would meet the city’s LOS standard. All other roadway segments and directions of travel would operate at LOS E or F. The C Street SW corridor during the Saturday peak hour under Alternative 1 conditions relative to the No Action conditions to LOS D compared to LOS C in the northbound direction and to LOS E compared to LOS D in the southbound direction. The reduced corridor LOS is due to the Alternative 1 site access being provided along C Street SW.

**Table 3.12-19
Alternative 1 – Weekday PM and Saturday Peak Hours Corridor
Operations and Speeds**

Corridor	Urban Street	Weekday PM Peak Hour				Saturday Peak Hour			
		LOS ¹		Speed ²		LOS		Speed	
2020									
East-West Corridors	Class	EB ⁴	WB	EB	WB	EB	WB	EB	WB
15th St SW (W Valley Hwy to C St)	II	D	D	21	19	D	D	21	18
North-South Corridors		NB	SB	NB	SB	NB	SB	NB	SB
C St SW (Ellingson Rd to SR 18)	II	C	C	24	23	C	C	24	25
W Valley Hwy (W Main St to South City Limits ³)	II	D	F	22	13	C	C	23	23
2040									
East-West Corridors	Class	EB	WB	EB	WB	EB	WB	EB	WB
15th St SW (W Valley Hwy to C St)	II	F	E	12	14	E	F	16	11
North-South Corridors		NB	SB	NB	SB	NB	SB	NB	SB
C St SW (Ellingson Rd to SR 18)	II	D	F	22	13	D	E	21	17
W Valley Hwy (W Main St to South City Limits ³)	II	D	F	20	6	D	E	22	16

Notes:

1. Level of service (LOS) based on the *Highway Capacity Manual*, Transportation Research Board, 2000 methodology for urban arterials.
2. Arterial speed in miles per hour which includes the average speed delay encountered at each signalized intersection along the corridor as well as delays at mid-block sections.
3. South City Limit is at 15th Street SW.
4. EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound

Traffic Safety

As traffic volumes increase, the potential for traffic safety issues increases proportionately. The overall vehicular and non-motorized traffic in the area under 2020 and 2040 conditions are anticipated to be higher than occurs under existing conditions.

Existing rail crossing controls along the Main Street and 15th Street SW corridors were reviewed. Both rail crossings are equipped with gates and rail crossing signals alerting drivers to oncoming rail traffic and stopping traffic on both roadways. Given the current traffic control provided at the crossings and the level of traffic associated with the proposed project, no adverse impacts to safety are anticipated.

Decommissioning and Deconstruction

Possible deconstruction and removal of the existing scale complex and transfer building (including the roof, the concrete flooring and timber pilings) would bring construction equipment and work crew vehicles to the existing Algona Transfer Station. Construction vehicles would follow a route and schedule that would avoid the AM and PM peak hours as much as possible. Approximately 20,000 cubic yards of rubble from deconstruction of existing structures and pavements would be removed from the existing Algona Transfer Station. Assuming 20 cubic yards capacity per dump truck and pup trailer, this would likely require approximately 1,000 truck round trips of haul away. There would be additional truck trips to haul support piles from the site which could vary in length depending on whether the piles were fully removed or cut at the surface. Pile lengths are up to 50 feet in length or about 15 feet in length if cut at the ground surface. If the piles were fully removed, additional fill (gravel or with cementitious grout from an approved source) would likely be placed in void spaces left by the piles from up to two trucks. It is anticipated that the traffic volumes due to deconstruction would be substantially less than generated by the new transfer station. The deconstruction would be coordinated with the City of Algona and traffic control plans would be implemented.

Alternative 2

The following describes the potential impacts associated with the construction and operation of Alternative 2 at 35101 West Valley Highway South in the City of Algona. There are multiple potential access points to the site along West Valley Highway. The site is located near SR 167 and SR 18.

Construction

The construction impacts related to the street system would be concentrated along West Valley Highway South along the new transfer station frontage. The same assumptions for cubic yards of cut and fill, work days, and truck trips are assumed as described for Alternative 1 in Section 3.12.3.2.

Overall, the maximum impact of truck traffic due to construction of both the new transfer station and the West Valley Highway South frontage improvements (described below) is not

expected to exceed 170 one-way truck trips per day which, as shown, equates to an average of approximately one truck trip per 3 minutes (20 truck trips per day) occurring for approximately a 4-month period. Impacts to traffic are anticipated to be minor and temporary. There could be potential roadway wear and tear during construction from heavy equipment and truck hauling.

Operation

This section summarizes the future conditions within the study area under Alternative 2. The transportation elements described within this section are consistent with those previously described for the affected environment and No Action Alternative.

Street System

Planned Improvements are anticipated to be consistent with No Action and Alternative 1 conditions previously described. The following projects were included in the analysis:

- **Main Street Signal Upgrades** – Reconstruct the existing C Street and Main Street traffic signal. Provide protected left-turn phasing for C Street and additional safety improvements related to railroad preemption. This project also includes upgrades to A Street and Auburn Way, which are not included in the study area. This project is anticipated to be completed by 2020 and is included in both the 2020 and 2040 analysis.
- **W Main Street Multimodal Corridor and ITS Improvements** – Convert the existing four-lane road section along W Main Street from the interurban trail to West Valley Highway South to a three-lane section with a two-way center left-turn lane, new bike lanes, new sidewalks, new LED lighting, and streetscape improvements. ITS improvements will be made along W Main Street, West Valley Highway South, 15th Street SW, and C Street SW including interconnecting and coordinating traffic signals at 16 signalized intersections. This project is anticipated to be completed by 2020 and is included in both the 2020 and 2040 analysis.
- **A Street SE/C Street SW/Ellingson Road** – Coordinate the A Street and C Street traffic signals along Ellingson Road and provide an additional westbound through at A Street and a southbound left-turn lane at C Street. Provide sidewalks on all legs of both intersections. This project is anticipated to be completed by 2040 and is included in the 2040 analysis.
- **West Valley Highway South (37th Street NW to north city limits and 15th Street SW to SR 18)** – This project would widen West Valley Highway South to two lanes each direction and provides sidewalks on both sides between Main Street and SR 18, as well as bicycle lanes on both sides or a non-motorized trail on one side. This project is anticipated to be completed by 2040 and is included in the 2040 analysis.

Trip Generation

Trip generation was estimated based on the methodology discussed previously. The trip generation for Alternatives 1 and 2 are the same, and the summary of the estimated weekday

daily, AM, and PM peak hour trip generation for the existing and 2020 and 2040 with project is shown above in Table 3.12-14.

As shown in Table 3.12-14, the 2020 trip generation for Alternative 2 is anticipated to increase when compared to the existing site, based on the expanded capacity of the transfer station and tonnage projections provided by King County. In the AM peak hour, 51 additional trips are estimated (27 entering and 24 exiting). In the PM peak hour, an additional 12 trips are estimated (11 entering and 1 exiting). In the Saturday peak hour, an additional 108 trips are estimated (57 entering and 51 exiting).

Under 2040 conditions, the trip generation for Alternative 2 is anticipated to increase when compared to the 2020 trip generation. In the AM peak hour, 60 additional trips are estimated (30 entering and 30 exiting). In the PM peak hour, 48 additional trips are estimated (24 entering and 24 exiting). In the Saturday peak hour, an additional 187 trips are estimated (94 entering and 93 exiting).

Trip Distribution and Assignment

Distinct trip distribution patterns for the commercial, self-haul, transfer trailers, and recyclables haul vehicles were developed based on available data. Travel patterns for self-haul were based on zip code data for patrons of the existing transfer station. Commercial travel patterns were based on the existing haul routes for the commercial-haulers for the inbound distribution. Outbound commercial-hauling was distributed to the commercial-hauler home-base facility located in Auburn. Transfer trailers and recyclables haul trip distribution were based on the location of the facility where recycling and landfill material would be hauled. The distribution of the transfer trailers and recyclables haul truck traffic is based on blended weighting for land fill-destined and recycling-destined trips. The travel patterns for each of the vehicle categories are summarized in Appendix D Figures 3.12-20 through 3.12-22. Specific trip assignment to the study intersections was based on the travel patterns shown and coordination with staff from the division and the Cities of Algona and Auburn. The net new project trip assignment is shown in Appendix D Figures 3.12-23 through 3.12-26 for 2020 and 2040 horizon years for the weekday PM and Saturday peak hours.

Traffic Volumes

The net new increase in traffic, reflecting increased levels and revised distribution patterns, was assigned to the study area intersections. The Alternative 2 2020 and 2040 weekday PM and Saturday peak hour traffic volumes and weekday AM peak hour traffic volumes at the site access are shown in Appendix D Figures 3.12-27 through 3.12-30.

Appendix D Figures 3.12-27 through 3.12-30 illustrate the Alternative 2 weekday PM and Saturday peak hour traffic volumes for 2020 and 2040. Similar to Alternative 1, Alternative 2 has little percent impact at the off-site intersections. Comparing the No Action Alternative traffic volumes to the Alternative 2 conditions, weekday traffic volumes would increase by less than 1 percent by 2020 during the weekday PM peak hours and by approximately 4 percent during the Saturday peak hour. Traffic volumes from the No Action to 2040 Alternative 2

conditions are anticipated to increase by less than 1 percent during the weekday PM peak hour and approximately 6 percent during the Saturday peak hour. There could be potential roadway wear and tear from traffic during operations.

Despite the same trip generation for Alternatives 1 and 2, the percent impact for Alternative 2 during the Saturday peak hour is anticipated to be higher than for Alternative 1 conditions. This is due to the Alternative 2 site access being along West Valley Highway South, south of 15th Street SW with much lower traffic volumes compared with the Alternative 1 site access along C Street SW between the SR 18 ramps and 15th Street SW, providing access to the Outlet Collection. Traffic volumes along C Street SW within the vicinity of the Alternative 1 site access are anticipated to be approximately four times as large as traffic volumes along West Valley Highway South within the vicinity of the Alternative 2 site access.

Traffic Operations

The following section summarizes the 2020 and 2040 Alternative 2 traffic operations within the study area including intersection and corridor LOS.

Intersection

For all study intersections, lane geometrics and traffic control remained consistent with existing conditions for both 2020 and 2040 conditions except for the inclusion of the transportation improvement projects noted in the street system section above. Signal timing was optimized for the long-term (2040) analysis; optimizing the traffic signal timing takes into consideration the actuated nature of the signals and changes that would occur with growth in traffic volumes.

Table 3.12-20 and Table 3.12-21 summarize the LOS results for the Alternative 2 weekday PM peak hour for the off-site intersections and the weekday AM and PM peak hours at the site access for the 2020 and 2040, respectively.

As shown in Table 3.12-20, there is little to no change comparing No Action Alternative and Alternative 2 2020 conditions with approximately 1 second or less of added delay at any study intersection. Under 2020 Alternative 2 conditions during the weekday PM peak hour, all intersections are anticipated to operate within the respective agencies' LOS standard with the exception of the West Valley Highway South/Ellingson Road and SR 167 Southbound Ramp/Ellingson Road intersections. Both intersections were shown to operate at LOS F during the weekday PM peak hour under existing conditions as well as under No Action 2020 conditions. These two intersections are two-way stop-controlled intersections, stopped along the east leg at the West Valley Highway South/Ellingson Road intersection and along the north leg at the SR 167 Southbound Ramp/Ellingson Road intersection. Poor operations during the weekday PM peak hour are due to the high turning volumes at the stopped approaches with few gaps for vehicles to enter the main street.

The anticipated site access operations for Alternative 2 are also shown in Table 3.12-20 for both the weekday AM and PM peak hours north of the existing site access along West Valley Highway South and south of 15th Street SW. The table shows that the site access is forecast to

meet the LOS standard for the City of Algona. The Alternative 2 site is assumed to be accessed at a two-way stop-controlled intersection.

**Table 3.12-20
Alternative 2 – 2020 Weekday Peak Hour LOS Summary**

Intersection	Jurisdiction	No Action (2020)			Alternative 2 (2020)		
		LOS ¹	Delay ²	V/C ³ or WM ⁴	LOS	Delay	V/C or WM
Weekday PM Peak Hour							
1. W Valley Hwy N/Main St	Auburn	C	20.8	0.56	C	20.8	0.56
2. W Valley Hwy N/SR 18 WB Ramps	WSDOT	B	12.0	0.56	B	12.1	0.56
3. W Valley Hwy N/SR 18 EB Ramps	WSDOT	D	43.6	0.70	D	44.4	0.70
4. W Valley Hwy S/Peasley Canyon Rd	WSDOT	D	53.5	0.98	D	54.8	0.98
5. C St SW/Main St	Auburn	D	36.4	0.85	D	36.3	0.85
6. C St SW/SR 18 WB Ramps	WSDOT	B	19.3	0.51	B	19.3	0.51
7. C St SW/SR 18 EB Ramps	WSDOT	C	31.6	0.93	C	31.6	0.93
8. C St SW/8th St SW	Auburn	A	6.1	0.60	A	6.2	0.60
9. W Valley Hwy/15th St SW	Auburn	C	20.1	0.84	C	20.3	0.84
10. SR 167 SB Ramps/15th St SW	WSDOT	B	11.6	0.57	B	11.7	0.57
11. SR 167 NB Ramps/15th St SW	WSDOT	B	13.5	0.50	B	13.5	0.50
12. O St/15th St SW	Auburn	C	24.7	0.44	C	24.7	0.44
13. Market St/15th St SW	Auburn	B	12.9	0.31	B	13.0	0.31
14. Supermall Way/15th St SW	Auburn	C	34.7	0.79	C	34.7	0.79
15. Perimeter Rd/15th St SW	Auburn	A	9.5	0.48	A	9.5	0.48
16. C St SW/15th St SW	Auburn	C	27.0	0.84	C	27.0	0.84
17. W Valley Hwy/1st Ave N	Algona	A	8.5	0.73	A	8.5	0.73
18. W Valley Hwy/Ellingson Rd	Pacific	F	>80	WBL ⁵	F	>80	WBL
19. SR 167 SB Ramps/Ellingson Rd	WSDOT	F	>80	SBL ⁶	F	>80	SBL
20. SR 167 NB Ramps/Ellingson Rd	WSDOT	A	9.2	0.48	A	9.2	0.48
21. C St SW/GSA Access	Auburn	A	5.0	0.50	A	5.0	0.50
22. C St SW/Safeway Access	Auburn	A	4.2	0.46	A	4.2	0.46
23. C St SW/Ellingson Rd	Auburn	D	37.8	0.83	D	37.8	0.83
B. Alternative 2 Site Access	Algona	-	-	-	D	27.6	EB ⁷
Weekday AM Peak Hour							
B. Alternative 2 Site Access	Auburn	-	-	-	C	16.9	EB

Notes:

1. Level of service, based on 2000 *Highway Capacity Manual* methodology.
2. Average delay in seconds per vehicle.
3. V/C = Volume-to-Capacity ratio.
4. Worst Movement reported for side-street stop-controlled intersections.
5. Westbound left-turn movement
6. Southbound left-turn movement
7. Eastbound

As shown in Table 3.12-21, under 2040 Alternative 2 conditions during the weekday PM peak hour, due to increases in traffic associated with background growth, three off-site intersections are anticipated to degrade to LOS E and seven off-site intersections operating at LOS F, not meeting the current LOS standards for the respective road authority. The site access is shown to operate at LOS F under 2040 conditions. The Alternative 2 site access is located north of the

existing site along West Valley Highway South and the No Action site access was shown to also operate at LOS F under 2040 conditions, consistent with the Alternative 2 site access operations. This is due to high traffic volumes along West Valley Highway South.

**Table 3.12-21
Alternative 2 – 2040 Weekday Peak Hour LOS Summary**

Intersection	Jurisdiction	No Action (2040)			Alternative 2 (2040)		
		LOS ¹	Delay ²	V/C ³ or WM ⁴	LOS	Delay	V/C or WM
Weekday PM Peak Hour							
1. W Valley Hwy N/Main St	Auburn	C	27.9	0.78	C	28.0	0.78
2. W Valley Hwy N/SR 18 WB Ramps	WSDOT	E	59.7	0.8	E	61.4	0.8
3. W Valley Hwy N/SR 18 EB Ramps	WSDOT	F	>80	1.01	F	>80	1.02
4. W Valley Hwy S/Peasley Canyon Rd	WSDOT	F	>80	>1.2	F	>80	>1.2
5. C St SW/Main St	Auburn	F	>80	1.16	F	>80	1.17
6. C St SW/SR 18 WB Ramps	WSDOT	C	24.6	0.74	C	24.5	0.74
7. C St SW/SR 18 EB Ramps	WSDOT	F	>80	>1.2	F	>80	>1.2
8. C St SW/8th St SW	Auburn	B	14.1	0.76	B	14.2	0.76
9. W Valley Hwy/15th St SW	Auburn	C	25.6	0.82	C	27.0	0.83
10. SR 167 SB Ramps/15th St SW	WSDOT	C	21.0	0.86	C	20.5	0.86
11. SR 167 NB Ramps/15th St SW	WSDOT	C	22.5	0.80	C	22.4	0.80
12. O St/15th St SW	Auburn	D	43.3	0.59	D	43.3	0.59
13. Market St/15th St SW	Auburn	B	17.4	0.51	B	17.4	0.51
14. Supermall Way/15th St SW	Auburn	E	63.2	1.04	E	63.3	1.04
15. Perimeter Rd/15th St SW	Auburn	B	15.2	0.65	B	15.2	0.65
16. C St SW/15th St SW	Auburn	F	>80	1.15	F	>80	1.15
17. W Valley Hwy/1st Ave N	Algona	C	33.1	0.97	C	33.9	0.98
18. W Valley Hwy/Ellingson Rd	Pacific	F	>80	WBL ⁵	F	>80	WBL
19. SR 167 SB Ramps/Ellingson Rd	WSDOT	F	>80	SBL ⁶	F	>80	SBL
20. SR 167 NB Ramps/Ellingson Rd	WSDOT	B	15.1	0.74	B	15.1	0.75
21. C St SW/GSA Access	Auburn	A	8.7	0.67	A	8.7	0.67
22. C St SW/Safeway Access	Auburn	A	6.4	0.64	A	6.4	0.64
23. C St SW/Ellingson Rd	Auburn	E	62.7	0.97	E	63.0	0.98
B. Alternative 2 Site Access	Algona	-	-	-	F	>80	EB ⁷
Weekday AM Peak Hour							
B. Alternative 2 Site Access	Auburn	-	-	-	D	32.7	EB

Notes:

1. Level of service, based on 2000 *Highway Capacity Manual* methodology.
2. Average delay in seconds per vehicle.
3. V/C = Volume-to-Capacity ratio.
4. Worst Movement reported for side-street stop-controlled intersections.
5. Westbound left-turn movement
6. Southbound left-turn movement
7. Eastbound

Table 3.12-22 and Table 3.12-23 summarize the LOS results for the Alternative 2 Saturday peak hour for the off-site intersections as well as at the site access for the 2020 and 2040 conditions, respectively.

As shown in Table 3.12-22, there is little to no change comparing No Action Alternative and Alternative 2 2020 conditions with approximately 1 second or less of added delay at any study intersection. Under 2020 Alternative 2 conditions during the Saturday peak hour, all intersections are anticipated to operate within the respective agencies' LOS standard with the exception of the SR 167 Southbound Ramp/Ellingson Road intersection. This intersection was shown to operate at LOS F under existing conditions as well as under No Action conditions. The SR 167 Southbound Ramp/Ellingson Road intersection is two-way stop-controlled intersection, stopped along the north leg at the SR 167 Southbound Ramp/Ellingson Road intersection. Poor operations during the Saturday peak hour are due to the high turning volumes at the stopped approaches with few gaps for vehicles to enter Ellingson Road. The site access is shown to operate at LOS A under 2020 conditions.

**Table 3.12-22
Alternative 2 – 2020 Saturday Peak Hour LOS Summary**

Intersection	Jurisdiction	No Action (2020)			Alternative 2 (2020)		
		LOS ¹	Delay ²	V/C ³ or WM ⁴	LOS	Delay	V/C or WM
1. W Valley Hwy N/Main St	Auburn	B	15.8	0.22	B	15.9	0.23
2. W Valley Hwy N/SR 18 WB Ramps	WSDOT	B	10.8	0.37	B	10.9	0.38
3. W Valley Hwy N/SR 18 EB Ramps	WSDOT	C	23.8	0.52	C	23.7	0.54
4. W Valley Hwy S/Peasley Canyon Rd	WSDOT	C	25.7	0.7	C	26.9	0.72
5. C St SW/Main St	Auburn	C	23.7	0.46	C	23.7	0.47
6. C St SW/SR 18 WB Ramps	WSDOT	B	19.5	0.22	B	19.4	0.22
7. C St SW/SR 18 EB Ramps	WSDOT	B	18.6	0.65	B	18.5	0.65
8. C St SW/8th St SW	Auburn	A	4.0	0.47	A	4.0	0.47
9. W Valley Hwy/15th St SW	Auburn	B	14.1	0.63	B	15.0	0.66
10. SR 167 SB Ramps/15th St SW	WSDOT	B	14.2	0.75	B	13.8	0.75
11. SR 167 NB Ramps/15th St SW	WSDOT	C	20.0	0.64	C	20.0	0.64
12. O St/15th St SW	Auburn	C	25.1	0.59	C	25.1	0.59
13. Market St/15th St SW	Auburn	B	14.7	0.44	B	14.7	0.44
14. Supermall Way/15th St SW	Auburn	D	47.3	0.86	D	47.3	0.86
15. Perimeter Rd/15th St SW	Auburn	A	7.1	0.43	A	7.1	0.43
16. C St SW/15th St SW	Auburn	C	23.9	0.88	C	24.0	0.88
17. W Valley Hwy/1st Ave N	Algona	A	5.0	0.17	A	5.0	0.18
18. W Valley Hwy/Ellingson Rd	Pacific	B	12.7	WBL ⁵	B	13.1	WBL
19. SR 167 SB Ramps/Ellingson Rd	WSDOT	F	>80	SBL ⁶	F	>80	SBL
20. SR 167 NB Ramps/Ellingson Rd	WSDOT	A	7.7	0.29	A	7.7	0.29
21. C St SW/GSA Access	Auburn	A	2.8	0.22	A	2.8	0.22
22. C St SW/Safeway Access	Auburn	A	4.2	0.23	A	4.2	0.23
23. C St SW/Ellingson Rd	Auburn	C	29.9	0.77	C	30.2	0.77
B. Alternative 2 Site Access	Algona	-	-	-	B	14.8	EB ⁷

Notes:

1. Level of service, based on 2000 *Highway Capacity Manual* methodology.
2. Average delay in seconds per vehicle.
3. V/C = Volume-to-Capacity ratio.
4. Worst Movement reported for side-street stop-controlled intersections.
5. Westbound left-turn movement
6. Southbound left-turn movement
7. Eastbound

As shown in Table 3.12-23, under 2040 Alternative 2 conditions during the Saturday peak hour, due to increases in traffic associated with background growth, two intersections are anticipated to degrade to LOS E and four intersections operating at LOS F, not meeting the current LOS standards for the respective road authority. The intersections operating below the respective city's LOS standard is consistent with No Action conditions. The site access is shown to operate at LOS E under 2040 conditions. The site access operations under Alternative 2 conditions are shown to be lower compared with No Action conditions despite being adjacent to one another. This is due to Alternative 2 having a higher trip generation than No Action.

**Table 3.12-23
Alternative 2 – 2040 Saturday Peak Hour LOS Summary**

Intersection	Jurisdiction	No Action (2040)			Alternative 2 (2040)		
		LOS ¹	Delay ²	V/C ³ or WM ⁴	LOS	Delay	V/Cor WM
1. W Valley Hwy N/Main St	Auburn	B	17.9	0.3	B	18.0	0.33
2. W Valley Hwy N/SR 18 WB Ramps	WSDOT	D	43.3	0.52	D	42.7	0.54
3. W Valley Hwy N/SR 18 EB Ramps	WSDOT	C	30.0	0.63	C	30.5	0.68
4. W Valley Hwy S/Peasley Canyon Rd	WSDOT	F	>80	1.13	F	>80	1.18
5. C St SW/Main St	Auburn	C	27.7	0.65	C	28.2	0.68
6. C St SW/SR 18 WB Ramps	WSDOT	C	23.4	0.32	C	23.2	0.33
7. C St SW/SR 18 EB Ramps	WSDOT	C	32.7	0.94	C	33.0	0.94
8. C St SW/8th St SW	Auburn	A	7.3	0.68	A	7.4	0.68
9. W Valley Hwy/15th St SW	Auburn	C	31.2	0.87	D	52.4	0.95
10. SR 167 SB Ramps/15th St SW	WSDOT	E	61.4	1.08	E	64.2	1.09
11. SR 167 NB Ramps/15th St SW	WSDOT	D	39.8	0.96	D	41.0	0.97
12. O St/15th St SW	Auburn	D	35.1	0.82	D	35.2	0.82
13. Market St/15th St SW	Auburn	C	26.0	0.59	C	25.7	0.59
14. Supermall Way/15th St SW	Auburn	F	>80	>1.2	F	>80	>1.2
15. Perimeter Rd/15th St SW	Auburn	A	8.1	0.61	A	8.1	0.61
16. C St SW/15th St SW	Auburn	F	>80	>1.2	F	>80	>1.2
17. W Valley Hwy/1st Ave N	Algona	A	5.8	0.26	A	5.8	0.29
18. W Valley Hwy/Ellingson Rd	Pacific	C	17.1	WBL ⁵	C	19.0	WBL
19. SR 167 SB Ramps/Ellingson Rd	WSDOT	F	>80	SBL ⁶	F	>80	SBL
20. SR 167 NB Ramps/Ellingson Rd	WSDOT	A	9.8	0.51	B	10.0	0.53
21. C St SW/GSA Access	Auburn	A	3.6	0.33	A	3.6	0.33
22. C St SW/Safeway Access	Auburn	A	4.9	0.34	A	4.9	0.34
23. C St SW/Ellingson Rd	Auburn	E	56.8	0.91	E	58.3	0.92
B. Alternative 2 Site Access	Algona	-	-	-	E	44.0	EB ⁷

Notes:

1. Level of service, based on 2000 *Highway Capacity Manual* methodology.
2. Average delay in seconds per vehicle.
3. V/C = Volume-to-Capacity ratio.
4. Worst Movement reported for side-street stop-controlled intersections.
5. Westbound left-turn movement
6. Southbound left-turn movement
7. Eastbound

Corridor

Table 3.12-24 summarizes the corridor LOS results for 2020 and 2040 Alternative 2 weekday PM and Saturday peak hour conditions. As shown in the table, all corridors would meet the City of Auburn LOS standard during both the weekday PM and Saturday peak hours under 2020 Alternative 2 conditions with the exception of southbound along West Valley Highway South during the weekday PM peak hour. By 2040 during the weekday PM peak hour, only West Valley Highway South and C Street SW in the northbound direction would meet the city’s LOS standard. All other roadway segments and directions of travel would operate at LOS E or F. During the Saturday peak hour in 2040, the C Street SW and West Valley Highway South corridors would meet the city’s LOS standard in both directions. The 15th Street SW would operate at LOS E or F during the Saturday peak hour in 2040.

**Table 3.12-24
Alternative 2 – Weekday PM and Saturday Peak Hours Corridor Operations and Speeds**

Corridor	Urban Street	Weekday PM Peak Hour				Saturday Peak Hour			
		LOS ¹		Speed ²		LOS		Speed	
2020									
East-West Corridors	Class	EB	WB	EB	WB	EB	WB	EB	WB
15th St SW (W Valley Hwy to C St)	II	D	D	21	19	D	D	22	18
North-South Corridors		NB	SB	NB	SB	NB	SB	NB	SB
C St SW (Ellingson Rd to SR 18)	II	C	C	24	23	C	C	24	25
West Valley Hwy (W Main St to South City Limits ³)	II	D	E	22	17	C	C	23	23
2040									
East-West Corridors	Class	EB	WB	EB	WB	EB	WB	EB	WB
15th St SW (W Valley Hwy to C St)	II	F	E	12	14	E	F	16	9
North-South Corridors		NB	SB	NB	SB	NB	SB	NB	SB
C St SW (Ellingson Rd to SR 18)	II	D	F	22	13	C	D	23	18
West Valley Hwy (W Main St to South City Limits ³)	II	D	F	20	9	C	D	23	18

Notes:

1. Level of service (LOS) based on the *Highway Capacity Manual*, Transportation Research Board, 2000 methodology for urban arterials.
2. Arterial speed in miles per hour which includes the average speed delay encountered at each signalized intersection along the corridor as well as delays at mid-block sections.
3. South City Limit is at 15th Street SW.
4. EB = Eastbound, NB = Northbound, WB = Westbound, SB = Southbound

Traffic Safety

As traffic volumes increase, the potential for traffic safety issues increases proportionately. The overall vehicular and non-motorized traffic in the area under 2020 and 2040 conditions are anticipated to be higher than occurs under existing conditions.

Decommissioning and Deconstruction

Decommissioning and possible deconstruction impacts described above for Alternative 1 would also apply to Alternative 2.

West Valley Highway South Frontage and Overlay Improvements

The majority of the traffic-related construction impacts would be due to the earthwork for the proposed project. The West Valley Highway South frontage improvements are anticipated to require approximately 10,000 cy of cut and 6,000 cy of fill. Assuming 20 cy capacity per dump truck and pup trailer this would likely require 500 truck round trips of excavation and 300 truck round trips of compaction. Assuming an 8-hour work day, the roadway excavation would take approximately 7 days assuming 71 vehicle trips per day, consistent with WSDOT production rate standards for roadway excavation (WSDOT 2013a). Similarly, the roadway compaction would take approximately 4 days assuming 75 vehicle trips per day, consistent with WSDOT production rate standards for embankment compaction (WSDOT 2013b). This is a total of approximately 3 weeks of work to complete the earthwork for the West Valley Highway South frontage improvements. This would equate to approximately 140 to 150 daily one-way truck trips over the 3-week period, taken as an average over 8 hours, just under 20 truck trips per hour (approximately one trip per 3 minutes).

The construction of the West Valley Highway South frontage and overlay improvements would result in a temporary increase in traffic volumes due to workers traveling to and from the site, delivery of material, and truck hauling. The construction would be locally managed with traffic control plans. The timing of the West Valley Highway South frontage improvements is not expected to directly overlap the timing of the peak activity associated with earthwork for the new transfer station. The overlays would occur after construction and prior to operation of the SCRTS.

3.12.3.2 Indirect and Cumulative Impacts

No Action Alternative

Indirect Impacts

There are no indirect transportation impacts associated with the No Action Alternative.

Cumulative Impacts

There are no cumulative transportation impacts associated with No Action Alternative.

Alternative 1

Indirect Impacts

There are no indirect transportation impacts associated with Alternative 1.

Cumulative Impacts

There are no cumulative transportation impacts associated with Alternative 1.

Alternative 2

Indirect Impacts

There are no indirect transportation impacts associated with Alternative 2.

Cumulative Impacts

There are no cumulative transportation impacts associated with Alternative 2.

3.12.4 Mitigation Measures

3.12.4.1 No Action Alternative

No transportation mitigation measures are required.

3.12.4.2 Alternative 1

Construction would be coordinated with the City of Auburn to minimize effects to travelers along the highway. Short-term, temporary lane closures, if required, will be coordinated with local agencies, WSDOT and the Washington State Patrol as applicable. Coordination with the City of Algona and other agencies will also occur during deconstruction of the existing Algona Transfer Station.

3.12.4.3 Alternative 2

Construction would be coordinated with the City of Algona to minimize effects to travelers along the highway. Short-term, temporary lane closures, if required, will be coordinated with local agencies, WSDOT and the Washington State Patrol as applicable. Coordination with the City of Algona and other agencies will also occur during deconstruction of the existing Algona Transfer Station and West Valley Highway South frontage and overlay improvements.

Road frontage improvements will occur after the majority of heavy construction and earthwork at the Alternative 2 site to minimize impacts on traffic and reconstruction.

Preliminary analyses suggest that a traffic signal may be warranted at the southern driveway of the Alternative 2 site based on 2040 forecasts. Although it may be warranted based on 2040 forecasts, installation of a traffic signal is not recommended at this time. Conditions should be monitored in the future if on-site delays incur that are not acceptable to King County. Project design would allow for future consideration of signalization if warranted.

As part of Alternative 2 West Valley Highway South would receive pavement overlays north and south of the road frontage improvement area, between approximately 12th Ave N and 9th Ave

N and between approximately Broadway Boulevard and 5th Ave N, after construction and prior to operation of the SCRTS project.

3.12.5 Significant Unavoidable Adverse Impacts

3.12.5.1 No Action Alternative

There are no significant unavoidable transportation impacts associated with the No Action Alternative.

3.12.5.2 Alternative 1

There are no significant unavoidable transportation impacts associated with Alternative 1.

3.12.5.3 Alternative 2

There are no significant unavoidable transportation impacts associated with Alternative 2.

3.13 Public Services and Utilities

3.13.1 Affected Environment

This section of the Environmental Impact Statement describes the existing public services and utilities at or near the No Action Alternative and Alternatives 1 and 2. Public services described include fire, police, schools, parks, other recreation facilities and health care facilities. Public utilities described include water, sanitary sewer, stormwater and solid waste. Private utilities described include electricity, natural gas, communications, and cable. Public services and utilities common to all alternatives are described in Section 3.13.1.1.

Information referenced in this section came from field visits, City of Auburn website and comprehensive plans, City of Algona website and Stormwater Management Plan, and King County facility planning documents, city codes and regulations; other agency and organizational websites; and direct contact with some of the agencies referenced.

3.13.1.1 Public Services and Utilities Common to all Alternatives

Fire

Valley Regional Fire Authority (VRFA) provides service to the alternatives from the following six locations as shown on Figure 3.13-1.

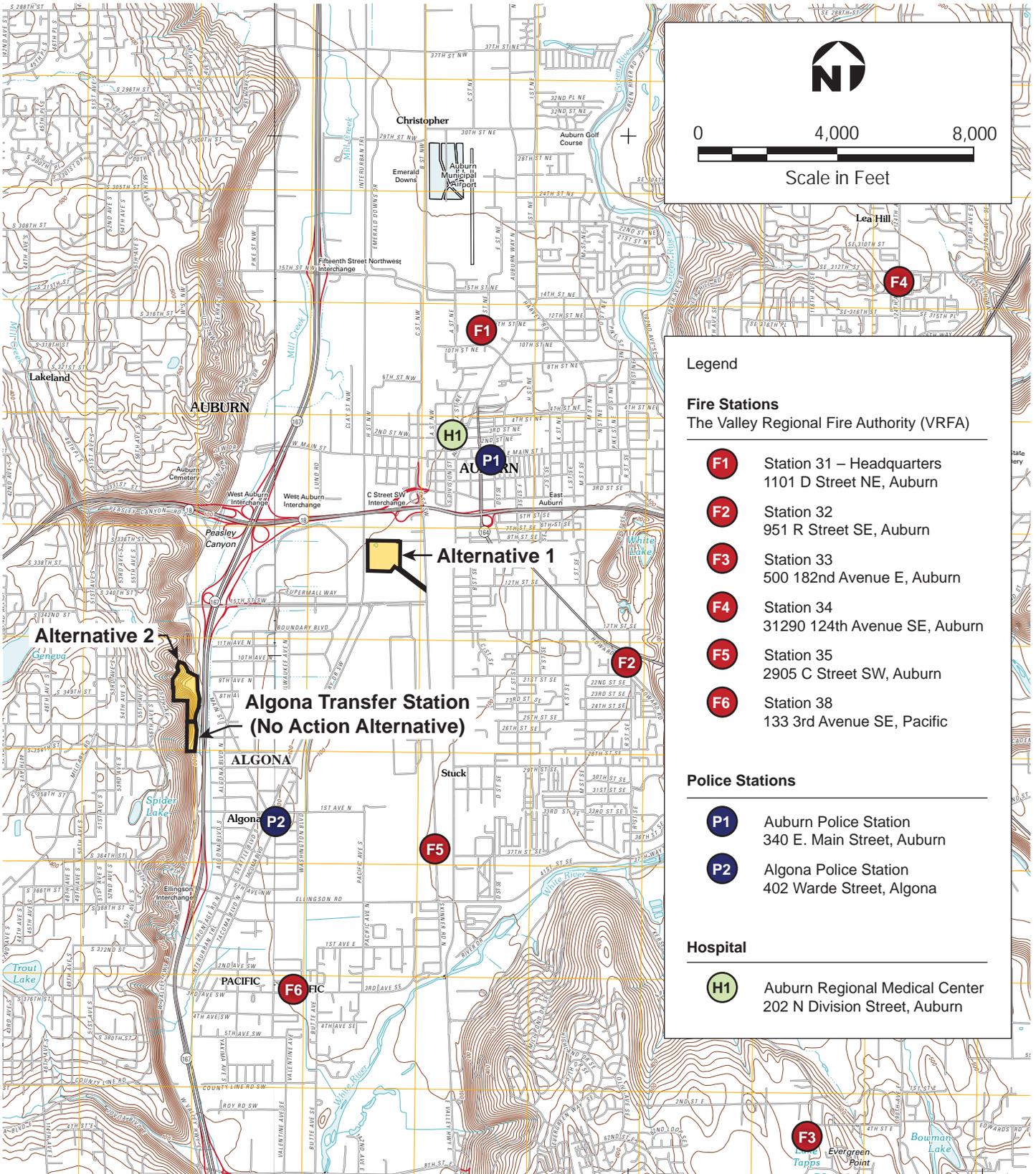
**Table 3.13-1
Valley Regional Fire Authority Stations Locations**

Station	Address
Station 31 (Headquarters)	1101 D Street NE Auburn, WA 98002
Station 32	1951 R Street SE Auburn, WA 98002
Station 33	500 182nd Avenue E Auburn, WA 98092
Station 34	31290 124th Avenue SE Auburn, WA 98092
Station 35	2905 C Street SW Auburn, WA 98002
Station 38	133 3rd Avenue SE Pacific, WA 98047

Pursuant to the Washington Administrative Code (WAC), transfer stations shall be designed, constructed, and operated so as to have communication capabilities to immediately summon fire, police, or emergency service personnel in the event of an emergency (WAC 173-304-410(2)(n)).

Distance from the fire station is only one factor in determining which fire stations and how many units respond to any alarm. Other factors include, but are not limited to, type of alarm (e.g., fire or medical emergency), area impacted by the alarm, and available units.

VRFA provides professional services to approximately 85,000 citizens residing throughout the 34 square miles of Algona, Auburn, and Pacific – an area that includes the project alternatives. The VRFA has 120 full-time staff and responded to over 11,000 incidents in 2014 (VRFA 2014).



Basemap Source: USGS 7.5-minute topographic quadrangles: Poverty Bay, Washington, 2011; and Auburn, Washington, 2011

Prepared for King County by URS Corporation Consultants

Figure 3.13-1
Fire, Police, and Medical Facilities

The VRFA provides the following fire, rescue, and Emergency Medical Services (EMS) services:

- Fire Protection and Suppression
- Emergency Medical Aid
- Hazardous Materials Response
- Specialized Technical Rescue Services
- Fire and Life Safety Inspections
- Public Fire Safety and Prevention Education
- Fire Investigation Services
- Community CPR and First Aid Training
- Construction Fire Code Plan Review
- Community Relations and Events
- Disaster Preparedness and Education

The VRFA serves a diverse demographic and geographic area, including industrial areas.

Chapter 52.33 of the Revised Code of Washington (RCW) requires that fire departments establish performance measures, such as response time measures, and then publish an annual report that describes their achievement of these measures. According to the VRFA's 2014 annual report, current response time statistics indicate that crews responded to EMS calls in 7 minutes and 13 seconds, and to fires in 7 minutes and 46 seconds. These response times are considered in the 90th percentile in the industry and exceeded VRFA's performance goals. The average response time for all unit responses was 4 minutes and 56 seconds (VRFA 2014).

The VRFA has five primary fire engines and two medical aid units. The typical VRFA fire engine pumps over 1,750 gallons per minute (gpm) and carries 750 gallons of water. The VRFA also has a variety of ambulance and support vehicles to respond to emergencies involving hazardous materials, high-angle rope rescues, and water-related emergencies (VRFA 2015).

Emergency Communications (9-1-1)

Valley Communications Center serves nine police departments, 11 fire departments, and King County Medic One paramedics; and has emergency call receiving and dispatching services. Departments participate as either a member/owner or through a contract. Auburn Police Department and the VRFA are member/owner organizations. Algona Police Department has a contract with the Valley Communications Center. Valley Communications has a service area population of approximately 447,650 served by police and 735,694 served by Fire and EMS (Valley Communications Center 2014).

The 2014 Valley Communications staff included 10 supervisors, 44 call receivers and 59 dispatchers working in shifts to provide coverage 24 hours per day, 365 days each year. In 2014, The King County standard was to answer 90 percent of all calls in 10 seconds or less; 93 percent of 9-1-1 calls were answered in 10 seconds or less by Valley Communications. Call receivers and dispatchers are cross-trained in police, fire, and EMS functions, so they can be deployed to meet any spike in workload for law enforcement emergencies, major fires, or multiple casualty EMS incidents. Information provided in the 2014 Annual Report indicates a high level of

competency and flexibility achieved through ongoing training, diversified resources, and cooperative arrangements with affiliated agencies throughout the region.

The Valley Communications 2014 Annual Report indicates an approximately 4 percent increase in police calls for service between 2010 and 2014. Calls for Fire and EMS services indicated an increase from 2010 to 2014 by about 15 percent (Valley Communications Center 2014).

Hospitals

The alternatives are served by several medical facilities. According to the Auburn Reporter *VRFA Fire and Rescue Blotter* (2013), the VRFA transports those in need of emergency care to Auburn Regional Medical Center in Auburn, St. Francis Hospital in Federal Way, and Valley Medical Center in Renton. Harborview Medical Center, located near downtown Seattle, is the only designated Level 1 adult and pediatric trauma and burn center in Washington and serves as the regional trauma and burn referral center.

Police

The project sites are served by police departments in Auburn and Algona that are described for each alternative. Driving with an unsecured load is against state law and is applicable to the project. The requirement to secure loads is in the Rules of the Road, RCW 46.61.655. The King County Solid Waste Division (division) has implemented a diversified approach to help reduce the number of violations related to unsecured loads at transfer stations and other facilities. The approach involves a public education campaign, strictly enforced fees, and, when necessary, strict enforcement, which includes fines for unsecured loads and penalties for unsecured loads that result in injury.

Solid Waste

Solid waste handling, as defined in RCW 70.95.030, includes management, storage, collection, transportation, treatment, utilization, processing, and final disposal of all solid wastes.

The division provides garbage transfer, disposal, and recycling services for residents and businesses in all of King County, except for Seattle and Milton. The division also provides household hazardous waste (HHW) disposal options and recycling education programs for its residents.

Countywide the division serves a population of approximately 1.3 million, or approximately 70 percent of King County's population as a whole. Most of the customers live in incorporated areas of the county. The No Action Alternative and Alternatives 1 and 2 are within the south county service area.

Customers include commercial haulers, as well as both residential and non-residential self-haulers who use county transfer station facilities. The division does not provide residential curbside collection. Garbage collected in the county's service area by commercial haulers is taken to transfer stations, where it is packed into larger transfer trailers for transport to the Cedar Hills Landfill for disposal. The transfer stations also are open to the general public, who may bring garbage to the transfer stations in addition to using curbside collection services. In

addition to garbage disposal, basic recycling services are available at no charge at most transfer stations.

3.13.1.2 No Action Alternative

Fire

The VRFA Station 38 is the nearest fire station, approximately 2.2 miles southeast of the No Action Alternative site. Fire hydrants are located on the east side of West Valley Highway South, adjacent to the site. See Section 3.13.1.1 for more information about VRFA.

VRFA reports that if it is called to the existing Algona Transfer Station or a similar facility, generally the incident involves a transfer load that has caught on fire. Though there have been no recent hazardous material releases at the existing Algona Transfer Station, the VRFA is prepared to handle such incidents (VRFA 2013).

Emergency Communications (9-1-1)

The Algona Police Department has a contract with the Valley Communications Center. Information about Valley Communications Center related to all alternatives is discussed in Section 3.13.1.1.

Hospitals

Information about hospitals related to all alternatives is discussed in Section 3.13.1.1.

Police

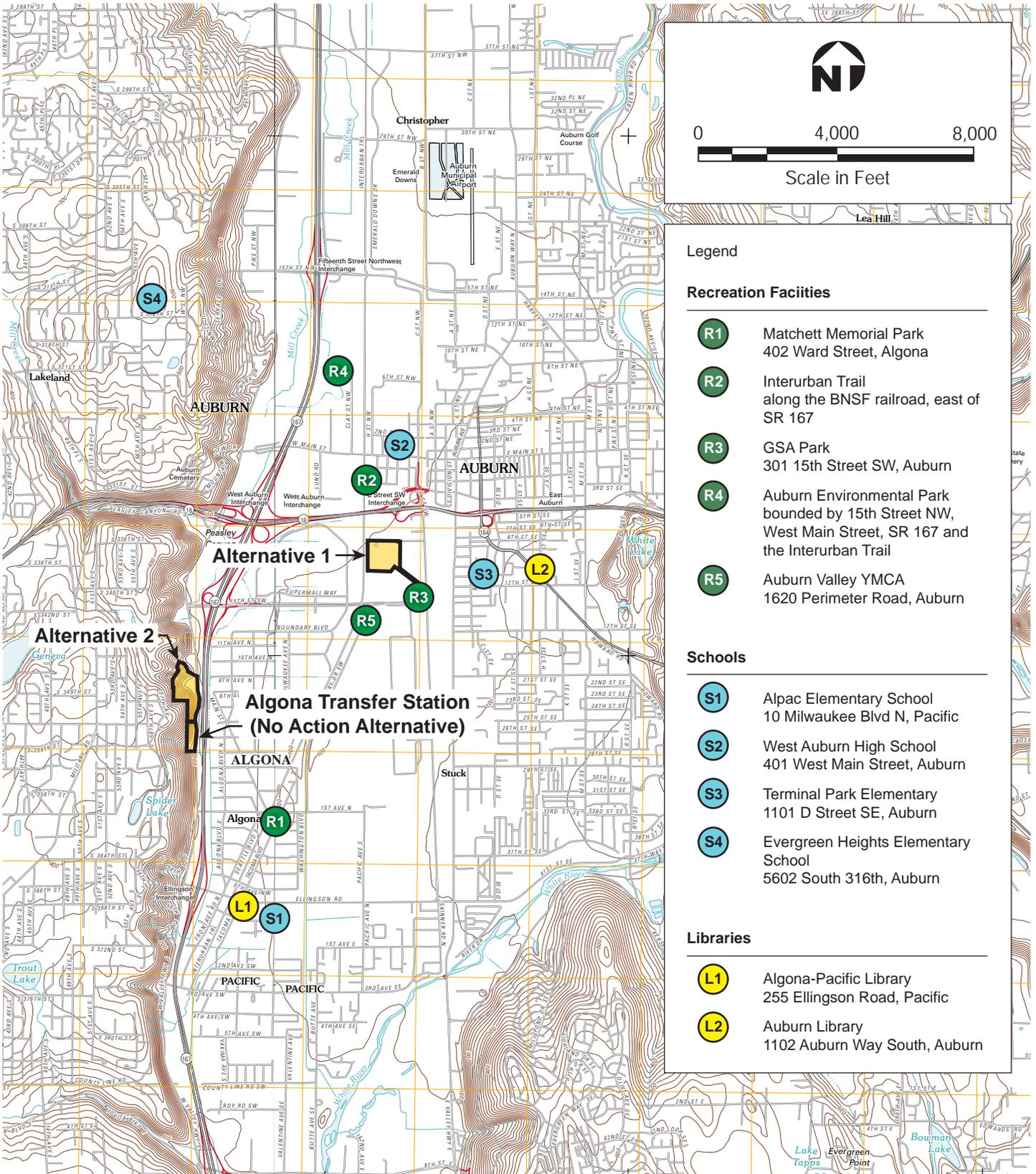
The No Action Alternative site is served by the Algona Police Department located in City Hall at 402 Warde Street. Police staff includes one sergeant, one police clerk, six police officers and two reserve officers. Additional information about unsecured loads is discussed in Section 3.13.1.1.

Schools

There are no schools or school facilities on or adjacent to the No Action Alternative site (Figure 3.13-2). The area surrounding this site is served by the Auburn School District. The nearest school is Alpac Elementary School, 1 mile southeast of the site on Ellingson Road on the opposite side of State Route 167 (Auburn School District 2015).

Parks and other Recreation Facilities

There are no parks or other recreation facilities on or adjacent to the No Action Alternative site (Figure 3.13-2). The nearest recreational facility is the Interurban Trail, located approximately 0.6-mile east of the site. The nearest park is the City of Algona's Matchett Park, which is approximately 1-mile southeast of the site on the opposite side of State Route 167. There are two King County Library System libraries in the area: Algona-Pacific Library in Pacific and the Auburn Library in downtown Auburn.



Basemap Source: USGS 7.5-minute topographic quadrangles: Poverty Bay, Washington, 2011; and Auburn, Washington, 2011

Figure 3.13-2

Recreation Facilities, Schools, and Libraries

Prepared for King County by URS Corporation Consultants

Water, Sanitary Sewer, and Stormwater

Water

The City of Algona serves approximately 920 residential and 45 commercial water accounts, and maintains a hydraulic grade line of 245 feet. Algona consumers use about 870,000 gallons per day (City of Algona 2015a). The Public Works Department services and maintains the city's water mains and meters. The City of Algona purchases water wholesale from the City of Auburn through an inter-local agreement.

Under inter-local agreements water utilities use an interconnection to move water between adjacent systems to meet supply needs, to increase reliability, and to respond to emergencies. The agreement anticipates 1.114 million gallons per day peak by 2014. In the event that Auburn experiences any failure or decreased capacity, the supply of water to Algona may be decreased by the same percentage that is experienced by Auburn (City of Auburn 2009a).

At the existing Algona Transfer Station, an 8-inch water main extends from the south to a connection point due east of the existing scale house on 6th Avenue N. This water main extends 700 feet north of the existing scale house before its terminus.

Sanitary Sewer

Algona operates its own sewer conveyance system, which includes several miles of sewer mainline, hundreds of manholes, and one lift station. The system is gravity flow from Algona to Renton, via a King County Wastewater Treatment Division (WTD) trunk line just east of State Route 167, where the wastewater is treated by King County at the South Treatment Plant in Renton (City of Algona 2013). There are no capacity limits for sewer (City of Algona 2015a).

An 8-inch gravity sewer line serves the site from a connection at the southeast corner. The line runs south in the West Valley Highway South right-of-way, turns east on 3rd Avenue N, turns south to a lift station at 3rd Avenue N and Seattle Boulevard N.

Stormwater

The site is located in Washington Resource Inventory Area (WRIA) 9 in the Duwamish-Green River Basin. The storm drainage system consists of approximately 9.9 miles of open ditches, 4.6 miles of pipe, 110 catch basins and six major outfalls.

Algona manages stormwater through implementation of its 2011 Stormwater Management Plan. According to the plan, Algona is continually improving the scope and detail of its stormwater management program, including the city's Illicit Discharge Detection and Elimination Program. Key aspects of the program pertinent to new development are: the completed storm sewer system map that includes information on the city's outfalls, receiving waters, and connection points, ongoing public outreach and education of municipal employees on best management practices (BMPs) (City of Algona 2011).

Stormwater runoff is collected at the existing Algona Transfer Station in catch basins and conveyed in a pipe system to underground detention tanks. The flow is discharged from the

tanks to downstream pipes and catch basins before crossing in a culvert under West Valley Highway South where it outfalls to the vegetated area sloping down to the wetland and jurisdictional ditch on the west side of State Route 167.

Surface water management at the transfer station has been upgraded to meet the requirements of King County's Phase I Municipal Stormwater Permit and the transfer station operates under the Stormwater Pollution Prevention Plan and *King County Solid Waste Division and Transfer Facilities* (King County 2012a).

Solid Waste

Algona is serviced by Waste Management for garbage and curbside recycling services. Yard waste services are also available (City of Algona 2015b).

The existing Algona Transfer Station does not provide recycling services on-site. Customers are directed to other facilities for recycling and handling of special materials including HHW. Additional information about the division is discussed in Section 3.13.1.1.

Electricity

Puget Sound Energy (PSE) provides electric service through overhead transmission lines to the No Action Alternative site. The existing Algona Transfer Station consumes electricity for the administrative building (lighting, office equipment, break room/lunchroom appliances, cooling and heating), scale house, computers and electronic scales, as well as lighting for the transfer building, driveway, and parking lot. Energy use is estimated at approximately 267,000 kilowatt hours (kWh) annually (based on average usage 2009 to 2012). Refer to Section 3.6 Energy and Natural Resources for a more detailed discussion of electrical supply.

Natural Gas

PSE provides natural gas service to Algona. The existing Algona Transfer Station does not currently use natural gas.

Telecommunications and Cable

Conventional Telephone

Conventional local telephone service to the area is provided by CenturyLink, which offers service to 25 million customers in the western United States. Long distance service is provided in the area by several providers.

Cable Television

Cable television service is provided by Comcast through a combination of aerial and underground cables.

Cellular Telephone

Cellular telephone service is provided by approximately 20 private companies throughout the Puget Sound region.

According to the Auburn comprehensive plan (City of Auburn 2011), Abovenet, 360 Networks, and AT&T may have cables that extend along West Valley Highway South to the east of the No Action Alternative site. The comprehensive plan indicates these cables terminate at Boundary Boulevard SW to the north of the site.

King County I-Net

I-Net is a fiber optic network service provided by King County for public facilities in the county. It is a regional communications network for voice, data, and video services. The existing Algona Transfer Station does not currently use I-Net.

3.13.1.3 Alternative 1

Fire

Station 35 is the nearest VRFA fire station, located approximately 1.7 miles south of the Alternative 1 site (Figure 3.13-1). See Section 3.13.1.1 for more information about VRFA.

Fire hydrants serving existing commercial and light industrial uses are located adjacent to the Alternative 1 site on 8th Street SW.

Auburn Municipal Code (Chapter 13.16) requirements would be applicable. There are also special requirements that apply to all building construction projects in which buildings are to be located more than 150 feet in vehicular travel from a street property line.

As a transfer station, the Alternative 1 site could receive a wide range of materials including recyclables and HHW if the division programs these services. The VRFA is a partner in the South King County Hazardous-Materials Providers Group (Haz-Mat). This group consists of seven fire agencies who share the responsibility of providing Haz-Mat emergency response to the region. Haz-Mat technicians are trained to deal with a broad spectrum of emergencies, ranging from spills of industrial products that are used in manufacturing and transported over the roadways, to releases of products that are transported over the region's extensive railway network (VRFA 2014).

Emergency Communications (9-1-1)

The Auburn Police Department is a member/owner organization with the Valley Communications Center. Information about Valley Communications Center related to all alternatives is discussed in Section 3.13.1.1.

Hospitals

Information about hospitals related to all alternatives is discussed in Section 3.13.1.1.

Police

The Alternative 1 site would be served by the Auburn Police Department (Figure 3.13-1). The department has over 115 authorized full-time employees serving a population of over 72,000. The department maintains more than 40 vehicles and participates on regional task forces and special teams. The services most relevant are the patrol and traffic unit.

For patrol, the community is divided into North and South patrol sectors with a total of six patrol districts. The patrol division is staffed by 50 officers who respond to calls for service in marked patrol vehicles. The Alternative 1 site is located in South Sector District 4.

The Traffic Unit consists of a Sergeant, four traffic officers, and two parking control officers. Their primary responsibility is traffic enforcement and accident investigations.

Refer to Section 3.13.1.1 for information about unsecured loads.

Schools

No schools are adjacent to the site (Figure 3.13-2). The nearest schools are West Auburn High School to the north of State Route 18 and Terminal Park Elementary to the east of C Street SW, railroad tracks, and A Street SE. The Alternative 1 site is within both schools' attendance area but not within walking distance to either school (Auburn School District 2015).

Parks and other Recreation Facilities

City of Auburn's Government Services Administration Park, more commonly referred to as GSA Park, includes two youth baseball and softball fields (Figure 3.13-2). The fields abut the driveway currently accessing the Alternative 1 site. The fields are accessed via 15th Street SW. Parking for the ball field is a shared use with the Auburn School District property west of the field (south of the Alternative 1 site).

The north end of the park, with a natural area, passive park area, basketball court and blacktop, could be accessed by the park maintenance shop entrance. A windbreak of mature trees exists along the entire driveway from C Street SW to the main part of the Alternative 1 site.

The Interurban Trail is on the opposite (i.e., western) side of the rail yard west of the Alternative 1 site.

The Auburn YMCA is located south of 15th Street SW at 1620 Perimeter Road within 0.5-mile of the Alternative 1 site.

The Auburn Environmental Park is located approximately 1.5 miles northwest of the Alternative 1 site. The 120-acre park is bounded by the Interurban Trail to the east, W Main Street to the south, State Route 167 to the west and 15th Street NW to the north.

Water, Sewer, and Stormwater

Existing water, sanitary sewer, and stormwater utilities are available near the Alternative 1 site.

Water

The Alternative 1 site is within the area served by the City of Auburn. The city provides water service to a total of 10,817 customer accounts. Auburn's water comes from deep well aquifers and springs. The city's sources of water include the Coal Creek watershed, West Hill Springs watershed and a system of 10 wells. Storage facilities are found on the Enumclaw plateau, Lakeland Hills, and Lea Hill.

The city is responsible for the repair and maintenance of the water service lines from the street to the backside of the service meter (City of Auburn 2009a).

Water service provides water for both domestic and fire protection purposes.

Sanitary Sewer

The Alternative 1 site is within the Valley Sewer District. Auburn provides sewer service to a total of 13,439 customer accounts. The system is primarily a collection system with treatment provided by King County. The city's sewer system is not as extensive as its water system and there are significant areas within the city's service area which are on septic systems (City of Auburn 2009a).

The existing wastewater conveyance system on the site is a King County WTD trunk sewer pipe that runs west under 15th Street SW and continues north along the Union Pacific Railroad (UPRR) and PSE right-of-way to the South Treatment Plant in Renton (see the No Action Alternative Sanitary Sewer section for reference to King County WTD capacity). Existing uses near the site are served by an Auburn gravity sewer pipe.

Stormwater

The Auburn storm drainage system serves over 9,281 customers within the city limits. The Auburn Storm Drainage Utility operates and maintains approximately 199 miles of pipe, 10,000 catch basins and manholes, 159 stormwater facilities, 6 pump stations, and 27 miles of ditch. The storm system is designed to convey rainwater from the streets and properties of the city to nearby creeks and rivers through a combination of open ditches and closed conveyance pipes (City of Auburn 2009b).

The site is relatively flat and topography indicates that surface water drains to the west. There is an existing stormwater pond in the northwest corner of the site, which is assumed to capture most of the surface water from the site (Figure 3.3-5). An open storm channel (i.e., ditch) flows north between the western site boundary and the Union Pacific Railroad. It is unknown if surface water from the site outfalls to the ditch, but the length of this ditch and its minimal gradient provide additional opportunities for detention and retention of stormwater discharge. Storm pipes are located to the east of the site at C Street SW and to the north of the site at 8th Street SW (City of Auburn 2009b).

The site is located in Washington Resource Inventory Area (WRIA) 10 in the Puyallup-White River Basin. An unnamed tributary originates approximately 0.6-mile south of the Alternative 1 site. When water is present seasonally, it likely flows south to Puyallup-White River.

Solid Waste

Auburn is serviced by two waste haulers: Waste Management and Republic Services. According to the comprehensive plan (City of Auburn 2011), there are approximately 15,900 solid waste and recycling accounts within the city. Recycling is handled by Waste Management. Residential customers are currently recycling approximately 47 percent of its waste stream curbside.

For commercial customers, the garbage charges and fees set by the city are based on container size and pick up frequency. The charges are applied whether or not the service is utilized. Businesses may choose to utilize city-contracted recycling services at no additional cost as long as the recycling container is not larger than 150 percent of the garbage container. Additional recycling requires a fee subject to negotiation with the solid waste contractor.

Additional information about the division is discussed in Section 3.13.1.1.

Electricity

PSE provides electric service to the City of Auburn and its potential annexation area. A PSE 115-kilovolt transmission line (a major supply line) shares a right-of-way including the Interurban Trail, which is adjacent to the UPRR right-of-way along the western boundary of the site.

Natural Gas

PSE provides natural gas service to Auburn. The PSE supply pipeline is located on 8th St SW.

Telecommunications and Cable

Conventional Telephone

Conventional local telephone service to the city is provided by CenturyLink.

Long-distance service is provided in the area by several providers. These providers have underground fiber optic cables passing through Auburn. Verizon has a cable along C Street SW, to the east of the site, and along the right-of-way to the west of the site. CenturyLink has a cable passing through the area between the Alternative 1 site and C Street SW (this cable appears to cross under the two potential site access driveways (City of Auburn 2011).

Cellular Telephone

There are two cell sites located near the northeast corner of the Alternative 1 site.

Cellular telephone service within the city and its potential annexation areas is provided by approximately 20 private companies providing service throughout the Puget Sound region.

Cable Television

Cable television service is provided by Comcast through a combination of aerial and underground cables. According to the comprehensive plan (City of Auburn 2011) cable lines are not located in the immediate vicinity of Alternative 1. The closest cable is to the east along A Street SE.

King County I-Net

I-Net is a fiber optic network service provided by King County for public facilities in the county. It is a regional communications network for voice, data, and video services. Alternative 1 would use I-Net.

3.13.1.4 Alternative 2

Fire

Stations 35 and 38 are the nearest VRFA fire stations, both within 3 miles of the Alternative 2 site (Figure 3.13-1). Station 35 is not staffed around the clock and is used for offices, storage and training. Fire hydrants are located on the east side of West Valley Highway South, adjacent to the Alternative 2 site. See Section 3.13.1.1 for more information about VRFA.

As a transfer station, the Alternative 2 site could receive a wide range of materials including recyclables and HHW if the division programs these services. The VRFA is a partner in the South King County Hazardous-Materials Providers Group (Haz-Mat). This group consists of seven fire agencies who share the responsibility of providing Haz-Mat emergency response to the region. Haz-Mat technicians are trained to deal with a broad spectrum of emergencies, ranging from spills of industrial products that are used in manufacturing and transported over the roadways, to releases of products that are transported over the region's extensive railway network (VRFA 2014).

Emergency Communications (9-1-1)

The Algona Police Department has a contract with the Valley Communications Center. Information about Valley Communications Center related to all alternatives is discussed in Section 3.13.1.1.

Hospitals

Information about hospitals related to all alternatives is discussed in Section 3.13.1.1.

Police

See the No Action Alternative Police section for more information that also applies to Alternative 2 (Figure 3.13-1). Refer to Section 3.13.1.1 for information about unsecured loads.

Schools

There are no schools or school facilities on or adjacent to the Alternative 2 site (Figure 3.13-2). The area surrounding this site is served by the Auburn School District. The nearest school is Alpac Elementary School, 1.3 miles southwest of the site on Ellingson Road on the opposite side of State Route 167 (Auburn School District 2015).

Parks and other Recreation Facilities

There are no parks or other recreation facilities on or adjacent to the Alternative 2 site (Figure 3.13-2). The nearest recreational facility is the Interurban Trail, located approximately 0.7-mile east of the site. See the No Action Alternative Parks and Recreation Facilities section for more information that also applies to Alternative 2 (Figure 3.13-2).

Water, Sanitary Sewer, Stormwater

Existing water, sanitary sewer, and stormwater utilities are available near the Alternative 2 site.

Water

An 8-inch water main extends from the south to a connection point due east of the existing scale house of the Algona Transfer Station on 6th Avenue N. This water main extends 700 feet north of the existing scale house before its terminus. Another 8-inch water main begins 1,400 feet north of the existing scale house from a connection due east at the intersection of West Valley Highway South and 8th Avenue N and continues north along West Valley Highway South right-of-way.

See the No Action Alternative Water section for more information that also applies to Alternative 2.

Sanitary Sewer

An 8-inch gravity sewer line serves the site from a connection at the southeast corner. The line runs south in the West Valley Highway South right-of-way, turns east on 3rd Avenue N, turns south to a lift station at 3rd Avenue N and Seattle Boulevard N. A force main completes the connection from the lift station to the Metro trunk line east of Main Street. Another 8-inch gravity line extends from a termination in a manhole in Iowa Drive north by means of a property easement to 11th Avenue N where it turns east, passes under State Route 167 and terminates in the Metro trunk line under Celery Avenue.

See the No Action Alternative Sanitary Sewer section for more information that also applies to Alternative 2.

Stormwater

Stormwater is captured in several places on the Alternative 2 site. At the north central property line there is a small stormwater pond, divided into two cells. Although no outlet is visible, information received from a previous property owner indicates that the pond's outlet flows by pipe to the north. What appears to be a small sediment settling pond is located near the property line in the northeast portion of the site. A bio-filtration swale lies parallel to West Valley Highway South along the eastern property line in the northeast portion of the site. When its capacity is reached excess water is pumped upslope to a depression gravel area in the middle of the site, south of Algona Creek Tributary 09.0054A. This depressed ponding area overflows to a 12-inch diameter pipe and the stormwater is conveyed to the north to a catch-basin located near the northwest corner of the current landscaping business office. The conveyance continues in a northeasterly direction from this catch basin and discharges to the 2-celled pond noted previously.

There is a short shallow ditch on the south side of Iowa Drive (along the north property line) which enters a culvert and flows to a catch basin located in the roadway located near the southwest corner of the intersection of West Valley Highway South and Iowa Drive. This culvert is the point where Algona Creek Tributary 09.0054A, flowing from the south in a 30-inch diameter culvert, turns easterly and crosses under West Valley Highway South in a culvert.

Stormwater service along the site frontage on West Valley Highway South is fragmentary. It consists of three disconnected segments of pipe under the west edge of the highway that

collects water from the east edge of the site and conveys it to discharge points in Algona Creek Tributary 09.0054 between West Valley Highway South and State Route 167. The Alternative 2 site is located in the Mill Creek drainage basin and the Duwamish-Green River basin (WRIA 9). The City of Algona requires new and redeveloped properties, as part of a development agreement, to implement a stormwater facility maintenance program and a pollution sources control program. Property owners must also submit an annual report detailing compliance with their agreement.

See the No Action Alternative Stormwater section for more information that also applies to Alternative 2.

Solid Waste

Algona is serviced by Waste Management for garbage and curbside recycling services. Yard waste services are also available (City of Algona 2015b). Additional information about the division is discussed in Section 3.13.1.1.

Electricity

PSE provides medium-voltage, three-phase electric service from the south along the west edge of the West Valley Highway South right-of-way to a termination point at the southeast corner of the site. Another line extends from the north along the west edge of the West Valley Highway South to a termination point approximately 500 feet south of the intersection of the highway and Iowa Drive.

Natural Gas

PSE has a 4-inch natural gas line that extends the length of the site in the West Valley Highway South right-of-way.

Telecommunications and Cable

See the No Action Alternative Telecommunications and Cable section for more information that also applies to Alternative 2. As with Alternative 1, King County I-Net would be used with Alternative 2.

3.13.2 Environmental Impacts

3.13.2.1 Direct Impacts

No Action Alternative

Construction

Under the No Action Alternative, a new transfer station would not be built. Construction-related public services and utilities impacts would not occur.

Operation

The existing Algona Transfer Station would continue to operate with similar levels of demand for public services and utilities. The transfer station would remain under the Stormwater Pollution Prevention Plan during continued operations. No impacts to public services and utilities are anticipated from continued operations.

Alternative 1

Construction

Fire

The Alternative 1 site is currently being served by the VRFA. All emergency calls are routed through the centralized Valley Communications Center dispatch system that determines which fire station and equipment will respond to a 9-1-1 call. Station 33, the nearest fire station, is staffed 24 hours a day, 7 days a week by one captain and three firefighters.

In the development of a new transfer station, the VRFA would refer to the National Fire Prevention Association (NFPA). NFPA codes and standards are the governing fire and life safety documents for building construction and operation. Development of Alternative 1 would not necessitate additional staffing or equipment, nor require the construction of additional fire station facilities (VRFA 2013).

The Auburn Municipal Code requires payment of a development impact fee for fire protection facilities and services. The fire code requires a project to be subject to review and approval by the VFRA fire marshal to ensure that all proposed facilities include adequate fire and life safety protection equipment and infrastructure, such as fire sprinkler systems as required by fire code.

The VRFA states that, in the development of a new transfer station, impacts to fire services are minimized through the development of an up-to-date building with appropriate fire protection equipment and design (e.g., fully equipped with sprinklers and fire resistant containers and areas) and site access for emergency vehicles. The new transfer station would be designed and built to meet these standards (VRFA 2013).

Construction may affect emergency vehicle access to the construction area and around the site due to temporary street congestion caused by construction vehicles. The project would maintain access to emergency facilities at all times during construction.

Alternative 1 would be developed to meet all national and local codes and standards. No impacts to fire services are anticipated.

Police

There could be a need for traffic control by the police department during construction if road or utility improvements are made to adjacent roadways, which may temporarily impede the normal flow of traffic. It is anticipated that the short-term construction-related impacts would be within the capacity of the Auburn Police Department. No impacts to police services are anticipated.

Schools

No construction impacts to schools would be anticipated because there are no schools near the Alternative 1 site that would be affected.

Parks and Recreation Facilities

Construction of Alternative 1 would not result in direct impacts to parks or recreation facilities. Construction activity would not limit use of the GSA Park as there would be no shared access between the two sites. The vegetative buffer between the GSA Park and the site would minimize any potential temporary disturbances to park users during construction. Traffic, due to construction, could temporarily slow access to the park maintenance shop, which is accessed by driveway on C Street SW. No impacts to parks and recreation facilities are anticipated.

Water, Sanitary Sewer, and Stormwater

Water

Construction of a new transfer station at this undeveloped site would likely require upgrades to the on-site water service. The new water service for similar projects consist of 8-inch Class 52 ductile iron water main loop around buildings, with provisions included for fire hydrants, and fire sprinkler and domestic services. New on-site water mains are assumed to hook-up to existing city water mains (10- to 16-inch mains are located adjacent to the site in C Street SW and 8th Street SW) and developed to include all water appurtenances including backflow preventers, check valves and domestic and irrigation water meters.

The most recently built transfer stations in King County included a looped water supply and fire main system around the sites with fire hydrants situated at various locations. Hydrants could be sited during the design phase of the project. Design of the transfer building would likely incorporate a dry pipe fire sprinkler system that would reduce the overall fire flow requirements for the site (King County 2006). In planning a LEED certified building, there would be efforts to maximize water conservation through the use of low flow toilet and faucets.

The city requires that water system extensions needed to serve new development will be built prior to or simultaneous with such development, according to the size and configuration identified by the Comprehensive Water Plan as necessary to serve future planned development (City of Auburn 2009a). The location and design of these facilities are required to give full consideration to the ease of operation and maintenance of these facilities by the city. Prior to receiving water service, provision of water service both inside and outside the current city limits will be conditioned on the developer and development providing infrastructure improvements identified by the city, in accordance with City of Auburn design and construction standards.

According to the comprehensive water plan (City of Auburn 2009a), the fire flow requirement is 2,500 gpm for non-residential land uses. The higher fire requirements can be met in the Valley Service Area.

New utility locations would be confirmed and easements developed during design of the project, as part of the project permitting. Upgrade needs would be the responsibility of the

division and would be determined during design of the transfer station when detailed flow requirements are determined. All upgrades to the water would be made in coordination with the appropriate public utilities, include public outreach, and follow the Auburn Public Facilities Extension procedure, which would minimize the effects of such interruptions. No impacts to water services are anticipated.

Sanitary Sewer

Construction of a new transfer station at this undeveloped site would likely require upgrades to on-site sewer lines. New utility locations would be confirmed and easements developed during design of the project, as part of the project permitting. The sanitary sewer system would be designed for connection to the city's main line.

Based on other recently developed transfer facilities, in addition to the sanitary sewer system required for toilets and normal domestic wastewater disposal, precipitation falling on the roof of the new transfer building would be diverted to a detention system. This rainwater would be used for wash down of transfer building floors and other surfaces that come in contact with refuse. This wash water, as well as any water draining from full refuse trailers and intermodal containers, would drain to the sanitary sewer system. In addition, all parking areas for all loaded waste trailers and containers and any outdoor areas where open top bins for recycled materials are placed would be designed to drain to the sanitary sewer system.

No new, or expansion of, city sanitary sewer pipes to serve Alternative 1 is expected. All upgrades to the sewer utility would be made in coordination with public utilities, with adequate public outreach, and following the City of Auburn Public Facilities Extension procedure, which would minimize the effects of such interruptions. No impacts to sanitary sewer services are anticipated.

During construction, the contractors would be required to provide temporary sanitary toilets on-site for use by workers and visitors. These facilities would be maintained by a designated subcontractor.

Stormwater

There is an existing stormwater pond in the northwest corner of the site, which is assumed to capture most of the surface water from the site. A new stormwater management system with flow control and water quality treatment would be constructed at Alternative 1 that will be designed to meet Auburn's *Surface Water Management* (2014) requirements. Treatment and detention of stormwater would be consistent with regional efforts to protect and improve water quality and salmonid habitat conditions in the surface waters downstream of the site.

The new stormwater system design could include, as appropriate, water quality treatment and surface and underground detention. Low impact development (LID) features and LEED design criteria could be implemented to reduce the amount of runoff entering the stormwater system. These features could include rooftop rainwater harvesting and pervious pavement on driveways or walking surfaces. Excess runoff not treated with LID would be routed to stormwater facilities.

The City of Auburn requires developers to construct storm drainage improvements directly serving the development, including any necessary off-site improvements (Capital Facilities Plan (CF-37). Off-site storm drainage improvements needed to serve new development shall be built prior to or simultaneous with such development, according to the size and configuration identified by the Comprehensive Drainage Plan (CF-38). The *Comprehensive Stormwater Plan* (City of Auburn 2009b) indicates that the storm drainage pipes in the immediate vicinity of the Alternative 1 site (in 8th Street SW) are at a low priority for assessment based on risk of failure compared to the system as a whole. No adverse impacts to stormwater drainage utilities are anticipated.

The project is anticipated to require a National Pollutant Discharge Elimination System (NPDES) permit and a Stormwater Pollution Prevention Plan would need to be prepared for construction. With implementation of BMPs and the Stormwater Pollution Prevention Plan, no impacts to stormwater are anticipated.

Solid Waste

The existing Algona Transfer Station would remain in operation until the new transfer station opens. No construction impacts to solid waste services are anticipated.

Electricity

PSE provides electric service adjacent to the UPRR right-of-way along the western boundary of the site. No construction impacts to the electric utility are anticipated.

Natural Gas

The PSE supply pipeline is located on 8th St SW. A short gas main extension may be required to serve the project property. No construction impacts to the natural gas utility are anticipated.

Telecommunications and Cable

No construction impacts to telecommunications or cable providers are anticipated.

Operation

Fire

Alternative 1 would have to meet Auburn Municipal Code (Chapter 13.16) requirements for fire hydrants and fire flow. There would be no impacts to fire services (and emergency services) due to the project. The VRFA would continue to meet needed service levels.

Accident prevention and provision of emergency services, as they may be needed, are an essential focus of all King County transfer station operations. In addition, the division cooperates with other local emergency service providers to ensure that transfer stations are well-served in the event of an emergency. The potential need for emergency services is not expected to be any greater than currently exist (King County 2006).

Police

No impacts to police services are anticipated. The City of Auburn Police Department would continue to meet needed service levels.

Schools

Alternative 1 would not displace or affect any existing schools.

Parks and Recreation Facilities

Alternative 1 would not displace or affect any existing parks or recreational facilities. Access to the park maintenance shop, with the C Street SW driveway entrance, could be impacted by transfer station traffic if that driveway is used to reach the site.

Water, Sanitary Sewer, and Stormwater

Water

No substantial demand or operation impacts to the water utility are anticipated.

Sanitary Sewer

No substantial demand or operation impacts to the sanitary sewer system are anticipated.

Stormwater

No substantial demand or operation impacts to the stormwater system are anticipated.

Solid Waste

Construction of a new transfer station, designed to meet the growing needs of the community, would add garbage transfer and recycling capacity over the long term.

Alternative 1 would help the City of Auburn meet its Comprehensive Plan objective (13.3) that states:

To provide area residents and businesses with a universal and compulsory system for collection and disposal of all solid waste, including ample waste reduction and recycling opportunities intended to maximize diversion of the city's waste stream away from costly landfills, incineration, or other solid waste disposal facilities, and to conserve exhaustible resources.

The existing Algona Transfer Station would remain in operation until the new transfer station opens. No operation impacts to solid waste services are anticipated.

Electricity

No substantial demand or operation impacts to the electric utility are anticipated.

Natural Gas

No substantial demand or operation impacts to the natural gas utility are anticipated.

Telecommunications and Cable

If Auburn requires upgrades to C Street SW as a condition of the proposal it may require placement of telecommunication conduits. As there is city-owned conduit, the city may require the placement of conduits as part of arterial street improvement projects whether private or public development projects (City of Auburn 2012).

Alternative 1 would benefit from the regional communications using I-Net during operations. No operation impacts to telecommunications or cable are anticipated.

Decommissioning and Deconstruction

It is anticipated that decommissioning, and possible deconstruction, of the existing Algona Transfer Station would occur after a new transfer station is constructed and operating. The use of utilities at the existing Algona Transfer Station would cease after decommissioning. The underground sewer conveyance system would be capped and remain in place. The stormwater system would remain in place to handle site runoff. Other utilities would be capped or disconnected. No impacts to public services or utilities are anticipated.

Alternative 2

Construction

Fire

Requirements from the VRFA and other potential impacts during construction for Alternative 1 would also apply to Alternative 2.

The Alternative 2 site is currently being served by the VRFA. All emergency calls are routed through the centralized Valley Communications Center dispatch system that determines which fire station and equipment will respond to a 9-1-1 call. Station 38, the nearest fire station, is staffed 24 hours a day, 7 days a week by one captain and two firefighters.

Algona enforces the International Fire Code in accordance with Washington State law as outlined in the Valley Regional Fire Protection Service Authority Plan (City of Algona 2015a).

Alternative 2 would be developed to meet all national and local codes and standards. No impacts to fire services are anticipated.

Police

The potential impacts for Alternative 1 would also apply to Alternative 2.

Schools

No construction impacts to schools would be anticipated because there are no schools near the Alternative 2 site that would be affected.

Parks and Recreation Facilities

No construction impacts to parks or recreation facilities would be anticipated because there are none located in the vicinity of the Alternative 2 site.

Water, Sanitary Sewer, and Stormwater

Water

Construction of a new transfer station at this minimally developed site would likely require upgrades to the on-site water service. The new water service for similar projects consist of 8-inch Class 52 ductile iron water main loop around buildings, with provisions included for fire hydrants, and fire sprinkler and domestic services. New on-site water mains are assumed to hook-up to existing city water mains (an 8-inch main is located on West Valley Highway South) and developed to include all water appurtenances including backflow preventers, check valves and domestic and irrigation water meters.

Design of the transfer building would include water considerations described under Alternative 1.

According to the Algona comprehensive plan (City of Algona 2015b), fire flow standards for the city are established by the adoption of the 2009 International Fire Code. Algona has set a goal to meet a fire flow requirement of 2,500 gpm in areas zoned heavy commercial and light industrial. The Alternative 2 site is zoned C-3, Heavy Commercial.

New utility locations would be confirmed and easements developed during design of the project, as part of the project permitting. The City of Algona Water System Plan (July 2013) states; "Existing infrastructure at this location does not meet fire flow requirements of the current zoning." Upgrade needs would be the responsibility of the division and would be determined during design of the transfer station when detailed flow requirements are determined.

All upgrades to the water would be made in coordination with the appropriate public utilities, include public outreach, which would minimize the effects of such interruptions. No impacts to water services are anticipated.

Sanitary Sewer

Construction of a new transfer station at this undeveloped site would likely require upgrades to on-site sewer lines. New utility locations would be confirmed and easements developed during design of the project, as part of the project permitting. The sanitary sewer connection would likely be from Iowa Drive since the system to the south on West Valley Highway South has low capacity.

Alternative 2 would include a similar design based on other recently developed county transfer facilities as described under Alternative 1.

The current 8-inch sanitary sewer service to the site may not be adequate to meet the demand of the new transfer station, although measures to mitigate peak flows could be investigated during design (KPG 2014). Upgrade needs will be the responsibility of the division and would be determined during design of the transfer station. All upgrades to the sewer utility would be made in coordination with public utilities, with adequate public outreach, which would minimize the effects of such interruptions. No impacts to sanitary sewer services are anticipated.

During construction, the contractors would be required to provide temporary sanitary toilets on-site for use by workers and visitors. These facilities would be maintained by a designated subcontractor.

Stormwater

The existing stormwater system on the Alternative 2 site would be replaced by a new stormwater management system with flow control and water quality treatment that will be designed to meet Ecology's *Stormwater Management Manual for Western Washington* (2012) requirements. Treatment and detention of stormwater would be consistent with regional efforts to protect and improve water quality and salmonid habitat conditions in the surface waters downstream of the site.

The current collection of stormwater on-site in three independent segments of storm sewer conveyed under West Valley Highway South is anticipated to require modifications in conjunction with road frontage improvements. There are no indications that upgrades would be required (KPG 2014).

The new stormwater system design could include, as appropriate, water quality treatment and surface and underground detention LID features and LEED design criteria described under Alternative 1.

The Alternative 2 site is adjacent to steep slope area. All work around the steep slope area of the Alternative 2 site would be completed in accordance with applicable geotechnical requirements to minimize impacts to water quality during construction. Applicable standards would be determined following a detailed investigation of actual site conditions. This project is anticipated to require a NPDES permit and a Stormwater Pollution Prevention Plan would need to be prepared for construction.

Sediment, erosion and pollution prevention control measures would be implemented as defined in the Stormwater Pollution Prevention Plan during construction to minimize effects from runoff and erosion. With implementation of BPMs and the Stormwater Pollution Prevention Plan, no impacts to stormwater are anticipated.

Solid Waste

The existing Algona Transfer Station would remain in operation until the new transfer station opens. No construction impacts to solid waste services are anticipated.

Electricity

PSE provides electric service to the site from lines in the West Valley Highway South right-of-way. These electric lines are likely to be more than adequate for future demand from Alternative 2 (KPG 2014). No construction impacts to the electric utility are anticipated.

Natural Gas

PSE maintains a 4-inch gas main in the in the West Valley Highway South right-of-way that would likely be adequate for future demand from Alternative 2. No construction impacts to the natural gas utility are anticipated.

Telecommunications and Cable

No construction impacts to telecommunications or cable providers are anticipated.

Operation

Fire

Alternative 2 would have to meet Algona Municipal Code (Chapter 15.04) requirements for fire hydrants and fire flow. There would be no impacts to fire services (and emergency services) due to the project. The VRFA would continue to meet needed service levels.

Emergency services for King County transfer station operations are described under Alternative 1.

Police

No impacts to police services are anticipated. The Algona Police Department would continue to meet needed service levels.

Schools

Alternative 2 would not displace or affect any existing schools.

Parks and Recreation Facilities

Alternative 2 would not displace or affect any existing parks or recreational facilities.

Water, Sanitary Sewer, and Stormwater

Water

No substantial demand or operation impacts to the water utility are anticipated.

Sanitary Sewer

No substantial demand or operation impacts to the sanitary sewer system are anticipated.

Stormwater

No substantial demand or operation impacts to the stormwater system are anticipated.

Solid Waste

Construction of a new transfer station, designed to meet the growing needs of the community, would add garbage transfer and recycling capacity over the long term.

Operation of a transfer station at a new location would allow for closure of the existing Algona Transfer Station.

Electricity

No substantial demand or operation impacts to the electric utility are anticipated.

Natural Gas

No substantial demand or operation impacts to the natural gas utility are anticipated.

Telecommunications and Cable

Alternative 2 would benefit from the regional communications using I-Net during operations. No operation impacts to telecommunications or cable are anticipated.

Decommissioning and Deconstruction

Decommissioning and possible deconstruction impacts described above for Alternative 1 would also apply to Alternative 2.

West Valley Highway South Frontage and Overlay Improvements

The more stringent of the *City of Algona Public Works Standards (2015)* and *King County Road Design and Construction Standards (2007)* would be followed to minimize impacts to utilities during frontage improvements. Frontage and overlay improvements on West Valley Highway South are not anticipated to result in an increased need for public services. The road frontage improvements would be designed to comply with the requirements of Ecology's *Stormwater Management Manual for Western Washington (2012)*. No impacts to public services or utilities are anticipated from frontage or overlay improvements.

3.13.2.2 Indirect and Cumulative Impacts

No Action Alternative

Indirect Impacts

For solid waste disposal, lack of capacity at the existing Algona Transfer Station would increase the amount of materials collected at other public transfer stations and private recycling

facilities and limit the ability to meet the solid waste management goals for cities within its service area.

Cumulative Impacts

No cumulative public services and utilities impacts are anticipated.

Alternative 1

Indirect Impacts

No indirect impacts to public services and utilities are anticipated.

Cumulative Impacts

No cumulative impacts to public services and utilities are anticipated.

Alternative 2

Indirect Impacts

No indirect impacts to public services and utilities are anticipated.

Cumulative Impacts

No cumulative impacts to public services and utilities are anticipated.

3.13.3 Mitigation Measures

3.13.3.1 No Action Alternative

No mitigation measures are required.

3.13.3.2 Alternative 1

The following BMPs will be implemented to minimize the disturbance to public services during the construction of Alternative 1:

- Coordinate with fire and police services to minimize the possibility of service disruptions during construction
- Maintain access to emergency facilities at all times during construction
- Provide public outreach through multiple outlets for notice of possible disruptions

The following BMPs will be implemented to minimize any short-term disturbance to utilities during construction:

- Coordinate with utilities to minimize the possibility of service disruptions during construction
- Provide public outreach through multiple outlets for notice of possible disruptions

The following stormwater BMPs will be implemented to minimize impacts to stormwater:

- Sediment, erosion and pollution prevention control measures would be implemented as defined in the Stormwater Pollution Prevention Plan during construction to minimize effects from runoff and erosion.
- Silt fences and other appropriate BMPs would be set up on the down gradient side of the disturbed areas for containment of loose material and filtration of surface runoff. All construction runoff would be managed in accordance with applicable water quality requirements. When complete, the project would provide pavement or planting over all disturbed soils for final ground cover.
- To minimize the possibility of tracking soil from the site, the wheels and undercarriage of trucks and other vehicles leaving the site would be washed and the sediment laden wash water would be controlled using erosion control methods prescribed by Auburn and King County BMPs for construction projects. Such practices may include the use of sediment traps, check dams, stabilized entrances to the construction site, erosion control fabric fences and barriers and other strategies to control and contain sediment.

3.13.3.3 Alternative 2

The mitigation measures proposed for Alternative 1 would also apply to Alternative 2.

3.13.4 Significant Unavoidable Adverse Impacts

3.13.4.1 No Action Alternative

No significant unavoidable adverse impacts to public services and utilities are anticipated.

3.13.4.2 Alternative 1

No significant unavoidable adverse impacts to public services and utilities are anticipated.

3.13.4.3 Alternative 2

No significant unavoidable adverse impacts to public services and utilities are anticipated.

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