

## 3.7 Energy and Natural Resources

This chapter describes how implementation of the action alternatives could affect energy and natural resources in the study areas of the Alternative 1 and Alternative 2 sites, compared with the No Action Alternative.

The environmental review determined that with mitigation, no significant unavoidable adverse impacts to energy and natural resources would be anticipated at the sites during construction or operation of the alternatives.

### 3.7.1 Regulatory Context

Under the action alternatives, development that has potential to impact energy and natural resources would require compliance with federal, state, and local regulations. Several federal, state, and local agencies support the protection of human health and the environment. These agencies and applicable regulations related to energy and natural resources are described in the following sections.

#### 3.7.1.1 *Federal Regulations*

##### 3.7.1.1.1 **Energy Policy Act**

The Energy Policy Act addresses energy production in the United States, including energy efficiency; renewable energy; oil and gas; coal; Tribal energy; nuclear matters and security; vehicles and motor fuels, including ethanol; hydrogen; electricity; energy tax incentives; hydropower and geothermal energy; and climate change technology.

#### 3.7.1.2 *State Regulations*

##### 3.7.1.2.1 **State Environmental Policy Act**

SEPA is intended to ensure that environmental values are considered during decision-making by state and local agencies. SEPA procedures require agencies to identify and evaluate whether the proposed project or action will have probable significant adverse environmental impacts, and where appropriate, to develop mitigation measures that will reduce adverse environmental impacts. Proposals with impacts are subject to the County's SEPA substantive authority to approve, deny, or approve with conditions to mitigate the impacts.

##### 3.7.1.2.2 **Washington Utilities and Transportation Commission**

The WUTC regulates private, investor-owned electric and natural gas utilities in Washington. It is the commission's responsibility to ensure regulated companies provide safe and reliable service to customers at reasonable rates, while allowing them the opportunity to earn a fair profit.

WAC 480 – Utilities and Transportation Commission regulates utilities in Washington, including but not limited to electrical, gas, irrigation, telecommunication, and water companies. State law (WAC 480 120)

regulates the rates and charges, services, facilities, and practices of utilities. Any change in customer charges or service provision policy requires WUTC approval.

### **3.7.1.2.3 Clean Building Act**

Washington's Clean Building Act (HB 1257) was signed into law in May 2019. The Clean Building Act required the Washington State Department of Commerce to develop a Clean Buildings Standard (WAC 194-50). The Clean Buildings Act requires all covered commercial buildings to comply with energy management provisions to reduce energy consumption and improve energy efficiency to reduce greenhouse gas emissions from the building sector.

### **3.7.1.3 Local Laws, Plans, and Policies**

#### **3.7.1.3.1 King County**

King County has adopted several plans and regulations related to energy and natural resources. The 2023 King County Comprehensive Plan contains policies and strategies for conservation of lands with long-term commercial significance for farming, forestry, and mineral extraction, and for encouraging their productive and sustainable management. The strategy consists of policies to guide planning, incentives, education, regulation, and purchase or transfer of development rights. KCC Title 21A establishes land use regulations to implement the King County Comprehensive Plan's policies and objectives.

King County also helps enforce the GMA, which provides tools for local jurisdictions to effectively manage growth and provides a vision for the preparation of comprehensive plans.

King County promotes the conservation of energy and natural resources through both voluntary and regulatory means. King County's Green Building and Sustainable Development Ordinance, updated in 2022 through King County Ordinance 19402, ensures the planning, design, construction, remodeling, renovation, maintenance, and operations of any King County owned or financed capital project is consistent with the latest green building and sustainable development practices. The ordinance was implemented as recommended in the SCAP to ensure King County facilities are consistent with the highest green building and sustainable development practices. The SCAP provides strategies to achieve green building goals such as establishing a water use baseline to increase water efficiency and requiring County capital programs to strive for carbon neutral development (SCAP 2020). Ordinance 19402 establishes minimum performance requirements for energy, emissions, stormwater management, and construction and demolition materials diversion, and requires all eligible new construction projects to strive for Leadership in Energy and Environmental Design (LEED) Platinum certification in accordance with King County Title 18 Environmental Sustainability Program and the updated ordinance. 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. The Ordinance also encourages innovation and supports flexibility by adding alternative green building rating systems, including Built Green, Evergreen Sustainable Development Standard, Salmon Safe, and Living Building Challenge,

among others. The SCAP states that King County's Wastewater Treatment Division (KCWTD) and Solid Waste Division shall each independently achieve carbon-neutral operations by 2025.

DNRP, including SWD, participates in PSE's Green Direct Program, where up to 100 percent of their energy is from dedicated, local, renewable energy resources. Small amounts of electricity from newer electricity accounts in PSE's service territory are not procuring 100 percent carbon-free electricity (SCAP 2023).

### 3.7.1.3.2 City of Kirkland

The City of Kirkland promotes energy efficiency in their buildings through voluntary programs. The Kirkland Sustainability Master Plan (2021) set key energy goals such as securing carbon-free electricity, reducing vehicle miles traveled, and reducing the use of natural gas in buildings by converting systems to clean electric. Kirkland's High Performing Green Building Program encourages the public to construct energy-efficient buildings by offering expedited permit review for certified high-performing new buildings.

The Kirkland Comprehensive Plan (2022) also focuses on energy and natural resource policies that support their sustainability initiatives in Chapter V – Environment. The Comprehensive Plan outlines goals for stewardship of natural resources, development of energy efficient buildings, and use of renewable energy. The Comprehensive Plan discusses the adoption of the Natural Resource Management Plan in 2003 which has been used to address environmental issues. The City has used the Natural Resource Management Plan to develop new environmental programs, initiatives, and regulations.

### 3.7.1.3.3 City of Woodinville

Woodinville's Climate Action Plan promotes energy efficiency and includes the following goals:

- Advancing building decarbonization
- Reducing energy use in new and existing buildings
- Increasing energy resilience to climate impacts

Woodinville aims to implement these goals by:

- Following Washington State Building and Energy Code
- Expanding their heat pump program
- Providing contractor incentives
- Promoting green power
- Implementing other programs that improve energy efficiency

The Woodinville Comprehensive Plan (2015) encourages energy-responsible decisions, energy conservation, renewable energy use, and protection of natural resources and critical areas. The Comprehensive Plan outlines key goals for utilities such as "encourage reduced energy consumption, conservation, the use of renewable technologies, and energy responsible land use decisions" and "explore

providing incentives to residents and businesses that improve building energy performance and/or incorporate on-site renewable energy.”

### **3.7.2 Affected Environment**

The following section describes the affected environment for energy and natural resources. Electricity and transportation fuels (diesel fuel and gasoline) are the primary forms of energy that would be consumed under the action alternatives. Soil, sand, gravel, rock, logs (large woody material), timber piles, native grasses, shrubs, trees, and groundcover are the primary natural resources that would be used for project construction under the action alternatives. This section focuses on those energy and natural resources.

#### **3.7.2.1 Study Area**

This section describes the existing energy and natural resources in the study areas of the proposed alternative sites.

The study areas used for assessing direct or indirect impacts to energy and natural resources encompass areas where the proposed project would have the potential to affect energy and natural resource supplies. The relevant service territory for Puget Sound Energy (PSE), which provides electricity service to the project area, includes most of western King County. The study areas for natural resource use include the geographic areas from which soil, sand, gravel, rock, native grasses, shrubs, and trees would be sourced, which are likely to be from a wide area in King County, but for calculations under this chapter, are assumed to be sourced from within 60 miles of the respective sites.

#### **3.7.2.2 No Action Alternative and Alternative 1**

Under the No Action Alternative, SWD would not site a new station in northeastern King County. SWD would continue to operate the existing Houghton Recycling and Transfer Station (RTS).

The existing facility receives electricity from PSE. PSE is the largest energy utility in Washington State, providing electric power to more than one million customers, including those in Kirkland and Woodinville, from a variety of renewable and nonrenewable sources including hydroelectric, natural gas, biomass, coal, and wind. PSE has approximately 3,500 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 2019 PSE customers consumed over 21 million MW hours of electricity (PSE 2020). Average electricity usage (or use) is expected to grow at an average annual rate of 1.2 percent per year during the study period from 2022 to 2045; from 2,500 average MW in 2022 to 3,316 average MW by 2045 (PSE 2021). PSE will continue to purchase additional power supply, as needed, in the future.

Natural gas service in the study area is also provided by PSE. Puget Sound Energy operates the state's largest natural-gas distribution system serving more than 900,000 gas customers in ten counties covering 6,000 square miles. Natural gas is supplied to the area through large interstate pipelines. PSE distributes the gas through more than 26,000 miles of PSE-owned gas mains and service lines. The company

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 0.8 percent per year between 2022 and 2041, from 96,156 million British thermal units per hour (MDth) in 2022, to just 112,918 MDth in 2041 (PSE 2021). (see Chapter 3.14 Public Services and Utilities for more information on PSE).

Diesel and gasoline are supplied to the No Action and Alternative 1 study area largely from within Washington, including from five in-state refineries (EIA 2023). Numerous commercial outlets in the project study area provide petroleum products, including vehicle and equipment gasoline and diesel fuels (e.g., biodiesel), and machinery lubricants; or from mobile or on-site equipment fueling services. Fuels used by the existing Houghton RTS for transfer trucks, SWD vehicles, and non-road equipment such as excavators, yard goats, and on-site waste handling equipment are supplied by commercial vendors.

If vegetative landscape materials are needed at the No Action Alternative or Alternative 1 site, they are obtained from local nurseries, or from nurseries on the [King County native plant nursery list](#). Mineral resources and construction materials are available from numerous sources within King County that have sufficient supplies.

### **3.7.2.3      *Alternative 2***

The Alternative 2 site is currently used for commercial uses, including construction, a portable toilet rental, manufacturing, and automotive businesses, which would relocate. A portion of the site is vacant and undeveloped.

Electricity and natural gas also are supplied to the Alternative 2 site and study area by Puget Sound Energy (PSE). See Section 3.7.2.2 for additional information on PSE energy and natural gas usage.

The Alternative 2 study area is supplied with vegetative landscape materials from local nurseries, or from nurseries on the King County native plant nursery list. In Woodinville specifically, native plant nurseries include Classic Nursery & Landscape Company, Olympic Nursery, and Tadpole Haven Native Plants. Fuels, mineral resources, and construction materials would be obtained from numerous sources within King County that have sufficient supplies to support the Alternative 2 study area.

## **3.7.3      Environmental Impacts**

### **3.7.3.1      *No Action Alternative***

Under the No Action Alternative, existing conditions for energy and natural resource use would continue for an indeterminate time into the future, and King County would continue maintenance and repair of the Houghton RTS if/as needed to continue serving as a basic means of solid waste management.

If a new NERTS facility were not built, the existing Houghton RTS would use electricity at about the same rate as it does now (including electricity used for lighting, electronic equipment, communications, etc.).

As population in the study area increases, the amount of waste brought to the Houghton RTS could increase resulting in increased use of fuel for transfer truck trips between the RTS and CHRLF, and

increased customer fuel usage for self-haul and commercial disposal. Continued use of the existing Houghton RTS, which does not have a compactor, would result in a continuation of the current projection for more transfer truck trips from the RTS to the CHRLF, resulting in equal or more fuel usage than the action alternatives. During operation, it is anticipated that the No Action Alternative would increase from 50 weekday trips and 13 weekend trips in 2016 to 66 weekday trips and 18 weekend trips in 2040 to CHRLF to dispose of waste (see Section 3.2.3.1.2) (KCSWD 2023). It is 24.1 miles from the Houghton RTS to CHRLF and transfer trucks operate at approximately seven mpg, so the No Action Alternative would use approximately 56,000 gallons in 2024 and approximately 77,000 gallons in 2040 per year if truck trips continued as is. However, an increasing number of customer vehicles may be electric-powered, and SWD anticipates converting its transfer truck fleet to electric vehicles over time, so increased trips to and from the transfer station should have gradually decreasing impacts on diesel fuel supplies. During operation, transfer station equipment that uses diesel fuel or gasoline includes backhoes and yard tractors. Forklifts could be powered by propane or electric batteries. Emergency (i.e., backup) generators also use diesel fuel. Waste Management collection trucks run on natural gas, so if the amount of waste at the RTS increased, use of natural gas would likely increase over time.

PSE's 2021 Integrated Resource Plan provides information on how PSE will meet future electricity demand through 2045 (PSE 2021). Because existing energy use does not cause or contribute to an exceedance of supply, nor would be expected to in the future, no indirect or cumulative impacts on energy resources are anticipated under the No Action Alternative. PSE installs natural gas main extensions and new service lines as needed in response to customer demand, so if natural gas were needed at the existing transfer station, distribution lines could be established (City of Kirkland 2022).

Minor demands on forest or vegetation resources are expected under the No Action Alternative because no wood structures or other features made of logs would be installed, but there would likely be minimal use of readily available landscaping materials.

Because energy resources are anticipated to increase (PSE 2021) and use of natural resource supplies would be minor, supplies should be more than adequate to meet the demand from the No Action Alternative. The No Action Alternative would not affect current or future energy or natural resource use from the facility but would result in higher operational impacts than the proposed Alternatives 1 and 2. No direct, indirect, or cumulative impacts on energy and natural resources are anticipated under the No Action Alternative.

### **3.7.3.2 Impacts Common to All Action Alternatives**

#### **3.7.3.2.1 Impacts from Construction**

##### **3.7.3.2.1.1 Direct Impacts**

##### **3.7.3.2.1.2 Energy**

Construction of the action alternatives would consume energy during manufacture of construction materials, transportation of materials to the site, and operation of machinery during construction. Energy in the form of electricity and fuel would be consumed during construction, which would be expected to last approximately 30 months.

In order to advance King County's energy efficiency goals, SWD would implement the following 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, 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.

With implementation of the measures described above, electricity use during construction is expected to be a negligible impact relative to the overall energy availability and use in the region. During construction, it is unlikely that natural gas will be used and therefore impacts would be non-existent or insignificant.

Vehicles, heavy machinery, and independently powered equipment (e.g., generators) associated with construction of the new NERTS facility are typically powered by petroleum-based fuels such as diesel, gasoline, and compressed natural gas. The SWD-owned equipment will use alternative fuels, to the extent practicable. Numerous commercial outlets in the project study area provide petroleum products, including vehicle and equipment gasoline and diesel fuels (e.g., biodiesel), and machinery lubricants.

With existing supplies of electricity, diesel and gasoline fuels and the numerous commercial outlets in the project study areas, energy use during construction is expected to have a negligible impact relative to the overall energy availability and use in the region.

##### **3.7.3.2.1.3 Natural Resource Supply**

Lands in the study areas to be used as sources for soil, sand, gravel, and rock are designated in the King County Comprehensive Plan as Natural Resource Lands (King County 2023) and encompass lands designated for conservation and sustainable use of agricultural, forest, or mineral resources.

The King County Comprehensive Plan identifies existing and potential mineral extraction sites to conserve mineral resources, promote compatibility with nearby land uses, protect environmental quality, maintain,

and enhance mineral resource industries, and as a basis to notify property owners of the potential for mineral extraction activities (King County 2023). Designated Mineral Resource sites, Potential Surface Mineral Resources sites, and Mineral Resource Overlay areas in King County are shown in the King County Comprehensive Plan. Table 3.7-1 shows the number and size of active surface mine permit sites in King County. Based on the data presented in Table 3.7-1, the project team anticipates that the regional supply of mineral resources is greater than that needed for the action alternatives.

<b>Table 3.7-1. Number and Size of Active Surface Mine Permit Sites in King County.</b>		
<b>Location</b>	<b>Number of Sites</b>	<b>Acreage</b>
King County	26	4,141

Source: Washington State Department of Natural Resources (WDNR 2021a, 2021b)

The King County Comprehensive Plan also identifies Forest Production Districts to prevent intrusion of incompatible uses, manage adjacent land uses to minimize land use conflicts, and prevent or discourage conversion from forestry to other uses (King County 2023). Designated Forest Production Districts and Forest Resource Lands in King County are shown in the King County Comprehensive Plan. Table 3.7-2 shows the approximate size of lands designated as forest resource lands in King County. Action alternatives may use forestry resources for lumber in compliance with Green Building standards. Based on the data presented in Table 3.7-2, the project team anticipates that the regional supply of forestry resources is greater than that needed for the action alternatives.

<b>Table 3.7-2. Areas of Designated Forest Production Districts in King County.</b>	
<b>Location</b>	<b>Acreage</b>
King County	825,000

Source: King County 2023

Construction materials used in the construction of modern recycling and transfer stations typically include sand, gravel, steel, aluminum, copper, concrete, gypsum, and asphalt. As discussed above, several gravel pits and quarries are located in King County and available for use by 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 study areas. The supply of construction materials in the study areas is distributed through a large number of wholesale and retail distributors nearby in King County and beyond. Other raw construction materials may be sourced locally, regionally, nationally, or internationally.

#### **3.7.3.2.1.4 Indirect Impacts**

No indirect impacts are expected from production and quarrying of mineral resources, construction materials, and forestry and vegetation resources as a result of the proposed action alternatives; therefore, no significant indirect impacts are anticipated.



### 3.7.3.2.2 Impacts from Operation

#### 3.7.3.2.2.1 *Direct Impacts*

All action alternatives would have similar potential to affect energy use, but the RTS's design would be more energy efficient than the current transfer station under the No Action Alternative. The action alternatives would have similar electricity uses to the existing transfer station, which uses electricity for offices (lighting, office equipment, cooling, and heating), storage buildings (lighting, cooling, and heating), computers and electronics, as well as lighting for the driveway and parking lot. Expanded recycling under the action alternatives could increase energy use compared with the No Action Alternative because additional recycling opportunities would be available in additional buildings requiring electricity under the action alternatives and may include additional equipment.

The project team anticipates that the total demand for electricity needed to power the new NERTS facility, equipment, and ancillary uses would be met by existing supplies; therefore, the operation of all action alternatives would have insignificant adverse impacts to energy resources. As discussed under Section 3.7.1.3, King County regulations and practices encourage new construction to prioritize improved energy efficiency through LEED and the Green Building Program. Based on these local energy efficiency goals, the action alternatives are anticipated to have improved energy efficiency compared with the existing building under the No Action Alternative, which could result in fewer energy impacts during operation.

During Operation, it is anticipated that minor amounts of natural gas will be used and therefore impacts would be non-existent or insignificant. SWD-owned equipment will use alternative fuels, to the extent practicable, and SWD will seek to use hybrid or alternative-fueled vehicles as technology and funding allow. Some fuel would be required to power some transfer station equipment and the emergency generator, but in amounts that would have a negligible impact on existing supplies.

Under all action alternatives, mining of mineral resources and harvesting of forestry and vegetation resources for facility maintenance, repair, or landscaping activities would continue at levels likely below historical levels. Because the current level of extraction of these natural resources does not constitute a significant use of the available resources within King County and the region, future uses associated with project operation and maintenance would not result in measurable adverse impacts to these natural resources.

#### 3.7.3.2.2.2 *Indirect Impacts*

No indirect impacts are expected from production and quarrying of mineral resources, construction materials, and forestry and vegetation resources as a result of the proposed project; therefore, no significant indirect impacts are anticipated.

### 3.7.3.2.3 Cumulative Impacts

Under the action alternatives, the proposed project would contribute to increased energy and natural resource consumption during construction of the new transfer station. There are other anticipated

development projects in the study area that would also contribute to increased energy and natural resource consumption. Anticipated projects include residential development to accommodate increased population, transportation development, and commercial development within Kirkland and Woodinville.

The proposed project and other development projects would also consume energy in the form of electricity and fuel. With existing capacity, PSE would be able to provide adequate service to the project and other customers—including other reasonably foreseeable development projects—in the study areas.

The vehicle and equipment use associated with the proposed project and other reasonably foreseeable development projects would consume fuel for their operation. However, fuel availability is not constricted, either locally or regionally. The cumulative fuel consumption associated with other nearby projects in combination with the proposed project is not expected to impact fuel availability for other uses. The cumulative vehicle and equipment use would not have the potential to result in significant adverse cumulative impacts to energy and natural resources.

The proposed project and other nearby development projects would also consume natural resources in the form of soil, sand, gravel, rock, trees, shrubs, and other vegetation. The project team expects that, as described for the proposed project, other nearby projects' natural resource demands could be met with existing capacity; therefore, no cumulative adverse impacts on natural resources are expected.

Construction of the proposed project and the other development projects would use traditional building materials such as steel, cement, sand, and gravel. As previously discussed in this section, these resources are not expected to be in short supply. Therefore, the proposed project, in combination with the other reasonably foreseeable development projects, would not result in significant adverse cumulative impacts to energy and natural resources.

The energy and natural resource impacts from the construction and operation of the proposed actions would not have significant cumulative impacts on study areas.

### **3.7.3.3 Alternative 1A**

#### **3.7.3.3.1 Impacts from Construction**

##### **3.7.3.3.1.1 Direct Impacts**

Construction of Alternative 1A in Kirkland would include the impacts described in Section 3.7.3.2.1.1. Alternative 1A includes removal of the existing transfer station building prior to construction of the new station and inclusion of a facility to house future private recycling or reuse operations or service providers (TBD); Alternative 1A does not provide for an MRW collection facility.

Demolishing the existing transfer station under Alternative 1A and replacing it with a new TBD building would use more energy than the No Action Alternative and about the same as Alternative 1B if that option includes replacement of the transfer station building with a new TBD building. Alternative 1A would use more energy than Alternative 1B if that option includes repurposing the transfer station building as a new TBD building. Alternative 1A would use slightly less than amount of energy as Alternative 2 since both

alternatives include construction of a new TBD building and demolition of existing structures, but Alternative 2 includes construction of an MRW facility.

Alternative 1A would use native shrubs and trees in landscaping for the new transfer station. It is anticipated that construction would include exporting 40,625 cubic yards of material and would import 33,185 cubic yards of soil, rock, aggregate, or other fill material (assuming no re-use of on-site material) (NERTS Transportation Assessment).

The NERTS Transportation Assessment (Appendix H) estimates 3,695 truck trips would be required for material movement over the 30-month construction period of Alternative 1A. Alternative 1A may also include removal of some existing waste in the development footprint to accommodate construction of new facilities. It is assumed that most imported materials would originate from within 60 miles of the site and trucks operate on average at 7 mpg as a worst case. Vehicles delivering construction materials to the project area, including materials for backfilling potential waste excavations from the existing closed Houghton landfill, and removing materials from the site would use approximately 32,000 gallons of diesel and gasoline during the construction period (using the assumptions previously mentioned).

Because demand for diesel and gasoline needed to fuel construction equipment and delivery vehicles under Alternative 1A would be met by existing supplies, no significant adverse impacts to energy resources are anticipated. However, energy and natural resource impacts during construction of Alternative 1A would be greater than energy impacts under the No Action Alternative because the No Action Alternative would not include construction.

#### **3.7.3.3.1.2 Indirect Impacts**

Indirect impacts for Alternative 1A are not anticipated as explained in Section 3.7.3.2.1.4.

### **3.7.3.3.2 Impacts from Operation**

#### **3.7.3.3.2.1 Direct Impacts**

Alternative 1A would use approximately 770,000 kilowatt hours (kWh) per year of electricity based on an average of 2020-2022 Factoria Recycling and Transfer Station data, which would be the primary and only energy source for transfer station operation, compared with the approximately 170,000 kWh per year at the existing Houghton RTS between 2020 and 2022. Alternative 1A would use electricity to power office needs (lighting, office equipment, cooling, and heating), storage buildings (lighting, cooling, and heating), computers and electronics, scale house, TBD building, waste compactor, and outdoor lighting. Based on PSE projections, the use of electricity would not exceed existing supplies under this alternative, no significant adverse impacts to energy resources are anticipated (PSE 2021).

Alternative 1A would use approximately 56,000 gallons of fuel in 2040 to transport materials to and bring empty trailers back from CHRLF, about 70 percent of the estimated 77,000 gallons per year used under the No Action Alternative (assuming 66 weekday trips and 18 weekend trips each week). This is because

Alternative 1A will have a compactor which would increase the amount of waste able to be transported each trip. This fuel use may be reduced in the future over time as SWD electrifies its transfer truck fleet.

#### **3.7.3.3.2 Indirect Impacts**

Indirect impacts for Alternative 1A are not anticipated as explained in Section 3.7.3.2.2.

#### **3.7.3.3.3 Cumulative Impacts**

Cumulative impacts for Alternative 1A are anticipated to be the same as those stated in Section 3.7.3.2.3.

### **3.7.3.4 Alternative 1B**

#### **3.7.3.4.1 Impacts from Construction**

##### **3.7.3.4.1.1 Direct Impacts**

Construction of Alternative 1B would include the impacts described in Section 3.7.3.2.1.1. Alternative 1B may include removal and replacement of the existing transfer station building after construction of the new station or repurposing the existing transfer station building to house future private recycling or reuse operations or service providers (TBD); Alternative 1B also does not provide for an MRW collection facility.

Alternative 1B would require the use of fuel for construction and demolition activities and material deliveries. The current transfer station is 13,608 square feet (King County Parcel Viewer). If it is assumed that there would be 155 pounds of demolition waste per square foot, 450 pounds per cubic yard, and each large disposal container can transport up to 50 cubic yards, removal of the demolished transfer station building would generate 94 truck trips. If Alternative 1B includes demolition and replacement of the transfer station building with a new TBD building, it would use about the same amount of truck trips and fuel as Alternative 1A (about 32,000 gallons of diesel and gasoline) and Alternative 2 as both include demolishing existing structures; both alternatives 1B and 1A would use more energy than the No Action Alternative. If Alternative 1B includes repurposing the transfer station building as a new TBD building, it would use fewer truck trips and less fuel (about 800 fewer gallons) than Alternative 1A and Alternative 2, since both alternatives include construction of a new TBD building and demolition of existing structures.

Alternative 1B may include removal of some existing waste in the development footprint to accommodate construction of new facilities. Construction of Alternative 1B would result in slightly more truck trips and fuel usage for import and export of soil, rock, aggregate, or other fill material compared with Alternative 1A due to the larger potential site development area and additional backfilling of potential closed landfill waste excavations.

Alternative 1B would also use native shrubs and trees in landscaping for the new transfer station at a rate commensurate with the overall size of the site development, similar to Alternative 1A.

Because demand for diesel and gasoline needed to fuel construction equipment and delivery vehicles under Alternative 1B would be met by existing supplies, no significant adverse impacts to energy resources

are anticipated, and like Alternative 1A, Alternative 1B would be greater than energy impacts under the No Action Alternative.

#### **3.7.3.4.1.2 Indirect Impacts**

Indirect impacts for Alternative 1B are not anticipated as explained in Section 3.7.3.2.1.4.

### **3.7.3.4.2 Impacts from Operation**

#### **3.7.3.4.2.1 Direct Impacts**

Operation of Alternative 1B would include the impacts described in Section 3.7.3.2.1.2.

Similar to Alternative 1A, Alternative 1B would use approximately 770,000 kilowatt hours (kWh) per year of electricity based on an average of 2020-2022 Factoria Recycling and Transfer Station data. Operational uses of electricity for Alternative 1B would be the same as for Alternative 1A. Based on PSE projections, the use of electricity would not exceed existing supplies under this alternative, no significant adverse impacts to energy resources are anticipated (PSE 2021).

Alternative 1B also would use approximately 56,000 gallons of fuel in 2040 to transport materials to and bring empty trailers back from CHRLF, 70 percent of the estimated 77,000 gallons per year used under the No Action Alternative (assuming 66 weekday trips and 18 weekend trips each week). This is because Alternative 1A will have a compactor, which would increase the amount of waste transported per trip. This fuel use may be reduced in the future over time as SWD electrifies its transfer truck fleet.

#### **3.7.3.4.2.2 Indirect Impacts**

Indirect impacts for Alternative 1B are not anticipated as discussed in Section 3.7.3.2.2.2.

#### **3.7.3.4.2.3 Cumulative Impacts**

Cumulative impacts for Alternative 1B are anticipated to be the same as those discussed in Section 3.7.3.2.3.

### **3.7.3.5 Alternative 2**

#### **3.7.3.5.1 Impacts from Construction**

##### **3.7.3.5.1.1 Direct Impacts**

Construction of Alternative 2 in Woodinville would also consume energy during manufacture of construction materials, transportation of materials to the site, and operation of equipment and machinery, and would include the impacts described in Section 3.7.3.2.1.1. Alternative 2 includes a TBD facility to house future private recycling or reuse operations or service providers an MRW collection facility.

Construction of Alternative 2 would use about the same amount of energy as Alternative 1A since both alternatives include construction of new transfer, administration, recycling, scale house, and TBD buildings and demolition of existing structures. Construction of Alternative 2 would use about the same amount of energy as Alternative 1B if the option chosen for that alternative includes demolition and replacement of the existing transfer building, and more if the Alternative 1B option includes repurposing the transfer station building as a new TBD building.

Alternative 2 would use native shrubs and trees in landscaping for the new transfer station. The NERTS Transportation Assessment (Appendix H) estimates that construction under Alternative 2 would include exporting 61,750 cubic yards of material and would import 12,450 cubic yards of soil, rock, aggregate, or other fill material (assuming no re-use of on-site material), resulting in 3,725 truck trips over the 30-month construction period of Alternative 2. Assumptions for material movements are similar to those for Alternative 1 and that vehicles delivering construction materials to the project area and removing materials from the site would use approximately 32,000 gallons of diesel and gasoline during the construction period, fuel use similar to Alternative 1.

Because demand for diesel and gasoline needed to fuel construction equipment and delivery vehicles under Alternative 2 would be met by existing supplies, no significant adverse impacts to energy resources are anticipated. However, energy and natural resource impacts during construction of Alternative 2 would be greater than energy impacts under the No Action Alternative because the No Action Alternative would not include construction.

#### **3.7.3.5.1.2 Indirect Impacts**

Indirect impacts for Alternative 2 are not anticipated as explained in Section 3.7.3.2.1.4.

#### **3.7.3.5.2 Impacts from Operation**

##### **3.7.3.5.2.1 Direct Impacts**

Operation of Alternative 2 would include the impacts described in Section 3.7.3.2.1.2.

Similar to alternatives 1A and 1B, Alternative 2 would use approximately 770,000 kilowatt hours (kWh) per year of electricity based on an average of 2020-2022 Factoria Recycling and Transfer Station data. Alternative 2 would use electricity in uses similar to alternatives 1A and 1B. Alternative 2 would also require power to an MRW collection facility which would not be included under Alternative 1. Based on PSE projections, the use of electricity would not exceed existing supplies under this alternative, thus no significant adverse impacts to energy resources are anticipated (PSE 2021).

Alternative 2 would use approximately 70,000 gallons of fuel in 2040 to transport materials to and bring empty trailers back from CHRLF, about 90 percent of the estimated 77,000 gallons per year used under the No Action Alternative (assuming 66 weekday trips and 18 weekend trips each week). However, Alternative 2 would likely result in fewer transport trips than the No Action Alternative because it will include a compactor which would increase the amount of waste transported per trip.

#### **3.7.3.5.2.2 Indirect Impacts**

No indirect impacts are anticipated from Alternative 2, as explained in Section 3.7.3.2.2.2.

#### **3.7.3.5.3 Cumulative Impacts**

Cumulative impacts for Alternative 2 are anticipated to be the same as those stated in Section 3.7.3.2.3.

### **3.7.4 Mitigation Measures**

There would be no significant adverse impacts to energy and natural resources with the action alternatives. King County would incorporate energy efficiency efforts into construction and operation of the new NERTS facility under all action alternatives. For example, the proposed project would conserve energy during construction and operation by using light-emitting diode (LED) light fixtures. LED light fixtures use substantially less energy than traditional high-intensity discharge lighting fixtures and have a much longer useful life. Compliance with the applicable regulations identified in Section 3.7.1 would reduce impacts on energy and natural resources. Additionally, the action alternatives would utilize solar panels to further reduce demand on traditional energy resources. Beyond designed energy efficiency measures and compliance with regulations, no additional mitigation measures are identified.

### **3.7.5 Significant Unavoidable Adverse Impacts**

No significant unavoidable adverse energy and natural resource impacts are anticipated under the No Action Alternative, Alternative 1, or Alternative 2.