SEATTLE PUBLIC UTILITIES
SEPA ENVIRONMENTAL CHECKLIST

This State Environmental Policy Act (SEPA) environmental review of Seattle Public Utilities' Bitter Lake Reservoir Improvements Project has been conducted in accord with the Washington SEPA statute (Revised Code of Washington 43.21C), State SEPA regulations (Washington Administrative Code [WAC] Chapter 197-11), and City of Seattle SEPA ordinance (Seattle Municipal Code [SMC] Chapter 25.05).

A. BACKGROUND

1. **Name of proposed project, if applicable:**

   Bitter Lake Reservoir Improvements Project (Project)

2. **Name of applicant:**

   Seattle Public Utilities (SPU)

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

   Seattle Public Utilities
   Attn: Andrew Karch, PE, PMP
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4. **Date checklist prepared:**

   December 19, 2023

5. **Agency requesting checklist:**

   SPU

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

   On-site construction activities would begin by late spring 2026 upon receipt of all required permits and approvals. Project construction is expected to occur in one phase and conclude in 2029, followed by the Project's 12-month close-out completion process in 2030.

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

   SPU does not have any plans for future additions, expansion, or activity related to or connected with this proposal.

   SPU is aware of preliminary plans being developed by Seattle Parks and Recreation (SPR) to improve the Bitter Lake Open Space Park, located along the north and east bounds of the site.

These park improvements would be planned, constructed, and maintained separate from the Project and under SPR's management. A separate environmental review and permitting effort would be required from SPR for potential permanent park improvements, as applicable.

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

- SPU. 2022. *Draft Geotechnical Report – Bitter Lake Reservoir Covering, Seattle, Washington*. August.
- SPU. 2023. *Alternatives Analysis, Bitter Lake Reservoir Improvements, Basis of Design Report, 60% Design.* 31 August.
- ICF International, Inc. (ICF). 2022. *Desktop Cultural Resources Analysis, Bitter Lake Reservoir Covering Improvements, Basis of Design Report, 30% Design.* April. (exempted from public disclosure)
- Richard Martin Groundwater, LLC, 2022. *Preliminary Infiltration Feasibility, Bitter Lake Reservoir, Seattle, Washington.* 15 December.
- Urban Forestry Services | Bartlett Consulting. 2023. *Seattle Public Utilities – Bitter Lake Reservoir Tree Inventory, Assessment, Tree Protection Plan and TVSPP*. August.
- Consor Engineering (Consor). 2023. *Drainage Report – 60% Stormwater, Bitter Lake Reservoir Improvements*. 31 August.

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.

No pending governmental approvals of other proposals directly affect the Project site.

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

All or some of the following permits or approvals would be required:

<u>Washington State Department of Ecology (Ecology)</u>

- National Pollutant Discharge Elimination System Construction Stormwater General Permit (CSGP)
- Underground Injection Control (UIC) Class V Well Review and Registration

<u>Washington State Department of Archaeology and Historic Preservation (DAHP)</u>

- Historic Resource Eligibility Determination

<u>Washington State Department of Health, Office of Drinking Water</u>

- Project Report and Construction Document Approval

<u>King County</u>

- Industrial Waste Program Wastewater Discharge Authorization

SPU

- Environmentally Critical Area (ECA) Exemption for work on steep slopes

Seattle Department of Construction and Inspections (SDCI)

- Construction Permit (Type I Master Use Permit [MUP] application)
- Demolition Permit
- Temporary Noise Variance(s) (TNV)
- Side Sewer Permit for Temporary Dewatering, and associated reviews with King County
- Electrical Permit

Seattle Design Commission (SDC)

- Design Review

Seattle City Light (SCL)

- Service Application

Seattle Department of Transportation (SDOT)

- Street Improvement Permit
- Street Use Permit

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. (Lead agencies may modify this form to include additional specific information on project description.)

The Project would replace the existing drinking water infrastructure with a new reservoir of similar capacity. The reservoir is a 21-million-gallon (MG) finished drinking water reservoir that serves SPU's water distribution system in North Seattle. The reservoir is on an SPU-owned 13.2-acre parcel bounded by Fremont Ave N to the west, Linden Ave N to the east, N 143rd St to the north, and N 138th St to the south. The reservoir basin is enclosed by a chain-link security fence established at the perimeter of the sloped grassy property. The property also houses a pump station and hypochlorite disinfection facility (Chlorination Building) located outside the fenced area at the base of the slope along the site's east side. SPR's Open Space Park is directly north of the reservoir and on the same parcel.

The 1958 construction of the reservoir excavated an approximate 416-foot-long and 201-foot-wide reservoir basin floor and placed and compacted excavation spoils along the east, north, and west sides of the excavated basin to create a raised-earth embankment. The embankment is registered with Ecology's Dams Safety Office (State ID #KI8-213, National ID #WA00213) and is periodically inspected by Ecology dam safety staff. SPU installed a floating cover over the reservoir in 2003. The reservoir cover has reached the end of its life and needs to be replaced.

The proposed Project would completely replace the existing open reservoir basin with a pre-stressed concrete reservoir tank. The Project would result in lower operation and maintenance costs over the anticipated 100-year life of the new reservoir, meet current seismic code requirements and recommendations, meet current building code requirements, and improve facility safety and access for SPU staff.

The Project would demolish and replace the existing reservoir with a partially buried, circular, 21-MG pre-stressed concrete reservoir with the same holding capacity as the existing reservoir. The new reservoir would have a concrete roof to provide primary containment and protect water quality. As design progresses, SPU will further evaluate whether it is feasible and reasonable to include photovoltaic cells on the reservoir roof.

The new reservoir would be configured to occupy less surface area than the existing reservoir, which would reduce impervious surfaces and increase open space and public access to this parcel. The new reservoir walls would extend approximately 12 to 22 feet above final grades based on differential backfill of the structure moving south to north, with a maximum exposed height above final grades of up to approximately 26.5 feet at its roof's peak. The diameter of the new reservoir would be 315.5 feet, smaller than the existing rectangular reservoir that measures approximately 510 feet by 296 feet.

The Project would also construct and line multiple new stormwater ponds to detain and treat runoff before sending it to an underground injection control well. The Project would remove the access road encircling the existing reservoir. Earthen slopes at the northern-most extent of the existing reservoir would be graded to accommodate future, currently unplanned, development of this area to usable public space. All stockpiled material not reused as fill for the Project would be trucked to an off-site permitted disposal facility licensed and approved to accept such materials. Clean fill for Project grading could be imported to the site, although the Project would reuse on-site excavated material to the extent feasible to reduce cost, construction duration, and environmental effects.

Construction would include a maintenance access road and security fence, stormwater management ponds, underground injection control well, stormwater piping, conveyance ditches, electrical conduit for reservoir lighting, and installation of landscaping. Mechanical appurtenances, including system piping, seismic valve and flowmeter vault, booster chlorination improvements, and water mixing system would be installed to maintain water quality treatment practices and improve operational efficiencies. Underground electrical utilities and below-grade stormwater infrastructure would be installed along the exterior of the reservoir. Right-of-way (ROW) improvements required by SDOT would occur in public street ROWs bordering the Project site, including N 143rd St, Linden Ave N, and N 138th St, and include installation or improvement of curb ramps, streetside parking, and sidewalks.

The Project would not alter the existing pump station, Chlorination Building, or Bitter Lake Open Space Park. Minor potential modifications may be made to the layout and configuration of the existing operations storage yard. Future improvements made to the Bitter Lake Open Space Park would be separate and distinct from this Project and likely proposed by SPR.

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.

Project activities would predominantly occur at 14141 Linden Ave N, Seattle, Washington, 98133 (parcel 1926049009; Section 19, Township 26 North, Range 4 East). Required ROW improvements would occur within the City-owned street ROWs bordering the Project site. A vicinity map and location map of the Project area are included as Attachment A. A site plan developed to the project's 60% Design level is included as Attachment B. A schematic update to the project's site layout, in particular the configuration of the site's stormwater management ponds, which was completed following the submittal of 60% level designs, is included as Attachment C.

B. ENVIRONMENTAL ELEMENTS

1. Earth

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

☐ Flat ☐ Rolling ☐ Hilly ☒ Steep Slopes ☐ Mountainous
☐ Other: (identify)

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

Steepest slopes are approximately 33%. These slopes were artificially created during the reservoir's permitted construction in 1958; as such, the SMC allows for the proposed grading.

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.

Subsurface conditions of the Project site were investigated and evaluated (SPU 2022). Analysis found that soils consist of non-engineered fill, reworked glacial till, and glacial till. The non-engineered fill consists of a mix of very loose to medium dense sand with silt to silty sand, with varied amounts of gravel, sand, and deleterious material. The reworked glacial till and glacial till generally consist of varying amounts of dense silty sand and gravel. The entire Project site has been previously disturbed by excavation and filling activities. There is no specific agricultural soil type on the site.

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

There are no surface indications or history of unstable soils in the immediate vicinity. The Project site has been developed with the existing reservoir since 1958 without indications of instability. Furthermore, the proposed reservoir has been designed to include a membrane slab system as the base of the reservoir basin—a design element that provides a stable and suitable subgrade.

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

To construct the temporary site construction access road and new reservoir footprint, approximately 51,000 cubic yards (CY) of material would be excavated. Approximately 10,000 CY of the excavation material may be placed as permanent fill within the existing reservoir basin, north of the new reservoir's footprint. The remaining approximately 41,000 CY of material would be temporarily stockpiled at one of multiple on-site areas until it could be used as backfill for the new reservoir or removed from the site by truck and disposed of at a permitted off-site disposal facility. Best management practices (BMPs) and temporary erosion and sediment control (TESC) measures would be implemented to stabilize stockpiled material and minimize potential for erosion during construction; see Section B.1.h of this SEPA Checklist for related BMPs.

After construction of the new reservoir, finished grading excavations would generate approximately 19,000 CY of additional material; this material may be used for permanent site backfill. When combined with excavated material from the Project's initial excavation activities, approximately 60,000 CY of material would be available for potential beneficial repurposing as site backfill. However, the Project requires only approximately 42,000 CY of permanent backfill material. The balance of approximately 18,000 CY of excavated material may be removed from the site during either the initial excavation activity phase or during the Project's final grading activities, at the discretion of SPU and the contractor.

Approximately 22,500 CY of clean crushed rock would be imported to the site for use as structural fill in the subsurface of the proposed reservoir and as structural fill under the new maintenance access road surrounding the tank; all other fill needed to construct the Project could be reused material generated during excavation activities.

f. Could erosion occur because of clearing, construction, or use? If so, generally describe.

Grading would occur across the Project site and would temporarily expose soil. Areas to be graded would be flagged in the field and contained within the Project area using appropriate BMPs, such as silt fencing and coverage with plastic sheeting, to avoid or minimize sediment-laden runoff. Temporarily exposed or stockpiled soils would be stabilized in accordance with TESC measures specified in the final construction documents to minimize potential for erosion. BMPs and TESC measures specified in approved permits, Project authorizations, Project specifications, or other construction materials would be provided to the contractor for implementation.

After final grading of the site, soils will be amended with compost and seeded to provide permanent erosion protection.

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

After Project construction, approximately 25% of the site would be covered with impervious surfaces. Impervious surfaces that would not be impacted by the Project include the existing pump station and paved areas throughout the Bitter Lake Open Space Park.

Impervious surface that would change as a result of the Project include the covered reservoir, the reservoir maintenance access road, and the addition of on-site lined stormwater management ponds. Given the reduction in size of the reservoir, the percent of the site covered with impervious surface is expected to decrease by approximately 50,000 SF. The completed Project's impervious surface coverage would be consistent with adopted lot coverage development standards set forth in the SMC for the parcel's NR2 (Neighborhood Residential) zone.

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

These construction BMPs would be implemented to avoid and minimize adverse impacts to the environment.

BMPs for general impact avoidance and minimization

- All work would comply with permit requirements.
- A TESC plan would be developed and implemented for all clearing, vegetation removal, grading, ditching, filling, embankment compaction, and excavation.
- A Spill Prevention, Control, and Countermeasure plan would be developed to prevent and minimize spills of hazardous materials.
- All equipment and materials would remain within the limits of disturbance.
- Boundaries of clearing and grading limits would be clearly flagged to prevent disturbance outside of the limits.
- Work areas would be kept in a neat condition and free of debris and litter for the duration of the Project.
- Staging and stockpile areas would be flagged.
- Mechanized equipment and vehicles would be inspected daily for leaks.

These BMPs would guide the contractor in developing a TESC plan.

General TESC plan recommendations

- Clearing limits would be clearly flagged in the field prior to construction. During construction, no disturbance beyond the flagged clearing limit would be permitted. Flagging would be maintained by the contractor for the duration of construction.
- TESC facilities would be constructed prior to clearing and grading activities, and in such a manner as to ensure sediment does not enter the drainage system or violate applicable water standards.

- Stabilized construction entrance and additional measures would be required and would be maintained for the duration of the Project to ensure publics streets are kept clean.

Inspection and maintenance

- All TESC facilities would be inspected, maintained, and repaired as needed to ensure continued performance.

Stabilization of soils and protection of slopes

- All exposed soil would be protected from erosion by mulching, hydroseed covering, or other approved measures within 3 days of grading. Soils would be stabilized before a work stoppage, holiday, or weekend, if needed, based on the weather forecast. Soil stockpiles would be stabilized and protected with sediment trapping measures.
- Cut and fill slopes would be designed to minimize erosion. Stormwater from off-site sources would be handled separately from stormwater generated onsite.

After final site stabilization

- All TESC measures would be removed within 30 days after final site stabilization or once no longer needed. Trapped sediment would be removed from the site or incorporated into finished grading. Disturbed soil areas resulting from removal would be permanently stabilized.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Construction activities have the potential to create temporary fugitive dust from demolition of the existing concrete reservoir and associated infrastructure, handling of new concrete, and earthmoving activities. Mobile and stationary equipment would be used to construct the proposed Project, generating usual exhaust emissions (that is, carbon dioxide, carbon monoxide, sulfur, and particulates) due to the combustion of gasoline and diesel fuels. These dust and exhaust emissions are expected to be localized and temporary.

The Project would generate greenhouse gas (GHG) emissions in four primary ways: pouring sourced concrete to fabricate the reservoir (embodied); laying asphalt (embodied); operating construction equipment; and minimally to maintain the completed Project. Total GHG emissions for the Project are estimated to be 2,641.18 metric tons of carbon dioxide emission equivalent ($MTCO_2e$), based on the King County GHG Emissions Worksheet (Attachment D). The GHG emission calculations are provided in Attachment D and summarized in the table below. One metric ton is equal to 2,204.6 pounds.

Embodied GHG emissions have been estimated for pavement associated with the project using the assumptions provided by King County in their review of relevant life cycle assessments. There are also embodied GHG emissions associated with concrete production and large volume of concrete will be used to construct the replacement reservoir. However, the concrete use on this project is unique; it is not associated with a

roadway that would require standard repair and replacement over time which has a set of associated emissions, and it is not associated with building construction, which has other embodied and energy emissions from building operation. For example, a vacant building "emission type" could be characterized as the most similar building whose emissions estimates have been quantified in the GHG Worksheet. However, even a vacant building includes emission assumptions in the GHG Worksheet for that of a partially occupied building, which reasonably exceeds the assumed emissions that could be generated by the unoccupiable reservoir. Therefore, it is likely that the emission estimates for any "emissions type" in the GHG Worksheet would be inflated.

There is not a standard formula for estimating the embodied GHG emissions related to use of concrete in this way. To capture these emissions, the Portland Cement Association estimate of 400lbs of CO2 release per cubic yard of concrete has been used. Maintenance of the reservoir after construction has also been estimated but is separate to the concrete emissions evaluation.

Because a contractor has not been identified for the Project at the time this Checklist was prepared, the estimates provided here are based on assumed daily vehicle operation times for the entire estimated Project duration; actual times may be less or more.

Table 1. Combined Per Annum Summary of Greenhouse Gas (GHG) Emissions

Activity/Emissions Type	GHG Emissions (pounds of CO_2e)[1]	GHG Emissions (metric tons of CO_2e)[1]
Concrete	3,243,200	1,471
Paving	628,311	285
Construction Activities (Diesel)	1,634,444.6	741.4
Construction Activities (Gasoline)	126,846	57.6
Long-Term Operation/Maintenance (Diesel)	3,032	1.38
Long-Term Operation/Maintenance (Gasoline)	186,948	84.8
Total GHG Emissions	5,822,781.6	2,641.18

Note:
1 1 metric ton = 2,204.6 pounds of CO2e. 1,000 pounds = 0.45 metric tons of CO2e.

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

No off-site sources of emissions or odor would affect the proposed Project.

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

Construction emissions would be minimized by requiring proper construction equipment maintenance and by minimizing vehicle and equipment idling. Dust control BMPs would be implemented to control fugitive dust during construction activities. Otherwise, emissions associated with Project activities are temporary or are related to routine operation of the site and would not result in long-term impacts to air quality.

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 yes, describe type and provide names. If appropriate, state what stream or river it flows into.

There are no surface water bodies on or immediately adjacent to the Project site.

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

Because there are no surface water bodies on or in the immediate vicinity of the Project site, the proposed Project would not require any work over, in, or adjacent to such waters.

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.

No fill or dredged material would be placed in or removed from surface waters.

4) Will the proposal require surface water withdrawals or diversions? Give a general description, purpose, and approximate quantities if known.

The proposal would not require surface water withdrawals or diversions.

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

According to the Federal Emergency Management Agency (FIRM panel 53033C0330G), the proposal does not lie within a 100-year floodplain.

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.

The Project does not propose to discharge waste materials to surface waters.

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 a general description, purpose, and approximate quantities if known.

The Project would not withdraw groundwater from a well for any purpose. Stormwater managed at the site after construction would be infiltrated via a deep UIC well to the subsurface unsaturated (vadose) zone immediately above the groundwater table. Stormwater managed at the site during construction may also be infiltrated via a UIC well,

pending agency negotiation to potentially discharge construction stormwater to existing public storm drain infrastructure within the ROW.

Geotechnical analysis (SPU 2022) recommended that shallow infiltration stormwater management would not be suitable for the proposed Project, given the likelihood for stormwater to perch atop the subsurface glacial till soil layer or flow horizontally to neighboring properties, increasing likelihood of flooding in these areas. Considering these conditions, preliminary hydrogeological investigations found that deep infiltration using a UIC well would be a more feasible stormwater management approach for the Project site.

The Project would design the UIC well consistent with both Ecology's current Stormwater Management Manual for Western Washington (SMMWW) and the preliminary recommendations made by SPU's Hydrogeologist of Record (SPU 2022), which require at least 15 feet of separation between the bottom of the UIC well and the groundwater table so that stormwater is discharged to the vadose zone and avoids interaction with groundwater. Considering the potential for the groundwater table to rise and interact with stormwater discharged to the vadose zone, the UIC well would be designed consistent with non-endangerment standards set forth in the SMMWW, which is required for all water reaching the groundwater table. Non-endangerment standards may be met presumptively or demonstratively, in accordance with the SMMWW. As the Project design continues to develop, the Project team would coordinate with Ecology and conduct additional site-specific analysis as needed to ensure the UIC well design aligns with the SMMWW's non-endangerment standards, avoiding the potential for stormwater to adversely affect groundwater.

The Project would include BMPs intended to remove sediment prior to discharge of collected stormwater. Discharged stormwater may undergo natural treatment provided by the soils of the vadose zone, although engineered pretreatment of stormwater would be implemented for compliance with City requirements. The Project would also include sumped catch basins and maintenance holes for sediment removal prior to discharge to the UIC well. It may also include sedimentation bays in the stormwater ponds, dual-stage drywell with sediment removal capacity, or other pre-discharge treatment infrastructure, as needed to comply with City stormwater requirements and the SMMWW.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (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.

The proposal would not discharge waste materials into the ground from septic tanks or other sources.

c. Water Runoff (including stormwater):

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.

All existing stormwater infrastructure associated with the existing reservoir would be removed during Project excavation activities. Stormwater runoff at the Project site would be collected via new stormwater infrastructure and multiple new lined stormwater management ponds that would infiltrate stormwater onsite via a deep UIC well. The UIC well would manage flows up to the 50-year recurrence interval, with allowed overflow through a hard-piped connection to the existing off-site stormwater infrastructure in the N 138th St ROW, flowing east to infrastructure within the Linden Ave N ROW.

SDOT-related Project improvements within the public ROW primarily involve replacement of existing impervious surfaces, and therefore do not trigger flow control or treatment requirements in accordance with the Minimum Requirements for Roadway Projects in the City of Seattle's 2021 Stormwater Code. Stormwater management requirements will be met by continuing to retain stormwater runoff generated from these ROW locations to management areas onsite.

SPU is considering potentially temporarily connecting to the existing storm drain system in Linden Ave N for disposal of collected TESC water, which would eventually discharge to Green Lake. If made, this connection would be disconnected after the Project's construction.

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

The proposal would neither generate nor discharge waste materials into ground or surface waters.

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

The proposal would not adversely affect drainage patterns in the vicinity of the Project site.

4) Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any.

The stormwater infrastructure would be constructed with sufficient capacity to manage all on-site generated stormwater up to a 50-year storm event. Pre-discharge treatment of stormwater and aboveground BMPs would be incorporated into the Project, as has been described previously in Section 3.b of this Checklist. As-needed implementation of additional BMPs to avoid adverse impacts to surface, ground, runoff, and drainage patterns would be negotiated with regulating agencies and would be incorporated into the Project as design continues to refine. Given these considerations, the Project is not expected to impact surface, ground, and runoff water and drainage patterns.

4. Plants

a. Check the types of vegetation found on the site:

☒ Deciduous trees: ☒ Alder ☒ Maple ☐ Aspen ☒ Other: birch, European mountain ash, bitter cherry, Pacific willow, black cottonwood, red oak, flowering plum, English hawthorn, Littleleaf linden
☒ Evergreen trees: ☒ Fir ☒ Cedar ☒ Pine ☒ Other: Sawara false cypress, Pacific madrone
☒ Shrubs
☒ Grass
☐ Pasture
☐ Crop or grain
☐ Orchards, vineyards, or other permanent crops
☐ Wet soil plants: ☐ Cattail ☐ Buttercup ☐ Bulrush ☐ Skunk cabbage
☐ Other:
☐ Water plants: ☐ water lily ☐ eelgrass ☐ milfoil ☐ Other:
☒ Other types of vegetation: weeds

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

A tree inventory and tree health assessment documented 57 trees onsite, 68 trees in the public ROW adjacent to the site, and 1 tree at an off-site private property unrelated to the proposed Project (Urban Forestry Services | Bartlett Consulting 2023). The tree health assessment identified eight trees as non-viable and recommended each for removal. SPU proposes to otherwise remove only those trees necessary to accommodate construction of the proposed Project. At the time this Checklist was prepared, the Project would remove 12 non-Exceptional trees, as identified in Table 2.

Table 2. Tree Removal Identification

Tree ID	Common Name	Scientific Name	Diameter at Standard Height (in)
228	Alaskan yellow-cedar	*Callitropsis nootkatensis*	4.6
234	cherry	*Prunus* sp.	7.3
236	shore pine	*Pinus contorta*	9.9
237	shore pine	*Pinus contorta*	13.1
238	shore pine	*Pinus contorta*	5.8
239	Sawara false-cypress	*Chamaecyparis pisifera*	9.1
255	red oak	*Quercus rubra*	10.8
256	red oak	*Quercus rubra*	10.8
284	Douglas-fir	*Pseudotsuga menziesii*	16.8
285	Austrian pine	*Pinus nigra*	13
286	Austrian pine	*Pinus nigra*	15.6
287	Norway maple	*Acer platanoides*	5

As the Project design refines and additional tree removals become apparent, SPU would adhere to the Mayor's Office Executive Order 2023-03 which requires each removed tree is replaced with three replacement trees. For trees to be retained, tree protection measures would be installed in a manner compliant with City requirements, or as otherwise recommended by the Project arborist and approved by the City.

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

No federally listed endangered or threatened plant species or state-listed sensitive plant species are known to occur on or near the Project site.

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

Following completion of reservoir construction and site grading, new landscaping would be installed. A planting schedule and planting plan would be prepared to document and guide the intended relandscaping of the Project site. SPU expects trees proposed for removal would be replaced with species and in quantities that would provide the same canopy coverage at maturity as is provided by the existing landscape. The planting plan would include tree replacement species and quantities consistent with relevant City requirements and would be reviewed and approved by SDCI as part of the Construction Permit process.

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

A review of King County's iMap noxious weeds data on April 11, 2023, confirmed no County-listed noxious weeds are on or near the site.

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.

Birds: ☒ Hawk ☒ Heron ☒ Eagle ☒ Songbirds
☒ Other: The project is within the Pacific Flyway migratory corridor and the Project vicinity is known to host a wide variety of transient, resident, and migratory waterfowl, songbirds, and raptors. In addition to boxes checked, some commonly observed species include transient geese, ducks, crows, pigeons, and gulls.

Mammals: ☐ Deer ☐ Bear ☐ Elk ☐ Beaver
☒ Other: The geographic extent of the project encompasses presence and habitats for a variety of animal species commonly found in urban areas. Commonly observed species include opossums, rabbits, raccoon, skunk, squirrel, rats, mice, and bats.

Fish: ☐ Bass ☐ Salmon ☐ Trout ☐ Herring
☐ Shellfish ☐ Other:

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

Site investigative work, including site visits and a review of Washington State Department of Fish and Wildlife's Priority Habitats and Species database and U.S. Fish and Wildlife Service's Information for Planning and Consultation database, indicate there is no documented habitat for known threatened and endangered species on or near the Project site.

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

The Project site is 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.

Wildlife known to occur at the site is limited to those terrestrial species common to dense urban environments and species migrating through the Project area, such as songbirds and migrating waterfowl. Existing conditions of the Project site provide limited habitat for wildlife, given the extent of the site that is developed with the covered reservoir and its associated rolling, grassy hills, and the otherwise densely built surrounding environment. Trees that are proposed for removal would be replaced with species that would provide the same canopy coverage at maturity as is provided by the existing landscape; in doing so, any habitat that may currently be used by wildlife would be preserved.

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

King County generally lists the following invasive terrestrial species as occurring throughout the County: European starling, house sparrow, Eastern gray squirrel, fox squirrel, and domestic cats (https://kingcounty.gov/services/environment/animals-and-plants/biodiversity/threats/Invasives.aspx [last updated November 10, 2016; last accessed April 11, 2023]). Exact spatial extent of these species proximal to the Project site is unknown.

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.

The proposed Project's electrical energy needs would continue to be met by SCL. Electricity is used to operate mechanical equipment necessary for the reservoir and processing of water therein, to include switchgears, pumps, chlorination control panels, transformers, lighting, and a security system, among other equipment. As an emergency backup, a single diesel-powered pump at the site's existing pump station may be operated during a power outage. The Project site does not presently use natural gas, oil, wood stove, or solar-based energy, and the proposed Project would not use these kinds of energy.

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

The proposed reservoir would be partially buried, limiting the height of the structure to 26.5 feet, as measured from the average site grade to the peak of the reservoir roof. The height of the proposed reservoir would be consistent with development standards set forth by the City in the parcel's NR2 zone. Furthermore, the Project site is in a densely urbanized environment; most structures adjacent to the Project site are multistory (from two to seven stories) structures and are considerably taller than the proposed reservoir. The reservoir would be no closer than approximately 135 feet from the nearest off-site structure. There are no vacant parcels adjacent to the Project site. As a result, there is no opportunity for infill development that would be impacted by the proposed Project.

The proposed reservoir would be compatible with the height-related development standards of the site's zoning and is proposed to be offset from nearby structures. The proposed Project is not expected to affect potential use of solar energy by 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.

The Project would install LED lighting to replace conventional, less energy-efficient lighting where the site's redevelopment includes lighting improvements. The site's energy demand and energy use are expected to be similar to the existing facility's demand and use. Therefore, no measures to reduce or control energy impacts are needed or proposed.

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 because of this proposal? If so, describe.

Toxic chemicals and hazardous waste would not be stored at the completed Project. There is and will continue to be an existing chlorination system for drinking water. Hypochlorite is generated onsite with salt, water and electricity and then is stored in a small day tank. This low-strength chlorine solution is then pumped into the reservoir as needed for chlorination. The ability to generate hypochlorite onsite, as needed, means that large volumes do not need to be stored in the project area.

During construction, contained gasoline and diesel would be available onsite for refueling construction equipment. A stormwater pollution prevention plan would be prepared and provided to Ecology for their issuance of a CSGP, documenting BMPs that would be implemented to avoid or minimize the discharge of related pollutants. The following pollution control BMPs would be used:

- Design, install, implement, and maintain effective pollution prevention measures to minimize discharge or spillage of pollutants.

- Handle and dispose of all pollutants, including waste materials that occur onsite, in a manner that does not cause contamination of stormwater.
- Provide cover, containment, and protection from vandalism for all chemicals, liquid products, petroleum products, and other materials having potential to pose a threat to human health and the environment. Provide secondary containment for tanks holding pollutants including on-site fueling tanks. (Secondary containment means placing tanks or containers within an impervious structure capable of containing 110% of the volume contained in the largest tank within the containment structure. Double-walled tanks do not require additional secondary containment.)
- Conduct maintenance, fueling, and repair of heavy equipment and vehicles using spill prevention and control measures. Clean contaminated surfaces immediately following any spill incident.

Pollution prevention measures would be implemented at the Project site consistent with Ecology's issued CSGP.

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

There was no known or possible contamination at the site from past or present uses as per a review of the Environmental Protection Agency's listed Superfund sites in Washington, Ecology's Toxics Cleanup Program Map tool, and Ecology's Environmental Information Monitoring Map Search database. The site has also been used and protected as a drinking water reservoir since the 1950s.

SPU staff's review of Ecology's Confirmed and Suspected Contaminated Site Lits (CSCSL) identified the SCL Linden Avenue ROW Site (SCL Site) on the northeast corner of the intersection of Linden Ave N and N 143rd St, immediately adjacent to the Project site. Although Ecology issued a No Further Action opinion for the SCL Site, the SCL Site was confirmed to have concentrations of lead above Model Toxics Control Act (MTCA) Method A cleanup levels in undocumented fill. Given the proximity of the SCL Site to the Project site, there was potential that concentrations of lead above MTCA Method A cleanup levels and above clean fill disposal facility acceptance criteria could be encountered in near surface fill soil. Two soil samples were collected from the site at the geotechnical exploration location nearest the SCL Site and were sent to a third-party laboratory to be analyzed for total lead content. Lead was not detected above the laboratory practical quantitation limit in any samples. SPU believes that encountering lead-contaminated soils during construction activities is unlikely.

Risk of groundwater contamination was also determined to be low at the Project site because groundwater is likely too deep to be affected by nearby sites on the CSCSL. There is no documentation of confirmed groundwater contamination at the nearby CSCSL sites included in SPU's review.

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.

There are no known underground hazardous liquid or gas transmission pipelines, or other existing hazardous chemicals or conditions that could affect the proposed Project's development and design.

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.

As described in response to Section 7.a of this Checklist, contained gasoline and diesel are expected to be stored onsite during construction. A diesel pump is at the site's existing pump house as a backup pump for use during electrical power outages, and hypochlorite is produced onsite to chlorinate the water in the reservoir. Pollution control BMPs would be instituted to ensure the proper handling and management of chemicals onsite. No other toxic or hazardous chemicals would be stored, used, or produced during the Project's construction, or at any time during operation of the completed Project.

4) Describe special emergency services that might be required.

Special emergency services would not be required for Project construction or operation.

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

Environmental health hazards would be reduced or controlled through the implementation of pollution control BMPs during refueling of construction equipment at the Project site. Construction would comply with the protective provisions of a CSGP issued at the site, further reducing environmental health hazards. Importantly, the Project purpose is to replace the aging reservoir cover, which protects the drinking water supply from environmental health hazards. There would be an overall reduction in potential impacts to environmental health as a result of the Project.

b. Noise

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

The surrounding dense urban area is built with a mix of single-family residential, multi-family residential, and commercial development, and is located proximal to State Route 99, a principal arterial street. Noise typical of a dense urban character exists at the Project area and is expected to continue after construction of the proposed Project. These noises would not affect the proposed Project.

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.

Noise generated during construction would be consistent with a large public infrastructure construction Project and would include use of heavy construction equipment such as excavators and vibratory roller-compactors. Demolition and construction is expected to span one continuous construction phase of 2.5 years. Hours of construction may extend beyond the City's allowed general construction hours for limited periods to allow adequate time to pour and cure the concrete paneling of the replaced reservoir. Any work conducted outside the allowed construction hours would be short term and would only commence after the SDCI's issuance of TNVs.

Operation of the completed Project would continue to generate generally low levels of noise, as are currently generated (attributable to the Chlorination Building and pump station).

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

Most construction-related noise impacts are expected to be typical of a construction Project and would occur during allowed construction hours. However, as described in response to Section 7.b.2 of this Checklist, short-term construction activities occurring outside the City's allowed construction hours may be required, and would only take place after TNVs are obtained from SDCI. Noise generated by operation of the completed Project would be comparable to the site's existing reservoir operation. No additional measures to reduce or control noise impacts are needed or proposed.

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.

The subject site is currently used as a public utility and a public park and has been principally developed for this use since 1958. The proposed Project would occur largely within that portion of the subject site currently serving a public utility use.

Use of properties adjacent to the Project site varies. Predominantly, the west, south, and north boundaries are adjacent to single-family and multi-family residential use. To the east, adjacent properties are developed with multi-family residences and a variety of commercial uses that include an automobile sales lot and a childcare center. Current uses of properties adjacent to the site would not be affected by the constructed Project.

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 because 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 Project site has not been used as working farmlands or forest lands. There are no such lands presently on or near the Project site.

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?

There are no working farms or forest lands near the Project site. The proposal would not affect or be affected by the operation of such lands.

c. Describe any structures on the site.

The Project site has been developed since 1958 with a 21-MG drinking water reservoir and an associated pump station and Chlorination Building. The reservoir is constructed predominantly beneath the ground surface of a raised-earth embankment created from the spoils of the reservoir's original excavation. In 2001, a floating cover was constructed atop the reservoir to protect water quality.

Flow between the reservoir and the associated drinking water distribution system is supported by two subsurface utility vaults and their associated infrastructure of piping and a maintenance hole access point. A 14-foot-wide paved maintenance access road surrounds the reservoir. Lawn slopes down from the access road at an approximate 3:1 slope, where a chain link security fence encloses the reservoir and separates it from the pump station and Chlorination Building.

The pump station is along the east boundary of the Project site, at the base of the sloped embankment along Linden Ave N. The pump station contains the infrastructure necessary to distribute water to the Richmond Highlands Zone, one of two subregional zones served by the facility. The pump station houses three pumps and a diesel fuel tank. The Chlorination Building is adjacent to and north of the pump station and is an integral component of the facility's operation. The Chlorination Building is used to regulate chlorine levels in the reservoir, and also contains the reservoir's recirculation pump and water quality monitoring systems. A paved and fenced storage yard of approximately 5,600 SF is adjacent to and north of the Chlorination Building and is used to store maintenance equipment.

The southeast corner of the Project site is developed with an unlined stormwater detention pond. The pond manages on-site stormwater flows generated at the on-site pump station, and from off-site flows along N 143rd St and residential areas to the northwest. Collected stormwater flows from these sources are conveyed to the pond via swales along the north and east property line; the swales are not formally designed to provide bioretention or treatment to the conveyed stormwater.

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

The proposed Project would demolish the existing concrete reservoir basin. The reservoir's pump station, Chlorination Building, and any structures or improvements associated with the Bitter Lake Open Space Park would be neither demolished nor otherwise impacted by the proposed Project.

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

The Project site is in the City's NR2 zone. As a utility use, the proposed Project is allowed outright in the NR2 zone.

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

The Project site is in the Bitter Lake Hub Urban Village. The City's Comprehensive Plan (2020) establishes land use designations and land use types throughout Seattle; the Project site is in the Hub Urban Village land use type, rather than a conventional land use designation.

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

The Project site is not in a Shoreline management district and therefore is not subject to the City's Shoreline Master Program.

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

The raised-earth embankment created during the construction of the existing reservoir is a steep slope ECA, as mapped by SDCI. As has been previously described in this Checklist, the earthen embankment was legally constructed after excavation of the reservoir basin in 1958, when material was placed and compacted alongside the basin. The subject embankment is registered with Ecology's Dam Safety Office (state identification [ID] no. KI8-213, national ID no. WA00213).

On January 25, 2023, SPU met with SDCI for a MUP preapplication conference to discuss the ECA classification. Specifically, SPU presented the artificial character of the legally created embankment to negotiate relief from development standards that otherwise apply to steep slope ECAs and their buffers. SDCI confirmed proposed grading of the human-made earthen embankment could be processed as an ECA exemption, affording relief from strict development standards applicable to steep slope ECAs. SDCI concurred the embankment was created through previous legal grading activities and that grading or removal of the embankment as proposed would not create an adverse impact.

SPU expects the proposed grading of the existing earthen embankment would be approved via an ECA exemption and therefore would not be subject to development standards applicable to steep slope ECAs in Seattle.

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

No full-time staff are expected to work at the completed Project; approximately one to two people may work short-term shifts as needed for operational maintenance of the site. No people would reside in the completed Project.

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

No people would be displaced by the completed Project.

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

The proposal would not result in displacement impacts; therefore, no avoidance or reduction measures are proposed.

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

The Project site has been used as a public utility since the 1950s and the proposed Project would not change that use. Because the proposed Project is compatible with and continues the existing use, no measures to ensure land use compatibility are proposed.

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

The Project would have no effect on agricultural or forest lands; therefore, no impact reduction or control measures are proposed.

9. Housing

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

No housing units would be provided as part of the proposed Project.

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

No housing units would be eliminated as part of the proposed Project.

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

Because the proposed Project would not provide or eliminate housing, no measures to reduce or control housing impacts are proposed.

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?

The proposed reservoir would be 26.5-feet tall, as measured from the average site grade to the tallest point of the structure, consistent with height measurement standards set forth in the SMC. The reservoir's principal exterior material would be pre-stressed concrete, reinforced with steel interior to the concrete.

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

Views in the immediate vicinity of the Project site would not be obstructed. The elevation at the top of the existing reservoir's walls is approximately 508 feet, which exceeds or is similar to the height of existing structures north, south, and west of the reservoir. Existing development east of the reservoir include multistory mixed and commercial use structures whose upper floors may exceed the elevation of the reservoir, allowing for visibility beyond the reservoir; however, there is no viewshed or visible features beyond tree lines west of the reservoir. Views in the immediate vicinity of the Project site include a drinking water reservoir and, after construction, would continue to include a drinking water reservoir. The proposed reservoir wall height would be approximately 16 feet higher than the roadway and top of berm surrounding the existing reservoir, which would make this a more dominant feature of the viewshed in its vicinity, but the context would remain similar.

The proposed reservoir would be constructed of concrete, consistent with the existing structure. Some additional ancillary features such as stormwater ponds would be introduced into the view. While the height of the reservoir would change, the context and construction materials would remain the same, and so the viewshed is not expected to be significantly impacted.

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

SPU is working jointly with the Seattle Office of Arts & Culture (ART), which has contracted a planning artist for the Project. The planning artist would engage with the local community to understand desired artistic representations to include with the site's redevelopment. Using feedback collected from this community outreach, the planning artist would aid ART in selecting and hiring an artist who could reflect the community's expressed interests in a permanent piece included as a component of the proposed Project. The artwork would enhance the site's aesthetic character and community perception.

SPU has also engaged collaboratively with SDC and has incorporated recommendations made by the Design Commission into the aesthetics of the proposed reservoir. SPU expects to continue working with the Design Commission as the Project's design refines and would consider their recommendations regarding design features of the reservoir.

11. Light and Glare

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

The reservoir would be constructed of concrete, which does not produce glare. Existing lighting at the site may be replaced by downcast LED fixtures, but an increase in light production by the Project is not proposed.

Should SPU opt to install PV panels on the reservoir roof as part of the project, an evaluation will be completed prior to installation to minimize or eliminate potential glare for neighboring properties. If glare from the panels occurs, it would be during daylight hours and concentrated between 7 AM – 6 PM.

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

The constructed Project would not include light or glare that could create a safety hazard or interfere with views.

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

Off-site sources of light or glare would not affect the proposed Project.

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

The proposed Project would not result in adverse impacts related to light and glare; therefore, no measures to reduce or control light and glare are needed or proposed.

12. Recreation

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

The Bitter Lake Open Space Park and P-Patch Community Gardens comprise approximately 1.5 acres of the Project site area; this area is managed by SPR and Department of Neighborhoods and is available to the public for pedestrian, cycling, and gardening recreational use. A variety of informal recreational opportunities exist within 1 mile of the Project site and include Llandover Woods Greenspace, Seattle Golf Club, Upper Boeing Creek ecological park, Interurban Trail access, commercial fitness centers, Bitter Lake Tennis and Pickleball Courts, and Bitter Lake public space.

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

The proposed Project would not permanently displace any existing recreational uses.

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

The proposed Project would not result in adverse impacts to recreation opportunities; therefore, no measures to reduce or control recreation impacts are needed or proposed.

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.

There are no buildings, structures, or sites in the Project area that are listed or eligible for listing in national, state, or local preservation registers.

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.

There are no landmarks, features, or other evidence of Indian or historic use or occupation, nor any material evidence, artifacts, or areas of cultural importance on or near the Project site. These findings have been documented in a desktop cultural resources analysis completed for the proposed Project in April 2022 by ICF (ICF 2022). ICF's analysis included a comprehensive review of DAHP's database and predictive modeling, historic property inventory forms, and cultural resources assessments within 0.5 miles of the Project site. Based on a complete review of past reports, studies, and germane peer-reviewed content, ICF concluded that no archeological sites have been documented within the vicinity of the Project site and submitted historic property inventory forms to DAHP recommending that neither the pump station nor the reservoir are eligible for listing in the National Register of Historic Places (NRHP), as consistent with NRHP's eligibility criterion. ICF's cultural resources analysis and its completed historic property inventory forms with eligibility recommendations can be provided on request if publicly disclosable.

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 archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Methods used to assess the potential impacts to cultural and historic resources on or near the Project site are summarized above in response to Section B.13.c of this Checklist and is further detailed in ICF's desktop cultural resources analysis (ICF 2022).

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.

Based on the findings of the Project's cultural resources analysis, the proposed Project is not expected to result in loss, changes to, or disturbance to cultural or historic resources. In the event of unexpected discovery of archaeological materials or human remains, Project activities would adhere to the Project's Inadvertent Discovery Plan (IDP). The Project's IDP would be maintained onsite throughout construction.

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.

The Project site is bordered by these public streets: to the south by N 138th St, to the north by N 143rd St, to the west by Linden Ave N, and to the west by Fremont Ave N, a private road. In its existing state, the site is accessed by an asphalt driveway from Linden Ave N. The Project may also propose to develop a pedestrian pathway from the southwest section of the reservoir maintenance access road to N 138 St at the site's southwest corner for the dual purpose of increased publicly accessible space at the Project site and for maintenance vehicle access for conducting facility inspections, anticipated to occur every 7 years.

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?

The site is currently served by public transit. Within 0.5 miles of the Project site, multiple public transit routes are available and provided by King County Metro ("E" line and routes 16, 28, 304, and 345). In the area's built urban environment, pedestrian infrastructure is developed and can provide access from public transit stops to the Project site.

c. 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).

The proposed Project includes improvements to existing streets and pedestrian infrastructure immediately surrounding the Project site. At the Project's master use permit preapplication meeting on January 25, 2023, SPU met with staff representatives from SDCI, SDOT, and SCL. SPU inquired as to the public infrastructure improvements required to develop the proposed Project in a manner consistent with agency standards; the improvements to N 143rd St, Linden Ave N, and N 138th St proposed by SPU reflect those advised by SDOT and SCL. Street and pedestrian infrastructure improvements included in the proposed Project are summarized Section A.11 of this Checklist and include installation or improvement of curb ramps, signage, landscaping, flex zone, and sidewalks.

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

The proposed Project would not use or occur in the immediate vicinity of water, rail, or air transportation.

e. 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 Project would generate approximately 13,000 vehicle round-trips, including construction trips and trips associated with standard operations and maintenance over

an assumed 100-year design life. Vehicle trips would be generated during construction from workers and materials being transported to and from the site. Most of these trips would occur during business hours, between 7 a.m. and 6 p.m. on weekdays. Construction trips may also occur over the weekend.

The completed Project would not generate additional vehicle round-trips compared to existing conditions. However, current routine trips for operation, maintenance, and monitoring of the municipal water system in this area would continue to occur once the Project is complete. When this is considered over a 100-year design life, it accounts for approximately 46-percent of the total trips traveled.

f. 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.

Neither the proposed Project nor its construction would interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets.

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

The proposed Project would improve public ROW and infrastructure bordering the Project site. The Project would not adversely affect the transportation infrastructure serving the Project site. Therefore, no measures to reduce or control impacts are proposed.

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.

The Project would not change use of the site or the scale of current uses. The Project would not create an increased need for public services. Project construction would be required to accommodate 'all-hours' emergency access for buildings accessed via the affected streets. Emergency access would comply with relevant policies administered by SDOT as part of its street use permitting process.

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

During construction, the reservoir and pump station would not be used for water distribution; alternative distribution solutions managed by SPU would be used to ensure uninterrupted water distribution in the service area. During construction, the proposed Project would be required to accommodate 'all-hours' emergency access. Because there would be no impacts to public services, no measures to reduce or control impacts are proposed.

16. Utilities

Check utilities currently available at the site:

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 (identify)

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.

Utilities currently providing service to the Project site are not proposed to be altered, nor would additional utilities be necessary or proposed to serve the constructed Project. However, the completed project may produce electricity for all or some of the site needs, if photovoltaic cells are installed on the reservoir roof.

The proposed Project would extend the life of an existing drinking water asset (utility service for the surrounding area) and minimize risk of its failure.

C. SIGNATURE

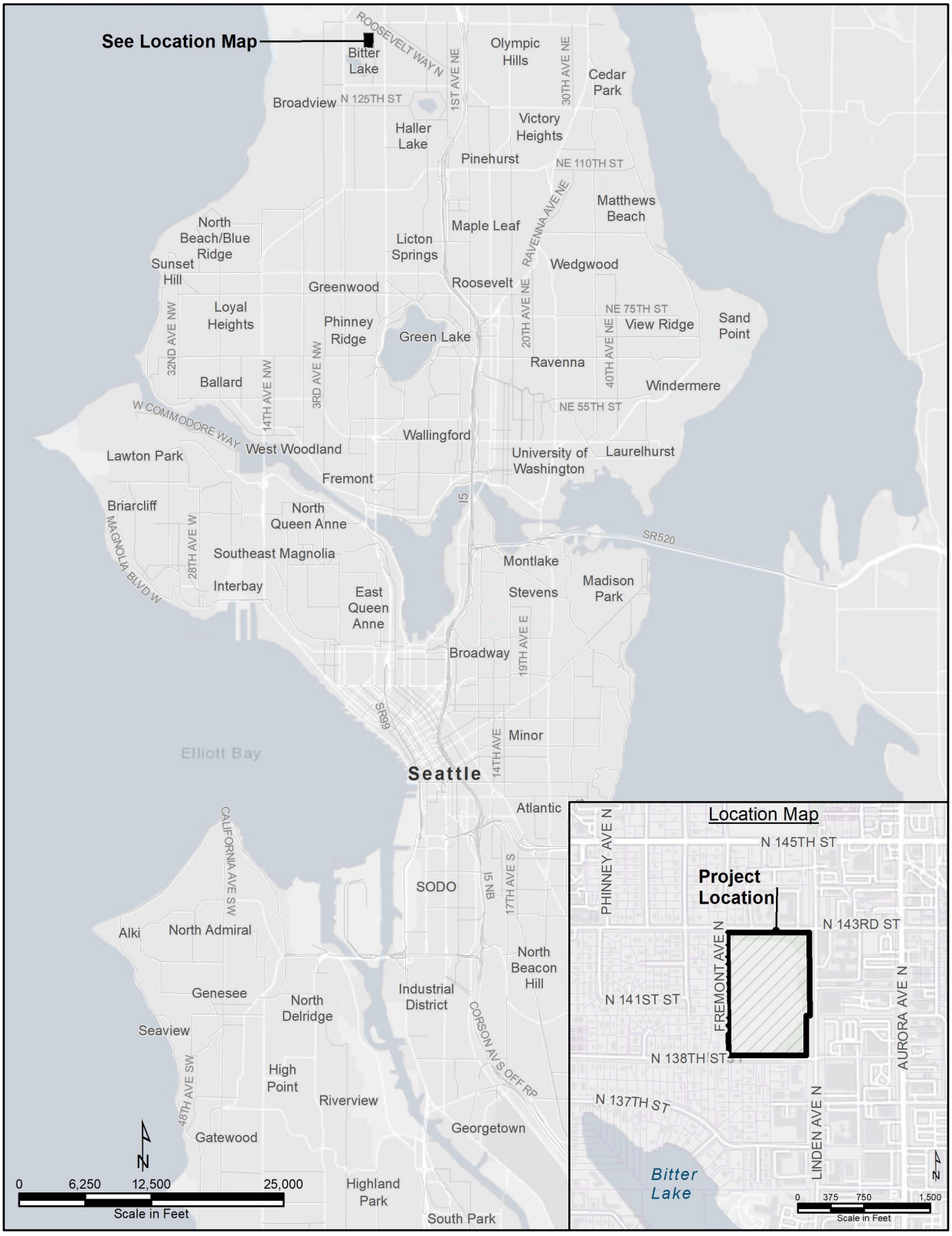
The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Andrew G. Karch Digitally signed by Andrew G. Karch Date: 2023.12.19 13:50:29 -08'00'

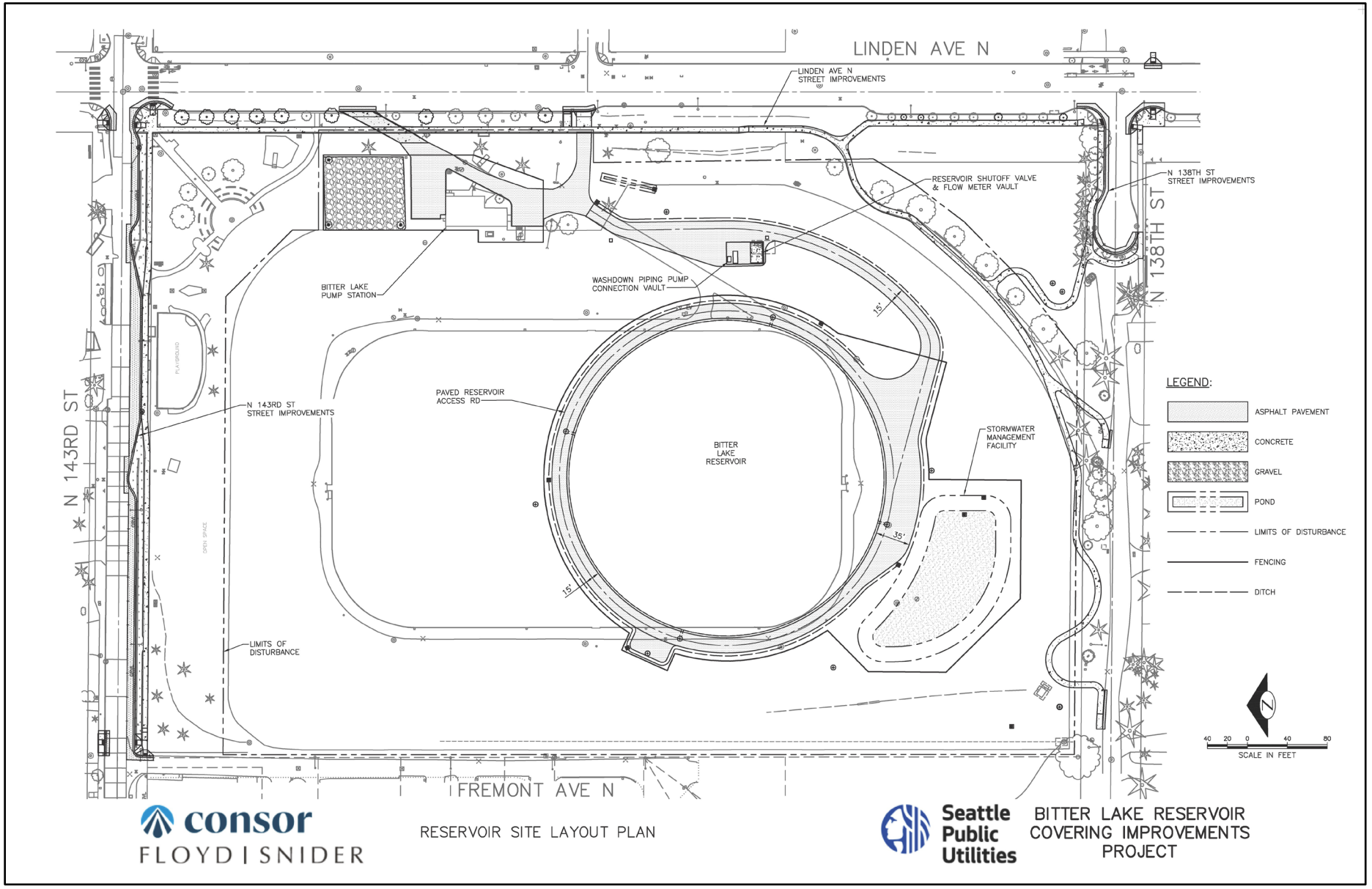
Andrew Karch, Project Manager

ATTACHMENTS
Attachment A – Project Vicinity Map and Location Map
Attachment B – Site Plan
Attachment C – Conceptual Stormwater Design
Attachment D – Greenhouse Gas Emissions Worksheet

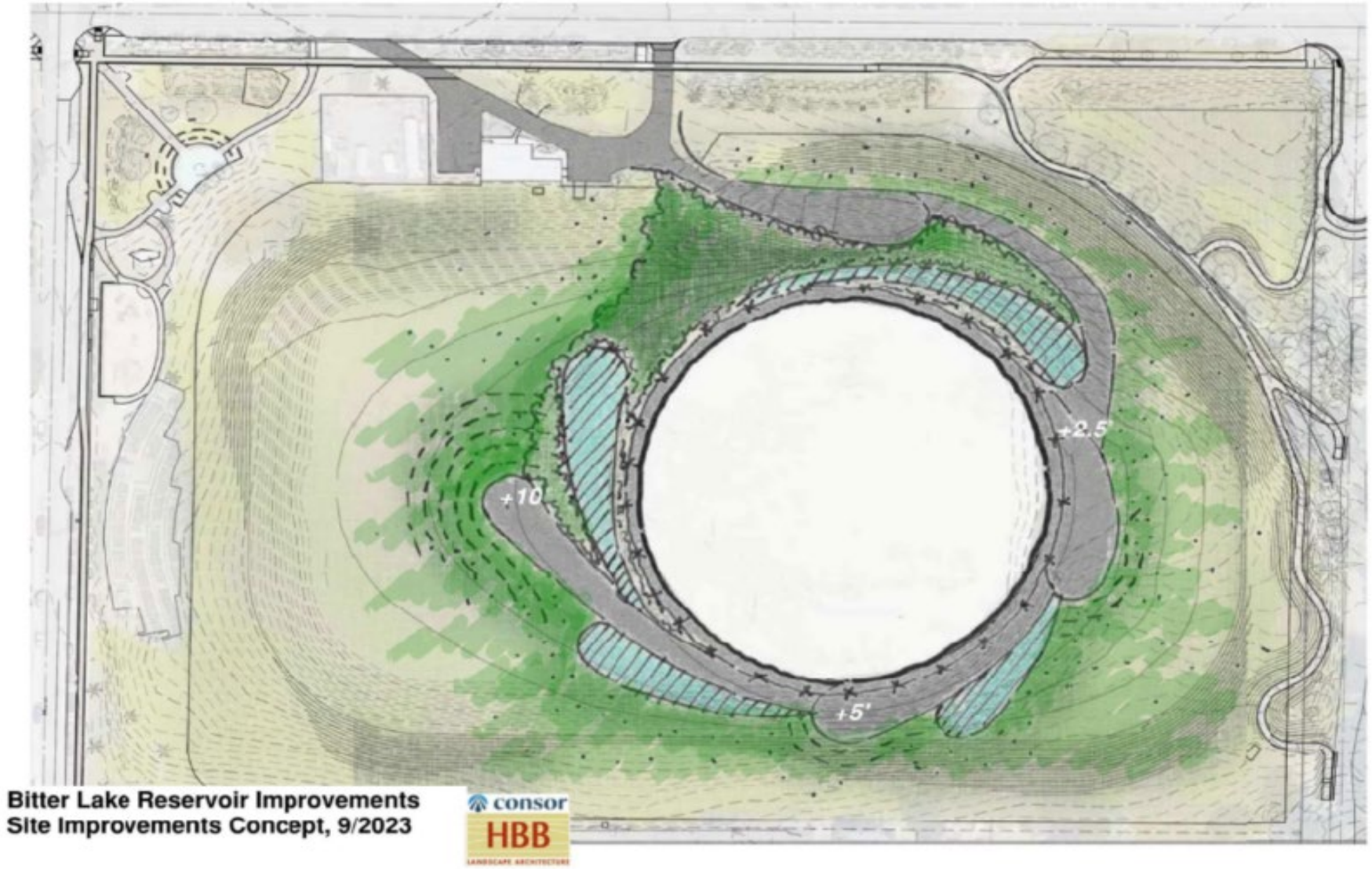
Attachment A – Project Vicinity Map and Location Map



Attachment B – Site Plan, 60% Design



Attachment C – Proposed Site Improvement Concepts, Stormwater Management, Post-60% Design



Attachment D – Greenhouse Gas Emissions Worksheet

Section I: Buildings

			Emissions Per Unit or Per Thousand Square Feet ($MTCO_2e$)			
Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Embodied	Energy	Transportation	Lifespan Emissions ($MTCO_2e$)
Single-Family Home	0		98	672	792	0
Multi-Family Unit in Large Building	0		33	357	766	0
Multi-Family Unit in Small Building	0		54	681	766	0
Mobile Home	0		41	475	709	0
Education		0.0	39	646	361	0
Food Sales		0.0	39	1,541	282	0
Food Service		0.0	39	1,994	561	0
Health Care Inpatient		0.0	39	1,938	582	0
Health Care Outpatient		0.0	39	737	571	0
Lodging		0.0	39	777	117	0
Retail (Other than Mall)		0.0	39	577	247	0
Office		0.0	39	723	588	0
Public Assembly		0.0	39	733	150	0
Public Order and Safety		0.0	39	899	374	0
Religious Worship		0.0	39	339	129	0
Service		0.0	39	599	266	0
Warehouse and Storage		0.0	39	352	181	0
Other		0.0	39	1,278	257	0
Vacant		0.0	39	162	47	0
					TOTAL Section I Buildings	**0**

Section II: Pavement

						Emissions ($MTCO_2e$)
Concrete produced for reservoir structure		8,108 CY of concrete @ 400 lbs CO_2 per CY				1,471
Asphalt/curb (50 $MTCO_2e$/1,000 SF of pavement with a thickness of 6 inches)		106 CY of asphalt = 5,700 SF 6 inches thick				285
					TOTAL Section II Pavement	

Section III: Construction

	Emissions ($MTCO_2e$)
(See detailed calculations below)	
TOTAL Section III Construction	**799**

Section IV: Operations and Maintenance

	Emissions ($MTCO_2e$)
(See detailed calculations below)	
TOTAL Section IV Operations and Maintenance	**86.18**
TOTAL GREENHOUSE GAS (GHG) EMISSIONS FOR PROJECT ($MTCO_2e$)	**2,641.18**

Section III Construction Details		
Construction: Diesel		
Equipment	**Diesel (gallons)**	**Assumptions**
Excavator	35,568	494 days × 8 hours/day × 9 gallons/hour
Transfer dump trucks (12 CY capacity)	1,093	5,467 round-trip miles ÷ 5 miles per gallon (mpg)
Flatbed truck	200	1,000 round-trip miles ÷ 5 mpg
Vibratory Roller-compactor (2)	4,480	2 roller-compactors × 40 days × 8 hours/day × 7 gallons/hour
Asphalt Paver (2)	240	2 asphalt pavers × 5 days × 8 hours/day × 3 gallons/hour
Concrete mixer (8)	11,520	8 concrete mixers × 45 days × 8 hours/day × 4 gallons/hour
Crane (materials unloading)	2,160	120 days × 2 hours/day × 9 gallons/hour
Crane (reservoir construction)	6,300	140 days × 5 hours/day × 9 gallons/hour
Subtotal Diesel Gallons	61,561	
GHG Emissions in pounds (lbs) CO_2e	1,634,444.6	26.55 lbs CO_2e per gallon of diesel
GHG Emissions in metric tons CO_2e	741.4	1,000 lbs = 0.45359237 metric tons

Construction: Gasoline		
Equipment	**Gasoline (gallons)**	**Assumptions**
Pick-up Trucks or Crew Vans (5)	5,220	783 days × 5 trucks × 1 round-trips/day × 20-mile round-trip ÷ 15 mpg
Subtotal Gasoline Gallons	5,220	
GHG Emissions in lbs CO_2e	126,846	24.3 lbs CO_2e per gallon of gasoline
GHG Emissions in metric tons CO_2e	57.6	1,000 lbs = 0.45359237 metric tons

Construction Summary		
Activity	**CO_2e in pounds**	**CO_2e in metric tons**
Diesel	1,634,444.6	741.4
Gasoline	126,846	57.6
Total for Construction	1,761,290.6	**799**

Section IV Long-Term Operations and Maintenance Details		
Operations and Maintenance: Diesel		
Equipment	**Diesel (gallons)**	**Assumptions**
		General maintenance of the Project site is estimated to occur once per 7 years for 100 years.
Boom truck	57.1	(100 years/maintenance event every 7 years) x 1 truck x 1 round-trip x 20 miles round-trip ÷ 5 mpg)
Scissor lift	57.1	(100 years/maintenance event every 7 years) x 1 lift x 2 hours x 2 gallons per hour)
Subtotal Diesel Gallons	114.2	
GHG Emissions in lbs CO_2e	3,032	26.55 lbs CO_2e per gallon of diesel
GHG Emissions in metric tons CO_2e	1.38	1,000 lbs = 0.45359237 metric tons

Operations and Maintenance: Gasoline		
Equipment	**Gasoline (gallons)**	**Assumptions**
		General maintenance of the Project site is estimated to occur up to once per week for 100 years.
Pick-up truck or crew van (1)	7,693.3	(52 general maintenance events/year × 100 years) + (400 maintenance events after reservoir draining over life of Project) + (170 maintenance to exterior concrete or shotcrete surface over life of Project) × 1 truck × 1 round-trip × 20 miles round-trip ÷ 15 mpg)
Subtotal Gasoline Gallons	7,693.3	
GHG Emissions in lbs CO_2e	186,948	24.3 lbs CO_2e per gallon of gasoline
GHG Emissions in metric tons CO_2e	84.8	1,000 lbs = 0.45359237 metric tons

Operations and Maintenance Summary		
Activity	**CO_2e in pounds**	**CO_2e in metric tons**
Diesel	3,032	1.38
Gasoline	186,948	84.8
Total Operations and Maintenance	189,980	86.18