BUREAU OF RECLAMATION

Draft Environmental Assessment Upper Thompson Sanitation District Water Reclamation Facility and Lift Station Improvement Project

EA No. EC-2020-086

Prepared by:
ERO Resources Corporation

Prepared for:
United States Department of the Interior
Bureau of Reclamation
Missouri Basin
Eastern Colorado Area Office

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Mission Statements

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

LIST OF ACRONYMS AND ABBREVIATIONS

APCD	Air Pollution Control Division
APE	area of potential effects
APEN	Air Pollutant Emissions Notice
BLS	U.S. Bureau of Labor Statistics
BMPs	Best Management Practices
BNR	biological nutrient removal
CAA	Clean Air Act
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CNHP	Colorado Natural Heritage Program
COE	Communications Outreach and Education
CPW	Colorado Parks and Wildlife
CRS	Colorado Revised Statute
CWA	Clean Water Act
CWCB	Colorado Water Conservation Board
CWRPDA	Colorado Water Resources and Power Development Authority
DOI	U.S. Department of the Interior
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
EPSD	Estes Park Sanitation District
ERO	ERO Resources Corporation
ESA	Endangered Species Act
FCLS	Fish Creek Lift Station
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FPPA	Farmland Protection Policy Act
GHG	greenhouse gas
IBA	Important Bird Area
IPaC	Information for Planning and Consultation
ITA	Indian Trust Assets
MBR	membrane bioreactors
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
NWP	Nationwide Permit
PCA	Potential Conservation Area
Phase I ESA	Phase I Environmental Site Assessment
ppd	pounds per day
RD	Rural Development
RECs	recognized environmental conditions

ROW	right-of-way
RUS	Rural Utilities Service
SH	State Highway
SHPO	Colorado State Historic Preservation Office
SO2	sulfur dioxide
TP	Total Phosphorus
TRLS	Thompson River Lift Station
U.S.	United States
USC	United States Code
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTSD	Upper Thompson Sanitation District
UV	ultraviolet
VP	viewpoint
WLS	Wapiti Lift Station
WQCD	Water Quality Control Division
WRF	Water Reclamation Facility
WSEL	Water Surface Elevation
WWTF	wastewater treatment facility

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CHAPTER 1 – INTRODUCTION

This Environmental Assessment (EA) has been prepared to disclose and evaluate the potential environmental effects of the proposed Upper Thompson Sanitation District (UTSD) Water Reclamation Facility (WRF) and Lift Station Improvements Project (Proposed Action or project). The project requires new construction on land owned by UTSD, and the U.S. Bureau of Reclamation (Reclamation). UTSD's existing wastewater treatment facility (WWTF), Thompson River Lift Station (TRLS), and Fish Creek Lift Station (FCLS) are located on Reclamation-owned properties that Reclamation acquired for the Colorado-Big Thompson Project (project area; Figure 1).

The Proposed Action consists of constructing, operating, and maintaining:

- a new WRF on UTSD property;
- a new Wapiti Lift Station (WLS) on Reclamation property that replaces the existing TRLS;
- a new WLS Force Main on Reclamation property that conveys wastewater from the WLS to the new WRF;
- a new FCLS on Reclamation property that replaces the existing FCLS; and
- continued use of portions of the existing WWTF for equipment and vehicle storage (the existing WWTF would not be maintained as a treatment facility).

The project would also include modifications to the existing interceptors in connecting pipelines that convey wastewater to the existing WWTF, existing TRLS, new WLS, and new FCLS. For ease of reading this EA, the WRF refers to the new WWTF that would be constructed downstream of the existing WWTF. The proposed project area encompasses approximately 36.6 acres.

A portion of the project requires the use of Reclamation lands, and Reclamation would need to issue a new land use authorization to allow UTSD to construct, operate, and maintain the new UTSD facilities on Reclamation land. UTSD's existing WWTF, TRLS, and FCLS facilities are included in a perpetual easement granted by Reclamation in 1974 (Reclamation 1974).

The existing WWTF would be decommissioned at a future date to be determined following start-up and commissioning of the new WRF. However, the existing WWTF building would continue to be used for maintenance and storage of UTSD equipment and vehicles until removed at a future date.

This EA has been prepared in compliance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality's (CEQ) implementing regulations at 40 Code of Federal Regulations (CFR) Parts 1500 – 1508 (2023). An environmental impact statement will be prepared if potentially significant impacts on environmental resources are identified.

A Finding of No Significant Impact will be issued if no significant impacts are identified.

1.1 Project Location and Legal Description

The project area is located in Larimer County, Colorado, in the Estes Valley, about 1.8 miles east of downtown Estes Park, Colorado (project area; Figure 1). The project area is located on lands owned by Reclamation in Section 29, Township 5 North, Range 72 West of the 6th P.M. in Larimer County, Colorado.

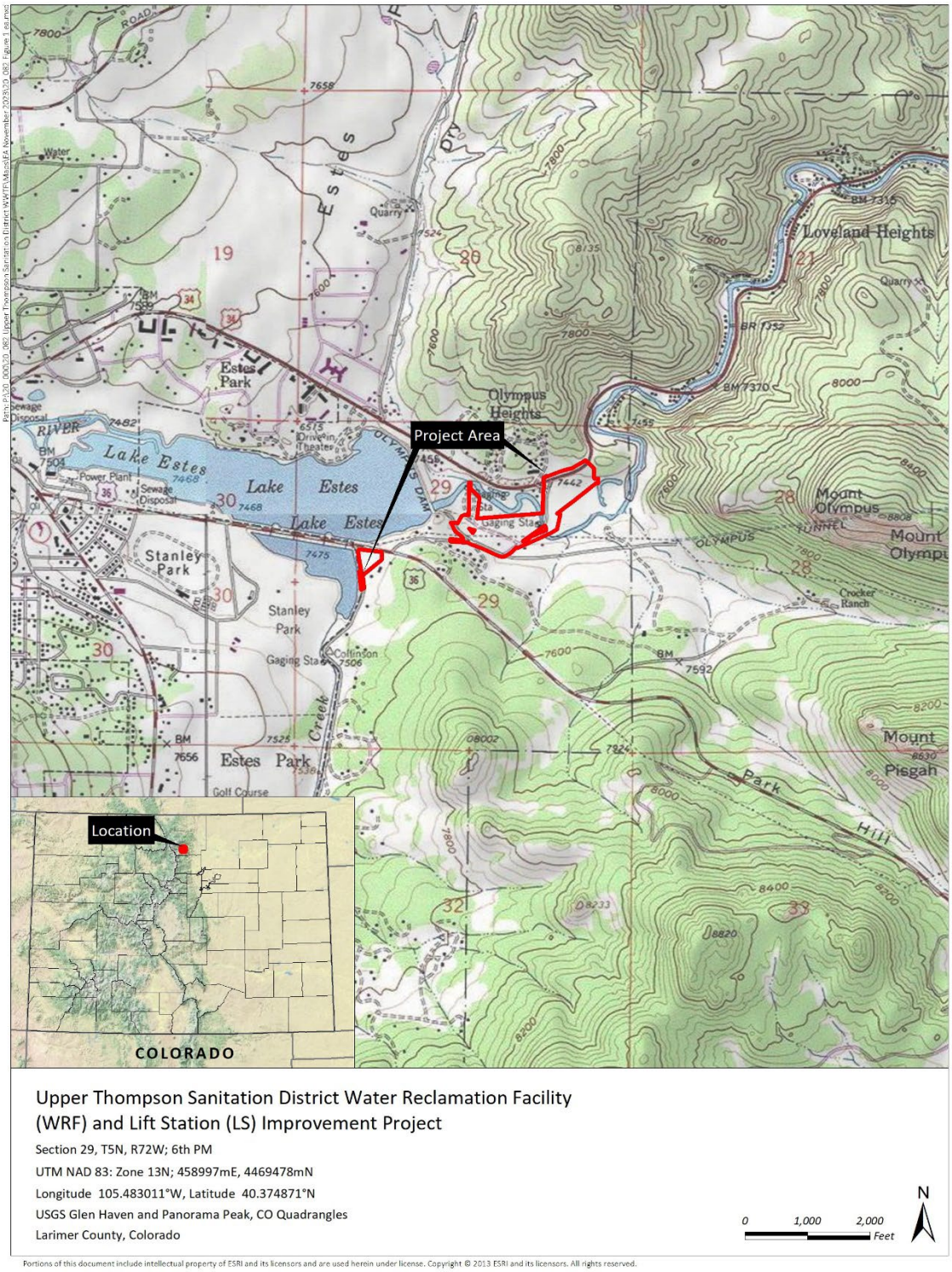

Figure 1. Project Vicinity.

1.2 Need for and Purpose of the Proposed Action

The purpose of the Proposed Action is to meet the wastewater treatment demands of residents and visitors in the UTSD service area. The Proposed Action is needed to: (1) meet future wastewater flow estimates, (2) meet applicable water quality standards and regulations, (3) address aging and deficient infrastructure, reduce long-term operation and maintenance costs for UTSD, and (4) allow for future facility expansion to meet projected wastewater flows when needed.

These issues are described in more detail below.

- **Increased Wastewater Flow**: Population expansion and associated increases in wastewater flow in the wastewater utility service area are expected to continue. The existing WWTF is unable to hydraulically pass and provide treatment to future wastewater flow and loadings beyond 2.0 million gallons per day (mgd) and 4,450 pounds of five-day biochemical oxygen demand per day without significant modifications that require site expansion.
- **Future Regulations**: The WWTF is unable to reduce nutrients (total phosphorus and total nitrogen), metals, and temperature to the anticipated future water quality standard effluent levels without significant modification of the existing treatment process, which would require site expansion or de-rating of the WWTF below 2.0 mgd.
- **Colorado Department of Public Health and Environment (CDPHE) Requirements:** The WWTF discharge permit requires that UTSD "initiate engineering and financial planning for expansion… wherever throughput reaches eighty (80) percent of the treatment capacity" and "… commence construction of… expansion wherever throughput reaches 95 percent of the treatment capacity." UTSD's 80 percent and 95 percent flow throughputs are 1.6 and 1.9 mgd, respectively. The peak month flow in May 2015 was 1.7 mgd. UTSD's 80 percent and 95 percent influent organic loading throughputs are 3,560 and 4,228 pounds per day (ppd), respectively. The existing WWTF has not exceeded the 80 percent peak month organic loading. The highest peak month loading between January 2014 and December 2019 was in June 2017 at 2,540 ppd.
- **Facility and Infrastructure Age:** The WWTF was constructed in the mid-1970s with upgrades conducted in the 2000s. The WWTF will reach its 50-year design life in 2025. Although UTSD staff have maintained the facility in excellent condition, the WWTF lacks operational flexibility; does not meet 2019 codes (building, electrical, and fire), standards, and regulations; and is approaching the end of its useful life with deteriorating structures/equipment and replacement parts hard to find. As WWTF flow and loadings continue to approach rated capacity, it will become increasingly difficult to remove structures from service for maintenance. The cost to maintain, as well as retrofit, existing structures for new purposes will require significant investment. Additionally, the TRLS and FCLS are reaching the end of their useful lives and present operational challenges and hazards.
- **Limited Aerobic Digester Capacity:** The aerobic digesters were constructed for the original facility capacity of 1.5 mgd. Digester capacity is limited during peak loading events and will be further limited as the influent flow and loadings approach the permitted and projected flow and loading capacities. The enclosed digester roofs and walls experience severe corrosion and were replaced in 1997. The digester roofs will likely require replacement in the next five years.
- **Limited Filtration Capacity:** The WWTF filters were constructed for the original facility capacity of 1.5 mgd. The filters capture solids sloughed from the nitrification towers during normal operation and are operated without polymer addition. Both the filter beds and surface wash arms require replacement. The filters require significant upgrades to operate at a higher flow rate for the WWTF capacity of 2 mgd. Currently at a flow rate of 100 gallons per minute into the filters, nearly constant backwashing is required. The filter capacity will be limited for

total phosphorus removal/polishing with the addition of alum or polymer as the influent flow and loadings approach the permitted and projected flow and loading capacities.

- **Chlorine Contact Basin:** UTSD staff have limited ability to prevent short circuiting in the chlorine contact basin during operation due to the layout of the basin.
- **Outside Clarifier:** UTSD staff are unable to operate the outside clarifier in the winter months due to freezing, unless significant upgrades are made. The clarifier is removed from service during the winter and limits treatment capacity of the WWTF.

1.3 Decision to Be Made

A portion of the project requires the use of Reclamation lands. Reclamation will decide whether to issue new land use authorization to allow UTSD to construct, operate, and maintain the new UTSD facilities on Reclamation land under the Proposed Action. UTSD's existing WWTF and TRLS and FCLS facilities are included in a perpetual easement granted by Reclamation in 1974.

1.4 Scoping and Issues

Scoping letters were sent to the interested agencies and to tribal governments on July 17, 2023 (see Chapter 5 for a list of interested parties). Issues considered for analysis in this EA were developed in accordance with guidelines outlined in the Reclamation NEPA Handbook (Reclamation 2012) and CEQ's and the U.S. Department of the Interior's (DOI) NEPA Implementing Regulations. Environmental commitments that would be implemented under the Proposed Action are provided in Chapter 4.

The issues listed in Table 1 were determined to be insignificant or not applicable and are not analyzed in greater detail in this EA.

Table 1. Resources eliminated from further analysis.

Issue Statement	Rationale for Elimination from Further Analysis
Potential impacts on noise from construction of the Proposed Action	After completed, the Proposed Action would result in a noise reduction due to the new and improved equipment and structures (Mott MacDonald, pers. comm. 2020). During construction, temporary increases in noise could occur; however, UTSD would comply with the Larimer Noise Ordinance (Larimer County 2020a).
Potential impacts on Wild and Scenic Rivers	A designated Wild and Scenic River section of the Cache la Poudre River, as defined in the 1968 Wild and Scenic Rivers Act (Public Law 90-542; 16 United States Code [USC] 1271 et seq.), is located north and east of Fort Collins in a different river basin. As such, the Proposed Action would have no effect on the Cache la Poudre River.

CHAPTER 2 – PROPOSED ACTION AND ALTERNATIVES

2.1 Alternatives Dismissed from Further Analysis

Three WWTF site alternatives were evaluated for the Proposed Action – one was selected by UTSD with the purchase of the new WRF site (Mott MacDonald 2017). The three alternatives are described below.

Alternative A: Existing Site Expansion. Alternative A includes expansion and modification of the existing WWTF and site (Figure 2). These activities include:

- Installing integrated fixed-film activated sludge media in two of the four existing aeration basins for biological nitrogen and phosphorus removal.
- Repurposing existing digesters as aeration basins to provide additional capacity for nutrient removal.
- Covering clarifier number three to allow operation during winter months.
- Constructing a new secondary clarifier to meet current CDPHE Water Quality Control Division (WQCD) design criteria.
- Constructing an advanced water treatment facility for metals treatment.
- Constructing a new solids handling facility east of Mall Road.

Alternative B: Mall Road / Highway 34 Site (Proposed Action). See the Proposed Action description in Section 2.3 below.

Alternative C: South of Mall Road Site. Alternative C includes construction of a new WRF on private land south of the existing WWTF and Mall Road and use of the existing UTSD administration and collection buildings as shown on Figure 3. The existing WWTF and TRLS would be demolished following construction of the new facility.

The alternatives were evaluated using the following eight criteria, which were weighted on a scale of 1 (least important) to 10 (most important) (Table 2). See the 2017 Upper Thompson Sanitation District Wastewater Treatment Facility Site Alternative Evaluation for more detailed information (Mott MacDonald 2017).

1. Ability to Achieve Required Treatment – Alternatives were assessed for their ability to meet required discharge regulations, including nutrient, metals, and temperature requirements. The ability of an alternative to meet the required treatment was limited either by site or retrofit limitations.
2. Site Acquisition – Alternatives were assessed for the cost, time, and restrictions associated with site acquisition or additional right-of-way (ROW) acquisition.
3. Operations and Maintenance – Alternatives were assessed for the amount, cost, and ease of WWTF operation and maintenance.
4. Expansion Flexibility – Alternatives were assessed for the ability to provide future WWTF expansion considering expansion area, site topography and conditions, and WWTF configuration.

5. Required Physical Improvements – Alternatives were assessed for the level of physical improvements, such as construction of buildings, equipment, outfalls, as well as demolition and retrofits needed.
6. Project Implementation – Alternatives were assessed for the time required to implement the alternative, from planning to construction. Factors in this criterion include permitting requirements, design complexity, construction complexity, financing options, and ability to use the existing facility during construction.
7. Ability to Treat Estes Valley Flow – Alternatives were assessed for their ability to treat the entire Estes Valley wastewater flow.
8. Community Aesthetics – Alternatives were assessed for their aesthetic value, ability to minimize adverse community impacts such as odor, and ease of delivery access.

Table 2. Alternatives evaluation criteria weighting.

Criterion No.	Criterion	Weighting Factor
1	Ability to Achieve Required Treatment	9
2	Site Acquisition	7
3	Operations and Maintenance	6
4	Expansion Flexibility	8
5	Required Physical Improvements	6
6	Project Implementation	6
7	Ability to Treat Estes Valley Flow	4
8	Community Aesthetics	7

The results of the alternatives evaluation are included in Table 3. For more information on the specifics of each alternative related to the criterion, see the 2017 Upper Thompson Sanitation District Wastewater Treatment Facility Site Alternative Evaluation (Mott MacDonald 2017).

Table 3. WWTF alternatives evaluation criterion results.

Criterion	Weighting Factor	Alternative A: Existing Site Expansion		Alternative B: Mall Road/Highway 34 Site (Proposed Action)		Alternative C: South of Mall Road Site	
		Rank*	Score**	Rank*	Score**	Rank*	Score**
1. Ability to Achieve Required Treatment	9	1	9	9	81	9	81
2. Site Acquisition	7	9	63	5	35	3	21
3. Operations and Maintenance	6	2	12	7	42	7	42
4. Expansion Flexibility	8	1	8	9	72	9	72
5. Required Physical Improvements	6	5	30	5	30	3	30
6. Project Implementation	6	4	24	6	36	6	36
7. Ability to Treat Estes Valley Flow	4	1	4	9	36	9	36
8. Community Aesthetics	7	4	28	9	63	4	28
Total Score		--	178	--	395	--	346
Total Project Cost***		$38 million		$46 million		$45 million	

*Rank is on a scale of 10 (best) to 1 (worst).
**Score equals the weighting factor times rank.
***Total Project Costs does not include annual operations and maintenance costs. Costs are presented in 2017 dollars.

Based on the evaluation, Alternative B scored the highest and Alternative A scored the lowest. Alternative C was close to Alternative B. Alternative A scored very low because of the inability to achieve required discharge regulations, little to no expansion capability, and the inability to treat the entire Estes Valley wastewater flow. Alternative C scored the same as Alternative B, except in two criteria – site acquisition and community aesthetics. Alternative C required a more complex acquisition process than Alternative B due to the multiple landowners. Additionally, Alternative C was determined to be visually exposed along Mall Road and near a church and residences. Therefore, Alternative B was selected by UTSD.

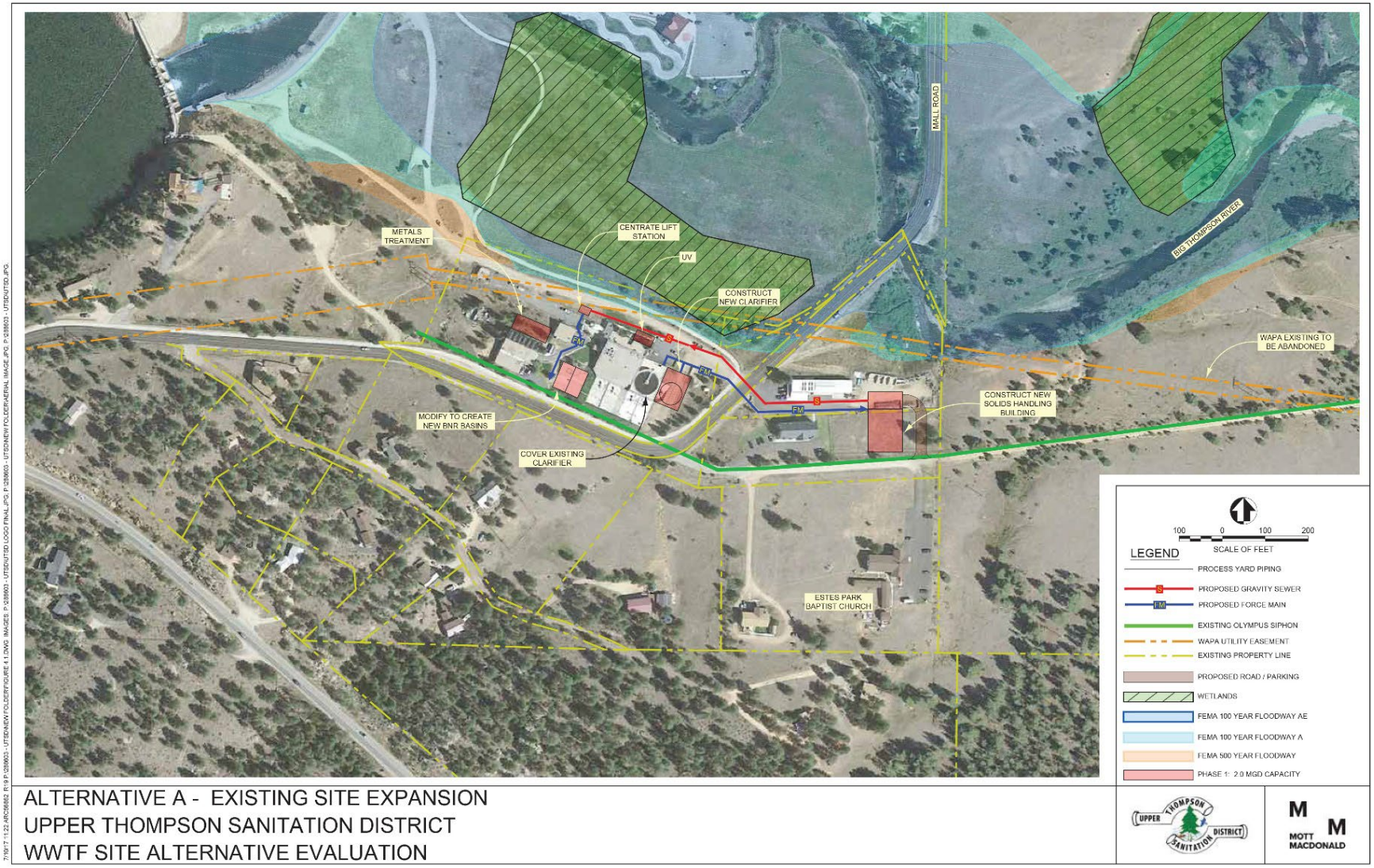

Figure 2. Alternative A.

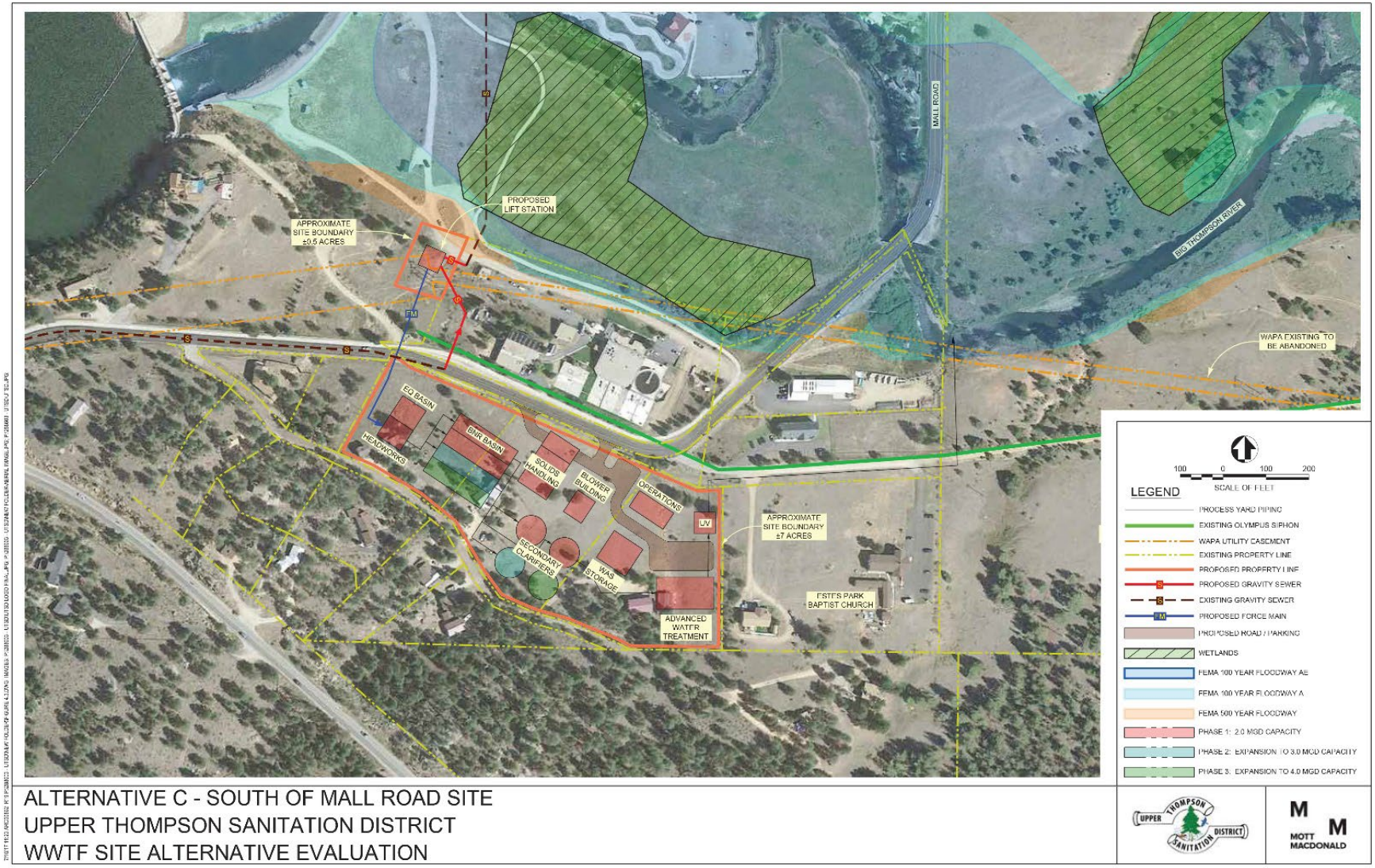

Figure 3. Alternative C.

2.2 No Action Alternative

Under the No Action Alternative, the existing WWTF would continue to be used by UTSD and existing and future deficiencies would persist unchanged. No additional ROW or land acquisition would occur and Reclamation would not issue additional land use authorizations.

2.3 Proposed Action

The Proposed Action (Alternative B) would include construction of a WRF on UTSD property at the southeast corner of the intersection of Mall Road and State Highway (SH) 34 (Figure 4) to replace the existing WWTF and construction of a new WLS west of the existing WWTF to replace the existing TRLS. Replacement of the existing FCLS south of the intersection of Fish Creek Road and St. Vrain Avenue/SH 36 and construction of associated WLS force main interceptors would also be needed. The existing WWTF would be decommissioned at a future date following start-up and commissioning of the new WRF. The existing WWTF buildings would continue to be used for maintenance and storage of UTSD equipment and vehicles until removed at a future date. The project area totals approximately 32.0 acres, including 16.0 acres on Reclamation land and 16.0 acres on private land. Temporary construction easements would be located adjacent to the perpetual easement to allow contractor access to the areas on Reclamation land.

Water Reclamation Facility – The new WRF on UTSD property would include:

- Constructing the headworks, equalization and biological nutrient removal (BNR) basins, blowers, membrane bioreactors (MBRs), ultraviolet (UV) disinfection, thickened sludge storage, solids dewatering (screw press), and an operations building as shown on Figure 4.
- Constructing in phases the initial facilities for a capacity of 2.0 mgd with space allocated for future expansion to 3.0 mgd and beyond 4.0 mgd.
- Constructing new outfall pipe and outfall discharge location at the Big Thompson River.
- Relocating existing aboveground electrical power lines on the site.
- Constructing two new access points for the proposed WRF site along Mall Road.

A phased approach would be implemented by UTSD to appropriately size the new WRF on UTSD-owned property to meet current and future flows.

- Phase 1 would include facilities to meet a 2.0-mgd capacity. Two BNR basins with a 1.0-mgd capacity each and MBRs would also be constructed. WFR buildings would be located for a buildout capacity of 4.0 mgd, with installation of buildings and equipment for a 2.0-mgd capacity.
- Phase 2 would include the construction of a third BNR basin and additional MBRs, as well as installation of necessary buildings and equipment to expand the capacity to 3.0 mgd.
- Phase 3 would include construction of a fourth BNR basin and additional MBRs, as well as installation of necessary buildings and equipment to expand to the buildout capacity of 4.0 mgd. A capacity of 3.0 mgd may be initiated earlier if the Estes Park Sanitation District joins in the project and the entire wastewater flow from the Estes Valley is treated at UTSD's new WRF). The proposed site layout and improvements, including proposed phasing, are shown on Figure 4.

Fish Creek Lift Station – Replacement of the FCLS would include:

- Constructing a new lift station on Reclamation land (under an amended existing land use authorization) adjacent to the existing lift station.
- Connecting the existing interceptor to the new lift station on Reclamation land (under a new land use authorization).
- Connecting the existing force main to the new lift station on Reclamation land (under a new land use authorization).
- Demolishing the existing lift station aboveground structure and continuing to use the existing lift station below ground structures, following modification, as emergency storage in compliance with CDPHE requirements. A perpetual easement is granted to UTSD for the existing Fish Creek Lift Station building (Corrective Easement Deed recorded March 9, 2009 as Reception No. 20090013914, Records of Larimer County).

Thompson River Lift Station – Replacement of the TRLS with a new WLS would include:

- Constructing a new WLS on Reclamation land (under a new land use authorization) adjacent to and west of the existing TRLS.
- Constructing a new Thompson River Interceptor to convey wastewater from the existing Thompson River Interceptor to the new WLS.
- Constructing a new Fish Creek Interceptor from the discharge of the FCLS gravity main located on the existing WWTF site to the new WLS site.
- Constructing parallel force mains on Reclamation land (under a new land use authorization) to convey wastewater from the new WLS to the new WRF site, including crossing of the Big Thompson River.
- Demolishing the existing TRLS aboveground structure and continuing to use the existing lift station below ground structures, following modification, as emergency storage in compliance with CDPHE requirements. The existing TRLS is in a perpetual easement granted to UTSD (Contract 14-06-700-7616, May 22, 1974, Book 1602, Page 510, Reception No. 88721, Records of Larimer County).

Removal of Existing Facilities – Removal of the existing WWTF, FCLS, and TRLS would include:

- Demolishing, removing, salvaging, and disposing of existing structures, equipment, piping, electrical, and materials at the FCLS and TRLS.
- Verifying termination of utility services (electric, water, telephone, and natural gas) to include removing meters and capping lines at the FCLS and TRLS.
- Removing items scheduled to be salvaged and placed in designated storage areas at the FCLS and TRLS.
- Removing existing exposed piping, equipment, conduit, and electrical wiring at the FCLS and TRLS.
- Removing roofs, ceilings, walls, joists, electrical, mechanical, furnishings, and other appurtenances at the FCLS and TRLS.
- Removing and disposing of all debris from demolition at the FCLS and TRLS.
- Abandoning in place the existing Big Thompson outfall at the WWTF.
- Removing the existing WWTF from operation following start-up and commissioning of the proposed WRF.
- Continuing to use the existing WWTF for maintenance and storage of UTSD equipment and vehicles until removed at a future date.

Wastewater conveyed by the FCLS would flow by gravity through a proposed Fish Creek Interceptor extension, located on Reclamation land between the WWTF and WLS. A gravity extension of the Big Thompson Interceptor would also be constructed from the Big Thompson River Interceptor on the south side of the river to the new WLS to convey Big Thompson Interceptor flow to the new WLS. The two interceptor extensions are shown on Figure 4.

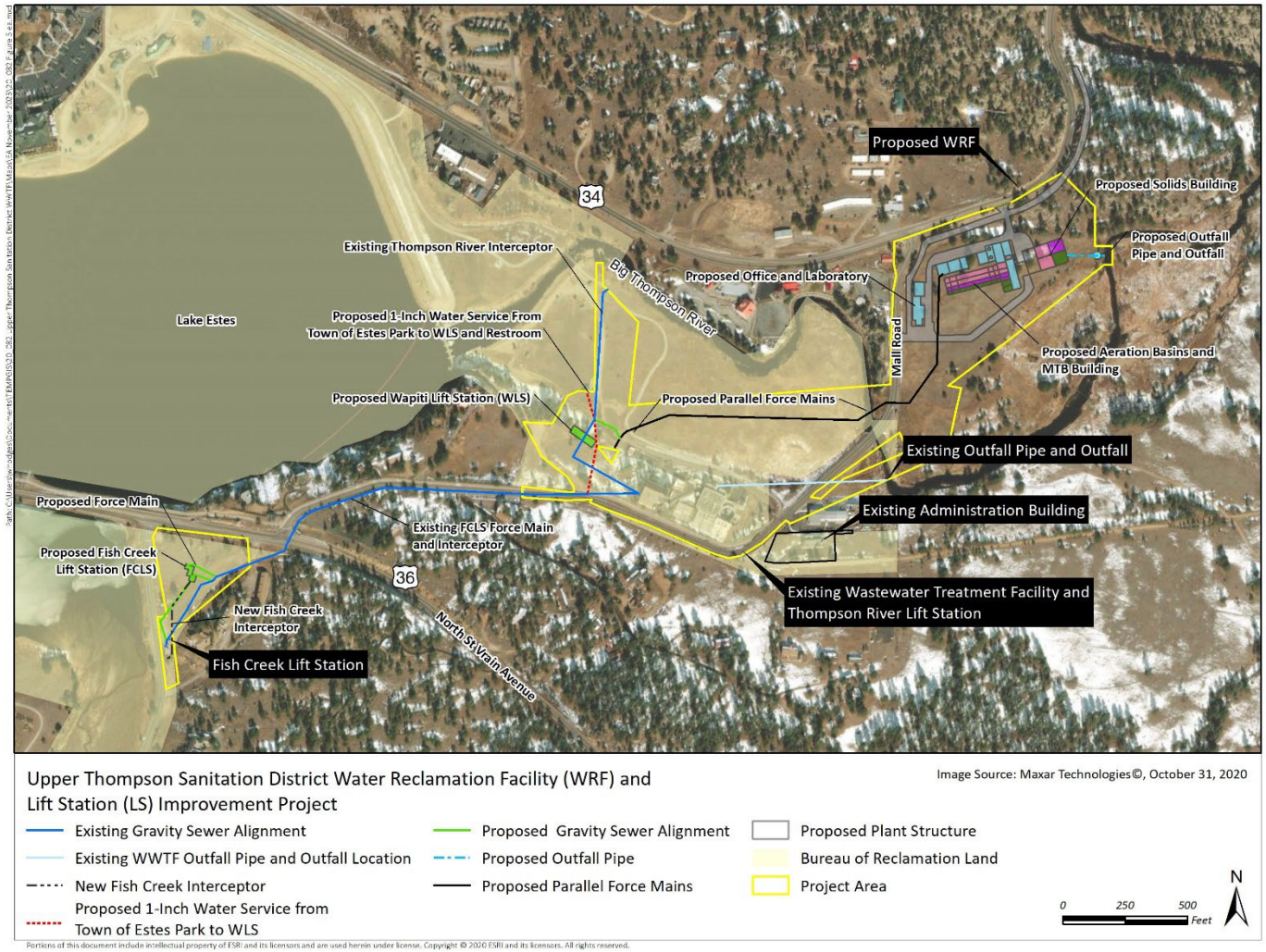

Figure 4. Proposed Action Alternative (Alternative B).

2.4 Permits and Authorizations

The following permits and authorizations would be required prior to project implementation:

- Authorization under Clean Water Act (CWA) Section 404, using Nationwide Permit (NWP) 7, as administered by the U.S. Army Corps of Engineers (USACE)
- CWA Section 402 National Pollutant Discharge Elimination System (NPDES) permit from the Environmental Protection Agency (EPA)
- Endangered Species Act (ESA) of 1973 as amended (16 USC 1531-1544, 87 Stat. 884) Section 7 concurrence from U.S. Fish and Wildlife Service (USFWS)
- National Historic Preservation Act of 1966 (NHPA; 16 USC 470 et seq.) Section 106 concurrence from the Colorado State Historic Preservation Office (SHPO)

Compliance with the following laws and Executive Orders is required before and during project implementation:

- Clean Air Act of 1963 (42 USC 7401)
- CWA of 1972 as amended (33 USC 1251 et seq.)
- Migratory Bird Treaty Act of 1918 (MBTA; 16 USC 703-712)
- Bald and Golden Eagle Protection Act of 1940 (16 USC 668-68c)
- Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (48 Federal Register 44716)
- NHPA

Below is a list of anticipated state, county and other permits needed under the under the Proposed Action.

- CDPHE Air Pollutant Emissions Notice
- CDPHE Construction Stormwater
- CDPHE Construction Dewatering Permits
- CDPHE Site Location Application (completed)
- CDPHE Design and Construction Approval
- Larimer County Site Planning Permit (under review)
- Larimer County Building Permit
- Larimer County Floodplain Development Permit. Conditional Letter of Map Revision (completed).
- Federal Emergency Management Agency (FEMA) Conditional Letter of Map Revision and Letter of Map Revision (completed).
- Larimer County 1041 Permit for interceptors located in the county (Mall Road and Big Thompson Interceptors). An exemption waiver has been granted by Larimer County.
- USACE CWA, Section 404 NWPs
- Reclamation Land Use Authorization for existing WWTF and FCLS site demolition
- Reclamation New Land Use Authorization for the new UTSD facilities to be constructed on Reclamation land.

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CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the existing conditions and discloses the environmental consequences of the Proposed Action and No Action Alternative. The baseline conditions or characteristics of each resource are discussed first, followed by predicted impacts associated with the Proposed Action and No Action Alternative. Direct and indirect effects are discussed together.

Cumulative effects for each resource are presented in the corresponding resource subsections below if they are reasonably certain to occur and are not speculative. For each resource, the spatial boundary is the area where other past, present, and reasonably foreseeable future actions have taken place, are taking place, or could take place and could result in cumulative impacts on the affected resource when combined with the impacts of the alternatives.

The significance of identified effects on the natural or human environmental quality were assessed based on context, duration, intensity, and type and are defined as follows.

Context is the setting in which an effect would occur.

Duration considers the timeframe over which an effect would occur; it also considers the frequency (return period) with which a particular impact would be expected to occur, if applicable. The duration of an effect can be defined as either short-term (temporary) or long-term (permanent). Short-term impacts are impacts expected to occur during construction or the first year of the project. Long-term impacts are impacts expected to occur post-construction and up to the life of the project, estimated at 25 years. Effects that may occur intermittently (e.g., during certain low-flow periods) are also considered long-term effects.

Intensity can be defined as no effect, negligible effect, minor effect, moderate effect, or major effect and its definition can vary by resource.

Type refers to whether the effects are beneficial, no effect, or adverse.

3.1 Reasonably Foreseeable Trends and Planned Actions

CEQ NEPA implementing regulations, 40 CFR 1502.15, require that NEPA documents "succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration, including the reasonably foreseeable environmental trends and planned actions in the area(s)." This EA describes the impacts, or environmental consequences, of the Proposed Action and alternatives, and the potential impact of the reasonably foreseeable future trends and planned actions combined with the Proposed Action that could cumulatively impact specific resources evaluated in this EA following the requirements of 40 CFR 1502.15.

Residential and Commercial Development. Increases in residential and commercial growth result in increases in runoff from impermeable surfaces and nonpoint source pollutants. These increases also result in increases in wastewater flows. Between 2010 and 2015, Estes Park and Larimer County experienced 1.0 and 2.1 percent annual growth rates, respectively (Mott MacDonald 2017). The Department of Local Affairs predicts a 1.85 percent annual growth rate for Larimer County between 2015 and 2040, which UTSD has adopted to gauge future flows.

Road Maintenance or Improvements. Road maintenance projects can directly and indirectly impact water quality of nearby waterbodies by increasing impermeable surfaces and runoff, which can lead to adverse water quality impacts such as sedimentation and pollution. Past road maintenance projects in the vicinity of the project area include improvements to U.S. Highway (US) 34 by Colorado Department of Transportation (CDOT) in response to the 2013 Big Thompson flood. As of August 2020, no ongoing or planned road maintenance or improvement projects are planned in the vicinity of the project area.

UTSD Projects. UTSD has several small collection system improvements underway and planned over the next six years. These projects would address system deficiencies and help meet CDPHE water quality standards. Additionally, UTSD has the long-term goal of consolidating with the Estes Park Sanitation District for treatment of the entire Estes Valley water.

Climate Change. Climate change is a reasonably foreseeable future condition that may impact the condition of the project area. Changes in temperature and precipitation patterns associated with climate change may have long-term negative impacts on the project area and its vicinity, such as changes in hydrology that could affect water supply, and treatment flows and changes in river flow associated with operating the facilities and discharges to the river.

3.2 Land Use, Important Farmlands, and Formally Classified Lands

3.2.1 Affected Environment

Larimer County Land Use / Zoning

The project area includes three parcels located in unincorporated Larimer County (Figure 5). The existing WWTF, TRLS, and FCLS are located on Reclamation land, and UTSD's use and continued use of the properties is covered by an existing land use authorization. UTSD was granted a perpetual easement for these facilities (WWTF, TRLS, and FCLS) in 1974. A portion of the project requires the use of Reclamation lands, and Reclamation would need to issue a new land use authorization to allow UTSD to construct, operate, and maintain the new UTSD facilities on Reclamation land. UTSD owns the parcel of the proposed WRF. For nonfederal lands, land use and development in Larimer County is guided by the Larimer County Comprehensive Plan (Larimer County 2019). Larimer County land uses and corresponding zoning districts are defined in the Larimer County Land Use Code (Larimer County 2020b) and shown on the Larimer County Zoning Map (Larimer County 2020c).

Parcels in the project area are zoned by Larimer County as Rural Estate (RE) and Commercial (C). Permitted uses in the Rural Estate zoning district include residential, agricultural, and industrial uses on a minimum lot size of 10 acres. Residential uses include single-family and group homes. Permitted agricultural uses include apiaries, farms, greenhouses, sod and tree farms, and nurseries. Permitted industrial uses include oil and gas drilling and production, and small solar facilities. Other uses are permitted under a special review or site plan review processes (Larimer County 2020b).

Permitted uses in the Commercial zoning district, aside from commercial, include agricultural and industrial on either 2.3-acre or 0.34-acre minimum lot sizes depending on the availability of public water and sewer. Permitted agricultural uses include apiaries, and permitted industrial uses include oil and gas drilling and production. Various transportation, utility, accommodation, recreation and institutional uses are permitted under a special review or site plan review processes (Larimer County 2020b).

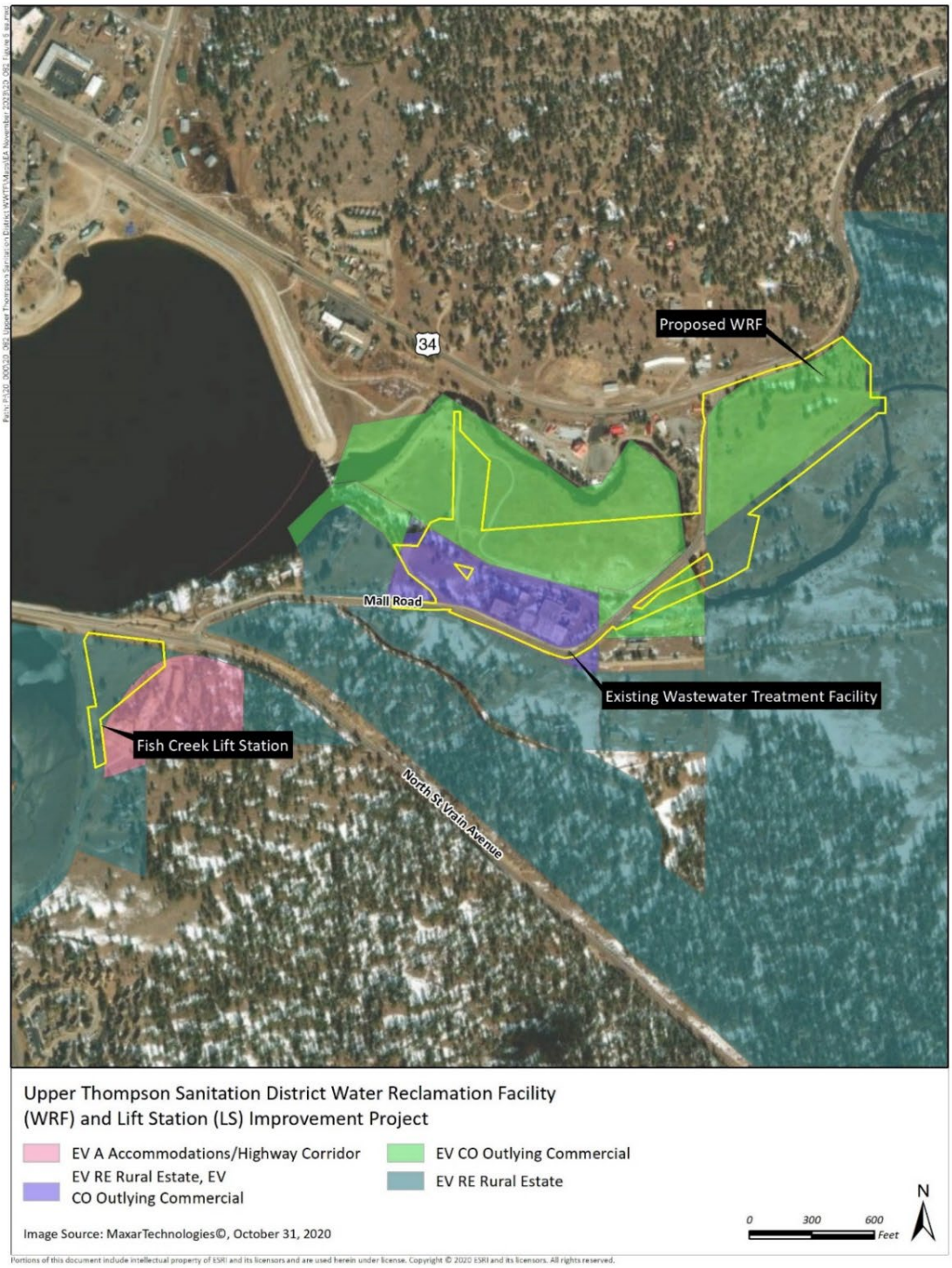

Figure 5. Land Use and Zoning.

The current land use of the UTSD property is the existing WWTF and associated infrastructure. The project area is bounded by commercial and residential land on the north; commercial and undeveloped land to the south; generally undeveloped land, offices, and a maintenance shop for UTSD to the east; and undeveloped and recreation land and Lake Estes to the west. Fishing along the Big Thompson River is popular upstream and downstream of the Mall Road bridge. No mining, large industrial, or energy developments are in the vicinity of the project area.

Lake Estes is located on the east side of Estes Park. The 160-acre reservoir was created by constructing Olympus Dam in 1948 as an impoundment on the Big Thompson River. Drainage into Lake Estes comes from native flows of the Big Thompson River and transmountain diversions from the Colorado-Big Thompson (C-BT) project. The primary functions of the reservoir are to provide regulation and storage of irrigation and municipal water, and to serve as an afterbay for hydroelectric power generation. The C-BT project stores, regulates, and diverts water from the Colorado River on the western slope of the Continental Divide to the eastern slope of the Rocky Mountains. It provides supplemental water for land irrigation, municipal and industrial use, hydroelectric power, and water-oriented recreational opportunities.

In addition to the lake surface area, there are approximately 145 acres of land surrounding the reservoir. These lands were acquired by the federal government as part of the C-BT project, authorized by the Secretary of the Interior and approved by the President of the United States on December 21, 1937. Reclamation owns the land, but Estes Valley Recreation and Park District (EVRPD), a public agency providing park and recreation programs for members of the community and visitors to Estes Park, manages the land and all associated recreational facilities for recreation purposes through Management Agreement #1300-07-01 at Lake Estes, Marys Lake and East Portal Reservoir.

Farmlands

The Farmland Protection Policy Act (FPPA) is intended to minimize the impacts that federal actions have on the unnecessary and irreversible conversion of farmland to nonagricultural use. It assures that, to the extent possible, federal actions are compatible with state and local governments, and private programs and policies to protect farmland. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland and can be forestland, pastureland, or cropland.

According to a soil report from the Natural Resources Conservation Service (NRCS), none of the mapped soil units are rated as prime farmland, unique farmland and land of statewide or local importance, as defined in 7 CFR 658 (Table 4; Figure 5). This finding was confirmed by Riley Dayberry, Assistant State Soil Scientist in a letter dated August 4, 2020.

Table 4. Mapped soil units and NRCS farmland soil ratings in the project area.

Soil Map Unit Symbol	Soil Map Unit Name	Slope	Texture	NRCS Farmland Rating	Percent of Project Area
52	Chaffee loam	Shallow	Coarse-loamy alluvium	Not prime farmland	42.3%
23	Lumpyridge-Rofork complex	Shallow	Coarse-loamy alluvium	Not prime farmland	27.0%
53	Chasmfalls coarse sandy loam, 1 to 15 percent slopes	Shallow	Coarse-loamy alluvium	Not prime farmland	29.7%
2704D	Typic Haplustolls-Cathedral family-Rock outcrop complex	Moderately deep to very deep	Colluvium and/or residuum	Not prime farmland	1.0%

*Shallow <20 inches; moderately deep 20-40 inches; deep 40-60 inches; very deep >60 inches.
**Hydrologic groups are explained below.
Source: U.S. Department of Agriculture (USDA), NRCS 2020.

Formerly Classified Lands

The project area does not contain formerly classified lands as defined in Rural Development Instructions CFR 1970(c) – Exhibit B.

3.2.2 Effects from the No Action Alternative

According to the Larimer Land Use Code, the existing WWTF is not permitted by right, special review, or site plan review as it is located on federally owned Reclamation land.

No impacts on prime farmland, unique farmland, or land of statewide or local importance, as defined in 7 CFR 658 would occur. The No Action Alternative would not result in direct, indirect, or cumulative impacts on formerly classified lands.

The No Action Alternative is not anticipated to result in indirect or adverse cumulative impacts on land use. The No Action Alternative would not induce additional new commercial or residential development in the vicinity of the project area because the existing facility has reached its capacity. Additionally, the No Action Alternative would not meet CDPHE requirements of its WWTF discharge permit.

The No Action Alternative would not result in direct, indirect, or cumulative impacts on farmlands or formerly classified lands.

3.2.3 Effects from the Proposed Action

According to the Larimer Land Use Code, the proposed WWTF is not permitted by right, special review, or site plan review. UTSD would address all applicable Larimer County zoning district and permitted use inconsistencies during the Larimer County location and extent review processes on the UTSD-owned parcel. Changes to the existing land use could occur but would be consistent with Larimer County Land Use Code. UTSD would comply with all applicable Larimer County Development Permit and ROW and access permits stipulations for the Proposed Action.

The Proposed Action would not result in adverse impacts on inhabited areas or other existing land uses, such as agriculture, forested, or recreation lands. No existing homes or businesses would be displaced as a result of the Proposed Action. Minor impacts on adjoining parcels may occur due to noise and traffic associated with construction, but these impacts would be temporary and would cease at the end of construction. The Proposed Action would not affect Reclamation's ability to operate and maintain the Colorado-Big Thompson Project as effects from the Proposed Action would be temporary. In addition, no

impacts on prime farmland, unique farmland, or land of statewide or local importance (as defined in 7 CFR 658) would occur. The Proposed Action would not result in direct, indirect, or cumulative impacts on formerly classified lands.

When combined with past, present, and reasonably foreseeable future actions, the Proposed Action would not result in additional adverse cumulative impacts on land use or farmlands. Population expansion and associated increases in wastewater flow in the wastewater utility service area are expected to continue. The Proposed Action would not likely induce additional new commercial or residential development in the vicinity of the project area because the existing facility has reached its capacity.

3.3 Floodplains

3.3.1 Affected Environment

The Olympus Dam was constructed from 1947 to 1949 as part of the Colorado-Big Thompson Project. Floodplain development within the project area and the adjacent areas is limited to Mall Road and the Mall Road bridge. Major changes to the floodplain include the 1976 and 2013 floods.

According to the FEMA Flood Insurance Rate Map (FIRM) number 08069C1113F (effective December 19, 2006) and 08069C1113F (effective December 19, 2006), portions of the project area are in FEMA 100 Year Flood Zone AE, FEMA 100 Year Flood Zone A, and FEMA 500 Year Flood Zone X (Figure 6). Zone AE and Zone A are considered Special Flood Hazard Area (Zone A), which is defined by FEMA as an area subject to inundation by the 1 percent annual chance flood event. Zone A identifies a special flood hazard area for which no base (100-year) flood evaluations have been provided, while Zone AE identifies a flood hazard area where base flood elevation has been derived from detailed hydraulic analyses. Approximately 4.26 acres of the Proposed Action facilities are in Zone AE and Zone A. The remainder of the project area is in Zone X, an area with minimal flood hazard, defined as areas outside the 0.2 percent annual chance floodplain.

The proposed WRF is considered a critical facility by Larimer County and, as such, must meet certain Colorado Water Conservation Board (CWCB) requirements for elevation above flood waters, as well as for emergency access, as determined to be practical and possible. The lowest adjacent grade elevations for critical facility structures located in a FEMA floodplain are recommended to be 2 feet above the 1% A.C. 100-year water surface elevation (WSEL) or above the 0.2% A.C. (500-year) floodplain, whichever requirement is more restrictive. Downstream of the Lake Estes Dam, the 0.2% A.C. flood discharges, and consequently WSELs, are much higher than those of the 1% A.C. flood. Therefore, the 0.2% A.C. flood WSELs are the controlling factors for the elevations to which the proposed WRF are recommended to be set for the facilities proposed directly in the path of the Mall Road overtopping flows. As an alternative, WWTF structures may be floodproofed to these same elevations. A Conditional Letter of Map Revision was approved for the WRF by FEMA and Larimer County in 2023. The FCLS and TRLS are not located in the floodplain.

Executive Order 11988 requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy or modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. FEMA and the USDA Rural Development implemented an eight-step decision-making process on projects that have potential impacts on wetlands or floodplains. The eight-step process required under Executive Order 11988 was completed and is included in Appendix A.

3.3.2 Effects from the No Action Alternative

No impacts on floodplains would occur under the No Action Alternative and no mitigation is proposed or needed.

3.3.3 Effects from the Proposed Action

Approximately 1.5 acres of the project area would be located in FEMA 100 Year Flood Zone AE and Zone A, based on current FIRM mapping. Preliminary designs show the headworks, BNR basin, a portion of the WWTF road, and installation of two gravity-flow sewers in FEMA 100 Year Flood Zone AE and Zone A. Demolition of the existing WWTF and TRLS, as well as the replacement of the FCLS, would not occur in any currently mapped FEMA Flood Zone.

A conceptual design exercise was conducted to evaluate potential effects on floodplains from the Proposed Action. Under proposed conditions, the site was conceptually elevated in three separate zones, with the west zone being elevated above the proposed 500-year WSEL. A conceptual layout of the proposed WRF is labeled on Figure 6. Under proposed conditions for the 100- and 500-year flood, the Mall Road overtops north of the bridge. Floodwater moving across the Mall Road flows east toward the proposed WRF site before encountering the elevated site that forces the flow around the site to the south. WSELs near the west side of the site are at elevations of approximately 7,428.0 feet for the 100-year and 7,431.2 feet for the 500-year flooding events. Under both flooding events, floodwater forced to the south by the elevated site drops in elevation as it reconnects with flow passing under the bridge. The recombined discharge moves around the proposed site at elevations below that of existing ground for the proposed site. At the downstream side of the proposed site, the 100- and 500-year WSELs are at elevations of 7,417.0 feet and 7,419.8 feet NAVD88, respectively.

While elevating only the west side of the site above the 500-year proposed WSEL (7,431.2 feet) may appear adequate, FEMA may consider the upstream blockage to be insufficient protection from flooding to consider the WSEL outside of the floodplain. Therefore, the greater of the existing conditions 0.2% A.C. flood WSEL or the 1% A.C. flood WSEL plus the 2 feet required by CWCB regulations should be used to determine the elevation of these middle and east facilities. In this case, the 1% A.C. flood WSEL plus 2 feet is higher than the 0.2% A.C. flood WSEL, resulting in recommended lowest floor elevations of 7,427.4 feet for the middle facilities and 7,426.6 feet for the east facilities. Floodproofing the facilities to the same elevations listed above may be an acceptable alternative to elevating the lowest floor elevations. This option would need to be discussed with and approved by Larimer County prior to design.

UTSD would comply with all FEMA National Flood Insurance Program and Larimer County floodplain development stipulations. Based on current FIRM mapping and preliminary design, UTSD would potentially submit a Letter of Map Revision through FEMA prior to construction of the Proposed Action. Based on this information, UTSD anticipates no change in base flood elevation and no direct or indirect impacts on the existing floodplain.

Completion of the eight-step process required under Executive Order 11988 revealed that the Proposed Action is the most practicable alternative.

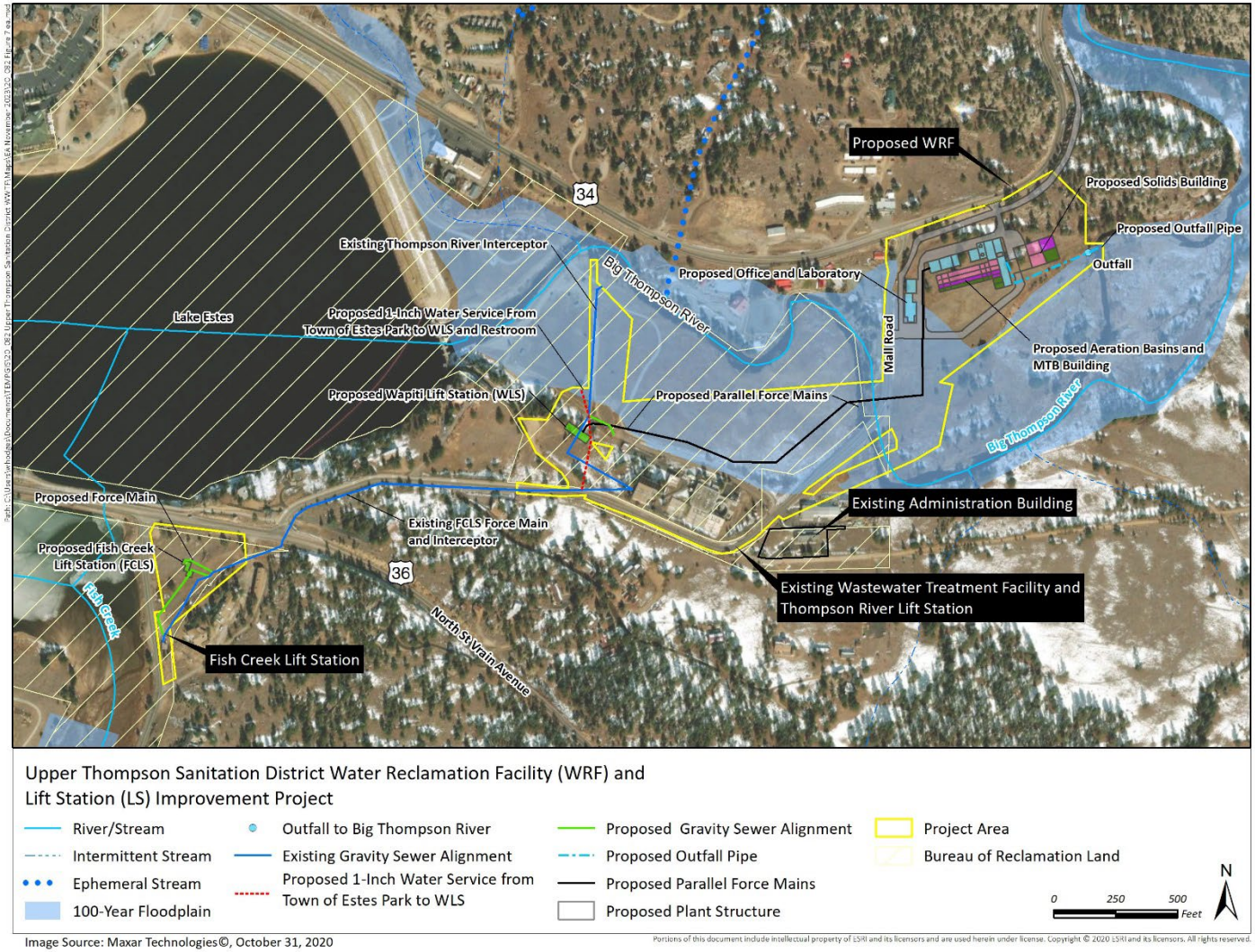

Figure 6. Floodplains.

3.4 Wetlands and Waters of the U.S.

The CWA protects the chemical, physical, and biological quality of waters of the U.S. The USACE Regulatory Program administers and enforces Section 404 of the CWA. Under Section 404, a USACE permit is required for the discharge of dredged or fill material into wetlands and other waters of the U.S. The USACE defines waters of the U.S. as "all navigable waters and their tributaries, all interstate waters and their tributaries, all wetlands adjacent to these waters, and all impoundments of these waters."

Federal agencies have responsibilities to avoid, minimize, and mitigate unavoidable impacts on wetlands under Executive Order 11990 and requires federal agencies to "consider factors relevant to a proposal's effect on the survival and quality of the wetlands." Executive Order 11990 requires that adverse effects on wetlands and other waters of the U.S. be avoided, where possible, in implementing federal actions.

3.4.1 Methods

On May 19, 2020 (2020 site visit), ERO Resources Corporation (ERO) conducted a jurisdictional wetland delineation for the project area following the methods for routine on-site wetland determinations in areas of less than 5 acres as described in the 1987 USACE Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to USACE Wetland Delineation Manual: Great Plains Region (Version 2.0) (USACE 2010). Data on wetland resources were collected during the 2020 site visit. The National Wetland Inventory was reviewed but is out of date since it was produced prior to the 2013 flood that altered the Big Thompson River channel and adjacent wetlands. The results of the wetland delineation will be provided to the USACE with the Section 404 NWP request.

3.4.2 Affected Environment

Wetlands occur in a portion of the project area and are associated with the Big Thompson River floodplain. Wetlands are adjacent to the Big Thompson River, which is a perennial tributary to the South Platte River, which eventually flows into the Missouri River. The Missouri River is considered a traditionally navigable water of the U.S., as defined in 33 USC 401 et seq. As such, the wetlands are likely waters of the U.S. because of adjacency to the Big Thompson River. A maximum of 0.83 acre of the project area overlaps water of the U.S. features, of which 0.12 acre consists of mapped open water and 0.71 acre consists of mapped wetlands (Figure 7). None of the mapped features were identified as wetland or riparian Potential Conservation Areas (PCAs) by the Colorado Natural Heritage Program (CNHP) during surveys of critical wetland and riparian areas in Larimer County (CNHP 2020). PCAs are considered the best quality from a natural plant community perspective or support rare or declining wetland/riparian plant or animal species (CNHP 2020).

3.4.3 Effects from the No Action Alternative

Under the No Action Alternative, the new WRF would not be constructed, the existing WWTF would not be demolished, and no impacts on waters of the U.S. or wetlands would occur.

3.4.4 Effects from the Proposed Action

Due to planning-level project design, precise impacts on wetlands are not known at this time. If any work is planned in the Big Thompson River or adjacent wetlands, a Section 404 permit would be required from the USACE for the placement of dredged or fill material in wetlands or below the ordinary high water mark. The proposed activities would likely be authorized under CWA Section 404 NWP 58 for utility line activities for water and other substances for the pipeline crossing and NWP 59 for water reclamation and reuse facilities. Impacts from pipeline installation would likely be temporary, and the affected areas

would be returned to preconstruction elevations. The outfall structure to the Big Thompson River would result in permanent impacts on the river. It is assumed that the permanent impacts would remain less than 0.1 acre. A preconstruction notification is required for outfall structures and would be submitted to the USACE. No indirect impacts on waters of the U.S. would occur under the Proposed Action. When combined with past impacts on wetlands, such as forest fires and flooding, the Proposed Action would result in negligible cumulative impacts on wetlands.

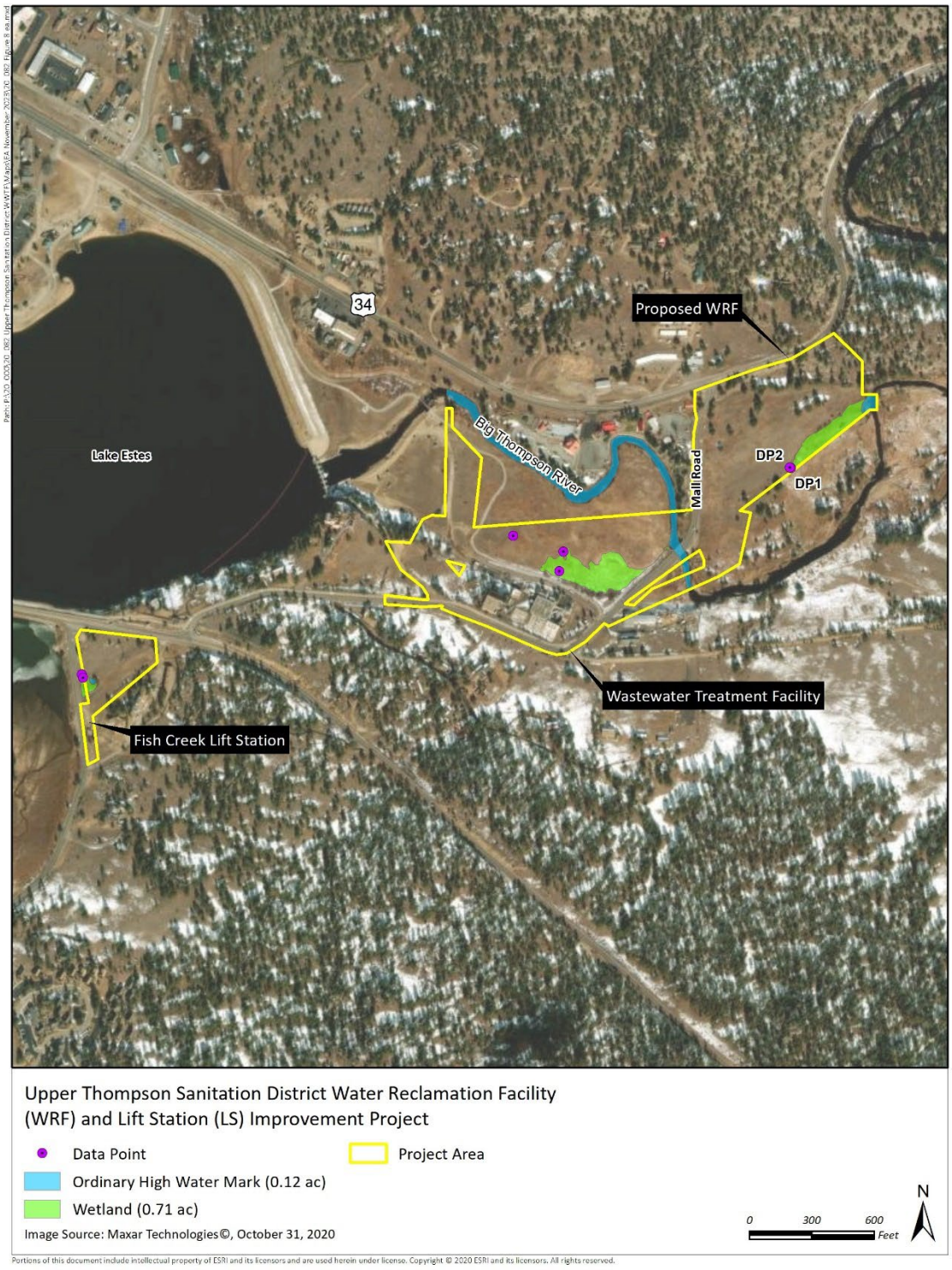

Figure 7. Wetlands and Waters of the U.S.

3.5 Soils and Geologic Resources

3.5.1 Affected Environment

Soils in the project area are typically formed in alluvial or glacial outwash material from mixed sources, or from granite, gneiss, and schist (USDA NRCS 2020). Most soils in the project are shallow (less than 20 inches to bedrock) and are generally loamy in the surface layers (Table 4).

The elevation in the project area ranges from 7,400 to 7,500 feet above sea level, and the topography is generally flat. The project area is semiarid with an average annual precipitation of approximately 14 inches and an average annual temperature of 44°F (USDA NRCS 2020).

Five soil map units were identified in the project area (Figure 8) (USDA NRCS 2020). Characteristics of the soil map units occurring in the project area are summarized in Table 4 (in the Affected Environment Section 3.2, Land Use, Important Farmlands, and Formally Classified Lands) and were taken from the USDA, NRCS.

Most soils in the project area are NRCS hydrologic group B soils, which are soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well-drained, or well-drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission. The Chaffee loam phase has a dual hydrologic group (B/D). The first letter (B) is for drained areas and the second letter (D) is for undrained areas. Hydrologic group D soils have a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission. Soils in the project area are not likely shrink-swell soils.

Due to the flat topography in the project area, the area is not at risk of hazards such as steep slopes or slides.

The project area lies in the middle zone of the Front Range uplift and is characterized by a gently rolling upland block of Proterozoic crystalline rocks with gently eastward declining summits and steep narrow and deeply incised canyons. This rolling upland is interpreted by many to be a relic of widespread erosion in the middle Tertiary (Cole et al. 2009). Geologic units near the Big Thompson River are Quaternary surficial deposits of unconsolidated fluvial deposits of silt, sand, and gravel (map unit Qal). The geologic units near the FCLS are Proterozoic and include Silver Plume Granite (map unit Ysp) (Bucknam et al. 1989). Three faults were recorded on USGS maps in the project area – one certain, one inferred, and one concealed.

3.5.2 Effects from the No Action Alternative

Under the No Action Alternative, the existing WWTF would not be demolished, and no new impacts on geologic resources or soil would occur.

3.5.3 Effects from the Proposed Action

The Proposed Action would result in temporary and permanent impacts on soils in the project area. Permanent impacts on soil would occur where new facilities and buildings are proposed. The disturbances would represent a fraction of the total mapped soil units in the Estes Park area. Overall, direct impacts on soils would be minor. The Proposed Action would be constructed to meet anticipated population

expansion and associated increases in wastewater flows and wastewater utility service. The Proposed Action would not likely result in additional new commercial or residential development.

Construction of new facilities in areas previously undisturbed could result in the disturbance of portions of the Silver Plume Granite, alluvium, and colluvium deposits underlying the ROWs. The disturbances would represent a fraction of the total geologic deposits in the project area and would represent a temporary direct impact. The Proposed Action is not anticipated to result in indirect impacts on geologic resources in areas previously disturbed. When combined with past, present, and reasonably foreseeable future actions, the Proposed Action would result in negligible cumulative impacts on soils and geologic resources.

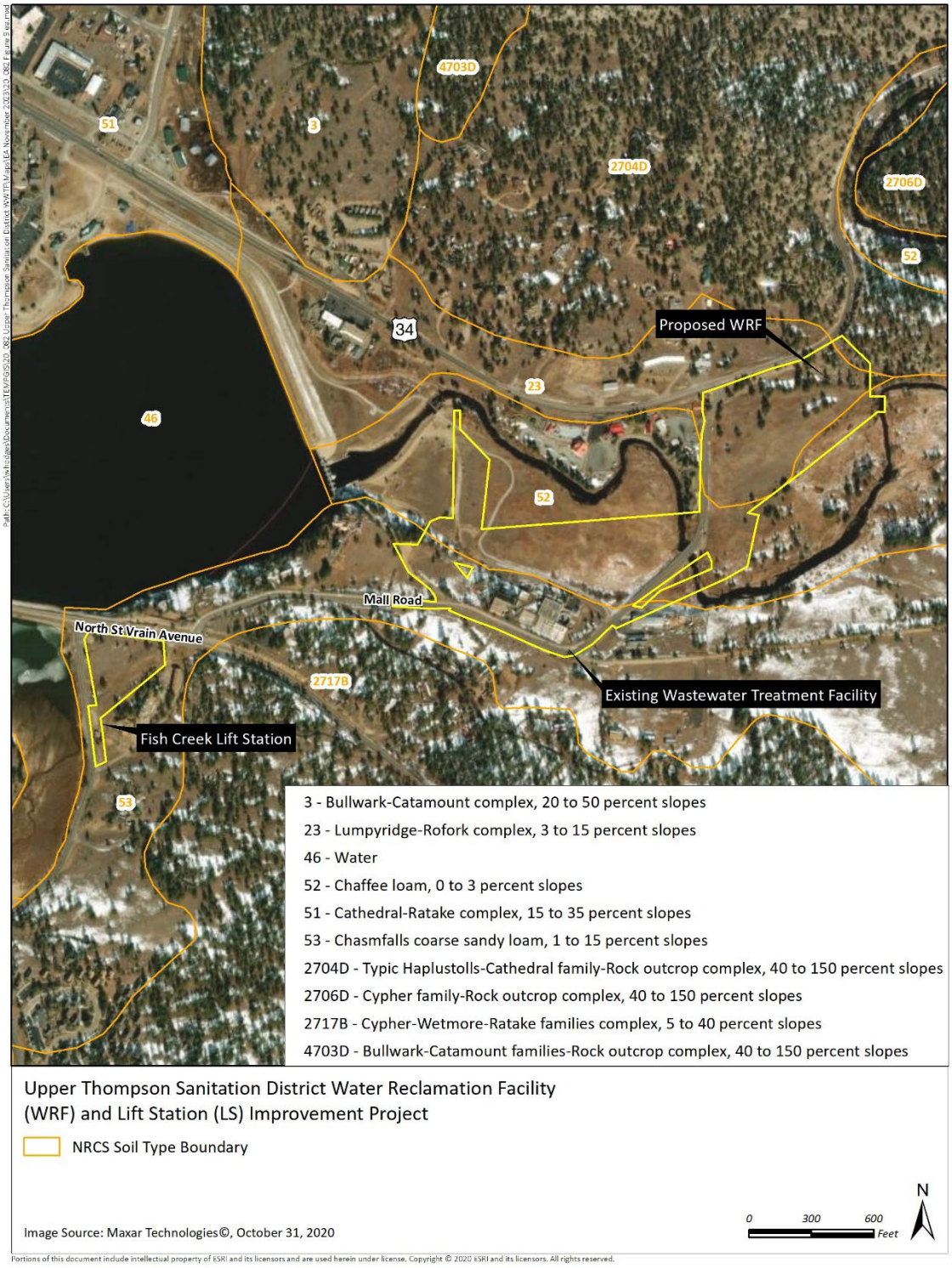

Figure 8. Soils and Farmland.

3.6 Water Resources

The Proposed Action is subject to the following regulations: CWA (33 USC §1251 et seq. [1972]), the Colorado Water Quality Control Act (Colorado Revised Statutes [CRS] §25-8-103), the Colorado Primary Drinking Water regulations, and the CDPHE Water Quality Control Commission regulations. Groundwater from designated basins in Colorado is regulated by the Colorado Groundwater Commission under the Groundwater Management Act (CRS 37-90 et seq.) and the Rules and Regulations for the Management and Control of Designated Groundwater (2 Code of Colorado Regulations [CCR] 410-1).

3.6.1 Affected Environment

Surface Water

The project area is in the Big Thompson subbasin (Hydrologic Unit Code 8: 10190006 and the Headwaters Big Thompson River subwatershed (Hydrologic Unit Code 10:1019000602) (USGS 2018). The subwatershed is a tributary to the Big Thompson River, which traverses the project area. The segment of the Big Thompson River (COSPBT02) in the project area flows from Estes Lake to its confluence with Cedar Creek (west to east). According to CDPHE water quality assessment data, this segment of the Big Thompson River has the following beneficial use classifications (Mott MacDonald 2020):

- Recreation Class E (Existing Primary Contact): Waters used for primary contact recreation.
- Aquatic Life, Class 1 Cold Water: Waters that are currently capable of sustaining a wide variety of cold water biota or could sustain cold water biota but for correctable water quality conditions.
- Agricultural: Waters suitable or intended to become suitable for irrigation of crops usually grown in Colorado and which are not hazardous to livestock.
- Domestic Water Supply: Waters suitable or intended to become suitable for potable water supplies.

These beneficial use classifications have corresponding water quality values and are shown in Table 3 of the Wastewater Treatment Facility (WWTF) Preliminary Engineering Report (PER) and Funding Project Design Criterion report (Mott MacDonald 2020).

The subsegments of the Big Thompson River (COSPBT02_A and COSPBT02_C) in the project area are also on the Section 303(d) list for impairment. Subsegment COSPBT02_A has impairments for copper (dissolved), mercury (total), and arsenic (total) (CDPHE 2020a). Subsegment COSPBT02_C is on the list for macroinvertebrates, arsenic (total), copper (dissolved), nitrate, and mercury (total) (CDPHE 2020a).

No Colorado Outstanding or Wild and Scenic waters are located in or near the project area.

Existing drainage facilities in the project area are associated with the Colorado-Big Thompson Project, the existing WWTF, and roads. This includes an effluent discharge at the existing WWTF site, roadside swales and ditches, and the Mall Road bridge (CDOT 2020). The effluent discharge site is located at downstream (east) of the Mall Road bridge over the Big Thompson River (approximately 50 feet) and on the south side of the Big Thompson River just north of UTSD's wastewater collection system building on the east side of Mall Road (Ravel 2020). UTSD has existing WWTF effluent limits associated with its NPDES permit issued by CDPHE WQCD for discharge wastewater effluent into the Big Thompson River (Colorado Discharge Permit CO0031844). In April 2020, preliminary effluent limits were provided by the CDPHE for a 3 mgd WWTF. CDPHE approved the site location application for the new WRF, WLS and force main, and FCLS.

The project area is located within the CDOT Municipal Separate Storm Sewer System (MS4) permit area boundary and subject to CDOT's water quality treatment and construction design standards for any work occurring within their permit boundary (CDOT 2022).

Groundwater

No major aquifers are located beneath the project area. Groundwater in the vicinity of the project area is likely from unnamed surficial aquifers. Based on topography observed in the project area, the depth to the uppermost groundwater is anticipated to be within 10 feet of the ground surface in areas in proximity to the Big Thompson River and is unknown in other areas of the project area (ERO 2020).

Of the 47 well permit applications submitted for Section 29, Township 5 North, Range 72 West of the 6th P.M., 4 are in the project area. The first permit is located on the undeveloped portion of the site for a 24-foot-deep monitoring/ sample well. The second and third permits are located at the existing WWTF site. Both permits are for the same well as the well that was redrilled due to contamination. According to CDWR, this well (permit number 148589) may be used by the Estes Park Ride-A-Kart (commercial use) located north of the project area (CDWR 2020). However, based on conversations with UTSD, the well provides nonpotable water to the existing WWTF site. The fourth permit occurring in the project area is for an expired permit for an industrial well for UTSD (ERO 2020).

According to the results of a preliminary geotechnical report, groundwater was measured at the proposed WRF at depth ranging from about 4 to 14 feet below existing grade (Terracon 2020).

No sole source aquifers, as designated by the EPA are in the state of Colorado.

3.6.2 Effects from the No Action Alternative

Under the No Action Alternative, existing surface water and groundwater impacts would continue to occur. Wastewater from the existing WWTF would not achieve compliance with future CDPHE nutrient (phosphorus and nitrogen) and metals (copper and arsenic) standards.

3.6.3 Effects from the Proposed Action

Surface Water

During construction of the Proposed Action, impacts on surface water features could occur during heavy precipitation events, resulting in temporary increases in sedimentation in drainages in the project area. However, the Proposed Action would comply with all applicable construction stormwater quality standards and requirements including, but not limited to, Larimer County, CDOT, and CDPHE to minimize construction-related impacts on surface water quality. The project area is located outside Larimer County's MS4 permit area, but within CDOT's MS4 permit boundary. Coordination with CDOT during final design and construction, implementation of Best Management Practices (BMPs), and development and implementation of a stormwater management plan with appropriate control measures would minimize any temporary impacts on water quality. Overall, when considering the mitigation measures to reduce project effects on water quality, construction-related impacts on surface waters in the project area would likely be negligible.

UTSD would obtain a new NPDES permit for the WTF and site stormwater construction permit from CDPHE. After construction, UTSD would comply with all NPDES permit restrictions and site stormwater permit requirements. Negligible changes to surface water quality in the project area would occur, although it is anticipated that a small section of the Big Thompson River between the former discharge point and the new discharge point would have improved water quality. Due to the upgraded facilities

proposed under the Proposed Action, stream discharge is anticipated to meet the permit stipulations and stream standards. No impacts on water rights are anticipated from the Proposed Action.

Under the Proposed Action, no indirect impacts on surface water resources would occur. When combined with past, present, and reasonably foreseeable future actions, the Proposed Action would not result in additional adverse cumulative impacts on surface water resources.

Groundwater

The maximum depth of the disturbances (25 to 35 feet) for construction of the Proposed Action is likely to encounter groundwater. Impacts on groundwater quality are not anticipated to occur under the Proposed Action, and UTSD would comply with all applicable Colorado Division of Water Resources (CDWR) groundwater regulations and obtain a CDPHE dewatering permit for temporary construction dewatering activities (permit COGO8000). BMPs for sediment control and runoff would need to be implemented. Standard BMPs are listed below (Table 11). No indirect, groundwater impacts are anticipated. When combined with past, present, and reasonably foreseeable future actions, the Proposed Action would not result in additional adverse cumulative impacts on groundwater resources.

3.7 Biological Resources

3.7.1 Methods

Assessment of current habitats include a review of existing information available from Colorado Parks and Wildlife (CPW), CNHP, the Natural Diversity Information System, and the USFWS to identify and address any potential issues associated with direct impacts from construction or operations of project facilities. ERO also conducted a site visit on May 19, 2020 to assess habitat. The following sections discuss threatened, endangered, and candidate species as well as sensitive or rare species, migratory birds, and large game that may be found in the project area.

3.7.2 Federal- and State-Listed Threatened, Endangered, and Candidate Species and Colorado Species of Concern

3.7.2.1 Affected Environment

The USFWS lists several threatened and endangered species with potential habitat in Larimer County, or potentially affected by projects in Larimer County (Table 5; Service 2024). No critical habitat has been designated in the project area. State special status species include species that are not protected under the ESA but are listed by CPW as threatened, endangered, or of concern in Colorado, as required by State Statute 33, or Tier 1 species in the Wildlife Action Plan (CPW 2015). State species are included in Table 5 if suitable habitat is present in the project area. No PCAs identified by CNHP overlap the project area, and the closest PCA is about 0.6 mile away at Hermit Park. The nearest PCA along the Big Thompson River is more than 4 miles east of the project area (CNHP 2020).

Table 5. Federally threatened, endangered, and candidate species and state-listed and Tier 1 species potentially found in the project area or potentially affected by the project.

Common Name	Scientific Name	Status*	Habitat	Suitable Habitat Present or Potential to be Affected?
Mammals				
Canada lynx	*Lynx canadensis*	FT, SE, Tier 1	Climax boreal forest with a dense understory of thickets and windfalls	No suitable habitat in the project area; below the known elevation limit for this species.
Gray wolf	*Canis lupus*	FE, SE, EXPN	Forests, grasslands, shrublands, alpine areas	Low potential – known population in Jackson County. A reintroduction program led by CPW started reintroducing 10 wolves west of the Continental Divide in Summit and Grand Counties in December 2023. In 2023, the USFWS designated the reintroduced Colorado wolf population as Experimental Population, Non-Essential under Section 10(j) of the ESA.
Fringed myotis	*Myotis thysanodes*	Tier 1	Roosts in caves, mines, cliff faces, rock crevices, old buildings, bridges, snags, and other sheltered sites	Low potential – individuals may roost in the project area.
Little brown myotis	*Myotis lucifugus*	Tier 1	Roosts in trees and under bark, rocks, buildings, woodpiles, and other structures	Low potential– individuals may roost in the project area
Preble's meadow jumping mouse	*Zapus hudsonius preblei*[3]	FT, ST	Shrub riparian/wet meadows	Nearby trapping surveys have yielded negative captures. The riparian and wet meadow habitat in the project area is fragmented and isolated from other suitable habitat and Preble's populations downstream. USFWS issued a "no concerns" determination in 2021.
River otter	*Lontra canadensis*	ST	Rivers, streams, lakes	Low potential – may forage along the Big Thompson River near the project area.
Townsend's big-eared bat	*Corynorhinus townsendii pallescens*	SC, Tier 1	Woodlands with rocky outcrops and cliffs, roosts in caves, mines, and rock crevices	No suitable habitat in the project area.
Birds				
American peregrine falcon	*Falco peregrinus*	SC	Open spaces associated with high cliffs and bluffs overlooking rivers and coasts	No suitable habitat in the project area.
Bald eagle	*Haliaeetus leucocephalus*	SC	Open water and rivers; large trees for nesting and roosting	Low potential – individuals may forage in the project area.

Common Name	Scientific Name	Status*	Habitat	Suitable Habitat Present or Potential to be Affected?
Eastern black rail	*Laterallus jamaicensis* ssp. *jamaicensis*	FT	Wetlands, marshes, and moist riparian areas.	No suitable habitat in the project area.
Golden eagle	*Aquila chrysaetos*	Tier 1	Undeveloped areas with open and semiopen spaces in mountainous areas	Low potential – individuals may roost or forage in the project area. No known nests within 0.25 mile of the project area.
Mexican spotted owl	*Strix occidentalis*	FT, ST	Closed canopy forests in steep canyons; east side of the Wet Mountains	No suitable habitat in the project area
Piping plover	*Charadrius melodus*[2]	FT	Sandy lakeshore beaches and river sandbars	No habitat in the project area and no new depletions are associated with the Proposed Action. Water storage and use would remain unchanged from current operations in this location. Depletions are addressed under the Platte River Recovery Implementation Program. No additional consultation is necessary.
Whooping crane	*Grus americana*[2]	FE	Mudflats around reservoirs and in agricultural areas	No habitat in the project area and no new depletions are associated with the Proposed Action. Water storage and use would remain unchanged from current operations in this location. Depletions are addressed under the Platte River Recovery Implementation Program. No additional consultation is necessary..
Fish				
Greenback cutthroat trout	*Oncorhynchus clarki stomias*	FT, ST	Cold, clear, gravel headwater streams and mountain lakes	No effect – the last remaining individual was identified in Bear Creek in El Paso County in 2018. Ongoing reintroduction efforts are occurring in Herman Gulch, Dry Gulch, Zimmerman Lake, and a fishless tributary to the Poudre River.

Common Name	Scientific Name	Status*	Habitat	Suitable Habitat Present or Potential to be Affected?
Pallid sturgeon	*Scaphirhynchus albus*[2]	FE	Large, turbid, free-flowing rivers with a strong current and gravelly or sandy substrate	No habitat in the project area and no new depletions are associated with the Proposed Action. Water storage and use would remain unchanged from current operations in this location. Depletions are addressed under the Platte River Recovery Implementation Program. No additional consultation is necessary.
Reptiles and Amphibians				
Boreal toad	*Anaxyrus boreas*	SE, Tier 1	Beaver ponds, wetlands, streams, and wet meadows above 7,500 feet in elevation	Potential habitat in wetlands adjacent to the project area. Suitable habitats would not be impacted by the project.
Northern leopard frog	*Lithobates pipiens*	SC, Tier 1	Wet meadows and shallows of marshes, ponds, lakes, reservoirs, streams, and irrigation ditches up to 11,000 feet in elevation	Potential habitat in wetlands adjacent to the project area. Suitable habitats would not be impacted by the project.
Wood frog	*Lithobates sylvaticus*	SC	Wet meadows, marshes, and ponds near the Colorado River and North Platte River headwaters	Known to occur in Rocky Mountain National Park. The project area is isolated from known populations so the potential to occur is very low.
Insects				
Monarch butterfly	*Danaus plexippus plexippus*	FC	Dependent on milkweeds (Asclepiadoideae) as host plants and forage on blooming flowers; a summer resident	No milkweed on-site and no habitat would be impacted. Not located in a migration route.
Plants				
Ute ladies'-tresses orchid (ULTO)	*Spiranthes diluvialis*	FT	Moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes below 7,800 feet in elevation	Potential suitable habitat in wetlands adjacent to the project area. Suitable habitats would not be impacted by the project. The project area is near the upper elevation for this species.

Common Name	Scientific Name	Status*	Habitat	Suitable Habitat Present or Potential to be Affected?
Western prairie-fringed orchid	*Platanthera praeclara*[2]	FT	Mesic and wet prairies and sedge meadows	No habitat in the project area and no new depletions are associated with the Proposed Action. Water storage and use would remain unchanged from current operations in this location. Depletions are addressed under the Platte River Recovery Implementation Program. No additional consultation is necessary.

*FT – Federally threatened, FE – Federally endangered, FC – Federal Candidate, ST – State threatened, SE – State endangered, SC – State species of concern, Tier 1 – State species of greatest conservation need.
Sources: Service 2024; CPW 2020a; CPW 2015.

3.7.2.2 Effects from the No Action Alternative

The No Action Alternative would not result in any new impacts on any federally listed threatened or endangered species, state-listed species, or Tier 1 species. Existing conditions in and in the vicinity of the project area would not change.

3.7.2.3 Effects from the Proposed Action

The Proposed Action would have no effect on the federally listed Canada lynx, gray wolf, Preble's meadow jumping mouse, Mexican spotted owl, greenback cutthroat trout, or Ute-ladies'-tresses orchid. No suitable habitat occurs in or adjacent to the project area for these species. On March 15, 2021, the USFWS submitted a letter stating to UTSD that "the Service has no concerns with this project resulting in impacts on species listed as candidate, proposed, threatened, or endangered" (Appendix C). Reclamation also obtained an official species letter from the USFWS Information for Planning and Consultation (IPaC) database. Reclamation has determined that the project would have no effect on federally listed species (Appendix C).

The piping plover, whooping crane, pallid sturgeon, and western prairie fringed orchid are species that rely heavily on aquatic habitats provided by the Platte River system. Effects associated with the Proposed Action on Platte River listed species were previously addressed in a biological opinion (USFWS 2006) and supplemental biological opinion (2018) for Platte River Recovery Implementation Program in Colorado, Wyoming, and Nebraska. These species do not occur in the project area, and any additional depletions associated with the Proposed Action have already been consulted on. Reclamation and the water users rely on the ESA protection provided by the Platte River Recovery Implementation Program, and no new Section 7 consultation is needed for these species.

The Proposed Action would have no effect on the monarch butterfly, which is a candidate species for ESA listing. No monarch butterfly habitat occurs in the project area.

The Proposed Action would not directly affect Colorado state species of concern including the fringed myotis, little brown myotis, river otter, Townsend's big-eared bat, American peregrine falcon, or golden eagle because of the lack of habitat in the project area.

Bald and golden eagles are protected under the federal Bald and Golden Eagle Protection Act (16 USC 668-668d). Lake Estes immediately west of the project area is considered bald eagle winter concentration and summer forage range; however, no known bald eagle nests, roosts, communal roosts, or concentration areas occur near the project area (CPW 2023). No suitable habit golden eagle habitat occurs in the project area. The Proposed Action is predicted to have no effect on bald or golden eagles.

The remaining state-listed species (boreal toad, northern leopard frog, and wood frog) have the potential to occur in wetlands adjacent to the project area; however, because the majority of project activities would be limited to uplands outside of the wetland area, impacts on these species would likely be negligible. An outfall would be constructed and would discharge into the Big Thompson River. The footprint of the outfall would be relatively small and is anticipated to affect less than 0.1 acre of wetlands. Adjacent upland habitat would also be directly affected by the Proposed Action. Any effects on state-listed species and Tier 1 species habitat associated with construction would likely be temporary. However, it is unlikely that construction would directly affect any of these species, or even temporarily displace individuals. In addition, temporary or permanent impacts from project operations and maintenance would be negligible.

The effects of vegetation removal on habitat availability would be minimized to the extent practicable by narrowing the construction ROW (Table 11). Where impacts are unavoidable, native vegetation areas would be revegetated with native species appropriate for the hydrologic conditions. Reclamation has determined that the Proposed Action would result in no effects on ESA-listed species or designated critical habitat. In addition, when combined with past, present, and reasonably foreseeable future actions, the Proposed Action would not result in additional adverse cumulative impacts on federal- and state-listed species.

3.7.3 Large Game

3.7.3.1 Affected Environment

The project area intersects or is located in overall range for black bear, elk, mountain lion, and mule deer (CPW 2023). Large game wildlife species, such as mule deer and elk, are economically important species in Colorado. No major large game migration routes transect the project area, although ridgelines and drainages often serve as smaller movement corridors for game species as well as other wildlife species (CPW 2023). A known migration corridor occurs about 2 miles southeast of the project area (CPW 2023).

The project area falls within the overall range for black bear and mountain lion, and includes summer and fall concentration range for black bear. The project area also lies within human conflict areas identified by CPW for both black bear and mountain lion (CPW 2023). In the fall, black bears concentrate in areas “for the purpose of ingesting large quantities of mast and berries to establish fat reserves for the winter hibernation period” (CPW 2023). Black bears occur throughout the surrounding area and may occasionally traverse the project area. Mountain lion habitat overlaps deer populations and is associated with areas of conifer forests and rock outcrops.

The project area overlaps elk and mule deer winter range, summer range, winter concentration areas, and severe winter range, and summer range for moose. The project area is within an identified mule deer concentration area and is between elk and mule deer highway crossing conflict areas (US 34 and US 36) where elk or mule deer movements traditionally cross roads, presenting potential conflicts between mule deer and motorists (CPW 2023). The project area is also located within the overall range for wild turkey (CPW 2023).

Winter range is defined by CPW as an area necessary for winter survival and summer range is where 90 percent of individuals are located between spring green-up and the first heavy snowfall. ***Severe winter range*** is defined as "winter range where 90 percent of the individuals are located when the annual snowpack is at its maximum and/or temperatures are at a minimum in the two worst winters out of ten." ***Concentration areas*** are defined as "that part of the overall range where higher quality habitat supports significantly higher densities than surrounding areas" (CPW 2023). Mule deer are the most generalized big game species in the state and are found throughout the entire state. In northern Colorado, mule deer are seen most frequently in shrublands and areas containing some vegetative cover. Elk are also widespread in the area and are important to the local economy from tourism, hunting and recreation.

3.7.3.2 Effects from the No Action Alternative

The No Action Alternative would have no direct effects on large game overall ranges. No mitigation is proposed or needed for large game under the No Action Alternative.

3.7.3.3 Effects from the Proposed Action

The Proposed Action would likely result in some limited temporary impacts on deer, elk, black bear, and mountain lion in the project area. Because of the proximity of existing development and roads, it is likely the temporary effects from construction would have no long-term adverse effects on large game species. Large game ranges are quite extensive, and the overall effects on habitat would be negligible because of the size of the ranges and the abundance of surrounding unaltered native habitat. UTSD would implement any recommended BMPs from CPW prior to construction.

No indirect impacts on large game ranges or species would occur. When combined with past, present, and reasonably foreseeable future actions, the Proposed Action would not result in additional adverse cumulative impacts on large game ranges or species.

3.7.4 Migratory Birds

3.7.4.1 Affected Environment

Migratory birds, as well as their eggs and nests, are protected under the MBTA. The MBTA does not contain any prohibition that applies to the destruction of a bird nest alone (without birds or eggs), provided that no possession occurs during the destruction. While the destruction of a nest by itself is not prohibited under the MBTA, nest destruction that results in the unpermitted take of migratory birds or their eggs is illegal and fully prosecutable under the MBTA (Service 2003). The regulatory definition of a take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect; or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect (50 CFR 10.12).

The project area occurs mostly in upland grassland habitat dominated by a mix of native and nonnative grasses. The project area is bordered by forested areas and wetlands to the east and south. These areas provide nesting and foraging habitat for many different species of migratory birds. Common species such as American robin, black-billed magpie, American crow, and Steller's jay likely roost and forage in the project area. CPW identifies the area as great blue heron and osprey foraging areas. Osprey have nested adjacent to Lake Estes, west of the project area (CPW 2023).

The Important Bird Area (IBA) program is an international effort to protect essential habitat for bird populations (Wells et al. 2005). In the U.S., the National Audubon Society leads the effort to identify, monitor, and protect IBAs. No IBAs as identified by the National Audubon Society are located in or adjacent to the project area. The closest IBA is in Rocky Mountain National Park, about 6 miles west of the project area. During the 2020 site visit, no nests were observed in the project area.

3.7.4.2 Effects from the No Action Alternative

The No Action Alternative would have no effect on migratory birds and raptors because there would be no removal of existing vegetation and no change in current operations.

3.7.4.3 Effects from the Proposed Action

The Proposed Action could result in the displacement of some migratory bird species, forcing them to adjacent lands containing similar habitat, but would not adversely affect the overall population of nesting birds in the project area. The direct effects on raptors and other migratory birds from the project would be negligible because of similar surrounding habitat and nearby undisturbed areas.

Implementation of environmental commitments (Chapter 4) would mitigate potential impacts on migratory birds. Vegetation would be cleared outside of the migratory bird nesting season (February 1 through August 31) to minimize potential conflicts with the MBTA and Bald and Golden Eagle Protection Act. If vegetation-disturbing activities are planned during the breeding season, the area would be surveyed for active nests no more than two weeks prior to commencement of the activity to ensure compliance with state and federal regulations. If active nests are found during nest surveys, a buffer would be established in coordination with CPW biologists. CPW recommends a 0.25-mile buffer around bald and golden eagle and osprey nests (CPW 2020b). Nest surveys would be valid for a two-week period and repeated as necessary. These measures would reduce the impacts on nesting birds and allow the young to fledge without disturbance.

Under the Proposed Action, no indirect impacts on migratory birds or raptors would occur. When combined with past, present, and reasonably foreseeable future actions, the Proposed Action would not result in additional adverse cumulative impacts on raptors and other migratory birds.

3.7.5 Vegetation

3.7.5.1 Affected Environment

Most of the project area consists of uplands dominated by smooth brome (*Bromus inermis*), blue grama (*Bouteloua gracilis*), Canada wildrye (*Elymus canadensis*), fringed sage (*Artemesia frigida*), and common mullein (*Verbascum thapsus*). Forested areas dominated by ponderosa pine (*Pinus ponderosa*) occur near the northern and eastern project area boundaries, and wetlands dominated by bluejoint reedgrass (*Calamagrostis canadensis*) and various sedges (*Carex* sp.) occur along the southern portion of the project area.

Noxious Weeds

The Colorado Noxious Weed Act (Act) was created in 1990 and consists of three categorical lists: A, B, and C (Appendix B). The state also added a watch list. The most recent update occurred on March 31, 2017 (Colorado Department of Agriculture 2017). Noxious weeds are defined in the Act as:

"An alien plant or parts of an alien plant that have been designated by rule as being noxious or has been declared a noxious weed by a local advisory board, and meets one or more of the following criteria:

a. Aggressively invades or is detrimental to economic crops or native plant communities;
b. Is poisonous to livestock;
c. Is a carrier of detrimental insects, diseases, or parasites;
d. The direct or indirect effect of the presence of this plant is detrimental to the environmentally sound management of natural or agricultural ecosystems."

The Act directs the USDA to develop and implement management plans for all List A and List B noxious weed species. The management plan for List A species is always to eradicate. For List B species, timelines are specified for eventual eradication as part of the management objectives. One List B species, Canada thistle (*Cirsium arvensis*), was documented in the project area. Two List C species, common mullein and cheatgrass (*Bromus tectorum*), were also observed.

Reclamation's *Integrated Pest Management Plan* provides a framework for the implementation of pest management in the Eastern Colorado Area Office, including parts of the C-BT project (see Section 3.2.1 for a description of the C-BT project; Reclamation 2022). The Integrated Pest Management Plan outlines pest control techniques to be used on Reclamation land to control undesirable plant and animal species on the lands, waters, or facilities that fall under its jurisdiction.

3.7.5.2 Effects from the No Action Alternative

Under the No Action Alternative, vegetation would likely remain similar to existing conditions, although noxious weeds in the project area would not likely expand.

3.7.5.3 Effects from the Proposed Action

Vegetation clearing during construction of the Proposed Action could result in direct impacts on up to 32.0 acres, including up to 16.0 acres of vegetation on Reclamation land. The vegetation consists mostly of a mix of native and introduced grasses and forbs. The vegetation community consists of common species that are widespread throughout the Estes Valley; therefore, overall direct effects on vegetation on a county level would be minor. However, the Proposed Action may increase the spread of noxious weeds during construction.

Mitigation measures would be implemented to minimize impacts of the Proposed Action on native vegetation and the spread of noxious weeds (Table 11). The effects on native vegetation would be minimized to the extent practicable by narrowing the construction ROW. Where impacts are unavoidable, native vegetation areas would be revegetated with a native species mix appropriate for the hydrologic conditions and that provide adequate forage for large game in the area. Areas that do not have structures and paving would be replaced with native vegetation to match existing vegetation. Guidance outlined in the Integrated Management Plan (Reclamation 2022) and environmental commitments listed in the *Resource Management Plan and Environmental Assessment Finding of No Significant Impact for Lake Estes, Marys Lake, East Portal, and Common Point (*Reclamation 2008) would be followed to ensure compliance with Reclamation's goals and policies.

Under the Proposed Action, no indirect impacts on vegetation would occur. When combined with past, present, and reasonably foreseeable future actions, the Proposed Action would not result in additional adverse cumulative impacts on vegetation.

3.8 Cultural Resources

A "cultural resource" is defined as an object, archaeological site, structure, or building constructed 50 or more years ago. A cultural resource listed in or eligible for listing in the National Register of Historic Places (NRHP) (54 USC §300101 et seq.) (National Historic Preservation Act (NHPA), 1966, as amended) or the State Register of Historic Places is a "historic property." Pursuant to Section 106 of the NHPA, federal agencies must consider the undertaking's (i.e., the Proposed Action) potential effects on historic properties prior to permitting, funding, or conducting ground-disturbing activities. In the event of a post review discovery of cultural resources within the area of potential effects (APE), all ground disturbing work would stop and Reclamation would resume consultation with Colorado State Historic

Preservation Office (SHPO) and all federally recognized tribes with ancestral affiliation to the APE regarding appropriate site treatment.

Reclamation is the lead agency for the Project because the Proposed Action cannot be completed without authorization from Reclamation to complete portions of the Proposed Action on Reclamation land. The USACE will also be involved because authorization will be needed for ground-disturbing activities in jurisdictional waters of the US, pursuant to Section 404 of CWA. NHPA Section 106 consultation involved the CDPHE who will be authorizing federal funds issued by the Water Infrastructure and Innovation Act administered by the EPA.

3.8.1 Indian Trust Assets

Indian Trust Assets (ITAs) are legal interests in property held by the U.S. for Indian tribes or individuals. ITAs include, but are not limited to, lands, minerals, hunting and fishing rights, traditional gathering grounds, and water rights. The DOI's policy is to recognize and fulfill its legal obligations to identify, protect, and conserve the trust resources of federally recognized Indian Tribes and tribal members, and to consult with the tribes on a government-to-government basis whenever plans or actions affect tribal trust resources, trust assets, or tribal health and safety (512 DM 2).

Under the DOI's policy, Reclamation is responsible for identifying any potential impacts to ITAs as part of the planning process for the Proposed Action. Any impacts to ITAs as a result of the Proposed Action must be addressed within this EA. When an impact to ITAs cannot be avoided, Reclamation would provide appropriate mitigation or compensation to the federally recognized Indian tribes or individuals. The affected environment for ITAs corresponds to the APE for direct effects for cultural resources. Based on Reclamation's analysis and consultation, no ITAs are located in or near the project area.

3.8.2 Methods

Reclamation defined the APE as 36.6 acres to include the Proposed Action's planning area and potential alternatives. A Class I review of the APE, followed by a Class III pedestrian survey were completed by the archaeological contractor, ERO, to identify potential historic properties. Exploratory shovel tests were completed across landforms where buried archaeological sites may be present, but not visible on the surface. Two Indigenous archaeological sites were tested to evaluate the potential for intact significant cultural deposits. The identification efforts were summarized in a Cultural Resources Report submitted to the Reclamation (Mayo et al. 2023). Reclamation consultation with the SHPO and Tribal Historic Preservation Officers occurred in 2023 and consultation results are provided below.

3.8.3 Affected Environment

The ERO report, *Cultural Resource Survey Upper Thompson Sanitation District Wastewater Treatment Facility Project Larimer County, Colorado* (report) documents eight cultural resources in the APE: a segment of the Olympus Siphon (5LR4004.1), a segment of the Estes to Lyon TAP transmission line (5LR9454.6), a segment of the historic Big Thompson Canyon Road (5LR13357.2), two indigenous sites (5LR1854 and 5LR14853), a monument (5LR800); and two isolated finds (5LR14836 and 5LR14837) (Table 6). Identification and evaluation efforts also included exploratory shovel tests in landforms with potential for buried cultural deposits. No buried cultural resources were identified through exploratory testing. Evaluative STs were excavated at 5LR1854 and 5LR14853 and one test unit was excavated at 5LR1854.

The report recommends 5LR14835 eligible for listing in the NRHP. Segments 5LR4004.1 is recommended supporting of its respective linear resource while 5LR9454.6, and 5LR13357.2 are recommended as non-supporting of the eligibility of their respective linear resources. 5LR800 and

5LR1854 are recommended not eligible for NRHP listing. The two isolated finds are recommended not eligible. Avoidance is only recommended for 5LR14835.

Table 6. Revisited and newly documented cultural resources in the APE.

Smithsonian Number	Resource Type/Name	NRHP Eligibility Recommendation	Management Recommendation
5LR800	Joel Estes homestead monument	Not eligible	No further work
5LR1854	Indigenous open camp	Not eligible	No further work
5LR4004.1	Olympus Siphon (segment)	Eligible/nonsupporting	No further work
5LR9454.6	Estes to Lyons TAP transmission line (segment)	Eligible/nonsupporting	No further work
5LR13357.2	Big Thompson Canyon Road (segment)	Eligible/nonsupporting	No further work
5LR14835	Indigenous open camp	Eligible	Avoid and protect
5LR14836	Indigenous isolated find	Not eligible	No further work
5LR14837	Indigenous isolated find	Not eligible	No further work

5LR14835 is an indigenous site that represents activities such as late-stage stone tool manufacturing and food processing and indicate the site functioned as an open camp. Shovel test results indicate portions of the site have potential for buried cultural deposits that would yield significant information regarding indigenous occupation (Criterion D of the NRHP).

3.8.4 Effects from the No Action Alternative

There would be no direct effects to any of the cultural resources or historic properties under the No Action Alternative. Reclamation would continue to operate and maintain its Colorado-Big Thompson facilities and UTSD would continue to operate and maintain the existing WWTF. Under the no action alternative site 5LR14835 would remain unprotected from potential future events unrelated to the proposed WWTF.

3.8.5 Effects from the Proposed Action

Under the Proposed Action, no direct effects would occur at sites 5LR4004.1, 5LR9454.6, and 5LR13357.2. Not eligible sites 5LR800, 5LR1854 and isolated finds 5LR14836 and 5LR14837 would be directly affected, however, those effects would not be adverse because they are not historic properties. Direct effects to historic property 5LR14835 are mitigated entirely by project design and fencing during construction. Further, 5LR14835 would be protected in perpetuity because it would remain on a UTSD-controlled facility in a location where there are no future design plans. Because 5LR14835 would not be impacted by the Proposed Action and all other resources are either non-supporting or not eligible, Reclamation made a determination of "no adverse effect to historic properties" pursuant to 36 CFR 800.5 of the NHPA. There would be no direct effect on ITAs by the Proposed Action.

Reclamation sent consultation requests to Southern Cheyenne and Arapaho, Comanche Nation, Northern Arapaho Tribe, the Northern Cheyenne Tribe, Southern Ute Indian Tribe, Ute Indian Tribe (Uintah and Ouray Reservation), Ute Mountain Ute Tribe, Eastern Shoshone Tribe of the Wind Reservation, Shoshone-Bannock Tribes, and the SHPO. Only the Northern Cheyenne Tribe and the SHPO consulted on the Proposed Action and both concurred on Reclamation's determination. No ITAs were identified during tribal consultation.

3.9 Aesthetics

3.9.1 Affected Environment

Aesthetics are important in Estes Park and the Estes Valley community because of the proximity to Rocky Mountain National Park and surrounding viewshed of the mountains. The Town of Estes Park's Comprehensive Plan encourages development to blend in and preserve a scenic natural and ranching environment along US 34 (Estes Park 2022). The visual landscape of the project area is characterized by flat, open meadows, with scattered ponderosa pine and Douglas fir trees, and the meandering Big Thompson River in the undeveloped areas, and characterized by the concrete buildings, roads, and sidewalks, and scattered shrubs and trees in developed areas, in the project area. Three viewpoints in the project area were selected to assess aesthetic and visual impacts (Table 7; Figure 9 through Figure 11). Viewpoint (VP) 1 is located at the end of the driveway at 125 Mall Road, which is the private residence located on the southwest side of the US 34 and Mall Road intersection. VP 2 is located at the intersection of the paved and unpaved sections of Mall Road on the southeast side of Mall Road and the existing WWTF. VP 3 is located at the intersection of the Estes Park Lodge driveway and Fish Creek Road.

Table 7. Viewpoints.

Viewpoint Name	Coordinates	Direction	Description
VP 1 Private Residence along Mall Road	40°22'34.46"N 105°28'52.03"W	East	Located at the end of the private residence driveway on the southwest corner of the US 34 and Mall Road intersection.
VP 2 Intersection of paved and unpaved Mall Road	40°22'23.32"N 105°28'59.92"W	Northwest	Located at the intersection of the paved and unpaved sections of Mall Road on the southeast side of Mall Road and the existing WWTF.
VP 3 Fish Creek Road	40°22'17.92"N 105°29'30.02"W	North	Located at the intersection of the Estes Park Lodge driveway and Fish Creek Road.

Figure 9. Viewpoint 1.

Figure 10. Viewpoint 2.

Figure 11. Viewpoint 3.

VP 1 includes immediate foreground views of the paved Mall Road and open views of the undeveloped portion of the Proposed Action with ponderosa pine trees and native grasses and shrubs. Views of the road, utility box, and utility lines contrast with the undeveloped meadow. Foreground views consist of mature conifer trees along the Big Thompson River, the southwestern slope of Mount Olympus, and tan rock outcroppings on Mount Olympus. Middleground views include mature conifer forests along the steeper slopes of Mount Pisgah, The Notch, and other unnamed mountains. Views further than 4 miles are obstructed by the mountains.

Immediate foreground views at VP 2 include views of the paved Mall Road, Lake Estes Trail and existing WWTF. Views of the existing WWTF include several mature conifer trees, a grey metal chain link fence, light grey concrete buildings and covered tanks, and grey metal pipes of varying sizes. Foreground views include residential and commercial buildings that are tan and brown of varying materials along the north and eastern shores of Lake Estes. Middleground and background views include views of residential and commercial buildings in the town of Estes Park, as well as the forested and bare rock outcroppings of Lumpy Ridge and the Needles northwest of downtown Estes Park.

Views from VP 3 are generally open and include developed and natural elements. Immediate foreground views at VP 3 include Fish Creek Road, the existing FCLS, a building associated with the Estes Lake Lodge, and a few mature conifer trees. Both buildings are reddish brown color, made of wood, and include grey metal elements. Foreground views are obstructed by the topography – a small hill where Estes Lake Lodge is located. Middleground and background views include residential and commercial buildings as well as forested and bare slopes of small mountains near the western edge of the town of Estes Park.

3.9.2 Effects from the No Action Alternative

Under the No Action Alternative, no changes to the existing visual landscape would occur.

3.9.3 Effects from the Proposed Action

Under the Proposed Action, the new WRF would be visible from VP 1 in the immediate foreground, and views of the commercially zoned, undeveloped meadow would change, resulting in less visual harmony. A fence or screening materials would be installed to mitigate this impact. Middleground and background views would not be affected. Details regarding the design and materials used for the proposed WRF, including perimeter fencing or screening would be decided as the Proposed Action progresses and would conform to all Larimer County zoning and building permit requirements.

Also, the existing WWTF would eventually be demolished or repurposed, and views from VP 2 of the existing structures, piping, conduits, and other facilities would be removed. While the exact use of the Reclamation parcels would need to be approved by Reclamation and is not known at this time, the immediate foreground views are not likely to change substantially. Foreground, middleground, and background views would not be affected.

The new FCLS would be visible from VP 3 and would be similar in size and material as the existing FCLS. No change to the immediate foreground or existing visual landscape or harmony would occur. All disturbed areas would be returned to preconstruction grades and reseeded with a Reclamation-approved native seed mix appropriate for the hydrologic conditions where appropriate.

3.10 Air Quality and Climate Change

Federal actions must comply with the Clean Air Act of 1970 (CAA) (42 USC 7401) and its amendments. Established under the CAA, the General Conformity Rule (Section 176(c)(4)) and requirements are meant to prevent air quality impacts as a result of federal actions or federally funded actions from causing or contributing to violations of the National Ambient Air Quality Standards (NAAQS). The NAAQS are intended to protect public health and regulate the emissions of hazardous air pollutants. The EPA has set NAAQS for six pollutants, commonly referred to as criteria pollutants, which are carbon monoxide, nitrogen dioxide, ozone, particulate matter, lead, and sulfur dioxide (SO_2). The CDPHE has adopted the national standards, and in 2016 established a state standard for SO_2.

Areas that meet the NAAQS and state standard are classified as attainment, while areas that exceed the NAAQS or state standard are classified as nonattainment. Areas designated as nonattainment are required to prepare implementation plans for attaining the standard for each pollutant. The CDPHE Air Pollution Control Division (APCD) oversees air quality policies and develops the statewide implementation plans for all areas that currently violate or have violated federal or state standards.

Climate Change

The White House CEQ issued National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change on January 9, 2023 (CEQ 2023). The intent of the interim guidance is to provide federal agencies with “a common approach for assessing their Proposed Actions, while recognizing each agency’s unique circumstances” and to replace CEQ’s 2016 greenhouse gas (GHG) emissions guidance (CEQ 2016) that went back into effect in February 2021. Because the project was initiated prior to the issuance of the 2023 guidance, the 2016 guidance is applicable to the Proposed Action. Based on the 2016 guidance, agencies are to consider: (1) the potential effects of a proposed action on climate change as indicated by assessing GHG emissions (e.g., to include, where

applicable, carbon sequestration); and (2) the effects of climate change on a proposed action and its environmental guidance (CEQ 2016).

Climate change and emission trends were considered at a national, state, and permit-area level. The carbon dioxide equivalent (CO_{2e}) is the number of metric tons of carbon dioxide (CO_2) emissions with the same global warming potential as 1 metric ton of another GHG. CO_{2e} was used throughout this analysis to consider and discuss GHG emission trends.

3.10.1 Affected Environment

The project area is in the Estes Valley, about 60 miles northwest of Denver, Colorado in the Rocky Mountains and approximately 5 miles east of the entrance to Rocky Mountain National Park. The project area is characterized by flat to undulating topography. Nearby topographic features include vegetated and exposed rock hills and mountains. The topography does not create unique air quality problems and no meteorological constraints are present in the vicinity of the project area. The project area is in an attainment area for all criteria pollutants and is not located in a CDPHE-defined monitoring region. The Denver Metro/North Front Range area of Larimer County is in nonattainment for ozone but the project area is outside of the partial nonattainment area (EPA 2024).

Climate Change

According to the EPA (2023), the total GHG emissions for the U.S. were 6,340.2 million metric tons (MMT) CO_{2e}. Compared to 1990, total annual GHG emissions in the U.S. have decreased by 2.3 percent (EPA 2023); however, looking at just more recent years (since 2020), emissions have actually increased 5.2 percent. An important driver of year-to-year emissions are changes in the economy, the price of fuel, weather, and other factors.

Projections for Colorado indicate an increase of approximately 2.5°F to 5°F annual average daily maximum temperature by mid-century (2050s) compared with the late 20th century (1971-2000) average (CWCB 2024). Warming of about 1.5°F has already occurred beyond the late 20th century baseline. Climate models disagree on the overall impact of climate change on precipitation patterns in Colorado, but the variability in precipitation patterns both seasonally and annually is likely to increase. Projected future changes in annual precipitation show a greater likelihood of increased precipitation in the northern portion of the state, though the evaporative demand is expected to increase and the spring snowpack to decrease (CWCB 2024). Statewide precipitation trends indicate overall decreases in precipitation since 2000 (CWCB 2024).

3.10.2 Effects from the No Action Alternative

Under the No Action Alternative, no new air quality and climate change impacts would occur, and existing air quality and climate change would continue.

3.10.3 Effects from the Proposed Action

During construction of the Proposed Action, temporary air quality impacts could occur because of increased fugitive dust and emissions from earthmoving activities, construction equipment, and vehicles. These include emissions resulting from the use of heavy equipment, as well as during earthmoving, land clearing, and ground excavation. Emissions can vary substantially from day to day, depending on the level of activity, specific operations, weather, and prevailing wind direction. If earthmoving construction activities would occur for longer than six months, UTSD would submit an Air Pollutant Emissions Notice (APEN) to the CDPHE APCD (CDPHE 2023). Construction air quality BMPs would be implemented to minimize, avoid, and mitigate effects on air quality.

Odors would be released as a result of the Proposed Action. Colorado Air Quality Regulation Number 2 sets parameters for odor levels emitted from commercial/industrial operations (Section 25-7-109(2)(d), CRS). UTSD would submit an odor mitigation plan as part of the Larimer County Site Plan application.

Overall, no long-term indirect effects on air quality would occur from construction of the Proposed Action within the Air Quality attainment area or other adjacent areas. The Proposed Action is not anticipated to impact air quality in Rocky Mountain National Park. The Proposed Action would not violate the NAAQS and would be consistent with the statewide implementation plan. When combined with past, present, and reasonably foreseeable future actions, the Proposed Action would not result in additional adverse cumulative impacts on air quality.

The Proposed Action could result in a temporary negligible increase in GHG emissions associated with construction of the project. These local minor emissions would have a negligible immeasurable effect on climate change. GHG emissions from the new WRF are anticipated to be equivalent to GHG from the existing WWTF; therefore, the Proposed Action would not result in impacts on GHG emissions and trends.

3.11 Socioeconomics

3.11.1 Affected Environment

Socioeconomic data, including demographic data, were collected for the project area using U.S. Census Bureau (Census) and Colorado Department of Local Affairs (DOLA) data. Census data were collected at the state, county, town of Estes Park, and Census tract (tract) level. Tracts within approximately 0.25 mile of the project area are included in the socioeconomic and environmental justice analysis area, and include the following:

- Census tract 28.01
- Census tract 28.02
- Census tract 19.03

Due to the rural nature of the project area, the tracts cover a larger area than the defined project area and inferences about the project area have been made from the tract data. Town of Estes Park Census data are included in tracts 28.01 and 28.02 which encompass the project area. Data from Larimer County and the state of Colorado are also included in this analysis to provide a reference and comparison with the analysis area.

Demographic and Economic Characteristics

The project area is in the Estes Valley, located just east of the incorporated town of Estes Park above the head of the Big Thompson Canyon. See Section 3.12 for a summary of existing transportation facilities in the project area.

Nearby commercial areas are limited to lodges, retail shops, a campsite, an amusement park along US 34, and a lodge west of the FCLS (Figure 1). Single-family residences are north and south of the project area. Single-family residences are also north of US 34 off Olympus Lane and MacCracken Lane, as well as along Mall Road and the existing WWTF and US 36 / North St. Vrain Avenue. The FCLS is across Fish Creek Road from the southern arm of Estes Lake, Estes Park Memorial Observatory, Estes Park High School, and Estes Valley Youth Center. The existing WWTF is just south of an Estes Valley Recreation and Park District recreation facility located on Reclamation land along the Big Thompson River

downstream of the Olympus Dam. See Section 3.14 for more information on recreation in and near the project area.

Due to the proximity to Rocky Mountain National Park, Estes Park and the surrounding areas typically experience large fluctuations in seasonal contributors (tourists) and residential populations throughout the year, with higher populations in the summer months. These fluctuations typically result in average monthly summer wastewater influent flows nearly twice as high as the average monthly winter flows. UTSD has estimated the population in the service area based on influent flow to the existing WWTF (Mott MacDonald 2020). A summary of the summer average, winter average, annual average, and peak month populations is provided in Table 8.

Table 8. UTSD service area estimated population.

Year	Summer Average Population*	Winter Average Population**	Annual Average Population
2003	--	--	12,359
2004	--	--	11,783
2005	--	--	11,855
2006	--	--	10,190
2007	--	--	10,871
2008	--	--	10,829
2009	13,800	8,157	10,529
2010	16,043	8,557	11,700
2011	14,900	8,214	11,014
2012	14,286	7,414	10,271
2013	15,800	9,871	12,343
2014	14,700	9,400	11,614
2015	17,971	9,000	12,743
2016	13,743	7,943	10,357
2017	17,386	9,043	12,514
2018	14,429	8,914	11,229
2019***	16,571	9,129	12,357

*Summer months are considered May to September.
**Winter months are considered October to April.
***Includes data through July 2019.
Source: Mott MacDonald 2020.

Demographic and economic characteristics of the project area based on Census data are provided in Table 9. Area residents are generally older and less racially and ethnically diverse than the town of Estes Park, Larimer County, and the state. Median income is considerably higher in tract 19.03 than the other tracts in the project area, and higher than the state and county averages.

The poverty rate in tract 28.01 is slightly higher than the other tracts in the project area, and the comparison locations. However, unemployment percentages for tracts in the project area are generally at or below the state and county levels. Given the dramatic increase in unemployment across the state due to COVID-19 in 2020, with unemployment rates reaching 12.2 percent for the state in April 2020 (U.S. Bureau of Labor Statistics [BLS] 2020), current unemployment rates in the analysis area could be higher. Information from the BLS shows a 46 percent decrease from the previous 12 months in the number of jobs in the leisure and hospitality industry throughout the state in April 2020 (BLS 2020). However, updated Census unemployment information by Census tract or county is not currently available.

Table 9. Population and demographic characteristics of Colorado, Larimer County, Estes Park, and Census tracts in the analysis area.

Demographic Indicator	Colorado	Larimer County	Estes Park	Census Tract 19.03	Census Tract 28.01	Census Tract 28.02
Population	5,531,141	338,161	6,297	3,725	3,565	6,192
Median age	36.6	35.9	59	53.7	58.1	57
Percent population 18 and under	22.2%	20.1%	12.3%	14.3%	13.1%	12.5%
Percent population 65 and over	13.4%	14.7%	33.9%	21.0%	35.4%	31.0%
Percent Hispanic or Latino	21.4%	11.3%	11.6%	0.7%	2.6%	12.3%
Percent Non-white, non-Hispanic or Latino	10.3%	5.8%	1.4%	2.5%	3.0%	1.2%
Percent limited English speaking households	2.7%	1.5%	3.9%	1.8%	3.0%	2.5%
Percent of people in poverty*	10.9%	12.0%	13.5%	11.5%	18.8%	9.8%
Percent unemployment**	3.2%	3.4%	2.8%	2.7%	1.5%	3.2%
Median household income (2018 dollars)	$68,811	$67,664	$50,833	$78,914	$60,446	$59,773

*Percentage of people whose income in the past 12 months is below the poverty level.
**Percent of population 16 years and over, civilian labor force.
Source: Census 2018.

The largest single employment sector for tracts 19.03 and 28.01 is educational services, and health care and social assistance, which is the largest employment sector in Larimer County and the state (Table 10). In tract 28.02, the largest employment sector is arts, entertainment, and recreation, and accommodation and food services followed by educational services, and health care and social assistance, which is similar to the town of Estes Park.

Table 10. Employment by industry sector for Colorado, Larimer County, Estes Park, and Census tracts in the analysis area.

Industry	Colorado	Larimer County	Estes Park	Census Tract 19.03	Census Tract 28.01	Census Tract 28.02
Agriculture, forestry, fishing and hunting, and mining	2.36%	2.14%	0.71%	0.48%	0.00%	1.08%
Construction	8.10%	6.84%	4.24%	8.59%	6.54%	6.37%
Manufacturing	6.70%	9.45%	7.63%	10.67%	4.29%	10.77%
Wholesale trade	2.47%	2.03%	3.60%	2.35%	0.46%	3.79%
Retail trade	10.84%	11.32%	10.44%	7.15%	10.63%	9.15%
Transportation and warehousing, and utilities	4.61%	3.55%	2.21%	7.95%	2.71%	2.54%
Information	2.86%	2.09%	5.13%	0.48%	5.15%	3.76%
Finance and insurance, and real estate and rental and leasing	6.95%	5.13%	3.78%	6.67%	3.76%	3.01%
Professional, scientific, and management, and administrative and waste management services	13.92%	12.83%	9.59%	13.77%	11.16%	9.04%
Educational services, and health care and social assistance	20.76%	24.82%	17.28%	17.40%	27.08%	17.48%
Arts, entertainment, and recreation, and accommodation and food services	10.72%	10.69%	22.52%	9.18%	21.20%	18.02%
Other services, except public administration	5.01%	5.12%	5.17%	5.71%	4.23%	7.72%
Public administration	4.71%	4.00%	7.70%	9.61%	2.77%	7.25%

Source: Census 2018. The shading highlights the highest percentage by industry section and location.

3.11.2 Effects from the No Action Alternative

No temporary or long-term effects on the local demographic and economic characteristics, property values, aesthetic values, or recreation or tourism-based revenue sources would occur under the No Action Alternative.

When combined with the past, present, and reasonably foreseeable future actions, the No Action Alternative would not result in adverse cumulative effects on the local demographic and economic characteristics, property values, aesthetic values, or recreation or tourism-based revenue sources. Existing characteristics and trends would not change.

3.11.3 Effects from the Proposed Action

Construction of the Proposed Action could result in temporary and minor direct and indirect beneficial impacts on the Estes Valley economy. These temporary effects would occur during construction and would be mostly limited to a slight increase in the construction work force and beneficial impacts from associated spending in the local community. Construction of the Proposed Action would require about 10 to 20 personnel working on the project at various stages for about 24 months. It is anticipated that workers would spend a portion of their income in the local communities on meals and potentially lodging, resulting in an incremental beneficial effect on local businesses during construction. These impacts would be temporary and end after construction is completed. The number of construction personnel would be negligible and would have a less than significant impact on the local population or housing in the analysis area. No long-term population and housing effects are anticipated from the Proposed Action.

The presence of construction vehicles and construction personnel in the project area would result in temporary minor impacts on aesthetic values, recreation, and tourism activities during construction. Temporary and long-term visual changes to existing recreation facilities and recreation users is discussed in Section 3.14.

The Proposed Action would not result in changes or limitations in access to existing commercial, residential, or public facilities, including recreation sites. No changes for nearby residents would occur except for minor changes in existing noise levels during construction due to the increased use of equipment and trucks. Impacts on traffic are discussed in Section 3.12. No existing residences or businesses would be displaced because of the Proposed Action.

The Proposed Action would result in the WWTF being located further from existing residences along Mall Road and would not result in measurable changes to property values. No long-term effects on property values are anticipated.

As mentioned earlier, from 2010 to 2015, Estes Park and Larimer County experienced 1.0 and 2.1 percent annual growth rates, respectively (Mott MacDonald 2017). The Department of Local Affairs predicts a 1.85 percent annual growth rate for Larimer County between 2015 and 2040, which UTSD has adopted to gauge future estimated flows. The Proposed Action would not result in a change in anticipated population growth in the Estes Valley.

When combined with the past, present, and reasonably foreseeable future actions, the Proposed Action would contribute additional human disturbance to the area. For recreationists, this disturbance would include changes in the existing visual landscape and setting; however, no changes to existing recreation facilities or the visual landscape and setting of foreseeable planned future development would occur. Overall, the Proposed Action would not result in adverse cumulative effects on the local demographic and economic characteristics, property values, aesthetic values, or recreation or tourism-based sources of revenue.

3.12 Transportation

3.12.1 Affected Environment

Transportation facilities in or adjacent to the project area include four local roads (Olympus Lane, Mall Road, Joel Estes Drive, and Fish Creek Road); two U.S. highways (US 34 / Big Thompson Avenue and US 36 / North St. Vrain Avenue); and two access roads on Reclamation land (one to the Estes Valley Recreation and Park District-managed recreation area and one to Olympus Dam). Local roads and U.S. highways are two lanes and the two access roads are each single lane. No traffic studies have been completed for this project.

Estes Transit is a free shuttle service operated by the town of Estes Park during the peak summer tourism season and for several town-related events during the year (Estes Park 2020). The shuttle does not overlap the project area; however, the nearest stop is located along at the Estes Park KOA campground north of the project area along US 34.

3.12.2 Effects from the No Action Alternative

The No Action Alternative would not result in any impacts on traffic or transportation. Existing transportation facilities in the project area would not change. No mitigation for transportation is proposed or needed under the No Action Alternative.

3.12.3 Effects from the Proposed Action

No changes to existing traffic patterns or traffic intensity would occur under the Proposed Action. During construction, temporary traffic delays could occur along Mall Road. No long-term closures would occur along Mall Road; however, traffic may be temporarily reduced to one lane at a time during construction activities. Increases in traffic noise and dust from construction-related vehicles could also occur to nearby residences and businesses. Construction of the Proposed Action is not anticipated to last more than 24 months. UTSD would coordinate with CDOT for the installation of the gravity extension of the Big Thompson Interceptor from US 34 to the new WRF to convey Big Thompson Interceptor flow, as well as any new access point along US 34 to access the new WRF site. UTSD would also coordinate with Larimer County for the proposed access to the new WRF site.

UTSD would continue to transport roll-offs from the new WRF, similar to the existing facility. Existing levels of congestion, noise, odors, and dust are anticipated to be similar under the Proposed Action. No new roads would be constructed under the Proposed Action.

3.13 Human Health and Safety

3.13.1 Affected Environment

ERO performed a Phase I Environmental Site Assessment (Phase I ESA; ERO 2020) to identify recognized environmental conditions (RECs) in the project area according to the “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process” (ASTM International E1527-13 2013) (ASTM 2013). The term REC refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property due to a release to the environment, under conditions indicative of a release to the environment, or under conditions that pose a material threat of a future release to the environment. The Phase I ESA consisted of a review of historical information and federal, state, and local records; interviews with persons knowledgeable of the project area; and a site reconnaissance. The assessment revealed no evidence of RECs in connection with the project area.

Federal, state, and local records did not identify any sites or incidents in or near the project area typically associated with RECs. Records indicate that the WWTF maintains an industrial stormwater discharge permit (#COR011087) and a Colorado discharge permit (#CO0031844) for WWTF discharge to the Big Thompson River. In addition, the facility has a Biosolids General Permit (#COG650000) (CDPHE 2020a). Informal administrative violations have been reported for the WWTF; however, the facility is currently in compliance with its discharge permits.

Larimer County Health and Environment provided ERO with records regarding the removal of two underground storage tank from the WWTF and FCLS. The tanks were removed in 1989, and a soil sample collected from each tank basin indicated no evidence of contamination (Larimer County Health and Environment 2020). In addition, two closed Leaking Underground Storage Tank/Leaking Aboveground Storage Tank sites were identified within 0.5 mile of the project area.

During the site reconnaissance, ERO inspected the project area by walking the perimeter and traversing the interior. The project area consists of five areas: an undeveloped parcel, the UTSD WWTF, the FCLS, a private residential parcel, and road ROW. The undeveloped parcel is vegetated with grasses and trees along the Big Thompson River, which flows to the east along the southeast project area boundary. The WWTF is developed with an approximately 33,000-square-foot main treatment and office facility, a 6,500-square-foot pretreatment structure, a 1,400-square-foot maintenance building, and a 500-square-foot lift station. The WWTF was constructed in the mid to late 1970s, with improvements and additions in 2005. The remainder of the parcel consists of a vegetated area along the western portion, paved drives providing access to the buildings, and an unpaved access drive along the northern border.

The Olympus Siphon, consisting of a 10-foot square concrete box culvert, is located along the south boundary of the existing WWTF and extends to the east, off the project area. The FCLS consists of an approximately 500-square-foot structure with an associated emergency generator and pad-mounted transformer, and an underground 12-inch wastewater force main. The road ROW consists of US 34, from Olympus Lane east to the intersection with Mall Road. The road ROW continues south along Mall Road and veers west to the western boundary line of the WWTF. An occupied single-story 844-square-foot residence is located on the private residential parcel on the southwest corner of US 34 and Mall Road. The interior of the residence was not inspected during the site reconnaissance.

Numerous storage tanks and basins were observed on the parcel during the site reconnaissance, but all appeared to be in good condition, with no indications of leaking or corrosion. Three diesel tanks (one 1,000-gallon and two 100-gallon) are located in the emergency generators on the WWTF and the FCLS. No staining was observed around the generators, and there were no known leaks or spills associated with the tank (Newhouse 2020). Surface spillage was observed atop the 1,000-gallon tank of the WWTF generator. The spill appeared to be the result of overfilling the tank.

Several drums and containers were observed in the project area; however, the drums appeared to be in good condition, with no evidence of leaking or staining of the surfaces beneath or around the drums noted during the site reconnaissance. Several 275-gallon totes of a polymer known as Core Shell were located in the centrifuge room of the WWTF. The polymer is used to bind the biosolids during the centrifuge process into sludge for disposal (Newhouse 2020). No evidence of staining, leaking, or corrosion of the totes were noted during the site reconnaissance.

Several containers, ranging in size from a few ounces to less than 5 gallons, were observed on storage shelves, workstations, and in and on top of a fireproof cabinet of the maintenance building and the laboratory. The contents included paints, stains, lacquers, degreasers, lubricating oils, motor oil, fuel, cleansers, and various solutions used in the testing and distillation processes for effluent testing of the wastewater. The containers appeared to be in good condition and properly labeled, with no evidence of

leaking or corrosion. No evidence of pooling liquids on the concrete floor or releases to the subsurface was observed.

Oxygen and acetylene welding gas tanks were observed in the maintenance building. The tanks appeared to be in good condition, with no evidence of staining, leaking, or corrosion. Welding was historically performed at the WWTF; however, the WWTF does not currently employ a welder (Newhouse 2020).

Pad-mounted transformers were observed at the WWTF and FCLS. No evidence of staining, leaking, or corrosion was noted around the transformers. Polychlorinated bi-phenyl (or PCB) labeling was not observed on the equipment.

An area of solid waste disposal was observed on the west portion of the WWTF. The items observed generally included inert materials including scrap wood and metal, decommissioned equipment, old parts, empty drums, and plastic containers. Oil staining was observed on the soils beneath and around a small compressor and appeared to be the result of leakage from the equipment. The staining appeared to be localized, de minimis in nature, and not the result of long-term leakage from several pieces of oil-filled equipment. ERO was not able to assess the soil conditions beneath the remainder of the solid waste disposal area.

Dewatered biosolids from the treatment process are collected in a dumpster on the west side of the existing WWTF. The waste is periodically hauled off-site for disposal by McDonald Farms Enterprises. No evidence of staining, leaking, or corrosion was noted around the dumpster.

ERO observed a stormwater drain outside the TRLS at the WWTF. The drain is connected to the lift station and any discharge to the drain would return to the facility for treatment (Newhouse 2020).

ERO observed a monitoring well near the southern border of the undeveloped parcel. According to CDWR, the purpose of the well is to determine the depth to groundwater (CDWR 2020). ERO observed a shallow well near the TRLS, at the WWTF. According to the permit on file with CDWR, the well provides nonpotable water to the WWTF (CDWR 2020). The use of the well was confirmed during the site reconnaissance (Newhouse 2020).

Floor drains and sumps were observed throughout the main processing building and lift stations. The drains and sumps all discharge back to the lift stations for processing (Newhouse 2020). No evidence of corrosion or staining around the sumps or drains was observed during the site reconnaissance. Overall, no site conditions or features typically associated with RECs were identified during the site reconnaissance.

No EPA superfund site or state-sponsored cleanup sites are in the project area (EPA 2020; CDPHE 2020b). No regulatory remedial action plans, violations, or clean-ups are ongoing at the project area.

3.13.2 Effects from the No Action Alternative

The No Action Alternative would not result in result in disturbance to any known RECs. Operation of the existing WWTF would continue. No mitigation measures are proposed.

3.13.3 Effects from the Proposed Action

The Proposed Action would not result in disturbance to any known RECs. The Proposed Action would result in construction of a WWTF with numerous storage tanks, basins, and containers that could contain toxic or hazardous materials; however, UTSD would comply with all applicable county and state storage and disposal regulations.

While operation of the WWTF under the Proposed Action could result in an accidental spill of toxic or hazardous materials, UTSD maintains a spill prevention, control, and countermeasures plan.

The Proposed Action would not result in the creation of or exposure to electromagnetic fields.

3.14 Recreation

3.14.1 Affected Environment

Existing recreation facilities in the project area on Reclamation lands include a small portion of the Big Thompson River, a popular fishing location just downstream of the Lake Estes dam. The existing WWTF authorized by Reclamation includes an access road to an Estes Valley Recreation and Park District-managed site that provides access to fishing on Lake Estes and the Big Thompson River, a picnic site, and the Lake Estes Trail. Estes Valley Recreation and Park District manages recreation on Reclamation lands under an agreement with Reclamation.

3.14.2 Effects from the No Action Alternative

The No Action Alternative would not result in changes to existing recreation facilities, including open space areas, parks, trails, paths, or areas of scenic value.

3.14.3 Effects from the Proposed Action

The Proposed Action would not result in changes to existing recreation facilities, including open space areas, parks, trails, paths, or areas of scenic value. Access to the existing Estes Valley Recreation and Park District would not change or be restricted during or after construction of the Proposed Action.

3.15 Environmental Justice

3.15.1 Affected Environment

Environmental justice refers to the social equity in sharing the benefits and the burdens of specific projects and programs and is addressed by Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations issued in 1994 by President Clinton (Executive Order 12898, 1994). Executive Order 12898 directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. The Executive Order is in response to Title VI of the Civil Rights Act of 1964 which states: “No person in the U.S. shall, in the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.”

An environmental justice assessment requires an analysis of whether minority and low-income populations (i.e., populations of concern) would be affected by a proposed federal action. If adverse or negative impacts would occur, the severity and proportion of these impacts on populations of concern must be compared to the impacts on the population or populations not classified as low-income or minority. If the adverse impacts would fall disproportionately on minority or low-income members of the community, an assessment of disproportionately high and adverse effects is needed. If disproportionately high and adverse effects would occur, EPA guidance advises consideration of alternatives and mitigation actions in coordination with extensive community outreach efforts (EPA 2016).

The EPA defines a community with potential environmental justice populations as one that has a greater percentage of minority or low-income populations than does an identified reference community. Minority populations are those populations having (1) 50 percent minority population in the affected area or (2) a significantly greater minority population than the reference area (EPA 2016). The EPA has not specified any percentage of the population that can be characterized as "significant" to define environmental justice populations. Therefore, a population of concern in the analysis area is defined as minority and/or low-income populations greater than 10 percentage points than those of the reference area.

For this analysis, minority includes all racial groups other than white, not Hispanic or Latino. For the year 2018, low-income populations were defined as those individuals that are considered living below the poverty level. To identify potential environmental justice populations, Census tract level data were compared to reference communities, including the county (Table 9). According to the Census data shown in the socioeconomics analysis (Section 3.11), no environmental justice populations were identified in the project area. The Climate and Economic Justice Screening Tool did not identify any disadvantaged populations in the project area, but a disadvantaged population exists west of Estes Park in the vicinity of Rocky Mountain National Park (Tract No. 08069002803; CEQ 2022).

3.15.2 Effects from the No Action Alternative

The No Action Alternative would not result in either adverse or disproportionately high and adverse impacts on populations of concern.

When combined with the past, present, and reasonably foreseeable future actions, the No Action Alternative would not result in adverse cumulative effects on populations of concern. Existing characteristics and trends would not change.

3.15.3 Effects from the Proposed Action

The Proposed Action would not have disproportionately high or adverse human health or environmental effects on minority or low-income populations. While a disadvantaged population exists west of the project area, the Proposed Action is not anticipated to adversely impact this population of concern. UTSD has been engaging in communication, outreach, and education with the community to ensure the project benefits the community and to foster support from the community (see Section 5.3, Communication, Outreach, and Education).

When combined with the past, present, and reasonably foreseeable future actions, the Proposed Action would contribute additional human disturbance to the area. Overall, the Proposed Action would not result in adverse cumulative effects on populations of concern.

CHAPTER 4 – ENVIRONMENTAL COMMITMENTS AND MITIGATION MEASURES

This section discusses the proposed environmental commitments and mitigation measures developed to protect resources. The UTSD will work with the appropriate agency to implement the following environmental commitments if the Proposed Action is approved and constructed.

Table 11 summarizes the proposed mitigation measures necessary to avoid or minimize any adverse effects on environmental resources under the Proposed Action.

Table 11. Proposed Action mitigation measures.

Resource	Mitigation Measure
Land Use, Important Farmlands, and Formally Classified Lands	UTSD would address all Larimer County zoning district and permitted use inconsistencies during the Larimer County location and extent process. Changes to the existing land use could occur but would be consistent with Larimer County Land Use Code.
	UTSD would comply with the Larimer County development review and location and extent review processes.
	UTSD would acquire all applicable Larimer County development-related permits, including building permits.
	A Larimer County Floodplain Development Permit would be obtained for all development.
	A Conditional Letter of Map Revision has been obtained from FEMA.
Floodplains	UTSD would comply with all FEMA National Flood Insurance Program and Larimer County floodplain development stipulations. Based on current FIRM mapping, and preliminary design, UTSD would potentially submit a Conditional Letter of Map Revision through FEMA prior to construction of the Proposed Action.
Wetlands and Waters of the U.S.	Wetland and open water impacts would be avoided and minimized to the extent practicable.
	UTSD would obtain all necessary CWA Section 404 permits and comply with all terms and conditions listed in the permits. If any work is planned in the Big Thompson River or adjacent wetlands, a Section 404 permit would be required from the USACE for the placement of dredged or fill material in wetlands or below the ordinary high water mark.
	All disturbed areas would be reseeded with a native seed mix appropriate for the hydrologic conditions where appropriate.
Soils and Geologic Resources	Any excess native material displaced by the Proposed Action would be hauled away and disposed of outside the designated floodplain.
	All disturbed areas would be reseeded with a native seed mix appropriate for the hydrologic conditions where appropriate.
Water Resources	UTSD would acquire a CDPHE WQCD construction stormwater permit for disturbances of 1 acre or more.
	UTSD would develop a stormwater management plan that includes detailed reclamation and weed management plans per Section 8.12 of the Larimer County Land Use Code.
	Preparation of a CDOT stormwater management plan may be necessary. UTSD would coordinate with CDOT as the project progresses.
	UTSD would implement BMPs and stormwater control measures required by Larimer County, CDOT, and CDPHE to minimize temporary construction impacts on surface water quality.
	UTSD would comply with all applicable groundwater regulations as imposed by CDWR.
	UTSD would obtain CDPHE Construction Dewatering Permits as necessary.
	UTSD would obtain a new NPDES permit for the WTF and site stormwater construction permit from CDPHE. After construction, UTSD would comply with all NPDES permit restrictions and site stormwater permit requirements.

Resource	Mitigation Measure
Biological Resources	All disturbed areas would be returned to preconstruction grades and reseeded with a native seed mix appropriate for the hydrologic conditions where appropriate.
	If vegetation removal is scheduled to occur during the breeding season, preconstruction surveys for active migratory bird nests would be performed and design changes would be implemented, if possible, to avoid nests during the active breeding season (typically March through August).
	If an active nest is identified in or near the project area, activities that would directly impact the nest, or that would encroach close enough to cause adult birds to abandon the nest during the breeding season, would be restricted.
	The effects on native vegetation would be minimized to the extent practicable by narrowing the construction ROW. Where impacts are unavoidable, native vegetation areas would be revegetated with native species appropriate for the hydrologic conditions.
	UTSD would comply with the state and county noxious weed regulations.
Cultural Resources	Impacts on all known historic properties would be avoided.
	5LR14835 would be fenced off to avoid accidental intrusion.
	In the event any historic properties are in the APE, UTSD would consult with the SHPO on effects on the historic properties.
Aesthetics	Installation of a fence or screening materials could mitigate visual impacts of the proposed WRF, FCLS, and WLS. Details regarding the design and materials used for the proposed WRF, FCLS, and WLS, including perimeter fencing or screening, would be decided as the project progresses and would conform to all Larimer County zoning and building permit requirements.
Air Quality	Fugitive dust during construction would be controlled. Standard dust-control practices would be developed and implemented to minimize particulate and dust emissions from construction work sites. A fugitive dust control plan would be submitted as part of the Larimer County Site Plan application.
	The contractor would ensure construction equipment (especially diesel equipment) meets standards for operating emissions.
	UTSD would submit an APEN to the CDPHE APCD if earthmoving construction activities would occur on an area greater than 25 acres or would occur for longer than six months. Depending on the construction equipment used, an air quality permit may be required.
	UTSD would submit an odor mitigation plan as part of the Larimer County Site Plan application.
	All disturbed areas would be reseeded with a native seed mix appropriate for the hydrologic conditions to minimize fugitive dust.
Transportation	UTSD would coordinate with CDOT on installation of the gravity extension of the Big Thompson Interceptor and any new access point along US 34.
	UTSD would coordinate with Larimer County for the proposed access to the new WRF site and would comply with all related county road standards.
Human Health and Safety	Prior to demolition, UTSD would evaluate the existing structures for asbestos-containing materials. If asbestos-containing material is encountered, the contractor must follow the CDPHE – Air Quality Control Commission Regulation No. 8, Part B: Asbestos, and properly abate asbestos-containing material, if found.
	New dump stations for proposed parking areas would require Larimer County Health and Environment septic permits.
	UTSD would comply with a spill prevention, control, and countermeasures plan in the event of a spill.

CHAPTER 5 – CONSULTATION AND COORDINATION

Reclamation's public involvement process presents the public with opportunities to obtain information about a given project and allows interested parties to participate in the project through written comments. This chapter discusses public involvement activities taken to date for the Proposed Action.

5.1 Public Involvement

The Draft EA and Preliminary Finding of No Significant Impact will be published on Reclamation's website (https://www.usbr.gov/gp/nepa/sopa.html#ecao). Reclamation will also distribute a news release to individuals and entities included in Reclamation's Eastern Colorado Area Office Estes Park Distribution List. The Final EA will meet the technical standards of Section 508 of the Rehabilitation Act of 1973 so that the documents can be accessed by people with disabilities using accessibility software tools.

5.2 Agency Coordination and Consultation

Preparation of this EA is being coordinated with appropriate tribal, congressional, federal, state, and local interests, as well as other interested parties. Results of consultations will be incorporated into the Final EA.

Letters requesting input on the Proposed Action were sent to the following agencies:

- Colorado Department of Public Health and Environment, Air Pollution Control Division
- Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division
- Colorado Department of Public Health and Environment, Water Quality Control Division, Drinking Water Section
- Colorado Department of Transportation, Region 4 Office
- Colorado Parks and Wildlife
- Department of Natural Resources, Colorado Division of Water Resources
- Environmental Protection Agency
- Federal Emergency Management Agency
- History Colorado Center, Office of Archaeology and Historic Preservation
- Larimer County Community Development Department
- Rocky Mountain National Park
- U.S. Army Corps of Engineers, Denver District
- U.S. Department of Agriculture, Natural Resources Conservation Service - Colorado State Office
- U.S. Fish and Wildlife Service

Letters were also sent to the following tribes:

- Apache Tribe of Oklahoma
- Arapaho Tribe of the Wind River Reservation, Wyoming

- Cheyenne and Arapaho Tribes, Oklahoma
- Comanche Nation, Oklahoma
- Fort Belknap Indian Community of the Fort Belknap Reservation of Montana
- Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana

5.3 Communication, Outreach, and Education

For many years, UTSD has been actively engaging with the customers and community to create a base level of understanding, trust, and support for the proposed project. In 2021, UTSD formally engaged public relations firm, GBSM, to assist in communications and community affairs management, specifically for the proposed project. UTSD continues to use GBSM to drive successful communication, outreach, and education in the Estes Valley. UTSD has hosted open houses at operations facilities, sent customer letters and postcards, participated in the farmers market, published op-eds in local newspapers, and offered presentations to community service organizations – including Rotary Clubs, Board of Realtors, and the League of Women Voters. As project design, construction planning, and financing decisions are finalized, UTSD will build on communication strategies that have been successfully implemented. In the future, UTSD's approach to public outreach will continue the highly effective, direct, in-person communication among UTSD, its customers, and the community.

CHAPTER 6 – PREPARERS

The following list contains the specialists who participated in preparing this EA:

Name	Role/Title	Organization
Terrence Stroh	Regional NEPA/ESA Coordinator	Bureau of Reclamation
Matthew Schultz	Environmental Specialist	Bureau of Reclamation
Elizabeth Rush	Archaeologist	Bureau of Reclamation
Traci Robb	Resources Division Chief	Bureau of Reclamation
Steve Ravel	Water/Wastewater/Reuse Project Manager	Merrick & Company
Clint Henke	Project Manager, Biologist/Principal	ERO Resources Corporation
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Jonathan Hedlund	Senior Archaeologist	ERO Resources Corporation
Lili Perreault	Project Environmental Planner	ERO Resources Corporation
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CHAPTER 7 – LITERATURE CITED

ASTM International (ASTM). 2013. Annual Book of ASTM Standards. "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process." Philadelphia: ASTM E1527-13.

Bucknam, R.C., and Braddock, W.A. 1989. Geologic map of the Glen Haven quadrangle, Larimer County, Colorado: Map GQ-1626, 1:24,000 scale.

Cole, J.C., and Braddock, W.A. 2009. Geologic map of the Estes Park 30' x 60' quadrangle, north-central Colorado: U.S. Geological Survey Scientific Investigations Map 3039, 1 sheet, scale 1:100,000, pamphlet, 56 p.

Colorado Department of Agriculture. 2017. Colorado Noxious Weeds (Including Watch List), effective March 31, 2017.

Colorado Department of Public Health and Environment (CDPHE), Hazardous Materials and Waste Management Division (HMWMD). Environmental records search. https://www.colorado.gov/pacific/cdphe/hm-gis-data. Accessed March 2024.

Colorado Department of Public Health and Environment (CDPHE). 2020a. Regulation #93 – Colorado's Section 303(d) List of Impaired Waters and Monitoring and Evaluation List. 5 CCR 1002-93. 14 June. https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=8787&fileName=5%20CCR%201002-93

Colorado Department of Public Health and Environment (CDPHE). 2020b. Environmental Cleanup. https://www.colorado.gov/pacific/cdphe/categories/services-and-information/environment/environmental-cleanup.

Colorado Department of Public Health and Environment (CDPHE). 2023. Regulation number 3: Stationary Source Permitting and Air Pollutant Emission Notice Requirements. https://drive.google.com/file/d/16xujP2xacQwVW8Vv1IoG_A5Ly_HjFFqq/view. Accessed March 2024.

Colorado Department of Public Health and Environment, Water Quality Control Division – Grants and Loans Unit (CDPHE). 2020a. Preparation of Environmental Assessments Memorandum. April 10. https://drive.google.com/file/d/1wN0L97YxblrcE576h8sLqExVTSwui9jQ/view

Colorado Department of Transportation (CDOT). 2022. Colorado Department of Transportation Stormwater Programs. Available at: https://www.codot.gov/programs/environmental/water-quality/stormwater-programs.

Colorado Division of Water Resources (CDWR). 2020. Well Permit Search for Section 29, Township 5 North, Range 72 West of the 6th P.M. https://dwr.state.co.us/Tools/WellPermits?submitButton=Submit&SelectedGeoValue=waterDivisionDiv&SelectedPermitUse=All&SelectedAdditionalValue=plssDiv&PlssSearch.Q10=0&PlssSearch.Q40=0&PlssSearch.Q160=0&PlssSearch.SectionValue=2&PlssSearch.Section=0&PlssSearch.TownshipValue=23&PlssSearch.Township=2&PlssSearch.RangeValue=68&PlssSearch.Range=4&PlssSearch.PM=4.

Colorado Natural Heritage Program (CNHP). 2020. CNHP Potential Conservation Area Reports. https://cnhp.colostate.edu/ourdata/pca-reports/. Accessed March 2024.

Colorado Parks and Wildlife (CPW). 2020a. Colorado listing of endangered, threatened and wildlife species of special concern. https://cpw.state.co.us/learn/Pages/SOC-ThreatenedEndangeredList.aspx

Colorado Parks and Wildlife (CPW). 2020b. Recommended buffer zones and seasonal restrictions for Colorado Raptors. https://cpw.state.co.us/Documents/WildlifeSpecies/LivingWithWildlife/Raptor-Buffer-Guidelines.pdf. Accessed March 2024.

Colorado Parks and Wildlife (CPW). 2015. State Wildlife Action Plan. https://cpw.state.co.us/aboutus/Pages/StateWildlifeActionPlan.aspx

Colorado Parks and Wildlife (CPW). 2023. CPW Wildlife Shapefile Download. From: Species Activity Data Collection. Redlands, CA: ESRI. Available at: http://www.arcgis.com/home/group.html?owner=rsacco&title=Colorado%20Parks%20and%20Wildlife%20-%20Species%20Activity%20Data. Last accessed: March 2024.

Colorado Water Conservation Board [CWCB]. 2024. Climate Change in Colorado. https://climatechange.colostate.edu/downloads/CCC%202024%20Climate%20Assessment%20Report%20pages%20view.pdf.

Council on Environmental Quality (CEQ). 2023. National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change. CEQ-2022-0005. January 9.

Council on Environmental Quality (CEQ). 2016. Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews. 81 FR 51866.

Council on Environmental Quality (CEQ). 2022. Climate and Economic Justice Screening Tool. https://screeningtool.geoplatform.gov/en/. Accessed March 2024.

Environmental Protection Agency (EPA). 2016. Technical Guidance for Assessing Environmental Justice in Regulatory Analysis. https://www.epa.gov/sites/production/files/2016-06/documents/ejtg_5_6_16_v5.1.pdf

Environmental Protection Agency (EPA). 2020. Superfund Sites in Region 8. https://www.epa.gov/superfund/superfund-sites-region-8#colorado.

Environmental Protection Agency (EPA). 2023. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021. U.S. Environmental Protection Agency, EPA 430-R-23-002. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021. Accessed March 2023.

Environmental Protection Agency (EPA). 2024. 8-Hour Ozone (2015) Nonattainment Areas by State/County/Area. https://www3.epa.gov/airquality/greenbook/jncty.html. Accessed March 2024.

ERO Resources Corporation (ERO). 2020. Phase I Environmental Site Assessment New Wastewater Treatment Facility & System Improvements, 2201 Mall Road, Estes Park, Larimer County, Colorado. Prepared for Mott MacDonald.

Federal Emergency Management Agency (FEMA). 2020. Federal Emergency Management Agency Community Status Book Report – Colorado – Communities Participating in the National Flood Program. https://www.fema.gov/cis/CO.html

Larimer County Health Department (LCHD). 1989. Memorandum regarding the removal of two USTs at the WWTF and FCLS. September 26.

Larimer County. 2019. Larimer County Comprehensive Plan. https://www.larimer.org/planning/documents

Larimer County. 2020a. Larimer County Noise Level Policy – Ordinance Concerning Noise Levels in Unincorporated Larimer County. Ordinance no. 97-03. https://www.larimer.org/policies/noise

Larimer County. 2020b. Larimer County Land Use Code. https://library.municode.com/co/larimer_county/codes/code_of_ordinances?nodeId=PTIILAUSCO

Larimer County. 2020c. Zoning Map. https://www.larimer.org/planning/zoning/map

Mayo, Katherine, Marie Matsuda, Justin Batista, Jonathan Hedlund. 2023. Cultural Resource Survey Upper Thompson Sanitation District Wastewater Treatment Facility Project, Larimer County, Colorado. Prepared for UTSD and submitted to the US Bureau of Reclamation, Loveland, CO.

Mott MacDonald. 2017. Upper Thompson Sanitation District Wastewater Treatment Facility Site Alternative Evaluation. June.

Mott MacDonald. 2019. Upper Thompson Sanitation District Wastewater Utility Master Plan (WUMP). June.

Mott MacDonald. 2020. Upper Thompson Sanitation District Wastewater Treatment Facility (WWTF) Preliminary Engineering Report (PER) and Funding Project Design Criterion. Revised July 10.

Newhouse, Henry. 2020. Personal communication with Nancy Otterstrom and User Questionnaire. August 7 and 10.

Ravel, S. 2020. Project Manager, Mott MacDonald. Email with A. Fowler, ERO Resources Corporation regarding project details and known impacts. August 24.

Terracon Consultants, Inc (Terracon). 2020. Preliminary Geotechnical Engineering Report: Upper Thompson Sanitation District New Wastewater Treatment Facility and System Improvements, Estes Park, Colorado. May 4.

Town of Estes Park (Estes Park). 2020. Estes Transit (Free Shuttles). https://estespark.colorado.gov/shuttles. Accessed March 2024.

Town of Estes Park (Estes Park). 2022. Estes Forward Comprehensive Plan. https://dms.estes.org/WebLink/DocView.aspx?id=213740&dbid=0&repo=TownofEstesPark&cr=1. Accessed March 2024.

U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0). Vicksburg, Mississippi. March.

U.S. Bureau of Labor Statistics. 2020. Economy at a Glance – Colorado. https://www.bls.gov/eag/eag.co.htm

U.S. Census Bureau. 2018. ACS 2013 – 2018 5 Year Estimates Subject Tables. https://data.census.gov/cedsci/

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2020. Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

U.S. Department of the Interior, Bureau of Reclamation (Reclamation). 1974. Easement for Constructing, Operating, and Maintaining Sewers, Lift Stations, and Sewage Treatment Plant – Lake Estes Area. Contract number 14-06-700-7616. May.

U.S. Department of the Interior, Bureau of Reclamation (Reclamation). 2008. Resource Management Plan and Environmental Assessment Finding of No Significant Impact. FONSI no. EC-1300-08-01. Eastern Colorado Area Office. July.

U.S. Department of the Interior, Bureau of Reclamation (Reclamation). 2022. Pesticide Discharge Management Plan and Integrated Pest Management Plan. Missouri Basin Region, Eastern Colorado Area Office. Project No. ECAO-2022-11. Loveland, Colorado. December.

U.S. Fish and Wildlife Service (USFWS). 2018. Final Supplemental Biological Opinion. Platte River Recovery Implementation Program. U.S. Fish and Wildlife Service. Nebraska Ecological Services Field Office. Mountain Prairie Region. August 27, 2018.

U.S. Fish and Wildlife Service (USFWS). 2003. Migratory Bird Permit Memorandum. https://www.fws.gov/media/mbpm-1-migratory-bird-permit-mbp-memorandum-series.

U.S. Fish and Wildlife Service (USFWS). 2024. Information for Planning and Consultation (IPaC) List. https://ecos.fws.gov/ipac/. Accessed March 2024.

U.S. Fish and Wildlife Service (USFWS). 2006. Biological Opinion on the Platte River Recovery Implementation Program. U.S. Fish and Wildlife Service. Nebraska Ecological Services Field Office. Mountain Prairie Region. June 16, 2006.

U.S. Geological Survey (USGS). 2018. The National Map. https://apps.nationalmap.gov/viewer/. Accessed March 2024.

Wells, Jeffrey V., D.K. Niven, and J. Cecil. 2005. The Important Bird Areas Program in the United States: Building a Network of Sites for Conservation, State by State. USDA Forest Service General Technical Report PSW-GTR-191. https://www.fs.usda.gov/psw/publications/documents/psw_gtr191/psw_gtr191_1265-1269_wells.pdf. Accessed March 2024.

Appendix A Eight-Step Process Required Under Executive Order 11988

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January 26, 2024

Executive Order 11988 and 11990 Compliance Memo for Upper Thompson Sanitation District Wastewater Treatment Facility, Environmental Report

The Upper Thompson Sanitation District (UTSD) is proposing construction of a new wastewater treatment facility (WWTF) and two lift stations in the Estes Valley, located about 1.8 miles east of downtown Estes Park, Colorado (project area; Figure 1 in the Environmental Assessment [EA]).

UTSD is seeking financial assistance from the U.S. Department of Agriculture (USDA) Rural Utilities Service (RUS). The RUS is one of three agencies within the USDA Rural Development (RD) program – Rural Business-Cooperative Service, Rural Housing Service, and Rural Utilities Service. The agencies have programs that provide financial, technical, and educational assistance to eligible rural and tribal populations, communities, individuals, cooperatives, and other entities with a goal of improving the quality of life, sustainability, infrastructure, economic opportunity, development, and security in rural America. Financial assistance can include direct loans, guaranteed loans, and grants to accomplish program objectives.

UTSD is also seeking financial assistance from the Colorado Department of Public Health & Environment's (CDPHE) State Revolving Fund, administered through the Colorado Water Resources and Power Development Authority (CWRPDA).

Executive Order (EO) 11988 requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy or modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. EO 11990 requires federal agencies to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided. FEMA implements an eight-step decision making process on projects that have potential impacts to wetlands or floodplains. The results of the eight-step decision-making process for the proposed action are described below.

Purpose and Need

The purpose of the proposed project is to meet the wastewater treatment demands of residents and visitors within the UTSD (Figure 2 in the EA). The proposed project is needed to: meet future wastewater flow estimates, meet applicable water quality standards and regulations, address aging and deficient infrastructure, reduce long-term operation and maintenance costs for UTSD, and allow for future facility expansion to meet projected wastewater flows when needed. These issues are described in more detail below.

- **Increased Wastewater Flow**: Population expansion and associated increases in wastewater flow in the wastewater utility service area are expected to continue. The existing WWTF is unable to hydraulically pass and provide treatment to future wastewater flow and loadings beyond 2.0 million gallons per day (mgd) and 4,450 pounds of five-day biochemical oxygen demand per day without significant modifications that require site expansion.
- **Future Regulations**: The WWTF is unable to reduce nutrients (total phosphorus (TP) and total nitrogen), metals, and temperature to the anticipated future water quality standard effluent levels without significant modification of the existing treatment process that would require site expansion or de-rating of the WWTF below 2.0 mgd.
- **CDPHE Requirements**: The WWTF discharge permit requires that the UTSD "initiate engineering and financial planning for expansion… wherever throughput reaches eighty (80) percent of the treatment capacity" and "… commence construction of… expansion wherever throughput reaches 95 percent of the treatment capacity." The UTSD's 80 percent and 95 percent flow throughputs are 1.6 and 1.9 mgd, respectively. The peak month flow in May 2015 was 1.7 mgd. The UTSD's 80 percent and 95 percent influent organic loading throughputs are 3,560 and 4,228 pounds per day (ppd), respectively. The existing WWTF has not exceeded the 80 percent peak month organic loading. The highest peak month loading between January 2014 and December 2019 was in June 2017 at 2,540 ppd.
- **Facility and Infrastructure Age**: The WWTF was constructed in the mid-1970s with upgrades conducted in the 2000s. The WWTF will reach its 50-year design life in 2025. Although UTSD staff has maintained the facility in excellent condition, the WWTF lacks operational flexibility; does not meet 2019 codes (building, electrical, and fire), standards, and regulations; and is approaching the end of its useful life with deteriorating structures/equipment and replacement parts hard to find. As WWTF flow and loadings continue to approach rated capacity, it will become increasingly difficult to remove structures from service for maintenance. The cost to maintain, as well as retrofit, existing structures for new purposes will require significant investment. Additionally, the Thompson River Lift Station (TRLS) and Fish Creek Lift Station (FCLS) are reaching the end of their useful lives and present operational challenges and hazards.
- **Limited Aerobic Digester Capacity**: The aerobic digesters were constructed for the original facility capacity of 1.5 mgd. Digester capacity is limited during peak loading events and will be further limited as the influent flow and loadings approach the permitted and projected flow and loading capacities. The enclosed digester roof and walls experience severe corrosion and were replaced in 1997. The digester roof will likely require replacement in the next five years.
- **Limited Filtration Capacity**: The WWTF filters were constructed for the original facility capacity of 1.5 mgd. The filters capture solids sloughed from the nitrification towers during normal operation and are operated without polymer addition. Both the filter beds and surface wash arms need to be replaced. The filters require significant upgrades to operate at a higher flow rate for the WWTF capacity of 2 mgd. Currently at a flow rate of 100 gallons per minute into the filters, nearly constant backwashing is required. The filter capacity will be limited for TP removal/polishing with the addition of alum and/or polymer as the influent flow and loadings approach the permitted and projected flow and loading capacities.
- **Chlorine Contact Basin**: UTSD staff has limited ability to prevent short circuiting in the chlorine contact basin during operation due to the layout of the basin.
- **Outside Clarifier**: UTSD staff is unable to operate the outside clarifier in the winter months due to freezing. The clarifier is removed from service during the winter and limits treatment capacity of the WWTF.

Proposed Action (Alternative 1)

Alternative 1 would include construction of a new WWTF and influent lift station on the southeast corner of the intersection of Mall Road and State Highway (SH) 34, demolition of the existing WWTF along Mall Road, and replacement of the FCLS south of the intersection of Fish Creek Road and St. Vrain Avenue/SH 36.

Construction of the new WWTF would include:

- Construction of the lift station/headworks, equalization basin, biological nutrient removal (BNR) basins, blowers, secondary clarifiers, advanced water treatment filtration, ultraviolet (UV) disinfection, solids handling, waste-activated sludge storage, aerobic digesters, solids dewatering (centrifuge), and an operations building as shown on Figure 3 in the EA.
- Phased construction of initial facilities for a capacity of 2.0 mgd with space allocated for future expansion to 3.0 mgd and beyond 4.0 mgd.
- Continued use of the FCLS with gravity flow through a new interceptor from the discharge to the new lift station/headworks.
- Construction of new outfall pipe and outfall discharge location at the Big Thompson River.
- Relocation of existing aboveground electrical power lines on the site.

A phased approach is recommended to appropriately size the WWTF for current and future flows.

- Phase 1 would include facilities to meet a 2.0-mgd capacity. Two clarifiers and two BNR basins with a 1.0-mgd capacity each, would be constructed. Buildings would be sized for a buildout capacity of 4.0 mgd, with installation of equipment for a 2.0-mgd capacity.
- Phase 2 would include the construction of a third BNR basin and third clarifier as well as installation of necessary equipment to expand the capacity to 3.0 mgd.
- Phase 3 would include construction of a fourth BNR basin and fourth clarifier as well as installation of necessary equipment to expand to the buildout capacity of 4.0 mgd. A capacity of 3.0 mgd may be initiated earlier if the Estes Park Sanitation District joins in the project. The proposed site layout and improvements, including proposed phasing, are shown on Figure 3 in the EA.

Demolition of the existing WWTF and TRLS would include:

- Demolish, remove, salvage, and dispose of existing structures, equipment, piping, electrical, and materials.
- Verify termination of utility services (electric, water, telephone, and natural gas) to include removing meters and capping lines.
- Remove items scheduled to be salvaged and placed in designated storage areas.
- Remove existing exposed piping, equipment, conduit, and electrical wiring.
- Remove roofs, ceilings, walls, joists, electrical, mechanical, furnishings, and other appurtenances.
- Remove concrete walls of basins to 2 feet below grade.
- Fill basins and openings and compact structural fill to the proposed finished grade.
- Remove and dispose of all debris from demolition.
- Abandon in place the existing pipeline and Big Thompson outfall.

- Return the property to the U.S. Bureau of Reclamation (USBR), convert the site to a hauled waste / RV dump station site, and/or allow for the Estes Valley Recreation and Park District vehicle parking and Big Thompson River access.

Replacement of the FCLS would include:

- Construction of a new lift station on USBR property (under a special use permit) adjacent to the existing lift station.
- Connect to the new lift station to the existing dual force mains.
- Demolish the existing lift station.

Wastewater conveyed by the FCLS would flow by gravity through a proposed Mall Road interceptor extension from the existing WWTF to the new WWTF headworks. A gravity extension of the Big Thompson Interceptor would be constructed from SH 34 to the new WWTF to convey Big Thompson interceptor flow. The two interceptor extensions are shown on Figure 3 in the EA.

Step 1: Determine whether the proposed action is in a wetland and/or the 100-year floodplain (500-year floodplain for critical actions), and whether it has the potential to affect, or be affected by a floodplain or wetland.

According to the current Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM) number 08069C1113F (effective December 19, 2006) and 08069C1113F (effective December 19, 2006), portions of the project area are in FEMA 100 Year Flood Zone AE, FEMA 100 Year Flood Zone A, and FEMA 500 Year Flood Zone X (Figure 4 in the EA). Zone AE and Zone A are considered Special Flood Hazard Area (Zone A), which is defined by FEMA as an area subject to inundation by the 1 percent annual chance flood event. Zone A identifies a special flood hazard area for which no base (100-year) flood evaluations have been provided, while Zone AE identifies a flood hazard area where base flood elevation have been derived from detailed hydraulic analyses. Approximately 1.5 acres of the project area are within Zone AE and Zone A. The remainder of the project area is within Zone X, an area with minimal flood hazard, defined as areas outside the 0.2 percent annual chance floodplain.

UTSD would comply with all FEMA National Flood Insurance Program (NFIP) and Larimer County floodplain development stipulations. Based on current FIRM mapping, and preliminary design UTSD would potentially submit a Letter of Map Revision (LOMR) through FEMA prior to construction of Alternative 1. Based on this information, UTSD anticipates no change in base flood elevation and no direct or indirect impacts to the existing floodplain.

A maximum of 0.83 acre of the project area overlap NWI features, of which 0.12 acre consists of mapped open water and 0.71 acre consists of mapped wetlands. Due to preliminary project design, precise impacts to wetlands are not known at this time. If any work is planned within the Big Thompson River or adjacent wetlands, a Section 404 permit would be required from the Corps for the placement of dredged or fill material within wetlands or below the ordinary high-water mark. It is assumed that the proposed activities would likely be authorized under CWA Section 404 Nationwide Permit (NWP) 12 for the pipeline crossing and NWP 7 for outfall structures. Impacts from pipeline installation would likely be temporary, and the affected areas would be returned to preconstruction elevations. The outfall

structure to the Big Thompson River would result in permanent impacts to the River. It is assumed that the permanent impacts would remain under 0.1 acre.

Step 2: Notify the public at the earliest possible time of the intent to carry out an action in a floodplain and involve the affected and interested public in the decision-making process.

Outreach regarding the UTSD WWTF Project began with project scoping, which occurred in late July 2020. Letters describing the project were sent to potentially interested federal, state and local agencies.

Public notification will occur once the EA is published by the USDA RUS.

Step 3: Identify and evaluate practicable alternatives to locating the proposed action in a floodplain or wetland (including alternative sites, actions and the "no action" option) (see 44 CFR § 9.9). If a practicable alternative exists outside the floodplain or wetland FEMA must locate the action at the alternative site.

Three WWTF site alternatives were originally considered for the proposed project (Mott MacDonald 2017). They include:

- **Alternative A: Existing Site Expansion.** Alternative A included expansion and modification of the existing WWTF and site (Figure 3 in the EA). These include:
    - Install integrated fixed-film activated sludge media in two of the four existing aeration basins for biological nitrogen and phosphorus removal.
    - Repurpose existing digesters as aeration basins to provide additional capacity for nutrient removal.
    - Cover clarifier number three to allow operation during winter months.
    - Construct new secondary clarifier to meet current WQCD design criteria.
    - Construct an Advanced Water Treatment facility for metals treatment.
    - Construct new solids handling facility east of Mall Road.
- **Alternative B: Mall Road / Highway 34 Site (Proposed Action).** See the Proposed Action description above.
- **Alternative C: South of Mall Road Site.** Alternative C included a combination of construction of a new WWTF on private land south of the existing WWTF and Mall Road, and use of the existing UTSD administration and collection buildings as shown on Figure 4 in the EA. The existing WWTF and TRLS would be demolished following construction of the new facility.

Both Alternative A and Alternative C would not result in impacts on floodplains or wetlands.

All three alternatives were evaluated using the following eight criteria, which were weighted on a scale of 1 (least important) to 10 (most important) (Table 1). See the 2017 Upper Thompson Sanitation District Wastewater Treatment Facility Site Alternative Evaluation for more detailed information (Mott MacDonald 2017).

1. Ability to Achieve Required Treatment – Alternatives were assessed for their ability to meet required discharge regulations, including nutrient, metals, and temperature requirements. The

ability of an alternative to meet the required treatment was limited either by site or retrofit limitations.

2. Site Acquisition – Alternatives were assessed for the cost, time and restrictions associated with site acquisition or additional ROW acquisition.
3. Operation and Maintenance – Alternatives were assessed for the amount, cost, and ease of WWTF operation and maintenance.
4. Expansion Flexibility – Alternatives were assessed for the ability to provide future WWTF expansion considering expansion area, site topography and conditions, and WWTF configuration.
5. Required Physical Improvements – Alternatives were assessed for the level of physical improvements, such as construction of buildings, equipment, outfalls, as well as demolition and retrofits needed.
6. Project Implementation – Alternatives were assessed for time required to implement the alternative, from planning to construction. Factors in this criterion included permitting requirements, design complexity, construction complexity, financing options and ability to use existing facility during construction.
7. Ability to Treat Estes Valley Flow – Alternatives were assessed to their ability to treat the entire Estes Valley wastewater flow.
8. Community Aesthetics – Alternatives were assessed for their aesthetic value, ability to minimize adverse community impacts, such as odor, and east of delivery access.

Table 1. Alternatives evaluation criteria weighting.

Criterion No.	Criterion	Weighting Factor
1	Ability to Achieve Required Treatment	9
2	Site Acquisition	7
3	Operations and Maintenance	6
4	Expansion Flexibility	8
5	Required Physical Improvements	6
6	Project Implementation	6
7	Ability to Treat Estes Valley Flow	4
8	Community Aesthetics	7

The results of the alternatives evaluation are included in Table 2. For more information on the specifics of each alternative related to the criterion see the 2017 *Upper Thompson Sanitation District Wastewater Treatment Facility Site Alternative Evaluation* (Mott MacDonald 2017).

Table 2. WWTF alternatives evaluation criterion results.

Criterion	Weighting Factor	Alternative A: Existing Site Expansion		Alternative B: Mall Road/Highway 34 Site (proposed action)		Alternative C: South of Mall Road Site	
		Rank*	Score**	Rank*	Score**	Rank*	Score**
1. Ability to Achieve Required Treatment	9	1	9	9	81	9	81
2. Site Acquisition	7	9	63	5	35	3	21
3. Operations and Maintenance	6	2	12	7	42	7	42
4. Expansion Flexibility	8	1	8	9	72	9	72
5. Required Physical Improvements	6	5	30	5	30	3	30
6. Project Implementation	6	4	24	6	36	6	36
7. Ability to Treat Estes Valley Flow	4	1	4	9	36	9	36
8. Community Aesthetics	7	4	28	9	63	4	28
Total Score		--	178	--	395	--	346
Total Project Cost***		$38 million		$46 million		$45 million	

* Rank is on a scale of 10 (best) to 1 (worst).
** Score equals the weighting factor times rank.
*** Total Project Costs does not include annual O&M costs. Costs are presented in 2017 dollars.

Based on the evaluation, Alternative B scored the highest and Alternative A scored the lowest. Alternative C was a close second. Alternative A scored very low because of the inability to achieve required discharge regulations, little to no expansion capability, and the inability to treat the entire Estes Valley wastewater flow. Alternative C scored similarly with Alternative B, except in two criterion – site acquisition and community aesthetics. However, Alternative C required a more complex acquisition process than Alternative B, due to the multiple residential landowners. Additionally, Alternative C was determined to be visually exposed along Mall Road and near a church and residences, causing community aesthetic impacts. Therefore, Alternatives A and C were dismissed from more detailed analysis.

Step 4: Identify the potential direct and indirect impacts associated with the occupancy or modification of floodplains or wetlands, and the potential direct and indirect support of floodplain development, or support of new construction in wetlands that could result from the proposed action.

The proposed action could result in a maximum of 0.83 acre of NWI features, of which 0.12 acre consists of mapped open water and 0.71 acre consists of mapped wetlands. Due to preliminary project design, precise impacts to wetlands are not known at this time. If any work is planned within the Big Thompson River or adjacent wetlands, a Section 404 permit would be required from the Corps for the placement of dredged or fill material within wetlands or below the ordinary high-water mark. It is assumed that the proposed activities would likely be authorized under CWA Section 404 Nationwide Permit (NWP) 12 for the pipeline crossing and NWP 7 for outfall structures. Impacts from pipeline installation would likely be temporary, and the affected areas would be returned to preconstruction elevations. The outfall structure to the Big Thompson River would result in permanent impacts to the River. It is assumed that the permanent impacts would remain under 0.1 acre. No indirect impacts or development within wetlands are expected.

UTSD would comply with all FEMA National Flood Insurance Program (NFIP) and Larimer County floodplain development stipulations. Based on current FIRM mapping, and preliminary design UTSD would potentially submit a Letter of Map Revision (LOMR) through FEMA prior to construction of

Alternative 1. Based on this information, UTSD anticipates no change in base flood elevation and no direct impacts to the existing floodplain. Additionally, no indirect or cumulative impacts would occur.

The proposed action would meet the existing and future required wastewater treatment flows, for customers within the UTSD and would not result in new construction or development in nearby wetlands or floodplains.

Step 5: Minimize the potential adverse impacts or support of development in floodplains or minimize the impacts or support of new construction in wetlands identified under Step 4 and restore and preserve the natural and beneficial values served by floodplains and wetlands.

Under the proposed action no impacts to the Big Thompson River floodplain would occur. Efforts will be made by UTSD to minimize temporary construction and permanent impacts on nearby wetlands during final design of the proposed action; however, some wetland impacts may be unavoidable. No wetlands located outside of the project area would be impacted. UTSD would obtain all necessary CWA Section 404 permits and adhere to all terms and conditions listed in the permits. All temporary impacts associated with the construction of the proposed action, including wetlands, would be reseeded with a native seed mix appropriate for the hydrologic conditions where appropriate.

Step 6: Reevaluate the proposed action to determine first, if it is still practicable in light of its exposure to flood hazards and the ensuing disruption of natural values, the extent to which it will aggravate the flood hazards to others, and its potential to disrupt floodplain and wetland values; and second, if alternatives preliminarily rejected at Step 3 are practicable in light of the information gained in Steps 4 and 5.

In determining the 'practicality' of the proposed action, the "…importance of carrying out the action must clearly outweigh the requirements listed in paragraphs (e)(2) and (e)(3) …" as included in 44 CFR 9.9. Practicable is defined in 44 CRF 9.4 as "…capable of being done within existing constraints… and includes the consideration of all pertinent factors, such as environment, cost and technology."

The proposed action was selected because it met the stated project purpose, and best addressed all the UTSD needs. As noted in Step 3, Alternative A scored very low because of the inability to achieve required discharge regulations, little to no expansion capability, and the inability to treat the entire Estes Valley wastewater flow. While Alternative C scored similarly with Alternative B in six of the criterion, Alternative C required a more complex and lengthy acquisition process and would result in adverse community aesthetic impacts.

As described in Step 5, temporarily impacted wetlands would be reseeded, and impacts to wetlands would be minimized during final design. Measures would also be taken to ensure that existing floodplain is not altered.

The proposed action would meet the wastewater treatment demands of residents and visitors within the UTSD, allow UTSD to meet applicable water quality standards and regulations, address aging and deficient infrastructure, reduce long-term operation and maintenance costs for UTSD, and allow for

future facility expansion to meet projected wastewater flows when needed. Overall, the benefits for the residents outweigh the requirements of EO 11988 and 11990 with regards to floodplains and wetlands.

Given this, none of the two alternatives rejected in Step 3 are 'practicable' considering the information gained in Step 4 and Step 5.

Step 7: Prepare and provide the public with a finding and public explanation of any final decision that the floodplain or wetland is the only practicable alternative.

Final public notice for the proposed action and EA will be determined by the USDA RUS. UTSD will post any final decision that the floodplain or wetland is the only practicable alternatives with the EA public notice.

Step 8: Review the implementation and post-implementation phases of the proposed action.

UTSD will ensure that the proposed action is implemented as approved. Compliance with all applicable federal, tribal, state and local permits, approvals, and project conditions, including Section 404 of the CWA, is required. The National Environmental Policy Act process must be completed and a decision issued by USDA RUS regarding funding. At that point in time, USDA RUS may fund the project, and final design may proceed.

Reference

Mott MacDonald. 2017. Upper Thompson Sanitation District Wastewater Treatment Facility Site Alternative Evaluation. June.

Appendix B Colorado Noxious Weed Act

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Colorado Noxious Weeds (including Watch List), effective May, 2023

List A Species (26)

Common	***Scientific***
Camelthorn	*(Alhagi maurorum)*
Giant reed	*(Arundo donax)*
Elongated mustard	*(Brassica elongata)*
Flowering rush	*(Butomus umbellatus)*
Yellow starthistle	*(Centaurea solstitialis)*
Squarrose knapweed	*(Centaurea virgata)*
Meadow knapweed	*(Centaurea x moncktonii)*
Rush skeletonweed	*(Chondrilla juncea)*
Common crupina	*(Crupina vulgaris)*
Hairy willow-herb	*(Epilobium hirsutum)*
Cypress spurge	*(Euphorbia cyparissias)*
Myrtle spurge	*(Euphorbia myrsinites)*
Japanese knotweed	*(Fallopia japonica)*
Giant knotweed	*(Fallopia sachalinensis)*
Bohemian knotweed	*(Fallopia x bohemicum)*
Orange hawkweed	*(Hieracium aurantiacum)*
Hydrilla	*(Hydrilla verticillata)*
Yellow flag iris	*(Iris pseudacorus)*
Dyer's woad	*(Isatis tinctoria)*
Purple loosestrife	*(Lythrum salicaria)*
Parrotfeather	*(Myriophyllum aquaticum)*
African rue	*(Peganum harmala)*
Mediterranean sage	*(Salvia aethiopis)*
Giant salvinia	*(Salvinia molesta)*
Tansy ragwort	*(Senecio jacobaea)*
Medusahead	*(Taeniatherum caput-medusae)*

List B Species (38)

Common	***Scientific***
Jointed goatgrass	*(Aegilops cylindrica)*
Mayweed chamomile	*(Anthemis cotula)*
Absinth wormwood	*(Artemisia absinthium)*
Plumeless thistle	*(Carduus acanthoides)*
Musk thistle	*(Carduus nutans)*
Wild caraway	*(Carum carvi)*
Diffuse knapweed	*(Centaurea diffusa)*
Spotted knapweed	*(Centaurea stoebe ssp. micranthos)*
Spotted x diffuse knapweed hybrid	*(Centaurea x psammogena)*
Canada thistle	*(Cirsium arvense)*
Bull thistle	*(Cirsium vulgare)*
Chinese clematis	*(Clematis orientalis)*
Houndstongue	*(Cynoglossum officinale)*
Yellow nutsedge	*(Cyperus esculentus)*
Common teasel	*(Dipsacus fullonum)*
Cutleaf teasel	*(Dipsacus laciniatus)*
Russian-olive	*(Elaeagnus angustifolia)*
Leafy spurge	*(Euphorbia esula)*

List B Species Continued (38)

Common	***Scientific***
Dame's rocket	*(Hesperis matronalis)*
Black henbane	*(Hyoscyamus niger)*
Hoary cress	*(Lepidium draba)*
Perennial pepperweed	*(Lepidium latifolium)*
Oxeye daisy	*(Leucanthemum vulgare)*
Dalmatian toadflax, broad-leaved	*(Linaria dalmatica)*
Dalmatian toadflax, narrow-leaved	*(Linaria genistifolia)*
Yellow x Dalmatian toadflax hybrid	*(Linaria vulgaris x L. dalmatica)*
Yellow toadflax	*(Linaria vulgaris)*
Eurasian watermilfoil	*(Myriophyllum spicatum)*
Scotch thistle	*(O. tauricum)*
Scotch thistle	*(Onopordum acanthium)*
Sulfur cinquefoil	*(Potentilla recta)*
Russian knapweed	*(Rhaponticum repens)*
Bouncingbet	*(Saponaria officinalis)*
Salt cedar	*(T. chinensis)*
Salt cedar	*(Tamarix. ramosissima)*
Common tansy	*(Tanacetum vulgare)*
Scentless chamomile	*(Tripleurospermum inodorum)*
Moth mullein	*(Verbascum blattaria)*

List C Species (18)

Common	***Scientific***
Velvetleaf	*(Abutilon theophrasti)*
Tree of Heaven	*(Ailanthus altissima)*
Common burdock	*(Arctium minus)*
Downy brome, cheatgrass	*(Bromus tectorum)*
Chicory	*(Cichorium intybus)*
Poison hemlock	*(Conium maculatum)*
Field bindweed	*(Convolvulus arvensis)*
Quackgrass	*(Elymus repens)*
Redstem filaree	*(Erodium cicutarium)*
Halogeton	*(Halogeton glomeratus)*
Common St. Johnswort	*(Hypericum perforatum)*
Wild proso millet	*(Panicum miliaceum)*
Bulbous bluegrass	*(Poa bulbosa)*
Perennial sowthistle	*(Sonchus arvensis)*
Johnsongrass	*(Sorghum halepense)*
Puncturevine	*(Tribulus terrestris)*
Siberian elm	*(Ulmus pumila)*
Common mullein	*(Verbascum thapsus)*

Watch List Species (19)

These species are not regulated by the Noxious Weed Act/Rule.

Common	***Scientific***
Garlic mustard	*(Alliaria petiolata)*
Common bugloss	*(Anchusa officinalis)*
Tall Oatgrass	*(Arrhenatherum elatius)*
Onionweed	*(Asphodelus fistulosus)*
Hoary alyssum	*(Berteroa incana L.)*
Caucasian bluestem	*(Bothriochloa bladhii)*
Yellow bluestem	*(Bothriochloa ischaemum)*
White bryony	*(Bryonia alba)*
Scotch broom	*(Cytisus scoparius)*
Baby's breath	*(Gypsophila paniculata)*
Meadow hawkweed	*(Hieracium caespitosum)*
Perennial Sweet Pea	*(Lathyrus latifolius)*
Garden loosestrife	*(Lysimachia vulgaris)*
Common reed	*(Phragmites australis)*
Yellow mignonette	*(Reseda lutea)*
Himalayan blackberry	*(Rubus armeniacus)*
Swainsonpea	*(Sphaerophysa salsula)*
Ventenata grass	*(Ventenata dubia)*
Syrian beancaper	*(Zygophyllum fabago)*

Appendix C USFWS No Concerns Response

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Clint Henke

From: Williams, Jennifer M <jennifer_williams@fws.gov> on behalf of ColoradoES, FW6 <ColoradoES@fws.gov>
Sent: Monday, March 15, 2021 2:18 PM
To: Clint Henke
Cc: Ravel, Steve; Laureska, Jacob - RD, Denver, CO; Aliina Fowler
Subject: Re: [EXTERNAL] Habitat Assessment Report for UTSD WWTF

Hello, Clint Henke -

The U.S. Fish and Wildlife Service (Service) has reviewed the documents associated with the construction of a new wastewater treatment facility, outfall, interceptor line, and two lift stations in the Estes Valley, east of Lake Estes, in Larimer County, Colorado. The existing wastewater treatment facility and lift stations will be demolished. Water storage and use will remain unchanged from current operations. The Service has no concerns with this project resulting in impacts to species listed as candidate, proposed, threatened, or endangered.

In your effects evaluation for greenback cutthroat trout (*Oncorhynchus clarki stomias*), you wrote that the "last remaining individual was identified in Bear Creek in El Paso County in 2018." That information is incorrect. A genetic study in 2012 determined that only one greenback population remained in existence and this population is located in Bear Creek in El Paso County. An 80 percent decline in the adult population of Bear Creek was recently documented, but the younger age classes are fairly robust.

Effective February 12, 2021, the interior least tern (*Sterna antillarum athalassos*) was removed from the federal list of endangered and threatened wildlife due to recovery. Therefore, you do not need to evaluate this species in future consultations.

We recommend that you review our migratory bird guidance on best practices and conservation measures, available online here.

We appreciate your efforts to ensure the conservation of threatened and endangered species. Thank you for contacting us and please let me know if you have any further questions. I can be reached at 303-236-4758 or at jen_williams@fws.gov.

Reference: Projects\LARIMER COUNTY\WATERWATER TRMT FACILITY NEAR ESTES

U.S. Fish and Wildlife Service
Colorado Ecological Services Field Office
P.O. Box 25486 - DFC
Lakewood, CO 80225

From: Clint Henke <chenke@eroresources.com>
Sent: Friday, February 19, 2021 6:31 PM
To: ColoradoES, FW6 <ColoradoES@fws.gov>
Cc: Ravel, Steve <steve.ravel@mottmac.com>; Laureska, Jacob - RD, Denver, CO <Jacob.Laureska@usda.gov>; Aliina Fowler <afowler@eroresources.com>
Subject: [EXTERNAL] Habitat Assessment Report for UTSD WWTF

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hello,

Please see the attached habitat assessment for the Upper Thompson Sanitation District (UTSD) Wastewater Treatment Facility (WWTF) and Lift Station. The UTSD plans to construct a new WWTF and associated lift station in the Estes Valley, approximately 1.8 miles east of downtown Estes Park in Larimer County, Colorado. UTSD is seeking financial assistance from the USDA Rural Utilities Service (RUS). The USDA will act as the lead federal agency for the project. Clint Henke with ERO and Jen Williams with the Service discussed the project on January 6, 2021.

Please feel free to contact me if you have any questions or need additional information. Thanks!

Clint Henke
Senior Biologist/Project Manager

ERO Resources Corporation
303.830.1188 O | 720.231.5174 C | chenke@eroresources.com | www.eroresources.com
DBE Update: ERO is now certified as a Minority/Women Business Enterprise (M/WBE) and Small Business Entity (SBE) by the state of Colorado, and federally as a Women-Owned Small Business (WOSB) by the U.S. Small Business Administration.