



Draft Environmental Assessment

# City Creek Water Treatment Plant Resilient Water Quality and Supply

EMD-2021-BR-063-0016

Salt Lake City, Salt Lake County, Utah

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**FEMA**

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## Abbreviations and Acronyms

AADT	average annual daily traffic
BMPs	best management practices
BRIC	Building Resilient Infrastructure and Communities
CCWTP	City Creek Water Treatment Plant
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
DEQ	Department of Environmental Quality
EA	environmental assessment
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FONSI	finding of no significant impact
GHG	greenhouse gas
MBTA	Migratory Bird Treaty Act
N/A	not applicable
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PM	particulate matter

PM2.5	particulate matter less than 2.5 micrometers in diameter
SLCDPU	Salt Lake City Department of Public Utilities
SWCA	SWCA Environmental Consultants
TMDL	total maximum daily loads
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

## SECTION 1. Introduction

Salt Lake City proposes to demolish and rebuild infrastructure at the City Creek Water Treatment Plant (CCWTP) and to stabilize the banks of City Creek to improve facility performance during and after a seismic or flood event. The CCWTP is located at 2200 City Creek Canyon Road in Salt Lake City in Salt Lake County, Utah (**Figure 1-1**). Salt Lake City applied to the Federal Emergency Management Agency (FEMA) through the Utah Division of Emergency Management for a grant under FEMA's Building Resilient Infrastructure and Communities (BRIC) grant program. The Utah Division of Emergency Management is the direct applicant for the grant, and Salt Lake City is the Subapplicant. The BRIC grant program is authorized under Section 203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 United States Code (U.S.C.) 5133, as amended by the Disaster Recovery Reform Act of 2018.

The proposed project would include demolishing the existing flocculation basins, sedimentation basins, and filter building at the CCWTP and replacing the processes with modern structures at higher elevations (above flood levels) in one new treatment building. The new water treatment building, with a finished water clearwell and backwash pump station, would be constructed where the existing flocculation and sedimentation basins are currently located. The existing fluoride building and the existing clarifier would be improved and continued to be used. **Figure 1-2** shows the project area and existing CCWTP components to be replaced and retrofit. The seismic upgrades would protect plant operators during a seismic event by increasing the probability that the building would experience less damage. The new treatment building would be elevated when compared to the existing structures to raise treatment facilities above potential flood elevations and foundation drain systems would also be added to provide additional protection. The proposed project would also include construction of an infiltration gallery of perforated pipes placed to collect groundwater near the intake to mimic bank filtration. This would allow high-turbidity creek water to flow through the ground, providing some filtration, and into the infiltration gallery pipelines, where it would be collected and pumped to the head of the plant for further treatment. The infiltration gallery would help mitigate high-turbidity events after a wildfire, landslide, or flood.

Creek channel and streambank improvements along City Creek would include removing debris, replacing existing gabion walls to stabilize the bank, placing energy dissipating rock weirs in the channel, and raising the bank near the existing filter building to contain a 500-year flood event in the channel. Improvements would occur along the creek from the raw water intake structure to the existing filter building (**Figure 1-2**). The channel and streambank improvements would help prevent erosion and degradation of the existing channel along the plant and reduce the probability that the CCWTP could flood.



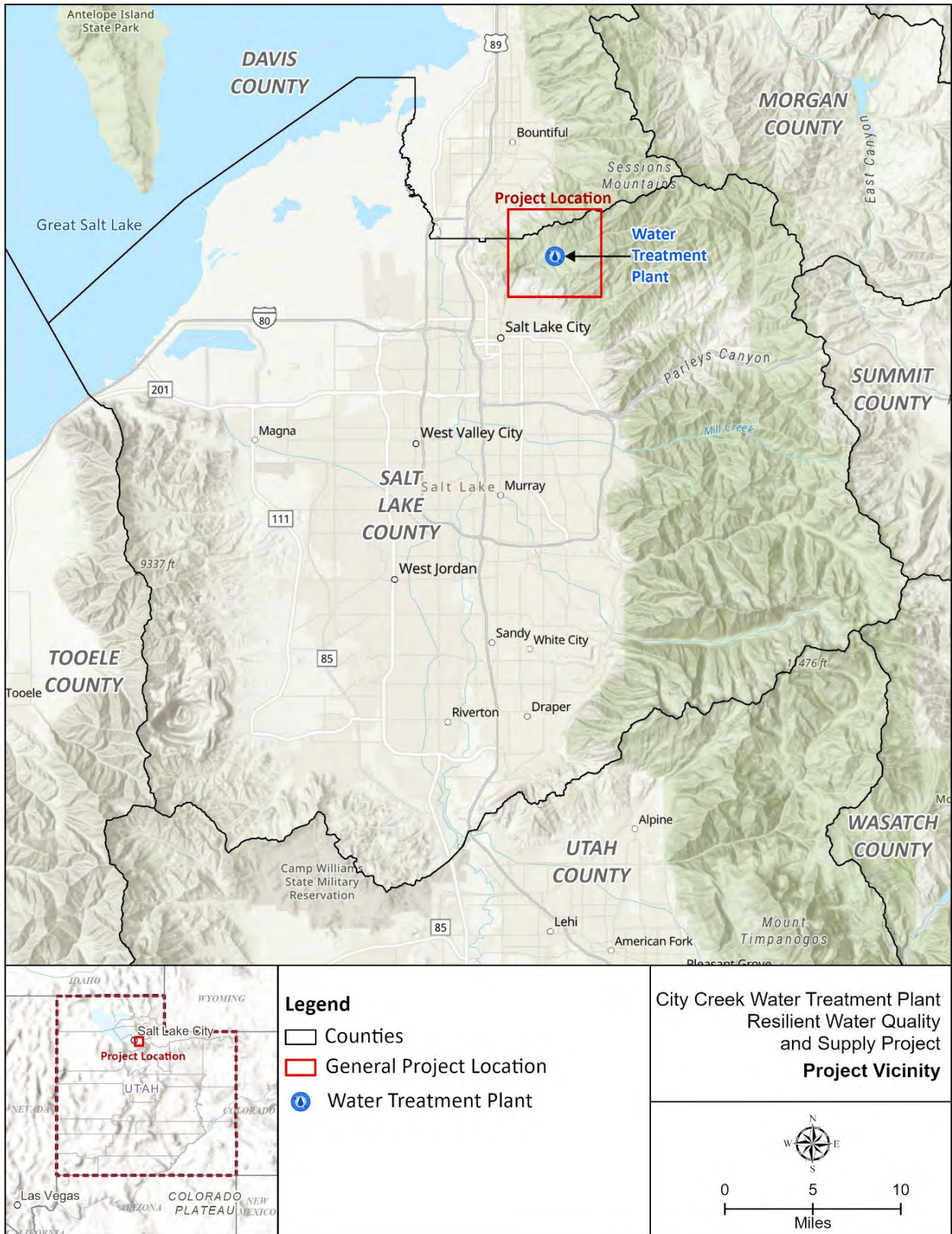


Figure 1-1. Project Vicinity

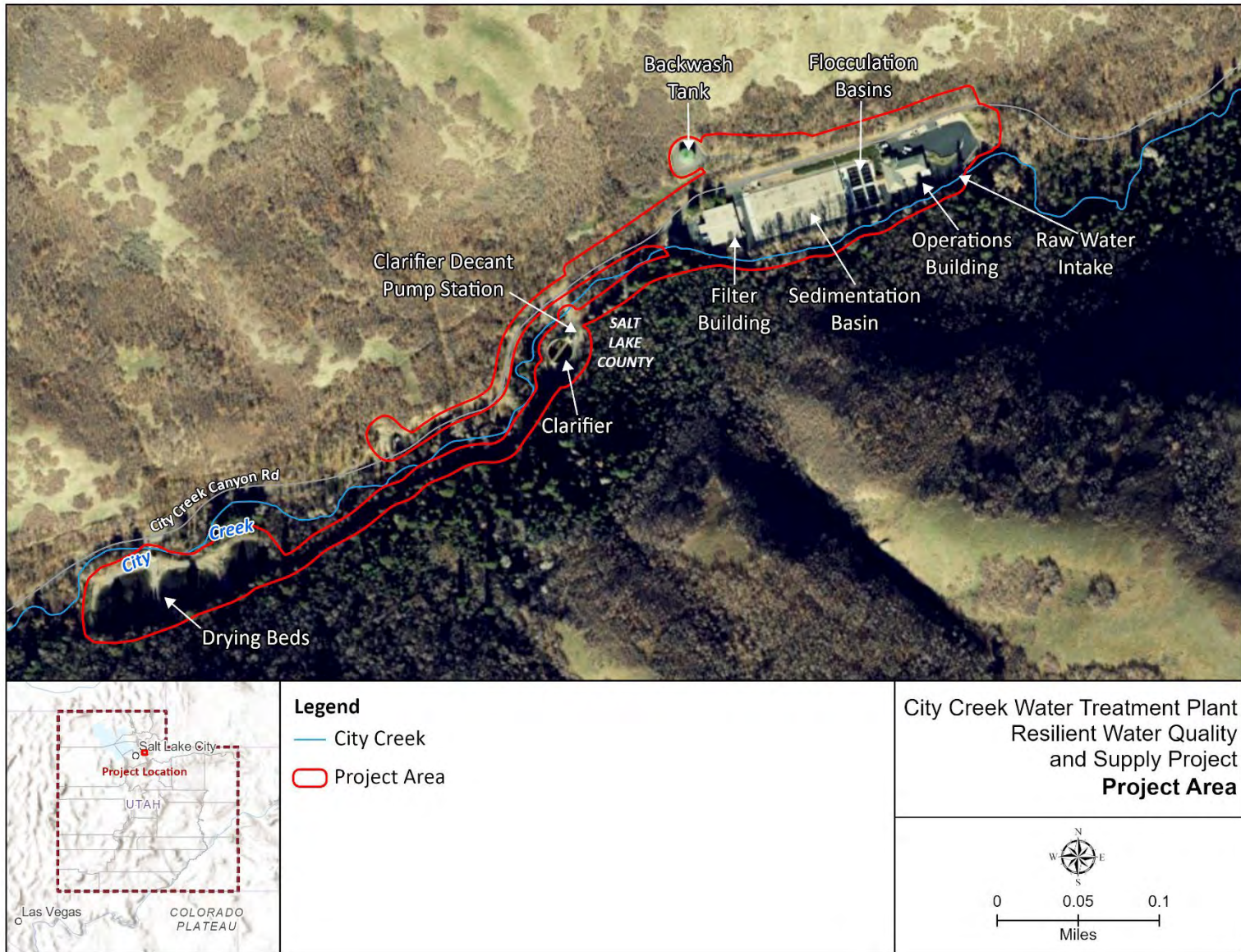


Figure 1-2. Project Area

FEMA prepared this environmental assessment (EA) in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and FEMA guidance for implementing NEPA (U.S. Department of Homeland Security Instruction 023-01-001 and FEMA Instruction 108-01-1). FEMA is required to consider potential environmental impacts before funding or approving actions and projects. The purpose of this EA is to analyze the potential environmental impacts of the proposed project and alternatives, including a no action alternative. FEMA used the findings in this EA to determine whether to prepare an environmental impact statement or to issue a finding of no significant impact (FONSI).

## SECTION 2. Purpose and Need

FEMA's BRIC grant program provides grants to eligible state, territory, and local governments and federally recognized tribes to implement natural hazard mitigation projects. The objective of the BRIC grant program is to shift the federal focus away from reactive disaster spending and toward research-supported proactive investment in community resilience to reduce overall risk to the population and structures from future hazard events. Specifically, the purpose of the proposed project is to reduce seismic, flood, and landslide hazards to the CCWTP.

The proposed project is needed to make the current facility more resilient to the natural hazards of earthquakes, floods, landslides, and debris flows in order to ensure essential operations and services are able to continue during these types of events.

### 2.1. Background

The CCWTP is a critical facility and damage or disruptions in service, even if short in duration, would affect the provision of safe drinking water to a significant portion of Salt Lake City's northern service area (approximately 37,900 people). The CCWTP is approximately 1 mile north of the Wasatch Front fault line and within an area of very high seismic hazard, according to the U.S. Geological Survey National Seismic Hazard Map (U.S. Geological Survey 2014) (**Figure 2-1**). The CCWTP is also within a floodplain (**Figure 2-2**). The CCWTP flocculation basins, sedimentation basins, and filter building are not currently constructed to withstand earthquakes and other geological and flood hazards. The existing filter building was designed in 1964 and constructed shortly thereafter and has unreinforced expansion joints and a leaking roof. A structural evaluation determined the replacement of the building is needed to address seismic improvements. Bank erosion and flood events have occurred within and along City Creek, which runs adjacent to the CCWTP, threatening operation of the facility. If a catastrophic failure were to occur at the CCWTP, the loss of service (i.e., loss of drinking water produced at CCWTP) could extend for up to 3 years while a new facility is constructed. Smaller disruptions such as floods or excess debris that may require short shutdowns for maintenance would also affect the provision of services.

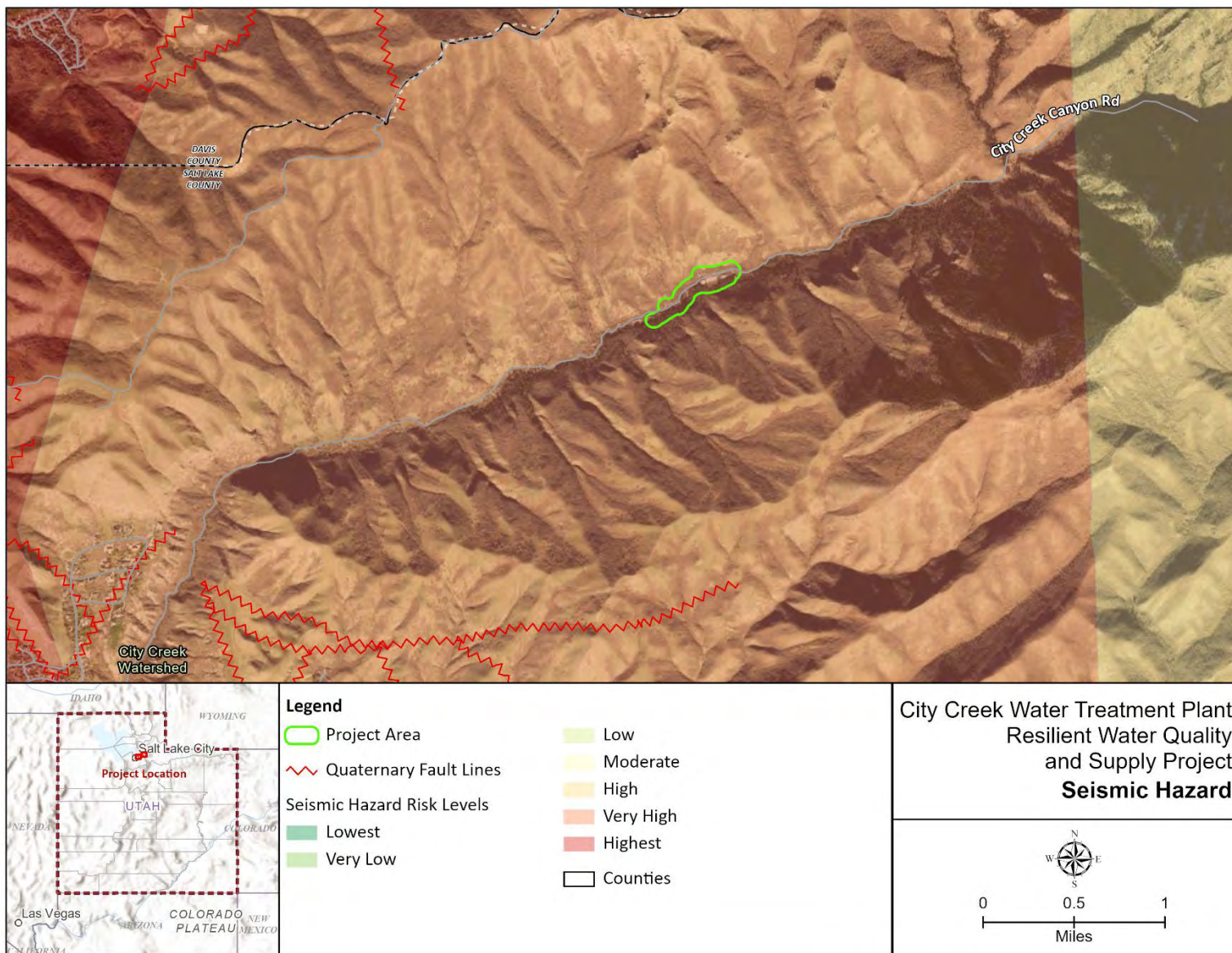


Figure 2-1. Project Area Seismic Risk

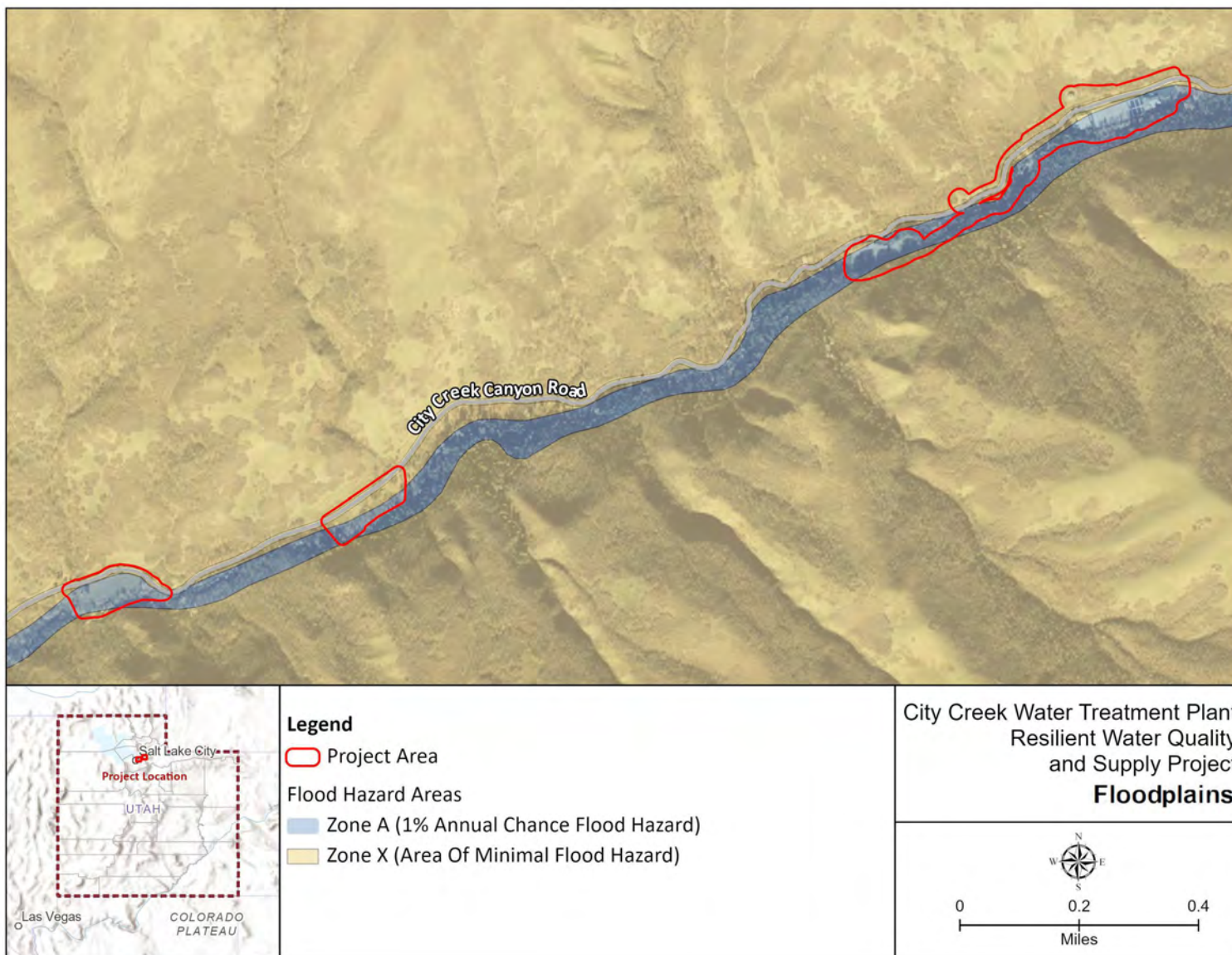


Figure 2-2. Floodplains in the Project Area

## SECTION 3. Alternatives

This section describes the no action alternative, the proposed action, and alternatives that were considered but dismissed.

### 3.1. No Action Alternative

The no action alternative is included to describe potential future conditions if no action is taken to reduce seismic, flood, and landslide hazards. Under this alternative, there would be no improvements to the CCWTP and City Creek. Existing conditions, including the risk of damage and disruptions at the CCWTP from a seismic, flood, or other hazardous event would remain. If a failure were to occur, the public works department would switch to a limited alternate supply and a significant portion of Salt Lake City's northern service area could lose reliable water service. In addition, switching the supply requires the manual operation of valves that are in remote locations and that may not be accessible, depending on the severity of the event. Because current seismic and flood risks at the CCWTP would not be reduced under the no action alternative, the probability of disrupting water supply potentially affecting lives and property would continue to be high.

### 3.2. Proposed Action

Salt Lake City is proposing to demolish and rebuild infrastructure at the CCWTP and to restore the banks of City Creek to improve facility performance during and after a seismic or flood event.

#### 3.2.1. CITY CREEK WATER TREATMENT PLANT IMPROVEMENTS

Under the proposed project, the existing flocculation basins, sedimentation basins, and filter building would be demolished and replaced with modern equipment and processes combined into one new treatment building with a finished floor elevation at least 10 feet above the 500-year flood elevation. The new structures would be elevated when compared to the existing structures to raise treatment facilities above potential flood elevations and foundation drain systems would also be added to provide additional flood protection. The new treatment building would be completely covered, grouping all treatment processes under a common cover to shield sensitive processes and operators from extreme weather events, reducing the risk of a plant shutdown. Overall, the new CCWTP facility would be designed with the goal of being able to immediately return to service after a 2,475-year seismic event, 100-year wind event, or 500-year flood event.

Construction of the CCWTP improvements would be sequenced in a way to avoid water service interruptions during construction. The new treatment plant, with a finished water clearwell and backwash pump station, would be constructed within the footprint of the existing flocculation and sedimentation basins (**Figure 3-1**). Construction of the treatment building would require excavation to a depth of 30 feet. The existing fluoride building, located directly west of the filter building, would remain in place and continue to be used. However, the fluoride building would be expanded with a 6-foot by 26-foot addition to improve operator safety related to the use of hydrofluorosilicic acid (**Figure 3-1**). The filter building in this area would be demolished.

The existing clarifier would be improved within its existing location. Improvements to the clarifier would include replacing the existing solids removal mechanism and walkway bridge, adding a geodesic dome cover to prevent freezing and icing in the winter, and replacement of pumps and piping with equipment designed to meet current codes, including seismic standards. Work would include trenching, installation of the pipes, and backfilling the pipes. A soil nail and shotcrete retaining wall, approximately 150-feet long by 15-feet tall, would be constructed south of the clarifier to protect the existing slope from eroding and threatening the integrity of the clarifier.

The existing drying beds would be improved with connection pipes with slide gates placed between each drying bed to allow for enhanced plant operations. A portable generator would be used to provide backup power to the drying beds.

### **3.2.2. INFILTRATION GALLERY AND CIVIL IMPROVEMENTS**

The groundwater level at the CCWTP is near the surface with several springs located throughout the canyon. An infiltration gallery would provide a means to capture groundwater as an additional source of water for the CCWTP and help optimize the use of treatment capacity during the lower creek flows in late summer and the winter. Higher levels of sediment can occur in City Creek following wildfire, landslides, or floods, reducing water quality, and causing temporary closure of the CCWTP until raw water quality improves. The use of the infiltration gallery is expected to improve raw water quality during storm events and avoid plant shutdowns through the addition of less turbid water collected in the infiltration gallery. Construction of the infiltration gallery would include 50 feet of buried 12-inch perforated pipe for groundwater collection connected to the new structural groundwater dewatering system that also serves as part of the infiltration gallery. The new collection pipe would be buried at a depth of approximately 12 feet. These new elements would be placed on the far eastern end of the CCWTP and north of City Creek, thereby facilitating potential riverbank filtration of a portion of the surface water.

Most of the existing yard piping at the CCWTP is over 65 years old, is not considered seismically resilient, and failure of which poses a significant flooding hazard to the operations building and other structures that would result in loss of service. Under the proposed project, yard piping would be replaced or lined throughout the CCWTP. New pipes would be installed beneath roadways and in areas previously impacted by development. Seismic-resistant piping with restrained joints and flexible couplings would be used to protect against the risk of leaks or breaks following a seismic event.

The existing septic drain field, located on the south side of City Creek just west of the existing filter building, would be replaced. A new septic drain field would be constructed approximately 1,000 feet down the canyon from the existing filter building on the north side of City Creek Canyon Road near an existing pit toilet facility. A 2-inch graywater drain line would be extended from the treatment plant site to the drain field.



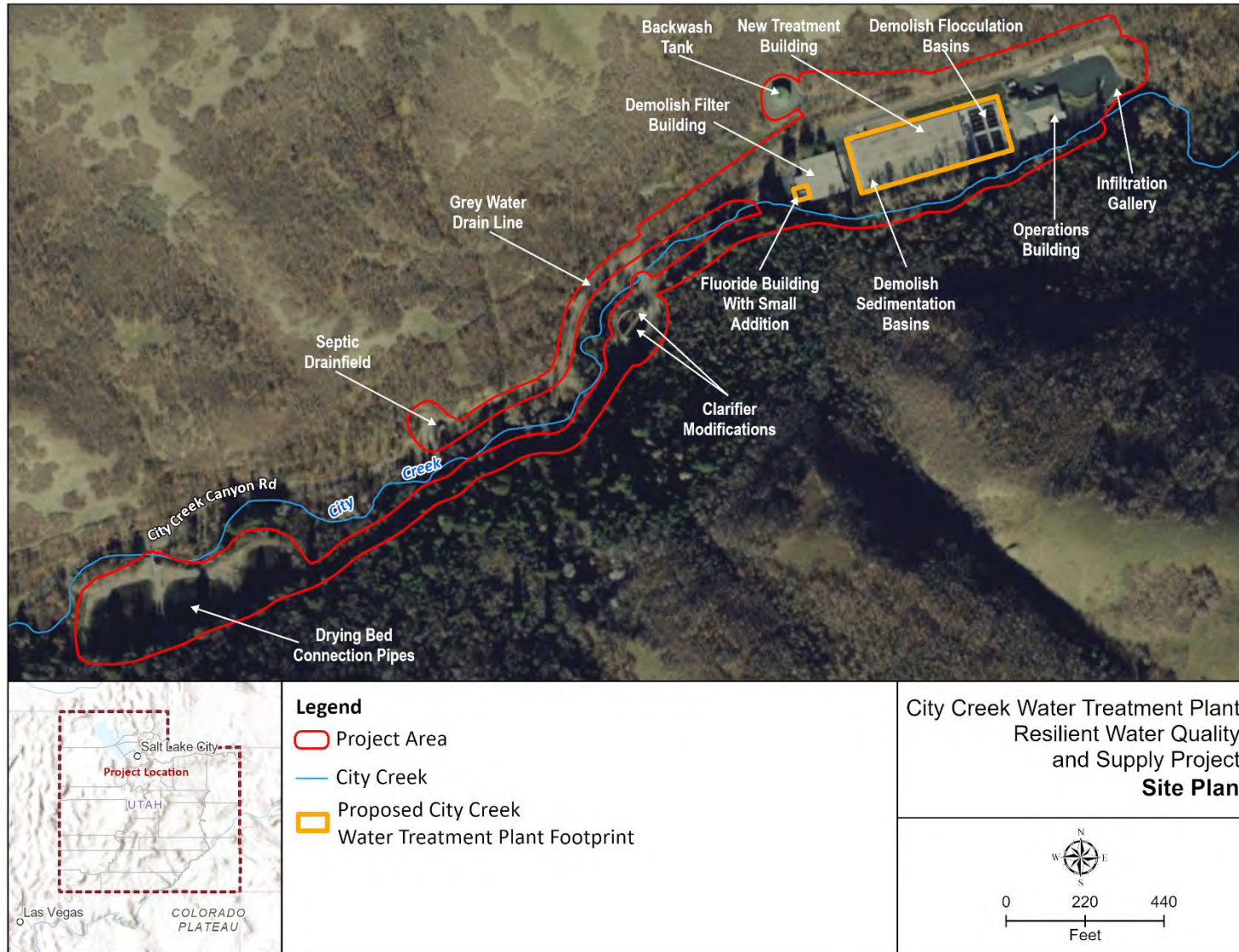


Figure 3-1. Proposed City Creek Water Treatment Plant Improvements

### **3.2.3. STREAMBANK IMPROVEMENTS**

City Creek runs along the southern side of the CCWTP. Streambank improvements would include removing debris and some vegetation, planting of riparian vegetation, reinforcing the banks, raising the bank elevation near the existing filter and fluoride buildings, and placing energy dissipating rock weirs in the creek channel. The proposed streambank improvements would prevent bank erosion and increase freeboard alongside the CCWTP, reducing the probability that the CCWTP could flood. Proposed riparian vegetation to be planted would include willows (*Salix* spp.), red osier dogwood (*Cornus sericea*), Nebraska sedge (*Carex nebrascensis*), and Baltic rush (*Juncus balticus*) as well as other riparian and upland vegetation recommended by the Natural Resources Conservation Service. The riparian vegetation would also help mitigate flooding, stabilize the surrounding slope, and filter pollutants.

Starting downstream of the existing intake, improvements would include demolition and replacement of the existing gabion retaining wall along the northern streambank. The new gabion retaining wall would extend from the existing intake to the existing flocculation basins. Directly south of the new gabion retaining wall, a 50-foot-long brush mattress made of live willow and dogwood cuttings with rock toe protection would be placed along the southern streambank. Farther downstream, next to the existing filter building, the existing bank would be raised approximately 2.5 feet to prevent flooding the area where the existing filter building and fluoride building are located. Approximately 10 boulder rock weir step-pool structures would be constructed throughout the channel starting downstream of the existing intake to the existing filter building. A rubber-tired backhoe with an extended boom would be used to remove existing gabion baskets and embankment material along the streambank and for placing the rocks when constructing the weirs in the channel. All equipment would be operated from the top of the City Creek banks and no equipment would enter the creek channel.

During construction of the streambank improvements, City Creek would need be dewatered from the intake structure to downstream of the existing filter building. A cofferdam would be placed near the intake structure and pumps would be used to bypass water through temporary piping around the work area. If needed, wells would be installed within the channel to contain groundwater and direct flow downstream of the work area.

### **3.2.4. EQUIPMENT, STAGING, AND ACCESS**

Equipment used during construction would include dump trucks, excavators, loader, compaction roller, street sweeper, forklifts, and cranes. Equipment staging would occur within the CCWTP boundary on existing surfaces as well as at other staging areas along City Creek Canyon Road (**Figure 3-2**). An approximately 0.15-acre area east of the existing CCWTP parking area would be graded and vegetation and trees would be removed to create space for construction staging. The existing slope would be cut to match the existing paved grade, with cuts up to 20 feet deep, followed by the installation of permanent shoring to stabilize the slope. After construction is complete, the area would be paved and used for snow storage.

Two off-site staging areas approximately 1 mile west of the CCWTP adjacent to City Creek Canyon Road would also be used, as shown in **Figure 3-2**, with both areas totaling approximately 2.5 acres. Vegetation and trees would be removed and minor grading would be done to make the areas suitable for construction laydown and staging. At both sites, the top 6 inches of soil would be removed, the areas would be leveled, geofabric would be placed, and the areas would be covered with a 6-inch aggregate base.

Before disturbance occurs, the areas would be inventoried to identify the current plant species and conditions. After construction is complete, active restoration of staging areas would take place to recover abiotic and biotic conditions. The principles of plant biodiversity, ecosystem function, and the community value of aesthetic open space would guide the restoration process. A native seed mix of grasses and flowering forbs would be planted. Trees removed from the project would be replanted with saplings of a 1.5-inch caliper and irrigated until established. The areas that are being revegetated would be closed to foot traffic for at least a year. The restored vegetation may take 3 to 5 years to re-establish and multiple decades for the trees. The Salt Lake City Department of Public Utilities (SLCDPU) Watershed Team would continue to maintain the restoration beyond the initial implementation.

City Creek Canyon Road would be used to access the project work areas. Equipment and materials would be stored immediately adjacent to the plant on the north side, partially on the existing access road. An approximately 0.8-acre area adjacent to the existing City Creek Canyon Road north of the CCWTP would be graded and vegetation would be removed to widen the road to maintain access around the plant and up the canyon. The existing slope would be cut back, with cuts up to 12 feet from the edge of the existing pavement, and a soil nail and shotcrete retaining wall (approximately 425 feet long and averaging 4 feet in height) would be installed to stabilize the slope. The area would be extended and paved with asphalt to permanently widen City Creek Canyon Road. To convey stormwater under the widened road, an existing pipe culvert would be removed and replaced with a new drainpipe. The pipe would be placed north of City Creek Canyon Road, under the extended portion of the road. This new culvert would extend approximately 115 feet under the intersection of City Creek Canyon Road and the access road to the backwash tank.

The access road to the backwash tank, along with a 0.12-acre area north of the access road, would also be used for staging. Vegetation and trees would be removed, and the area would be graded to be level, geofabric would be placed, followed by the placement of 6-inch aggregate throughout the site.

Public access to City Creek Canyon would be limited for the duration of construction. During construction, City Creek Canyon Road would be closed to the public during the week and a limited area would be open to the public on weekends and holidays. It is expected that off-road hiking trails would remain open throughout construction to pedestrians and cyclists.

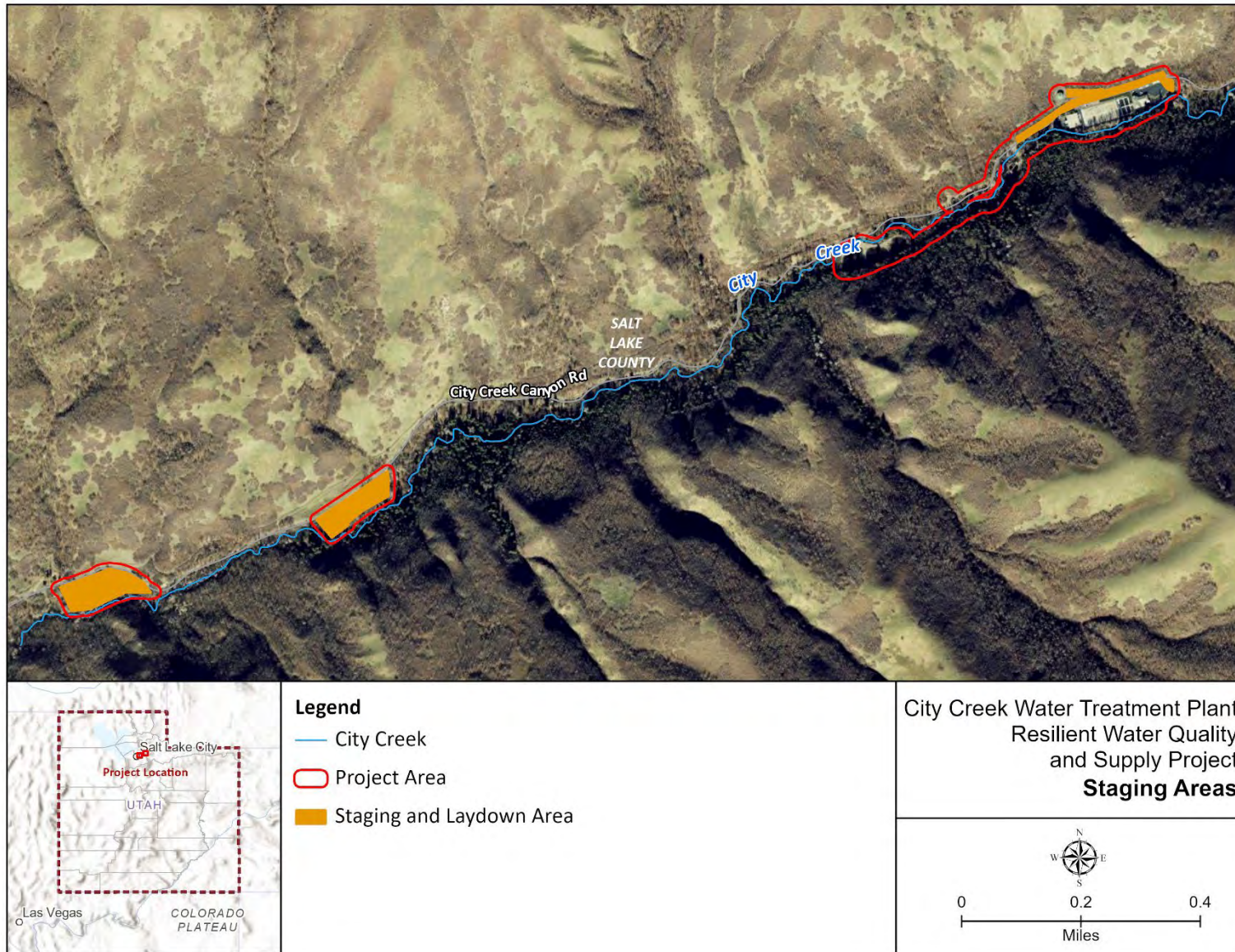


Figure 3-2. Staging Areas

### **3.2.5. PROJECT DURATION**

Construction of the proposed project is anticipated to last 3 years. Modifications to City Creek would take approximately 3 months. During the first year of construction, the sedimentation and flocculation basins would be demolished and the new treatment building would be constructed, which would take approximately 30 months. The rehabilitation of the backwash clarifier would occur concurrently with construction of the new treatment building. Following completion of the new treatment building and backwash clarifier, the filter building would be demolished and the fluoride building would be expanded, which would take approximately 4 months.

### **3.2.6. MAINTENANCE ACTIVITIES**

Salt Lake City is the owner of the CCWTP, and SLCDPU is responsible for the long-term maintenance of the facility. Maintenance would be scheduled and performed in accordance with federal, state, and local requirements, as well as industry standards. The SLCDPU Watershed Team would monitor the streambank improvement work, including the vegetation, during an establishment period of approximately 3 years and beyond. As needed, maintenance would include removal of invasive vegetation and possible replanting of riparian vegetation.

## **3.3. Additional Action Alternatives Considered and Dismissed**

Two additional action alternatives were considered to address and mitigate the hazards threatening the CCWTP. These alternatives were determined to be infeasible and insufficient in meeting the project purpose and need.

### **3.3.1. RELOCATE THE CITY CREEK WATER TREATMENT PLANT**

Under this alternative, a new water treatment plant would be built at a different location in the watershed. However, the City Creek watershed and the City Creek Canyon have similar hazards at almost all locations within the canyon. The existing site was selected in the 1950s because it is at the preferred elevation to provide gravity flow to the northern service area of Salt Lake City, and it is in the canyon in an area that is wide enough and suitable for a treatment plant. Alternate locations would not provide the same natural benefits as the current site. Additionally, the estimated cost to build an entirely new plant with the required support facilities would be considerably more than the proposed action and is not viable under current funding options. Therefore, this alternative was dismissed from further consideration.

### **3.3.2. ABANDON THE CITY CREEK WATER TREATMENT PLANT**

Under this alternative, SLCDPU would abandon the CCWTP rather than address the hazards. Under this alternative, Salt Lake City would lose a vital source for the city's drinking water supply, as the CCWTP is the only facility available to treat City Creek water to drinking water standards. Abandonment of the facility would reduce the city's water supply, increase drought vulnerability, reduce system redundancy, and put a significant burden on other portions of the water supply and distribution system. This alternative would only replace some hazards (e.g., flooding) with other

hazards (e.g., drought). Abandoning the CCWTP would require a significant investment in conveyance, storage, and continuous pumping capacity to reliably supply the service area, which would result in a life cycle cost several times the cost of the proposed project. Therefore, this alternative was dismissed from further consideration.

## SECTION 4. Affected Environment, Potential Impacts, and Mitigation

This section describes the environment potentially affected by the alternatives, evaluates potential environmental impacts, and recommends measures to avoid or reduce those impacts. When possible, quantitative information is provided to establish potential impacts, and the significance of potential impacts is evaluated qualitatively based on the criteria listed in **Table 4.1**. The study area generally includes the project area and access and staging areas needed for the proposed action. If the study area for a particular resource category is different from the project area, the differences will be described in the appropriate subsection.

**Table 4.1. Evaluation Criteria for Potential Impacts**

Impact Scale	Criteria
None/Negligible	The resource area would not be affected, or changes or benefits would be either nondetectable or, if detected, would have effects that would be slight and local. Impacts would be well below regulatory standards, as applicable.
Minor	Changes to the resource would be measurable, although the changes would be small and localized. Impacts or benefits would be within or below regulatory standards, as applicable. Mitigation measures would reduce any potential adverse effects.
Moderate	Changes to the resource would be measurable and have either localized or regional-scale impacts/benefits. Impacts would be within or below regulatory standards, but historical conditions would be altered on a short-term basis. Mitigation measures would be necessary, and the measures would reduce any potential adverse effects.
Major	Changes would be readily measurable and would have substantial consequences on a local or regional level. Impacts would exceed regulatory standards. Mitigation measures to offset the adverse effects would be required to reduce impacts, though long-term changes to the resource would be expected.

### 4.1. Resources Not Affected and Not Considered Further

The following resources (**Table 4.2**) would not be affected by either the no action alternative or the proposed action because they do not exist in the project area or the alternatives would have no effect on the resource. These resources have been removed from further consideration in this EA.

## Affected Environment, Potential Impacts, and Mitigation

**Table 4.2. Resources Eliminated from Further Consideration**

Resource Topic	Reason for Elimination
Farmland Soils	According to the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Web Soil Survey, no soils in the project area have been designated as prime or unique farmland, or farmland of statewide importance. Therefore, there would be no impact on designated farmland soils (USDA NRCS 2023).
Wild and Scenic Rivers Act	According to the National Wild and Scenic Rivers website (National Wild and Scenic Rivers System 2023), the closest wild and scenic river, the Green River, is approximately 150 miles southeast of the project area. Thus, the alternatives would have no effect on wild and scenic rivers.
Sole Source Aquifers	According to the U.S. Environmental Protection Agency's (EPA) sole source aquifer map (EPA 2023a), there are no sole source aquifers designated in Salt Lake County; therefore, the alternatives would have no effect on sole source aquifers.
Land Use and Zoning	This proposed action would not change existing land uses and is consistent with the current zoning. The alternatives would have no effect on land use and zoning.
Essential Fish Habitat (Magnuson-Stevens Fishery Conservation and Management Act)	The project area is not within or near designated Essential Fish Habitat (National Oceanic and Atmospheric Administration 2024).

### 4.2. Geology, Soils, and Topography

The project area lies within City Creek Canyon in the Wasatch Mountains. City Creek Canyon is approximately 12 miles long, with City Creek starting at an elevation of approximately 8,100 feet above mean sea level and flowing generally east to west with an elevation of approximately 5,360 feet at the CCWTP, and an elevation of 4,500 feet at the mouth of the canyon. The creek channel is narrow with medium to heavy vegetation on the banks and floodplain.

According to the NRCS Web Soil Survey, the predominant soil type in the project area is colluvium, loose sediment, and material that accumulates at the base of a slope, including Harkers-Wallsburg association and Harkers soils (USDA NRCS 2023). These soils are moderately susceptible to erosion by water and wind (USDA NRCS 2023).

The Wasatch fault zone, consisting of a network of Quaternary faults, lies on the west side of the Wasatch Mountains. As discussed in Section 2, the CCWTP lies approximately 1 mile from several faults and is in an area designated as severe/violent for ground shaking (U.S. Geological Survey 2014). City Creek Canyon has slopes greater than 30 percent and is considered a debris-flow source area with mapped landslides (Christenson and Shaw 2008). According to a post-fire debris flow analysis using the U.S. Geological Survey debris flow model, a rainfall event of 0.2 inches in



15 minutes has a 55.4 percent likelihood of producing a debris flow on a wildfire burn scar area in the canyon (JW Associates 2023).

### 4.2.1. NO ACTION ALTERNATIVE

Under the no action alternative, there would be no construction-related short-term impact on topography or soils in the project area.

In the long term, the proposed stream bank modifications would not take place and the City Creek channel would continue to experience sloughing, channel incision, and degradation, exacerbating erosive conditions. There would also be no improvements to the CCWTP and the risk of damage from a seismic, flood, or other hazardous event would remain. Construction to repair any damage to the CCWTP or reconstruct the CCWTP may require soil disturbance and earth-moving activities. Therefore, this alternative could result in minor to moderate long-term adverse impacts on soils and topography from continued erosion within City Creek and potential repairs to the CCWTP.

### 4.2.2. PROPOSED ACTION

Under the proposed action, demolition, excavation, and soil disturbance would be required to construct CCWTP improvements and modify the City Creek streambanks. Construction of the treatment building would require excavation to a depth of 20 feet at the east end of the plant. Construction of the new clearwell and backwash pump station at the west end of the new treatment building would require excavation to 30 feet. The collection pumping vault and collection pipe for the infiltration gallery would be buried at a depth of 12 feet. The estimated excavated volume for the access improvements, parking lot staging area, pipe crossing excavations, installation of gabion baskets, rock riprap, soldier pile, and retaining wall is estimated to be approximately 2,800 cubic yards. Approximately 10 rock weir step-pool structures would be constructed in City Creek. The use of best management practices and erosion control would reduce potential impacts on soils to a minor short-term adverse impact.

In the long term, the streambank and rock weir modifications would reduce scouring of the creek bed and future erosion of streambank soils. The slope stabilization shoring above the parking area east of the CCWTP and the retaining wall south of the clarifier would also reduce the potential for erosion or landslide in those areas over the long term. Therefore, this alternative would have a minor long-term benefit to soils in the area.

## 4.3. Visual Quality and Aesthetics

Because the proposed construction activities include the removal of vegetation and replacement of infrastructure, the proposed project has the potential to affect visual quality. The analysis of visual quality is a qualitative analysis that considers the visual context of the project area, potential for changes in character and contrast, assessment of whether the project areas include any places or features designated for protection, the number of people who can view the site and their activities, and the extent to which those activities are related to the aesthetic qualities of the area.

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The project area is within City Creek Canyon, a popular recreational area used for hiking, biking, and rock climbing. The views within City Creek Canyon are dominated by undeveloped open space, mountains, and steep slopes vegetated by maple, oak, and willow trees and shrubs. City Creek Canyon Road curves up the canyon adjacent to City Creek and is open to public vehicles at certain times from May through September. The CCWTP is visible from City Creek Canyon Road, including the operations building and parking lot, the flocculation and sedimentation basins, and the filter and fluoride buildings. The CCWTP is surrounded by a chain link fence topped with barbed wire to prevent trespassing and vandalism.

### **4.3.1. NO ACTION ALTERNATIVE**

No construction would occur under the no action alternative; therefore, there would be no short-term impacts on visual resources within the project area.

In the long term, there would be no improvements to the CCWTP or City Creek and the risk of damage from a seismic, flood, or other hazardous event would remain. Construction to repair any damage to the CCWTP or reconstruct the CCWTP would disrupt the existing visual character of the viewshed within City Creek Canyon. However, access to City Creek Canyon may be limited during construction, which would reduce visual impacts. Therefore, over the long term, there could be negligible to minor adverse impacts on visual quality and aesthetics from repair or reconstruction work.

### **4.3.2. PROPOSED ACTION**

In the short term, construction activities to construct the CCWTP improvements and modify the City Creek streambanks would temporarily disrupt the existing visual character of the viewshed within City Creek Canyon. However, the public would have restricted access to the construction area, and visual disruptions would be limited to construction truck traffic entering and exiting City Creek Canyon. In addition, as recreationists are routed off of City Creek Canyon Road to trails above the road, views of the alterations at the staging areas and truck traffic along the road may be more or less visible depending on the trail location and the intervening vegetation. Therefore, there would be a minor temporary adverse impact on visual quality and aesthetics.

In the long term, while the improvements to the CCWTP would not significantly alter the existing visual quality and aesthetic of the area surrounding the CCWTP, preparation of the staging areas along City Creek Canyon Road would require vegetation and tree removal. As described in Section 3.2.4., after construction is complete, active restoration of staging areas would take place to recover abiotic and biotic conditions. However, restored vegetation may take 3 to 5 years to re-establish and multiple decades for the trees. Therefore, there would be a negligible long-term adverse impact on visual quality and aesthetics in the project area under the proposed action.

## **4.4. Air Quality and Climate**

The Clean Air Act, as amended, requires EPA to establish National Ambient Air Quality Standards (NAAQS) for six pollutants harmful to human and environmental health, including ozone, nitrogen

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dioxide, carbon monoxide, sulfur dioxide, lead, and particulate matter (PM) (including PM that is less than 10 micrometers in diameter [PM<sub>10</sub>] and fine particulate matter less than 2.5 micrometers in diameter [PM<sub>2.5</sub>]) (EPA 2022). Fugitive dust, which is considered a component of PM, also can affect air quality. Fugitive dust is released into the air by wind or human activities, such as construction, and can have human and environmental health impacts. Federally funded actions in nonattainment and maintenance areas for these pollutants are subject to conformity regulations (40 CFR Parts 51 and 93) to ensure that emissions of air pollutants from planned federally funded activities would not cause any violations of the NAAQS, increase the frequency or severity of NAAQS violations, or delay timely attainment of the NAAQS or any interim milestone. According to the EPA's Green Book, Salt Lake County is designated as a serious nonattainment area for PM<sub>2.5</sub>, moderate nonattainment area for 8-hour ozone, and a nonattainment area for sulfur dioxide. All other criteria pollutants are in attainment for Salt Lake County (EPA 2023b).

Climate change refers to a change in the state of the climate that can be identified by changes in the mean and/or variability of its properties and that persists for an extended period, typically decades or longer (U.S. Global Change Research Program 2022). Its primary cause is emissions of greenhouse gases, including carbon dioxide and methane. Climate change is capable of affecting species distribution, temperature fluctuations, and weather patterns. The CEQ's *National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change* (2023) recommends that agencies quantify projected direct and indirect greenhouse gas (GHG) emissions of a proposed agency action, considering suitable available data and GHG quantification tools. Agencies use projected GHG emissions (including, where applicable, carbon sequestration implications associated with the proposed agency action) as a proxy for assessing potential climate change effects when preparing a NEPA analysis for a proposed agency action. When agencies do not quantify a proposed agency action's projected GHG emissions—because tools, methodologies, or data inputs are not reasonably available to support calculations for a quantitative analysis—agencies include a qualitative analysis in the NEPA document and explain the basis for determining that the quantification is not reasonably available (CEQ 2023). Previous CEQ guidance suggested quantitative analysis should be done if an action would release more than 25,000 metric tons of GHG per year (CEQ 2010).

The climate in Salt Lake County is semi-arid with hot, dry summers and cold winters with high levels of snowfall. Temperatures in the county can vary throughout the year from an average low of approximately 26 degrees Fahrenheit in the winter to an average high of 90 degrees Fahrenheit in the summer. The average annual low temperature is 46 degrees Fahrenheit, and the average annual high temperature is 64 degrees Fahrenheit. The average annual precipitation in the county is 18.57 inches and the average annual snowfall is 47 inches (U.S. Climate Data 2023). Salt Lake City temperatures have warmed at a rate of 0.4 degrees Fahrenheit per decade since 1930. Temperatures in Salt Lake City are projected to warm by 3 degrees Fahrenheit to 4 degrees Fahrenheit by 2050. Floods in the mountainous western United States typically arise from rainfall, snowmelt, and rain-on-snow events, and mixtures of these events (Yu et al. 2022). According to a Salt Lake County Flood Insurance Study, severe flooding in the Salt Lake region is caused by

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snowmelt and cloudburst events (FEMA 2021). Climate change could result in flooding in snow-dominated watersheds becoming more rain-on-snow or rainfall driven (Yu et al. 2022).

### **4.4.1. NO ACTION ALTERNATIVE**

Under the no action alternative, there would be no construction-related short-term impacts on air quality or GHG emissions within the project area.

In the long term, there would be no improvements to the CCWTP or City Creek and the risk of damage from a seismic, flood, or other hazardous event would remain. Construction to repair any damage to the CCWTP or reconstruct the CCWTP would require the use of construction equipment and vehicles, which would result in the release of air pollutant and GHG emissions. However, these emissions would not result in a NAAQS exceedance and would be below "de minimis" thresholds for the General Conformity Rule. In addition, the operation of construction equipment would be temporary and would not release more than 25,000 metric tons of GHG per year. Therefore, over the long term, there could be negligible to minor adverse impacts on air quality and climate from repair or reconstruction work.

### **4.4.2. PROPOSED ACTION**

Under the proposed action, the use of construction equipment and vehicles to construct the CCWTP improvements and modify the City Creek streambanks would result in the short-term release of air pollutant and GHG emissions. Emissions from off-road construction equipment, on-road construction-related vehicles, and dust-generating construction activities have the potential to affect short-term air quality and climate. Heavy equipment and earth moving machinery could temporarily increase the levels of some pollutants, including carbon monoxide, volatile organic compounds, nitrogen dioxide, ozone, and PM. Construction associated with the proposed action would be below "de minimis" thresholds for the General Conformity Rule, and air emissions would not increase to the extent that a general conformity analysis would be required for the proposed action. In addition, the operation of construction equipment would be temporary and would not release more than 25,000 metric tons of GHG per year. Temporary impacts on air quality and climate would be reduced through the implementation of best management practices (BMPs) including keeping vehicle and equipment running times as short as possible and covering or wetting areas of exposed soil to reduce fugitive dust. All construction equipment would be required to meet current EPA emissions standards. Therefore, construction of the proposed action would have minor short-term adverse impacts on air quality and climate within the project area.

In the long term, the project would not create a new source of permanent air emissions. The newly constructed and improved structures would not significantly change the operation of the CCWTP and would not result in an increase of permanent air emissions. The new treatment building would be constructed to current building codes and standards; as such, the new facility would likely be more energy efficient than the separate older facilities. In addition, equipment involved in operation of the CCWTP would also be more efficient than the existing infrastructure and could potentially result in

reduced emissions. Therefore, there would be a negligible beneficial impact on air quality and climate change under the proposed action.

### **4.5. Surface Waters and Water Quality**

The Clean Water Act (CWA) of 1977, as amended, regulates the discharge of pollutants into water, with sections falling under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and EPA. Section 404 of the CWA establishes the USACE permit authority to regulate the discharge of dredged or fill materials into waters of the United States. Under the National Pollutant Discharge Elimination System, EPA and the Utah Department of Environmental Quality (DEQ) regulate both point and nonpoint pollutant sources, including stormwater and stormwater runoff, via a permitting system. Activities that disturb one or more acres of ground are required to apply for a Utah Pollutant Discharge Elimination System Stormwater permit through the Utah DEQ.

Section 73-3-29 of the Utah Code requires any person, governmental agency, or other organization wishing to alter the bed or banks of a natural stream to obtain written authorization from the State Engineer prior to beginning work. USACE issued Programmatic General Permit 10 (PGP-10), which allows an applicant to obtain state approval and authorization under Section 404 through a single application process.

CWA Section 303(d) requires states to identify waters that do not or are not expected to meet applicable water quality standards with current pollution control technologies alone. Under Section 303(d), states must develop total maximum daily loads (TMDLs) for impaired water bodies. A TMDL establishes the maximum amount of a pollutant or contaminant allowed in a water body and serves as a planning tool for restoring water quality. Utah DEQ is responsible for compliance with Section 303(d) of the CWA. To comply with CWA Section 303(d), Utah DEQ maintains a database of waters requiring a TMDL, also known as the 303(d) list or Category 5 waters. Both upper and lower City Creek are listed in the Final 2022 Integrated Report on Water Quality (Utah DEQ 2023) as Category 1, fully supporting all designated uses. Therefore, City Creek is compliant with CWA Section 303(d).

Relevant state regulations include Standards of Quality for Waters of the State (Utah Administrative Code R317-2), Groundwater Quality Protection (Utah Administrative Code R317-6), and Utah Water Quality Act (Title 19 Environmental Quality Code, Chapter 5 Water Quality Act).

The project area is in the City Creek watershed, hydrologic unit code 160202040304 (U.S. Geological Survey 2023). The project area includes City Creek, which originates in the Wasatch Mountains and flows southwest towards downtown Salt Lake City. The creek enters a concrete channel and flows underground via a culvert within Memory Grove Park near the mouth of City Creek Canyon. The creek continues through manmade structures along North Temple Street and eventually empties into the lower Jordan River near the Jordan River Parkway Trail. Jordan River continues north and empties into Great Salt Lake (U.S. Geological Survey 2023). The groundwater level at the CCWTP is near the surface with several springs located throughout the canyon.

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Salt Lake City has designated City Creek Canyon as a protected watershed above the CCWTP. Section 17.04 and 17.08 of the Salt Lake City Code of Ordinances contain rules and regulations for the watershed and canyon. Regulations and rules include no camping, no dogs or livestock, and no swimming or body contact with the creek.

### **4.5.1. NO ACTION ALTERNATIVE**

Because the no action alternative would not require construction, it would have no short-term impacts on water resources and quality.

In the long term, there would be no improvements to the CCWTP or City Creek and the risk of damage from a seismic, flood, or other hazardous event would remain. Construction to repair any damage to the CCWTP or reconstruct the CCWTP may require soil disturbance and earth-moving activities, which could result in the discharge of pollutants and sediments into surface waters. Landslides in the area south of the clarifier could introduce high levels of sediment into the creek. Flooding could damage the plant structures and release hazardous chemicals used in the treatment processes into the creek waters. The City Creek channel would continue to experience sloughing, channel incision, and degradation, exacerbating erosive conditions that would continue to release sediment into the creek waters. In addition, the infiltration gallery would not be installed and high levels of sediment following a hazardous event upstream could cause a temporary closure of the CCWTP. Therefore, there could be minor to major adverse impacts on water quality and water supply in the long term under this alternative depending on the severity of the hazardous event.

### **4.5.2. PROPOSED ACTION**

The proposed action would have minor short-term impacts on water quality from construction-related activities, which could result in the discharge of pollutants and sediments into surface waters. Construction activities would be temporary, and Salt Lake City would implement erosion and sediment control BMPs. As discussed in Section 3.2, City Creek would be dewatered from the intake structure to downstream of the existing filter building. The work area would remain dewatered during construction and the proposed action would not generate construction-related turbidity within surface waters. All equipment would be operated from the top of the City Creek banks and no equipment would enter the creek channel. Because of the nature of the project activities related to the streambank and channel improvements within City Creek, a USACE CWA Section 404 permit may be required for in-water work. The Section 404 permit provides requirements for the discharge of dredged and placement of fill material, streambank construction, and restoration of the site. Salt Lake City would be required to coordinate with USACE and the State Engineer to determine the required permit authorization needed. In addition, Salt Lake City would implement a Stormwater Pollution Prevention Plan in compliance with the general stormwater permit for construction activities that would cover all project activities. Thus, the proposed action would have negligible to minor short-term adverse impacts on water quality from construction-related activities.

Implementation of the proposed action would increase water supply reliability in Salt Lake City if a flooding or seismic event were to occur, reducing the risk of water supply service disruptions. The

use of the infiltration gallery is expected to improve raw water quality during storm events and avoid plant shutdowns through the addition of less turbid water collected from the infiltration gallery. The new CCWTP would have the same capacity as the existing CCWTP of 16 million gallons per day. Because the capacity of CCWTP would not be changed under the proposed action, no additional water rights are needed and there would be no change to diversions from City Creek. Therefore, operation of the proposed action would not impact flows within City Creek. The proposed action would result in a long-term, moderate beneficial impact on water supply for Salt Lake City.

### 4.6. Wetlands

Executive Order (EO) 11990, Protection of Wetlands, requires federal agencies to consider alternatives to work in wetlands and limits potential impacts on wetlands if there are no practicable alternatives. FEMA regulation 44 CFR Part 9, Floodplain Management and Protection of Wetlands, sets forth the policy, procedures, and responsibilities to implement and enforce EO 11990 and prohibits FEMA from funding activities in a wetland unless no practicable alternatives are available. Activities that disturb wetlands may also require a permit from USACE under Section 404 of the CWA.

A review of the USFWS National Wetlands Inventory mapper indicates that potential freshwater forested/shrub wetlands are present in the project area (USFWS 2024a). However, based on a review of high-resolution aerial imagery and ground-level photos from the field review and site assessment in August 2023, the topography of the area does not support prolonged periods of inundation and does not have defined wetland habitat features. Therefore, it is unlikely that wetlands are present in or directly adjacent to the project area.

#### 4.6.1. NO ACTION ALTERNATIVE

Because there are no existing wetlands within or adjacent to the project area, implementation of the no action alternative would have no short- or long-term impact on wetlands.

#### 4.6.2. PROPOSED ACTION

Because there are no existing wetlands within or adjacent to the project area, implementation of the proposed action would have no short- or long-term impact on wetlands.

### 4.7. Floodplains

EO 11988, Floodplain Management, requires federal agencies to avoid, to the extent possible, short- and long-term, adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. FEMA regulations (44 CFR Part 9.7) use the 1-percent-annual-chance flood as the minimal area for floodplain impact evaluation. FEMA uses an eight-step decision-making process to ensure compliance with EO 11988, which requires the evaluation of alternatives to use of the floodplain prior to funding the action. An initial public notice for the project was published April 5, 2023, in the Salt Lake Tribune. FEMA will issue a final notice as part of the EA public notification process in accordance with 44 CFR 9.8 and 9.12. The purpose of the notices is to inform and solicit

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feedback from the public regarding the potential effects on floodplains and notify the public of FEMA's final decision when it has been made.

Title 17 of the Salt Lake County Code of Ordinances defines the Flood Control Permit Program. Flood Control Permits are required for any activity occurring within a Flood Control Facility (e.g., City Creek). The Flood Control Engineering Division of the Salt Lake County Public Works and Municipal Services Department is responsible for permitting.

Based on FEMA Flood Insurance Rate Map Panels 49035C0161G, 49035C0162G, and 49035C0154G, effective September 25, 2009, portions of the CCWTP and staging areas are within Zone A, an area of 1-percent annual chance of flooding. **Figure 2-2** shows the floodplains in the project area.

### **4.7.1. NO ACTION ALTERNATIVE**

Under the no action alternative, there would be no short-term impacts on floodplains.

In the long term, there would be no improvements to the CCWTP and City Creek and the risk of flooding would remain. Flood events could threaten lives and damage the CCWTP, resulting in potential disruptions in water service. In addition, construction to repair any damage to the CCWTP or reconstruct the CCWTP may require excavation and fill activities within the floodplain. Construction activities could cause an accidental release of hazardous materials or cause sediment to enter City Creek, resulting in impacts on the natural and beneficial values of floodplains. Therefore, the no action alternative would have minor long-term adverse impacts on people and property within the floodplain as well as on natural floodplain functions.

### **4.7.2. PROPOSED ACTION**

The proposed action would have minor short-term adverse impacts on the 100-year floodplain along City Creek because of construction, including excavation and fill activities. Fill within City Creek would be limited to placement of rock weirs and temporarily impacted areas would be restored following construction of the proposed action. Construction activities could cause an accidental release of hazardous materials during the construction period from minor leaks from construction equipment, and ground-disturbing activities could cause sediment to enter City Creek. However, construction activities would be temporary, and Salt Lake City would implement erosion and sediment control BMPs. Construction could also result in temporary impacts on natural and beneficial values of floodplains. Coordination with the local floodplain administrator regarding any necessary permits to conduct activities within the floodplain would be managed by Salt Lake City. If all BMPs and conditions from any required permits are followed, there would be a minor short-term adverse impact on the 100-year floodplain because of construction, including excavation and fill activities, that would occur within the floodplain.

In the long term, the proposed action would reduce the risk of flooding in the project area by elevating the treatment building and stabilizing the City Creek streambank. The proposed action would reduce the extent and the depth of flooding within and near the project area. Additionally, the



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streambank restoration along City Creek would increase flood storage and increased attenuation of flood waters, thus reducing the risk of flooding. The revegetated areas would be planted with native vegetation, as appropriate for site conditions, that would slow and distribute the force of floodwaters over the floodplain, reducing the potential for erosion. Thus, the proposed action would have minor long-term benefits on flood protection and natural floodplain functions and values in the project area and vicinity.

FEMA completed an eight-step checklist for the proposed action, which concluded that the need for the project in a floodplain clearly outweighs the requirements of EO 11988 and that there is no practicable alternative to conducting the project within the floodplain. The eight-step checklist is provided in Appendix A.

### 4.8. Vegetation

Federally listed plant species that may occur near the proposed project areas are discussed in Section 4.10. On October 18, 2022, and July 21 and August 3, 2023, Salt Lake City conducted surveys throughout the project area to identify vegetation and associated landcover types. In addition to developed land, two different Southwest Regional Gap Analysis Project landcover types were observed in the project area: Rocky Mountain Gambel Oak-Mixed Montane Shrubland and Rocky Mountain Lower Montane Riparian Woodland and Shrubland (Lowry et al. 2005, SWCA Environmental Consultants [SWCA] 2023). Vegetation is dominated by Gambel oak (*Quercus gambelii*), Rocky Mountain maple (*Acer glabrum*), boxelder (*Acer negundo*), willow species (*Salix* spp.), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), and the nonnative invasive species cheatgrass (*Bromus tectorum*) and smooth brome (*Bromus inermis*) (SCWA 2023).

#### Invasive Species

EO 13112, Invasive Species, requires federal agencies, to the extent practicable, to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause. Invasive species prefer disturbed habitats and generally possess high dispersal abilities, enabling them to outcompete native species.

Three state-listed noxious weed species, Canada thistle (*Cirsium arvense*), Dalmatian toadflax (*Linaria dalmatica*), and myrtle spurge (*Euphorbia myrsinites*) were observed in the project area during the field survey (SWCA 2023). The Utah Commissioner of Agriculture and Food designates noxious weeds for which some level of detection and response is required. Cheatgrass and smooth brome are not included because they have become so widespread that control is no longer feasible.

#### 4.8.1. NO ACTION ALTERNATIVE

Under the no action alternative, there would be no construction-related short-term impact on vegetation in the project area.

In the long term, the proposed stream bank modifications would not take place and the City Creek channel would continue to experience sloughing, channel incision, and degradation, worsening

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erosive conditions that could impact stream adjacent vegetation. Therefore, the no action alternative could result in minor adverse impacts on vegetation from erosion caused by flooding. Additionally, construction to repair any CCWTP damage associated with seismic events, debris flows, and landslides could require additional soil disturbance and earth-moving activities, further impacting vegetation within and around the project area.

### **4.8.2. PROPOSED ACTION**

Under the proposed action, short-term adverse impacts on vegetation would result from construction activities that would remove or disturb natural vegetation. Several aspects of the proposed action involve ground-disturbing activities that could affect existing vegetation.

- Streambank improvements along City Creek would include removing debris and some vegetation, reinforcing the banks, raising the bank elevation near the existing filter and fluoride buildings, and placing energy dissipating rock weirs in the creek channel. The total area of disturbance for this aspect of the project is approximately 1.32 acres. However, some of the area is previously disturbed and does not currently support vegetation. Areas supporting vegetation would be revegetated with riparian vegetation following construction.
- An approximately 0.15-acre area east of the existing CCWTP parking area would be graded and vegetation and trees would be removed to create space for construction staging. This area would be permanently converted to a paved area.
- Vegetation and trees would be removed in two off-site staging areas, totaling approximately 2.5 acres, approximately 1 mile west of the CCWTP. These areas would be revegetated and restored following construction.
- An approximately 0.8-acre area adjacent to the existing City Creek Canyon Road north of the CCWTP would be graded and vegetation would be removed to widen the road to maintain access around the plant and up the canyon. This area would be permanently converted to roadway.
- The access road to the backwash tank, approximately 0.12 acres of vegetation and trees north of the access road, would be removed, and the area would be graded to be level. This area would be permanently converted to roadway.

Therefore, in the short term, the proposed action has the potential to disturb or remove up to approximately 4.89 acres of existing vegetation, including invasive species. Because most of the project area has been previously disturbed and invasive species would be removed the short-term adverse impact on vegetation would be minor.

In the long term, approximately 1.07 acres of existing vegetation would be permanently converted to non-vegetated developed areas. Permanent vegetation removal in these areas would not noticeably impact the vegetation communities in the area and may have beneficial impacts from the removal of invasive species. Areas used for staging and areas disturbed by streambank improvements along

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City Creek would be revegetated. Proposed riparian vegetation to be planted would include willows, red osier dogwood (*Cornus sericea*), Nebraska sedge (*Carex nebrascensis*), and Baltic rush (*Juncus balticus*) as well as other riparian and upland vegetation recommended by NRCS. The staging areas would be restored with appropriate native upland species similar to those currently present. The restored vegetation may take 3 to 5 years to re-establish and multiple decades for the trees. The SLCDPU Watershed Team would maintain the restored areas along City Creek and at the staging areas beyond the initial implementation to ensure restoration success. As needed, maintenance would include removal of invasive vegetation and possible replanting of vegetation that did not survive the initial planting. Therefore, the proposed action would have a negligible long-term adverse impact on vegetation within and around the project area and a short- and long-term minor benefit from the initial invasive species removal and continued maintenance.

### 4.9. Fish and Wildlife

Fish and wildlife include the species that occupy, breed, forage, rear, rest, hibernate, or migrate through the project area. Regulations relevant to fish and wildlife include the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act. Threatened and endangered fish and wildlife species are evaluated separately in Section 4.10.

On October 18, 2022, and July 21 and August 3, 2023, Salt Lake City conducted surveys throughout the project area to identify potential nesting substrates that could serve as suitable nesting sites for raptors, including bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*). Additionally, biologists noted fish and wildlife species that were either observed during the surveys or through anecdotal observations from CCWTP staff. Fish and wildlife species that are known to occur within or near the project area include coyote (*Canis latrans*), mountain lion (*Puma concolor*), bobcat (*Lynx rufus*), mule deer (*Odocoileus hemionus*), moose (*Alces alces*), Rocky Mountain elk (*Cervus canadensis nelsoni*), rock squirrel (*Otospermophilus variegatus*), common raven (*Corvus corax*), Steller's jay (*Cyanocitta stelleri*), Woodhouse's scrub jay (*Aphelocoma woodhouseii*), black-capped chickadee (*Poecile atricapillus*), dark-eyed junco (*Junco hyemalis*), wild turkey (*Meleagris gallopavo*), black-billed magpie (*Pica hudsonia*), red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), American dipper (*Cinclus mexicanus*), mourning dove (*Zenaida macroura*), Great Basin rattlesnake (*Crotalus lutosus*), and trout species (*Salmonidae*) (SWCA 2023).

The MBTA of 1918, as amended (16 U.S.C. 703–711), provides protection for migratory birds and their nests, eggs, and body parts from harm, or sale except under the terms of a valid permit issued pursuant to federal regulations. USFWS is the lead federal agency for implementing the MBTA. All native birds are protected by the MBTA and existing habitat in the project area has the potential to support a variety of native bird species. Several migratory bird species could occur in the project area, including all of the bird species mentioned above. During the 2022 and 2023 field surveys, suitable nesting substrates for migratory birds were observed throughout the project area. Preconstruction bird clearance surveys for MBTA species are recommended if construction activities are expected to impact any vegetation within 100 feet of the project area for the non-raptor migratory bird nesting season (mid-March through August) (SWCA 2023).

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The Bald and Golden Eagle Protection Act of 1940 prohibits the take, possession, sale, or other harmful action of any gold or bald eagle, alive or dead, including any part, nest, or egg unless allowed by permit (16 U.S.C. 668[a]). This act requires consultation with the USFWS to ensure that proposed actions do not adversely affect bald or golden eagles. Biologists conducted a visual ground survey of potential nesting substrates that could serve as suitable nesting sites for raptors, including bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*). No eagles were observed during the 2022 and 2023 field surveys or noted from anecdotal observations from CCWTP staff; however, suitable nesting substrates for eagles were observed throughout the project area. Therefore, preconstruction surveys for eagle nests are recommended if construction activities are expected to impact any vegetation within 0.5 mile of the project area during the raptor nesting season (January through September) (SWCA 2023).

### 4.9.1. NO ACTION ALTERNATIVE

Under the no action alternative, there would be no construction-related short-term impact on fish and wildlife, migratory birds, or eagles in the project area.

In the long term, the proposed stream bank modifications would not take place and the City Creek channel would continue to experience sloughing, channel incision, and degradation. The worsening erosive conditions could impact fish and aquatic wildlife species from the degradation of water quality and the in-stream habitat conditions of the channel. Further, construction to repair CCWTP damage associated with seismic events, debris flows, and landslides could require additional soil disturbance and earth-moving activities, which could adversely impact terrestrial wildlife species. Ground-disturbing activities could result in injury or mortality of wildlife species from trampling or crushing if they were to come into direct contact with construction equipment or crews and construction-related noise and visual effects could disturb wildlife, causing them to alter their preferred behaviors. Therefore, if a flood or seismic event were to occur, the no action alternative could result in minor long-term adverse impacts on fish and wildlife, including migratory birds and eagles, dependent upon the severity of erosion caused by flooding, the extent of flooding, or construction related impacts from cleanup and repair activities.

### 4.9.2. PROPOSED ACTION

Under the proposed action, there would be short-term minor adverse impacts on fish and wildlife from construction-related impacts. Aquatic species in City Creek would be disturbed during construction of the streambank improvements that involve dewatering of the stream between the intake structure to downstream of the existing filter building. Aquatic species that inhabit the dewatered area would be forced to relocate during construction activities, which would result in an increased expenditure of energy, loss of foraging area, and increased exposure to predation. Additionally, if aquatic species do not move out of the area to be dewatered, they could be injured or killed by the dewatering process. Effects of the proposed action on terrestrial species would include short-term habitat loss from the removal of vegetation, injury or mortality by crushing or trampling from direct contact with construction equipment or crew members, and visual and auditory disturbance from construction activities that could force wildlife species to alter their normal

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behaviors, increasing energy expenditure. However, most of the construction activities would occur within or near previously disturbed areas and infrastructure that do not provide suitable habitat. Additionally, the impacted area represents a small portion of the typical home range for most of the species expected to be present and the surrounding area provides thousands of acres of undisturbed habitats that provide nearby suitable habitat for species that need to relocate from the project area.

In the long term, as described in Section 4.8.2, vegetation removal associated with the proposed action would not noticeably deteriorate the quality of habitats in the project area and the removal of invasive species could slightly increase the habitat quality in the project area. Further, the function of the new infrastructure is expected to remain consistent with existing conditions and would not increase human or noise disturbance over the long term. Additionally, as described in Section 4.9.1, flooding, landslides, and seismic events could have adverse effects on fish and wildlife; however, the proposed action would mitigate these effects, resulting in a negligible adverse impact on fish and wildlife in the long term.

### 4.10. Threatened and Endangered Species and Critical Habitat

The Endangered Species Act (ESA) of 1973 gives USFWS and the National Marine Fisheries Service (NMFS) authority for the protection of threatened and endangered species. This protection includes a prohibition on direct take (e.g., killing, harassing) and indirect take (e.g., destruction of habitat).

The ESA defines the action area as “all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action” (50 CFR 402.02). Therefore, the action area where effects on listed species must be evaluated may be larger than the project area where project activities would occur. The action area includes the project footprint with a 500-foot buffer to account for noise impacts for Canada lynx. Because of the existing human disturbance and topography around the project area, noise impacts associated with construction would attenuate to the ambient levels of the project area at approximately 500 feet.

The USFWS Information for Planning and Consultation was used to identify proposed, threatened, and endangered species in the action area. All ESA-listed species that may be near the action area are listed in **Table 4.3** (USFWS 2024b) and are briefly discussed below.

**Table 4.3. Federally Listed Species in the Project Area**

Common Name	Scientific Name	Status
<b>Mammals</b>		
Canada lynx	<i>Lynx canadensis</i>	Threatened
<b>Plants</b>		
Ute ladies'-tresses	<i>Spiranthes dilluvialls</i>	Threatened

Source: USFWS 2024b

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No designated critical habitat occurs within or near to the action area (USFWS 2023a).

Canada lynx: Canada lynx generally occurs in dense, subalpine forests with mixed aged stands. Suitable habitat for the lynx must include late successional stage forests for denning, an abundance of its primary prey, the snowshoe hare (*Lepus americanus*), and deep unconsolidated snow that lets them outcompete other terrestrial hare predators that are less efficient in such conditions (USFWS 2017). Although the upper elevation portions of City Creek Canyon may contain some subalpine forests, these areas are well outside of the project action area. The lower portions of City Creek Canyon in the action area mainly consist of scrub-shrub Gambel oak woodlands and riparian woodland and shrubland corridors. There is no suitable habitat within the project action area for Canada lynx.

Ute ladies'-tresses: Ute ladies'-tresses occurs in a wide variety of habitats, both human-modified and natural. Habitat for this species includes early- to mid-seral stage wetlands along rivers, perennial streams, canals, lakeshores, and springs. It also occurs in wet meadows, both naturally occurring and human-created, borrow pits, and agricultural ditches (USFWS 2023b). Suitable habitat was not observed during the field surveys. The project area consists mainly of upland vegetation that was either too dense or lacked species commonly associated with suitable habitat.

No suitable habitat occurs for any federally listed species. During the surveys conducted by Salt Lake City on October 18, 2022, and July 21 and August 3, 2023, no federally listed species or their associated habitats were observed in the survey area (SWCA 2023). Therefore, no federally listed species are anticipated to occur within or near the project area.

### **4.10.1. NO ACTION ALTERNATIVE**

Because no suitable habitat for any federally listed species exists within or adjacent to the project area, implementation of the no action alternative would have no short- or long-term impact on threatened and endangered species.

### **4.10.2. PROPOSED ACTION**

Because no suitable habitat for any federally listed species exists within or adjacent to the project area, implementation of the proposed action would have no short- or long-term impact on threatened and endangered species.

## **4.11. Cultural Resources**

This section provides an overview of potential environmental effects on cultural resources, including historic properties. Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470f), requires that activities using federal funds undergo a review to consider potential effects on historic properties that are listed in or may be eligible for listing in the National Register of Historic Places (NRHP). Cultural resources include prehistoric or historic archeology sites; historic standing structures; historic districts; objects; artifacts; cultural properties of historic or traditional significance, referred to as Traditional Cultural Properties that may have religious or cultural

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significance to federally recognized tribes; or other physical evidence of human activity considered to be important to culture, subculture, or community for scientific, traditional, religious, or other reasons.

Pursuant to 36 CFR 800.4(a)(1), FEMA defined an Area of Potential Effects (APE) that includes all areas within which the undertaking may directly affect cultural resources. The APE encompasses approximately 20.88 acres of land owned by Salt Lake City. The vertical depth of the APE includes the deepest extent of project-related ground-disturbing activity anticipated, which would not exceed 30 feet below existing grade.

Qualified contractors for Salt Lake City conducted an intensive pedestrian inventory of the APE for both architectural and archaeological resources in May 2023. More intensive field surveys were completed in August 2023. The inventory identified 11 historical structures/buildings associated with water treatment or monitoring (most associated directly with the CCWTP) and three isolated archaeological finds. None of the three archaeological resources are considered NRHP-eligible. Seven of the 11 historical structures/buildings are considered NRHP-eligible only as contributing elements of a potential historic district encompassing the CCWTP facility and grounds. However, no such district has been established, nor is one being proposed. One of the structures, the filter-fluoride building, was determined to be eligible for inclusion on the NRHP under criterion A and C. **Table 4.4** lists the eligibility determinations for the identified historical structures/buildings.

**Table 4.4. Determinations of Eligibility**

Historic Property	Property Type	NRHP Eligibility
CCWTP Historic District	District	Ineligible
Flocculation and Sedimentation Basins	Structure	Ineligible
Filter-Fluoride Building	Building	Eligible for listing in the NRHP under Criteria A and C
Collection Box	Structure	Eligible as a contributor to a potential historic district; not considered individually eligible
Transformer/Stepdown Structure	Structure	Ineligible
Backwash Water Storage Tank	Structure	Eligible as a contributor to a potential historic district; not considered individually eligible
Clarifier	Structure	Eligible as a contributor to a potential historic district; not considered individually eligible

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Historic Property	Property Type	NRHP Eligibility
Upper Bridge	Structure	Eligible as a contributor to a potential historic district; not considered individually eligible
Solids Drying Beds	Structure	Eligible as a contributor to a potential historic district; not considered individually eligible
Lower Bridge	Structure	Eligible as a contributor to a potential historic district; not considered individually eligible
Weir	Structure	Ineligible
Diversion Structure	Structure	Eligible as a contributor to a potential historic district; not considered individually eligible

### 4.11.1. NO ACTION ALTERNATIVE

Under the no action alternative, there would be no short-term construction-related impacts on historic properties in and near the project area. However, no action would be taken to reduce the risk of flooding in the project area or to stabilize the stream, and the risk of flooding would remain. Under this alternative, future flood events could result in exposure or the complete removal of undiscovered subterranean archaeological materials and features. Therefore, the no action alternative could have minor long-term adverse impacts on unknown archaeological resources.

### 4.11.2. PROPOSED ACTION

Under the proposed action excavation and soil disturbance would be required to reconstruct the CCWTP, install the infiltration gallery and civil improvements, and modify the City Creek streambanks. The proposed action would require the demolition of the flocculation basins, sedimentation basins, and filter building, as well as the modification of the clarifier, drying beds, and fluoride building. While several structures and buildings were recommended eligible as contributing to a potential CCWTP historic district, the potential CCWTP historic district was not recommended eligible for listing on the NRHP. Because the CCWTP historic district was not considered eligible, the eligible contributing resources are also not considered eligible. FEMA consulted with the Utah State Historic Preservation Office (SHPO) on February 12, 2024, and the SHPO determined there would be an adverse effect on the filter-fluoride building related to the demolition of the filter building. FEMA and the SHPO agreed the undertaking would constitute an adverse effect on a historic property. Per the February 25, 2022, Section 106 Programmatic Agreement with Utah SHPO, FEMA recommended and SHPO agreed on resolving the adverse effect on the filter-fluoride building using the Abbreviated Consultation Process and Treatment Measures outlined in Appendix C of FEMA's Programmatic Agreement; and that use of the Treatment Measures does not require the execution of a



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Memorandum of Agreement. FEMA and Salt Lake City will implement the following measures to address the adverse impact:

### A. Recordation:

1. **Digital Photography Package:** Prior to project implementation, a draft of the digital photography package in electronic format shall be provided to FEMA and SHPO for review, with comments to be received within thirty (30) calendar days. The designated responsible party (Applicant) shall oversee the delivery of a digital photography package prepared by staff or contractors meeting the Professional Qualifications for Architectural History, History, Architecture, or Historic Architecture, as appropriate. The digital photography package will meet the standards cited in the May 2013, National Park Service National Register of Historic Places Photographic Policy or subsequent revisions available at [Interim National Register Photo Policy Factsheet \(nps.gov\)](https://www.nps.gov/interim-national-register-photo-policy-factsheet).
  - a. The digital photography package shall include a comprehensive collection of photographs of the interior and exterior (before and after construction) of the filter-fluoride building. Photography will document linear and side views showing representative details of significant engineering/design and construction features and building materials. Contextual images related to the site's position within the landscape are also to be included.
  - b. The digital photography package shall include color copies of the photographs (per National Park Service Photographic Policy). All photographs are to be keyed to a site plan and to a state historic engineering inventory form and shall be indexed according to the date photographed, site designation, address (GPS), direction, frame number, subject matter, and photographer's name recorded.
  - c. The Applicant party shall submit the final digital photography package to FEMA. Once approved by FEMA and SHPO, the Project Applicant shall submit a copy of the approved documentation to a state or local historical society, archive, and/or library (identified by SHPO) for permanent retention.

### B. Public Interpretation:

1. Prior to project implementation, FEMA and the Project Applicant shall work with the SHPO to design an educational interpretive plan. The plan might include an educational pamphlet, signage, or other similar mechanism to educate the public on the historic structure. Once an interpretive plan has been agreed to by FEMA and SHPO the Project Applicant shall continue to consult throughout implementation of the plan until all agreed upon actions have been completed.

On January 26, 2024, FEMA initiated consultation with seven tribes about the action alternatives to solicit comments and request any additional information about cultural resources that may be

impacted by the action alternatives. Tribes contacted included the Confederated Tribes of the Goshute Reservation, Paiute Indian Tribe of Utah, Northwestern Band of Shoshone Nation, Skull Valley Band of Goshute, Ute Indian Tribe of the Uintah and Ouray Reservation, Ute Mountain Ute Tribe, and Navajo Nation. The tribal consultation period ended on March 3, 2024, and no responses from the tribes were received.

### 4.12. Environmental Justice

Environmental justice is defined by EO 12898 (59 Federal Register 7629) and CEQ guidance (1997). Under EO 12898, demographic information is used to determine whether minority populations or low-income populations are present within the areas potentially affected by the range of project alternatives. If so, a determination must be made whether implementation of the project alternatives may cause disproportionately high and adverse human health or environmental impacts on those populations.

The study area for the proposed project includes the project area, access and staging areas, and Salt Lake City's northern service area. Therefore, the study area for the environmental justice analysis includes the northeast portion of Salt Lake City. The study area represents the area where project-related impacts would occur, potentially causing disproportionately high and adverse effects on neighboring minority and low-income populations. For the purposes of this analysis, environmental justice populations are identified using demographic indicators and Environmental Justice Indexes.

In accordance with the FEMA EO 12898 Environmental Justice: Interim Guidance for FEMA EHP Reviewers, environmental justice populations are defined as meeting either or both of the following criteria:

- The minority and/or low-income population of the affected environment equals or exceeds the 50th percentile in the state in which the affected environment is located.
- One or more of the Environmental Justice Indexes in the affected environment equals or exceeds the 80th percentile in the state in which the affected environment is located.

EPA defines minority populations (people of color) as individuals who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino (i.e., all people other than non-Hispanic white-alone individuals) (EPA 2023c). Low-income populations are measured as households with an income that is less than or equal to twice the federal poverty level. The Environmental Justice Indexes combine environmental indicators with socioeconomic indicators to identify areas where there may be a disproportionate exposure to environmental pollution.

**Table 4.5** presents the environmental justice demographics and **Table 4.6** presents the Environmental Justice Index values for the study area and the state and identify if environmental justice populations are present based on the criteria described above.

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**Table 4.5. Environmental Justice Data for the Study Area**

Demographic Indicators	Study Area Average Percentage	Utah Average Percentage	Percentile in State	Environmental Justice Population Present
People of Color	18%	22%	52	Yes
Low-Income	26%	26%	57	Yes

Source: EPA 2023d

**Table 4.6. Environmental Indexes for the Study Area**

Environmental Justice Index	Percentile in State	Environmental Justice Population Present in the Study Area? <sup>1</sup>
PM2.5	76	No
Ozone	81	Yes
Diesel Particulate Matter	75	No
Air Toxics Cancer Risk	66	No
Air Toxics Respiratory Risk	78	No
Toxic Releases to Air	73	No
Traffic Proximity	67	No
Lead Paint	78	No
Superfund Proximity	81	Yes
RMP Facility Proximity	70	No
Hazardous Waste Proximity	76	No
Underground Storage Tanks	72	No
Wastewater Discharge	69	No

Source: EPA 2023d

Notes: <sup>1</sup> Index equals or exceeds the 80th percentile compared to the average of Utah; therefore, an environmental justice population is present.

As presented in **Table 4.5** and **Table 4.6**, the study area meets the criteria for containing environmental justice populations based on thresholds for minority populations, low-income populations, ozone, and superfund proximity. Ozone is based on the average of the annual top ten daily maximum 8-hour ozone concentrations and superfund proximity is based on the count of proposed or listed National Priorities List, also known as superfund, sites within 5 kilometers, each divided by distance in kilometers (EPA 2023c).

### 4.12.1. NO ACTION ALTERNATIVE

Under the no action alternative, no construction at the CCWTP or City Creek improvements would occur; thus, no construction-related impacts, such as increased noise or temporary reductions in air quality, would occur. Therefore, the no action alternative would have no short-term impacts on environmental justice populations.

In the long term, there would be no improvements to the CCWTP or City Creek and the risk of damage from a seismic, flood, or other hazardous event would remain. Smaller disruptions at the CCWTP because of floods or excess debris could require short shutdowns for maintenance or repairs, disrupting water service. In the event of failure at the CCWTP, Salt Lake City's northern service area, including environmental justice populations within the service area, would lose water service for up to 3 years while a new facility is constructed. Water service disruptions would place a disproportionate burden on environmental justice populations that are unlikely to have the same financial capacity or flexibility to pay for or access alternate water sources, such as bottled water, as compared to other populations. Therefore, this alternative could have moderate to major adverse impacts on environmental justice populations in the long term.

### 4.12.2. PROPOSED ACTION

Under the proposed action, construction activities would result in short-term adverse effects, including noise and reduced air quality, which would impact those proximate to work areas. However, construction noise and air quality impacts generated at the CCWTP and staging areas would be confined within City Creek Canyon and would not reach residents, including environmental justice populations, near the canyon mouth. Some additional traffic would be generated by the proposed action, as discussed further in Section 4.15. However, this traffic would be temporary and localized, affecting only a small number of roadways. These effects would not disproportionately impact environmental justice populations, as these short-term effects would impact all residents near the project area equally. Therefore, construction of the proposed action would have negligible short-term adverse effects on environmental justice populations, as well as the entire community, but there would be no disproportionately high and adverse impacts on these populations.

Implementation of the proposed action would improve water supply reliability in the event of a flood, seismic event, or landslide and would reduce the risk of water shortages and service interruptions in Salt Lake City's northern service area. Water rate increases for SLCDPU customers would be required to fund the proposed action. However, the same increased water rates would be implemented for the entire Salt Lake City service area, impacting all SLCDPU customers equally. In addition, public assistance for low-income customers is offered by SLCDPU, in partnership with the Salvation Army, through the Project Water ASSIST program (Salt Lake City 2024). Therefore, this alternative would have moderate long-term beneficial impacts on environmental justice populations.

## 4.13. Hazardous Materials

Hazardous materials are those substances defined by the Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization

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Act and the Toxic Substances Control Act. The Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, which was further amended by the Hazardous and Solid Waste amendments, defines hazardous wastes. In general, both hazardous materials and waste include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health or to the environment when released or otherwise improperly managed.

Hazardous materials may be encountered in the course of a project, or they may be generated by the project activities. To determine whether any hazardous waste facilities exist in the vicinity or upgradient of the proposed project area or whether there is a known and documented environmental issue or concern that could affect the proposed project area, a search for Superfund sites, toxic release inventory sites, industrial water dischargers, hazardous facilities or sites, and multiactivity sites was conducted using EPA's NEPAAssist website (EPA 2023e). According to the database, the CCWTP is the only hazardous waste facility within 1 mile of the project area. The CCWTP is an industrial water discharger with a National Pollutant Discharge Elimination System permit because of the materials used in the treatment processes.

### **4.13.1. NO ACTION ALTERNATIVE**

No construction would occur under the no action alternative; therefore, no short-term impacts related to hazardous materials would occur as a result of construction equipment use or the exposure of contaminated materials through ground-disturbing activities.

In the long term, there would be no improvements to the CCWTP or City Creek and the risk of damage from a seismic, flood, or other hazardous event would remain. The CCWTP is an industrial water discharger and operation of the CCWTP requires the storage and use of hazardous materials. A hazardous event, such as a flood or earthquake, could affect the project vicinity and pose a risk to human health and safety by causing the accidental release of these hazardous materials into City Creek and the surrounding area. In addition, construction to repair any damage to the CCWTP would introduce a risk of leaks and spills of hazardous fuel. Therefore, this alternative could result in minor to moderate long-term adverse impacts related to hazardous materials.

### **4.13.2. PROPOSED ACTION**

Under the proposed action, demolition and construction would occur and the use of mechanical equipment and vehicles would introduce a risk of leaks and spills of hazardous fuel, lubricants, and oils. However, all equipment used would be in good condition and project activities would adhere to state and local regulations to reduce the risk of hazardous leaks and spills. Any spills during construction would be immediately contained and cleaned. Although no known subsurface hazardous materials are present within the project area, excavation activities could expose or otherwise affect previously undetected subsurface hazardous wastes or materials. Given the location in the otherwise undeveloped City Creek Canyon, the potential to encounter unknown wastes or materials is considered low. Any hazardous materials discovered, generated, or used during implementation of the proposed action would be disposed of and handled in accordance with

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applicable local, state, and federal regulations. Therefore, there would be a minor short-term adverse impact from the use of vehicles and equipment or from the potential for inadvertent exposure of previously unknown hazardous materials.

In the long term, the proposed action would reduce the risk of damage to the CCWTP in the event of earthquakes, landslides, debris flows, and flood events. A reduction in these risks would subsequently reduce the risk of hazardous materials being released and transported by City Creek and the risk of pollutants being released by construction equipment required to repair CCWTP damage. Therefore, the proposed action would result in a negligible long-term benefit related to hazardous materials.

### **4.14. Noise**

Sounds that disrupt normal activities or otherwise diminish the quality of the environment are considered noise. Noise events that occur during the night (10 p.m. to 7 a.m.) are more annoying than those that occur during normal waking hours (7 a.m. to 10 p.m.). Noise is regulated at the federal level by the Noise Control Act of 1972 (42 U.S.C. §§ 4901, et seq). At the local level, noise is regulated in the Salt Lake City Code of Ordinances. Section 9.28.040 prohibits construction work from 9 p.m. to 7 a.m., and 9 p.m. to 9 a.m. when the following day is Sunday or a holiday.

Assessment of noise impacts includes the proximity of the proposed action to sensitive receptors. A sensitive receptor is an area of frequent human use that would benefit from a lowered noise level. Typical sensitive receptors include residences, schools, churches, hospitals, nursing homes, parks, and libraries. There are no sensitive receptors near the CCWTP. However, City Creek Natural Area and numerous residences, are within a 500-foot radius of Bonneville Boulevard and its intersections with 11<sup>th</sup> Avenue and East Capitol Boulevard, the two points used to enter and exit City Creek Canyon.

#### **4.14.1. NO ACTION ALTERNATIVE**

No construction would occur under the no action alternative and implementation of the no action alternative would not introduce a new permanent noise source.

In the long term, there would be no improvements to the CCWTP or City Creek and the risk of damage from a seismic, flood, or other hazardous event would remain. Construction to repair any damage to the CCWTP or reconstruct the CCWTP would temporarily increase noise levels in the immediate vicinity of the work. In addition, construction-related truck trips entering and exiting City Creek Canyon would also contribute to noise impacts. Any construction activities that may occur would be required to comply with local construction noise ordinances. Therefore, over the long term, there would be negligible construction noise impacts from repair work.

#### **4.14.2. PROPOSED ACTION**

Construction activities, including demolition, excavation, and construction at the CCWTP would cause temporary increases in noise levels. Public access to City Creek Canyon would be restricted, which

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would mitigate recreationists' exposure to construction noise near the CCWTP. Construction noise generated at the CCWTP and staging areas would be confined within City Creek Canyon and would not reach sensitive receptors near the canyon mouth. There would be several truck trips per day to and from the project site to bring in construction materials and dispose of demolished material. Bonneville Boulevard is used to access City Creek Canyon and described further in Section 4.15. There are sensitive receptors within 500 feet of the two access points used to enter and exit City Creek Canyon, including a park and residences, that would experience a temporary increase in daytime noise levels. However, noise from trucks travelling at residential speeds would be similar to traffic noise experienced under existing conditions. Temporary increases in noise levels owing to construction activities would be minimized through compliance with the local noise ordinance and adherence to any conditions described in issued permits. Additionally, all construction equipment would be well maintained, have sound-control devices no less effective than those provided on the original equipment, and have muffled exhaust. With the implementation of these BMPs and compliance with all applicable noise regulations, implementation of the proposed action would have negligible short-term adverse noise impacts.

The proposed action would not result in long-term noise impacts because it would not include a permanent source for noise.

### 4.15. Transportation

City Creek Canyon and City Creek Canyon Road are accessed via Bonneville Boulevard, a one-way street that starts on the east side of City Creek at the intersection of B Street East and 11<sup>th</sup> Avenue. Cars are allowed on City Creek Canyon Road on all holidays and even calendar days during the summer season (the first even day of Memorial Day weekend through September 30<sup>th</sup>) with a paid fee. Cars exit City Creek Canyon via Bonneville Boulevard, a one-way street, which ends at the intersection of East Capitol Boulevard and 500 North. **Table 4.7** presents the most updated (2020) approximate average annual daily traffic (AADT) counts along the roadways within the project area for which data are available (Utah Department of Transportation 2021).

**Table 4.7. Average Annual Daily Traffic within the Project Area**

Street	2020 AADT (number of vehicles)
B Street	2,800
11 <sup>th</sup> Avenue	3,400
East Capitol Boulevard	4,000
500 North	3,000

Source: Utah Department of Transportation 2021

Note: AADT numbers represent traffic in both directions

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The Utah Transit Authority operates several bus lines in Salt Lake City. The closest bus stops to Bonneville Boulevard are at 500 North and Cortez Street (200), 11<sup>th</sup> Avenue and E Street (F11), and on 9<sup>th</sup> Avenue at Intermountain LDS Hospital (209) (Utah Transit Authority 2023).

### **4.15.1. NO ACTION ALTERNATIVE**

In the short term, no construction would occur along the roadways within the project area under the no action alternative. Therefore, there would be no short-term impacts on traffic and no road closures or other traffic detours would occur.

In the long term, there would be no improvements to the CCWTP or City Creek and the risk of damage from a seismic, flood, or other hazardous event would remain. Construction to repair any damage to the CCWTP or reconstruct the CCWTP could result in construction traffic and detours along Bonneville Boulevard and City Creek Canyon Road. Closure of City Creek Canyon Road would impact recreational users on foot or bicycle and restrictions on use of the Bonneville Boulevard entrance to City Creek Canyon would impact people accessing the trail head parking area. Alternate access points are available for recreationists; although parking is more limited at alternate locations. Therefore, the no action alternative could have occasional minor adverse impacts on traffic and transportation over the long term.

### **4.15.2. PROPOSED ACTION**

Under the proposed action, construction would take place at the CCWTP and there would be traffic impacts from construction vehicles entering and exiting City Creek Canyon. While there would be additional construction traffic on the roadways surrounding the project area, these impacts would be temporary and localized, affecting only a small number of roadways. Equipment would be staged along City Creek Canyon Road in areas closed to traffic; however, construction-related traffic would use Bonneville Boulevard to enter and exit City Creek Canyon. Construction traffic would temporarily be two directional along one lane of Bonneville Boulevard with flaggers at either end to allow public vehicles to pass safely. Jersey barriers would be placed along Bonneville Boulevard to maintain recreational access on foot or bicycle in the second lane. The restriction to one shared lane with construction traffic would result in some minor delays in public vehicle access. If it is determined that a temporary traffic control plan is required during construction, Salt Lake City would coordinate with Utah Department of Transportation and obtain any permits necessary. Therefore, the proposed action is expected to have minor short-term adverse impacts on transportation.

In the long term, there would be no impact on transportation, as there would not be an introduction of new services or alteration of traffic patterns under the proposed action.

## **4.16. Public Services and Utilities**

SLCDPU provides water, sewer, storm, and street light services in Salt Lake City (SLCDPU n.d.). The CCWTP is owned and operated by SLCDPU, and it was first brought online in 1955. The CCWTP is an integral component of SLCDPU's drinking water supply, providing water to approximately 37,900 people in the northern service area. During atypical operations, water from CCWTP may also be



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conveyed to the larger city service area. Power in the project area is supplied by Rocky Mountain Power (Rocky Mountain Power 2023). City Creek Canyon offers visitors several recreational opportunities, including hiking, biking, hunting, and picnicking. There are 15 bathrooms and seven drinking fountains in the canyon provided by SLCDPU in addition to 30 reservable picnic sites (SLCDPU 2023). Outside the entrance to City Creek Canyon is the Lower City Creek Natural Area and Memory Grove Park, which provide a number of recreational amenities, including hiking trails, off-leash dog areas, picnic tables, restrooms, and drinking fountains (Salt Lake City Public Lands Department 2023).

### **4.16.1. NO ACTION ALTERNATIVE**

Under the no action alternative, construction would not occur; therefore, this alternative would not disrupt or increase demand on public services or utilities in the project area in the short term.

In the long term, there would be no improvements to the CCWTP or City Creek and the risk of damage from a seismic, flood, or other hazardous event would remain. Smaller disruptions at the CCWTP because of floods or excess debris could require short shutdowns for maintenance, disrupting water service. In the event of failure at the CCWTP, approximately 37,900 people in Salt Lake City's northern service area would lose water service for up to 3 years while a new facility is constructed. High costs associated with emergency maintenance repairs or construction could result in water rate increases for SLCDPU customers. In addition, construction to repair any damage to the CCWTP or reconstruct the CCWTP could require the closure of or limited access to recreational amenities in City Creek Canyon during construction. Therefore, this alternative could have moderate to major impacts on public services and utilities in the long term.

### **4.16.2. PROPOSED ACTION**

During construction of the proposed action, public access to City Creek Canyon would be limited. Off road hiking and biking trails in the area would be open to pedestrians and cyclists throughout construction. City Creek Canyon Road above Site 16 would be closed for the duration of the project. City Creek Canyon Road below Site 16 would be closed to the public during the week and open only for bikes and pedestrians on weekends and holidays. The use of Bonneville Boulevard for construction access, which crosses through the Lower City Creek Natural Area and Memory Grove Park, could disrupt some recreational activities. Water service interruptions during construction would be prevented by limiting shutoffs at the treatment plant to 48 hours. Water would be provided to the CCWTP service area by SLCDPU's other water treatment plants, booster pump stations, and storage tanks. Therefore, there would be minor short-term adverse impacts on public services and utilities because of construction of the proposed action.

Implementation of the proposed action would improve water supply reliability in the event of a flood, seismic event, or landslide and would reduce the risk of water shortages and service interruptions. As discussed in Section 4.12, the proposed action would require water rate increases for SLCDPU customers. However, water rate increases under the proposed action would likely be less than the potential water rate increases associated with emergency-related repairs and construction discussed

under the No Action Alternative in Section 4.16.1. In addition, as a mitigation project, it is estimated that water rate increases for SLCDPU customers would be 15 percent less with federal funding assistance under the proposed action. Therefore, this alternative would have moderate long-term beneficial impacts on utilities within Salt Lake City.

### 4.17. Public Health and Safety

Fire and ambulance services are provided by the Salt Lake City Fire Department. The closest fire station to the project area is Fire Station 4 at 830 East 11<sup>th</sup> Avenue, 5 miles away, with the next closest being Fire Station 2 at 270 West 200 North, approximately 6 miles away. The nearest hospital is Intermountain LDS Hospital, a full-service hospital with Life Flight air ambulance services, located at 8<sup>th</sup> Avenue and C Street, approximately 6 miles away. Police services are provided by Salt Lake City Police Department, with the closest station at 475 South 300 East, approximately 6 miles away.

The Mayor and Salt Lake City emergency Management Department leads emergency response in Salt Lake City and coordinates with the Salt Lake City County Emergency Management and the Utah Division of Emergency Management to respond to natural disasters and public safety hazards. Salt Lake County uses a regional Emergency Notification System that send telephone, SMS text, and email notifications regarding emergency situations or critical public safety information to residents and businesses (Salt Lake City 2023).

As discussed in Section 2, Section 4.2, and Section 4.8, the project area is subject to natural hazards such as earthquakes, floods, landslides, and debris flows.

#### 4.17.1. NO ACTION ALTERNATIVE

Under the no action alternative, there would be no short-term construction-related impacts on the health and safety of those in and near the project area.

In the long term, there would be no improvements to the CCWTP or City Creek and the risk of damage from a seismic, flood, or other hazardous event would remain. These natural hazards could cause disruptions in water service, even if short in duration, that would affect the provision of safe drinking water to a significant portion of Salt Lake City's northern service area, approximately 37,900 people. A disruption in drinking water services would have an adverse effect on public health throughout the service area. In addition, flooding could result in the accidental release of hazardous materials into City Creek and the surrounding area, as discussed in Section 4.13. Therefore, this alternative could have minor to major long-term adverse impacts on public health and safety within Salt Lake City depending on the intensity and duration of service disruptions resulting from future natural hazard events.

#### 4.17.2. PROPOSED ACTION

For the health and safety of Salt Lake City residents and visitors, City Creek Canyon Road above Site 16 would be closed throughout construction of the project. Jersey barriers and flaggers would help

## Affected Environment, Potential Impacts, and Mitigation

guide traffic and recreationists to parking and trailheads through the Lower City Creek Natural Area. Construction traffic on Bonneville Boulevard could impact emergency response times; however, emergency responders would be given priority access that would be managed by traffic control personnel avoiding measurable delays in response. Additionally, all construction activities would be completed by qualified personnel trained in the proper use of equipment, including all safety precautions. Therefore, there would be a potential short-term negligible adverse impact on public health and safety.

In the long term, the proposed action would reduce the risk of damage to the water treatment plant in the event of earthquakes, landslides, debris flows, and flood events. Implementation of the proposed action would increase water supply reliability in Salt Lake City if a flood or seismic event were to occur, reducing the risk of water supply service disruptions and help protect the provision of safe drinking water to approximately 37,900 people. A reduction in these risks would also reduce the risk of hazardous materials being released into and transported by City Creek as a result of a natural hazard event. Therefore, there would be a moderate beneficial impact on public health and safety in the long term.

### 4.18. Summary of Effects and Mitigation

**Table 4.8** provides a summary of the potential environmental effects from implementation of the proposed action, any required agency coordination efforts or permits, and any applicable proposed mitigation or BMPs.

**Table 4.8. Summary of Impacts and Mitigation**

Resource	Potential Impacts	Agency Coordination or Permits	Mitigation/BMPs
<b>Geology, Soils, and Topography</b>	Topography and soil – Minor short-term adverse impacts; minor long-term benefit.	Not applicable (N/A)	<ul style="list-style-type: none"> <li>BMPs to control erosion and sediment runoff.</li> </ul>
<b>Visual Quality and Aesthetics</b>	Minor short-term adverse impact on visual quality and aesthetics; negligible long-term adverse impact.	N/A	N/A

## Affected Environment, Potential Impacts, and Mitigation

Resource	Potential Impacts	Agency Coordination or Permits	Mitigation/BMPs
<b>Air Quality and Climate</b>	<p>Construction would have minor short-term adverse impacts on air quality and climate.</p> <p>In the long term, operation would have negligible beneficial impacts on air quality and climate.</p>	N/A	<ul style="list-style-type: none"> <li>▪ All construction equipment would be required to meet current EPA emissions standards.</li> <li>▪ Areas of exposed soil would be covered or wetted to reduce fugitive dust.</li> <li>▪ Vehicle and equipment runtimes would be kept to a minimum.</li> </ul>
<b>Surface Waters and Water Quality</b>	<p>Water Quality – Negligible to minor short-term adverse impacts; minor beneficial long-term impacts.</p> <p>Water Supply – Moderate short-term adverse impacts; minor beneficial long-term impacts.</p>	CWA Section 404 Permit – USACE/ State Engineer; Utah Pollutant Discharge Elimination System Stormwater permit – Utah DEQ	<ul style="list-style-type: none"> <li>▪ Erosion control BMPs.</li> <li>▪ Project-specific Stormwater Pollution Prevention Plan would be prepared.</li> </ul>
<b>Wetlands</b>	No short- or long-term adverse impacts on wetlands.	N/A	N/A
<b>Floodplains</b>	Minor short-term adverse impacts; minor long-term beneficial impacts on floodplains.	Floodplain Permit – Flood Control Engineering Division of the Salt Lake County Public Works and Municipal Services Department	N/A
<b>Vegetation</b>	<p>Vegetation – Minor short-term adverse impacts; negligible beneficial long-term impacts.</p> <p>Invasive Species – Minor beneficial short- and long-term impacts.</p>	N/A	<ul style="list-style-type: none"> <li>▪ Use weed-free seed. Verify seed mix to ensure it does not contain invasive plants.</li> <li>▪ Restore project area with native trees and vegetation.</li> </ul>

## Affected Environment, Potential Impacts, and Mitigation

Resource	Potential Impacts	Agency Coordination or Permits	Mitigation/BMPs
<b>Fish and Wildlife</b>	Minor short-term adverse impacts on fish and wildlife from construction-related impacts; negligible long-term adverse impacts on fish and wildlife from vegetation removal.	N/A	<ul style="list-style-type: none"> <li>▪ To the extent feasible, activities involving the removal of vegetation would occur outside of the general bird nesting season for migratory birds.</li> <li>▪ If vegetation removal must occur during the nesting season, a qualified biologist must perform a pre-construction survey of potential nesting habitat prior to the start of vegetation removal activities.</li> </ul>
<b>Threatened and Endangered Species</b>	No short- or long-term adverse impacts on threatened and endangered species.	N/A	N/A
<b>Cultural Resources</b>	Adverse effect to historic properties, resolved through mitigation.	Utah SHPO	<ul style="list-style-type: none"> <li>▪ Should resources be discovered during the project, a report will be made immediately to Salt Lake City, the Utah Division of Emergency Management, the FEMA Environmental and Historic Preservation Regional Officer, and the Utah SHPO.</li> <li>▪ Implementation of the Recordation and Public Interpretation Treatment Measures outlined in Appendix C of FEMA's Programmatic Agreement, as described in Section 4.11.</li> </ul>

## Affected Environment, Potential Impacts, and Mitigation

Resource	Potential Impacts	Agency Coordination or Permits	Mitigation/BMPs
<b>Environmental Justice</b>	The proposed action would have no short-term disproportionately high and adverse impact on environmental justice populations. Long-term moderate beneficial effects would occur.	N/A	N/A
<b>Hazardous Materials</b>	The proposed action would have a minor short-term adverse impacts and negligible long-term beneficial impacts.	N/A	<ul style="list-style-type: none"> <li>▪ Equipment would be kept in good condition.</li> <li>▪ Any spills or leaks from equipment would be contained and cleaned up right away.</li> <li>▪ All equipment and project activities would adhere to local regulations to reduce the risk of hazardous leaks and spills.</li> <li>▪ Any hazardous material unexpectedly encountered during construction would be reported to the Utah DEQ.</li> </ul>
<b>Noise</b>	Construction would have negligible adverse impacts from increased noise within the project area and the immediate vicinity of the work; no long-term adverse impacts.	N/A	<ul style="list-style-type: none"> <li>▪ All construction equipment would be well maintained, have sound-control devices no less effective than those provided on the original equipment, and have muffled exhaust.</li> <li>▪ Vehicle and equipment runtimes would be kept to a minimum.</li> </ul>
<b>Transportation</b>	Construction would have minor short-term adverse impacts. No long-term adverse impacts.	Coordinate with Utah Department of Transportation to obtain necessary permits.	N/A

## Affected Environment, Potential Impacts, and Mitigation

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Resource	Potential Impacts	Agency Coordination or Permits	Mitigation/BMPs
<b>Public Services and Utilities</b>	The proposed action would have a minor short-term adverse impact on utilities and a moderate long-term beneficial effect on utilities.	N/A	N/A
<b>Public Health and Safety</b>	The proposed action would have a negligible short-term adverse impact on public health and safety and moderate long-term benefits.	N/A	N/A

## **SECTION 5. Cumulative Impacts**

This section addresses the potential cumulative impacts associated with the implementation of the proposed action. Cumulative effects represent the “impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.1). CEQ’s regulations for implementing NEPA require an assessment of cumulative effects during the decision-making process for federal projects.

Because of the remote nature of the project area, there are no other known past, present, and future projects near the project area. Therefore, cumulative impacts are not expected as a result of the proposed action.



## SECTION 6. Agency Coordination, Public Involvement, and Permits

This section provides a summary of the agency coordination efforts and public involvement process for the proposed CCWTP Resilient Water Quality and Supply project. In addition, an overview of the permits that would be required under the proposed action is included.

### 6.1. Agency Coordination

On January 25, 2024, FEMA initiated consultation with seven Tribes to solicit comments and request any additional information about cultural resources that may be impacted by the action alternatives. Tribes contacted included the Confederated Tribes of the Goshute Reservation, Paiute Indian Tribe of Utah, Northwestern Band of Shoshone Nation, Skull Valley Band of Goshute, Ute Indian Tribe of the Uintah and Ouray Reservation, Ute Mountain Ute Tribe, and Navajo Nation. The tribal consultation period ended on March 3, 2024, and no responses from the tribes were received. FEMA consulted with SHPO on February 12, 2024, and on February 13, 2024, the SHPO determined there would be an adverse effect on the filter-fluoride building related to demolition of the filter building. Mitigation for adverse impacts as described in Section 4.11 will be implemented. Appendix B provides a copy of all agency correspondence.

### 6.2. Public Participation

In accordance with NEPA, this draft EA will be released to the public and resource agencies for a 30-day public review and comment period. Comments on this draft EA will be incorporated into the final EA, as appropriate. This draft EA reflects the evaluation and assessment of the federal government, the decision-maker for the federal action; however, FEMA will take into consideration any substantive comments received during the public review period to inform the final decision regarding grant approval and project implementation. If no substantive comments are received from the public or agency reviewers, this draft EA will be assumed to be final and a FONSI will be issued by FEMA.

A public scoping notice about the proposed project was published at <https://www.fema.gov/disaster-federal-register-notice/public-notice-federal-emergency-management-agency-fema-notice> and in the Salt Lake Tribune newspaper on April 5, 2023, to notify and provide the public with an opportunity to comment on the proposed action, potential alternatives, and preliminary identification of environmental issues. The public comment period on the public notice closed on May 5, 2023. No public comments were received.

Salt Lake City will make the draft EA available on its website at <https://www.keepitpurecitycreek.com/>. The draft EA also will be available on FEMA's website at <https://www.fema.gov/emergency-managers/practitioners/environmental-historic/nepa-repository>. Hard copies of the draft EA will be made available at Salt Lake City Public Utilities, 1530 S W Temple Street, Salt Lake City, UT 84115. The comment period for the draft EA will start when the public

## Agency Coordination, Public Involvement, and Permits

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notice of EA availability is published and will extend for 15 days. Comments on the draft EA may be submitted to the FEMA email at [fema-r8ehp@fema.dhs.gov](mailto:fema-r8ehp@fema.dhs.gov); please include 'Salt Lake City CCWTP' in the subject line. Comments also may be submitted via mail to: Denver Federal Center, Building 710, Box 25267, Denver, Colorado 80225-0267 Attn: Richard Myers.

### 6.3. Permits

Salt Lake City will be responsible for obtaining any necessary local, state, or federal permits needed to conduct the proposed work. The following permits would be required for the proposed action and all work authorized under these permits must be performed in compliance with the conditions of the permits.

- Obtain a Utah Pollutant Discharge Elimination System Storm Water General Permit for Construction Activities from the Utah Division of Water Quality.
- Coordinate with USACE to obtain necessary CWA Section 404 permit.
- Coordinate with Utah Department of Transportation to obtain necessary permits for road closures.

## SECTION 7. List of Preparers

The following is a list of preparers who contributed to the development of the CCWTP Resilient Water Quality and Supply draft EA for FEMA. The individuals listed below had principal roles in the preparation of this document. Many others, including senior managers, administrative support personnel, and technical staff, contributed, and their efforts were no less important to the development of this EA.

### CDM Smith

Preparers	Experience and Expertise	Role in Preparation
Deats, Stewart	Cultural Resources Specialist	NEPA Documentation
Fogler, Wilson	Biologist	NEPA Documentation
Gledhill, Greta	Environmental Planner	NEPA Documentation
Jadhav, Ajay	Geographic Information System Specialist	Figure Development
Quan, Jenna	Environmental Planner	NEPA Documentation
Stenberg, Kate PhD	Senior Environmental Planner	Quality Control/Technical Review
Woodruff, Abbie	Environmental Planner	NEPA Documentation

### Federal Emergency Management Agency

Reviewers	Role in Preparation
Jones, Daniel	Environmental Planning and Historic Preservation Specialist
Myers, Rick	Deputy Environmental Officer
Turner, Kate	Environmental Planning and Historic Preservation Specialist

This document was prepared by CDM Smith under Contract No.: 70FA6020D00000002, Task Order: 70FA6021F00000053.

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**Appendix A:  
Floodplain Management Eight-Step Documentation**

# 8-Step Process

EMD-2021-BR-063-0016

## City Creek Water Treatment Plant Resilient Water Quality and Supply

Executive Order 11988 Floodplain Management  
Executive Order 11990 Wetland Protection  
Eight-Step Planning Process Summary

Step	Project Analysis
<p><b>Step 1: Determine Project Location</b> Determine whether the proposed action is located in a wetland and/or the 100-year floodplain, or whether it has the potential to affect or be affected by the floodplain or wetland.</p>	<p><b>Project Analysis:</b> The proposed action is to demolish and rebuild infrastructure at the City Creek Water Treatment Plant (CCWTP) and to stabilize the banks of City Creek to improve facility performance during and after a seismic or flood event. The CCWTP and the staging areas for the proposed action are within a 100-year flood hazard area as delineated on FEMA Flood Insurance Rate Map Panels 49035C0161G, 49035C0162G, and 49035C0154G, effective September 25, 2009. None of the project is located within or adjacent to a wetland</p>
<p><b>Step 2: Encourage Public Involvement</b> Notify public at earliest possible time of the intent to carry out an action in a floodplain or wetland, and involve the affected and interested public in the decision-making process.</p>	<p><b>Project Analysis:</b> A public notice for the proposed action was published at <a href="https://www.fema.gov/disaster-federal-register-notice/public-notice-federal-emergency-management-agency-fema-notice">https://www.fema.gov/disaster-federal-register-notice/public-notice-federal-emergency-management-agency-fema-notice</a> and in the Salt Lake Tribune newspaper on April 5, 2023.</p>
<p><b>Step 3: Evaluate Alternatives</b> Identify and evaluate practicable alternatives to locating the proposed action in a floodplain or wetland.</p>	<p><b>Project Analysis:</b> The following alternatives were considered in selecting the proposed action.</p> <p><u>Alternative 1. No Action:</u> No project would be undertaken. The No Action alternative would not affect the floodplain; however, existing conditions, including the risk of damage and disruptions at the CCWTP from a seismic, flood, or other hazardous event would remain.</p> <p><u>Alternative 2. Relocate CCWTP:</u> A new water treatment plant would be built at a different location in the watershed. However, the City Creek watershed and the City Creek Canyon have similar hazards at almost all locations within the canyon and alternate locations would not provide the same natural benefits as the current site.</p> <p><u>Alternative 3. Abandon CCWTP:</u> Salt Lake City would abandon the CCWTP rather than address the hazards. Salt Lake City would lose a vital source for the city's drinking water supply, as the CCWTP is the only facility available to treat City Creek water to drinking water standards. Abandonment of the facility would reduce the city's water supply, increase drought vulnerability, reduce system redundancy, and put a significant burden on other portions of the water supply and distribution system.</p>



Step	Project Analysis
	<p><u>Proposed Action:</u> The proposed action would include demolishing the existing flocculation basins, sedimentation basins, and filter building at the CCWTP and replacing the processes with modern structures at higher elevations (above flood levels) in one new treatment building. Creek channel and streambank improvements along City Creek would include removing debris, replacing existing gabion walls to stabilize the bank, placing energy dissipating rock weirs in the channel, and raising the bank near the existing filter building to contain a 500-year flood event in the channel. The proposed action would take place within the 100-year floodplain (Flood Zone A) as discussed in Step 1 of this checklist.</p>
<p><b>Step 4: Access Impact</b> Identify the full range of potential direct or indirect impacts associated with the occupancy or modification of floodplains and wetlands and the potential direct and indirect support of floodplain and wetland development that could result from the proposed action.</p>	<p><b>Project Analysis:</b> The following are the direct or indirect impacts associated with the project.</p> <p>The proposed action would have minor short-term adverse impacts on the 100-year floodplain along City Creek because of construction, including excavation and fill activities. Fill within City Creek would be limited to placement of rock weirs and temporarily impacted areas would be restored following construction of the proposed action. Construction activities could cause an accidental release of hazardous materials during the construction period from minor leaks from construction equipment, and ground-disturbing activities could cause sediment to enter City Creek. Construction could also result in temporary impacts on natural and beneficial values of floodplains.</p> <p>In the long term, the proposed action would reduce the risk of flooding in the project area by elevating the treatment building and stabilizing the City Creek streambank. The proposed action would reduce the extent and the depth of flooding within and near the project area. Additionally, the streambank restoration along City Creek would increase flood storage and increased attenuation of flood waters, thus reducing the risk of flooding. The revegetated areas would be planted with native upland vegetation, as appropriate for site conditions, that would slow and distribute the force of floodwaters over the floodplain, reducing the potential for erosion. Thus, the proposed action would have minor long-term benefits on flood protection and natural floodplain functions and values in the project area and vicinity.</p>
<p><b>Step 5: Minimize Impact</b> Minimize the potential adverse impacts to work within floodplains and wetlands to be identified under Step 4, restore and preserve the natural and beneficial values served by wetlands.</p>	<p><b>Project Analysis:</b> The proposed action would comply with the Utah Department of Environmental Quality general stormwater permit for construction activities. Salt Lake City would implement a Stormwater Pollution Prevention Plan as well as erosion and sediment control best management practices. Additionally, Salt Lake City would coordinate with the local floodplain administrator and obtain any required permits prior to initiating work.</p>

Step	Project Analysis
<p><b>Step 6: Determine Practicability</b>  Re-evaluate the proposed action to determine 1) if it is still practicable in light of its exposure to flood hazards; 2) the extent to which it will aggravate the hazards to others; and 3) its potential to disrupt floodplain and wetland values.</p>	<p><b>Project Analysis:</b> The proposed action remains the most practicable action because it meets the purpose and need of the project to reduce flood risk and protect life and property and the measures in Step 5 would minimize temporary adverse impacts on the floodplain. The proposed action would have no significant, long-term adverse effects on the floodplain.</p>
<p><b>Step 7: Provide Public Explanation</b>  If the agency decides to take an action in a floodplain or wetland, prepare and provide the public with a finding and explanation of any final decision that the floodplain or wetland is the only practicable alternative. The explanation should include any relevant factors considered in the decision-making process.</p>	<p><b>Project Analysis:</b> Public notice of the proposed action alternative was provided with the environmental assessment, informing the public of a potential FEMA funded action, which would occur within the 100-year floodplain.</p>
<p><b>Step 8: Comply with Executive Orders</b>  Review the implementation and post-implementation phases of the proposed action.</p>	<p><b>Project Analysis:</b> Per 44 CFR Part 9, the full 8-step process is required and has been completed. This step is integrated into the NEPA process and FEMA project management and oversight functions.</p>

**Appendix B:**  
**Agency Consultation**



Spencer J. Cox  
Governor

Deidre M. Henderson  
Lieutenant Governor

Donna Law  
Interim Executive Director



Christopher Merritt  
State Historic Preservation Officer  
Utah State Historic Preservation Office

February 13, 2024

Richard Myers  
Deputy Regional Environmental Officer  
Federal Emergency Management Agency  
Region VIII

RE: SLC City Creek WTP

For future correspondence, please reference Case No. 24-0422

Dear Mr. Myers,

The Utah State Historic Preservation Office received your submission and request for our comment on the above-referenced project on February 12, 2024. Based on the information provided to our office, we concur with your determinations of eligibility; however, we do not agree with the finding of No Adverse Effect for the undertaking. It is our opinion, based documentation submitted to our office, that even though no historic district is in place or is being proposed, that the Filter-Fluoride Building is Eligible for the National Register of Historic Places as noted on its site form,

“This building is associated with the theme of community planning and development associated with City Creek’s role in the development of Salt Lake City. Based on a 1965 photograph, the building has undergone few changes since it was built. The fact that the completion of the water treatment plant and specifically the Filter-Fluoride Building complex enabled the reopening of the canyon for recreation after a period of closure in the mid-20th century, provides a significant contribution to the history of community planning and development in City Creek Canyon and for Salt Lake City. As a result, the canyon again provided and continues to provide recreation and access to natural areas within several miles of downtown Salt Lake City. The fact that City Creek is open to the public and can also provide safe water for the city is testament to the value of the advancements to water filtration provided by the Filter Building as a supplement to the larger CCWTP upon its completion in the mid-1960s. Additionally, the building exhibits an association with the historic period of development related to community planning and development within City Creek Canyon and was among the first water filtration and treatment plants in the state. This building was part of that development made possible by a grant from HUD and associated with federally mandated water quality programs during the mid-20th century. With little alteration evident since its initial construction, the building is significant under Criterion A.” According to the documentation provided to the Utah SHPO, the Filter-Fluoride Building is also recommended eligible under Criterion C.

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Therefore, demolition of this Eligible historic property would result in and meet the criteria of Adverse Effect as per the Section 106 regulations. This information is provided to assist with Section 106 responsibilities as per §36CFR800. If you have questions or would like to discuss this further, please contact me at (801) 245-7239 or by email at [clhansen@utah.gov](mailto:clhansen@utah.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'C. Hansen', followed by a horizontal line extending to the right.

Christopher Hansen  
Preservation Planner/Utah SHPO