

SEATTLE PUBLIC UTILITIES SEPA ENVIRONMENTAL CHECKLIST

Seattle Public Utilities (SPU) has prepared the *2019 Water System Plan* (Plan), the latest long-range plan for SPU's drinking water system. The Plan is updated regularly as required by Washington State Department of Health (WDOH) regulations. These updates have occurred every six years but will occur every ten years going forward consistent with recent changes in WDOH regulations, unless significant changes warrant amendments or updates before that timeframe. SPU's last water system plan was approved in 2013. The Plan addresses SPU's water system capital facilities improvements identified for 2019 through 2040 as well as its water system operation and maintenance activities. Implementation of the *2019 Water System Plan* would require future evaluation and development of programs and capital improvement projects designed to address SPU's identified water system issues and needs.

This environmental review of the *2019 Water System Plan* has been conducted in accordance with the Washington State Environmental Policy Act (SEPA) [Revised Code of Washington (RCW) 43.21C], the State's SEPA regulations [Chapter 197-11 Washington Administrative Code (WAC)], and the City of Seattle SEPA ordinance [Seattle Municipal Code (SMC) Chapter 25.05]. SPU has prepared this SEPA Environmental Checklist under the non-project and phased review provisions of SEPA. Non-project actions are broader than a single site-specific project (Section 197-11-774 WAC). Phased review covers general matters in a broader environmental document, with subsequent more narrowly focused documents that concentrate on the issues relating to specific projects (Section 197-11-776 WAC). This Checklist addresses both the potential non-project impacts (Subpart D, Supplemental Sheet for Non-Project Actions) and the types of anticipated projects and their general range of potential environmental impacts (Subpart B, Environmental Elements). Actions that require project-specific environmental analysis of impacts will be subject to additional review before federal, state, and local permits are issued.

A. BACKGROUND

1. Name of proposed project:

Seattle Public Utilities 2019 Water System Plan

2. Name of applicant:

Seattle Public Utilities

3. Address and phone number of applicant and contact person:

Joan M. Kersnar, P.E.
Drinking Water Planning Manager
Seattle Public Utilities
Water Planning and Program Management Division
Seattle Municipal Tower
700 Fifth Avenue, 59th Floor
P.O. Box 34018
Seattle, WA 98124-4018
(206) 684-0839
joan.kersnar@seattle.gov

4. Date checklist prepared:

March 6, 2018

5. Agency requesting checklist:

Seattle Public Utilities (SPU)

6. Proposed timing or schedule (including phasing, if applicable):

SPU developed the *2019 Water System Plan* to describe future infrastructure projects and operations and maintenance (O&M) activities for SPU's drinking water system for the period 2019 through 2040. SPU's water system plan has been updated every six years to meet state regulatory requirements but will be updated every ten years going forward due to recent regulatory changes, unless significant changes warrant amendments or updates before that timeframe. Regulations require the Seattle City Council to approve the *2019 Water System Plan* through an ordinance. That approval is planned for the Fall of 2018, prior to submittal to WDOH. WDOH's approval of the Plan is needed on or before April 19, 2019. SPU would implement the Plan in phases. Some elements of the Plan may be implemented immediately upon City Council approval, while others would be implemented in future years. Some elements of the Plan would be contingent on additional legislative action by the City Council.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

SPU engages in many activities related to its water system, including planning, engineering, operation, maintenance, financial planning, and customer service. SPU would continue to focus on programs and initiatives to address water capital and O&M needs. SPU would periodically review and update the *2019 Water System Plan*, as needed. Future updates of the Plan may undertake additional environmental review under SEPA depending on the nature of the updates.

The *2019 Water System Plan* includes plans for ongoing water programs and maintenance activities such as infrastructure repair and replacement. Future programs and projects to implement the Plan would undergo environmental review at the time projects are specifically proposed, to the extent applicable. Refer to Response A10. Related planning efforts are described in detail in Chapter 1 of the *2019 Water System Plan*.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

A large body of existing scientific, planning, and environmental information, comprising published and unpublished data, analyses, and literature—including previous water system plans—provided a basis for the analysis and development of the *2019 Water System Plan*. SEPA analyses have been prepared for the following previous water system plans and are incorporated by reference into this Checklist:

- SEPA Environmental Checklist and Determination of Non-significance (DNS), SPU 2013 Water System Plan, April 2012.
- SEPA Environmental Checklist and DNS, SPU 2007 Water System Plan, August 2006.
- SEPA Environmental Checklist and DNS, SPU 2001 Water System Plan Update, July 2000.
- 1993 Comprehensive Regional Water Supply Plan SEPA Environmental Impact Statement (EIS).
- Seattle Water Department COMPLAN EIS, 1985.

The following documents have been prepared for several Seattle programs and projects related to the *2019 Water System Plan* and this Checklist. These are incorporated by reference in this Checklist and are cited where appropriate. These include:

- *2017-2022 Cathodic Protection System Maintenance, Repair, and Minor Modification* SEPA Environmental Checklist and DNS, October 2017.
- *2017 Cathodic Protection Improvement Project* SEPA Environmental Checklist and DNS, March 2017.
- *City of Seattle Residential RainWise Program* SEPA Environmental Checklist and DNS, February 2013.
- *Landsburg Forebay Cleaning* SEPA Environmental Checklist and DNS, February 2012, and DNS addendum October 2013.
- *South Fork Tolt Municipal Watershed Management Plan* SEPA Environmental Checklist and DNS, July 2011.
- *Cedar Right – Transfer of Water Right* SEPA Environmental Checklist and DNS, May 2006.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

There are no other applications pending for governmental approvals of other proposals directly affecting this proposal. However, individual projects related to the Plan may require additional approvals. Such approvals would be sought for these individual projects prior to construction or development, as applicable. Other, unrelated (public and private) proposals and government approvals may be pending that could affect SPU's water supply service area, the Cedar and Tolt municipal watersheds, and/or the SPU pipeline corridors between the service area and the municipal watersheds.

10. List any government approvals or permits that will be needed for your proposal, if known.

Regulations require the Seattle City Council to approve the *2019 Water System Plan* through an ordinance. City Council approval of the Plan would include adoption of the Plan's 2019-2028 Water Use Efficiency Goal. In addition, WDOH reviews and approves updates of water system plans, as required under Section 246-290-100 WAC. The King County Utilities Technical Review Committee (UTRC) reviews water utility comprehensive plans for compliance with King County Code Chapter 13.24. The UTRC recommends approval or denial to the King County Council, which takes action by ordinance. Some elements of the Plan would be contingent on additional legislative action by the Seattle City Council. Permits and approvals needed to implement specific programs, projects, and activities in the Plan would be determined during planning and design of these programs, projects, and activities.

11. Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.

SPU operates and maintains its regional water system—the largest in Washington State—with a service area population of 1.4 million. SPU's two main sources of water supply are the surface waters of the Tolt and Cedar River municipal watersheds, each with its own water treatment facilities. SPU's Seattle Well Fields are available during peak demand seasons and

in emergencies. SPU's high-quality drinking water is delivered to its customers through an existing network of approximately 1,820 miles of transmission and distribution system pipelines.

In its continued efforts to provide reliable, efficient and environmentally conscious utility services to its wholesale and retail customers, SPU has prepared the *2019 Water System Plan* in compliance with state regulatory requirements. The Plan presents SPU's water system capital facilities and the O&M "roadmap" for the next ten years and beyond. The Plan is described in detail in the Public Review Draft of the *2019 Water System Plan* (March 2018), available on the SPU website: www.seattle.gov/util/WaterSystemPlan. A summary of the Plan is presented below.

Objectives

Section 246-290-100 WAC requires water purveyors having 1,000 or more service connections to prepare and submit new or updated water system plans to WDOH every ten years, unless significant changes warrant amendments or updates before that timeframe. According to the WAC, the purposes of such a plan are to:

- Demonstrate the system's operational, technical, managerial, and financial capability to achieve and maintain compliance with relevant local, state, and federal plans and regulations; and
- Demonstrate how the system will address present and future needs in a manner consistent with other relevant plans and local, state, and federal laws, including applicable land use plans.

SPU has prepared the *2019 Water System Plan* as its long-range water system plan to meet these state regulations.

Plan Summary

The Plan includes proposed programs, projects, and activities relevant to SPU's water system, including planning relative to major capital projects. Some programs, such as water conservation, could affect the environment at the regional level. Some of the programs, projects, and activities have been identified in previous planning documents and some have been analyzed through previous SEPA documents. Many of these are continuations of existing SPU activities. Previous environmental and planning documents are identified in Response A8, above.

Key changes in the Plan from previous water system plans include an updated long-range water demand forecast, a new conservation goal and a shift in conservation program emphasis; development of revised climate change adaption strategies; an update to the Water Shortage Contingency Plan; shifts in ongoing maintenance activities; and planning for several potential capital infrastructure projects and programs. The key findings and implementation actions of the *2019 Water System Plan* are summarized below.

WATER RESOURCES

SPU's water supply system consists of surface water reservoirs on the Cedar River and South Fork Tolt River and two well fields providing groundwater. The system is operated primarily for water supply and protection of instream flows, but is also used for hydroelectric power generation and flood management.

Water Use

- Approximately one-half of SPU's water is used by SPU's retail customers and one-half is sold through wholesale contracts to 19 municipalities and special purpose districts, plus Cascade Water Alliance, who in turn provide the water to their own retail customers.
- Since 1990, consumption has decreased about 28 percent while population has increased by the same percentage.
- From 2016 to 2040, population is forecast to increase by 10 percent in SPU's retail service area and by 24 percent in the service area of SPU's full and partial wholesale water contract holders. Employment is forecast to grow by 29 and 43 percent, respectively, over the same period.
- Total demand is forecast to remain relatively flat through 2030 before rising gradually to a peak of 137 million gallons per day (mgd) in 2039. By 2060, total water demand from SPU's system is forecasted to have ramped back down to 133 mgd, which is consistent with what was forecasted in the *2013 Water System Plan*.
- Primary factors influencing the demand forecast consist of the declining block contract with Cascade Water Alliance and continued reductions in water use by customers.

Conservation

- The Plan sets a 2019-2028 Water Use Efficiency Goal to keep the total average annual retail water use of Saving Water Partnership members under 110 mgd through 2028 despite forecasted population growth by reducing per capita water use. This new regional goal has a modestly higher threshold than the previous 2013-2018 goal of 105 mgd that was reported in the 2013 WSP. However, the new goal still represents significant conservation within the context of continued population growth forecast for the 2019-2028 time period.

Water Supply

- The current firm yield estimate (the amount of water that can be withdrawn within SPU's supply reliability standard) for SPU's water supply system is 172 mgd, which is unchanged from the firm yield estimate in the *2013 Water System Plan*.
- No modifications to SPU's service area are proposed as part of this Plan.
- Given the new demand forecast and current firm yield estimate for SPU's existing supply resources, no new source of supply is needed before 2060.
- Should a drought or other water supply emergency occur, SPU would activate the Water Shortage Contingency Plan (WSCP), which is contained in the Plan's appendices. The WSCP has been updated since the *2013 Water System Plan* based on lessons learned from the response to the 2015 drought.

Climate Change and Future Supply Outlook

- Climate variability and climate change are uncertainties that SPU will continue to study and consider in ensuring that current and future water demands for people and fish are met. SPU will further evaluate adaptation strategies to address identified vulnerabilities and will identify and plan for additional adaptation and new supply

options with an emphasis on building system resilience under a range of potential climate scenarios.

Planned Infrastructure and Operational Improvements

- SPU will conduct further investigations to determine the potential impact on water quality that could be caused by failure of Lake Youngs Cascades Dam and will study potential improvements to mitigate this risk.
- SPU will complete work on the South Fork Tolt Valve 15 and replace the Tolt Dam Warning System.
- SPU will support Seattle City Light in studies needed for FERC relicensing of the South Fork Tolt Hydroelectric Project.

WATER QUALITY AND TREATMENT

SPU's water system includes water treatment facilities for the Cedar and South Fork Tolt source waters, in-town disinfection facilities at reservoirs and well sites, and a state-certified water quality laboratory.

Drinking Water Quality

- SPU's source protection practices, water treatment facilities, and distribution system practices have provided excellent quality water that ensures compliance with current and future regulations.
- SPU continues to meet drinking water quality regulations and other aesthetic criteria (i.e., taste and odor).
- In the Fall and Winter of 2016 and 2017, SPU participated in a Water Research Foundation study related to distribution system flushing. SPU will continue to review distribution system flushing practices and the level of resources allocated to flushing of the distribution system through fire hydrants.
- SPU conducted a risk-cost analysis of public access on the Kerriston Road within the lower Cedar River watershed and determined that additional expense of land acquisition is not warranted at this time to mitigate risk from public access. SPU will revisit the risk-cost analysis if there is an increase in trespass in the area.
- SPU will continue to monitor and characterize limnological conditions in Lake Youngs to evaluate potential effects on Cedar supply operations and treated water quality.
- SPU will continue to avoid having problematic algae in the water system by bypassing Lake Youngs during periods of algal growth.
- SPU will continue its ongoing efforts to prevent aquatic nuisance and invasive species from being introduced into the drinking water system.
- SPU will remove lead whips, or goosenecks, when these are found while replacing service lines for other reasons or when a lead whip is otherwise discovered. Lead whips/goosenecks were formerly used as short, flexible connections between a water main and service line and are made of lead. SPU reduces the risk of potential lead leaching by continuously treating its source water to specific optimized corrosion control targets for pH and alkalinity.

- SPU will stay abreast of EPA and WDOH regulatory developments and make adjustments as necessary to ensure that the SPU water quality service levels are always met.
- SPU will monitor the science regarding new or emerging contaminants of concern, and continue to monitor source and finished drinking water to determine whether these contaminants are at levels of concern in SPU supplies.

Reservoir Covering/Burying

- SPU completed the DOH-approved Reservoir Covering Plan ahead of schedule.
- SPU disconnected the remaining open reservoirs, Roosevelt and Volunteer, from the water system in 2013. The long-term use of these two out-of-service open reservoirs will continue to be evaluated for potential future emergency storage as part of SPU's water system seismic study that is currently underway.
- SPU will evaluate options to replace the floating covers on Lake Forest Park Reservoir and Bitter Lake Reservoir.

Water Treatment Facilities

- SPU will continue to evaluate contract extension options for the Tolt and Cedar water treatment facilities, which are operated and maintained by a private partnership under the terms of long-term Design-Build-Operate (DBO) contracts, and SPU will plan for upgrades as these facilities age.

WATER TRANSMISSION SYSTEM

SPU's transmission system consists of the facilities that convey bulk water to wholesale customers throughout the regional service area, as well as to SPU's own retail service area distribution system. SPU's transmission system facilities include the large-diameter transmission pipelines, storage facilities, pump stations, wholesale customer meters, and other appurtenances that are used in conveying water from SPU supply sources. The regional and sub-regional water transmission systems include 193 miles of pipeline, 7 covered reservoirs, 15 pump stations, and 7 elevated tanks and standpipes. Taps off of the major supply transmission pipelines from the Cedar and Tolt sources deliver water to 131 wholesale customer master meters and intertie locations.

Transmission Infrastructure

- SPU has met the wholesale contract requirements for pressure and flow, and there have been no unplanned outages of the transmission pipelines that have exceeded SPU's service level for maximum outage durations.
- Since the 2013 Water System Plan, corrosion has been discovered along the lockbar of lockbar pipelines causing SPU to take a proactive approach to their condition assessment and rehabilitation going forward.
- SPU will employ a combination of short- and long-term measures to improve the overall water system's performance following a major earthquake, based on the results of a water system seismic vulnerability study that is currently underway.
- SPU will continue to mitigate the risk of pipe failure in the Tolt slide area through continued slope monitoring, additional geotechnical data collection, periodic internal inspections, and biannual leak testing, and by implementing additional capital improvements and pipeline stress relief measures when appropriate.

- SPU will continue to implement cost-effective cathodic protection projects for older steel transmission pipelines to protect them from corrosion and extend their service lives well into the future.

- SPU will remove the Richmond Highlands #1 Tank from service for decommissioning.

WATER DISTRIBUTION SYSTEM

SPU's water distribution system consists of water mains, distribution storage facilities and pump stations, and related appurtenances such as valves, hydrants, service connections, and retail billing meters. The water distribution system contains more than 1,630 miles of water mains, most of them 6 to 12 inches in diameter. The water distribution system also includes 2 open reservoirs that have been disconnected from the drinking water system, 6 covered reservoirs, 16 pump stations, and 6 elevated tanks and standpipes. In addition, the system has 17,000 valves, 19,000 fire hydrants and 191,000 service lines and meters serving individual residential and non-residential properties in SPU's retail service area.

Service Delivery

- Pressures at all retail service connections are greater than 20 pounds per square inch (psi) during normal operations.
- More than 90 percent of the time, SPU responded to reported distribution system problems within one hour.
- SPU's distribution system leakage has varied from 4.9 to 6.8 percent over the past 6 years, with the last three years averaging 5.4 percent. Since 2006, the 3-year rolling average has remained below the WDOH standard of 10 percent.
- Based on data from 2004 through 2016, SPU's rate of water main leaks and breaks remains low, averaging 9 reported leaks or breaks per 100 miles per year in the distribution system. This is less than the rate experienced by other major water utilities in the United States.

Distribution Infrastructure

- SPU will continue to improve operational response and customer service by using information from the water main shutdown block analysis for project and emergency shutdown plans.
- SPU will continue to replace older water mains with new earthquake resistant pipe in seismically vulnerable areas when there is an opportunity to do this work because the water main needs to be replaced for other reasons.
- Following completion of a water system seismic vulnerability study that is currently underway, SPU will improve the overall water system's performance following a major earthquake.
- SPU will continue to work with the Seattle Fire Department and Shoreline Fire Department to improve fire hydrant maintenance and testing practices, better coordinate communication, and prioritize fire flow improvement projects. SPU will engage in similar discussions with other fire districts where appropriate.
- SPU will continue to proactively replace or rehabilitate water mains based on criticality and leak/break history.

- SPU will work to address impacts to the water system from transportation projects, particularly Move Seattle levy and Sound Transit projects.
- SPU will include proactive hydrant painting tasks in all hydrant maintenance work orders to paint hydrants when needed and during amenable weather conditions.
- SPU will continue working with developers where water main replacements or upgrades in redevelopment areas are required to meet current fire flow requirements and water main standards.

PLAN IMPLEMENTATION

Implementation of this plan requires completion of capital projects, programs, and operations and maintenance activities. SPU uses an asset management approach in selecting which capital improvement projects go forward. The cost estimates presented in the plan are subject to change as the projects are further developed and analyzed, and ultimately require budget approval of the Seattle City Council.

Capital Facilities Budget

- SPU's Capital Facilities Plan totals to \$1.7 billion from 2019 through 2040 (in 2017 dollars).
- Within the 2019 to 2040 timeframe, capital spending is expected to be highest in the earlier years due to significant distribution system expenditures associated with the Move Seattle transportation levy.

- 12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.**

The planning area for the *2019 Water System Plan* includes the entire SPU water service area (approximately 840 square miles), the Tolt River and Cedar River municipal watersheds (approximately 160 square miles), and the SPU pipeline corridors that connect the municipal watersheds and supply sources to SPU's service area. Locations of the SPU water service area and the municipal watersheds are shown in Attachment A.

As shown in this figure, SPU's water service and planning area generally includes the City of Seattle, surrounding suburban areas immediately to the north and south, and similar areas extending east of Lake Washington to slightly beyond North Bend. The SPU water service area also includes the retail service areas of SPU's current and potential wholesale customers, and areas that SPU does not currently serve but could serve in the future. These areas are shown in Attachment A.

The planning area is comprised of SPU's municipal watersheds and service area that includes all of the City of Seattle, much of the surrounding areas of King County, and a small portion of southern Snohomish County. Cities located within the planning area include Seattle, Shoreline, Edmonds, Lake Forest Park, Kenmore, Bothell, Woodinville, Kirkland, Redmond, Issaquah, Bellevue, Mercer Island, Burien, Normandy Park, Des Moines, Tukwila, Renton, Kent, SeaTac, North Bend, Duvall, and Carnation.

Future water programs and projects to implement the proposed 2019 Water System Plan could occur at various locations within the planning area. Precise locations of specific water system projects would be identified in the future when individual water system projects are implemented.

B. ENVIRONMENTAL ELEMENTS

Approval of this Plan is a non-project action under SEPA. Non-project (also called programmatic) actions include approval of plans, policies, programs, or regulations that contain standards controlling use of the environment or standards that would guide a group of related future actions. The probable significant adverse environmental impacts analyzed in a non-project SEPA environmental checklist are those impacts foreseeable at this stage, before specific project actions are planned. That is, the range of potential impacts of these anticipated types of projects and activities are discussed at a broad level in this Checklist rather than at a more detailed level of individual project and site-specific impacts.

More specific information on approvals or permits for projects anticipated under the Plan would be determined during project-level design, environmental review, and permitting. Future actions resulting from the 2019 Water System Plan must comply with applicable federal, state, and local regulations and could require certain federal, state, and local government approvals and permits, including SEPA review, and potentially NEPA review if a project involves federal funding or permits/approvals. Such future projects may use all or part of this Environmental Checklist or other City environmental documents to satisfy the requirements of SEPA in whole or in part.

1. Earth

a. General description of the site: *[Check the applicable boxes]*

- Flat Rolling Hilly Steep Slopes Mountainous
 Other: (identify)

In general, the planning area is characterized by a wide variety of topographical features, ranging from flat river valleys, ravines, and hillsides to shallow estuaries and deep marine waters. The City of Seattle is located on a series of hills and intervening valleys in the Puget Sound lowlands. The Cedar and Tolt municipal watersheds are located in the mountainous terrain of the Cascade Mountains. More specific information on the site topography would be determined during the design, environmental review, and permitting of individual projects.

b. What is the steepest slope on the site (approximate percent slope)?

Slopes in the planning area generally range from 0 to 40 percent, with steeper slopes present. More specific information on site topography would be determined during the design, environmental review, and permitting of individual projects.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

As the result of several periods of glaciation, compacted or cemented glacial till underlies much of the planning area. Permeable soils overlying the till are shallow, ranging from 2 to 4 feet deep, while the impermeable till layer may be quite deep. Compact clay (hardpan) often underlies the surface soils. Predominant soil types in the area are artificial fill, alluvial soils, and the Alderwood series soils. The Alderwood soil series

occurs in upland areas and is the most common soil series in King County. Alluvial soils occur along streams and in river valleys.

Due to previous urban and suburban development, prime farmland is no longer present within Seattle and other cities. Prime farmland is located outside the urban growth areas of Seattle and other cities, such as areas of the Snoqualmie and Green River valleys.

Because much of SPU's service area is densely urbanized, native soils in the planning area have been extensively altered. In addition, soils in the immediate vicinity of existing SPU facilities are likely to include highly disturbed native soils and fill materials as a result of the construction, operation, and maintenance of those facilities. More specific information on soils would be determined during the design, environmental review, and permitting of individual projects.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe:

Unstable soils in the planning area primarily occur in areas of steep slopes and in areas of artificial fill or alluvial soils with shallow water tables that may lead to soil liquefaction during earthquakes. Areas where these conditions may exist have been mapped by local jurisdictions as critical areas.

SPU has studied the stability of the Cedar moraine slope area near its Masonry Dam, and has identified a slope near the head of West Boxley Creek with the potential for a groundwater burst flood during a large earthquake.

In the SPU-managed areas above the Tolt Dam, 44 separate landslides from the period of 1964 to 2003 have been inventoried and identified as either debris torrent/flows or shallow rapid process types. Failures are more likely to be debris flows in the steep drainages of the watershed. Forest roads are associated with the majority of landslides, and almost all of the shallow rapid-type landslides are associated with forest roads.

In 2009, Tolt Pipelines 1 and 2 were found to cross a historic slide located between the Tolt Regulating Basin and the Tolt Treatment Facility. SPU has an on-going survey and inclinometer monitoring program to track the slide and any pipeline movement.

More specific information on unstable soils would be determined during the design, environmental review, and permitting of individual projects.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate the source of fill.

Filling and/or grading activity could occur in association with some future water system projects. In general, the amounts of grading and filling required for most O&M activities would be relatively modest. Some projects, such as pipeline projects, could require excavation and back filling. More specific information on filling and grading would be determined during the design, environmental review, and permitting of individual projects.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe:

Actions contemplated in the Plan could involve clearing and grading activities during construction, which could result in exposed soils and erosion, if uncontrolled; however, SPU utilizes best management practices to control and reduce erosion during individual project implementations. Once constructed, operation of SPU water system projects

generally would not create or increase the potential for long-term erosion. More specific information on the potential for erosion would be determined during the design, environmental review, and permitting of individual projects.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Some SPU projects could require construction of new impervious surfaces; although, it is expected that most projects associated with the Plan would result in relatively minor additional impervious surface area if any. Many operations and maintenance activities would occur in urban areas or within roadway rights-of-way, which already have large areas of impervious surface. Potential infrastructure projects in the relatively undeveloped Cedar and Tolt municipal watersheds could involve minor amounts of additional impervious surface. The total area of new impervious surfaces constructed by projects and activities contemplated in the Plan is not known. More specific information on the creation of new impervious surfaces would be determined during the design, environmental review, and permitting of individual projects.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

More specific information on the potential for erosion and site-specific erosion control measures would be determined during the design, environmental review, and permitting of individual projects. Those projects would comply with the applicable stormwater, grading, erosion control, and critical areas provisions of the State and local jurisdictions (such as the City of Seattle's Stormwater Grading and Drainage Control Code). When applicable, project construction would use site-specific standard operating procedures (SOPs), best management practices (BMPs), and other measures to prevent or reduce potential erosion. Such measures could include temporary erosion controls, stormwater pollution prevention plans, and spill prevention control and countermeasures plans. Examples of temporary erosion controls include installing filter fabric fences or hay bales, covering exposed soils, using temporary soil covers such as mulch, diverting stormwater with temporary berms, and using settling ponds or grass-lined swales to prevent sediment from moving into receiving waters and storm drains.

2. Air

a. What types of emissions to the air would result from the proposal [e.g., dust, automobile, odors, industrial wood smoke, greenhouse gases (GHG)] during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Mobile and stationary equipment would be used to construct, operate, and maintain some of the projects and activities contemplated in the Plan, thus generating emissions due to the combustion of gasoline and diesel fuels (such as oxides of nitrogen, carbon monoxide, particulate matter and smoke, uncombusted hydrocarbons, hydrogen sulfide, carbon dioxide, and water vapor). Emissions during construction would also include normal amounts of dust from grading and hauling activities. Some of those emissions are considered to be greenhouse gases (GHG). Some projects and activities would also generate greenhouse gas in their use of pipe, concrete, asphalt, or other materials (embodied GHG). The quantities and timing of these emissions are not known, but more

specific information on emissions would be determined during the design, environmental review, and permitting of individual projects.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

Future water facilities contemplated under the Plan would not be affected by off-site emissions or odors. There are no known off-site sources of emissions or odor that would affect this proposal.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Generally, the emissions described above are expected to be minimal, localized, and temporary. More specific information on the types and quantities of air emissions, including greenhouse gas emissions, if present, would be determined during the design, environmental review, and permitting of individual projects and activities. Projects and activities would comply with applicable air quality regulations and would control emissions using reasonably available control technologies and City of Seattle SOPs and BMPs for construction. These would include requiring SPU personnel and any contractors to use best available control technologies, use dust control technologies, perform proper vehicle maintenance, and minimize vehicle and equipment idling. Site-specific BMPs and other measures to reduce or control emissions would be developed during project-level environmental review and permitting.

3. Water

a. Surface:

(1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If so, describe type and provide names. If appropriate, state what stream or river or water body it flows into.

In general, the planning area is characterized by a wide variety of surface water features, including marine areas, rivers, lakes, artificial reservoirs, and streams. Potential infrastructure projects could occur in the vicinity of the Puget Sound; Lake Washington; the Ship Canal; Lake Union; Chester Morse Lake; Rattlesnake Lake; Lake Youngs; South Fork Tolt Reservoir; Tolt River; Cedar River; Snoqualmie River; Green/Duwamish River, and their tributaries; and other urban rivers and creeks (e.g. Thornton Creek, Longfellow Creek, Pipers Creek, Taylor Creek, etc.) within Water Resource Inventory Areas 7, 8, and 9. More specific information on surface water bodies near individual sites would be determined during project-level design, environmental review, and permitting.

(2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If so, please describe, and attach available plans.

Some of the future Capital and Operations and Maintenance projects could occur in and around natural surface waters and SPU's in-town reservoirs. Capital projects and Operations and Maintenance projects could occur in the Cedar or Tolt municipal watersheds. Maintenance and other improvement projects in urban areas could occur within public rights-of-way that are also near surface waters. The specific potential for work affecting surface waters would be identified during future design, environmental review, and permitting of individual projects.

- (3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands, and indicate the area of the site that would be affected. Indicate the source of fill material.**

Fill and/or dredge activity could occur in association with some future projects. Potential stream and river crossings could require in-water work, where some excavation and fill could occur to install and backfill pipelines. The amounts of fill and dredge material created by projects and activities contemplated in the Plan are not known. These details would be determined during future design, environmental review, and permitting of individual projects.

- (4) Will the proposal require surface water withdrawals or diversions? If so, give general description, purpose, and approximate quantities if known.**

The programs, projects, and activities contemplated in the Plan are designed to provide high-quality drinking water to SPU customers and to maintain instream flows. Water is currently withdrawn from the Cedar and South Fork Tolt rivers in compliance with existing regulations, permits, agreements, and water rights. SPU has determined that it has adequate supplies of water for its customers as well as for the instream needs of the South Fork Tolt and Cedar rivers. SPU also has determined that it would not likely need any additional sources of water supply before 2060, and therefore does not propose major new water withdrawals during the planning horizon of this Plan. SPU would continue to implement programs to meet water conservation goals that would further reduce the potential for new surface water withdrawals or diversions.

During construction, individual water system projects could require temporary diversions of surface water. The quantities, timing, and duration of those diversions are not known and would be determined during future design, environmental review, and permitting of applicable individual projects.

- (5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

Some of the future capital and O&M projects contemplated in the Plan could occur in or near floodplains. Maintenance and other improvement projects would occur within developed and undeveloped public rights-of-way, but also could cross floodplains. More specific information on potential work within 100-year floodplains would be determined during project-level design, environmental review, and permitting.

- (6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

Programs, projects, and activities contemplated in the Plan are not expected to discharge waste materials to surface waters. Wastewater from SPU facilities currently discharges into public wastewater systems and/or existing septic systems, and vault toilets or similar are utilized where public wastewater systems or septic systems are not available. Temporary restrooms (sanicans) used during construction are self-contained and pumped out at regular intervals.

b. Ground:

- (1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.**

In addition to the major surface water supplies in the Cedar and South Fork Tolt watersheds, SPU operates two well fields in the City of SeaTac (Seattle Well Fields) under temporary water right permits. These wellfields provide peak season and emergency supply as needed, and can supply up to 10 mgd for drinking water purposes. A wellhead protection program is currently in place for these groundwater sources.

Individual project construction could require below-ground work and may result in the need for temporary dewatering to maintain dry construction conditions. The quantities, locations, and duration of that dewatering activity are not known. More specific information on potential groundwater withdrawals or discharges would be determined during the design, environmental review, and permitting of individual projects.

- (2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage; industrial, containing the following chemicals...; agricultural, etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

Programs, projects, and activities contemplated in the Plan are not expected to discharge waste materials to ground waters. Wastewater from existing SPU facilities discharges into public wastewater systems and/or existing septic systems, and vault toilets or similar are utilized where public wastewater systems or septic systems are not available. Temporary restrooms (sanicans) used during construction are self-contained and pumped out at regular intervals and the contents transferred to sanitary sewer systems. More specific information on potential waste material discharges into the ground would be determined during the design, environmental review, and permitting of individual projects.

c. Water Runoff (including storm water):

- (1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

Some SPU projects and construction activities could temporarily increase runoff due to the creation of modest amounts of new impervious surfaces, although most capital projects and operations and maintenance projects are not expected to create increased areas of additional impervious surface. More specific information on the potential for runoff and identification of receiving waters, if present, would be determined during the design, environmental review, and permitting of individual projects. See also Response B1.g.

(2) Could waste materials enter ground or surface waters? If so, generally describe.

Operation of SPU water system projects would not directly discharge waste materials of any kind into ground or surface waters. Human, animal, or operational wastes would not be discharged. Construction activities could temporarily discharge waste materials as the result of an accidental spill. More specific information on potential waste material discharges into ground or surface waters would be determined during the design, environmental review, and permitting of individual projects.

(3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

Programs, projects, and activities contemplated in the Plan are not expected to alter or otherwise affect drainage patterns. More specific information on potential project effects on drainage patterns would be determined during the design, environmental review, and permitting of individual projects.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

Actions contemplated in the Plan would be designed, constructed, and operated to meet applicable local, state, and federal regulatory and permit requirements to protect water resources, including surface waters, shorelines, floodplains, ground water, and stormwater runoff. Specific measures for reducing or controlling impacts to water resources—including compensatory mitigation—would be identified during the design, environmental review, and permitting of individual projects, as applicable.

Generally, impacts related to water resources are expected to be minimal, localized, and temporary—typically related to construction. These short-term, temporary impacts associated with construction would be controlled with site-specific SOPs, BMPs, and other measures such as temporary erosion and sedimentation controls (see also Response B.1.h) and the preparation and implementation of plans for pollution and spill prevention. If permanent, impacts would be mitigated to the satisfaction of the relevant regulatory agencies.

4. Plants

a. Types of vegetation found on the site: [check the applicable boxes]

<input checked="" type="checkbox"/> Deciduous trees:	<input checked="" type="checkbox"/> Alder	<input checked="" type="checkbox"/> Maple	<input checked="" type="checkbox"/> Aspen	
<input checked="" type="checkbox"/> Other: cottonwood, various ornamentals				
<input checked="" type="checkbox"/> Evergreen trees:	<input checked="" type="checkbox"/> Fir	<input checked="" type="checkbox"/> Cedar	<input checked="" type="checkbox"/> Pine	
<input checked="" type="checkbox"/> Other: hemlock, various ornamentals				
<input checked="" type="checkbox"/> Shrubs				
<input checked="" type="checkbox"/> Grass				
<input checked="" type="checkbox"/> Pasture				
<input checked="" type="checkbox"/> Crop or grain				
<input checked="" type="checkbox"/> Orchards, vineyards, or other permanent crops				
<input checked="" type="checkbox"/> Wet soil plants:	<input checked="" type="checkbox"/> Cattail	<input checked="" type="checkbox"/> Buttercup	<input checked="" type="checkbox"/> Bulrush	<input checked="" type="checkbox"/> Skunk cabbage
<input checked="" type="checkbox"/> Other: various native and non-native rushes, sedges, grasses, willows				
<input checked="" type="checkbox"/> Water plants:	<input checked="" type="checkbox"/> water lily	<input checked="" type="checkbox"/> eelgrass	<input checked="" type="checkbox"/> milfoil	<input type="checkbox"/> Other: (identify)
<input checked="" type="checkbox"/> Other types of vegetation: various other vascular and non-vascular plants				

Generally, the Puget Sound Region is home to an extremely wide diversity of plant species that depend upon marine, estuarine, freshwater, and terrestrial environments. The planning area has a broad variety of vegetation, including upland forest (deciduous, coniferous, and mixed), shrublands, riparian forests, croplands (including pasture), and wetlands. This flora includes species native to the region, as well as many non-native species. Seattle, adjacent cities, and suburbs are developed urban areas having few remaining areas of native vegetation and high-quality habitat. These remaining fragments of quality native vegetation are found in parklands and open spaces throughout the planning area. The plants found in most urban and suburban areas are those native and non-native species that tolerate or benefit from habitat degradation and disturbance.

Typically, areas on and adjacent to SPU's infrastructure and facilities have been extensively altered by construction, operation, and maintenance of that infrastructure or facility. Turf and ornamental shrubs dominate SPU's in-town reservoir sites. Pipeline routes are dominated by turf and shrublands. The Cedar and Tolt municipal watersheds, in comparison, are primarily forestlands dominated by conifers. More specific information on existing vegetation would be determined during the design, environmental review, and permitting of individual projects.

b. What kind and amount of vegetation will be removed or altered?

Programs, projects, and activities contemplated in the Plan could remove or alter existing vegetation. In general, potential Operations and Maintenance projects would require minimal clearing of vegetation. Many future water infrastructure projects would occur in developed urban and suburban areas, and the amounts of vegetation to be removed or altered likely would be relatively small, localized, and mostly limited to urban-type vegetation. Some vegetation removal could be associated with larger infrastructure projects. Vegetation on or adjacent to project sites could be disturbed by construction activities. More specific information on the kind and amount of vegetation to be removed or altered would be determined during the design, environmental review, and permitting of individual projects.

c. List threatened or endangered species known to be on or near the site.

The Puget Sound basin is home to a wide diversity of plant species that depend upon marine, estuarine, freshwater, and terrestrial environments. Some of the species listed as threatened and endangered under the Endangered Species Act (ESA) and found in the Puget Sound region include golden paintbrush (*Castilleja levisecta*), water howellia (*Howellia aquatilis*), and Kincaid lupine (*Lupinus sulphureus* ssp. *kincaidii*). Because many potential project sites affected by the Plan have been previously developed and the native vegetation previously removed or significantly altered, the potential for these or other threatened or endangered plant species to be present on or near these sites is low. However, some actions contemplated in the Plan could impact threatened or endangered plants or their habitats. More specific information on the presence of threatened or endangered species and their habitats would be determined during the design, environmental review, and permitting of individual projects.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Actions contemplated in the Plan would be designed, constructed, and operated to minimize impacts to plants and meet applicable local, state, and federal regulatory and permit requirements to protect vegetation, including threatened and endangered plants

and their habitats. Specific measures for reducing, controlling, or mitigating impacts to plants would be identified during the design, environmental review, and permitting of individual projects, as applicable.

Where a project requires removal or alteration of vegetation, vegetation would be restored following construction using SPU’s standard construction practices. Where appropriate, SPU would prepare a landscape plan or restoration for individual projects. Areas would be restored, when possible, with plantings of native species and other appropriate vegetation.

e. List all noxious weeds and invasive species known to be on or near the site.

A variety of noxious weeds and invasive species are known to be located within the planning area. Most of these plant species are categorized as Class 1, 2, or 3 noxious weeds by the State of Washington. As the majority of the planning area is located within King County, there are numerous invasive and/or noxious plant species found in the list of “Weeds of Concern” that is maintained by King County Department of Natural Resources and Parks that are, or could be, found in the planning area. All of these noxious and/or invasive plant species can be found listed on the County’s website: <http://www.kingcounty.gov/services/environment/animals-and-plants/noxious-weeds/laws/list.aspx>. More specific information on the presence of noxious weeds and invasive species would be determined during the design, environmental review, and permitting of individual projects.

5. Animals

a. List any birds and other animals that have been observed on or near the site or are known to be on or near the site: [check the applicable boxes]

- Birds:** Hawk Heron Eagle Songbirds
 Other: osprey, bald eagle, peregrine falcon, purple martin, owl (various species), pileated woodpecker, belted kingfisher, waterfowl species, Canada goose. Also, typical urban species associated with urban development such as starling and pigeon.
-
- Mammals:** Deer Bear Elk Beaver
 Other: California sea lion, river otter, muskrat, raccoon. Also, a variety of urban-adapted species such as possum and rat.
-
- Fish:** Bass Salmon Trout Herring
 Shellfish Other: numerous freshwater and marine species

Generally, the Puget Sound Region is home to an extremely wide diversity of animal species that depend upon marine, estuarine, freshwater, and terrestrial environments. This fauna includes species native to the region, as well as many non-native species. Seattle, adjacent cities, and suburbs are developed urban areas having few remaining areas of native vegetation and high-quality habitat. These remaining fragments of quality wildlife habitat are found in parklands and open spaces throughout the planning area. The wildlife found in most urban and suburban areas are those native and non-native species that tolerate or benefit from habitat degradation or close association with humans. In contrast, the Cedar and Tolt municipal watersheds are predominantly undeveloped and support a very high diversity of native animal species. More specific information on animals and their habitats would be determined during the design, environmental review, and permitting of individual projects.

b. List any threatened or endangered species known to be on or near the site:

In King and Snohomish counties, six wildlife species are listed as endangered or threatened under the ESA and are potentially found in the planning area. These include the Canada lynx (*Lynx Canadensis* Threatened), gray wolf (*Canis lupus*; Endangered), grizzly bear (*Ursus arctos*; Endangered), marbled murrelet (*Brachyramphus marmoratus*; Threatened), and the northern spotted owl (*Strix occidentalis caurina*; Threatened). King County contains federally designated critical habitat for marbled murrelet and northern spotted owl, and the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus Americanus*; Threatened). None of these species are expected to occur in the Seattle, Lake Washington, Eastside, or Snohomish County portions of the planning area. However, all of these species are either known to occur (or have occurred) or are thought to potentially occur in or near the South Fork Tolt and Cedar municipal watersheds. Bald eagle (*Haliaeetus leucocephalus*) was removed from the federal list of threatened and endangered species on August 8, 2007, but is federally protected under the Bald and Golden Eagle Protection Act. Bald eagle is known to occur in the planning area.

Fish species listed as endangered or threatened under the ESA and found in freshwater tributaries of Puget Sound (PS) include Chinook salmon (*Oncorhynchus tshawytscha*, Threatened, PS), steelhead (*O. mykiss*, Threatened, PS), and bull trout (*Salvelinus confluentus*, Threatened, PS). Coho salmon (*O. kisutch*) is a Candidate species for listing as Threatened. All of these species reside in the planning area. King County contains federally designated critical habitat for steelhead, bull trout, and Chinook salmon.

Some actions contemplated in the Plan could impact threatened or endangered animals or their habitats. Because many of the potential project sites affected by the Plan have been previously developed and the original habitats significantly altered or eliminated, the potential for threatened or endangered animal species to be present on or near these sites is low. In-town reservoirs generally are located in urban areas where listed species are not found. Some infrastructure projects could cross rivers and streams supporting listed salmonids. More specific information on the presence of threatened or endangered species and their habitats would be determined during the design, environmental review, and permitting of individual projects.

c. Is the site part of a migration route? If so, explain.

The Puget Sound region is known to be an important migratory route for many animal species. Portions of the planning area provide migratory corridors for bald eagles traveling to and from foraging areas in Puget Sound or Lake Washington. Marbled murrelets travel through the planning area between marine waters and their nests in late successional/old growth forests in the Cedar River Municipal Watershed (among other places). Bull trout, steelhead, and Chinook, chum, pink, and coho salmon use the Puget Sound nearshore. Chinook, coho, and sockeye salmon, and potentially steelhead, use Lake Washington, Lake Union, and Lake Sammamish as migration corridors. Anadromous trout and salmon migrate through the area river systems, including the Snoqualmie, Tolt, and Cedar rivers. The Puget Sound region is also within the Pacific Flyway—a flight corridor for migrating waterfowl, migratory songbirds, and other birds. The Pacific Flyway extends from Alaska to Mexico and South America.

d. Proposed measures to preserve or enhance wildlife, if any:

In operating its surface water supply sources, SPU is obligated to meet instream flow requirements on the Cedar and South Fork Tolt rivers to protect fish and aquatic habitat. The Plan includes revised policies and programs to meet the instream flow requirements and performance commitments in tribal, regional, state, and federal agreements and permits. For the Cedar River Municipal Watershed, SPU would continue to implement the Cedar River Habitat Conservation Plan (HCP), a 50-year land management plan that prescribes the City's management of the municipal watershed's fish, forests, and stream flows. The HCP was approved by federal and state resource agencies in the year 2000 and allowed the federal government to issue ESA incidental take permits to the City for its water management, hydropower, and land management operations in the Cedar. In addition, a 2006 agreement between the City and the Muckleshoot Indian Tribe provides for interim and long-term limits on diversions from the Cedar River. The Plan would not affect the HCP or the Muckleshoot Agreement.

Actions contemplated in the Plan would be designed, constructed, and operated to minimize impacts to plants and meet applicable local, state, and federal regulatory and permit requirements to protect fish and wildlife species and their habitats, including threatened and endangered species and their habitats. Specific measures for reducing, controlling, or mitigating impacts to fish and wildlife would be identified during the design, environmental review, and permitting of individual projects, as applicable. Examples of such measures could include compliance with all environmental permit conditions including any seasonal timing restrictions, restoration of disturbed soils and vegetation, and deployment of erosion and sediment controls.

e. List any invasive animal species known to be on or near the site.

A variety of aquatic and terrestrial invasive animal species are known to be located within the planning area. For example, New Zealand mudsnails (*Potamopyrgus antipodarum*) are found within some urban stream areas such as Thornton Creek in Seattle. More specific information on the presence of invasive animal species would be determined during the design, environmental review, and permitting of individual projects.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Construction of some projects contemplated in the Plan would require equipment and vehicles that would temporarily consume electricity and gasoline/diesel fuels. These impacts are expected to be short-term and negligible relative to regional energy supplies and demands. Constructed projects contemplated in the Plan (such as cathodic protection systems) are not expected to require major energy usage or new sources of energy production. The Plan would not construct any new water facilities that use substantial amounts of energy but, rather, would predominantly modify or replace existing infrastructure. The potential increase in energy use caused by the Plan would be unavoidable and is also expected to be minor in the context of regional energy supplies

and demands. Electrical power would be supplied mostly through the existing power lines and associated infrastructure in the vicinity of existing water system facilities.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

The Plan would not involve building large, new structures, or planting vegetation that would block access to the sun for adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

This plan does not directly propose any specific energy conservation measures. However, the Plan's proposed water conservation program includes measures that would reduce energy use (particularly through hot water savings). Water conservation measures would reduce the amount of hot water (and the amount of energy required to produce it) for showering, laundering clothes, and other residential and commercial uses.

The City of Seattle has adopted a policy requiring all new construction and major renovations to be designed and built in a sustainable manner, and applicable projects would be evaluated based on the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Rating System. Any future SPU projects and facilities would be consistent with the City's sustainable building policies, as applicable. Specific measures for energy conservation would be determined during the design, environmental review, and permitting of individual projects.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe:

A major goal of the Plan is to protect overall drinking water quality. Collectively, all of the actions contemplated in the Plan would cumulatively improve and protect public health. Long-term benefits for public health would occur at a slower rate if the Plan was not implemented.

Construction of projects contemplated in the Plan could potentially create environmental health hazards due to leaks and spills from equipment and vehicles. Materials likely to be present during construction would include gasoline/diesel fuels, hydraulic fluids, oils, lubricants, solvents, paints, and other chemical products. A spill of one of these chemicals could potentially occur during construction as a result of either equipment failure or worker error. Contaminated soils, sediments, or groundwater also could be exposed during excavation. If disturbed, contaminated substances could expose construction workers and potentially other individuals in the vicinity through blowing dust, stormwater runoff, or vapors. Such impacts would be considered short-term, temporary, and localized.

Operation of individual water system projects anticipated under the Plan generally would not increase environmental health hazards in the long term. In general, the planned water infrastructure projects typically would not require large amounts of hazardous materials, and any potential releases of those materials would be minimal.

(1) Describe any known or possible contamination at the site from present or past uses.

There are numerous areas of known, and likely also unknown, contamination within the planning area, given its very large area. More specific information on the presence of any actual on-site contamination would be determined during the design, environmental review, and permitting of individual projects.

(2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

Because the planning area is quite large, there are areas where existing hazardous chemicals/conditions might affect projects that are developed and designed in association with the Plan. There are also areas where underground hazardous liquid natural gas transmission pipelines are separately located within a shared right-of-way, parallel to water supply pipelines where future projects could occur. More specific information on the presence of, and relevance of, underground hazardous chemicals/conditions and/or underground hazardous liquid and/or gas transmission pipelines would be determined during the design, environmental review, and permitting of individual projects.

(3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

A major goal of the Plan is to protect overall drinking water quality. Construction of projects contemplated in the Plan could potentially involve toxic or hazardous chemicals that might be stored, used, or produced during the project's development, construction, or during the project's operating life. Materials possibly present during a project's construction could include gasoline/diesel fuels, hydraulic fluids, oils, lubricants, solvents, paints, and other chemical products. A spill of one of these chemicals could potentially occur during construction as a result of either equipment failure or worker error. Contaminated soils, sediments, or groundwater also could be exposed during excavation.

Operation of individual water system projects anticipated under the Plan generally would not increase environmental health hazards in the long term. Any potential issues related to storage, use, or production of toxic or hazardous chemicals would be determined during the design, environmental review, and permitting of individual projects.

(4) Describe special emergency services that might be required.

Emergency services could be required to clean hazardous material spills or respond to worker injuries during project construction or maintenance of completed water facilities. No other special emergency services would be required as part of this proposal, either during construction or once projects are completed. Typical emergency services required for medical emergencies during construction and operation of future projects would be provided by the Seattle Fire Department and county and local fire districts. Typical security services during construction and operation of future projects would be provided by the Seattle Police Department,

King and Snohomish county sheriff offices, various City police departments, Seattle Public Utilities, and project contractors.

(5) Proposed measures to reduce or control environmental health hazards, if any:

Actions contemplated in the Plan would be designed, constructed, and operated to reduce or control environmental health hazards and meet applicable local, state, and federal regulatory and permit requirements for the protection of human health and the environment. Specific measures for reducing or controlling such hazards would be identified during the design, environmental review, and permitting of individual projects, as applicable. Such measures are expected to include Environmental Site Assessments, Health and Safety Plans, and Pollution Prevention Plans—each of which are described below.

Environmental Site Assessments:

If future water system projects are located in areas of suspected contamination, soil testing would be conducted prior to construction to determine the extent of potential contamination. Any contaminated soils would be excavated and disposed of in a manner consistent with the level of contamination and in compliance with federal, state, and local regulatory requirements by a qualified contractor(s) and/or City staff.

Health and Safety Plans:

As required by the Washington Department of Labor and Industries (Section 296-843 WAC), a Health and Safety Plan would be prepared by SPU (for SPU employees) or its contractor (for contractor's employees) before work commences. The plan would address proper employee training, use of protective equipment, contingency planning, and secondary containment of hazardous material. It would identify measures to ensure construction worker safety, outline emergency medical procedures, and reporting requirements.

Pollution Prevention Plans:

A Pollution Prevention Plan would be prepared by SPU or its contractor before work commences. Such plans typically include pollution prevention and spill response SOPs and BMPs, as identified, for example, in the City of Seattle's Stormwater Code SMC 22.800–22.808, Director's Rule: 2009-004 SPU/16-2009 DPD, and Volume 2 Construction Stormwater Control Technical Requirements Manual, to reduce or control environmental health hazards. Equipment would be inspected for leaking hoses, mechanical joints, and hydraulic pistons. Temporary control measures for both erosion and hazardous material spills would be installed to minimize access pathways to surface and ground waters in the event of a spill or leak. Hazardous material spill response materials would be available on the construction site for the duration of the construction work. Soils contaminated by spills would be excavated and disposed of in a manner consistent with the level of contamination and in compliance with federal, state and local regulatory requirements by a qualified contractor(s) and/or City staff.

b. Noise

(1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Action and projects contemplated in the Plan could occur at various locations within the planning area (see Response A12). A wide range of noise sources are present, associated with rural land uses, urban land uses, industrial production, and transportation. Urban and industrial areas often have higher existing noise levels, while rural areas are relatively quieter. Transportation facilities are major sources of noise, and background traffic noise levels are highest along arterials and freeways with higher traffic volumes and speeds. These existing noise sources would not affect future actions under the Plan. More specific information on types of existing noise would be determined during the design, environmental review, and permitting of individual projects.

(2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Construction of some future projects could result in construction noise, which is expected to be short-term, temporary, and localized. Potential construction noise would be most noticeable at residences, institutions, and park/public open spaces near construction sites. Noise from construction equipment would be limited to the allowable maximum noise levels of the City of Seattle's Noise Control Ordinance (SMC Chapter 25.08), King County Code (Title 12, Chapter 12.86), or the applicable noise codes of other local jurisdictions where projects are located.

After completion of future water system projects, noise may be generated by operation of the project and/or by equipment and vehicles used for maintenance. Such noise would be limited to daytime hours, when possible, except for noise associated with responses to certain emergencies. More specific information on noise that could be created or associated with a project would be determined during the design, environmental review, and permitting of the individual projects.

(3) Proposed measures to reduce or control noise impacts, if any:

Actions contemplated in the Plan would be designed, constructed, and operated to reduce or control noises and to meet applicable local and state regulatory and permit requirements related to noise. Specific measures for reducing or controlling noise would be identified during the design, environmental review, and permitting of individual projects, as applicable. For example, SPU may attempt to comply with local noise ordinances by locating facilities underground where feasible, by enclosing facilities, or by installing noise attenuation equipment. Control measures related to construction could include restrictions on nighttime activity, muffling or enclosing equipment, reducing equipment idling, and locating equipment distantly from receptors. Prior to the start of construction, SPU would coordinate construction activities with affected businesses, institutions, and residences that may be sensitive to construction-generated noise.

8. Land and Shoreline Use

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.**

In general, the planning area is characterized by urban uses in the Seattle area, cities, and suburbs, and more rural uses in unincorporated King County. Existing uses include single-family and multifamily residences, commercial, industrial, recreation, and open space. Most city properties have been developed at urban densities, and existing uses are often mixed. Downtown areas often include many high-rise developments. In contrast, the Cedar and Tolt municipal watersheds are mostly undeveloped.

Future SPU projects could be located in areas characterized by a variety of land uses. In-town reservoirs are located generally in landscaped open spaces or in parks, surrounded by residential development. O&M projects could be located in areas ranging from urban to rural. More specific information on land and shoreline use would be determined during the design, environmental review, and permitting of individual projects.

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?**

The City of Seattle and other nearby cities have not been used for large-scale agriculture in recent history. Because much of the planning area has been previously developed for urban and suburban uses, prime farmland is no longer present within Seattle and adjacent cities. Remaining areas of prime farmland are located primarily outside the urban growth areas of Seattle in unincorporated King County, such as the Snoqualmie and Green River valleys.

- (1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?**

The proposal is not expected to affect, or be affected by, surrounding working farm or forest land. In its forest management activities, and when conducting habitat restoration projects in the Cedar or Tolt Municipal Watersheds, SPU conducts forest business operations, but these operations do not affect other lands, landowners, or business operations. More specific information related to how a specific project affects, or how it is affected from, surrounding working farm or forest land would be determined during the design, environmental review, and permitting of individual projects.

- c. Describe any structures on the site.**

The Seattle urban area is developed with a wide range of structures, ranging from single-family residences to high-rise office towers to large industrial structures. Rural areas of unincorporated King County have fewer structures. In-town reservoir facilities include a secured, lined reservoir structure and associated disinfection and maintenance facilities. Most pipelines are buried and generally have no above-ground structures.

d. Will any structures be demolished? If so, what?

Few actions contemplated in the Plan would require demolition of existing structures. More specific information on the potential demolition of structures would be determined during the design, environmental review, and permitting of individual projects.

e. What is the current zoning classification of the site?

Zoning classifications are determined by the local jurisdictions. Local jurisdictions in the planning area include King and Snohomish Counties, and the cities of Seattle, Shoreline, Edmonds, Lake Forest Park, Kenmore, Bothell, Woodinville, Kirkland, Redmond, Issaquah, Bellevue, Mercer Island, Burien, Normandy Park, Des Moines, Tukwila, Renton, Kent, SeaTac, Auburn, North Bend, Duvall, Snoqualmie, and Carnation. Existing zoning ranges from urban zones in cities to rural zones in unincorporated King County. Zoning around in-town reservoirs is predominantly residential, while zoning in the vicinity of other infrastructure projects can range from rural to urban. SPU's Cedar and Tolt municipal watersheds are mostly located in forestry zones. More specific information on zoning classifications would be determined during the design, environmental review, and permitting of individual projects.

f. What is the current comprehensive plan designation of the site?

Comprehensive plan designations within the planning area are diverse. More specific information on the relevant comprehensive plans would be determined during the design, environmental review, and permitting of individual projects. See also the discussions for land use in Section B8.a and for zoning in Section B8.e.

g. If applicable, what is the current shoreline master program designation of the site?

The planning area contains both freshwater and marine shorelines. Some future water system projects could be located in the shoreline zone and could be subject to the local shoreline master program (SMP). Shoreline resources regulated under the SMP include all marine waters, larger streams and lakes, associated wetlands and floodplains, and upland areas called shorelands that extend 200 feet landward from the edges of these waters. More specific information on the potential for runoff and identification of receiving waters, if present, would be determined during the design, environmental review, and permitting of individual projects.

h. Has any part of the site been classified as an "environmentally critical" area? If so, specify.

Some future projects could affect environmentally critical areas and be subject to local critical areas regulations. Critical areas can include geologic and seismic hazards, flood prone areas, riparian corridors, wetlands, fish and wildlife habitat conservation areas, and abandoned landfills and mines. In-town reservoirs are generally not located in environmentally critical areas and the sites have already been developed. More specific information on environmentally critical areas would be determined during the design, environmental review, and permitting of individual projects.

i. Approximately how many people would reside or work in the completed project?

The Plan does not include any residential development. People would not reside in the future projects.

j. Approximately how many people would the completed project displace?

It is not anticipated that implementation of the Plan would displace any people. Most future water system projects would occur at existing SPU facility locations and would not likely displace any people or properties.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Displacement impacts are not anticipated, and therefore measures to avoid or reduce displacement are not proposed. Future projects would be designed to avoid or reduce potential displacements, where possible. If any displacements are necessary, SPU would comply with applicable local, state, and federal guidelines for relocation assistance. More specific information on the potential for displacement would be determined during the design, environmental review, and permitting of individual projects.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Actions contemplated in the Plan would be designed, constructed, and operated to meet applicable local, state, and federal planning, regulatory, and permit requirements related to land and shoreline use, agricultural lands, structure demolition, and environmentally critical areas. Specific measures ensuring such compatibility with such requirements would be identified during the design, environmental review, and permitting of individual projects, as applicable. For example, prior to construction of any future projects, SPU would apply for and obtain the applicable land use permits and approvals. Similarly, SPU would obtain any applicable shoreline substantial development permit, variance, or conditional use permits where applicable. Design, construction, and operation of the individual water facilities would follow local zoning and development standards for mitigating potential impacts on adjacent land uses. Future individual permits could include site-specific conditions or mitigation measures to meet the requirements of the applicable land use, zoning, and shoreline codes and policies.

The City has prepared and adopted Seattle's *Comprehensive Plan*, effective November 28, 2016. The *Comprehensive Plan* has provided sources of direction for the SPU's water planning because it contains policies on utilities and identifies areas for future growth. The Plan is consistent with the goals and policies of the Utilities Element of the *Comprehensive Plan*. Any population growth facilitated by implementation of the *2019 Water System Plan* generally would occur in areas identified for future development in Seattle's *Comprehensive Plan* and in the comprehensive plans of other local jurisdictions.

The *2019 Water System Plan* is consistent with the requirements of the Growth Management Act (GMA) and local and regional land use plans, including those for King County, the City of Burien, the City of Shoreline and the City of Lake Forest Park. Any SPU actions themselves would not encourage land or shoreline uses that are incompatible with existing plans. Future land and shoreline uses are determined by local land use plans, zoning codes, and development regulations, not by SPU activities.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

It is not anticipated that implementation of the Plan would impact agricultural and forest lands of long-term commercial significance. More specific information on any potential for impacts and related measures to reduce or control these impacts would be determined during the design, environmental review, and permitting of individual projects.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

The Plan would not provide any housing units.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Most projects under the Plan would be located at existing SPU facilities, which do not have housing and would not require acquisition or demolition of adjacent housing. Should SPU decide to demolish any housing units on land associated with a specific project, such actions would be evaluated during the design, environmental review, and permitting of individual projects, as applicable.

c. Proposed measures to reduce or control housing impacts, if any:

Implementation of the Plan is not expected to result in any impacts on housing. More specific information on housing impacts would be determined during the design, environmental review, and permitting of individual projects.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas? What is the principal exterior building material(s) proposed?

Future water system projects under the Plan would mostly modify existing SPU facilities, and would require few new, large or tall structures. At in-town reservoir sites, the surrounding fences and/or small accessory buildings typically would be the tallest structure(s). The height, size, and building materials of new or modified water facilities would be evaluated during design, environmental review, and permitting of individual projects.

b. What views in the immediate vicinity would be altered or obstructed?

Below-ground installations would not affect views. Some above-ground water facilities would be modified, mostly within existing SPU facility sites, which would not substantially alter or obstruct existing views. Some existing in-town reservoirs, with views of open water, currently provide visual amenities for surrounding residential areas. Such views of open water may be retained or may be replaced by views of open space, with revegetated and landscaped areas. During construction of potential future water facilities, project sites could be cleared and graded. Exposed earth, materials, and construction vehicles could be temporarily visible from adjacent properties and roadways. Because most projects would occur in sites already developed for existing SPU facilities, minimal vegetation would be removed during construction. Any

construction impacts on aesthetics are expected to be short-term, temporary, and localized. More specific information on view impacts would be determined during the design, environmental review, and permitting of individual projects.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Specific measures for reducing or controlling impacts to aesthetic elements would be identified during the design, environmental review, and permitting of individual projects, as applicable. For example, the design, height, and size of new projects and modifications of individual water facilities would meet the applicable development regulations of local jurisdictions. Exterior building materials could be selected to be compatible with each project site. Measures might also include landscaping that provides a visual buffer between a SPU facility and adjacent viewers.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The Plan would not introduce major new sources of light or glare. Minimal new lighting might be required on a project-specific basis, and its potential effects would be localized. Smaller Operations and Maintenance projects would not be long-term sources of light or glare. Construction activities could be short-term sources of light and glare. However, most construction would occur during daytime hours, in compliance with local noise ordinances to avoid nighttime hours. More specific information on light and glare would be determined during the design, environmental review, and permitting of individual projects.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Future projects would not be major sources of long-term light or glare. Any new light or glare created under the Plan would be minimal and would not increase safety hazards or interfere with views.

c. What existing off-site sources of light or glare may affect your proposal?

Future SPU projects under the Plan would not be affected by existing off-site sources of light or glare.

d. Proposed measures to reduce or control light and glare impacts, if any:

Actions contemplated in the Plan would be designed, constructed, and operated to meet applicable local, state, and federal code, regulatory, and permit requirements for lighting. Specific measures for reducing or controlling impacts related to light and glare would be identified during the design, environmental review, and permitting of individual projects, as applicable. Such provisions generally require that light fixtures be installed in such a way as to optimize on-site lighting and minimize off-site impacts.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

In general, the planning area has a variety of active and passive recreational opportunities, including parks, trails, gardens, playfields, swimming pools, community centers, golf courses, school playgrounds, fishing piers, and private health clubs. Puget Sound, Lake Washington, Lake Union, and other water bodies offer water related recreation such as swimming, boating, fishing, use of public beaches, and scuba diving.

Some SPU water facilities themselves provide recreational opportunities. In-town reservoirs and tanks are located in urban areas, and some provide open areas and aesthetic benefit for neighbors and users of adjacent recreational facilities. The existing uncovered in-town reservoirs are closed for public use. The Lake Youngs, Tolt, and Cedar River Reservoirs are also closed for public use and the draft 2017 SPU Watershed Protection Plan includes further information on regulations, policies, and program details for these areas. Several pipeline rights-of-way provide informal recreation opportunities as trail corridors for pedestrian, bicycle, and equestrian users. More specific information on recreational opportunities would be determined during the design, environmental review, and permitting of individual projects.

b. Would the proposed project displace any existing recreational uses? If so, describe.

Actions contemplated in the Plan are not anticipated to permanently displace any existing recreational resources. During construction, localized recreational uses could be temporarily affected at project sites near recreational resources, as, for example, by temporary closures or detours. More specific information on potential impacts to recreational uses would be determined during the design, environmental review, and permitting of individual projects.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Specific measures for reducing or controlling impacts to recreation would be identified during the design, environmental review, and permitting of individual projects, as applicable. Impacts on active and passive recreational opportunities would be avoided wherever possible, and would be addressed when individual projects are proposed. Short-term construction impacts would be minimized to the maximum extent possible. Additional landscaping could be provided, if warranted, to provide a visual buffer between facilities and adjacent recreational users.

13. Historic and Cultural Preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

Actions contemplated in the Plan would occur at many different locations within the planning area (see Response A12). The planning area includes many known landmarks, properties, districts, and objects that are listed on, proposed for, or potentially eligible for national, state, and local preservation registers. SPU has obtained a significant knowledge of such resources for the Cedar and South Fork Tolt municipal watersheds. There are designated historic districts and historic landscapes in the Cedar River Municipal Watershed. More specific information on such resources would be determined during the design, environmental review, and permitting of individual projects.

- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.**

The planning area has many known landmarks and evidence of historic, archaeological, scientific, or cultural importance, as well as significant potential for the discovery of additional such resources. More specific information on the presence of these resources would be determined during the design, environmental review, and permitting of individual projects.

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the Department of Archaeology and Historic Preservation, archaeological surveys, historic maps, GIS data, etc.**

Prior to construction of individual projects, SPU would assess the potential for disturbance of cultural, archaeological, or historic resources. These assessments would include reviews of preservation registers and databases (such as the Washington Heritage Register, the National Register of Historic Places, and SPU's geospatial database of known cultural resources in the Cedar and Tolt municipal watersheds) and consultations with other appropriate organizations having knowledge about and/or jurisdiction over historic and cultural resources, including the City of Seattle Department of Neighborhood's Historic Preservation Program, the King County Historic Preservation Program, local tribes, local jurisdictions, and the Washington State Department of Archaeological and Historic Preservation.

Future projects within the Cedar River Municipal Watershed would be managed within the protocols and procedures of the most current *Cedar River Municipal Watershed Cultural Resources Management Plan*. The South Fork Tolt Watershed Management Plan, adopted in 2010, provides direction for projects in that watershed to also follow the protocols and procedures found in the most current version of the *Cedar River Municipal Watershed Cultural Resources Management Plan*.

Specific measures for assessing potential impacts to cultural and historic resources would be identified during the design, environmental review, and permitting of individual projects, as applicable.

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.**

Implementation of individual projects arising under the proposal could have the potential to encounter historic, archaeological, and other cultural resources. Actions contemplated in the Plan would be designed, constructed, and operated to avoid and minimize impacts to historic, archaeological, and cultural resources and meet applicable local, state, and federal regulatory and permit requirements to protect such resources. Specific measures for doing so would be identified during the design, environmental review, and permitting of individual projects, as applicable.

Prior to construction of individual projects, SPU would assess the potential for disturbance of cultural, archaeological, or historic resources. These assessments would include reviews of preservation registers and databases (such as the Washington Heritage Register, the National Register of Historic Places, and SPU's geospatial database

of known cultural resources in the Cedar and Tolt municipal watersheds) and consultations with appropriate organizations having knowledge about and/or jurisdiction over historic and cultural resources, including the City of Seattle Department of Neighborhood's Historic Preservation Program, the King County Historic Preservation Program, local tribes, local jurisdictions, and the Washington State Department of Archaeological and Historic Preservation.

Future projects within the Cedar River Municipal Watershed would be managed within the protocols and procedures of the most current *Cedar River Municipal Watershed Cultural Resources Management Plan*. The South Fork Tolt Watershed Management Plan, adopted in 2010, provides direction for projects in that watershed to also follow the protocols and procedures found in the most current version of the *Cedar River Municipal Watershed Cultural Resources Management Plan*.

During construction of future projects, if any cultural, archaeological, or historic resources were encountered during excavation, SPU would immediately consult with the state and local historic preservation offices and with affected tribes regarding site-specific mitigation measures. Work in that immediate area would be suspended, and the find would be examined and documented by a professional archaeologist or historian. Decisions regarding appropriate mitigation measures and further action would be made before construction in the area of discovery is allowed to resume.

14. Transportation

- a. Identify public streets and highways serving the site or affected geographic area, and describe proposed access to the existing street system. Show on site plans, if any.**

In general, the planning area has a variety of transportation facilities, including roadways, bicycle paths, railroads, airports, ferries, and public transit. More specific information on transportation facilities would be determined during the design, environmental review, and permitting of individual projects.

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?**

Transit stops generally would not be affected by operation of water system projects anticipated under the Plan. More specific information on transit facilities, including information on construction and post-construction impacts, would be determined during the design, environmental review, and permitting of individual projects.

- c. How many additional parking spaces would the completed project or nonproject proposal have? How many would the project or proposal eliminate?**

Future water system projects under the Plan would require few parking spaces. Future water system projects are not anticipated to substantially alter the number of existing parking spaces. Construction of future water system projects could temporarily displace on-street parking. More specific information on parking issues would be determined during the design, environmental review, and permitting of individual projects.

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).**

Future projects anticipated under the Plan would generate minimal traffic during operation. Most SPU water facilities would continue to use the existing roadways and access points that serve the project sites. Water pipelines, which often run within public rights-of-way, occasionally could affect roads or streets by overflowing water should such pipelines fail. Replacement or repair of these pipelines also could result in temporary disruptions to local traffic and access. Construction of individual projects could occur near or within roadways, which could temporarily disrupt traffic. Access could be restricted to adjacent residences and businesses. Road restrictions also could temporarily interfere with transit, ferry, and emergency service vehicles. More specific information on the need to construct new roads or improve existing roads would be determined during the design, environmental review, and permitting of individual projects.

- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.**

Future water system projects under the Plan would not result in long-term use of water, rail, or air transportation. Construction of individual projects could occur in the immediate vicinity of water, rail, and air transportation, which could result in temporary disruptions. More specific information on the use of or impacts to water, rail, or air transportation would be determined during the design, environmental review, and permitting of individual projects.

- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur, and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?**

The number of long-term vehicular trips and peak volumes is not expected to increase substantially as a result of activities or operation of actions contemplated in the Plan. Construction activities would temporarily generate vehicle trips for workers and hauling materials. The number of these trips and the timing of peak volumes are not known. More specific information on vehicular trips and peak volumes would be determined during the design, environmental review, and permitting of individual projects.

- g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.**

It is not anticipated that implementation of the Plan would interfere with, affect, or be affected by the movement of agricultural and forest products on roads and streets in the area. Implementation of projects or operations and maintenance anticipated in the Plan within the right of way of streets and roads could temporarily interrupt traffic flow. More specific information would be determined during the design, environmental review, and permitting of individual projects.

h. Proposed measures to reduce or control transportation impacts, if any:

Specific measures for reducing or controlling transportation impacts would be identified during the design, environmental review, and permitting of individual projects, as applicable. For example, SPU or its contractors would coordinate future projects with the appropriate local jurisdictions to develop construction plans and to obtain required street use permits. Construction activities would be coordinated with affected landowners, local businesses, emergency service providers, transit services, and the local jurisdictions.

When projects affect roads and vehicular access, SPU or its contractor prepare Traffic Control Plans to ensure vehicular and emergency response access to affected residences and businesses during construction. Traffic Control Plans commonly specify use of flaggers and traffic controls to maintain vehicle access when lanes are temporarily closed during construction. Plans might also include requirements that workers carpool to the job site or that the contractor provide worker shuttles from off-site parking locations.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

Implementation of the Plan would not result in a long-term increase in the need for public services. Future water system projects would result in minimal impacts on public services. Occasional spills during construction and operation of water facilities could require responses from emergency service providers. Construction activities could affect local traffic circulation and access on public streets, which could temporarily affect emergency service vehicles.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Because public services would not be directly affected, no such measures are proposed. Any potential spills during construction and operation of future SPU projects would be contained and cleaned under applicable state and local provisions. During construction, access and circulation would be maintained for emergency service vehicles.

16. Utilities

a. Check utilities available at the site, if any: [check the applicable boxes]

- None
- Electricity Natural gas Water Refuse service
- Telephone Sanitary sewer Septic system
- Other: cable, drainage

More specific information on utilities available at individual sites would be determined during project-level design, environmental review, and permitting. In general, the planning area has a variety of utilities, including those checked above.

- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None

Implementation of the Plan would directly affect the water utility services provided by SPU. The other utility most likely to be affected by long-term operation of future projects is electricity. Water facilities like those contemplated under the Plan typically use electricity. Pump stations would consume the most energy; although energy use would not substantially increase in the long term and would be minor compared to regional demands and supplies (see Response B6). Electrical power would be supplied through existing power lines and associated electrical infrastructure in the vicinity of proposed projects. Long-term demands on water, refuse, telephone, and other utilities would be negligible.

Repairing or replacing water lines could temporarily disrupt other utilities such as water, sewer, drainage, power, and communication utilities. Such disruptions are expected to be short-term, temporary, and localized. Construction of individual water system projects required to implement the Plan could temporarily disrupt utility service in the immediate locales.

More specific information on potential conflicts with utilities would be determined during the design, environmental review, and permitting of individual projects. Individual projects would include project-specific measures to minimize disruptions to utilities, where applicable. For example, SPU would coordinate with the various utilities and service providers to avoid or minimize utility interruptions during construction.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature:



Joan M. Kersnar, P.E.
Project Manager

Date:

3/6/2018

Attachment A – SPU's Water Service Area

Note: Section *D. Supplemental Sheet for Non-Project Actions* is required if the proposal applies to a program, planning document, or code change.

D. SUPPLEMENTAL SHEET FOR NON-PROJECT ACTIONS

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

Note: The SPU 2019 Water System Plan (Plan) is a non-project action under SEPA. It is a long-range water system plan that includes studies, programs, and projects designed to address SPU water system needs. No specific projects, however, would be implemented directly as a result of adoption of the Plan. The following sections of this SEPA Environmental Checklist address the non-project nature of the Plan, and potential impacts are evaluated at the long-term, broader level. This Subpart D of the checklist does not discuss site-specific impacts and mitigation for future individual projects (e.g., construction activities) that may result subsequent to adoption of the Plan. As described in Subpart B of the checklist, any projects to implement the Plan would undergo future environmental review and permitting, where applicable, at the time the individual projects are proposed for the specific action.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

As summarized in Response A11, the Plan is a long-range water system plan that would not result directly in the implementation of specific projects. Therefore, the Plan itself would be unlikely to increase long-term discharges to water (see B3); emissions to air (see B2); production, storage, or release of toxic or hazardous substances (see B7.a); or production of noise (see B7.b). Overall, the Plan would not likely increase regional discharges of pollutants to the environment.

Proposed measures to avoid or reduce such increases are:

The Plan would not result in increased discharges to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise. Therefore, no measures to avoid or reduce such increases are proposed.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

The Plan is a long-range water system plan that would not result directly in the implementation of specific projects. Therefore, the Plan itself would be unlikely to adversely affect plants, animals, or fish, including threatened and endangered species (see B4 and B5). As described in Response A11, the Plan includes goals for SPU's regional water conservation program. Reductions in water use through conservation would reduce the need for surface water withdrawals, which could potentially benefit instream flows and fish resources (including listed salmonids), and aquatic and riparian plants and animals.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

Long-term adverse impacts on plants, animals, fish, and marine life are not expected under the Plan. Therefore, measures to protect flora and fauna are not proposed.

3. How would the proposal be likely to deplete energy or natural resources?

The Plan is a long-range water system plan that would not result directly in the implementation of specific projects. Therefore, the Plan would be unlikely to directly deplete energy or natural resources (see B6). The Plan itself would not require any additional long-term energy sources.

As summarized in Response A11, SPU has determined that it would not likely need additional sources of water supply before 2060. Therefore, SPU does not propose development at this time of major new water sources that could deplete natural resources. SPU would continue to implement programs to meet water conservation goals, which would further reduce the potential for depletion of water resources and energy supplies.

Proposed measures to protect or conserve energy and natural resources are:

The Plan would not result in long-term, adverse impacts on energy and natural resources. Therefore, measures to protect or conserve energy and natural resources are not proposed.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

The Plan is a long-range water system plan that would not directly implement specific projects. Therefore, the Plan would be unlikely to directly use or affect environmentally sensitive areas or areas designated for government protection (see B8, B12, and B13). The Plan also would be unlikely to adversely affect threatened and endangered species habitat (see B4 and B5).

The Plan includes goals for SPU's water conservation programs, which may benefit instream flows. Maintaining instream flows would directly benefit habitat for listed salmonids, along with aquatic and riparian habitat used by other species such as bald eagle. Benefits to sensitive areas from water conservation would occur at a lower level if the Plan were not implemented.

Proposed measures to protect such resources or to avoid or reduce impacts are:

The Plan would not result in adverse, long-term impacts on environmentally sensitive areas or areas designated for government protection. Therefore, no measures to protect such resources are proposed.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

The Plan is a non-project plan of future actions that would not directly affect land and shoreline use in the planning area (see B8). The Plan itself would not change land and shoreline uses or designations. The Plan includes SPU's new water conservation goals, which could benefit instream flows and shoreline uses.

The Plan is consistent with the requirements of the Growth Management Act and local and regional land use plans. Any SPU actions themselves would not encourage land or shoreline uses that are incompatible with existing plans. Future land and shoreline uses would be determined by local land use plans, zoning codes, and development regulations, not by SPU activities.

Proposed measures to avoid or reduce shoreline and land use impacts are:

The Plan would not result in direct or indirect adverse impacts on shoreline and land uses. Therefore, measures to avoid or reduce shoreline and land use impacts are not proposed.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

The Plan is a long-range water system plan that would not directly implement specific projects. Therefore, the Plan would be unlikely to directly increase demand on transportation (see B14), public services (see B15), or utilities (see B16). The Plan itself would not have any effects on transportation, public services, or non-water utilities.

The Plan could affect the water utility services provided by SPU. The Plan includes SPU's new water conservation goals, which would help decrease future demand on SPU's water supply system. Also, SPU has determined that it would not likely need a new source of water before 2060. The Plan's programs and projects would address SPU's present and future needs, which would benefit utilities.

In planning to meet future water demand, it is necessary to coordinate with other planning efforts to ensure consistency. These include the coordinated water system plans in King County, water system plans of SPU's wholesale customers, the King County Comprehensive Plan, water system plans of adjacent water purveyors, King County's Regional Wastewater Services Plan, Seattle's Comprehensive Plan, and watershed plans. SPU has determined that the Plan would be consistent with these water planning efforts. Each of these plans and their relevance to SPU's water resources are described in Chapter 1 of the *2019 Water System Plan*.

Proposed measures to reduce or respond to such demand(s) are:

The Plan would not result in long-term, adverse impacts on transportation, public services, and utilities. Therefore, measures to reduce or respond to such demand are not proposed.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

The Plan would be consistent with, and support, all local, state, and federal laws or requirements for the protection of the environment. The Plan would not affect the Habitat Conservation Plan for the Cedar River Municipal Watershed and would be consistent with tribal treaty rights and specific agreements SPU has with tribal governments. In implementing the Plan, SPU would comply with all applicable local, state, and federal laws and regulations.

ATTACHMENT A: SPU WATER SERVICE AREA

