EFSEC
WASHINGTON

Appendix 4-1

Cumulative Impacts Methodology

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4.1 Introduction

The Washington Energy Facility Site Evaluation Council (EFSEC) has determined that the appropriate scope and level of detail for the Programmatic Environmental Impact Statement (EIS) cumulative effects analysis (the Study Area) may not be sufficient for a project-specific cumulative effects analysis (Washington Administrative Code 197-11-060[5] Phased Review). The Programmatic EIS analyzes cumulative effects and recognizes that significant cumulative effects are possible for any environmental resource. However, the actual context for a specific project would vary with the physical setting and would therefore affect the analysis of cumulative effects for that specific project. Completing a project-specific cumulative effects analysis would also make it more feasible to identify appropriate mitigation for any identified project-specific significant cumulative impact.

This document provides general guidance to complete a project-specific cumulative impact analysis. The approach should be confirmed by the State Environmental Policy Act (SEPA) Lead Agency before initiating.

4.2 Regulatory Context

Washington SEPA requires consideration of how a project or projects could contribute to cumulative impacts when combined with impacts caused by other developments in the region over time (Washington Administrative Code [WAC] 197-11-060). Although the adverse environmental effects of an individual project may not be significant when considered separately, the combined effects of several projects may be significant when considered collectively.

Ecology guidance on Washington's State Environmental Policy Act states that a review of cumulative impacts should address how the impacts of the proposal will contribute to the total impact of development in the region over time. Example -- Increased runoff and contaminants from the development would be added to the volumes and levels of contamination from similar developments surrounding the wetland (cumulative impacts).

Washington courts have limited the requirement for cumulative impact analysis under SEPA, stating that an analysis of the cumulative impacts of a proposed project is not required under SEPA unless: 1) there is some evidence that the

project will facilitate future action that will result in additional impacts, or 2) the project is dependent on subsequent proposed development. A project's cumulative impacts that are merely speculative need not be considered (Boehm v. City of Vancouver, 111 Wn. App. 711 (2002) – Cumulative impacts) (MRSC 2025).

4.3 Methodology

The analysis of cumulative impacts can be accomplished using the following general methodology. Additional guidance and information on these steps can be found in the following sections.

1. Use the information in the project-specific application, specifically, the affected environment sections, as the baseline for the analysis.
2. Identify environmental resources that could be cumulatively affected by the proposal in combination with other actions.
3. Identify present projects and reasonably foreseeable actions (collectively referred to herein as RFAs) that could contribute to cumulative impacts.
4. Analyze each environmental resource identified in Step 2 when considering the proposal and RFAs.

4.3.1 Step 1: Affected Environment

The project-specific application should describe the existing environment that will be affected by the proposal. Project-specific applications may adopt, reference, or build upon the affected environment sections provided in the Programmatic EIS.

Describing the affected environment establishes the environmental baseline and thresholds of environmental change that are important for analyzing cumulative effects. Recently developed indicators of ecological integrity (e.g., index of biotic integrity for fish) and landscape condition (e.g., fragmentation of habitat patches) can be used as benchmarks of accumulated change over time (CEQ 1997).

4.3.2 Step 2: Potentially Affected Resources

Identify the significant cumulative effects issues associated with the proposal by defining the following:

- The direct and indirect impacts of the proposal
- Which environmental resources would be affected
- Which of these environmental resources are important from a cumulative impacts perspective (CEQ 1997)

Table 4.3-1 summarizes the potential cumulative impacts of the Action Alternative identified in the Programmatic EIS in combination with other present projects and RFAs across the state.

Table 4.3-1: Summary of Potential Cumulative Impacts

Element of the Environment	Activities Associated with a Potential Cumulative Impact	Associated Potential Cumulative Impact	Probable Significant Cumulative Adverse Impact?
Earth Resources	▪ Grading ▪ Removing vegetation ▪ Excavating ▪ Building access roads ▪ Use of heavy construction equipment ▪ Siting and constructing transmission facilities in geologically unstable areas ▪ Routine maintenance and operation activities	▪ Alteration of topography and drainage patterns ▪ Soil erosion and/or accretion ▪ Compaction of soil ▪ Damage from a geological hazard	No

Element of the Environment	Activities Associated with a Potential Cumulative Impact	Associated Potential Cumulative Impact	Probable Significant Cumulative Adverse Impact?
Air Quality	▪ Grading ▪ Removing vegetation ▪ Excavating ▪ Building access roads ▪ Moving equipment and vehicles over unpaved surfaces ▪ Disrupting soils susceptible to erosion ▪ Using portable generators, heavy equipment, and concrete batch plants ▪ Installing and handling gas-insulated switchgear and other electrical equipment that use SF_6 ▪ Clearing and blasting ▪ Using gas and diesel-powered vehicles and equipment ▪ Routine maintenance and operation activities	▪ Increased fugitive dust emissions ▪ Increased emissions from fuel-burning equipment ▪ Increased SF_6 emissions ▪ GHG emissions ▪ Odor	No

Water Resources	▪ Creating temporary water diversions
	▪ Altering hydrology patterns
	▪ Using water or extracting groundwater for construction activities, such as concrete mixing and dust control
	▪ Increasing soil erosion and sediment transport due to construction activities
	▪ Flooding or storm surges
	▪ Spilling deleterious substances or unearthing contaminated sediments near waterbodies
	▪ Routine maintenance and operation activities
		• Impacts on water quality, including:
		  ○ Changes in sedimentation
		  ○ Changes in water chemistry
		• Impacts on water quantity, including:
		  ○ Increased water usage
		  ○ Altered hydrology
		  ○ Temporary water diversions
		  ○ Groundwater extraction
		• Damage to infrastructure
			No

Element of the Environment	Activities Associated with a Potential Cumulative Impact	Associated Potential Cumulative Impact	Probable Significant Cumulative Adverse Impact?
Vegetation	▪ Removing vegetation ▪ Building new access or maintenance roads ▪ Creating new ROWs ▪ Spreading invasive species ▪ Increasing sedimentation or dust due to construction activities ▪ Using herbicides ▪ Accidentally spilling hazardous materials ▪ Routine maintenance and operation activities	▪ Loss of native ecosystems and plants ▪ Fragmentation ▪ Degradation of soils ▪ Edge effects ▪ Introduction or spread of invasive plants or noxious weeds ▪ Surface runoff ▪ Impacts from increased dust ▪ Introduction of hazardous materials ▪ Increased fire risk	Yes
Habitat, Wildlife, and Fish	▪ Grading ▪ Removing vegetation ▪ Excavating ▪ Changes in vegetation composition, exposure to wind, soil conditions, noise levels, light regimes, and human presence ▪ Increasing collisions with vehicles ▪ Destroying nests/dens ▪ Introducing nuisance or invasive species ▪ Changes in water flow or quality ▪ Constructing poles, towers, substations, access and maintenance roads, and fences or sediment fences ▪ Routine maintenance and operation activities	▪ Direct habitat loss ▪ Indirect habitat loss ▪ Mortality ▪ Barriers to movement ▪ Fragmentation	Yes

Element of the Environment	Activities Associated with a Potential Cumulative Impact	Associated Potential Cumulative Impact	Probable Significant Cumulative Adverse Impact?
Energy and Natural Resources	▪ Using resources such as metal, aggregate, concrete, fuel, and oil ▪ Using resources such as land and water ▪ Using resources such as electricity ▪ Routine maintenance and operation activities	▪ Consumption of non-renewable resources ▪ Consumption of renewable resources ▪ Consumption of energy	No
Public Health and Safety	▪ Handling motor vehicles and equipment ▪ Increased exposure to extreme weather events ▪ Working at extreme heights ▪ Electricity-related risks, such as electric shock ▪ Increased exposure to hazardous substances ▪ Conducting hot-work activities ▪ Operating combustion engines and motor vehicles over vegetated areas ▪ Generating EMF ▪ Generating heat during the operation of underground transmission facilities ▪ Flooding or storm surges ▪ Routine maintenance and operation activities	▪ Increase in accidents and injuries ▪ Exposure to hazardous materials ▪ Increased risk of wildfire ▪ Exposure to EMF ▪ Excess heat generation	No

Element of the Environment	Activities Associated with a Potential Cumulative Impact	Associated Potential Cumulative Impact	Probable Significant Cumulative Adverse Impact?
Land and Shoreline Use	▪ Being inconsistent with existing land uses ▪ Being inconsistent with goals or policies in relevant planning and program documents ▪ Interfering with natural resource operations, such as farming, due to equipment laydown and staging, and constructing access roads ▪ Soil erosion and sedimentation due to clearing vegetation, constructing foundations, and laying materials within or adjacent to shorelines ▪ Siting and constructing overhead facilities within or near military utilized airspace and civilian airports ▪ Siting and constructing overhead facilities within or near designated wilderness areas, national parks, or start parks ▪ Routine maintenance and operation activities	▪ Incompatibility with land use ▪ Conflict with relevant goals and policies ▪ Loss of function and value of shorelines ▪ Loss of function and value of agricultural lands and rangelands ▪ Conflicts with military utilized airspace and civilian airfield operations	Yes

Element of the Environment	Activities Associated with a Potential Cumulative Impact	Associated Potential Cumulative Impact	Probable Significant Cumulative Adverse Impact?
Transportation	▪ Creating temporary road closures ▪ Creating temporary detours ▪ Constructing access roads ▪ Moving heavy construction vehicles and equipment ▪ Generating EMF ▪ Routine maintenance and operation activities	▪ Impacts on vehicular transportation and infrastructure, including: ○ Closures and diversions ○ Increased traffic and increased collision risk ○ Impacts from access road construction ○ Impacts on road authority ▪ Impacts on waterborne vessels and infrastructure, including: ○ Closures and diversions ○ Increased collision risk ○ Impacts from infrastructure modification ▪ Impacts on rail transportation and infrastructure, including: ○ Closures and diversions ○ Increased collision risk ○ Impacts on rail stability ○ Impacts from infrastructure modification ▪ Impacts on air transportation and infrastructure,[a] including: ○ Impacts from airspace restrictions ○ Increased collision risk ○ Decreased visibility	No

Element of the Environment	Activities Associated with a Potential Cumulative Impact	Associated Potential Cumulative Impact	Probable Significant Cumulative Adverse Impact?
Public Services and Utilities	▪ Impacting existing utility infrastructure ▪ Creating excess solid waste from excavating, clearing vegetation and soils, packing materials, etc. ▪ Using water for dust or fire control, concrete mixing, and revegetation efforts ▪ Increasing risks of fires, worker injuries, vehicular collisions, theft, vandalism, and trespassing ▪ Creating temporary road closures, detours, and increased traffic ▪ Routine maintenance and operation activities	▪ Conflicts with existing utility infrastructure ▪ Increased solid waste production ▪ Increased water demand ▪ Increased demand for fire protection services, law enforcement, and emergency responders ▪ Increased emergency response times ▪ Increased risk of power outages at public service facilities	No
Visual Quality	▪ Grading ▪ Removing vegetation ▪ Excavating ▪ Open trenching for underground transmission facilities ▪ Creating new ROW corridors ▪ Building access roads, fencing, bridges, temporary laydown areas, turnaround areas, and watercourse crossings ▪ Assembling foundations, structures, and substations ▪ Transporting materials and equipment at night ▪ Use of lighting during night construction ▪ Presence of vehicles and equipment during construction ▪ Routine maintenance and operation activities	▪ Degradation of scenic natural resources ▪ Degradation of aesthetics ▪ Degradation of night sky	Yes

Element of the Environment	Activities Associated with a Potential Cumulative Impact	Associated Potential Cumulative Impact	Probable Significant Cumulative Adverse Impact?
Noise and Vibration	▪ Transporting materials and equipment ▪ Staging materials ▪ Assembling transmission structures and other project features ▪ Constructing access roads ▪ Increasing vehicle traffic from commuting workers and trucks ▪ Blasting and rock breaking ▪ Using implosive devices during conductor stringing ▪ Using heavy machinery and helicopters during construction ▪ Conducting open-trenching operations ▪ Conducting horizontal directional drilling operations ▪ Conducting trenchless crossing operations ▪ Corona discharge ▪ Routine maintenance and operation activities	▪ Increased noise at sensitive receptors ▪ Ground-borne vibration at off-site structures ▪ Hearing loss	No

Element of the Environment	Activities Associated with a Potential Cumulative Impact	Associated Potential Cumulative Impact	Probable Significant Cumulative Adverse Impact?
Recreation	▪ Grading ▪ Removing vegetation ▪ Excavating ▪ Open trenching for underground transmission facilities ▪ Creating new ROW corridors for overhead and underground transmission facilities ▪ Increasing publicity of recreational facilities ▪ Using recreational facilities ▪ Welding, vehicle ignition, and blasting ▪ Use of heavy machinery and combustion vehicles ▪ Routine maintenance and operation activities	▪ Temporary closure or restricted access ▪ Permanent closure ▪ Increase in use ▪ Change in integrity ▪ Increased risk of wildfire ▪ Physical hazard to aerial recreation	Yes
Cultural and Historic Resources	▪ Grading ▪ Removing vegetation ▪ Excavating ▪ Compacting soils ▪ Creating new ROW corridors for overhead and underground transmission facilities ▪ Creating a modern intrusion ▪ Replacing gates or fences for access roads ▪ Collocating conduits on historic bridges ▪ Routine maintenance and operation activities	▪ Physical impacts ▪ Visual impacts ▪ Physical impacts on Tribal resources and TCPs ▪ Visual impacts on Tribal resources and TCPs	Yes
Socioeconomics and Environmental Justice	▪ Grading ▪ Removing vegetation ▪ Excavating ▪ Transporting materials and equipment ▪ Staging materials	▪ Degradation of the natural and built environment, including: ○ Noise and vibration ○ Air quality ○ Visual quality	Yes

Element of the Environment	Activities Associated with a Potential Cumulative Impact	Associated Potential Cumulative Impact	Probable Significant Cumulative Adverse Impact?
	▪ Assembling transmission structures and other project features ▪ Creating an increase in fugitive dust emissions, emissions from fuel-burning equipment, and SF6 emissions ▪ Creating new ROW corridors ▪ Constructing access roads ▪ Blasting and rock breaking ▪ Conducting open-trenching operations ▪ Conducting horizontal directional drilling operations ▪ Conducting trenchless crossing operations ▪ Generating corona discharge ▪ Generating EMF ▪ Creating an influx of construction workers looking for temporary housing ▪ Requiring land acquisitions that displace residents or housing units ▪ Imposing a tariff for the additional cost of undergrounding a transmission facility ▪ Creating temporary road closures ▪ Creating temporary detours ▪ Vehicle traffic from commuting workers and trucks ▪ Creating an increase in employment opportunities ▪ Increasing the earnings of workers and sole proprietors ▪ Increasing tax revenue	○ Land and shoreline use, and recreation ▪ Changes in housing availability ▪ Changes in home values ▪ Changes in economic and fiscal conditions or employment	

Element of the Environment	Activities Associated with a Potential Cumulative Impact	Associated Potential Cumulative Impact	Probable Significant Cumulative Adverse Impact?
	▪ Routine maintenance and operation activities		

EMF = Electromagnetic Fields; **GHG** = Greenhouse Gas; **ROW** = right-of-way; **TCP** = Traditional Cultural Place

4.3.3 Step 3: Bounding Cumulative Impacts Analysis

Once the potentially affected environmental resource areas are identified, a geographic boundary and time frame should be defined to encompass additional impacts on the resources of concern.

The geographic boundary of the cumulative impact analysis for a site-specific project should almost always be expanded. Choosing the appropriate scale to use is critical and will depend on the resource or system. The boundaries for each resource can be determined by:

- Identifying the area that will be impacted by the proposal
- List the resources within that area that could be impacted by the proposal
- Identifying the geographic areas occupied by those resources that are outside of the proposal's impact area
- Identify the affected jurisdictions, including the proposing agency and other agencies or groups (CEQ 1997).

Table 4.3-2 below provides a summary of the possible geographic areas for each resource, as provided in the Programmatic EIS.

Table 4.3-2: Geographic Setting for Environmental Resources

Resource	Geographic Setting
Earth Resources	▪ **Project Site and Immediate Vicinity:** This includes the specific location of the project and the surrounding area that might be directly affected by construction, operation and maintenance, and upgrade or modification activities. ▪ **Soil and Geology:** This includes the types of soils and geological formations present in the area. This helps in understanding the potential for erosion, landslides, and other geotechnical issues. Unique geologic formations that are within the viewshed of the project should be included. ▪ **Natural Hazard Zones:** This includes floodplains, wildfire risk areas, landslide-prone zones, and seismic hazard zones. ▪ **Previous Earthworks:** Previous earthworks, such as landfills or underground mines, aid in understanding whether uneven settlement or subsidence is a concern. Additionally, disturbing these sites could release contaminants, posing environmental and health risks. ▪ **Hazardous Materials and Contaminated Sites:** This includes known Superfund or brownfield sites, areas with historical industrial activity, and locations with underground storage tanks or waste disposal areas.
Air Quality	▪ **Project Site and Immediate Vicinity:** This includes the specific location of the project and the surrounding area that might be directly affected by construction, operation and maintenance, upgrade, and modification activities. ▪ **Air Basin:** Depending on the project components identified for the development of a transmission facility, a specific analysis of the meteorology and regional area would be required. Reported ambient monitoring data of three years should be analyzed.
Water Resources	▪ **Project Site and Immediate Vicinity:** This includes the specific location of the project and the surrounding area that might be directly affected by construction and operation and maintenance activities. ▪ **Watershed and River Basins:** The study area would be large enough to determine if there were any impacts on watershed or river basins. ▪ **Wetlands and Floodplains:** The study area would be large enough to determine if there were any impacts on wetlands and floodplains. ▪ **Groundwater Aquifers:** Groundwater aquifers in the vicinity of the project would be included within the study area to evaluate impacts on groundwater resources.
Vegetation	▪ **Project site and immediate vicinity:** Specific location of the project and the surrounding area that might be directly affected by construction, operation and maintenance, upgrade, and modification activities. ▪ **Protected Areas:** Nearby protected areas that could be affected by the project, such as preserves and conservation areas. ▪ **Critical Habitat:** areas designated as critical habitat under the ESA for endangered or threatened species. ▪ **Priority Plant Species:** location of known priority plant species populations or important or protected habitat for priority plant species.

Resource	Geographic Setting
	▪ **Sensitive Ecosystems or Habitat:** location of sensitive ecosystems or important habitat. ▪ **Biodiversity Corridors:** areas important due to high biodiversity that occurs within the ecosystem or is supported by the ecosystem ▪ **A local study area surrounding the project site:** Areas beyond the project site and immediate vicinity to help understand the landscape-level context of the project and its potential impacts on vegetation.
Wildlife, Habitat, and Fish	▪ **Project Site and Immediate Vicinity:** Specific location of the project and the surrounding area that might be directly affected by construction, operation and maintenance, upgrade, and modification activities. ▪ **Protected Areas:** Nearby protected areas that could be affected by the project, such as wildlife preserves, refuges, or conservation areas. ▪ **Aquatic Ecosystems:** Any adjacent rivers, streams, lakes, wetlands, or other waterbodies that could be impacted by the project. ▪ **Critical Habitat:** Areas designated as critical habitat under the ESA for endangered or threatened species. ▪ **Sensitive Species Habitat:** Habitats important to the survival of state or federally listed sensitive and priority species. These could include identified core habitats, breeding grounds, nesting sites, overwintering sites, and feeding areas. ▪ **Movement Corridors:** Routes used by wildlife for migration that might be disrupted by the project.
Energy and Natural Resources	▪ **Project Site and Immediate Vicinity:** This includes the specific location of the project and the surrounding area that might be directly affected by construction, operation and maintenance, upgrade, and modification activities. The project site would include the transmission facility ROWs, substation locations, transmission towers, access roads, and construction yards and associated laydown areas. ▪ **Affected Geography:** The consumption of energy and natural resources during a project's construction would be measurable and could impact resource availability within and outside the borders of Washington. The demand for these resources can lead to increased extraction and production activities, affecting local ecosystems and communities.
Public Health and Safety	▪ **Project Site and Immediate Vicinity:** This includes the specific location of the project and the surrounding area that might be directly affected by construction, operation and maintenance, upgrade, and modification activities. ▪ **Sensitive Receptors:** This includes residential neighborhoods, schools, daycare centers, hospitals and healthcare facilities, and senior living communities. ▪ **Emergency Services and Infrastructure:** This includes fire stations, police departments, and EMS facilities, evacuation routes or emergency access roads, and utility corridors (e.g., water, gas, etc.) ▪ **Hazardous Materials and Contaminated Sites:** This includes known Superfund or brownfield sites, areas with historical industrial activity, and locations with underground storage tanks or waste disposal areas.

Resource	Geographic Setting
	▪ **Recreational and Public Use Areas:** This includes parks, trails, campgrounds, public gathering spaces, and cultural or historic sites with public access. ▪ **Natural Hazard Zones:** This includes floodplains, wildfire risk areas, landslide-prone zones, and seismic hazard zones.
Land and Shoreline Use	▪ **Project Site and Immediate Vicinity:** This includes the specific location of the project and the surrounding area that might be directly affected by new construction, operation and maintenance, upgrade, and modification activities. ▪ **Agriculture and Rangelands:** The study area would be large enough to determine if there were any adverse environmental impacts on agricultural lands and rangelands. ▪ **Shorelines:** The study area would be large enough to determine if there were any adverse environmental impacts on shorelines. ▪ **Military Utilized Airspace and Civilian Airfields:** The study area would be large enough to determine if there were any adverse environmental impacts on military utilized airspace and civilian airfields.
Transportation	▪ **Project Site and Immediate Vicinity:** This includes the specific location of the project and the surrounding area that might be directly affected by construction, operation and maintenance, upgrade, and modification activities. ▪ **Transportation Corridors:** This includes identified routes for the transportation of materials and equipment to construction sites, which may involve freight transported by road, water, rail, or air. Identified routes would also include both existing and anticipated LOS during project development. ▪ **Transportation Infrastructure:** It is essential to identify and evaluate various types of transportation infrastructure that could be affected by the construction, operation and maintenance, upgrade, and modification of projects, including bridges and overpasses, railways, airports and airspace, ports and waterways, public transit systems, and pedestrian and bicycle infrastructure. ▪ **Airspace and Flight Paths:** Applicants would work closely with the FAA to ensure the project does not interfere with controlled airspace. This includes filing necessary forms and obtaining approvals. Areas of special consideration would be identified for environmental analysis. ▪ **Safety and Reliability:** Areas requiring road improvements, traffic management, and coordination with local authorities would be identified.
Public Services and Utilities	▪ **Project Site and Immediate Vicinity:** This includes the specific location of the project and the surrounding area that might be directly affected by construction, operation and maintenance, and upgrade or modification activities. ▪ **Existing Utilities:** The study area would be large enough to determine if there could be any impacts on existing utilities or infrastructure systems, such as local landfills, electric utilities, sewer districts, etc.

Resource	Geographic Setting
Visual Quality	▪ **Project Site and Immediate Vicinity:** This includes the specific location of the project and the surrounding area that might be directly affected by construction, and operation and maintenance activities. ▪ **Assessment Zone:** The assessment zone establishes an area surrounding the proposed transmission facilities within which the applicant would assess the visual impacts that may be found within that zone. ▪ **Viewshed:** This includes the total landscape seen or potentially seen from a point, or from all or a logical part of a travel route, use area, or water body. Viewshed analysis is a GIS-based procedure that determines what locations within the assessment zone will have an uninterrupted line-of-sight to the project features. Viewshed analysis is an important part of a visual impact assessment and is a useful tool to help determine KOPs.
Noise and Vibration	▪ **Project Site and Immediate Vicinity:** This includes the specific location of a project and the surrounding area that might be directly affected by construction, operation and maintenance, upgrade, and modification activities. The site characteristics that can affect noise propagation include, but are not limited to, topography, foliage, ground cover, and surrounding barriers/buildings. ▪ **Existing Noise Environment:** The existing noise environment encompasses all existing noise sources and is generally affected by population density, proximity to travel corridors, and the natural soundscape. ▪ **Climate and Elevation:** Weather-related conditions can influence noise propagation in general and can be a source of noise, such as wind or—specific to transmission lines—corona noise. Additionally, corona noise is generally a principal concern with lines that are at higher elevations.
Recreation	▪ **Project Site and Immediate Vicinity:** This includes the specific location of the project and the surrounding area that might be directly affected by new construction, operation and maintenance, upgrade, and modification activities. ▪ **Viewshed:** This includes conducting a visual assessment to determine what recreation facilities may be indirectly affected by new construction, operation and maintenance, upgrade, and modification activities.
Historic and Cultural Resources	▪ **Project Site and Immediate Vicinity:** This includes the specific location of the project and the surrounding area that might be directly affected by new construction, operation and maintenance, upgrade, and modification activities. ▪ **Viewshed:** This includes the viewshed of the project site that might be affected by new construction, operation and maintenance, upgrade, and modification activities.
Socioeconomics	▪ **Project Site and Immediate Vicinity:** This includes the specific location of the project and the surrounding area that might be directly affected by construction, operation and maintenance, upgrade, and modification activities. The project site would include the transmission facility ROWs, substation locations, transmission towers, access roads, and construction yards and associated laydown areas. The immediate vicinity would be

Resource	Geographic Setting
	based on setback requirements within local land use codes and transmission facility voltages. ▪ **Vulnerable Populations and Overburdened Communities:** Applicants would work closely with the SEPA Lead Agency to identify which screening tool to use to ensure the project does not result in an adverse disproportionate impact on vulnerable populations or overburdened communities.

EMS = emergency medical services; **ESA** = Endangered Species Act; **FAA** = Federal Aviation Administration; **GIS** = geographic information system; **KOP** = key observation point; **LOS** = level of service; **ROW** = right-of-way; **SEPA** = State Environmental Policy Act

The cumulative impact analysis should also determine how far into the future to analyze cumulative impacts. To do this, the time frame of the proposal could be considered. For example, if the impacts of the proposal are expected to continue for five years, this timeframe may be the most appropriate for the cumulative impacts analysis (CEQ 1997).

4.3.4 Step 4: Reasonably Foreseeable Actions

Applicants should prepare an updated reasonably foreseeable actions (RFA) list based on the site-specific project, in coordination with the SEPA Lead Agency. The applicant may prepare the updated RFA list based on the geographic setting and timeframe of the project-specific application, and for the identified environmental resources. It may be helpful to develop a list and an associated map figure identifying the locations.

In general, RFAs can be excluded from the analysis of cumulative effects if:

- The action is outside the geographic boundaries or time frames established for the cumulative impacts analysis
- The action will not affect resources that are the subject of the cumulative impacts analysis, or
- The inclusion of the action would be arbitrary.

To include all proposals ever considered as RFAs would most likely overestimate the future effects of cumulative effects on the resources, ecosystems, and human communities. Therefore, guidelines as to what constitutes RFAs should

be developed. The following resources could be reviewed or completed to identify RFAs:

- SEPA Register - List of known public and private land use proposals in Washington State
- Federal Register - List of known public and private land use proposals required to comply with the National Environmental Policy Act (NEPA)
- Long-range plans, such as capital facilities plans, transportation improvement programs, natural resource plans, housing action plans, and economic development plans
- Local agency or jurisdiction websites on planned projects and developments
- Local comprehensive plans, existing zoning, and recent building permits
- Coordination with local jurisdictions or agencies

It should be noted that RFAs in the states of Idaho and Oregon, and/or in Canada, could have overlapping cumulative impacts in Washington.

The project-specific cumulative impact assessment can utilize and build from the RFAs identified in the Programmatic EIS, as applicable.

4.3.5 Step 5: Assessment of Cumulative Impacts

The analysis builds on information derived from the direct and indirect impacts analysis for the proposal. This makes it tempting to postpone the identification of cumulative effects until the direct and indirect effect analyses are well underway. However, early consideration of cumulative effects may facilitate the design of alternatives to avoid or minimize impacts. Do not defer the consideration of cumulative effects. Instead, as you begin to consider a project's potential direct and indirect effects, start outlining the potential cumulative effects as well. As more information about direct and indirect effects becomes available, use it to further refine the cumulative effects analysis. If it is determined that cumulative effects are not an issue, document that decision along with the reasons for the decision (WSDOT 2024).

Cumulative effects can either be discussed in individual sections on each element of the environment or included in a separate section. A separate section is most appropriate when there are a lot of cumulative effects that are interrelated across disciplines. Most project teams find it useful to have a separate discipline report or technical memo to document the details of methodology and findings.

Methods

In preparing the assessment, information about the cause-and-effect relationships between potential impacts and resources should be gathered. A cause-and-effect model can aid the identification of RFAs that should be considered in the analysis. However, a wide variety of evaluation techniques have been used. Once this initial evaluation is completed, the resulting impacts or consequences may be identified. As with defining the boundaries, analyzing the consequences of cumulative impacts requires broader thinking about the interactions among the projects and resources. The significance of cumulative effects depends on how they compare with the environmental baseline and relevant resource thresholds (such as regulatory standards) (CEQ 1997).

One method for determining the likely response or impact on the resources is to evaluate the historical effects of activities similar to those being proposed. A trends analysis can be used to model the impacts of linear facilities, such as transmission facilities, over time and extrapolate the effects of a project into the future (CEQ 1997).

If cause-and-effect relationships cannot be quantified, or if quantification is not needed to adequately characterize the consequences of the proposal, a qualitative evaluation procedure can be used. This process may involve categorizing the magnitude of impacts into a set number of classes (e.g., low, medium, high) or describing the types of impacts that may occur (CEQ 1997).

The significance of cumulative effects depends on how they compare with the environmental baseline and relevant resource thresholds (such as regulatory standards) (CEQ 1997).

4.3.6 Step 6: Mitigation Strategies

Describe how the proposal will mitigate probable adverse cumulative impacts. The discussion of minimization and mitigation in the cumulative impacts

analysis may reflect the distinction between the proposed action and other actions:

- Proposed Action. Minimization and mitigation for the impacts of the proposal are typically addressed outside the cumulative impacts section—as part of the discussion of the proposed action's direct and indirect effects—and can be cross-referenced in the cumulative impacts section. This discussion may include measures beyond the control of the lead agencies, such as land use planning decisions that could be implemented by local governments.
- Other Actions. Minimization and mitigation for impacts of other actions typically consist of a discussion of potential measures that could be adopted by the sponsors of those other actions. For example, if the "other actions" include agricultural practices that affect water quality in impaired streams, the cumulative impacts analysis could discuss potential measures that could be adopted to reduce agricultural run-off into streams. The discussion should identify the entity that would carry out such measures, as well as the likelihood of those measures actually being implemented.

4.3.7 Step 7: Evaluate Incremental Impacts

Evaluate how incremental impacts that will remain after mitigation are applied will be offset over time. Generally, mitigation applied at the project level is not 100 percent successful. The resulting small impacts associated with incremental development can add up, causing adverse cumulative impacts. For example, the stormwater runoff from a four-lot subdivision would carry pollutants from vehicles and pesticides from lawns into local streams and eventually the larger receiving water, such as Puget Sound or the Columbia River. The pollutants and pesticides from this subdivision may be minor, but add up such pollutants from 5 or 10 more subdivisions and they may be significant (Ecology 2017).

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