CHAPTER 15. PUBLIC SERVICES

15.1 HOW WERE PUBLIC SERVICES IN THE COMBINED STUDY AREA EVALUATED?

This chapter describes existing public services including police, fire, and emergency response services located within the combined study area (Alternatives 1, 2, and 3 as depicted on Figure 1-4 in Chapter 1). The combined study area spans large geographic regions that were reviewed programmatically because specific project locations have yet to be identified. The EIS Consultant Team identified existing emergency response and police services by reviewing local comprehensive plans for the study area communities. Information on emergency response and polices services was obtained from emergency service provider's website information, publicly available plans and reports, and through interviews with representatives of service providers.

The topic of environmental and public health, including public safety and hazardous materials, is discussed in Chapter 8.

Public Services Key Findings

Existing local and regional emergency services are expected to be adequate to address increased demand for fire and emergency response services; minor to moderate impacts could occur. Impacts on response times from construction would also be minor to moderate depending on the alternative.

Although a significant impact on public services could occur if a pipeline leak or an explosion resulted from the project, the risk is minimized by conformance with industry standards, regulatory requirements, and construction and operational procedures that address pipeline safety.

15.2 WHAT ARE THE RELEVANT PLANS, POLICIES, AND REGULATIONS?

Public services within the study area communities are primarily managed and regulated by state and local government agencies. The Washington State Growth Management Act requires cities and counties to develop and adopt comprehensive plans that include long-range planning for future public service needs. Among the required elements is a capital facility plan element. The capital facility plan element must include an inventory of existing facilities showing locations and capacities, forecasts of future needs, proposed locations and capacities of new or expanded facilities, and a financing strategy (Revised Code of Washington [RCW] 36.70A.070(3)).

Comprehensive plans for study area communities range from those containing basic information primarily focused on meeting requirements under the Growth Management Act (e.g., The Town of Beaux Arts Village, 2004) to inclusive documents containing a variety of goals and policies related to the provision of police, fire, and emergency services with references to master plans for associated equipment and facilities (e.g., City of Bellevue, 2015). All plans describe general provisions for fire and police protection services and facilities, and some describe existing and ongoing regional coordination efforts to ensure high levels of service through cost-effective means. Common goals expressed throughout the study area plans are to ensure citizens' feelings of safety and provide effective, efficient, and equitable police, fire, and emergency services and facilities.

15.3 WHAT PUBLIC SERVICES ARE AVAILABLE IN THE COMBINED STUDY AREA?

Emergency services include fire, emergency medical response, and police services, which are provided by cities, counties, and emergency medical providers throughout the combined study area. Individual communities may have their own police and fire departments or may contract with other jurisdictions, such as adjacent cities or the county, to provide the services.

15.3.1 Fire and Emergency Response Services

15.3.1.1 Providers, Levels of Service, and Response Times

Table 15-1 summarizes fire and emergency services providers in the combined study area. The Cities of Bellevue, Kirkland, Redmond, and Renton have their own fire departments that provide fire and emergency medical services. The Bellevue Fire Department also provides fire and emergency medical services for Newcastle, Hunts Point, Yarrow Point, Clyde Hill, Medina, and Beaux Arts Village. Eastside Fire and Rescue provides fire and emergency services to Issaquah and Sammamish and unincorporated areas of King County within the combined study area. Multiple fire stations are located throughout the service areas to ensure timely response to emergency calls. For large incidents, fire departments from outside of the combined study area could be dispatched as backup (Anderson, personal communication, 2015).

Table 15-1. Fire and Emergency Medical Services (EMS) Provider for Each Community

Fire and EMS Service Provider	Community Served
Bellevue Fire Department	Bellevue, Newcastle, Hunts Point, Yarrow Point, Clyde Hill, Medina, Beaux Arts Village, and much of east King County (for Medic One ALS)
Eastside Fire and Rescue	Issaquah, Sammamish, King County
Kirkland Fire Department	Kirkland
Redmond Fire Department	Redmond, and northeast King County (for Medic One ALS)
Renton Fire and Emergency Services Department	Renton
King County Public Health – Seattle & King County	Renton and south King County (for Medic One ALS)

Sources: Bellevue Fire Department 2015; Eastside Fire and Rescue 2015; Redmond Fire Department 2015; Renton Fire and Emergency Services Department 2015; King County Medic One 2015.

Hospitals and emergency medical facilities are located throughout the combined study area. One such facility is Overlake Hospital Medical Center in Bellevue, a level III trauma center. The Bellevue Fire Department, Redmond Fire Department, and King County Public Health – Seattle & King County provide advanced life support (ALS) and transport services for the Medic One/Emergency Medical Services (EMS) program, which runs out of Overlake Hospital. Bellevue Fire Department operates four paramedic ALS units that serve Bellevue and much of east King County; Redmond Fire Department operates three ALS units that serve northeast King County and King County operates eight ALS units that serve Renton and south King County.

In addition to fire suppression and emergency medical response, fire departments in the combined study area also have training and equipment to provide hazardous materials spill response and rescue services. Regional emergency response capacity includes rope, confined space, near surface and swift water, hazardous material, trench, advanced vehicle, and structural collapse rescue. Responders can be trained at the operations level and the technician level. First responders at the operations level protect nearby persons, property, or the environment from the effects of the emergency. Technician responders receive additional training and assume a more central role in that they perform physical rescues or attempt to abate or arrest the cause for emergency. Responders within the departments pursue technician- and operations-level training on a regular basis. In the event of a major incident, rescuers and specialized response units from throughout the region arrive to ensure full capacity (Moulton, personal communication, 2015a; Turner, personal communication, 2015).

Throughout the combined study area, individual fire departments set levels of service and target response times. Levels of service standards generally refer to a number of units per member of the public (units can be measured in numbers of firefighters, fire engines, fully equipped response components, or another measure). Levels of service standards can also be used to determine the number of fire facilities needed per geographic service area. The response time is the time interval from receipt of the alarm at the primary public safety answering point (PSAP) to when the first emergency response unit is initiating action or intervening to control the incident. Targets vary depending on the nature of the incident (fire, life support, or other) and level of risk to public safety (low versus high). Within the combined study area, response targets vary but are generally 10 minutes or under, according to information available in comprehensive plans, master plans, and reports (Eastside Fire and Rescue, 2013; City of Renton, 2015; City of Redmond, 2011; City of Bellevue, 2014).

The EIS Consultant Team interviewed representatives of fire departments within the combined study area to determine the departments' ability to quickly and effectively respond to fires and medical emergencies that could potentially be associated with the type of facilities considered for the project proposal (Bunting, personal communication, 2015). Interview questions included whether the department is currently meeting response targets; whether the department has the ability to respond to incidents involving electrical facilities, including downed 115 kV and 230 kV transmission lines, and substation fires and explosions; whether there are different levels of complexity in responding to each scenario; and how the department coordinates with PSE (see Appendix K for interview questions). Departments were also interviewed to determine their ability to respond to a fire or explosion along the Olympic Pipeline, including training and response protocols. Responses were used to determine whether departments have adequate capacity to effectively respond to the range of emergencies that could occur under the alternatives.

Fire departments throughout the combined study area reported meeting level of service and response time targets for various types of emergencies, including emergency medical and other incidents (Moulton, personal communication, 2015a; Walgren, personal communication, 2015; Bunting, personal communication, 2015; and Turner, personal communication, 2015), with the exception of Eastside Fire and Rescue who fell just short of a structural fire response target by “literally seconds” in 2014 (Tryon, personal communication, 2015). When an emergency is reported and fire and emergency services are needed, the request for services is routed through one of three dispatch systems in King County. If available resources are limited due to a high volume of incident reporting (such as during heavy storms), response times may take “a little longer” (Bunting, personal communication, 2015). The Bellevue Fire Department is unique in that it is accredited by the Commission on Fire Accreditation International (CFAI); an element considered in the accreditation process is meeting response time targets (Moulton, personal communication, 2015a).

15.3.1.2 Electrical Incidents

Fire departments reported using standard operating procedures to respond to live electrical fires, including downed 115 kV and 230 kV overhead transmission lines on houses and across rights-of-way (Moulton, personal communication, 2015a). Emergency response is coordinated with the utility purveyor through a dispatch system. The fire department and utility purveyor are dispatched simultaneously: Fire department first responders secure the scene and prevent access to the hazard area; and the utility purveyor disconnects or otherwise addresses utility service to the affected equipment. To resolve the emergency, the fire department proceeds to manage fire and emergency medical response, and the utility purveyor manages technical aspects of the emergency, including returning service to customers (Moulton, personal communication, 2015a; Walgren, personal communication, 2015; Bunting, personal communication, 2015; Turner, personal communication, 2015; and Tryon, personal communication, 2015).

Fire departments generally responded that no significant difference exists in their approach to a 230 kV versus a 115 kV incident. A perimeter is secured and the utility purveyor is dispatched to address the utility-specific issue (Moulton, personal communication, 2015a; Walgren, personal communication, 2015; Bunting, personal communication, 2015; Turner, personal communication, 2015; and Tryon, personal communication, 2015). One fire department responded that a greater capacity for harm and damage exists when more power is overhead, and the response would involve securing a larger perimeter than would be secured for lower-power incidents (Moulton, personal communication, 2015a). Generally, the capacity for harm and damage can be minimized if operating under large overhead wires can be avoided (Moulton, personal communication, 2015a). Response actions also include ensuring that adequate resources are deployed to address the incident, such as dispatching additional fire units to the scene and ensuring that law enforcement is present to help isolate the area and direct traffic (Anderson, personal communication, 2015). The fire departments interviewed reported adequate training and capability to respond to live electrical fires, with the provision that PSE also responds with specialized knowledge that enables them to safely address the incident (Moulton, personal communication, 2015a; Walgren, personal communication, 2015; Bunting, personal communication, 2015; Turner, personal communication, 2015; and Tryon, personal communication, 2015).

If there is a fire at a substation, either electrical or oil, PSE sends the appropriately qualified personnel to meet fire department crews on site. If the responding fire department requires additional resources, such as a foam truck from the Port of Seattle, they contact those resources for assistance in responding to the fire (Strauch, personal communication, 2016).

15.3.1.3 Pipeline Fire or Explosion

The Olympic Pipe Line Company (OPLC) *Facility Response Plan* (FRP) provides guidelines to respond to a spill from the Olympic Pipeline, and supplements responders' training and experience during an actual response. Study area communities located along the pipeline corridor have adopted emergency response plans outlining procedures for responding to pipeline incidents (Anderson, personal communication, 2015). In the event of a pipeline rupture or explosion that requires services such as rescue, evacuation, traffic control, hazardous materials cleanup, etc., the first responders will immediately attempt to establish a safe perimeter and will conduct emergency response activities described above. However, response steps that occur following securing the perimeter could be more extensive than for other emergencies, depending on the magnitude of the incident.

For a large incident involving the Olympic Pipeline, the fire department and OPLC technical staff would be contacted simultaneously (Anderson, personal communication, 2015). Fire departments within other jurisdictions could be dispatched as backup, as could OPLC, Port of Seattle Fire Department, and Boeing for backup equipment and fire suppression supplies (Anderson, personal communication, 2015; Strauch, personal communication, 2016). The Incident Commander of the Fire Department and OPLC would collaborate, along with other affected jurisdictions, to form a multijurisdictional unified command (Anderson, personal communication, 2015). Adopted tactics, unified management of the incident, along with management of the perimeter and public safety, would be employed (Anderson, personal communication, 2015).

Both the Bellevue Fire Department and Redmond Fire Department reported having petroleum-absorbent boom systems that could be employed should petroleum products be spilled in a waterway (Anderson, 2015, personal communication; Moulton, personal communication, 2015b). The booms could be used to stop the flow and expansion of the spill, as well as siphon up the product. They also have the means to monitor and contain flow of petroleum products in the sewer system. The response to a fuel leak in the water system is the same as in other situations: locate the leak, contain the incident, and work collaboratively to address the incident. Bellevue Fire Department engines, ladder companies, and hazardous materials response vehicle all have the necessary monitoring instrumentation to permit ongoing evaluation of flammable materials (Moulton, personal communication, 2015b).

Interview respondents indicated that within the last 16 years following the Olympic Pipeline explosion in Whatcom County, many precautionary measures have been taken to increase safety and avoid a pipeline fire or explosion (Anderson, personal communication, 2015;

Moulton, personal communication, 2015b). Stronger laws are in place that require monitoring for digging that occurs near the pipeline (Anderson, personal communication, 2015). Also, pressure changes and flow levels within the pipeline are continuously measured to identify possible leaks, allowing OPLC to address the issue before an incident occurs (Anderson, personal communication, 2015). To monitor for leaks and ensure unauthorized digging is not occurring, OPLC flies the pipeline corridor once per week to check for discoloration of the grass or other anomalies and to ensure unauthorized digging is not occurring within the easement (Anderson, personal communication, 2015). Additionally, product shut-off valves, located at a distance of up to 5 miles, previously were turned by hand only, but are now automated so product flow can be shut off remotely and immediately (Anderson, 2015; Moulton, personal communication, 2015b).

In the event of other utility-related incidents, such as a natural gas line rupture or explosion, the fire department would contact PSE and follow a protocol similar to other incidents: secure the perimeter, isolate the incident, and deny entry to the hazardous area. When the incident is capable of causing a widespread safety concern, additional units from surrounding jurisdictions are employed to contain and manage the incident. The affected utility and fire department are informed of the incident simultaneously. The utility company disconnects service to the area and is dispatched to the scene to coordinate with the Incident Commander, Chief Commander, or another designated fire department official. The affected utility and fire department establish an action plan and engage in emergency management activities (Tryon, personal communication, 2015; Moulton, personal communication, 2015a).

15.3.2 Police Services

Table 15-2 summarizes police service providers in the combined study area. Study area communities primarily rely on municipal police departments for police services. County sheriff departments serve the unincorporated King County area, while local municipal police departments typically serve incorporated cities and towns; some cities contract with the County or another city to provide police service. The Medina Police Department provides law enforcement services for both Medina and Hunts Point. Newcastle, Beaux Arts Village, and Sammamish contract with the King County Sheriff's Office, which also provides police services for unincorporated King County within the study areas.

Many local fire and police agencies now have mutual response agreements, which allow public safety responsibilities to be shared across jurisdictional boundaries. This is especially helpful in emergency situations when sheriff departments are unable to respond in a timely manner, particularly in unincorporated "islands" where city departments may have staff close by who are available to respond.

Table 15-2. Law Enforcement Provider for Each Community

Law Enforcement Provider	Community Served
Bellevue Police Department	Bellevue
Clyde Hill Police Department	Clyde Hill, Yarrow Point
Issaquah Police Department	Issaquah
Kirkland Police Department	Kirkland
King County Sheriff's Department	Newcastle, King County, Beaux Arts Village, Sammamish
Medina Police Department	Medina, Hunts Point
Redmond Police Department	Redmond
Renton Police Department	Renton

Sources: Bellevue Police Department 2015; Clyde Hill Police Department 2015; Issaquah Police Department 2015; Kirkland Police Department 2015; King County Sheriff's Department 2015; Medina Police Department 2015; Redmond Police Department 2015; Renton Police Department 2015

Electric transmission corridors and substations are located throughout the combined study area. The EIS Consultant Team interviewed representatives from major police departments within the combined study area to determine whether they have observed an increased rate of reported crime within the transmission corridors and substations in their service areas (Appendix L). Except for a few incidents of theft of ground wires in a utility corridor no other incidents of unique crime-related problems associated with existing electricity substations or transmission corridors (Farman, personal communication, 2015; Irvine, personal communication, 2015; Parks, personal communication, 2015; and Trader, personal communication, 2015). According to the interview respondents, no problems with graffiti, illegal drug sales and use, or other disorderly or illegal behavior were reported in these areas by police patrols. None of the interview respondents expected that the level of crime would change depending on whether a transmission line corridor was located in an urban or rural location.

Similarly, none of the respondents suggested that there are existing problems with electric substations as places that attract crime, such as graffiti or other property crimes. Respondents stated that no notable difference in crime is likely whether a substation is located within a densely populated area versus a low-density area. Online crime data and mapping reflect that littering, graffiti, theft, and other crime are not disproportionately reported in utility corridors or substations (PublicStuff, 2015).

The response from study area police departments is consistent with available research, which indicates that crime associated with electrical facilities is generally directed at power theft rather than property crime or violent crime (Depuru et al., 2011). However, petty metal theft at electrical utility sites also occurs (Kooi, 2010). Overall, published research focusing on crime occurring in transmission line corridors and at substations is not as well documented.

15.4 HOW WERE POTENTIAL IMPACTS TO PUBLIC SERVICES ASSESSED?

Potential effects on public services were determined by reviewing comprehensive plans and policies of each jurisdiction, conducting phone interviews with the major police and fire departments, and reviewing published literature on the topic of corona interference. Factors considered for the analysis of construction effects included increased demands on emergency services, and the project’s potential to alter or hinder the timely provision of emergency services or other public services during construction. Factors considered for the analysis of operational effects include an increased demand for emergency services, and the ability of emergency services to respond to potential fires and accidents at proposed electric facilities. This analysis address both fire and accident risks confined to electrical facilities, and risks that electrical facilities could have for other nearby or co-located utilities. The potential for facilities included under the alternatives to attract crime and result in increased demand for police services was also addressed.

Based on the potential change to property values described in Chapter 11, this chapter also identifies the potential range of impacts to tax revenue and how that could affect the cities’ ability to continue to provide the same level of public services (FCS Group, 2016).

For this analysis, the magnitude of project-related impacts are classified as being minor, moderate, or significant as follows:

Minor – Conformance with industry standards and regulatory requirements, and implementation of project design, would address potential adverse impacts such that there would be little likelihood of adverse effects. While there could be some temporary or short-term increase in demands on public services requiring local response from public service providers, or localized temporary or short-term changes in response times, there would be no long term changes**.**

Moderate – Conformance with industry standards and regulatory requirements, and implementation of project design, would address most potential adverse effects, but some reasonable potential for adverse effects would remain. Temporary or short-term increase in demands on public services could require regional response providers to assist local response. Temporary or short term changes in response times would be noticeable and may require providers to make service adjustments, but there would be no long term changes**.**

Significant –Even with conformance with industry standards and regulatory requirements, and implementation of project design, adverse impacts are likely. Impacts are also considered significant if there would be permanent increase in demand, or changes in response times, that could tax the ability to provide adequate fire protection services, emergency response services, and law enforcement services**.**

15.5 WHAT ARE THE LIKELY CONSTRUCTION IMPACTS RELATED TO PUBLIC SERVICES?

15.5.1 Construction Impacts Considered

15.5.1.1 Increased Demand for Emergency Services

Construction of the new transmission lines, expanded substations, distributed generation, generators, and energy storage facilities could temporarily increase demand for emergency services. The discussion of construction impacts considers the demand created for fire, police, or medical response services if any of the following emergency incidents occurred:

- Injury or fire due to a construction accident;
- Spill of hazardous materials;
- Damage to an existing natural gas pipeline or the Olympic Pipeline; or
- Theft of materials or equipment.

See also Chapter 8 for discussion of potential pipeline rupture risks.

15.5.1.2 Changes in Response Times

To varying degrees, construction could result in increased congestion along adjacent roadways as a result of temporary reductions in available lane width for travel, changes from signalized to manual intersection control, roadway closures, detours, and general construction activities associated with the project. This could temporarily affect access and response times for public service providers.

15.5.2 No Action Alternative

Under the No Action Alternative, maintenance activities would occur and could intensify, but they would not involve a significant increase in demand for emergency services. Occasional conductor replacement, implementation of new technologies not requiring discretionary permits, and installation of distributed generation facilities under PSE's conservation program would require minor construction activities. Construction impacts on public services would be negligible.

15.5.3 Alternative 1: New Substation and 230 kV Transmission Lines

Impacts are generally described according to the major components associated with Alternative 1 (substation impacts first, followed by transmission line impacts).

15.5.3.1 Option A: New Overhead Transmission Lines

15.5.3.1.1 Increased Demand for Emergency Services

Fire department service calls could increase related to inspection of specific construction projects and to respond to potential construction-related accidents, injuries, and spills. Site preparation and construction of new electric infrastructure could also increase the risk of an accidental fire requiring a response by the fire department. If construction-related accidents, injuries, spills, or fires were to occur, PSE personnel and the local fire departments are trained to respond.

Fire department response would also be required if construction equipment or activity damaged nearby natural gas or petroleum pipelines. The Olympic Pipeline crosses near the Lakeside substation and follows the same corridor as PSE's 115 kV easement, within the service areas for Bellevue Fire Department and Redmond Fire Department. In addition, several high-pressure gas mains cross PSE's easement, and gas mains are also located in other portions of the study area. If those lines were not properly identified and located prior to construction (through review of utility maps, coordination with utilities, or fieldwork to precisely locate them), they could be damaged during construction and leak, potentially leading to an explosion if leaked material encountered an ignition source, as described in Chapter 8.

A potential significant adverse impact on public services could occur if a rupture and explosion of a pipeline occurred requiring response from both local and regional emergency service providers. Depending on the magnitude of the incident, the response could be large and involve multiple regional agencies and responders. However, as described in Chapters 8 and 16, conformance with industry standards and regulatory requirements would ensure that potential hazards are identified and design plans developed to minimize adverse effects from these hazards to minor levels. Because existing local service providers are expected to be adequate to address increased demand for fire and emergency response services for construction–related incidents that could occur under Alternative 1, Option A, impacts on emergency services would be minor.

Service calls to police departments could increase during construction due to construction site theft and vandalism. The increase is expected to be minor, and existing police department staff and equipment are anticipated to be sufficient.

15.5.3.1.2 Changes in Response Times

If the 230 kV transmission lines were constructed in road rights-of-way, emergency response would potentially be able to access the construction sites more quickly than in an off-road corridor.

Construction of a new 230 kV substation yard to accommodate a new transformer could include temporary street closures and detours. Construction of the overhead lines would require installation of utility poles along a project length of at least 18 miles, some of which would likely be adjacent to roadways. For these areas, transmission lines installed overhead could require vehicle closures near the pole construction sites. During the period in which wire is pulled, no vehicular traffic would be allowed on roadways located beneath the areas of pulling activity. These delays and closures could delay response by requiring emergency service and other public service providers to use a less direct route, or by increasing traffic congestion such that vehicles are forced to reduce their speeds. Implementation of measures described in Chapter 14, Section 14.7, would be effective in ensuring that impacts on response times would be minor.

15.5.3.2 Option B: Existing Seattle City Light 230 kV Transmission Corridor

15.5.3.2.1 Increased Demand for Emergency Services

As with Alternative 1, Option A, construction could occur in the vicinity of regional natural gas pipelines or smaller pipelines that supply natural gas to homes and businesses. Although the transmission lines would, in large part, be located in or near the existing SCL corridor, that corridor does cross a PSE high-pressure gas main and the Olympic Pipeline several times as described in Chapter 16, and other gas utilities may also be present in the area. As described for Option A, a rupture and explosion, if it were to occur, could constitute a significant adverse impact due to the increased demand for emergency services. However, conformance with industry standards and regulatory requirements would ensure that potential hazards are identified and design plans developed to minimize adverse effects from these hazards to minor levels. Because existing local service providers are expected to be adequate to address increased demand for emergency response services for construction–related incidents that could occur, impacts on emergency services would be the same as Option A (minor).

15.5.3.2.2 Changes in Response Times

Since Alternative 1, Option B would include rebuilding or replacing existing poles and other structures, and pulling new transmission wire, the types of construction impacts on response times would be similar to those described for installing new overhead transmission lines in Option A. If constructed along road rights-of-way, the new transmission segment connecting the transmission lines to the Lakeside substation could result in localized impacts on responders. With implementation of measures described in Chapter 14, Section 14.7, impacts on response times would be the same as Option A (minor).

15.5.3.3 Option C: Underground Transmission Lines

15.5.3.3.1 Increased Demand for Emergency Services

The types of emergency services potentially needed for construction of an underground line would be the same as for construction of an overhead line. If the underground line was constructed in the existing PSE 115 kV easement under Alternative 1, Option A or SCL easement under Option B, this option would potentially require the same emergency service response as described for Options A and B, should an accidental rupture and explosion of a high-pressure gas main or the Olympic Pipeline occur during construction. Given the greater amount of ground disturbance associated with constructing an underground line, the potential risk would be higher relative to an overhead line. Nonetheless, conformance with industry standards and regulatory requirements would ensure that potential hazards are identified and design plans developed to minimize adverse effects from these hazards. Due to the increased area of ground disturbance, the probability of impacts would be somewhat higher than described for Alternative 1, Options A and B, but still considered low, and anticipated impacts are expected to be minor to moderate.

15.5.3.3.2 Changes in Response Times

As with Alternative 1, Option A, if an underground line is constructed in road rights-of-way, emergency response would potentially be able to access the construction sites more quickly than in an off-road corridor. Impacts on response times from construction activity affecting roadways would be similar to those described for overhead construction. However, with Option C the impacts would be less localized, likely extending along continuous lengths of one block or longer rather than only at pole locations, potentially causing more traffic disruption. With implementation of measures described in Chapter 14, impacts on response times would be expected to be minor to moderate.

15.5.3.4 Option D: Underwater Transmission Lines

15.5.3.4.1 Increased Demand for Emergency Services

In addition to the types of emergency services described for an overhead or underground line, construction of an underwater line could potentially require special emergency services to respond to an in-water accident, such as a spill. Although unlikely to occur, local fire departments have capabilities to respond to in-water spills and other accidents. With implementation of measures described in Chapter 8 and Chapter 16, impacts on emergency services are expected to be minor.

15.5.3.4.2 Changes in Response Times

At the land connections, response time impacts would be the same as those described for Alternative 1, Option A, if overhead and Option C, if underground, (minor), but would be expected to affect smaller localized areas.

15.5.4 Alternative 2: Integrated Resource Approach

Potential construction impacts under Alternative 2 would be much more limited than Alternative 1 because less construction of new infrastructure would be necessary.

15.5.4.1 Energy Efficiency and Demand Response Components

Strategies to promote energy efficiency and installation of demand response devices would not increase the demand for construction-related emergency services.

15.5.4.1 Demand Response Component

Demand response is an end-user strategy that pertains more to customer usage patterns and requires little construction of new infrastructure and would not increase the demand for construction-related emergency services.

15.5.4.2 Distributed Generation Component

Installation of devices to generate on-site power would require minor construction activities primarily on single residential and commercial sites. Construction impacts on public services would be negligible.

15.5.4.3 Energy Storage Component

Construction of large battery storage facilities would require activities similar to a substation, with potential impacts on public services the same as those described for Alternative 1 substation construction (minor).

15.5.4.4 Peak Generation Plant Component

Construction of peak generation plants would require construction similar to a substation, but would likely also require replacing or extending major gas mains for natural gas supply. Nonetheless, existing local service providers are expected to be adequate to address increased demand for fire and emergency response services for construction–related incidents that could occur. As a result, impacts would be the same as those described for Alternative 1 substation construction (minor).

15.5.5 Alternative 3: New 115 kV Lines and Transformers

15.5.5.1 Increased Demand for Emergency Services

Increased demand for emergency response associated with adding transformers at three existing substations and rebuilding or expanding five existing substations would be similar in type to the impacts associated with building a new substation, as described for Alternative 1. However, Alternative 3 would involve more sites than Alternative 1 and would potentially involve greater distances from some substations to fire departments and hospitals.

Alternative 3 would require a longer transmission line alignment (60 miles as opposed to 18 miles) and could slightly increase the demand for emergency services over a longer duration compared to overhead lines under Alternative 1, Option A and Option B. Also, construction for Alternative 3 would potentially occur in less urbanized areas than Alternative 1. The need for emergency response during construction in less urban areas would potentially have greater impacts on existing overall emergency response services because of potentially less well equipped local fire departments and the longer distances to public service facilities and mutual aid fire departments that may need to be dispatched to construction areas. Nonetheless, any increased demand for emergency services would be temporary and short-term, and local and regional emergency response providers in the study area would be capable of responding to construction-related incidents. Therefore, impacts on emergency services would be minor to moderate.

As with Alternative 1, construction could occur in the vicinity of the Olympic Pipeline, and regional natural gas pipelines or those that supply natural gas to homes and businesses, and would potentially require the same emergency service response as described for Alternative 1, Options A, B, and C in the unlikely event an accidental rupture and explosion of a pipeline occur during construction. Conformance with industry standards and regulatory requirements would ensure that potential hazards are identified and design plans developed to minimize adverse effects from these hazards to minor levels.

15.5.5.2 Changes in Response Times

Potential response impacts associated with adding transformers at three existing substations and rebuilding or expanding five existing substations would be similar in type to the impacts associated with building a new substation, as described for Alternative 1. However, Alternative 3 would involve more sites than Alternative 1 and would potentially have greater response impacts due to temporary road closures.

Potential response time impacts associated with construction and installation of new 115 kV transmission lines would be similar in type to the impacts described for new 230 kV transmission lines in Alternative 1, Option A. Lane closures, other traffic revisions, and construction staging areas could affect travel times for public service providers. Compared to Alternative 1, more transmission lines would be installed over a larger area under Alternative 3; therefore, the response time impacts are expected to be more widespread. With implementation of measures described in Chapter 14, Section 14.7, impacts on response times would be expected to be minor to moderate.

15.6 HOW COULD OPERATION OF THE PROJECT AFFECT PUBLIC SERVICES?

15.6.1 Operation Impacts Considered

Operation of new transmission lines, expanded substations, distributed generation, generators, and energy storage facilities associated with the alternatives could increase demand for emergency services in the study areas. The discussion of operation impacts considers the demand created for fire, police, or medical response services if any of the following emergency incidents occurred:

- Fire due to equipment malfunction;
- Spill of hazardous materials;
- Damage to an existing pipeline (from natural phenomena, or maintenance and operations activities); and
- Vandalism of equipment, structures, or property.

The potential for corona-ions from transmission lines to interfere with police and emergency communication or devices was often cited as a concern during the scoping process and is also addressed in this section.

See also Chapter 8 for discussion of potential health effects related to the proposed improvements.

15.6.2 What is corona-ion interference and is it a concern?

Corona can occur at the surface of an overhead high-voltage transmission line conductor, when the electric field intensity at the surface of the conductor exceeds a threshold (the breakdown strength of air). When this situation occurs, a very small electrical discharge is generated that can create audible noise and radio frequency noise, such as those used by fire and emergency responders. Corona effects on high-voltage transmission lines have been studied for over 60 years and engineers take steps in the design of overhead transmission lines to limit corona activity to acceptable levels (EPRI, 1982). Interference from corona-generated noise is generally associated with lines operating at voltages of 345 kV or higher (Enertech, 2015).

Corona is affected by the local electric field at the surface of the conductor (called the surface gradient). The conductor surface gradient is affected by many factors, including the conductor size, voltage of the line, smoothness or irregularities (such as nicks on the transmission line conductor, water droplets, insects, or debris) on the surface of the conductor, phase configuration, location of other energized conductors, distance to ground, etc. For new projects, such as the Energize Eastside Project, electrical engineers will usually design overhead transmission lines to comply with recommended maximum conductor surface gradient values set forth in the Institute of Electrical and Electronics Engineers (IEEE) *Radio Noise Design Guide for High-Voltage Transmission Lines* (IEEE, 1971). The design guide is applicable to overhead AC transmission lines in the voltage range of 115 kV to 800 kV. This design guide is a valuable tool in the design of overhead high-voltage transmission lines because it gives guidelines for acceptable electrical parameters (conductor surface gradients) that engineers can use to evaluate design options. The IEEE guide is based on many years of research and practical experience. Engineers can control the conductor gradients by selection of conductor size (larger conductors have lower gradients), phase spacing and arrangement, and sometimes by bundling (use of multiple conductors per phase lowers the surface gradient).

Gap discharges (where electricity crosses tiny gaps between mechanically connected parts) can also generate noise. Generally, higher voltage transmission lines (such as the 115 kV and 230 kV transmission lines associated with the Energize Eastside Project) do not produce noise due to gap discharges, since these lines would be constructed with modern hardware that eliminates such problems and therefore minimizes gap noise. Gap discharges are typically more common on lower-voltage distribution lines, caused by loose hardware and wires (Enertech, 2015).

Communication interference is dependent upon the frequency of the system in use, the relative locations of the transmitters and receivers with respect to one another, and other parameters (Enertech, 2015). Overhead transmission lines do not, as a general rule, interfere with radio or TV reception. Corona-generated radio frequency noise decreases with distance from a transmission line and also decreases with higher frequencies. Whenever corona is a problem, it is usually for amplitude modulation (AM) radio and not the higher frequencies associated with frequency modulation (FM) radio or TV/satellite signals. Generally most modern fire and emergency responder communication systems (such as mobile-radio communications) utilize either FM or digital signals that are not affected by transmission line corona. In addition, interference is unlikely with other communications devices such as cell phones and GPS units that operate with digital signals at much higher microwave frequencies.

In the U.S., electromagnetic interference from transmission systems is governed by the Federal Communications Commission (FCC), which requires the operator of any device that causes “harmful interference” to take prompt steps to eliminate it (FCC, 1988). Transmission line owners are also required to resolve interference complaints from licensed operators in accordance with FCC Rules and Regulations (47 CFR Part 15). Electric power companies have been able to work well under the present FCC rule because harmful interference can generally be eliminated. It has been estimated that more than 95 percent of power line sources that cause interference are due to gap-type discharges. These can be found and completely eliminated when required to prevent interference (USDOE, 1980). Complaints related to corona-generated interference occur infrequently.

15.6.3 No Action Alternative

If a fire, explosion, or spill were to occur along the existing transmission line or at a substation as a result of an earthquake, storm, or accident (as described in Chapter 8), there would be a need for emergency response. The need for emergency services would the same as described for construction under Alternative 1. The potential risk of transformer overheating associated with system overload during peak periods would be expected to increase under the No Action alternative, if system capacity is not increased. More frequent system overloading could increase the potential for transformers to catch fire or explode, with accompanying potential safety hazards. These hazards would be managed by load shedding and increased outages under the No Action Alternative.

The proximity of natural gas mains and the two Olympic Pipeline regional lines to the existing 115 kV transmission line through PSE's easement presents a potential operational hazard during PSE maintenance activities, such as conductor replacement near these utility lines. If an accidental rupture and explosion of a pipeline occurred during conductor replacement or other maintenance activities near these utility lines, an explosion would constitute a significant adverse impact due to the increased demand for local and regional emergency services. However, as described in Chapters 8 and 16, conformance with industry standards and regulatory requirements ensure that potential hazards are identified and operations and maintenance procedures in place to minimize adverse effects from these hazards to minor levels. Because existing local service providers are expected to be adequate to address the demand for fire and emergency response services for most operations and maintenance-related incidents that could occur under the No Action Alternative, impacts on emergency services would be minor.

Public service providers and facilities require continuous and reliable supplies of electricity. Under the No Action Alternative, maintenance of existing electrical facilities would likely increase, possibly causing brief interruptions or outages of electrical service. However, these would be planned events with advance notification, and if necessary, public service providers could employ backup generators during outages.

As described in Chapter 2, the risk of interruptions or outages of electrical service would grow under the No Action Alternative. In a sudden, unplanned loss of electricity, emergency response facilities are the highest priority for maintaining power during an outage, and they are equipped with backup power supplies. During load shedding, PSE's approach is to have rolling blackouts, where one area is subject to outages for a few hours, then another area is affected. As a result, only minor impacts on emergency response capabilities are anticipated. Full restoration from a large-scale power outage would likely take several hours. During this time, there could be an increased demand for emergency services to respond to accidents, fires, or other incidents that could occur if traffic controls or alarm systems that do not have backup generators stop functioning.

15.6.4 Alternative 1: New Substation and 230 kV Transmission Lines

Impacts are generally described according to the major components associated with Alternative 1 (substation impacts first, followed by transmission line impacts).

15.6.4.1 Option A: New Overhead Transmission Lines

15.6.4.1.1 Increased Demand for Fire Services

The demand for fire department services associated with equipment at the new substation that presents a fire risk could increase relative to the No Action Alternative. The following paragraphs describe potential scenarios that could result in a fire at a new or expanded substation. While an increase in fire demand response is possible, it is not expected to be significant relative to the ability of the fire departments to respond to such emergencies. With implementation of measures described in Chapters 8 and 16, impacts on fire services are expected to be minor. Operational environmental health and hazardous materials impacts of the substation alternatives are discussed in Chapter 8.

Oil-insulated equipment, such as capacitors, transformers, and inductors, has been known to cause fires at substations. Oil is used to insulate electrical equipment because it is more effective than air as an insulator, and it allows equipment to be more compact and placed closer together or underground. Oil insulation comes with the risk that when an element (for example, a capacitor) becomes overheated, the oil can convert to a gaseous state and, if it leaks and is exposed to sparks or high heat, can ignite and cause a fire or even an explosion.

Other activities or events that pose risks of igniting a fire include the following:

- Electrical fault;
- Cable overheating;
- *Arcing*, such as at switches;
- Lightning strike;
- Hot work, such as welding; and
- Equipment failure.

When these events occur at substations, they typically do not cause fires because of the safety systems that have been installed. A fire is not considered a probable outcome of operating the substation. However, if a fire were to occur, it would most likely be similar to the types of fires described in the following paragraphs, and the fail-safe systems described below would be in place to contain the damage (Orth, personal communication, 2014).

Electrical faults can occur in any type of electrical equipment. A typical substation will experience three to five electrical faults per year. Substation equipment has relays and circuit breakers to cut power to a piece of equipment when a fault occurs. Faults typically occur during an unexpected event, such as a lightning strike, a break in a cable, or equipment malfunction. When relays and circuit breakers function properly, they are designed to disconnect power within a fraction of a second to protect equipment and prevent fires that could damage substation equipment and transmission and distribution lines. However, there is a very small risk that a fault would go undetected and the equipment could overheat, cause sparks, catch fire, or even explode before being detected.

Oil used in insulating electrical equipment is monitored for the presence of *acetylene* and other dissolved gasses that are byproducts of arcing. If these dissolved gases are detected, the equipment may be subject to a combination of the following: being monitored more frequently, inspected, repaired, and/or replaced.

Although lightning occurs relatively infrequently in the combined study area, it still poses a risk of damaging substation equipment if the equipment is struck or if there is a lightning strike nearby. The risk is primarily to aboveground equipment; underground equipment is not expected to be at risk of lightning strikes. Substations would be equipped with mechanical means (such as a system of lightning rods) to convey lightning to the ground to avoid equipment damage and harm to workers on the site. These systems are expected to largely eliminate risks from lightning, but a small risk would remain. The other fail-safe systems described in this section are designed to operate if a lightning strike caused a fault or cable overload or other system malfunction.

Hot work such as welding can pose risks but is sometimes necessary to repair or modify equipment in a substation. While precautions, such as removing the piece of equipment that needs to be welded and welding it inside and away from electrical equipment, would reduce the potential for starting a fire, a small risk would remain. Crews conducting hot work are also trained to shut down equipment being worked on, shield equipment from exposure to intensive heat and sparks, let equipment cool adequately before re-energizing, and monitor any repairs to limit risk of fire.

In addition to the relays and circuit breakers described above, a number of other features are included as fail-safe systems to provide protection in case another system does fail. PSE personnel remotely monitor for conditions of overloading in the system, malfunctions, and other factors that could lead to a fire.

If a fire were to start in a substation, PSE personnel and the local fire departments are trained to deal with substation fires, including how to protect surrounding properties, minimize risk to substation personnel and firefighters, and avoid exacerbating the fire. The protocol is to contain the fire and prevent it from spreading beyond the substation site rather than entering the facility and risking injury to firefighters. Because existing local service providers are expected to be adequate to address increased demand for fire and emergency response services, impacts on public services would be minor.

The same types of hazards and potential need for emergency services related to operation of new 230 kV transmission lines in proximity to the Olympic Pipeline are already present with the existing 115 kV lines and would remain similar with a 230 kV line, even if it were to be located in a new right-of-way corridor. See the No Action Alternative for discussion of impacts. As described in Chapters 8 and 16, conformance with industry standards and regulatory requirements ensure that potential hazards are identified and operations and maintenance procedures in place that minimize adverse effects from these hazards to minor levels.

15.6.4.1.2 Increased Demand for Police Services

The demand for police services could increase if the project increases the opportunity for illegal activity to occur at the new substation site or on or near the transmission corridor. As described in Section 15.3.2, none of the interviewed police departments cited any incidents of theft and vandalism at PSE's existing substations. Security design features would minimize potential impacts on police response services during operations. Substations have security fences or walls and employ a variety of measures, including motion detectors and closed-circuit television surveillance, as needed to monitor each site. These measures would reduce the need for police services. Therefore, additional law enforcement demands are expected to be minimal, resulting in a minor impact on such services.

The potential for incidences of illegal activity and vandalism along the transmission corridor is anticipated to be low based on interview responses received from law enforcement agencies when asked about crime along existing transmission corridors. Unique crime-related problems associated with transmission corridors were generally not cited as an existing problem or future concern. To limit public accessibility into these areas, private property owners can install gates on service roads required for maintenance in locations where PSE has an easement but does not own the property. Therefore, only a minor impact on law enforcements services is expected.

15.6.4.1.3 Corona Interference

In general, corona interference is not considered a problem for transmission lines rated at 230 kV and below. Corona levels for the 230 kV transmission line (Alternative 1, Option A) would be low, and no corona-generated interference with police and emergency personnel communication/emergency devices would be anticipated. Furthermore, if interference should occur, and to comply with FCC regulations, PSE would work with owners and operators of communications facilities along the transmission line to identify and implement mitigation measures. As a result, impacts related to corona interference with emergency communication devices would be negligible. See Section 15.6.2 for additional information.

15.6.4.2 Option B: Existing Seattle City Light 230 kV Transmission Corridor

The demands for public services would be the same as those described for the No Action Alternative (minor), except that fewer portions of the transmission line would be located in proximity to the Olympic Pipeline. As described for Alternative 1, Option A, conformance with industry standards and regulatory requirements ensure that potential hazards are identified and operations and maintenance procedures developed that minimize adverse effects from these hazards. Same as Alternative 1, Option A, impacts related to corona interference with emergency communication devices would be negligible.

15.6.4.3 Option C: Underground Transmission Lines

Because the transmission line would be underground, there would be no risk of fire from lightning strike on the transmission line. Alternative 1, Option C would be located near the Olympic Pipeline in places and could be in operation near, or share corridors with, other utility infrastructure such as gas lines. Same as Alternative 1, Options A and B, with conformance to industry standards and regulatory requirements, impacts related to the OPLC pipelines or other gas lines in the area from operation of the project are expected to be minor.

Corona and radio noise are not factors for underground lines since they are not in corona (i.e., they are insulated by a solid dielectric material instead of air and therefore do not generate corona). As a result, there would be no impacts from corona interference with emergency communication devices.

15.6.4.4 Option D: Underwater Transmission Lines

Accidents along the submerged cable that might require emergency response would be unlikely considering the depth of water where they would be placed and the dimensions and strength of the cable itself, which would make it difficult to break. With implementation of measures described in Chapters 8 and 16, impacts on emergency service providers would be the same as Alternative 1, Options A, B, and C (minor).

An underwater transmission line will produce no electric fields in the surrounding environment due to the shielding of the conductors. As a result, there would be no impacts from corona interference with emergency communication devices.

15.6.4.5 Property Tax Revenues

During the public scoping process for the proposed project, the public expressed interest and concern regarding the potential impacts of 230 kV transmission lines on property values, with resulting loss in property tax revenues and the ability to adequately fund public services in the study area communities. The EIS Consultant Team conducted a literature review on proximity impacts for property values. Claims of diminished property value through decreased marketability are based on the reported concern about hazards to human health and safety and increased visual impacts associated with living in proximity to high-voltage transmission lines. This issue is discussed in Chapter 11.

As described in Chapter 11, it is reasonable to assume that properties with views of existing transmission lines may have somewhat lower property values than those nearby that do not have views of the power lines. However, because of the number of factors and interrelationships affecting property values, it is not possible to determine from Assessor's data how much of the effect on property values is due specifically to views.

For the purpose of identifying potential impacts of the Energize Eastside Project, the EIS Consultant Team developed a rough estimate of the effect of reduced property values on property tax revenues. A fiscal analysis prepared for the Project (FCS Group, 2016) utilized an estimate of a theoretical $10 million decrease in assessed value to demonstrate the relative effect of such a decrease on property tax revenues in one of the study area communities (City of Bellevue). The results indicated that for each $10 million decrease in assessed value, property tax revenues collected by the City of Bellevue would decrease by $9,800 per year. Although the specific change in property values is not known, out of approximately $35 million that Bellevue collects each year, this change (-0.03%) is small and would not affect the Cities' ability to adequately fund public services.

15.6.5 Alternative 2: Integrated Resource Approach

15.6.5.1 Energy Efficiency, Demand Response, and Distributed Generation Components

During operation of site-level and small-scale strategies implemented to address energy efficiency, demand response, and distributed generation components, an increased need for emergency services and law enforcement is unlikely. The existing emergency services are expected to be adequate to meet the demands.

15.6.5.2 Energy Storage Component

Accidental damage or equipment replacement with this component of Alternative 2 could possibly lead to leaks or spills of hazardous materials, requiring emergency response services. Although the specific technology likely to be used for these devices is unknown, for purposes of this discussion it was assumed that a battery system would likely contain hazardous materials.

As described in Chapter 8, the energy stored and released by battery cells has the potential to cause overheating and, if undetected and unmitigated, eventually cause the battery to experience *thermal runaway* (i.e., a positive feedback loop where an increase in cell temperature and pressure leads to an uncontrolled heat reaction). Primary concerns with battery fires include the release of toxic fumes from hazardous materials, challenges and uncertainty with extinguishing battery fires by first responders (as recommended response techniques vary by chemistry type), and re-ignition and overhaul procedure after extinguishment. Given the potential complexity of a response to a battery storage incident, moderate impacts on emergency service providers could occur.

The incidence of vandalism at battery storage facilities is expected to be negligible, the same as a substation as described for Alternative 1.

15.6.5.1 Peak Generation Plant Component

Generators would be located within substation yards and would have the same security measures as the rest of the substation. Therefore, the incidence of vandalism at these facilities is expected to be negligible.

As with Alternatives 1 and 3, accidental damage or equipment replacement under Alternative 2 could lead to leaks or spills of hazardous materials, which would potentially require emergency response from fire departments. The energy storage batteries, generators, and turbines of this alternative have the greatest potential for this type of situation, since they incorporate equipment containing materials such as acid, natural gas, insulating oil, or diesel fuel. Given the potential complexity of the response, moderate impacts on emergency service providers could occur.

15.6.6 Alternative 3: New 115 kV Lines and Transformers

The demand for emergency services and law enforcement with Alternative 3 would be the same as described for Alternative 1. As a result, minor impacts on emergency response services could occur.

In general, corona interference is not a problem for transmission lines rated at 230 kV and below. Because of the lower voltage, the 115 kV transmission line associated with Alternative 3 would generally have less corona than the 230 kV line associated with Alternative 1. Corona levels for these proposed lines would be low, and no corona-generated interference with police and emergency personnel communication/emergency devices is anticipated. Furthermore, if interference should occur, and to comply with FCC regulations, PSE would work with owners and operators of communications facilities along the transmission line to identify and implement mitigation measures.

15.7 WHAT MITIGATION MEASURES ARE AVAILABLE FOR POTENTIAL IMPACTS TO PUBLIC SERVICES?

A variety of project design features and best management practices to reduce the effects on public services would be implemented as part of the Energize Eastside Project.

15.7.1 Emergency Response Services

Measures PSE could take to minimize potential demand for emergency response services during construction and operation are described in Chapter 8.

To further reduce emergencies related to the proposed project, PSE is required by law to contact the appropriate Underground Service Alert organization to identify the location of underground utilities and pipelines prior to any excavation work. An OPLC representative would be present to observe excavation activities around buried pipelines during construction. Further discussion of measures to reduce risks associated with construction or operation in proximity to the Olympic Pipeline is provided in Chapter 8 and Chapter 16.

15.7.2 Response Times

The contractor would be required to prepare “maintenance of traffic” plans for any work with the public right-of-way as described in Chapter 14. These plans would minimize effects on emergency response and other public services.

Other potential mitigation measures include the following:

- Notify service providers and neighborhood residents of construction schedules, street closures, and utility interruptions as far in advance as possible.
- Notify and coordinate with fire departments for water line relocations that could affect water supply for fire suppression, and establish alternative supply lines prior to any service interruptions.
- Where feasible, schedule construction outside of hours of peak traffic congestion and times when service providers such as school buses and waste collectors are in the area.
- Coordinate with law enforcement agencies to implement crime prevention plans for construction sites and staging areas.

15.7.3 Substation Fire Risk

In order to reduce the risk of substation fire, PSE would routinely do the following:

- Use sulfur hexafluoride (SF_6) gas for closely spaced equipment. SF_6 is a nonflammable gas and an excellent insulator.
- Install relays and circuit breakers to shut down equipment experiencing a fault or malfunction.
- Install systems to conduct lightning to the ground rather than through lines or equipment.
- Monitor oil insulation for evidence of *arcing* and gassing. Monitor substations for evidence of overloading, overheating, or malfunctions.

15.8 ARE THERE ANY CUMULATIVE IMPACTS TO PUBLIC SERVICES AND CAN THEY BE MITIGATED?

As the regional population has increased, so has the demand for public services. Demands for these services will continue to increase as the area continues to grow. The Energize Eastside Project will incrementally contribute to those increased demands. Design and operation in accordance with applicable standards and requirements will reduce the incremental increase associated with the Energize Eastside Project.

15.9 ARE THERE ANY SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS TO PUBLIC SERVICES?

With the appropriate mitigation measures in place, no unavoidable significant adverse impacts to public services are anticipated from either construction or operation of the Energize Eastside Project alternatives.

There is a risk of damage and subsequent explosion requiring local, and potentially regional, emergency service response whenever construction or operations and maintenance occur near buried natural gas lines or the Olympic Pipeline. However, that risk is not considered an unavoidable significant impact because the probability of damage occurring is minimized by conformance with industry standards, regulatory requirements, and construction and operational procedures that address pipeline safety.