CLINTON GULCH RESERVOIR ENLARGEMENT

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Submitted on behalf of the:
Clinton Ditch & Reservoir Company

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SECTION 1: INTRODUCTION

Clinton Gulch Reservoir (CGR) is located on Clinton Creek, tributary to Tenmile Creek within the Upper Blue River watershed of Summit County, Colorado. The general location of CGR is shown on **Figure 1**. The CGR is owned and operated by the applicant, the Clinton Ditch & Reservoir Company (CDRC), and provides its shareholders with physical and legal water supplies in support of a variety of municipal, domestic, irrigation, industrial and snowmaking uses.[1] The system operates under the terms of the 1992 Clinton – Fraser Water Agreement as amended (Clinton Agreement) with the City and County of Denver acting by and through its Board of Water Commissioners (Denver Water) and provides direct use of released storage supply as well as indirect use for augmentation and exchange purposes.

Under the provisions of the Clinton Agreement (see **Appendix A**), CGR provides its shareholders with a firm storage supply capable of withstanding three consecutive drought years. At the time of the initial Clinton Agreement (1992), hydrologic studies suggested that such three-year supply would be sufficient to withstand future severe drought periods. However, the study findings were challenged during the drought period of 2002 to 2005 when CDRC could not fill the Reservoir for three out of the four years: 2002, 2003 and 2005. In 2004, the Reservoir barely filled and thus, narrowly avoided four consecutive call years during which the Reservoir could not be refilled. Had this occurred, the shareholders would not have been able to divert the water needed for municipal, domestic, irrigation and snowmaking uses. As a result of this sequence, the CDRC began to explore alternatives that would provide its shareholders with needed water supplies during future extended drought periods. Through that process, the CDRC has developed a proposal that would increase the reservoir's storage capacity by approximately 473 acre-feet (AF) at the dam through modification of the existing spillway system.

SECTION 2: BACKGROUND INFORMATION

CGR has a capacity of 4,460 AF of which 3,659 AF is active and can be regulated; the balance 801 AF consists of dead storage that is situated below the elevation of the reservoir's outlet facility. The CDRC has obtained numerous water court decrees that support the reservoir's existing and proposed uses. In Case No. W-2559, the District Court in and for Water Division No. 5 (Water Court) entered a decree granting the conditional right to 4,250 AF to be stored in CGR for industrial, domestic, irrigation, recreation, and fish and wildlife propagation purposes. This water right was decreed absolute in Case No. 79CW49. On May 25, 1993, the Water Court entered a decree in Case No. 92CW65 granting a conditional Use Enlargement and Second Filling for CGR in the amount of 4,250 AF for domestic, municipal, irrigation, industrial, snowmaking, recreation, fish and wildlife propagation, and augmentation purposes, both on the eastern and western slopes of Colorado. On September 17, 1998, the Water Court entered a decree in Case No. 98CW57

[1] The CDRC shareholders include Summit County Government; the Towns of Silverthorne; Breckenridge and Dillon; Copper Mountain Consolidated Metropolitan District; Dundee Realty USA Inc. (d/b/a Arapahoe Basin Ski Area); Vail Summit Resorts (d/b/a Keystone Resort); Vail Summit Resorts (d/b/a Breckenridge Ski Resort); Powder Copper Mountain LLC; and Winter Park Recreational Association.

approving the Clinton Gulch Reservoir Use Enlargement and Second Filling for 4,250 AF, absolute, for the uses decreed in Case No. 92CW65. On November 4, 2013, the Water Court entered a decree in Case No. 06CW252 for the CGR 1st Enlargement and Refill Right granting an absolute right to an additional 210 AF stored in CGR, together with the right to refill this amount when water is available in priority, for domestic, municipal, irrigation, industrial, snowmaking, recreation, fish and wildlife propagation, and augmentation purposes, both on the eastern and western slopes of Colorado for use in the Denver Water's municipal water system and for direct or indirect use in Summit and Grand Counties by the present and future shareholders of CDRC. On June 2, 2019, the Water Court entered a decree in Case No. 18CW3210 for the CGR 2nd Enlargement and Refill Right granting a conditional right to an additional 500 AF, together with the right to refill this amount when water is available in priority for the uses decreed in Case No. 06CW252. The proposed 473 AF of increased storage supply associated with the CDRC's planned modification to the CGR spillway is part of the decreed 500 AF 2nd Enlargement water right.

2.1 CDRC OPERATING PRINCIPLES

The upper headwaters region of Summit and Grand Counties provide needed water supplies for both west slope and east slope water users. The demand for water and associated water rights have created a complex and over appropriated stream system supporting a variety of small and large water users. The basin's major water users include operation of trans-mountain diversions and supporting reservoirs operated by Denver Water (Dillon Reservoir) and the US Bureau of Reclamation (Green Mountain Reservoir). These large water users have relatively senior water rights and historically, had the ability to place the headwaters regions on "call" thereby curtailing water use by more junior in-basin municipalities and ski resort developments. In recognition of the importance of water supply certainty for both east slope and west slope entities, in 1992 the various parties entered into an agreement of State-wide importance commonly referred to as the Clinton Agreement. The Clinton Agreement allows its shareholders to utilize their water rights while still meeting the water supply needs of more senior water rights holders including Denver Water and the Bureau of Reclamation.

The cornerstone of the Clinton Agreement includes the operation of CGR. The initial Clinton Agreement established a firm yield for the Reservoir of 1,200 AF. Firm yield is a reservoir's ability to provide stored water during extended drought conditions. In the development of the Clinton Agreement, Denver Water used their Platte and Colorado Simulation Model (PACSIM) to determine CGR's firm yield of 1,200 AF. The PACSIM modeled streamflows, reservoir storage, and water rights operations in the Colorado and South Platte watersheds to determine water supply availability to Denver Water and west slope users. To determine the firm yield of CGR, the PACSIM model used the gaged records of streamflows from 1947 to 1991 including the drought period of 1953-1957 (the worst drought period in the gage records available at that time). The model showed that under a similar drought period to that which occurred in the mid 1950's, CGR would be out of priority and not able to refill for three consecutive years. In other words, the Reservoir's initial active capacity (approximately 3,600 AF) could supply water to the CDRC shareholders during 3 consecutive drought years. As a result, the CDRC originally issued 1,200

AF of Class A stock to its shareholders, representing one third of the reservoir's 3,600 AF of regulatory capacity.

Over the last 30 years, the CDRC shareholders have successfully utilized, and have become dependent upon, CGR to provide dependable legal water supplies to support residential and ski area development in Summit and Grand Counties. Moreover, five of the participating entities have fully utilized their available shares.[2] Due to the importance of the water provided by the Clinton Agreement, the CDRC is concerned about the recent drought conditions that appear to be worse than the conditions reflected in the 1947-1991 data used by Denver Water to run its PACSIM model in 1992. The 2002 – 2005 drought period was more severe than the drought in the mid 1950's, and the fact that this more severe drought occurred only 10 years after the Clinton Agreement is concerning for the CDRC. Furthermore, three of the driest water years on record in Colorado include 2002, 2018, and 2020, all of which occurred post Clinton Agreement.[3] Thus, a fourth-year water supply is necessary to provide the CDRC shareholders with a firm, uninterruptible water supply during expected future drought sequences.

In effort to provide the CDRC with additional water supplies, the participants supporting the Clinton Agreement, including Denver Water, have amended the original 1992 Clinton Agreement to recognize CDRC's use of its existing 801 AF dead storage pool in the Reservoir and to store up to an additional 500 AF in CGR that will result from reconstructing the existing spillway system (combined pool = 1,300 AF). As a result of these amendments, the dead storage of the Reservoir and CGR as enlarged will operate under Denver Water's prior fill agreement with the Bureau of Reclamation and Denver Water will be obligated to meet the paper fill requirements of Green Mountain Reservoir. This application addresses the second source of additional water supply, the enlargement of CGR through the reconstruction of its existing spillway. Together, these two sources (Deadpool and spillway raise) would provide the CDRC shareholders with additional needed water supplies and/or a fourth-year firm supply.

2.2 UNIQUE ATTRIBUTES

The Clinton Agreement and its associated operating principals provide unique benefit to the CDRC ski resort shareholders including A-Basin, Breckenridge, Copper Mountain, Keystone, and Winter Park Resort. The Clinton Agreement established a mechanism by which the CDRC shareholders borrow water from Denver Water's system for snowmaking purposes. Under the Clinton Agreement, ski areas are allowed to divert water for snowmaking (that would otherwise be out of priority) and Denver Water releases from its Williams Fork Reservoir in amounts and times required to augment by exchange said snowmaking diversions. To pay Denver Water back the ski areas book over storage in CGR to Denver Water equivalent to 20% of the snowmaking diversions (this is the consumptive use, or snowmaking water lost to evaporation, evapotranspiration and other losses). During the ensuing spring runoff, Denver Water recaptures

[2] Breckenridge Ski Resort, Copper Mountain Resort, Winter Park Resort and the Towns of Breckenridge and Dillon
[3] https://cwcb.colorado.gov/drought

the remaining 80% as man-made snow melts and flows into Denver's Dillon Reservoir and Fraser River Water Collection System. This ability to recapture the return flows reduces the ski resort's pay back obligation to only 20% of the water previously diverted for snowmaking. This provides the ski resorts with ability to leverage their snowmaking storage accounts in CGR 1 to 5. For example, when the CDRC ski areas divert 100 acre-feet, Denver Water releases 100 AF from Williams Fork Reservoir and the CDRC credits (or books over) 20 AF of CGR water to Denver, with the remaining 80 AF returning to Denver Water as runoff during the following melt season. All snowmaking operations are subject to the maintenance of established instream flows at the various points of diversions.

SECTION 3: APPLICANT AND CONTACTS

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SECTION 4: PROJECT AREA, HABITAT AND LANDSCAPE DESCRIPTION

CGR is located on Clinton Creek, a tributary to Tenmile Creek on the west side of the Ten Mile Range in the Southern Rocky Mountain Province. The project area is located at 11,200 feet above msl in a subalpine ecosystem. The project area habitats include a spruce fir forest comprised of subalpine fir (*Abies lasiocarpa*) and Englemann spruce (*Picea engelmanni*), mesic meadows and willow and emergent wetlands. The open water of the reservoir comprises most of the project area.

The Clinton Gulch valley is narrow and trends NW-SE. The CGR is formed by a dam which includes Highway 91. The habitats to the west and southwest of the dam are highly modified by the Climax Mine Tailings ponds, while the habitats to the east are relatively undisturbed except for historic mining activity. Clinton Creek is one of the streams forming the headwaters of Tenmile Creek draining northwest. Mayflower Creek just to the north is a similar valley draining northwest. **Figure 2** is a vicinity map of the CGR.

Summer and early fall recreation on National Forest Lands and on the applicant's land around the CGR is high. Hiking and fishing are the most common uses on the lands around CGR (observed, no data on use). Mayflower Creek on the Dillon Ranger District includes road access (primarily 4-wheel drive) and hiking trails where the public can access old mine sites as well as the alpine ecosystem. The Climax Molybdenum Company property (i.e., Climax Mine) to the south and upstream of the CGR is posted as private property.

The Climax Molybdenum Company, owner, and operator of the Climax Mine, is the major private property owner in the surrounding landscape, including south of the project area spanning the Continental divide. Climax Mine is an important hard rock mining and processing operation in the region. There are various small mining claims owned by others in the headwaters of Clinton and Mayflower Creeks which are surrounded by public lands managed by the White River National Forest, Dillon Ranger District. Climax created the large tailings ponds in the headwaters of Tenmile Creek.

The outflow from CGR, through both the main outlet pipe and the spillway conduit, avoids mixing with the tailings ponds via flow through the constructed Clinton Canal which flows into Mayflower Creek. That combined natural discharge flows in a modified surface channel, and eventually reaches the area near the Climax Treatment plant outfall (see **Figure 2**). The treatment plant processes water from the tailings ponds, and below the plant's outfall, the main channel of Tenmile Creek forms and flows in a surface channel, modified in certain locations, but otherwise natural bed and bank. Tenmile Creek meets West Tenmile near I-70 and Copper Mountain Resort (CMR), and then eventually enters Dillon Reservoir in Frisco, Colorado.

As described above, the Clinton Agreement allows the applicants to use water out of priority throughout the Blue River watershed that would be junior to Denver Water, by storing water in CGR, and then releasing water to Dillon Reservoir, making Denver whole. CMR has a diversion on Tenmile Creek and can physically divert the flows released from CGR, whereas other members of the company rely on water right exchanges.

The valley floor in the project area is not visible due to the CGR. The slope rises steeply from the reservoir edge on the north side of the valley, with slightly less gradient on the south side. The two northwest trending ridges above the valley floor are heavily forested up to alpine elevations. The southern ridge is owned by Climax. Upstream of the CGR is a relatively undisturbed section of the valley which is basically covered with willow and emergent wetlands on the valley floor and on the adjacent hillslopes. Clinton Gulch originates upstream at Clinton Peak at 13,500 feet. Fremont Pass and the Continental Divide are only a few miles south of the project site.

The project area for the wetland delineation was conservatively defined by the applicant's representative as from the CGR water's edge at full pool up gradient to 8 feet above the water surface elevation at full pool. This was easy to estimate from water's edge in the field and we over delineated to ensure the project area was covered completely. Later a topographic survey confirmed our boundary estimate except for the upstream portions of the CGR. Upstream of the

reservoir we had overestimated the extent of the 8-foot rise extending the delineation too far upstream and have adjusted the wetland boundaries accordingly to fit the project area.

Due to a geologic constriction from the hillslope morphology near where Clinton Creek enters the CGR, the valley floor widens substantially upstream of the reservoir. Groundwater rises to the land surface creating a wide expanse of wetland habitat including fens, beaver ponds, and slope wetlands (HGM) on the hillslopes that extend well above the valley floor. Beavers have long colonized this wetland complex with active and inactive dams, and the changes in channel morphology and location that result are evident.

The wetland habitats in the project area are described more fully in Section 4:. Briefly, the western half of the CGR contains a narrow fringe as the drainage was a steeper gully prior to dam construction. This narrow fringe would be lacustrine wetlands under Hydrogeomorphic (HGM) classification (Brinson et al 1993) as the water supply is the CGR shoreline. In the eastern portion of the CGR more extensive wetlands exist along the shoreline as they were present before dam construction, and they are primarily slope wetlands under the HGM classification system. In many locations, these wetlands extend upslope, and well above the shoreline where the CGR's shoreline could not supply water.

Clinton Creek enters the CGR just downstream of the geologic constriction which forms the upper valley. The creek's substrate is small to large cobble, with natural pools and riffles. The banks are eroded in locations likely due to the geology in this reach of the creek or some historic man-made disturbance. A small pedestrian bridge crosses the creek on CDRC lands allowing for a loop trail around the CGR. Upstream of the bridge is a rectangular weir flow measurement feature likely installed in the 1970's during CDR construction (Metcalf Archaeology, 2019). Upstream of that structure, the valley widens as described above and the creek changes morphology to a narrower channel with multiple braids due to the beaver pond complexes both active and abandoned.

SECTION 5: PROJECT DESCRIPTION – NATURE OF THE ACTIVITY (SECTION 18)

The proposed project involves increasing the crest elevation of CGR's existing spillway by five feet, from 11,058 feet to 11,063 feet. The existing spillway consists of a 72-inch diameter concrete conduit buried within the embankment of the dam. The proposed project would excavate approximately 3,500 sq. ft area of the dam where the spillway's air vent is located and modify a section of the 72-inch RCP conduit to raise the crest elevation up to 5.0 feet (**Figure 3**). This modification would increase CGR's capacity by 473 acre-feet without having to increase the height of the dam. The proposed project has undergone a Dam stability analysis and initial review by the Colorado Department of Water Resources, Dam Safety Branch and is considered feasible. Construction best management practices (BMPs) for pollution and sediment control, such as silt fence, vehicle tracking control, and concrete washout containment, will be implemented during all construction activities.

Utilization of the CGR's existing dead pool capacity (801 acre feet), plus the additional 473 AF of proposed storage capacity would provide the CDRC shareholders with access to a total of 1,274 AF of additional CGR storage. Approximately 1,200 AF of this supply would be available for direct use by the shareholders and/or to help firm the yield of the reservoir by providing a fourth-dry year supply during a critical drought sequence. The balance, 74 AF, would be dedicated to providing CGR with a minimum conservation pool to help protect the fishery should access to the dead pool be required. The 74 AF conservation pool would have a surface area of 6.6 acres with a maximum depth of 42 feet.

Outflow from CGR is normally accomplished via a 48-inch steel outlet pipe, except when the CGR is full and spilling in which case discharge is also conveyed through the spillway. Both, the outlet pipe and the spillway conduit meet at the Outlet Control Structure and discharge through a reinforced concrete energy dissipater and stilling basin into the Clinton Canal which ultimately flows into Tenmile Creek (see **Figures 4** and **5**).

SECTION 6: PURPOSE AND NEED (SECTION 19)

The basic project purpose is to store additional water in CGR for all decreed uses, including municipal, domestic, irrigation, and snowmaking. Specifically, the project would provide the applicant's shareholders with 473 acre-feet of reliable water supplies in the Upper Blue River Basin to help firm their water availability during periods of extended droughts. The proposed enlargement project will:

- Help firm the CGR's yield during periods of severe drought, such as that experienced during the 2002-2005 period. This supply will reduce risks associated with climate change, severe drought and any unforeseen future events that could rapidly diminish water supplies.

- Provide the applicant with reliable physical and legal water supplies during periods when the CDRC's shareholders water rights would otherwise be out-of- priority.

SECTION 7: IMPACTS TO WATERS OF THE US

7.1 WETLAND IMPACTS

The project does not involve a discharge of fill material into wetlands. As described above in Section 4:, the project would raise the elevation of the dam's spillway, a concrete conduit siphon located in Highway 91, five feet higher than its current elevation. All construction activity would take place in upland areas located adjacent CGR's western parking lot and Highway 91. This five-foot elevation change in the spillway raises the water surface elevation of the reservoir at full pool by 5 feet. The new water surface elevation inundates 3.02 acres of wetlands on the shoreline of CGR. Included in the 3.02 acres of wetlands are 1.27 acres of fen wetland that will be inundated. The inundation of wetlands is considered a direct impact from the project.

The wetlands impacted in the north are lacustrine wetlands under the Hydrogeomorphic classification system (HGM) (Brinson et al 1995). They exist as a narrow fringe several feet wide on the perimeter of the existing reservoir and are entirely supported (water supply) by the water surface elevation in the reservoir. These lacustrine wetlands are palustrine emergent wetlands (PEM) under the Cowardin classification system (Cowardin et al 1977) as the primary plant community is herbaceous vegetation. The wetlands in the south are slope wetlands under the HGM classification system and are supported by groundwater entering the wetland from the adjacent hillslope, and for the wetlands near the shoreline by the water surface elevation of the reservoir. Portions of the wetlands in the south are several feet in elevation above the current water surface elevation of the reservoir and are obviously supported by groundwater. These wetlands were present prior to reservoir construction. Under Cowardin, there is a mix of both palustrine emergent and palustrine scrub-shrub.

The lacustrine wetland plant community varies by location and include water sedge (*Carex aquatilis*), redtop (*Agrostis gigantea*), Swordleaf rush (*Juncus ensifolius*), and Canada reedgrass (*Calamagrostis canadensis*). Soils are mineral with cobble, and at full pool the wetlands are either inundated or saturated to the surface. Occasional willows are present (*Salix drummondiana, Salix monticola and Salix geyeriana)* but cover is sparse from shrubs.

The slope wetlands in the southern portion of the reservoir include both palustrine scrub-shrub wetlands (PSS) and PEM, as well as fens. The plant community in the PSS wetlands is dominated by willow (Salix planifolia, Salix drummondiana, and Salix brachycarpa). Other shrubs include bog birch (*Betula glandulosa*), twinberry honeysuckle (*Lonicera involucrata*), and shrubby cinquefoil (*Dasiphora fruticosa*). The understory varied by location but was dominated by water sedge (*Carex aquatilis*) or Canada reedgrass (*Calamagrostis canadensis*). Other common understory plants in the willow wetlands were bluebells (*Mertensia ciliatum*), heartleaf bittercress (*Cardamine cordifolia*). The willow cover was on the shoreline of the existing reservoir and extended well up slope beyond the influence of the reservoir.

The common wetland herbaceous cover in the emergent slope wetlands was water sedge, with beaked sedge (*Carex utriculata)* in wetter areas, marsh marigold (*Caltha leptosepala*), heartleaf bittercress (*Cardamine cordifolia*) and elephanthead lousewort (*Pedicularis groenlandica*). On the slopes further from the reservoir, the willow wetlands had an understory of Canada reedgrass and blue bells (*Mertensia ciliatum*). Soils in wetlands were silty clay loams with low chroma and redoximorphic features. There were wetlands with histic epipedons near the fens, and the histosols in the fens.

In summary, the project would impact 1.0 acres of PSS and 2.02 acres of PEM (total impacted wetlands = 3.02 acres). Included in the total impacted area is 1.27 acres of fen habitat.

In addition to the wetland habitats described above the reservoir shoreline includes areas of shoreline with no wetland development. These occur in areas a very steep slope, and large

boulder and or large cobble on the shoreline that prohibits plant development. The habitat in these areas of shoreline is upland.

7.2 NON-WETLANDS WATERS IMPACTS

The proposed project would also inundate approximately 85 linear feet of the Clinton Creek channel at the upstream portion of the reservoir. The channel is series of pools riffle and runs with a substrate size of 2 to 8 inches. A pedestrian bridge for the hiking trail crosses the channel. The bankfull width is approximately 12 feet and the project will inundate 1,020 square feet of channel. The channel reach impacted is not the important spawning habitat for cutthroat fishery in the reservoir (see **Section 12:** below). The channel morphology is very different than the channel upstream of the old weir, and it is not clear if the changes are due to the natural geologic restriction just upstream or anthropogenic influences.

Table 1: Wetland Habitats Inundated by the Proposed Reservoir Expansion
(all values in acres unless otherwise noted)

Spillway Raise (feet)	Additional Reservoir Volume (acre-feet)	Total Impacts to Wetlands	Impacts to PSS Wetlands	Impacts to PEM Wetlands	Impacts to Fen Wetlands	Water Surface Area
5.0	473.3	3.02	1.00	2.02	1.27	97.93

7.3 NET WETLAND LOSS

The 3.02 acre of wetland impact discussed above is based on the simple mapping effort using the wetland and fen boundaries and the topographic survey (where they overlap is the wetland impact). A five-foot rise from the normal pool elevation (11,058 ft) to the proposed pool elevation results in 3.02 acres of impacted wetlands. The permanent wetland loss due to the project is 2.59 acres as shown on **Figure 6**. The calculation or analysis for this figure is not only topographic survey overlap, using a 4-foot rise, but also knowledge of the soils and slope gradient in the basin. We used the 4-foot rise in WSE in the southwest portion of the basin where the topography is more gradual, and the soils are primarily organic or at least silty clay loams. We believe that wetland habitats within 1 vertical foot of the 5-foot rise footprint will re-establish quickly or simply persist following the proposed action.

The wetlands will persist as the soils are conducive to wetland plant development, and the plant species present are highly rhizomatous, and often occur and persists in 6 to 12 inches of inundation. Carex utriculata and Carex aquatilis, the two dominant sedges, will move out into the new WSE, or in some cases will not decay or die back. This occurs now at CGR on the southwest shoreline. A portion of one of the emergent fen wetlands is inundated at full pool but has sufficient dense plant cover that it had to be delineated as wetland. In the PSS wetlands the willow plants in more than 6 inches of water for the majority of the growing season will die back, but sedge understory will re-establish.

In the remainder of the reservoir, the wetland habitat is in larger substrate soils (cobble) and with a fairly steep gradient above the 5-foot rise that the persistence of wetlands on the perimeter will not occur.

Table 2: Permanent Wetland Loss Due to Proposed Action
(all values in acres)

Total Wetland Loss from project	Total PSS wetland	Total PEM Loss	Total fen loss
2.59	0.84	1.75	1.10

7.4 STREAM STABILITY IN TEN MILE CREEK DOWNSTREAM OF RESERVOIR

This project involves the storage of an additional 473 AF per year of water and thus will result in a change in timing to the streamflow in Tenmile Creek. The additional water will be stored during the reservoir fill season, which typically occurs in the months May through August. In turn, the additional water stored will be made available for release in subsequent months. The effects of the proposed reduction in streamflow needs to be considered as it could alter the capacity of Tenmile Creek to flush fine sediment and maintain physical habitat for fishes and aquatic insects.

CGR releases water during the snowpack runoff for flood control purposes. Over the 2015 – 2021 period, the CGR flood control releases typically occurred in mid-June. In lower snowpack years (e.g., 2018 and 2020) releases occurred in late May/early June and higher snowpack years (e.g., 2019) in late June/early July. Over this period, the flood control release rate ranged from 76 cfs in 2019 to 18 cfs in 2021. The flood control releases will continue with the proposed change and contribute to the flushing flows on Tenmile Creek.

An estimate of the daily streamflow on Tenmile Creek above the Copper Mountain's Tenmile Creek Pipeline (irrigation & snowmaking diversion) was developed based on the gage data from the U.S. Geological Survey's (USGS) stream gage on Tenmile Creek at Frisco, CO (USGS 09050100). A watershed area factor was applied to the gage data which assumes that each square mile above the gage site contributed equally to the streamflow record at the gage. The watershed area factor was determined by taking the ratio of the watershed, or drainage, area above the Copper Mountain Tenmile Creek Pipeline and the watershed area for the entire gage. The Copper Mountain Tenmile Creek Pipeline diversions were added to the unit area daily streamflow to estimate the flow in Tenmile Creek above the pipeline diversion. The average mean daily flow for Tenmile Creek above the Copper Mountain Tenmile Creek Pipeline over the 2015 - 2021 May through August period ranged from a high of 555 cfs in 2019 to a low of 173 cfs in 2021.

Based on the average CGR storage occurring over the 2015 to 2021 period, the additional storage of the 473 AF was simulated daily. Historical reservoir outflows that were greater than the historical releases requested by the shareholders were assumed to be available for storage during the fill season. The reduced outflows and Tenmile Creek streamflows above the Copper Mountain

Tenmile Creek Pipeline were calculated by reducing the amount of historical outflow by the amount of additional water stored. The flood control release rate was reduced from 76 cfs to 67 cfs in model year 2019 and from 18 cfs to 2 cfs in model year 2021. The peak mean daily flow for Tenmile Creek above the Copper Mountain Tenmile Creek Pipeline over the simulated period were reduced to 546 cfs in 2019 (1.6% reduction) and to 172 cfs in 2021 (0.6%). Based on the results of the additional storage simulation over the 2015 – 2021 period, there would be little change to the capacity of Tenmile Creek to flush fine sediment and maintain physical habitat for fishes and aquatic insects.

SECTION 8: SECTION 401 WATER QUALITY ANALYSIS

The storage of an additional 473 AF per year of water under the proposed project will result in a change in timing to streamflow in Tenmile Creek as well as inundation of soils and vegetation that can impact water quality. A reduction to the Tenmile Creek streamflow will occur during the reservoir fill season when the additional water is stored and an increase in streamflow will occur in subsequent months when releases occur. The potential impacts to water quality in Tenmile Creek due to storage of the additional 473 acre-feet were estimated using publicly available water quality and streamflow data as well as data collected by CDRC and their consultants. The water quality parameters analyzed for potential impacts included both physical and chemical parameters: temperature, dissolved oxygen (DO), hardness, zinc, molybdenum (total recoverable), sulfate, and iron (dissolved and total recoverable).

Existing water quality conditions in Tenmile Creek were estimated using data from CDPHE's station on Tenmile Creek above Wheeler Junction near Copper Mountain (Station ID 21COL001). Estimates for existing streamflow conditions for Tenmile Creek which were discussed previously in Section 6:. Streamflow estimates of the additional storage in CGR were calculated from water usage accounting of reservoir operations. CDRC maintains a database of water quality data from samples collected at key locations around CGR such as the reservoir outlet and the Clinton Canal. The existing streamflow conditions for Tenmile Creek and the flows associated with the additional storage in CGR are shown in **Figures 7** and **8**, respectively. Any potential water quality impacts were estimated from CDRC's water quality database and compared to water quality standards listed in Regulation 33[4] for segment COUCBL13[5], the first segment downstream of the Clinton Canal's discharge into Tenmile Creek.

8.1 ANTIDEGRADATION REVIEW AND BASELINE AVAILABLE INCREMENT (BAI)

[4] CDPHE Regulation No. 33 – Classifications and Numeric Standards for Upper Colorado River Basin and North Platte River (Planning Region 12).
[5] Page 180 of Regulation 33, the reach described is as "Mainstem of Tenmile Creek from the Climax Parshall Flume (39.44756, -106.157003) to a point immediately above the confluence of West Tenmile Creek and all tributaries and wetlands from the source to Tenmile Creek to a point immediately above the confluence with West Tenmile Creek, except for the specific listing in Segment 15."

CDPHE regulations require an antidegradation review to quantify potential water quality degradation from the Proposed Action. The first step of the antidegradation analysis is to determine whether new or increased water quality impacts are "significant". Section 31.8(3)(c) of Regulation No. 31[6] determines that a water quality impact is considered significant if it consumes, after mixing, more than 15% of the Baseline Available Increment (BAI). The BAI is the difference between the baseline low-flow pollutant concentration and the associated numeric water quality standard (WQS). Section 31.8(3)(c)(ii)(B) states that the low-flow pollutant concentration represents the water quality as of September 30, 2000.

Typically, low-flow pollutant concentrations are estimated from statistical analysis of representative streamflow data to identify a chronic low-flow flow value and then screening for pollutant concentrations during conditions less than the statistical low-flow value. However, without water quality data paired with streamflow data, that analysis was not practicable. **Figure 7** shows that the minimum streamflow in Tenmile Creek typically occurs in February, so existing low-flow pollutant concentrations (except for temperature and DO) in Tenmile Creek, were estimated using data collected in January, February, and March at Station 21COL001. Temperature and DO are generally most favorable in the winter months due to cold air and water temperatures, so we estimated their low-flow pollutant concentrations during the hottest months of July, August, and September, to represent worst-case conditions.

The baseline available increment was then calculated as the difference between low-flow pollutant concentrations and the water quality standards for stream segment COUCBL13. For pollutants other than temperature and DO, the period of January through March was used for low-flow conditions, while July through August was used for temperature and DO to represent the worst-case scenario for each pollutant in a typical year. It's important to note that the water quality standards for COUCBL13 do not include limits for molybdenum, dissolved iron, or sulfate.

8.2 MASS BALANCE ESTIMATE OF IMPACTS

A mass balance approach was used to estimate the changes to pollutant concentrations in Tenmile Creek resulting from the Proposed Action. Impacts resulting from additional storage in CGR were estimated by subtracting mass loading (flow multiplied by concentration) due to storage in CGR from existing mass loading in Tenmile Creek and dividing by the corresponding reduced flows in Tenmile Creek. The results of the mass balance analysis indicate that the redistribution of streamflow throughout the year due to reservoir operations could increase or decrease the concentration of some pollutants. Temperature was the only parameter estimated to exceed 15% of the BAI as a result of the proposed action, and only during the month of July. **Table 3** summarizes the results of our antidegradation review and mass balance analysis. **Appendix B** includes more tables showing details of the antidegradation analysis.

[6] CDPHE Regulation No. 31 - The Basic Standards and Methodologies for Surface Water.

Table 3: Antidegradation Review and Mass Balance Analysis Summary

Low-flow pollutant concentrations estimated from January through March, unless otherwise noted.

Parameter	Units	BAI [1]	15% of BAI	Maximum Impact Estimate	Maximum Impact Month
Flow	cfs	Not Applicable	---	-9.06	June
Hardness	mg/L	No Standard	---	9.84	August
Sulfate	mg/L	No Standard	---	12.0	August
Zinc	µg/L	102	15.3	Insufficient Data	Insufficient Data
Iron (total)	µg/L	934	140	3.02	June
Iron (dissolved)	µg/L	No Standard	---	Insufficient Data	Insufficient Data
Molybdenum (total) [3]	µg/L	No Standard	---	6.42	June
Temperature [4]	°C	2.39	0.359	**0.468** [2]	**July** [2]
Dissolved Oxygen [4]	mg/L	-0.540	-0.0810	0.183	July

Table 3 Notes:

(1) Water quality standards for stream segment COUCBL13 were applied as it covers the next largest tributary downstream of CGR. Standards for molybdenum, sulfate, and iron (dissolved) are not listed for this stream segment.
(2) Parameters that could exceed 15% of the Baseline Available Increment (BAI).
(3) Total molybdenum was not measured in samples collected at the Reservoir Outlet. Instead, total molybdenum was estimated from the product of dissolved molybdenum concentrations, measured at the Reservoir outlet, and the total-to-dissolved molybdenum ratio measured Clinton Creek above the Reservoir.
(4) The low-flow pollutant concentrations and BAI for temperature and dissolved oxygen were estimated from data collected in July, August, and September to develop a more restrictive and conservative BAI. All other parameters were estimated from data collected in January, February, and March, the lowest flow months in Tenmile Creek.

8.3 DEPTH-PROFILE ANALYSIS OF CLINTON GULCH RESERVOIR

CDRC analyzed temperature and dissolved oxygen (DO) at the reservoir outlet for their depth-profile characteristics using a data-logging water quality sonde[7]. CGR is typically around 90 feet deep at its outlet. Profile data were collected on July 20, 2022, and spot measurements were taken at depths of 3ft, 30ft, and 90ft on November 9, 2017, and July 12, 2021. Temperature near the surface is warmest and gradually approaches the "boundary condition" temperature of 5°C at the bottom of the reservoir. Dissolved oxygen increases with depth to 8.8 mg/L at a depth of 20 feet, then decreases to 5.5 mg/L near the bottom of the reservoir, which is below the spawning DO water quality standard of 7 mg/L listed in COUCBL13. **Figures 9** and **10** show the depth-profile data for DO and temperature, respectively.

8.4 MERCURY IN FISH TISSUE

Studies have shown that mercury concentrations in fish tissue increase following impoundment of reservoirs; a direct result of microbial conversion of inorganic mercury in soils to water-soluble methylmercury.[8] In light of this effect, mercury concentrations in fish at CGR could increase due to the additional storage and rise in water surface elevation. However, at this time, there is insufficient data to estimate or quantify the potential impacts on mercury concentrations in fish. CDRC has not studied pollutants in fish and both CPW and CDPHE confirmed that no fish-tissue studies have been completed at CGR.

8.5 IMPACTS TO CLINTON CREEK

Approximately 85 feet Clinton Creek will be inundated by the Proposed Action and impact water quality to the stream. These impacts will be minimal and will not move upstream past the point of inundation.

SECTION 9: ALTERNATIVES AND MINIMIZATION

The Clean Water Act regulations under 40 CFR Section 404(b)(1) require that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant environmental consequences" (40 CFR 230.10[a]]). Unless the basic project purpose requires siting in a special aquatic site, there is a rebuttable presumption that a less damaging practicable alternative (LEDPA) is available to discharging fill into a special aquatic site.[9] An alternative is practicable if it is available to the applicant, and if it meets the overall project purpose considering costs, logistics and existing technology. The

[7] A four-parameter water quality sonde was used for depth-profile measurements, which logs pressure (i.e., depth), temperature, dissolved oxygen, pH, and specific conductivity.
[8] M. Mailman et al. "Strategies to lower methyl mercury concentraitons in hydroelectric reservoirs and lakes: A review". *Science of the Total Environment*. **368** (2006): 224-235.
[9] Special Aquatic sites are wetlands and a few other specific aquatic resources. The proposed project is water dependent as it involves storing water, however it does not necessarily depend on siting in a special aquatic site. Note for this project, the discharge of fill material is not within a special aquatic site as it occurs in the concrete siphon, and there is no discharge proposed in wetlands.

guidelines in 40 CFR Section 404 hold that the level of analysis for alternatives should be commensurate with the intensity or degree of impact or potential impacts to the aquatic environment.

The proposed discharge of fill material needed to raise the spillway is not located within a special aquatic site. The spillway for this project is the 72-inch concrete siphon conduit, and no earth work or discharge of dredged or fill material would occur in the open water of the CGR or wetlands (wetlands are special aquatic sites, but not the reservoir open water). The rebuttable presumption that a LEDPA exists applies to a discharge into a special aquatic site, which is not proposed for this project. Below is a discussion of the practicability of water storage alternatives in the Blue River Basin that satisfy the overall project purpose. The project permanently impacts 2.59 acres of wetlands through inundation which may be considered a direct impact of the proposed action, but that impact to special aquatic site is not a discharge of dredged or fill material.

9.1 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

9.1.1 Increase Capacity of Dead Pool Through Dredging of Bottom Sediments

This alternative would increase the capacity of CGR's dead pool through dredging and removal of accumulated sediments. U.S. Environmental Protection Agency (EPA) staff discussed this type of alternative during a site visit to the reservoir. Approximately 375 AF of sediment would need to be removed to create sufficient volume to provide the Clinton shareholders with a volume of storage comparable to that provided by the proposed project. This alternative was eliminated from detailed analysis primarily due to the magnitude and cost associated with the loading and transport of sediments and the prolonged period of required reservoir drawdown.

- Each acre-foot of sediment removal from CGR would require approximately 107 vehicle trips assuming use of large 15 cubic yard dump trucks (10,700 trips per 100 AF). The removal of 473 AF of sediment would require over 50,000 vehicle trips.

- Due to CGR's high elevation location, the construction season is short and will necessarily extend into the fall low flow season. Inflows into CGR are limited at this time and the reservoir will not be able to refill until the following year. Thus, water will not be available for snowmaking or other augmentation uses for an extended period.

- There is not a defined disposal area in a reasonable distance that would accept over 700,000 cubic yards of material, and the environmental impacts of such a disposal area in a mountain environment could be substantial.

9.1.2 Boyle Report Alternatives

The Upper Colorado River (UPCO) participants (water users from western slope in the Upper Basin) involved in Summit County developed a UPCO Phase III study completed by Boyle Engineering. This report, completed in 2004, provided a reconnaissance level examination of storage sites within the Summit County and water rights exchanges that could meet the water

supply needs of the community. This report, referenced as the Boyle report, was not specific to the purpose and need of the CGR, but looked at additional storage possibilities in Summit County.

The Boyle report discussed three potential new reservoirs in the County, one on the main fork of the Swan River, one on the Middle Fork of the Swan and one on Indiana Creek (tributary to the Blue upstream of Breckenridge). Since each of these potential reservoirs are upstream of Dillon reservoir and subject to Denver's call for water when filling the reservoir, the report identified two possible companion projects that would be needed to deliver substitute water supplies to Denver to satisfy their call. These mitigation projects would be required in addition to the proposed reservoirs. The two substitute water supply projects included the Everest Pumpback diversion and the Straight Creek diversion.

The Everest Pump back project would divert water from the Blue River north of Silverthorne (thus downstream of Dillon Reservoir) and store it temporarily in several gravel pits located adjacent to the Blue River, and then pump the water (50 CFS) back up stream to Dillon Reservoir in a buried pipeline. The diverted water would replace the water stored out of priority to Dillon Reservoir by one of the proposed upstream reservoirs.

The straight Creek diversion project involved diverting water from Straight Creek directly into Dillon Reservoir. Straight Creek drains a watershed on the north side of Tenderfoot Mountain up to the Eisenhower Tunnel, and the creek joins with the Blue River just downstream of the Dillon Dam. The Town of Dillon's water supply is on Straight Creek, and the project would divert more water from Straight Creek and deliver it to Dillon Reservoir via buried pipeline. That diverted water would be used to replace water stored in one of the upstream new reservoirs to satisfy Denver's call. The Boyle study concluded that the Straight Creek water rights were not sufficient to cover substitution years (years of drought conditions which the proposed action project specifically addresses), and the diversion could operate only when Straight Creek is above 9.5 cfs due to the Town's water right and minimum flows.

The Boyle study report found that the proposed storage reservoirs would have high costs for construction as they would require mitigation projects in addition to the construction of new reservoir facilities. In addition, all of the study reservoirs would impact large acreages of wetlands. The two reservoirs on the Swan River system would have substantial wetland impacts both for the new dam and the areas upstream inundated by the reservoirs. The Indiana Creek site also has a large wetland system that would be impacted and based on location, it is probable that some of the impacts would include fen wetlands. As a result of the study findings, these alternatives were eliminated from detailed analyses. The alternatives identified in the Boyle Report would not be less-damaging alternatives. The Boyle Report alternatives are also not practicable due to high costs compared to the proposed alternative.

9.1.3 Peru Creek Storage Reservoir

Summit County, a member of the CDRC, holds a storage water right for a reservoir on Peru Creek, a primary tributary to the Snake River. The reservoir would be located at about 11,000 feet above

msl in the subalpine ecosystem. Four different size reservoirs at the location could be constructed with yields of 100, 300, 950, and 2000 AF. The Peru Creek project is not considered a less damaging practicable alternative as it would require a new dam on a major drainage and wetlands cover the valley floor in the project area.

9.2 ALTERNATIVES CONSIDERED

9.2.1 Alternative 1 – Proposed Action (Preferred Alternative)

The proposed project involves increasing the crest elevation of CGR's existing spillway by five feet, from 11,058 feet to 11,063 feet. The existing spillway consists of a 72-inch diameter concrete conduit buried within the embankment of the dam. The proposed project would excavate an area of the dam where the spillway's air vent is located and modify a section of the 72-inch RCP conduit to raise the crest elevation up to 5.0 feet. This modification would increase CGR's regulatory capacity by 473 AF without having to increase the height of the dam. The proposed project has undergone a Dam stability analysis and initial review by the Colorado Department of Water Resources, Dam Safety Branch and is considered feasible.

The project area associated with the planned improvements is modest in size, less than 3,500 sq. ft., and is located adjacent to CGR's existing parking lot and State Highway 91. Construction access is readily available. CDRC's engineer's cost estimate to permit and construct the spillway raise project is approximately $2,000,000; a cost per AF of $4,228.

9.2.2 Alternative 2 – No-Action

The No Action Alternative considers water conservation measures available in the Blue River Watershed. In 2018, the High Country Conservation Center along with five water providers in Summit County developed a regional water efficiency plan for the Blue River Watershed. Four of the five water providers also developed individual efficiency plans. The total water savings projected by 2025 under these plans is approximately 377 AF per year.[10] The water plan, however, projected that the Blue River Watershed will likely be facing a gap of 22,000 to 48,000 AF per year by 2050. Thus, while water conservation measures can help alleviate a portion of the projected gap, the savings of 377 AF per year will only account for approximately 1.7% of the projected gap. This suggests that there will continue to be increasing water demands in the Blue River basin in the foreseeable future, and such demands will contribute to more frequent and prolonged periods of drought. There will be increasing need for water providers to protect and firm their available water supplies.

Under the No Action Alternative, CGR would not be enlarged to provide additional water supplies. The CGR shareholders would continue to have sufficient water supplies to withstand a three

[10] Blue River Watershed Regional Water Efficiency Plan, January 2018 (https://highcountryconservation.org/water/how-to-conserve/)

consecutive year drought but would not have sufficient firm storage available to withstand a four consecutive year or longer drought as now expected based upon recent trends and records.

9.2.3 Alternative 3 – On Site Alternatives/Minimization

Alternative 3 considers on site alternatives designed to minimize wetland impacts associated with an increase in spillway elevation. Specifically, this alternative examines the volume of additional firm yield provided by varying increases in the height of the spillway elevation. **Table 4** below compares potential wetland impacts associated with increases in spillway water surface elevation of 2, 3, 4 and 5 feet. By way of example, raising the spillway by 4 feet rather than 5 feet would reduce the overall wetland impact by 0.55 acre to a total of 2.47 acre, and the impacts to fen by 0.17 acre to a total of 1.10 acre. However, this 4-foot raise alternative also reduces the yield of the project by almost 100 AF (96.6 AF) or 21% of the total project yield.

Table 4: Spillway Raise vs. Reservoid Storage and Land/Wetland Impacts
(all values in acres unless otherwise noted)

Spillway Raise (feet)	Additional Reservoir Volume (acre-feet)	Impacts to Climax Property	Total Impacts to Wetlands	Impacts to Fen Wetlands
2.0	186.5	0.04	1.35	0.66
3.0	281.1	0.05	1.93	0.92
4.0	376.7	0.09	2.47	1.10
5.0	473.3	0.18	3.02	1.27

The 4-foot rise alternative Is not a practicable alternative as it would reduce the storage yield by 21% and basically cost the same amount as the proposed alternative**.**

9.2.4 Alternative 4 – Dillon Reservoir Storage – Colorado River Cooperative Agreement

In 2013, Denver Water and 17 west slope cities, county governments and water districts entered into The Colorado River Cooperative Agreement (CRCA). The purpose of the CRCA was to settle several long-term water issues between the east slope and west slope parties. This agreement provides an additional water supply to consider under alternatives. As part of the benefit received by the west slope participants in the CRCA, Denver Water allocated portions of its storage supplies in Dillon Reservoir and/or other water delivery sources to numerous west slope entities including some of the CDRC shareholders. As a result of the participation by certain CDRC shareholders, especially the Summit County ski resorts, the CRCA recognized that the allocated Dillon Reservoir storage could be used for snowmaking purposes and such use would be entitled to the same snowmaking ratio of 5 to 1 as approved in the Clinton Agreement.

In return for the allocated water supply in Dillon Reservoir, the CRCA recipients are required to provide Denver Water with “replacement water” for the Dillon yield. The ratio was established at 1 AF of Replacement Water for each acre-foot of water delivered above or into Dillon Reservoir and 1.4 acre-feet of Replacement Water for each acre-foot for each acre-foot made available below Dillon Reservoir.

Use of the CRCA of 2013 does not satisfy the overall project purpose considering costs and existing technology. With respect to costs, the Dillon Reservoir alternative is projected to cost more than five times that of the proposed action alternative on a per acre-foot basis. The increased costs are attributed to the CRCA’s requirement that the recipients provide Denver Water with replacement water for each acre-foot of Dillon water used. The most accessible and practical replacement supply acceptable to Denver Water originates from the Colorado River Water Conservation District’s (CRWCD) Wolford Mountain Reservoir located on Muddy Creek, tributary to the Colorado River downstream of Dillion Reservoir. As such, the recipients must supply Denver Water with 1.4 AF of Wolford Mountain Reservoir storage supply for each acre-foot of used Dillon supply.

Long term water supply contracts from Wolford Mountain Reservoir are available from the CRWCD at a cost of $387 per AF per year ($542 per 1.4 AF). The contract duration is 40 years after which the contract can be renewed for an additional 35 years. To establish the value of all necessary future payments to the CRWCD, a Net Present Value (NPV) analysis using a current contract amount of $542 was completed. The NPV represents the value of all future payments to the CRWCD made over the 75-year contract period discounted to the present. As shown in **Table 5**, for each acre-foot of Dillon water used under the CRCA, the NPV of the required lease pool associated with Wolford Mountain Reservoir is calculated to be $23,000 per acre-foot. As discussed above, the cost per AF to construct the Proposed Action alternative is $4,228 per AF.

The use of Dillon Reservoir under the CRCA is not practicable considering cost, and the fact that not all of the CDRC’s shareholders were allocated storage under the CRCA.

Table 5: Net Present Value Analysis Wolford Mtn. Reservoir Contract Supply

Input Parameters

Initial Present Value Factor	100.00%
Annual Interest Rate *	3.82%
Annual Inflation Rate **	2.17%
Net Discount Rate	1.65%

Cost/acre-feet of CRWCD Contract = $387.00
Assume 1.4 AF CRWCD Contract = $541.80 per (Acre-Foot/Year)

Year	(1) Wolford Mountain Water Supply Contract	(2) Present Value Factor	(3) Present Value of Water Supply Contract	(4) Cumulative Value of Water Supply Contract
1	541.80	96.32%	521.86	521.86
2	553.54	92.78%	513.55	1,035.41
3	565.53	89.36%	505.36	1,540.77
4	577.79	86.07%	497.31	2,038.08
5	590.30	82.90%	489.39	2,527.47
6	603.09	79.85%	481.59	3,009.06
7	616.16	76.91%	473.92	3,482.98
8	629.51	74.08%	466.37	3,949.34
9	643.15	71.36%	458.94	4,408.28
10	657.09	68.73%	451.62	4,859.90
11	671.32	66.20%	444.43	5,304.33
12	685.87	63.77%	437.35	5,741.68
13	700.73	61.42%	430.38	6,172.06
14	715.91	59.16%	423.52	6,595.58
15	731.42	56.98%	416.77	7,012.35
16	747.27	54.88%	410.13	7,422.49
17	763.46	52.86%	403.60	7,826.09
18	780.00	50.92%	397.17	8,223.26
19	796.90	49.04%	390.84	8,614.10
20	814.17	47.24%	384.61	8,998.71
21	831.81	45.50%	378.49	9,377.19
22	849.83	43.83%	372.45	9,749.65
23	868.24	42.21%	366.52	10,116.17
24	887.06	40.66%	360.68	10,476.85
25	906.28	39.16%	354.93	10,831.78
26	925.91	37.72%	349.28	11,181.06
27	945.97	36.33%	343.71	11,524.76
28	966.47	35.00%	338.24	11,863.01
29	987.41	33.71%	332.85	12,195.86
30	1,008.80	32.47%	327.55	12,523.41
31	1,030.66	31.27%	322.33	12,845.73
32	1,052.99	30.12%	317.19	13,162.92
33	1,075.81	29.01%	312.14	13,475.06
34	1,099.12	27.95%	307.16	13,782.23
35	1,122.93	26.92%	302.27	14,084.50
36	1,147.26	25.93%	297.45	14,381.95
37	1,172.12	24.97%	292.71	14,674.66
38	1,197.51	24.05%	288.05	14,962.71
39	1,223.46	23.17%	283.46	15,246.18
40	1,249.97	22.32%	278.94	15,525.12
41	1,277.05	21.49%	274.50	15,799.62
42	1,304.72	20.70%	270.13	16,069.75
43	1,332.99	19.94%	265.82	16,335.57
44	1,361.87	19.21%	261.59	16,597.16
45	1,391.38	18.50%	257.42	16,854.58
46	1,421.52	17.82%	253.32	17,107.90
47	1,452.32	17.16%	249.28	17,357.18
48	1,483.79	16.53%	245.31	17,602.49
49	1,515.94	15.92%	241.40	17,843.89
50	1,548.78	15.34%	237.56	18,081.45
51	1,582.34	14.77%	233.77	18,315.22
52	1,616.63	14.23%	230.05	18,545.26
53	1,651.65	13.71%	226.38	18,771.64
54	1,687.44	13.20%	222.77	18,994.42
55	1,724.00	12.72%	219.22	19,213.64
56	1,761.35	12.25%	215.73	19,429.37
57	1,799.52	11.80%	212.29	19,641.67
58	1,838.50	11.36%	208.91	19,850.58
59	1,878.34	10.94%	205.58	20,056.16
60	1,919.04	10.54%	202.31	20,258.47
61	1,960.62	10.15%	199.08	20,457.56
62	2,003.10	9.78%	195.91	20,653.47
63	2,046.50	9.42%	192.79	20,846.26
64	2,090.84	9.07%	189.72	21,035.98
65	2,136.14	8.74%	186.70	21,222.67
66	2,182.42	8.42%	183.72	21,406.40
67	2,229.71	8.11%	180.79	21,587.19
68	2,278.02	7.81%	177.91	21,765.11
69	2,327.37	7.52%	175.08	21,940.18
70	2,377.80	7.25%	172.29	22,112.47
71	2,429.32	6.98%	169.54	22,282.02
72	2,481.96	6.72%	166.84	22,448.86
73	2,535.73	6.47%	164.19	22,613.05
74	2,590.67	6.24%	161.57	22,774.62
75	2,646.80	6.01%	158.99	$22,933.61

NVP

* Annual Interest Rate: Avg. of Moody's Aaa Corporate Bond Yield and 30-Year Fixed Rate Mortgages, FreddieMac (2010 through 2021).
** CPI-W data provided by the U.S. Department of Labor. Represents avg. of 2010 through 2021

Notes:
(1) The dollar amount for an Wolford Mountain Reservoir Contract in Year 1 (2021).
In Years 2-75, water supply contracts equal the amount paid the prior year multiplied by one plus the annual inflation rate.
(2) The Present Value Factor (PVF) in Year 1 equals the initial PVF divided by one plus the interest rate.
In Years 2-75, the PVF equals the PVF from the prior year divided by one plus the interest rate.
(3) In each year, the Present Value equals the dollar amount of the Water Supply Contract multiplied by the Present Value Factor.
(4) The Cumulative Present Value (CPV) equals the CPV from the prior year plus the Present Value in the current year.

9.2.5 Alternative 5 - Lower Blue Reservoir

Colorado Springs Utilities (CSU), and the Town of Breckenridge (Town) recently commissioned RJH Consultants, Inc. (RJH) to provide engineering services for analysis of the proposed Lower Blue Dam and Reservoir Project (Project) located on Monte Cristo Creek, a tributary of the Blue River, 9 miles upstream from the Town. The purpose of the study was to provide a design concept and Opinion of Probable Project Costs for the construction of a new reservoir. The goal of the project is to develop a reservoir that would provide west slope participants with an active storage capacity of 600 AF of water that would be capable of providing a firm, drought year supply of 300 AF. The reservoir design is in the early planning stages; however, the initial investigations examined two alternative design concepts; a concrete-faced rockfill dan and an asphalt-core rockfill dam. The findings of the described concept design analysis are summarized in a report prepared by RJH Consultants, Inc., (May 2019).

RJH's initial opinion of probable project costs for this project is $10,000,000. Thus, assuming that the reservoir can provide an active storage supply of 600 AF, the cost per acre-foot of supply is calculated to be $16,666 ($10,000,000/600 AF). However, to be comparable to the cost per acre-foot provided by the proposed project, the total reservoir costs would be divided by the dependable firm-yield supply of 300 AF. The cost of reliable firm-yield supply associated with the Lower Blue Reservoir is calculated to be $33,300 ($10,000,000/300 AF). The reservoir is still in the early stages of planning and analysis and therefore, costs could vary appreciably as more information is developed. An evaluation by ERO found the project would potentially impact about 8.46 acres of wetlands including 0.38 acre of fen.

The Lower Blue Reservoir is not a practicable alternative considering costs and logistics. Under costs, the Lower Blue would be almost 8 times more expensive per acre-foot of firm yield than the proposed project. Under logistics, the yield of the reservoir is not available to all members of the CDRC. Finally, the Lower Blue Reservoir only provides 300 AF or 63% of that provided by the proposed project.

SECTION 10: CULTURAL RESOURCES

A copy of the cultural resource documenting the survey in 2019 by Metcalf Archaeology is attached as **Attachment 1**. Metcalf found no sites that were eligible for listing on the National List of Historic Places.

SECTION 11: ENDANGERED SPECIES ACT

The project involves the storage of water and thus will result in a net average annual depletion of water from the Upper Colorado River Basin. That depletion needs to consider as to its effect on the listed fish species in the Colorado River downstream near Grand Junction: those species include the Colorado pikeminnow (*Ptychocheilus lucius*), the razorback sucker (*Xyrauchen texanus*), the bonytail chub (*Gila elegans*) and the humbacked chub (*Gila cypha*). These species are protected under the Endangered Species Act, and populations have been affected by altered

flow regimes and competition from non-native species. The proposed action will increase the surface area of CGR and thus increase evaporative losses by 9.5 AF per year.

The Canada lynx (*lynx canadensis*) is listed under the ESA as Threatened in Colorado. The subalpine forests in the project area provide lynx habitat. CPW developed a lynx reintroduction program in late 1990's and that program appears to have been successful with the core lynx populations in the San Juans, but also populations in the Mosquito Range. The CPW studied lynx movements with telemetry and snow tracking. The CPW web site for the reintroduction program includes a 2014 Lynx update and several earlier reports (https://cpw.state.co.us/lynxresearch). The Lynx Update report includes a map of lynx habitat use up to 2011, and those locations include the Tenmile Range near the project area as a high use area. One of the CPW reports on lynx movements across I-70 also document lynx movement through the Tenmile range. The White River National Forest maps the forested areas north of the reservoir on NFS lands as winter and other habitat (https://databasin.org/maps/new/#datasets).

The project area is within lynx habitat and the loss of willow wetlands and fens would remove a minor amount of snowshoe hare habitat. The project only involves work on Highway 91 shoulder so no temporary construction impacts would occur, and it is unlikely the additional area of inundation would adversely affect lynx use of the habitats in the project area.

We generated an IPaC report (Information for Planning and Consultation) for the project area from the US FWS website. In addition to the lynx and four fish species discussed above the IPaC report included the gray wolf and Uncompahgre fritillary butterfly (*Boleria acrocnema*) as listed species and the Monarch butterfly as a candidate species.

The Uncompahgre fritillary butterfly occurs above 12,400 feet in elevation as is closely associated with snow willow (*Salix reticulata spp. Nivalis*) communities. That habitat is more than 1000 feet above the project area, and there are not any snow willow communities within the project area. Monarch butterflies are closely associated with milkweed plants (*genus Asclepias*) which do not occur in the project area habitats. IPaC states that lone dispersing gray wolves (*Canis lupus*) could move throughout the state of Colorado however this species needs to be considered only if the project includes a predator management program. The reservoir enlargement does not include a predator management program.

SECTION 12: FISH AND WILDLIFE HABITAT

The project area includes habitat for the typical guilds of terrestrial species in a subalpine ecosystem as the forested and wetland habitats adjacent to the reservoir are undisturbed. Large mammals such as mule deer, elk, black bear, and mountain lion continue to use these habitats and can move around the reservoir in the south. Bird species found at this elevation and habitat types would use the habitats. Small mammals and amphibians continue to use the adjacent habitats, but the reservoir itself would impede movements. The hiking trail is well used during the summer and human activity affects wildlife habitat within areas near the trail.

The existing reservoir has a self-sustaining population of Colorado River cutthroat trout (CRCT). We observed spawning activity in Clinton Gulch channel upstream of the reservoir and discussed the fishery with Jon Ewert, the Aquatic Biologist for CPW. He stated the population was not a genetically pure strain of CRCT, and that the good spawning habitat is upstream of the old diversion structure on Clinton Creek. That diversion structure is 125 feet upstream of any influence the reservoir on Clinton Creek channel, and we believe the project would not affect that spawning habitat.

SECTION 13: COMPENSATORY MITIGATION

The applicant proposes compensatory mitigation in the Upper Blue River watershed to include wetland establishment, re-establishment and rehabilitation including re-establishment and rehabilitation of fen wetlands. The mitigation sites are located on open space lands owned by Summit County and the Town of Breckenridge (applicants), and on National Forest System (NFS) lands managed by the White River National Forest, Dillon Ranger District. A location map of the wetland mitigation sites described below is shown on **Figure C-1** of the mitigation plans located in **Appendix C**.

We used the watershed approach discussed in the Final Mitigation Rule to identify potential mitigation sites in the Blue River watershed and concentrated on locating sites in the Upper Blue watershed to match aquatic resource functions and ecosystem services found at the impact site. We identified several sites on NFS lands and met with FS staff at each site. The FS agreed to allow use of three of the sites we proposed for use by the CDRC. The County and Town of Breckenridge (TOB) properties would be applicant provided sites as both the Town and county governments are part of the CDRC.

If the National Forest Foundation In-Lieu Fee Program (ILF) starts to sell credits in the Blue River watershed, they may utilize some of the sites referenced below. The applicant will consider purchasing credits from the ILF if the cost/benefit ratio is supported. It is also possible that some of the additional sites on NFS lands may become available through the ILF program. Summit County and the Town of Breckenridge recently retained a consulting firm to complete an assessment of other County Open Space properties for wetland mitigation potential. That assessment is complete and may offer additional areas in the watershed for compensatory mitigation. The Corps has issued a public notice recently on the Forest Foundation's ILF mitigation site on Soda Creek on NFS lands. We understand that very few credits are left available for that site, but also do not believe the timing is right for the CGDRC to purchase credits this early in the 404 permit process.

We use definition for the terms from the final Rule on Mitigation (Federal Register Vol. 73, April 10, 2008). *Restoration* is the manipulation of the physical, chemical, and biological characteristics of a site with the goal of returning the natural/historic functions to a former aquatic resource. Restoration is divided into either re-establishment or rehabilitation.

Re-establishment means the manipulation of the sites characteristics to return historic functions to a former aquatic resource, resulting in a net gain in aquatic resources area and functions. *Rehabilitation* means the manipulation of the sites characteristics with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but not a gain in aquatic resource area.

The sites below are described to demonstrate that compensatory mitigation is available in the Blue River watershed for the project impacts. These or other sites that have been explored or may come available to the applicant, and after consultation with the agencies, will be included in a final mitigation plan. Below is a brief description of the sites, and the attached plans provides existing conditions and a conceptual plan view for each site. **Table 6** summarizes the sites and acreages/credits available for compensatory mitigation by wetland type and project site.

13.1 BEMROSE PROPERTY – FOREST SERVICE (BEMROSE FS)

The Bemrose Forest Service Mitigation Area is on the northeast facing slope of Hoosier Pass on NFS system land at an elevation of 11,200 to 11,400 feet above msl in the subalpine ecosystem. The parcel is the headwaters of the Blue River with a tributary of Bemrose Creek which forms the upper Blue starting on the property. The property is the Bemrose-Bostwick Placer where gold mining started in 1870's as placer mining with primitive methods, continued into 1935 with stationary dredge and steam shovels, and in 1921 ditches were excavated to create water for flumes. Ore was mined from the Bemrose placer after the early 1900's and hauled to mill site nearby to extract the gold. (Information on mining from copies of old newspaper articles provided by Breckenridge Heritage Society). Dillon Ranger District staff suggested this property as a potential mitigation site during site review of other NFS sites. The FS acquired the property more recently and owns both surface and mineral rights.

We developed mitigation to include areas of aquatic resources disturbed by the historic mining operations. The project area includes both wetland and upland spruce fir forest habitat, willow (PSS) and emergent wetlands, stream channels, ditches, and bare ground cobble deposits. Highway 9 is on the east edge of the project area, undeveloped NFS lands to the south and west, and the NorthStar residential subdivision to the north. A Summit County Open Space parcel also proposed for compensatory mitigation, Bemrose County, borders the northern edge of the project area.

Due to the level and diverse types of historic impacts there are a variety of restoration opportunities. We divide the restoration opportunities into three geographic areas, each with both hydrologic rehabilitation and re-establishment of aquatic resources. The wetland boundaries for the eastern portion of the project area were GPS surveyed in 2020, the remainder of the boundaries are aerial delineations based on field work. dThe field wetland delineation for the remainder of the site will be completed in 2023.

Area 1 - Fen/PSS Area – In the north central portion of the project area (**Maps C-2 and C-3**) is an approximate 1-acre fen that was disturbed during the mining era (not documented when

disturbances occurred, in could have been for development purposes in the 1960's). A large drainage ditch was excavated across the slope just upgradient (south) of the fen, and this ditch collects both surface flows and groundwater, partially dewatering the fen, the adjacent wetland and the forested wetland upgradient of the ditch. The ditch is 4-5 feet wide at the base and 15-25 feet wide at the top. The ditch drains water from its natural flow path to both the northwest and to the east. The mining operators graded the fen, removing organic soils from the center of the fen. Those organic soils were stockpiled around the fen, and we were able to GPS delineate those stockpiles. A central portion of the fen was delineated as graded, and the entire fen has had its natural water supply diverted. The water supply for the surrounding PSS wetland and PFO-2 wetland are also dewatered by the drain ditch.

The restoration plan in this area would construct ditch blocks in the drain ditch in multiple locations to restore both surface and groundwater flows to the natural flow path. Restoring drain ditches in fens and wetlands is a reliable method of restoration (Cooper and Chimner, 2010). The ditch block technique may be bentomats and/or aspen fiber bales placed across the ditch and covered with soil. The main drain ditch traverses across the slope, but a second deep ditch is located on the edge of the fen, and apparently was never finished. The deep ditch is only 30 feet long but 10 feet deep and acts as drain on the adjacent fen and forested wetland. A ditch block would be installed in the deep ditch at the lower end. The peat stockpiles will be excavated, and a minor amount used to topsoil an area of the fen that is bare soil and to cover the deep ditch surface. The peat stockpiles are excavated down to original adjacent wetland surface to restore that area of wetland. Remaining material from the peat stockpiles would be hauled to Area 2 to use as topsoil for wetland re-establishment.

In Area 1 the proposal will:

- Hydrologically rehabilitate 1 acre of fen by restoring its natural water supply
- Hydrologically rehabilitate an additional 1.64 acres of PSS and PFO wetland
- Re-establish 0.16 acre of fen (peat stockpiles)
- Re-establish 0.19 acre of PEM and PSS wetland (ditch back fill)

Area 2 – Rock Pile Area - In eastern portion of the project area is an area heavily graded and disturbed during the mining era when the dredge and or other heavy equipment was used. Some of the disturbance in this area could be due to Highway 9 construction, but the majority appears to be from mining era. They excavated into the hillslope on the western edge to obtain ore and although much was hauled to the mill, large stockpiles of cobble were left on site. The rockpile restoration area was GPS delineated to include bare soil and rock stockpiles. An additional area was surveyed, labeled "road restoration," to allow for re-establishment of wetlands along the stream channel. We delineated wetlands in the rock pile area and the two stream channels are shown.

Approximately 0.55 acre of slope wetlands can be re-established within the rock pile restoration area. The excavated material can be hauled a short distance to a dry rocky area between the rockpile area and the highway. The work can be completed with track hoe and large front-end loader. Organic material from Area 1 would be hauled to the area for topsoiling restoration areas.

Area 3 – Forested Wetland Hydrologic Restoration/Sawmill Ditch - In the west central and southern portion of the project is a large spruce-fir forest on the slope with multiple drainage channels or swales. In the southwest corner of the project area is a clearing where the miners developed a sawmill. There is a bullwheel on the ground and stacks of milled lumber. Numerous old logging trails or roads lead to the mill site. The newspaper articles report a sawmill was started in 1905 at the Bemrose Placer to support the mining. Wetlands are present in the clearing, and to drain the site for the mill operation they constructed a drain ditch that pulls groundwater to the east, and intercepts two small drainages that flowed south to north towards the fen in Area 1. The drain ditch coneys flows to an active channel on the eastern edge of the forested wetland.

There is no restoration work proposed in the sawmill clearing. We propose to install a ditch block by hand work in the drain ditch to redirect flows to the natural flow path. The ditch is small enough to allow for hand work and bringing in heavy equipment to the site would be difficult. The ditch block will redirect flows to a swale/channel that previously flowed north towards the disturbed fen. A segment of this swale retains some flow now, see **Map C-2**, but much has been dewatered. This ditch block plus the main ditch backfill for Area 1 restores water supply to a forested wetland upgradient of the fen (see **Map C-3**). The main ditch drains groundwater from this forested wetland and the sawmill ditch intercepts both surface and groundwater flows from a swale channel that drains into the forested wetland. The acreage of forested wetland restoration (rehabilitation) is estimated on **Map C-3** at 1.2 acres, but this area will be documented and better defined for the final plan. A large portion of the area would be hydrologic rehabilitation and a smaller portion may be re-establishment.

13.2 BEMROSE PARCEL – COUNTY AND TOWN OF BRECKENRIDGE (TOB)

This County Open Space parcel is located just north of the Bemrose FS project area across the entrance road to the Northstar subdivision (**Map C-4**). This 9.7-acre parcel is also in the subalpine ecosystem with elevations ranging from 11,130 to 11,210 feet above msl, and this parcel was also part of the Bemrose-Bostwick Placer. The parcel is bordered by Highway 9 on the east, NFS lands on the south and the Northstar subdivision on the west. Much of the parcel is ruderal habitat, and although portions have revegetated, all the parcel appears to have been disturbed or graded during the mining era. Two stream channels enter the parcel from the southwest although they both may be altered watercourses constructed during the placer mining. The southwest portion of the parcel includes a large slope palustrine scrub/shrub (PSS) wetland intermixed with large stockpiles of cobble. A pond and dam are in the center of the parcel and the eastern portion of the parcel is a disturbed landscape with pockets of dry willow. There are more minor recent grading disturbances in the eastern part of the property. Along the northwest edge and on the adjacent private lands are steep, unvegetated slopes from where mining activities removed part of the hillside (possible remnants of hydraulic placer mining). A stream channel drains the pond

via a culvert and flows NE across the parcel to a culvert under Highway 9 to join with Bemrose Creek forming the headwaters of the Blue River.

Lodgepole pine trees have regenerated in uplands and Englemann spruce in the wetter areas. The PSS wetland in the SW regenerated due to the substantial amount of ground entering the site from the SW. The pond in the center of the property is formed by a dam with outlet culvert and is now shallow with an emergent wetland fringe. The purpose of the pond is unknown, but it was possibly constructed for water source for hydraulic placer mining. The channel downstream of the dam has been heavily altered and for the most part is a rock lined ditch. The landscape to the south and east of the pond is fill material and just north of the pond is fill material for the dam. The eastern portion of the property is also fill material likely from the hillslopes to the NW. The surface is rocky and sparsely vegetated with non-native grasses.

The aquatic resource restoration for this parcel is of three types: re-establishment, rehabilitation, and channel restoration.

- The re-establishment is the removal of fill material from 1.89 acres of former wetlands in the two areas shown on **Map C-5**. Monitoring wells would be installed to obtain information on groundwater, and fill removed to the appropriate elevation. The groundwater levels under the fill are apparent where the fill ends along the Highway 9 roadway as willow wetlands are present along the highway. The re-establishment would be to PSS wetlands to continue the slope wetland system in the SW.

- The open water of the pond would be restored to wetlands which would count as rehabilitation as the pond is already an aquatic resource. The pond would be restored to palustrine emergent (PEM) slope wetland creating 0.17 acre of PEM.

- Stream channel restoration would be completed in two locations. In the pond area restoration, a stream channel would be reconstructed provided 241 linear feet of re-established stream channel. Downstream of the dam, the existing channel would be restored to a stream condition providing 430 linear feet of restored channel.

13.3 ALPINE BRECKENRIDGE LOTS – COUNTY AND TOB

This property is located 1,300 feet down valley or NE from the Bemrose County parcel. The property is within the Alpine Breckenridge Subdivision, Block 7 and 8, and consists of a series of lots surrounding a cul-de-sac that was platted in the 1970's. County and TOB obtained these lots a few years ago as open space. The property is within the subalpine ecosystem at 10,950 feet above msl and other then the road (County Rd 672) and the cul-de-sac (County Rd 673), the project area is wetland-fen system with a large fen on both sides of County Road 672. The lot layout and cul-de-sac are shown on **Map C-6**. Bemrose Creek flows along the east side of the project area.

The fill for the Cul-de-sac was completed sometime in the 1970's and is mineral soil/ unconsolidated fill material was placed over the fen's organic soils. The county and town now own all the lots on the east side of CR 672 that surround the cul-de-sac - Lots 13,14,15,16, and 17 as well as Lot 12), and the cul-de-sac (CR 673) is a county road. The Town and County also own Lot 6 on the west side of County Road 672, but Lots 7 and 8 remain private.

The project is within a spruce-fir forest at an elevation of 10, 950 feet above msl. Much of the project area is a willow slope wetland with Drummond, mountain and Geyer's as the dominant willows, and bog birch present as well. Beaked and water sedge are the dominant herbaceous cover with Canada reed grass in the drier areas. The terrain slopes from the southwest towards the northeast, and groundwater is draining to Bemrose Creek. The project area includes the lots owned by the County and the county roads. The project area is a slope wetland under the HGM methodology with the exception of County Road 672 and the cul-de-sac fill.

Much of the wetland on the west side of CR 672 is fen except for the cul-de-sac fill. The fen does not extend into north part of Lots 16 and 17 and the riverine system along Bemrose creek is not fen. The fen extends to the south in dense willow cover, and lower portions of the slope wetland west of CR 672 is fen. The developer constructed the north south road (now County Road (CR) 672) and then started filling for the cul-de sac. But they did not complete the cul-de-sac fill project, and the cul-de-sac is not at the same elevation as CR 672. CR 672 remains an unimproved dirt road. It appears the original construction also scaped off a top layer of organic material in the historic borrow area. That area is dominated by beaked sedge and is basically shallow inundation much of the growing season. The cul-de-sac fill acts as a diversion for the near surface hydrology in the fen, routing water to the east form its original route of following the topography to the north-northeast.

In addition to the cul-de sac fill the developer constructed a drain ditch on the west side of CR 672 to protect the road and to remove or divert hydrology from the lots surrounding the cul-de-sac. The ditch captures groundwater in the fen west of CR 672 and conveys it to a culvert under CR 672 to the east side of the road. Besides the fen restoration aspect of this parcel, the restoration of wetlands at this location is important in a watershed context due to the level of suburban development in the vicinity. That development would lower the functional score on a FACWet assessment for the restored wetland, but the area would be able to perform its biogeochemical functions at a relatively high rate. One of the intake diversions for the Colorado Springs Utility transbasin diversion project is located about 400 feet just upstream on Bemrose Creek. Re-establishment and rehabilitation of wetlands in this landscape location may ameliorate some of the diversions impacts in the watershed.

Restoration Plan

The plan removes the fill material placed in the cul-de-sac and expose the organic soils to restore fen wetlands (**Map C-7**). We also restore the roadside ditch to allow groundwater to flow under the County Road to the restored fen area. A short ramp of access fill material would be constructed off the county road to the center of the cul-de-sac and a tracked excavator would

work in the cul-de-sac area to remove fill material, and the material would be loaded out of the area with a tracked skid steer to trucks for hauling to an upland disposal area. The excavator would carefully remove any viable willows, set them aside and replant after fill material is removed. The area would be excavated to the top of the organic soil layer which is an obvious soil profile line. The cul-de-sac fill removal area is as mapped with GPS, and the width adjacent to the road would remain roughly as shown to support the road fill of CR 672. The fill cannot be removed back to the surface of the road as CR 672 would remain.

At the center of the cul-de-sac the fill material is several feet above the adjacent wetland elevations, on the edges it is only several inches. The polygon measured was 0.34 acres of fill removal. The majority of that is re-establishment – converting upland to wetlands (fen), however the perimeter of the fill polygon may be mapped as wetlands. A wetland delineation would be completed in 2022 as well as a fen delineation for the surrounding habitats. For this conceptual level, the project includes 0.25 acre of fen re-establishment, upland to fen restoration; and approximately 0.10 acre of fen rehabilitation where the perimeter is fen, and we are removing a fill layer to restore functions. In addition to the area restored with the cul-de-sac removal, approximately 0.70 acre of PSS slope wetland north of the cul-de-sac will have hydrologic rehabilitation. The wetland water supply form the fen areas will be directed through this PSS wetland rather than shunted to the east towards Bemrose Creek. The area is already wetland, so the category is rehabilitation.

The second phase of restoration would start after the cul-de-sac fill is removed and fen elevations re-established. The roadside ditch is within the county road ROW, and only work in the ROW could be conducted. A road section is excavated and replaced with construction fabric and clean cobble, with several sections 4-inch ABS pipe in the clean cobble. The contractor will need to determine a method to handle the water while this work is performed.

A ditch block is installed on in the approximate location shown, consisting of an impermeable barrier and the roadway built back to the current elevation. Groundwater from the fen on the west side of CR 672 would move to the northeast across the restored fen. Elevations of the ditch block, the clean cobble and the roadway fill would be critical to ensure the hydro period for the wetland west CR 672 is not impacted.

13.4 MONTE CRISTO MINE SITE – COUNTY AND TOB

The Monte Cristo Mine Site property is a 23-acre parcel owned by Summit County and the Town of Breckenridge bordering Monet Cristo creek which located about 3,500 feet northwest of the Alpine Breckenridge Lots (**Map C-8**). Monte Cristo Creek is a major tributary to the Blue River draining the narrow, high elevation watershed which contains Quandary Peak and the upper sections of the Tenmile range. Monte Cristo Creek and Bemrose Creek join to form the Blue River downstream of this parcel. Clinton Gulch Reservoir is about 5.5 miles west-northwest on the east side of the Tenmile. North of the parcel is the McDill Placer subdivision with a series of single-family homes. West of the parcel is a privately owned parcel and then several parcels of land owned by the City of Colorado Springs. Beyond those parcels are lands managed by the White

River National Forest. Elevations on the parcel range from 10,800 feet along Monte Cristo Creek near Highway 9 to a little over 11,000 feet on the north facing slope on the south side of the parcel. The parcel is in the subalpine ecosystem and besides disturbed ground includes willow and emergent wetlands and a mixed coniferous forest.

This County and Town parcel was formerly part of the Quandary Village Subdivision Blocks 1, 2 and 3. It was also part of a historic mining operation, and a mine structure is still standing on the far west end of the site on Lot 1, Block 1. The Town and County own Lots 1-8 Block 1, Lots 1-3 Block 2, and Lots 1-11 Block 3 as well as Parcel A of the Quandary Village subdivision. Parcel A is the wide floodplain and active channel of Monet Cristo Creek. Lots 9 and 10 Block 1 and Parcel B are privately owned, and existing house is present on Parcel B and Lot 10 with access via driveway from Highway 9. Lot 2, Block 2 on this parcel contains a closed mine shaft and spoils from the mine. Colorado Springs Utilities (CSU) owns the lots just south of this parcel and several other lots along the access road to the diversion upstream on Monte Cristo Creek.

The parcel is the project area for this plan except for Lot 1, Block 1 where the mining structure is located as the restoration activities would stay well away from this structure. The parcel includes the active channel of Monte Cristo creek in the north and its adjacent willow and emergent wetlands along the floodplain. There is heavy beaver activity in the channel, and it meanders across the floodplain through a series of beaver dams. South of the active floodplain is an abandoned floodplain terrace of the creek which extends to the toe of the hillslope. This terrace was impacted by the historic mining activities including an access road, and various older fill areas and grading from the mining era. The terrace is a willow wetland community due to the groundwater that seeps from the toe of slope of the hillslope. The north facing hillslope is mixed conifer forest dominated by subalpine fir, Englemann spruce and lodgepole pine.

In 2015 Claffey Ecological Consulting (CEC) mapped wetlands on the Monte Cristo site as part of a county effort to locate and described potential restoration sites on County Open Space lands adjacent to National Forest lands. CEC also developed a conceptual restoration plan for the parcel. However, as part of that project the entire county owned parcel was not examined, and the project area was limited to what is shown in **Figures C-9** and **C-10**. The applicant will review the additional county lots for other opportunities and includes the entire 23 acres in this conceptual mitigation plan for the Clinton Gulch Reservoir project.

The project area landscape and habitats have been disturbed and impacted by the two major development activities in the Blue River watershed. In the late 1800's to the early 1900's placer mining activities developed the lower portions of the parcel including an access road, ditches various grading and the structure on Lot 1, Block 1. Mining was conducted on the property, but it appears ore was also delivered to the site based on the size of the structure.

The residential development occurred in the 1970's when many of the residential subdivisions in the Upper Blue watershed were originally platted and infrastructure developed. The hillslope was impacted by the mining era activities, but more significantly in the 1970's by a residential

development road cut into the hillside to access the lots now owned by the Town and County. In a cut and fill operation that was never completed, the roadway grading redirected and disturbed the surface and groundwater hydrology on the hillslope. Typical of many north facing hillslopes at about 11,000 feet, this roadway crossed a forested wetland. The roadway interrupted and concentrated flows in many areas.

As described above there is a mining structure remaining on the far west end of the site that appears to be a processing structure of some type. There is an engineered channel that extends down the slope (north-south) that we assume conveys overflow or emergency release discharges of water from the CSU water collection system to the south. The channel is deep and well armored and provides a restoration area buffer line. To ensure restoration activities do not affect the mining structure, no restoration would occur west of the engineered channel. Also in this general area on the west end is a metal cap from the Colorado Division of Minerals and Geology (DMG). The cap sits on a small stockpile of rubble. County staff indicated this was a state remediation of mining impacts and the restoration plan avoids work in this area.

Restoration Plan

As shown on **Figure C-10**, several restoration types are present on the Monte Cristo site. The plan would allow for restoring wetlands by removing fill material, (re-establishment) and in the rehabilitation of both palustrine scrub- shrub and forested wetlands by restoring the natural hydrologic regime or water supply. The road grading and historic mining modified how the slope wetlands on this parcel function, and by restoring the native water supply and hydrologic regime, forested wetland functions can be upgraded. The work may re-establish some areas of forested wetland as well, and that will be determined at the final plan.

The re-establishment area shown on **Figure C-10** is fill removal from previous grading. This area is 0.57 acre and would be re-established as PSS wetlands. The main feature of the restoration is the access road to the mine structure which CR 855. The fill removal would start on Lot 8 and extend west, as access to privately owned Lot 9 would be maintained. This roadway fill has eroded in places, and during runoff water runs down portions of the roadway. The eastern end of the roadway is larger fill area that can be restored to PSS wetlands. The entire access road would be restored to PSS wetland by removing the cobble fill, and re-establishing topography to allow the groundwater from the adjacent wetland to the south to move across the restored area to the creek. On the western end of the access road is a wider area of fill and wetland re-establishment. Water supply form a slope wetland is captured in a ditch in the southern end of this area. The ditch drains that water supply east along the development road and ditch sidecast fill retains the water along the roadway cut. The sidecaste fill would be removed and wetland re-established. The work areas avoid the DMG well cap and the rubble pile. If the state indicates that area is remediated and the fill can be removed, the restoration area can be expanded.

As shown on **Figure C-10** just north of the terrace is a drain ditch and sidecaste material. The ditch may have been constructed during the mining era in the early 1900's to reduce water levels along the access road. The sidecaste material is removed down to a wetland elevation, and

material placed into the drain ditch with an impermeable ditch plug installed at two or three locations.

On the development roadway the project would remove fill material placed as part the cut and fill operation and allow water to move down the slope. This can be completed in the area mapped but also the forested wetland to the west. Fill is removed and trammed to the mine shaft area between the two forested wetlands. There is a wide cut in the timber at the shaft area that could contain the fill, and the fill would be graded into the landscape. Currently the roadway retains water supply form its natural course downslope, and the cut slope acts to drain portions of the forested wetland on the south side of the roadcut. Some of the fill material form the fill side would be moved back into the cut side to reduce the drainage affect. Willows are present in the roadway currently and where disturbed they would be transplanted during the restoration work. This work provides hydrologic rehabilitation to more than 0.20 acre of wetlands and hydrologic rehabilitation in the roadcut area and hydrologic rehabilitation to forested wetlands impacted by the road cut. The amount of forested wetland rehabilitated is between 0.54 acre and 1 acre and that total will be mapped during the final plan. The hydrologic restoration in forested wetlands raises wetland function and restores the forested area to the typical plant assemblages found in forested wetland. The range for acres is given as the roadway to the west of the area mapped on Figure 9 will also be restored and additional acreage is available to review for restoration upslope or south of the area previously reviewed. The wetland boundary will be delineated on the entire parcel.

13.5 MONTE CRISTO – FOREST SERVICE

These sites are located on NFS lands in the headwaters on Monte Cristo Creek approximate 0.5 mile upstream of the Monte Cristo County parcel and about 1 mile downstream of Blue Lakes (**Maps C-11** and **C-12**). The sites are in a spruce fir forest at elevation 11,000 feet above msl. The sites are in an area disturbed from previous mining era and Blue Lakes Road is on the northern edge of the site area. A small cabin is located in the project area and other mining related infrastructure is present as well. A large parcel owned by the City of Colorado Springs Utilities (CSU) is just east of the FS boundary, but the restoration work described is on NFS lands. A diversion of Monte Cristo Creek for the Colorado Springs collections system is located just downstream of the project area.

The wetlands in the project area are within a large fen complex with high groundwater discharge over granite. The fen is a mix of emergent, scrub-shrub and forested wetlands with histosols of more than 20 inches in depth in most locations. The fens supply Monte Cristo Creek with groundwater throughout the summer maintaining base flows in this tributary to the Blue River. The wetland system on NFS lands is a diverse high functioning system.

There are multiple restoration opportunities in the area on NFS lands. The attached plan shows the main restoration which is removal of a road that was placed in a fen on the south side of Monte Cristo Creek. That road is a rock fill, three to four deep, which runs north south across the fen towards Monet Cristo Creek and was likely used to move material to a mine structure located to the NE about 600 feet on the CSU parcel. The graded area accessed by the road is at the toe of

slope of NorthStar Mountain at the base of a scree slope. The road fill not only impacts the fen directly beneath the fill material but interrupts the water supply to the remaining fen east of the road fill.

The impacts in the north of the site are from Blue Lakes Road and what appears to be an older roadbed. The roadbed runs parallel to Blue Lakes Road and captures groundwater discharge in the fen. That groundwater then flows down the old roadbed from NW to SE, then into a break in the road where an old culvert was placed. Much of the flow then reaches another existing roadbed to the cabin and mining infrastructure. Minor earthwork in the old roadbed with impervious barriers could return water supply to the fen. A second restoration would be removal of old roadbed fill that supplies access to the cabin. The road is blocked off at Blue Lakes Road and does not appear to have had vehicle traffic in some time. The FS plans to remove the cabin, and post restoration, the roadbed to the cabin could be restored.

Restoration Plan

The road fill sits on the south side of Monte Cristo Creek past the cabin. Access is via the roadway to the cabin discussed above. The restoration is a straightforward fill removal to re-establish approximately 0.08 acre of fen wetland. The boundary shown was GPS surveyed and was wetland line established in the project area. Soil sample points show organic soils on either side of the roadway fill. The fill removal polygon does not extend to the creek edge as there was a natural upland area on the south shore of the creek bank.

A tracked excavator would remove material and a skid steer would tram the material back to the graded area. The excavator would leave a layer of fill to allow access out of the site and remove that layer as they progress back towards the creek. That remaining material would have to be trammed across the creek and hauled off site. Another option is to remove all fill material to the graded area, and the track-hoe walks back across the exposed organic soils and cleans up ruts as it moves back to the creek.

The goal would be to expose the organic soil layer beneath the fill material. Once exposed the area is planted with nursery grown sedge plugs on 2–3-foot centers, using beaked sedge and water sedge (u*triculata and aquatilis*) with Canada reed grass on the perimeter near the upland edge. Salix planifolia would be planted in clumps of four to five in the restored wetland.

13.6 IRON SPRINGS – FOREST SERVICE

The Iron Springs is a unique fen wetland on NFS lands near the Farmers Corner area that was impacted by historic and more recent development activities including ditching, grading and excavation during the mining era, and more recently by power line and gas line infrastructure construction (**Map C-13**). The site is within the Montane ecosystem at approximately 9,200 feet above msl. An unnamed tributary of the Blue River/Dillon Reservoir flows east out of the wetland, and the wetland is the source or headwaters of that tributary. The wetland sits in the bottom of narrow valley bordered on the north and south by steep slopes. An unimproved dirt road borders the north side of the wetland and includes a buried natural gas line, and an overhead power line

travers the south side of the wetland. The historic disturbances were from the mining era and its possible the iron springs was converted to a small pond for water storage. A ditch had historically conveyed water from the watershed to the west across the ridgeline to the Iron Springs watershed.

The fen appears to have been ditched long ago for drainage, as a straight channel through two higher elevation areas connects the fen to a culvert. Log mats we placed in the fen during some construction project and left in place. A separate drainage to the north-northwest appears to have been diverted across the terrain to the north and into the fen. That ditch is still present but does not convey flows, but it could be the historic discharges of additional flow impacted and destabilized the fen. Excessive erosion in the fen has occurred and a large section of the fen is slumping to the north. As an iron fen, the soils are rich in minerals and mule deer and elk seem to use the fen for the minerals, and heavily impact the fen in locations.

Restoration Plan

The Iron fen provide for about 2.5 to 3 acres of fen-wetland complex rehabilitation, and as yet unknown but relatively small amount of fen re-establishment. Restoration work includes filling drainage ditches and re-grading areas of the ditch to reduce drainage. It would also include work to halt the erosion and prevent further slumping of the quagmire sections. That would be accomplished by removing portions of the berm area that is a mixture of organic and mineral soils and restoring the elevation of the excavated fen area using that material. The berm area appears to be a berm or dam and it has changed the flow patterns in the fen likely causing the slump area. We would also propose to remove the log mats in place to re-establish fen vegetation in these areas. All restoration work would be done without disturbing the power lines.

Table 6: Mitigation Sites for Aquatic Resource Restoration in the Upper Blue River Watershed

in acres, by project site, wetland type, and method of restoration

Project area acreage is in parenthesis under site name.

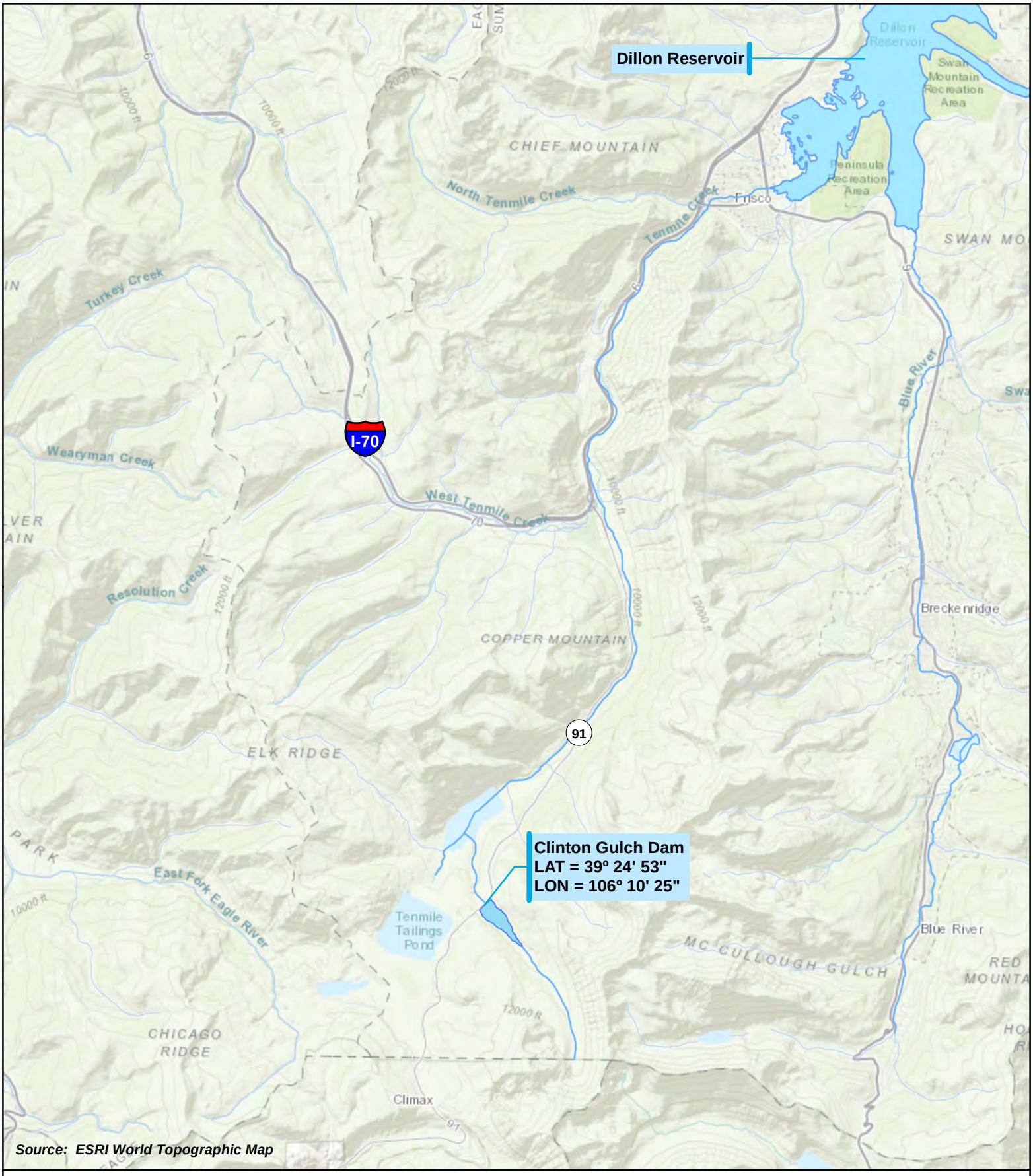
Site	Wetland Type	Re-establishment	Rehabilitation	Enhancement
Bemrose FS	Fen	0.16	1.0	0.40
(*50 acres*)	PSS – slope	0.33		
	PEM – slope	0.38		
	PFO – slope		1.6	
Bemrose FS Total		0.87	2.6	0.40
Bemrose County				
(10 aces)	PSS Slope	1.5		
	Pem Slope	0.39	0.17	
Bemrose CO Total		1.89	0.17	
Alpine Breckenridge Lots (3.65 acres)	Fen	0.25	0.10	0.05
	PSS -slope		0.70	
Total		0.25	0.80	0.05
Monte Cristo Mine – County and TOB	PSS	0.57	0.20	0.
	PFO		0.54-1.0	
	PFO-PSS *			0.50
Total Monte Cristo CO		0.57	0.54-1.0	0.50
* Estimate for area in NW which is now available				
Monte Cristo Forest Service	Fen	0.08	0.25	
Total Monte Cristo FS		0.08	0.25	
Iron Springs	Fen		2.5 -3	

SECTION 14: CONCLUSION

The Clinton Gulch Reservoir Enlargement Project will provide the applicant's shareholders with 473 AF of reliable water supplies in the Upper Blue Basin to help firm their water availability during periods of extended drought. This project will reduce risks associated with climate change, severe drought, and any unforeseen future events by providing access to a total of 1,274 AF of additional CGR storage. Approximately 1,200 AF of this supply would be available for direct use by the shareholders and/or to help firm the yield of the reservoir by providing a fourth-dry year supply during a critical drought sequence.

The Proposed Action (Preferred Alternative) will increase the crest elevation of CGR's existing spillway by five feet, from 11,058 feet to 11,063 feet. This modification will increase CGR's regulatory capacity by 473 AF without having to increase the height of the dam. The proposed project has undergone a Dam stability analysis and initial review by the Colorado Department of Water Resources, Dam Safety Branch and is considered feasible. The Proposed Action will disturb roughly 3,500 sq. ft. of uplands, 3.02 acres of wetlands through inundation which may be considered a direct impact of the proposed action, and result in the permanent loss of 2.59 acres due to that inundation. Water quality impacts due to the Proposed Action will be limited to slightly increased temperatures in Tenmile Creek. The permanent impacts of the Proposed Action will be offset with compensatory mitigation in the Upper Blue River watershed and includes wetland establishment, re-establishment and rehabilitation including re-establishment and rehabilitation of fen wetlands.

FIGURES



Source: ESRI World Topographic Map

Clinton Gulch Dam

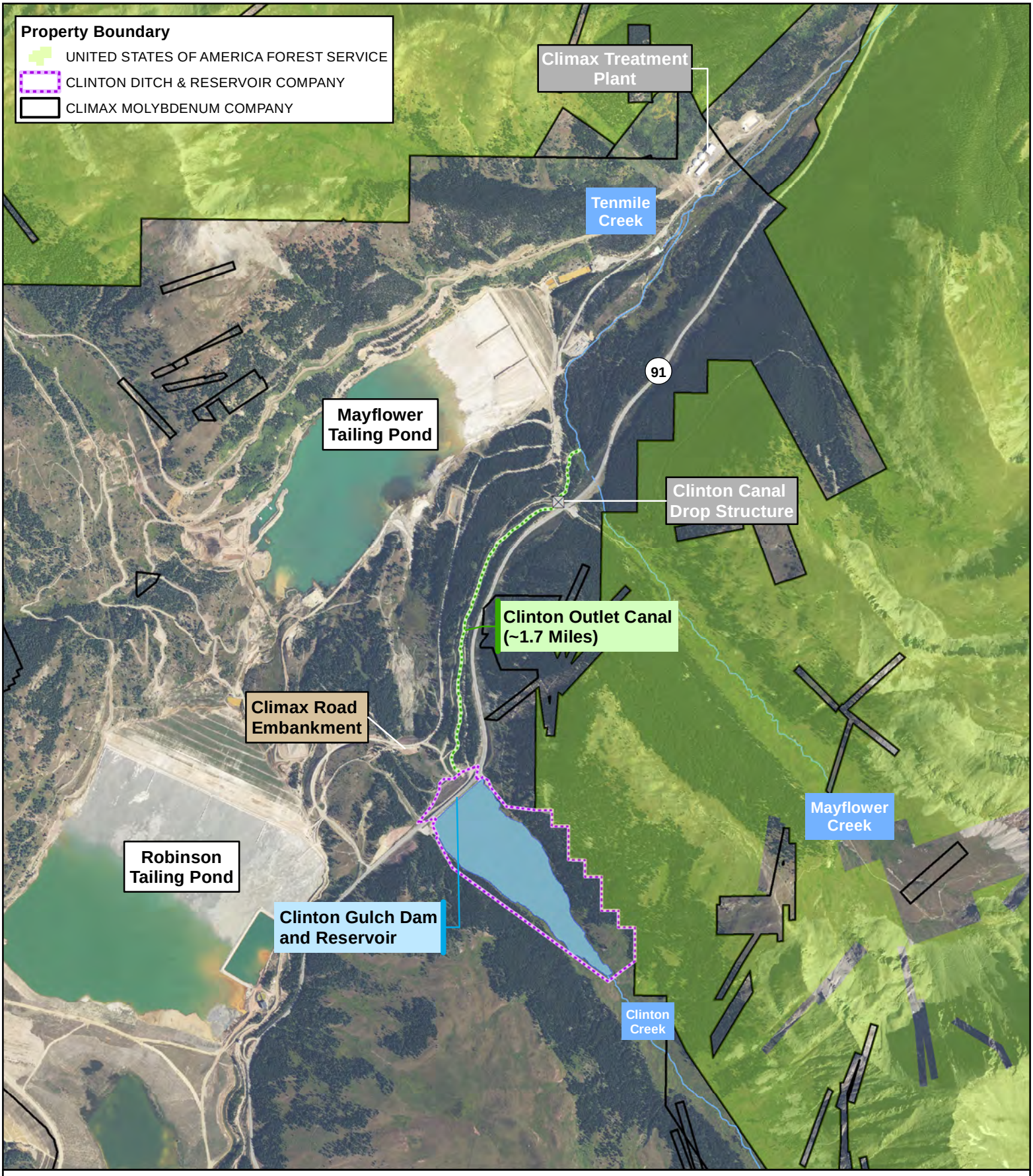
Figure 1: Location Map

1 in = 2 miles

Miles

0 1 2 4

Date: 2021-06-08
File: 423-7.12.3
Drawn: ABS
Approved: RP



Source: NAIP Aerial Photography (2015)

Clinton Gulch Dam

Figure 2: Vicinity Map

LRE WATER

1 in = 2,500 ft

Feet

0 1,250 2,500 5,000

N W E S

Date: 2021-06-15
File: 423-7.12.7
Drawn: ABS
Approved: RP

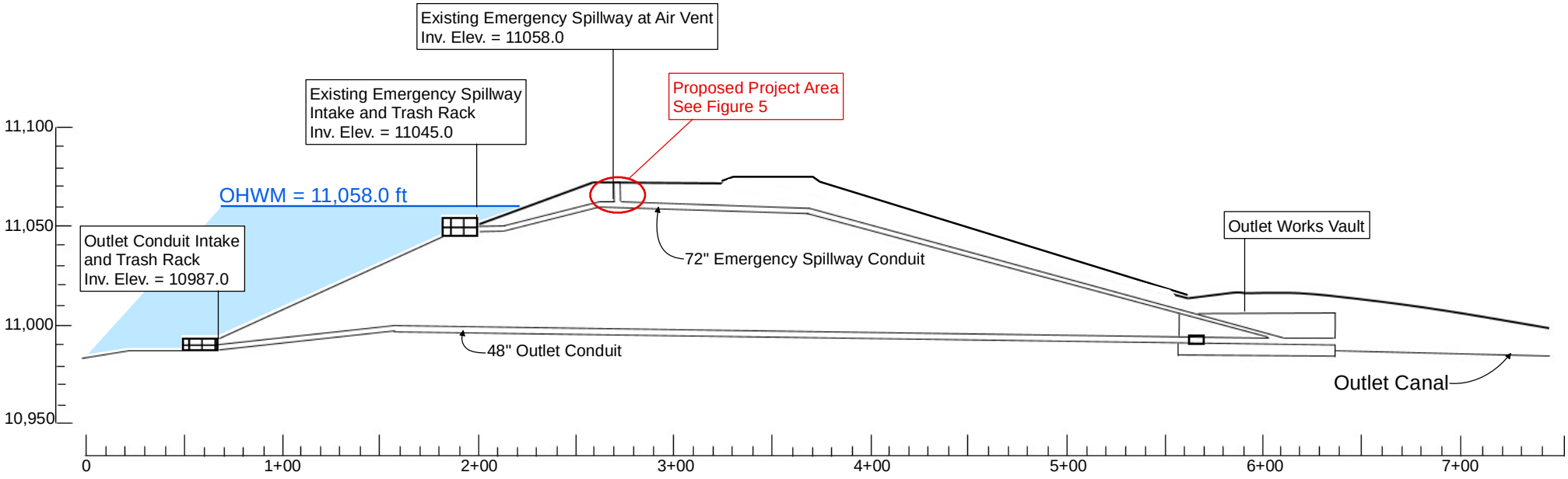
Clinton Gulch Dam

Figure 3: Proposed Emergency Spillway Modification
Plan View

LRE WATER

Feet
0 30 60 120

Date: 2021-06-16
File: 423-7.12.3
Drawn: RP
Approved:



Clinton Gulch Dam

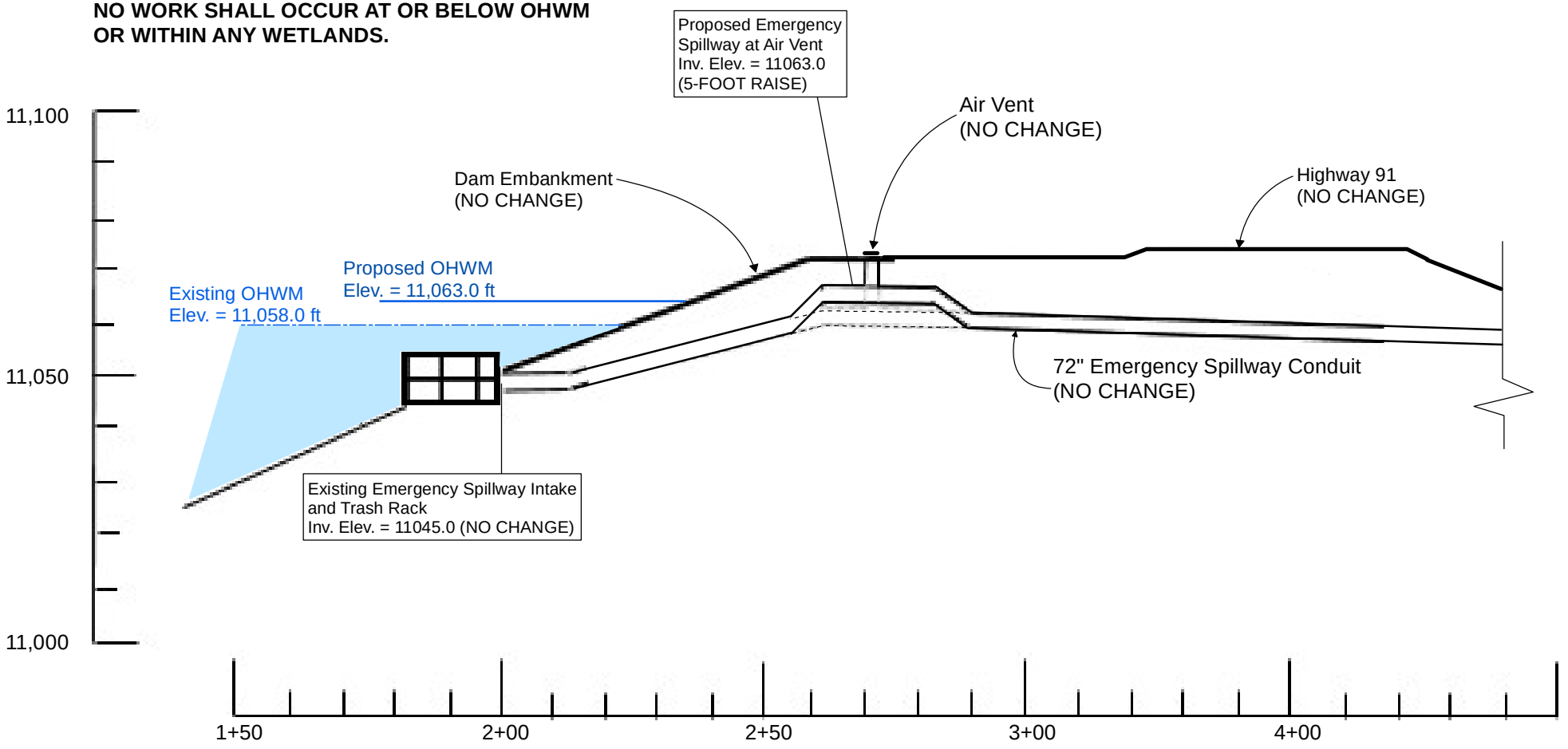
Figure 4: Profiles of Outlet and Emergency Spillway Conduits

NOT TO SCALE - DIMENSIONS ARE APPROXIMATE

Date: 2021-06-16
File: 423-7.12.7
Drawn: RP
Approved:

ALL WORK TO BE CONDUCTED WITHIN DAM EMBANKMENT.

NO WORK SHALL OCCUR AT OR BELOW OHWM OR WITHIN ANY WETLANDS.

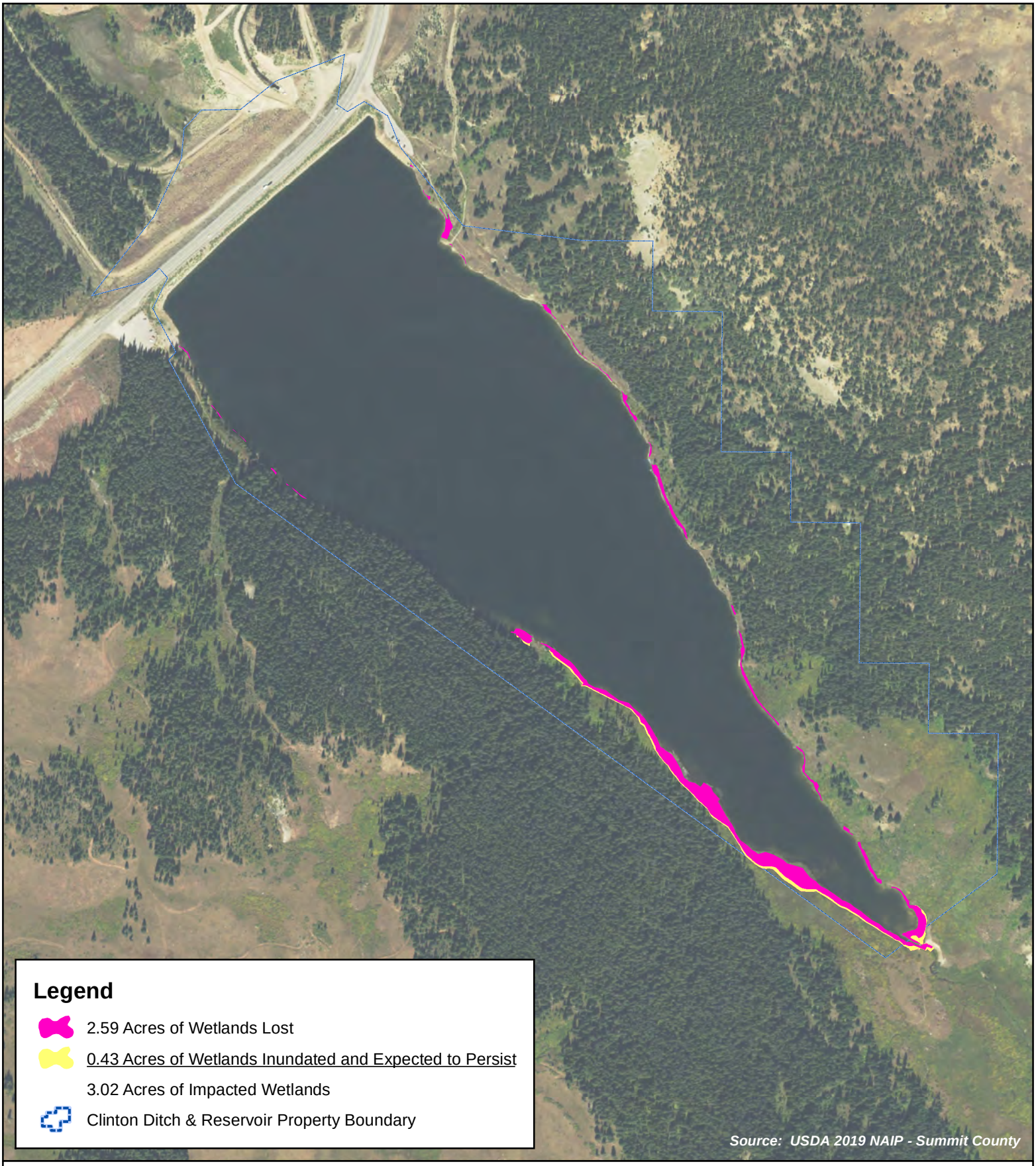


Clinton Gulch Dam

Figure 5: Proposed Emergency Spillway Modification

NOT TO SCALE - DIMENSIONS ARE APPROXIMATE

Date: 2021-06-16
File: 423-7.12.7
Drawn: RP
Approved:



Clinton Gulch Dam

Figure 6: Wetland Impact Location Map

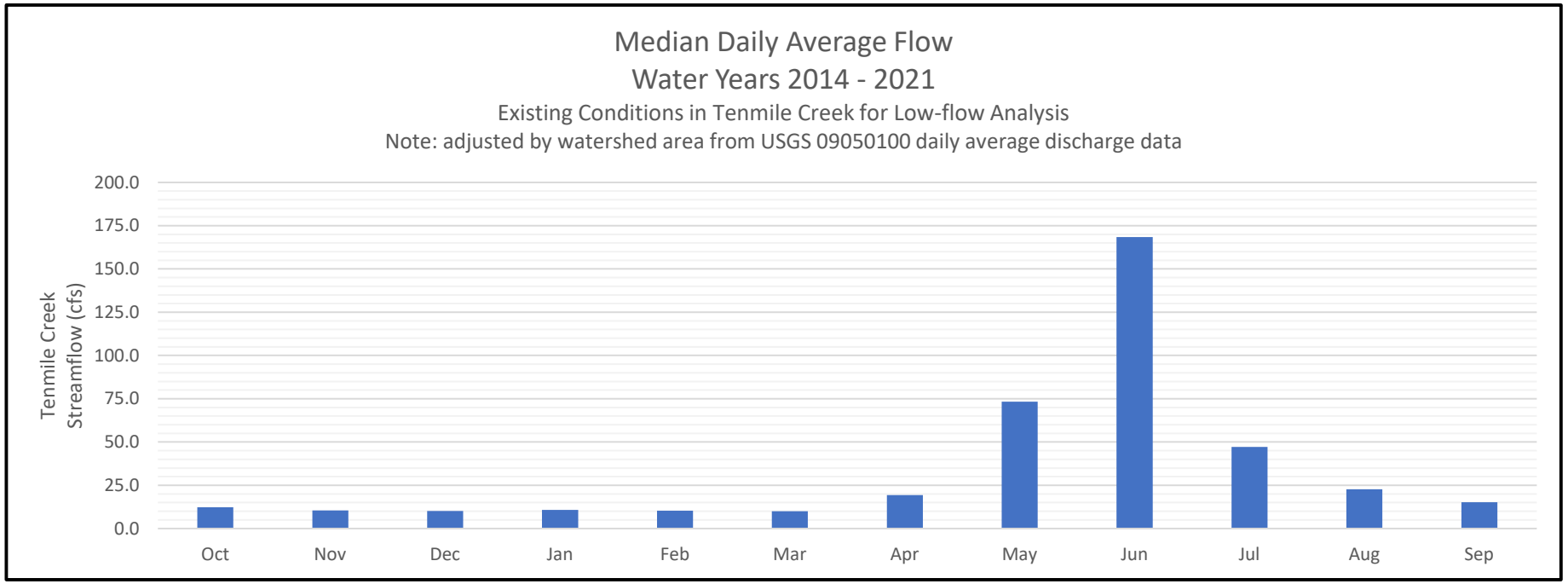
LRE WATER

Feet

0 275 550 1,100

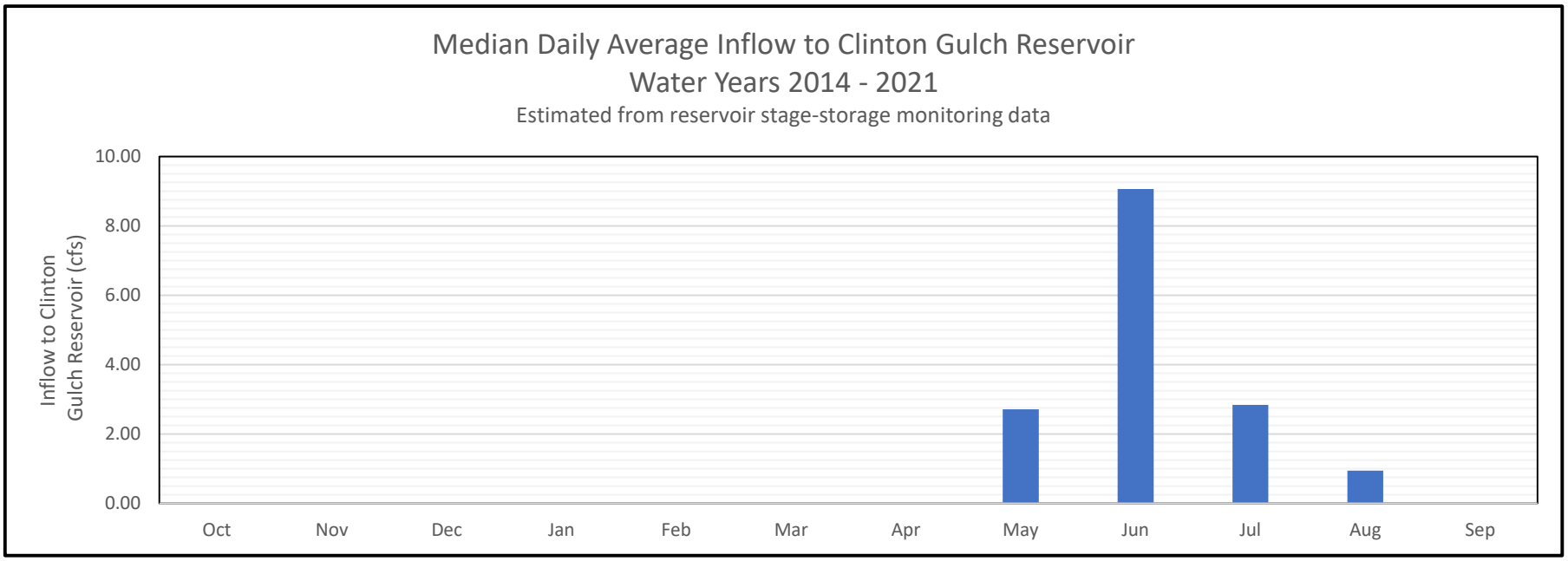
Date: 2022-03-30
File: 423-7.12.7
Drawn: ABS
Approved: RSF

Figure 7



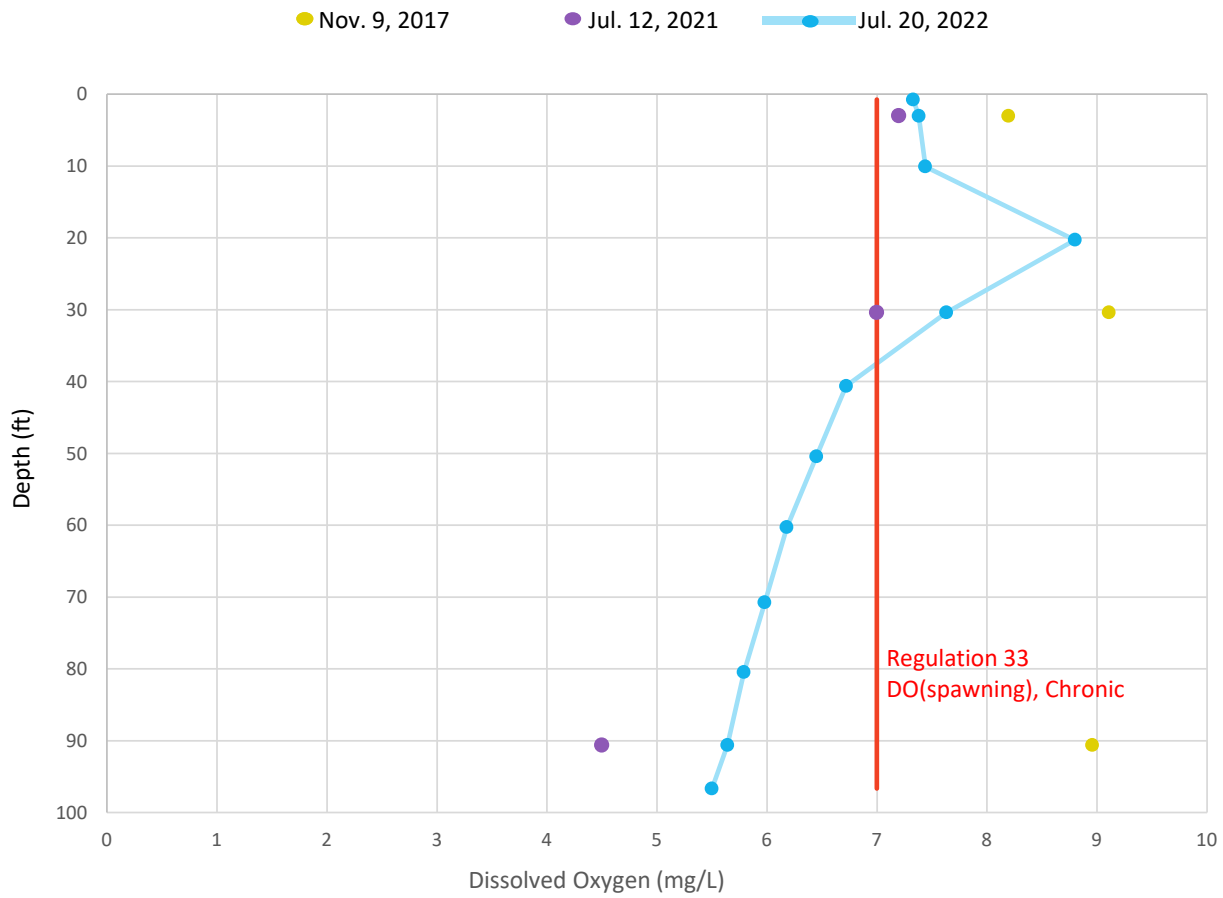
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Flow (cfs)	12.3	10.5	10.1	10.8	10.3	10.0	19.4	73.3	168.5	47.2	22.8	15.2

Figure 8



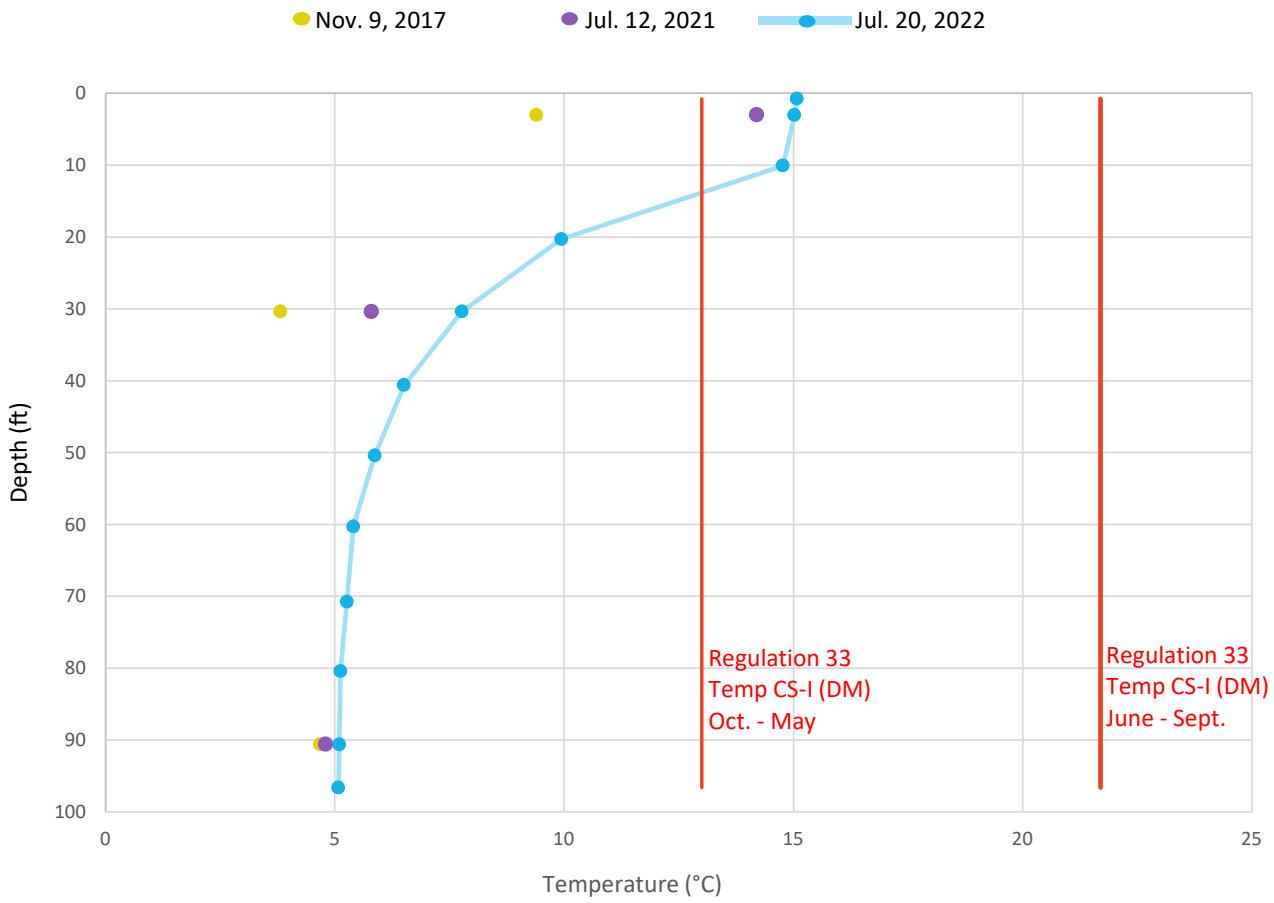
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Flow (cfs)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.71	9.06	2.84	0.94	0.00

Figure 9
Clinton Gulch Reservoir Depth Profile
Dissolved Oxygen



Dissolved Oxygen (mg/L)			
Depth (ft)	11/9/2017	7/12/2021	7/20/2022
3	8.20	7.20	7.38
30	9.11	7.00	7.63
90	8.96	4.50	5.64

Figure 10
Clinton Gulch Reservoir Depth Profile
Temperature



Temperature (°C)			
Depth (ft)	11/9/2017	7/12/2021	7/20/2022
3	9.40	14.20	15.03
30	3.81	5.80	7.77
90	4.68	4.80	5.09

APPENDIX A

Clinton Agreement with Amendments

- Clinton Reservoir - Fraser River Water Agreement, dated 6/21/1992.
- Amendment to Agreement - Contract 4394A, dated 10/23/2013.
- 2016 Amendment to Clinton Reservoir - Fraser River Water Agreement, dated 10/26/2016.
- Agreement Regarding Use of Clinton Reservoir Dead Pool Storage, dated 9/30/2018.
- Third Amendment to Clinton Reservoir - Fraser River Water Agreement, dated 10/23/2019.

WATER DIVISION NO. 5
Case No. 92CW305

CLINTON RESERVOIR - FRASER RIVER WATER AGREEMENT

THIS AGREEMENT dated this 21st day of July, 1992, is between the City and County of Denver acting by and through its Board of Water Commissioners (the "Water Board") and the Board of County Commissioners of Grand County ("Grand County"); the Board of County Commissioners of Summit County ("Summit County"); the Towns of Breckenridge, Dillon, Fraser, Frisco, Granby and Silverthorne (collectively the "Towns"); the Grand County Water and Sanitation District No. 1 and the Winter Park Water and Sanitation District (the "Districts"); the Breckenridge Ski Corporation, Copper Mountain, Inc. and Keystone Resorts Management, Inc. (collectively the "Summit County Ski Areas"); and the Winter Park Recreational Association ("Winter Park"). Collectively, Grand and Summit Counties, the Towns, the Districts, the Summit County Ski Areas and Winter Park are hereinafter referred to as the "West Slope Parties."

Whereas, the parties to this Agreement wish to cooperate among themselves to help solve water supply problems in Grand and Summit Counties and the Denver metropolitan area, and to resolve present and future disagreements and disputes;

Whereas, contemporaneous with the execution of this Agreement, Summit County, the Summit County Ski Areas, Winter Park, and the Towns of Breckenridge, Dillon and Silverthorne (collectively, the "Clinton Purchase Group"), through a non-profit mutual ditch and reservoir company known as the Clinton Ditch & Reservoir Company (the "Reservoir Company"), are entering into an agreement with Climax Molybdenum Company to acquire Clinton Gulch Reservoir, an existing water storage right decreed by the District Court in and for Water Division No. 5, State of Colorado, in Case No. W-2559, for 4250 acre feet absolute, for industrial, domestic, irrigation, recreation, and fish and wildlife propagation purposes, with a June 25, 1946 appropriation date ("Clinton Reservoir");

Whereas, without the Water Board's cooperation the yield of Clinton Reservoir in dry years would not be sufficient to help solve the water supply problems in Summit and Grand Counties;

Whereas, by agreement dated September 10, 1985, between the Water Board and Summit County (the "Summit County Agreement"), the Water Board agreed to subordinate certain of its water rights to the extent required to permit Summit County or its designees to utilize up to 3100 acre feet of water per year pursuant to paragraph 3 of the Summit County Agreement (the "3100 Acre Feet"), provided replacement water is furnished to the Water Board pursuant to paragraph 4 of the Summit County Agreement;

Whereas, the Summit County Ski Areas are designees of a portion of the rights and obligations under the Summit County Agreement;

Whereas, the rights of the Summit County Ski Areas under the Summit County Agreement may be exchanged with the Water Board to make water available in the Fraser and Williams Fork River basins to help solve the water supply problems in Grand County;

Whereas, the Water Board, the Bureau of Reclamation, Colorado River Water Conservation District, and Northern Colorado Water Conservancy District desire to implement a substitution of water utilizing Wolford Mountain Reservoir to be constructed in Grand County to enhance the yield of the Water Board's water system; and

Whereas, certain of the Western Slope Parties have opposed the proposed substitution of water from Wolford Mountain Reservoir, and have further opposed the Water Board's applications for diligence and to make absolute its water rights in Eagle, Grand and Summit Counties.

Now, therefore, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Clinton Reservoir.

(a) The Water Board will subordinate its Two Forks Reservoir water rights, and operate its Blue River Diversion Project water rights (more particularly described in the attached Exhibit A) so as to allow Clinton Reservoir to store up to 3650 acre feet in an accounting year, which is the period from August 1 to July 31. Such storage in Clinton Reservoir will operate under the Water Board's prior fill agreement with the Bureau of Reclamation, and the Water Board will be obligated to meet the paper fill requirements of Green

Mountain Reservoir. The maximum fill of 3650 acre feet will produce 3600 acre feet of useable water. Based on the drought period of 1953-1957, this 3600 acre feet of useable water is calculated to produce a reliable annual yield for Clinton Reservoir of 1200 acre feet (the "Reservoir Yield").

(b) Clinton Reservoir will retain for the uses set forth in paragraph 1(c) below any water stored in an accounting year if an allowable fill occurs. An allowable fill occurs each year except: (i) when Dillon Reservoir spills and Green Mountain Reservoir does not fill under its own right; or (ii) when the contents of Dillon Reservoir are less than 100,000 acre feet on August 1 for reasons other than the Water Board's maintenance or repair of its Dillon Reservoir facilities and the total combined contents of the Water Board's Dillon, Gross, Cheesman, Eleven Mile and Antero Reservoirs are less than 250,000 acre feet on August 1. Subject to the provisions of Paragraph 9 below, if an allowable fill does not occur in a given accounting year, the water stored in Clinton Reservoir during that accounting year will be credited to the Water Board's account and retained in Clinton Reservoir until the contents of Dillon Reservoir are 50,000 acre feet or less, in which event the water shall be released from Clinton Reservoir to Dillon Reservoir when requested by the Water Board, or until an allowable fill occurs, whereupon the Water Board's account balance of water stored in Clinton Reservoir will be reset to zero. The release of the Water Board's water stored in Clinton Reservoir shall be scheduled in such a manner as to meet the Water Board's needs in a timely manner and also to avoid erosion of the Clinton Canal.

(c) The Reservoir Yield shall be used to repay the Water Board for the snowmaking consumptive use pursuant to paragraph 2 below, and may also be used as a source of augmentation water for all beneficial uses, as a source of direct delivery water pursuant to paragraphs 9 and 11, and directly or by exchange for all uses as may be permitted by law.

(d) The current physical active storage capacity of Clinton Reservoir is at least 3650 acre feet. In the event that the active physical capacity of Clinton Reservoir becomes less than 3650 acre feet, then the provisions of paragraph 1(a) above shall be adjusted and the Reservoir Yield reduced accordingly.

(e) Water shall not be stored in Clinton Reservoir from October 15 through January 31 (absent the express approval of Copper Mountain), or during such periods that would adversely affect the existing decreed instream flows on Ten Mile Creek and the Blue River; provided, however, that this provision shall not be considered or construed as a subordination of the parties' water rights to the decreed instream flows on Ten Mile Creek or the Blue River. It shall be the responsibility of the Reservoir Company to monitor the instream flows in order to comply with this provision.

(f) The Water Board and the Clinton Purchase Group shall develop within one year of the date of this Agreement such operating procedures for Clinton Reservoir as may be required to accomplish the purposes of this Agreement.

(g) In the event the Reservoir Company does not enter into an agreement to directly reimburse the Bureau of Reclamation for power interference charges associated with the Clinton Reservoir prior fill provisions of paragraph 1(a) above, the Reservoir Company agrees to reimburse the Water Board for any such power interference charges. The Water Board assumes the burden of any power interference charges resulting from the exercise of any exchanges under paragraphs 2 and 3 below.

2. Snowmaking Water.

(a) Subject to the provisions of paragraph 3 below, the Water Board: (i) will allow the Summit County Ski Areas to capture and divert a portion of the Water Board's inflow to Dillon Reservoir and (ii) will release water from Williams Fork Reservoir (or Wolford Mountain Reservoir, if it becomes legally available for the purposes of this paragraph 2) in amounts and at times required to augment by exchange the snowmaking diversions of the Summit County Ski Areas. The total snowmaking diversions by the Summit County Ski Areas under all the provisions of this Agreement shall not exceed five times the number of acre feet of Reservoir Yield to which the Summit County Ski Areas are entitled by virtue of their ownership of stock in the Reservoir Company. The Summit County Ski Areas shall keep accurate records of the amount of water diverted for snowmaking purposes, pursuant to paragraph 12 below, and will not redivert, reuse or recapture the snowmaking return flows, which are part of the exchanged water. The Water Board will maintain dominion and control of the water diverted for snowmaking purposes and will recapture the snowmaking return flows, calculated as set forth in

paragraph 8 below according to engineering and hydrologic principles, in Dillon Reservoir for storage and direct diversion for municipal uses. For the purposes of river administration, the exchanges of the Water Board's water from Dillon Reservoir to the snowmaking diversions under this paragraph 2(a) shall supersede the exchanges of the Summit County Ski Areas implemented under the Summit County Agreement. The Summit County Ski Areas shall repay the loss resulting from the exchange by crediting to the Water Board's Clinton Reservoir account at the time of diversion an amount of water from the Reservoir Yield equal to the consumptive use of their snowmaking diversions, calculated pursuant to paragraph 8 below.

(b) The Water Board will allow Winter Park to divert water from the Water Board's Fraser River Diversion Project collection system to meet the snowmaking diversion requirements of Winter Park; provided, however, that Winter Park's diversions from the Water Board's system for snowmaking under all the provisions of this Agreement shall not exceed five times the number of acre feet of Reservoir Yield to which Winter Park is entitled by virtue of its ownership of stock in the Reservoir Company. Such water will be diverted in amounts, at times and at such point or points from the Water Board's Fraser River collection system as specified in the Grand County operating plan attached hereto as Exhibit B, or as Winter Park, the Districts, the Town of Fraser and the Water Board shall mutually agree. The Water Board will release water from Williams Fork Reservoir (or Wolford Mountain Reservoir if it becomes legally available for the purposes of this paragraph 2) to augment by exchange the snowmaking water diverted by Winter Park. In return for such augmentation releases, Winter Park will (i) insure that all snowmaking return flows can be captured by or otherwise credited to the Water Board's Fraser River Diversion Project, except as provided in paragraph 2(c) below, (ii) not redivert, reuse or recapture those return flows, except as specified in the Grand County operating plan attached hereto as Exhibit B, and (iii) credit to the Water Board's Clinton Reservoir account an amount of water from the Reservoir Yield equal to the consumptive use of its snowmaking diversions, calculated pursuant to paragraph 8 below. Winter Park shall keep accurate records of the amount of water diverted for snowmaking purposes, pursuant to paragraph 12 below. The Water Board will maintain dominion and control of the water diverted for snowmaking purposes and will recapture the snowmaking return flows, calculated as set forth in paragraph

8 below according to engineering and hydrologic principles, in its Fraser River collection system for use by the Water Board.

(c) For each acre foot of snowmaking water provided to Winter Park for which the snowmaking return flows cannot be captured by or otherwise credited to the Water Board's Fraser River Diversion Project, Winter Park will credit to the Water Board's Clinton Reservoir account one acre foot of water from the Reservoir Yield.

(d) The total amount of water released by the Water Board from Williams Fork Reservoir (or Wolford Mountain Reservoir if it becomes legally available for the purposes of this paragraph 2) to augment by exchange the snowmaking diversions pursuant to paragraphs 2(a), (b) and (c) and 11(b) shall not exceed 6,000 acre-feet per year.

(e) Except for exchanges pursuant to paragraph 7(a) below, exchanges of water by the Water Board from Williams Fork Reservoir or Wolford Mountain Reservoir for diversions above Dillon Reservoir under this Agreement shall be made only for snowmaking diversions; provided, however, that this limitation shall not apply to any municipal use of water by the Water Board, whether under this Agreement or otherwise.

(f) This Agreement shall supersede and replace in its entirety the agreement between the Water Board and Winter Park dated December 9, 1979.

3. Dillon Reservoir Inflow.

(a) The Water Board cannot exchange water from Williams Fork Reservoir (or Wolford Mountain Reservoir if it becomes legally available for the purposes of paragraph 2 above) for snowmaking diversions by the Summit County Ski Areas when the Computed Natural Inflow to Dillon Reservoir is at or below 50 cfs, except as provided in paragraph 3(c) below. When Computed Natural Inflow is at or below 50 cfs, the Water Board will operate Dillon Reservoir so that outflow at the USGS gage number 09046600 ("USGS gage") is at least equal to Computed Natural Inflow.

(i) For purposes of this Agreement, the Computed Natural Inflow is calculated as follows: Computed Natural Inflow = Volume Leaving Dillon (Volume Leaving Dillon = gaged outflow at the USGS gage below reservoir + Roberts Tunnel releases + net evaporative losses + any water diverted

directly from Dillon Reservoir) - Inflow from upstream sources (e.g., Clinton Reservoir storage releases, snowmaking returns) + change in storage.

(ii) For purposes of determining when the Computed Natural Inflow to Dillon Reservoir is at or below 50 cfs, the parties agree to use a 7-day running average of the Computed Natural Inflow to Dillon Reservoir, rather than individual daily computed natural inflow values. This allows daily fluctuations in inflow and any error made in the daily Computed Natural Inflow calculation to be absorbed in the averaging.

(b) During the springtime of the year, Dillon Reservoir fills prior to Green Mountain Reservoir. If Green Mountain Reservoir does not fill, the Bureau of Reclamation calculates how much of the water which the Water Board has stored in Dillon Reservoir during the runoff season must be released to meet the paper fill requirement of Green Mountain Reservoir. The Water Board and the Bureau of Reclamation then determine how much of such water can nevertheless be retained in Dillon Reservoir by a release of water from Williams Fork Reservoir and/or Wolford Mountain Reservoir in substitution for water which otherwise would be released to Green Mountain Reservoir. As part of this substitution, pursuant to the agreements between the Water Board and the Bureau of Reclamation dated December 30, 1991 ("the Substitution Agreements"), 1,000 acre feet of water (the "1,000 Acre Foot Pool") is held in Dillon Reservoir and released to Green Mountain Reservoir to maintain flows at 50 cfs in the Blue River immediately below Dillon Reservoir Dam when Computed Natural Inflow is below 50 cfs. If the entire 1,000 Acre Foot Pool is not required to supplement Computed Natural Inflow to Dillon Reservoir, the Water Board is able to retain the remainder, pursuant to the Substitution Agreements. In years that the Water Board operates a substitution, the 1,000 Acre Foot Pool may be used to supplement Computed Natural Inflow to Dillon Reservoir in accordance with the Substitution Agreements, and allow upstream municipal diversions and exchanges for snowmaking to occur.

(c) If Computed Natural Inflow to Dillon Reservoir falls below 50 cfs and water is available from the 1,000 Acre Foot Pool, the Water Board will supplement the Computed Natural Inflow with water from the 1,000 Acre Foot Pool so the flow at the USGS gage is equal to at least 50 cfs, and will continue to operate the exchanges pursuant to this Agreement. When Computed Natural Inflow is at or below 50 cfs

and insufficient water remains in the 1,000 Acre Foot Pool pursuant to paragraphs 3(b) and 3(e), the Water Board will not operate the exchanges pursuant to this Agreement, but will make releases from Dillon Reservoir Dam so that flow at the USGS gage is at least equal to Computed Natural Inflow. The Water Board's release of water stored in Dillon Reservoir under this paragraph shall be limited to the 1,000 Acre Foot Pool.

(d) If any member of the Clinton Purchase Group is able to add water to a stream tributary to Dillon Reservoir by releases from Clinton Reservoir or Goose Pasture Tarn, returns attributable to pumping from the Montezuma Shaft of the Roberts Tunnel, or other supplies, this introduced water may be diverted contemporaneously without affecting the Computed Natural Inflow to Dillon Reservoir.

(e) In order to insure that adequate storage remains in the 1,000 Acre Foot Pool to allow for supplementing Dillon Reservoir outflows when Computed Natural Inflows fall below 50 cfs, the following minimum reserve volumes will be maintained:

Date	Minimum Reserve Volumes (acre feet)
Oct. 1 - Jan. 31	188
Feb. 1 - Feb. 28/29	135
Mar. 1 - Mar. 7	113

If on the above dates, the specified minimum reserve volume is not present in the 1,000 Acre Foot Pool, the Water Board's exchanges from Williams Fork Reservoir or other sources for diversions pursuant to this Agreement will cease, and such diversions and any direct use of the 1,000 Acre Foot Pool, except such use as contemplated in the Substitution Agreements, shall also cease. After March 7, if 113 acre feet or less remains in the 1,000 Acre-Foot Pool, no use of the 1,000 Acre-Foot Pool shall be made except such use as contemplated in the Substitution Agreements.

(f) The inflows to Dillon Reservoir do not affect any of the operations in Grand County under this Agreement, including without limitation the snowmaking exchange for Winter Park Ski Area.

4. Grand County Yield.

(a) Summit County, the Summit County Ski Areas and the Water Board hereby: (i) amend paragraph 4(c) of the Summit County Agreement to reduce the consumptive use limitation contained in said paragraph from 1750 acre feet to 1151.4 consumptive acre feet; and (ii) amend the Summit County Agreement to reduce the 3100 Acre Feet to 1217.8 acre feet by the following amounts of water obtained by the following ski areas:

Breckenridge Ski Corporation	225.0 acre feet
Copper Mountain, Inc.	172.7 acre feet
Keystone Resorts Management, Inc.	1484.5 acre feet
Total	1882.2 acre feet

Notwithstanding the foregoing amendments, nothing contained herein shall modify any other provision of the Summit County Agreement.

(b) Based on paragraphs 3 and 4 of the Summit County Agreement, the maximum potential loss of yield to the Water Board's Blue River system is 2088 acre feet. The reduction provided for in paragraph 4(a) reduces the 2088 acre feet by 920 acre feet, leaving 1168 acre feet of consumptive use available under paragraph 4 of the Summit County Agreement for all allowable uses. The Water Board shall pay to the Reservoir Company the sum of $3.86 million for the 920 acre feet of potential lost yield released from the Summit County Agreement pursuant to the amendment set forth in paragraph 4(a) above.

(c) In consideration for the amendment of the March 3, 1987 lease between the Water Board and the Colorado River Water Conservation District, which amendment is executed contemporaneously with this Agreement, and the other terms of this Agreement, the Water Board will annually bypass at its intakes and make available from other components of its water delivery system, as necessary, for the use of the Town of Granby, Town of Fraser, the Districts and Winter Park (the "Grand County Users") or their designees, 920 acre feet of water (the "Bypass Water"). The Bypass Water shall be delivered from the Water Board's Fraser River or Williams Fork collection systems, in such amounts, at such times, and at such point or points as specified in the Grand County operating plan attached hereto as Exhibit B, or as shall be mutually agreed by the Grand County Users and the Water Board.

The Water Board hereby waives any claim it might have to the reuse, successive use or other disposition of the Bypass Water.

(d) The Water Board is required by the Forest Service or the Bureau of Land Management to bypass water at its points of diversion on the Fraser River, Vasquez Creek and St. Louis Creek under stipulations 3(a), 3(b) and 3(c) of the Amendatory Decision dated April 22, 1970, Serial No. 027914 ("Minimum Bypasses"). The Water Board hereby waives any right it might have to reduce the Minimum Bypasses under stipulations 3(e) and 6 of the Amendatory Decision. The Water Board further agrees to limit its right to reduce the Minimum Bypasses under stipulation 5 of the Amendatory Decision to situations involving mandatory restrictions on the use of water in the area served by the Board and agrees not to exercise its right under stipulation 5 if such a reduction in Minimum Bypasses would result in the imposition of mandatory restrictions on indoor municipal and firefighting use of water by the affected Grand County Users; provided, however, that the Water Board reserves the right to reduce the Minimum Bypasses under stipulation 5 whenever mandatory restrictions on in-house domestic use of water have been imposed in the area served by the Water Board.

(e) The Bypass Water shall be measured at the Water Board's Fraser River collection system and shall be made available between September 15 of any year and May 15 of the following year; provided, however, that up to 30 acre feet may be delivered for the benefit of Winter Park from May 16 through September 14 of any year. The Bypass Water represents a new obligation of the Water Board which shall be in addition to the Minimum Bypasses and existing legal and contractual obligations of the Water Board to bypass or deliver water from its system for use on the West Slope according the following agreements: Agreement with Grand County Water and Sanitation District No. 1 dated October 6, 1960, allowing for .5 cfs on Little Vasquez Creek (Hammond water); Agreement with Grand County Water and Sanitation District No. 1 dated November 24, 1986, as amended on July 14, 1987, and November 5, 1991, for 270 acre feet of water (O'Neill water); Agreement with Winter Park dated February 27, 1992, for 16 acre feet of water (20% water); and Memorandum Agreement with Winter Park Water and Sanitation District dated January 23, 1980, for delivery of .75 cfs of water (Crooked Creek water).

(f) The Grand County Users shall have the entire obligation to furnish any augmentation water which may

be required to prevent injury to water users other than the Water Board in connection with the use of the Bypass Water. The Grand County Users shall bear any pumping costs plus all costs of any modifications or changes to the Water Board's facilities (including measuring devices) required to implement this paragraph. The Grand County Users shall also pay annual operation and maintenance costs which shall be calculated pursuant to the Grand County operating plan attached hereto as Exhibit B.

5. Williams Fork Reservoir Water.

For any amount of water less than 920 acre feet per year of Bypass Water utilized in a given year, up to the maximum amounts of water for each year contained in the Grand County operating plan, the Water Board agrees to release for augmentation uses by any of the Grand County Users an equal amount of water from Williams Fork Reservoir ("Williams Fork Water"), such that the total of the Bypass Water and Williams Fork Water delivered under paragraph 4 and this paragraph in any given year does not exceed 920 acre feet. The Williams Fork Water released under this paragraph shall be released at such times and in such amounts as the Grand County Users and the Water Board agree in the Grand County operating plan.

6. Replacement Water.

(a) Replacement water is that amount of water necessary to be provided to the Water Board to offset the loss to the Water Board's existing system yield resulting from the consumptive use of water under paragraphs 4 and 5 of this Agreement. The replacement water obligation is in addition to any augmentation water the user may owe to the river and is defined as follows:

(i) No replacement water needs to be furnished to the Water Board in connection with the use of the Williams Fork Water.

(ii) Two-thirds of an acre foot of replacement water shall be furnished to the Water Board for every acre foot of Bypass Water released between September 15 of any year and May 15 of the following year. One and one-third acre foot of replacement water shall be furnished to the Water Board for every acre foot of Bypass Water released between May 16 and September 14 of any year.

(b) In satisfaction of the replacement water obligation of the Grand County Users for the Bypass Water, the Water Board will accept the assignment of Wolford Mountain Reservoir water acquired from the Middle Park Water Conservancy District in an amount equal to the replacement requirements contained in this paragraph 6. The Water Board shall be obligated to pay any annual assessments for such Wolford Mountain Reservoir water once it has been purchased by the Grand County Users and assigned to the Water Board. The Water Board shall exercise any rights to replacement water conveyed by the Grand County Users within and subject to the terms of the Substitution Agreements and any decree which may be entered in Case No. 91CW252, Water Division No. 5. The Water Board shall be required to obtain any approvals that may be required to use such water by substitution or exchange. In the event such water is acquired by the Grand County Users and conveyed to the Water Board, but Wolford Mountain Reservoir is not constructed, then the Grand County Users will make application for Green Mountain Reservoir water service contracts to be used as the source of replacement water. In the event a Green Mountain Reservoir service contract is issued upon terms and conditions reasonably acceptable to the Grand County Users and the Water Board, then the Green Mountain service contract will be an acceptable source of replacement water. Upon crediting of the contract water to the Water Board's account in Green Mountain Reservoir, the Water Board will pay all standby and delivery costs of such contract, and shall reassign the Wolford Mountain Reservoir water described in this paragraph back to the Grand County Users. In the event a Green Mountain Reservoir contract is not issued, or is issued on conditions that are not reasonably acceptable to the Grand County Users and the Water Board, then no replacement water needs be furnished to the Water Board by the Grand County Users.

7. Future Water.

(a) Summit County, the Town of Frisco, the Town of Dillon and Copper Mountain currently own 351 acre feet of consumptive use water under paragraphs 3 and 4(c) of the Summit County Agreement ("Additional Water") which can be used for municipal and irrigation purposes. For each acre foot by which the foregoing parties within ten years from the date of this Agreement agree to reduce their Additional Water by amending the Summit County Agreement, then as requested the Water Board shall make available one additional acre foot of Bypass Water, pursuant to the provisions of paragraph 4 above (the "Future Bypass Water"), or of Williams Fork Water (the

"Future Williams Fork Water"), or of water stored in Dillon Reservoir (the "Future Dillon Reservoir Water"), so long as the replacement obligations in subparagraph (b) of this paragraph 7 are satisfied. The actual physical arrangements by which the water is made available by the Water Board may be subject to separate agreement between the Water Board and the user. Any Future Dillon Reservoir Water or Future Williams Fork Water may be used as a source of year-round augmentation water by any Grand or Summit County user, provided, however, that Future Williams Fork Water shall be used if the augmentation is required only for the Colorado River.

(b) One and 58/100 acre feet of replacement water shall be furnished to the Water Board for every acre foot of Future Dillon Reservoir Water used by a party. Two-thirds of an acre foot of replacement water shall be furnished to the Water Board for every acre foot of Future Bypass Water made available between September 15 of any year and May 15 of the following year; and one and one-third acre foot of replacement water shall be furnished to the Water Board for every acre foot of Future Bypass Water made available between May 16 and September 14 of any year. No replacement water needs to be furnished to the Water Board for use of Future Williams Fork Water. The Water Board will accept those sources of replacement water identified in paragraph 4 of the Summit County Agreement, as amended by letter agreement dated November 13, 1986, subject to the conditions contained in said paragraph 4. In addition, the Water Board will accept Wolford Mountain Reservoir, Old Dillon Reservoir (providing this source is acceptable to the Bureau of Reclamation) or the Reservoir Yield as additional sources of replacement water for the Future Dillon Reservoir Water and Future Bypass Water.

8. Consumptive Use Assumptions.

The consumptive use of water for purposes of implementing the provisions of this agreement are as follows:

(a) 20% for snowmaking diversions, provided the return flows which accrue to the stream system are upstream of Dillon Reservoir or the collection facilities of the Fraser River Diversion Project;

(b) 100% for snowmaking or municipal diversions resulting in return flows which accrue to the stream system below Dillon Reservoir or the collection facilities of the Fraser River Diversion Project, unless equivalent return flows can be collected and delivered to such collection facilities.

(c) 1.45 acre feet per irrigated acre;

(d) 5% for all in-house, domestic, municipal and commercial water diversions when such diversions and their return flows are above Dillon Reservoir or the collection facilities of the Fraser River Diversion Project and when the water is treated by a central treatment plant;

(e) 10% for all in-house, domestic, municipal and commercial water diversions, when such diversions and their return flows are above Dillon Reservoir or the collection facilities of the Fraser River Diversion Project and when the water is treated by a septic/leach field system.

9. Copper Mountain Ski Area.

Up to 343 acre feet of water per year may be released from Clinton Reservoir for diversion by the Copper Mountain Ski Area, provided that the volume of water in Dillon Reservoir as of the preceding August 1 was at least 50,000 acre feet (the "50,000 af Limitation"). The 50,000 af Limitation shall not apply unless the Water Board has imposed mandatory restrictions on the use of water in the area served by the Water Board due to insufficient physical raw water supply. Such released water will be considered new supply water to the Water Board and all runoff water (releases minus 20% of the water diverted for snowmaking) shall be credited at the time of diversion against any consumptive use repayment water owed to the Water Board by other Clinton Reservoir snowmaking users. Credits may be carried forward to the next allowable fill.

10. Keystone Ski Area.

(a) Whenever water cannot be diverted from the Snake River or its tributaries because of decreed instream flows or the operation of the instream flow memorandum of agreement between Keystone Resorts Management, Inc. ("Keystone") and the Department of Natural Resources, Keystone may pump up to 1500 acre feet of water from September 1 to March 31 of the following year from the Montezuma Shaft of the Roberts Tunnel, subject to the provisions of this paragraph.

(i) Keystone may use the pumped water for snowmaking or its own municipal uses either directly or by delivering pumped water to the Snake River for rediversion for beneficial use. In addition, Keystone may leave all or part of such pumped water in the Snake River. Any such pumping

shall be in compliance with the instream flow agreement. Diversions from the Snake River may only occur if and to the extent that augmentation or substitute supply water is provided to the Snake River at the time and in the amount and location necessary to augment or offset Keystone's diversions from the Snake River.

(ii) As provided in paragraph 8(a) above, Keystone shall release to Dillon Reservoir from the Clinton Reservoir Yield 20% of the water that Keystone pumps from the Roberts Tunnel and uses directly for snowmaking or that Keystone pumps from the Roberts Tunnel to the Snake River and rediverts for use for snowmaking. If Keystone pumps and uses such water for beneficial uses other than snowmaking, Keystone's releases to Dillon Reservoir shall be calculated according to the consumptive use assumptions set forth in paragraph 8(b), (c), (d), or (e) above, as appropriate to each such use.

(iii) The parties to this Agreement acknowledge and agree that water pumped by Keystone from the Roberts Tunnel is the Water Board's water that has previously been lawfully stored in Dillon Reservoir and that neither Keystone's pumping nor the return flows of such water to the Snake River as a result of Keystone's pumping shall affect or be included in the calculations of inflows to Dillon Reservoir nor affect the Water Board's obligation to make releases of water to the Blue River from Dillon Reservoir. Keystone shall keep accurate records of the amount of water pumped, pursuant to paragraph 12 below. The Water Board will maintain dominion and control of the water pumped and will recapture the return flows, calculated as set forth in paragraph 8 above, in Dillon Reservoir for storage and direct diversion for municipal uses.

(iv) The provisions of this paragraph 10 shall apply without regard to whether, in any year, the Water Board is operating exchanges or substitutions from sources downstream of Dillon Reservoir or whether, in such year, the Water Board has released all or part of the 1,000 Acre Foot Pool of Dillon Reservoir water; provided, however, that Keystone may not pump pursuant to this paragraph 10 in any snowmaking season when Dillon Reservoir's volume as of the preceding August 1 was less than 50,000 acre feet. The 50,000 af Limitation as defined in this subsection shall not apply unless the Water Board has imposed mandatory restrictions on the use of water in the area served by the Water Board due to insufficient physical raw water supply.

(b) Keystone will pay all direct costs associated with the diversion and withdrawal of water from the Montezuma Shaft of the Roberts Tunnel pursuant to paragraph 10(a). No property interest to the use of the Roberts Tunnel is being conveyed by virtue of this Agreement, and the Water Board does not warrant or guarantee any particular water quality or quantity in the Roberts Tunnel. The Water Board must approve all design specifications before Keystone begins withdrawal; provided, however, the Water Board shall not unreasonably withhold such approval, but may seek changes and modification in the specifications to avoid interference with the physical integrity of the Water Board's facilities and with the Water Board's operations of the Roberts Tunnel and Dillon Reservoir.

11. Goose Pasture Tarn Exchange.

(a) The Reservoir Yield may be used by the Town of Breckenridge to repay water to the Water Board, on an acre foot for acre foot basis, for out-of-priority storage in Goose Pasture Tarn Reservoir (the "Tarn"). The Water Board agrees to allow such storage, provided that each acre foot stored is exchanged by an acre foot of Reservoir Yield. The foregoing exchange shall not occur when the Computed Natural Inflow to Dillon Reservoir is at or below 50 cfs.

(b) In the event that the Breckenridge Ski Area obtains the right to utilize a portion of the storage capacity of the Tarn, the Water Board agrees to allow such out-of-priority storage in the Tarn and to augment it by exchange in the same manner set forth in paragraph 2(a) above, provided that (i) such out-of-priority storage when combined with the snowmaking diversions under paragraph 2(a) does not exceed the limitation contained in paragraph 2(a), (ii) for each acre foot stored in the Tarn, 0.2 acre feet of the Clinton Reservoir Yield is credited to the Water Board, and (iii) such stored water is used for snowmaking purposes during the ensuing snowmaking season. If the stored water is not used for snowmaking purposes as required by subsection (ii) above, then for each acre foot of out-of-priority storage, 0.8 acre foot shall be released to Dillon Reservoir from the Breckinridge Ski Area account in the Tarn before August 1 of the following year, when requested by the Water Board.

(c) Such out-of-priority storage in the Tarn by the Breckenridge Ski Area shall be considered as an "early" diversion of the Water Board's Dillon inflow under paragraph 2(a) above, and the return flow and record-keeping provisions

of paragraph 2(a) above shall apply to such snowmaking use by the Breckenridge Ski Area.

(d) Such diversions may not occur pursuant to this paragraph 11 in any year in which the volume of water in Dillon Reservoir as of the preceding August 1 was less than 50,000 acre feet. The 50,000 af Limitation as defined in this subsection shall not apply unless the Water Board has imposed mandatory restrictions on the use of water in the area served by the Water Board due to insufficient physical raw water supply.

12. Accounting.

(a) The Clinton Purchase Group through the Reservoir Company shall provide such personnel, equipment and measuring devices as are necessary to collect all information and perform all the water accounting required under the Clinton Reservoir portion of this Agreement and under paragraph 7 above regarding Future Dillon Reservoir Water. All costs associated with the collection of information and water accounting provided to the Water Board under the Clinton Reservoir portion of this Agreement shall be borne by the Reservoir Company. Such information shall include diversion rates and volumes of water for municipal, industrial and irrigation uses of the Reservoir Yield, and such daily diversion rates and volumes of water for snowmaking use of the Reservoir Yield as may be needed to operate this Agreement. Other information may include data required by the Division Engineer or the Bureau of Reclamation in order to account for the diversons and repayment obligations described in this Agreement. Such information shall be provided to the Water Board's Raw Water Operations Section as required. The Clinton Purchase Group shall designate one contact person to ensure efficient operations under the Clinton Reservoir portion of this Agreement and shall notify the Water Board of such contact person. Provision of a contact person and adequate systems to account for operation of this Agreement is a prerequisite to the Water Board's obligation to implement the Clinton Reservoir portion of this Agreement. Summit County shall make all reasonable efforts to develop similar accounting necessary to collect all information required to operate the Summit County Agreement.

(b) The Grand County Users shall provide such personnel, equipment and measuring devices as are necessary to collect all information and perform all the water accounting required under the Grand County portions of this Agreement.

All costs associated with the collection of information and water accounting provided to the Water Board under this Agreement shall be borne by the Grand County Users. Such information shall include diversion rates and volumes of water for municipal, industrial and irrigation uses of the Bypass Water as may be needed to operate this Agreement. Other information may include data required by the Division Engineer to account for the operation of this Agreement. Such information shall be provided to the Water Board's Raw Water Operatons Section. The Grand County Users shall designate one contact person to ensure efficient operations under this Agreement, and shall notify the Water Board of such contact person. Provision of a contact person and adequate systems to account for operation of this Agreement is a prerequisite to the Water Board's obligation to provide the Bypass Water.

13. Water Court Proceedings.

The West Slope Parties shall be responsible for obtaining the necessary approvals from State water officials and/or the Water Courts for any exchanges, substitute supply plans, changes of water rights, plans for augmentation, applications for water rights or amendments to existing decrees, except for any adjudication involving the Water Board's water rights (which shall be brought only by joint application by the Water Board and the West Slope Parties or, if mutually agreed, by the Water Board alone), which may be required to effectuate the terms of this Agreement. The Water Board agrees to join as co-applicant in any water right application involving the Water Board's water rights as shall be necessary to implement this Agreement. The Water Board agrees not to oppose any administrative proceedings or water court applications to the extent they seek to implement the terms of this Agreement, although it may file a statement of opposition to monitor any application and assure compliance with the terms of this Agreement.

14. Reservoir Company.

Clinton Reservoir will be owned by the Reservoir Company, and the Clinton Purchase Group will obtain shares of stock in the Reservoir Company entitling them to a portion of the Reservoir Yield. The applicable terms of this Agreement shall inure to the benefit of the Reservoir Company and constitute a covenant running with Clinton Reservoir.

15. Water Rights.

(a) The West Slope Parties shall withdraw all opposition to the Water Board's diligence filings and shall agree not to oppose pending or future diligence applications or applications to make absolute the water rights or directly attack on any other grounds in Water Court those water rights decreed in C.A. 657, (Fraser, Williams Fork); C.A. 1430 (Moffat, Williams Fork); C.A. 1805 and 1806, 2782, 5016, 5017 (Blue River); C.A. 1193 (Eagle-Piney); C.A. 2371 (Straight Creek); C.A. 1526, 1548 (Eagle-Colorado); C.A. 112 (Big Lake Ditch); and C.A. 3286 (Two Forks).

(b) In turn, the Water Board agrees not to oppose the West Slope Parties' diligence applications or applications to make absolute the water rights or directly attack on any other grounds in Water Court those water rights decreed in 88CW038, 84CW455, 83CW333, 82CW402, 82CW403, 82CW404 (Grand County Water and Sanitation District No. 1); 82CW400, 84CW444, 86CW365, W-3145 (Winter Park Water and Sanitation District); 89CW125, 85CW339, 85CW337, C.A. 1175 (Town of Fraser); Grand County District Court No. 814 (Town of Granby); 84CW670, 85CW580 (Town of Silverthorne); 80CW444, 83CW051, 81CW107, 81CW487 (Town of Breckenridge); 81CW003, 85CW132, 86CW152, 87CW390 (Breckenridge Ski Corporation); 82CW435 (Copper Mountain, Inc.); 85CW614, 88CW242 (Keystone Resorts Management, Inc.).

16. Stipulation.

All parties to this Agreement who are objectors shall execute or otherwise withdraw their opposition to the final stipulation for decree in Consolidated Case Numbers 2782, 5016 and 5017 in the United States District Court; and Case No. 88CW382, Water Division No. 5, State of Colorado, and the supplemental stipulation, copies of which are attached hereto as Exhibit C.

17. Williams Fork Substitution Agreement

The West Slope Parties shall not oppose the Water Board's operation under the Williams Fork substitution agreement between the Water Board and the Bureau of Reclamation or any extension of that agreement under substantially similar terms and conditions; provided, however, that nothing in this Agreement shall affect Grand County's permitting or regulatory authority.

18. Wolford Mountain Reservoir.

Contingent upon execution by the United States and the Water Board of the supplemental stipulation attached as Exhibit C, the West Slope Parties agree not to oppose the Water Board's use by substitution or exchange of water from Wolford Mountain Reservoir. The West Slope Parties or their assigns shall not oppose the Water Board's application in 91CW252, Water Division No. 5 (Wolford Mountain Reservoir). Grand County has reviewed and conducted the necessary hearings regarding the proposal by the Colorado River Water Conservation District to take action on the special use permit and 1041 permit for the Wolford Mountain Reservoir project. Contemporaneously with the execution of this Agreement, Grand County has taken action on the proposal which is reasonably satisfactory to the permit holder. Subject to any rights of the permit holders, nothing in this Agreement shall affect Grand County's permitting or regulatory authority with regard to the Wolford Mountain Reservoir project. Nothing contained herein shall prevent Summit County from participating in any public hearings held by the Bureau of Reclamation as part of the commitments made in the Muddy Creek EIS or any supplement thereto.

19. Contingencies.

This Agreement is contingent upon the following: (a) execution by the United States of the supplemental stipulation attached as Exhibit C; (b) approval by the State Engineer of the snowmaking exchanges provided for in paragraph 2; (c) agreement by the Bureau and the State Engineer that the return flows to Dillon Reservoir created by implementation of paragraphs 2, 9, 10 and 11 shall be credited to the Water Board and treated for accounting purposes as if stored in Dillon Reservoir; (d) agreement by the State Engineer that the return flows to the collection facilities of the Fraser River Diversion Project created by implementation of paragraph 2 shall be credited to the Water Board; and (e) agreement by the State Engineer that a seven-day running average may be used to compute the Computed Natural Inflow to Dillon Reservoir pursuant to paragraph 3.

20. Miscellaneous.

(a) If any provision of this Agreement shall prove to be illegal, invalid, unenforceable or impossible of performance, the remainder of this Agreement shall not be affected thereby, and in lieu of each such provision of this Agreement, there shall be added as a part of this Agreement a provision which is legal, valid, enforceable and capable of

performance and which is as similar in terms as possible to the provision that was illegal, invalid, unenforceable or impossible of performance.

(b) The terms and conditions of this Agreement are binding upon and shall inure to the benefit and burden of the parties' successors and assigns. This Agreement cannot be assigned by any of the West Slope Parties in such a manner as to require a change in the physical operation of the Water Board's collection and delivery system under the Clinton Reservoir or Grand County operating plans except upon the express written approval of the Water Board.

(c) Nothing contained in this Agreement shall modify the existing instream flow memoranda of agreement between the Department of Natural Resources, State of Colorado, and either the Summit County Ski Areas, Summit County, or the towns of Breckenridge, Dillon, Frisco and Silverthorne.

(d) This Agreement shall be construed under Colorado law.

(e) The parties have taken all actions required and secured the necessary approvals to enter into this Agreement.

(f) The term of this Agreement is perpetual.

(g) This Agreement shall be deemed performable in the City and County of Denver, even though it may be necessary for any party to take action in furtherance of or compliance with the Agreement outside of the City and County of Denver. Nothing in this subparagraph shall be construed to deprive the water court of any jurisdiction it might otherwise have.

(h) The parties shall execute such agreements as may be required to implement the terms of this Agreement.

Executed as of the date first set forth above.

Executions begin on next page

ATTEST:

Secretary

CITY AND COUNTY OF DENVER,
acting by and through its
BOARD OF WATER COMMISSIONERS

By
President

REGISTERED AND COUNTERSIGNED:
Auditor
CITY AND COUNTY OF DENVER

APPROVED:

Director of Planning

APPROVED AS TO FORM:

Legal Division

BOARD OF COUNTY COMMISSIONERS
GRAND COUNTY, COLORADO

By
Title: Chairman

BOARD OF COUNTY COMMISSIONERS
SUMMIT COUNTY, COLORADO

By
Title: Chairman

TOWN OF BRECKENRIDGE

By
Title: Mayor

TOWN OF DILLON

By
Title: MAYOR PRO TEM

TOWN OF FRASER

By
Title: Mayor

TOWN OF GRANBY

By
Title: MAYOR

Executions continue on next page

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Auditor
CITY AND COUNTY OF DENVER

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Director of Planning

APPROVED AS TO FORM:

Legal Division

BOARD OF COUNTY COMMISSIONERS
GRAND COUNTY, COLORADO

By
Title: Chairman

BOARD OF COUNTY COMMISSIONERS
SUMMIT COUNTY, COLORADO

By
Title: Chairman

TOWN OF BRECKENRIDGE

By
Title: Mayor

TOWN OF DILLON

By
Title: MAYOR PRO TEM

TOWN OF FRASER

By
Title: Mayor

TOWN OF GRANBY

By
Title: MAYOR

Executions continue on next page

DENVER WATER

1600 West 12th Avenue • Denver, Colorado 80204-3412
Phone 303-628-6460 • Fax No. 303-628-6478

Patricia L. Wells, General Counsel, Legal Division

October 25, 2013

Glenn E. Porzak
Porzak Browning & Bushong LLP
929 Pearl Street, Suite 300
Boulder, CO 80302

Re: Amendment to Agreement – Contract 4394A

Dear Mr. Porzak:

Enclosed please find an executed original of the *Amendment to Clinton Reservoir – Fraser River Water Agreement (Contract 4394A)* between Clinton Ditch & Reservoir Company and the City and County of Denver, acting by and through its Board of Water Commissioners.

Please contact me if you have any questions.

Sincerely,

Casey S. Funk
Attorney

Enclosure

AMENDMENT TO
CLINTON RESERVOIR - FRASER RIVER WATER AGREEMENT
Contract 4394A

THIS AMENDMENT to the Clinton Reservoir - Fraser River Water Agreement ("Clinton Agreement"), Contract No. 4394A ("Amendment") is made and entered into between the Clinton Ditch & Reservoir Company ("Company"), P.O. Box 712, Frisco, Colorado 80443, and the City and County of Denver, acting by and through its Board of Water Commissioners ("Board"), a municipal corporation of the State of Colorado whose address is 1600 W. 12th Avenue, Denver, Colorado 80204.

WHEREAS, the Board and several entities in Summit and Grand Counties entered into the Clinton Agreement, dated July 21, 1992; and

WHEREAS, the Company represents the interests of all the parties to the Clinton Agreement who are shareholders in the Company; and

WHERAS, the Board and the Company, along with several other West Slope entities, have executed the Colorado River Cooperative Agreement ("CRCA"), dated September 26, 2013; and

WHEREAS, the CRCA requires certain amendments to the Clinton Agreement.

NOW, THEREFORE, the parties agree as follows:

1. Pursuant to Article III.C.1 of the CRCA, after the second whereas clause, a new whereas clause shall be added to read as follows:

> Whereas, by decree of the District Court in and for Water Division No. 5, State of Colorado, in Case No. 98CW57, Clinton Reservoir was granted a Use Enlargement and Second Filling in the amount of 4,250 acre feet for domestic, municipal, industrial, snowmaking, recreation, fish and wildlife propagation and augmentation purposes, both on the eastern and western slopes of Colorado, and an application is pending in Case No. 06CW252 for Clinton Gulch Reservoir 1st Enlargement and Refill Right for an additional 210 acre feet. All references to Clinton Reservoir herein collectively refer to the storage rights decreed in Case Nos. W-2559, 98CW57 and 06CW252;

2. Pursuant to Article III.C.2 of the CRCA, paragraph 1(b) shall be amended to read as follows:

(b) Clinton Reservoir will retain for the uses set forth in paragraph 1(c) below any water stored in an accounting year if an allowable fill occurs. An allowable fill occurs each year except: (i) when Green Mountain Reservoir does not fill under its own right and the Water Board is required to provide substitution water to Green Mountain Reservoir in order to retain water diverted at Dillon Reservoir; or (ii) when the contents of Dillon Reservoir are less than 100,000 acre feet on

August 1 for reasons other than the Water Board's maintenance or repair of its Dillon Reservoir facilities and the total combined contents of the Water Board's Dillon, Gross, Cheesman, Eleven Mile and Antero Reservoirs are less than 51% of their total usable capacity on August 1. Subject to the provisions of Paragraph 9 below, if an allowable fill does not occur in a given accounting year, the water stored in Clinton Reservoir during that accounting year will be credited to the Water Board's account and retained in Clinton Reservoir until the contents of Dillon Reservoir as measured above the invert of the west portal of the Roberts Tunnel are 100,000 acre feet or less, in which event the water shall be released from Clinton Reservoir to Dillon Reservoir when requested by the Water Board, or until an allowable fill occurs, whereupon the Water Board's account balance of water stored in Clinton Reservoir will be reset to zero. The release of the Water Board's water stored in Clinton Reservoir shall be scheduled in such a manner as to meet the Water Board's needs in a timely manner and also to avoid the erosion of the Clinton Canal.

3. Pursuant to Article III.C.7 of the CRCA, paragraph 10(a) shall be amended to read as follows:

(a) Whenever water cannot be diverted from the Snake River or its tributaries because of decreed instream flows, or the operation of the instream flow memorandum of agreement between Keystone Resorts Management, Inc. ("Keystone") and the Department of Natural Resources, or the water quality of the Snake River, Keystone may pump up to 1500 acre feet of water from September 1 of each year to March 31 of the following year from the Montezuma Shaft of the Roberts Tunnel, subject to the provisions of this paragraph.

4. Except as specifically amended in this Amendment or previous amendments, the Clinton Agreement shall remain in full force and effect. The effective date of this Amendment is the date it is executed by the appropriate representative of the Board.

CLINTON DITCH & RESERVOIR COMPANY

By: _____
Chairman

AND ITS ATTORNEYS

By: _____
General Counsel

CITY AND COUNTY OF DENVER,
acting by and through its
BOARD OF WATER COMMISSIONERS

ATTEST:

Secretary

President

10/23/2013

APPROVED AS TO FORM:

General Counsel

2016 AMENDMENT TO
CLINTON RESERVOIR – FRASER RIVER WATER AGREEMENT

This 2016 Amendment to the Clinton Reservoir – Fraser River Water Agreement ("Clinton Agreement") is made and entered into among the City and County of Denver, acting by and through its Board of Water Commissioners (the "Board'), a municipal corporation of the State of Colorado, whose address is 1600 W. 12th Avenue, Denver, Colorado 80204, and the Clinton Ditch & Reservoir Company (the "Company"), P.O. Box 712, Frisco, Colorado 80443, and the undersigned signators to the Clinton Agreement or their successors in interest.

Whereas, Paragraph 9 of the Clinton Agreement allows up to 343 acre feet of water per year to be released from Clinton Gulch Reservoir for diversion by the Copper Mountain Ski Area for snowmaking use, subject to certain conditions. At the time the Clinton Agreement was executed, the owner of the Copper Mountain Ski Area held 685 shares of Class A Series 2 stock, which represented 68.5 acre feet of storage in Clinton Gulch Reservoir that can be consumed for snowmaking. Under the consumptive use assumptions set forth in Paragraph 8(a) of the Clinton Agreement, the 68.5 acre feet of storage supply enabled the Copper Mountain Ski Area to divert 343 acre feet of water for snowmaking use annually. That was the basis of the 343 acre feet in Paragraph 9 of the Clinton Agreement.

Whereas, the owner of the Copper Mountain Ski Area has acquired additional Class A Series 2 snowmaking shares in the Clinton Ditch & Reservoir Company and now owns 1,060 Class A Series 2 shares representing 106 acre feet of storage that can be consumed for snowmaking. The Series 2 shares and associated 106 acre feet of storage allow the Copper Mountain Ski Area to divert up to 530 acre feet of water annually for snowmaking purposes. Accordingly, the Copper Mountain Ski Area desires to increase to 530 acre feet per year the amount of water released from Clinton Gulch Reservoir under Paragraph 9 of the Clinton Agreement.

Now, therefore, the parties agree as follows:

1. The 343 acre feet of water in paragraph 9 of the Clinton Agreement is amended to read "530 acre feet of water."

2. Except as specifically amended in this 2016 Amendment, or in previous amendments, the Clinton Agreement shall remain in full force and effect. The effective date of this 2016 Amendment is the date it is executed by the appropriate representative of the Board.

AGREEMENT REGARDING USE OF CLINTON RESERVOIR DEAD POOL STORAGE

This Agreement dated September 30, 2018, is between the City and County of Denver acting by and through its Board of Water Commissioners ("Denver") and the Clinton Ditch and Reservoir Company (the "Reservoir Company").

Recitals

A. Denver and the predecessors of the Reservoir Company have previously entered into the Clinton Reservoir - Fraser River Water Agreement dated July 21, 1992 (the "Clinton Agreement"), which among other matters governs the "Reservoir Yield" of Clinton Gulch Reservoir as defined in paragraph 1(a) of the Clinton Agreement.

B. The Reservoir Company desires to utilize the dead storage pool of Clinton Gulch Reservoir under the Clinton Agreement to increase the Reservoir Yield.

C. The Colorado River Cooperative Agreement ("CRCA") states that "Upon Resolution of Blue River Decree Issues, Denver Water and the Clinton Ditch & Reservoir Company will enter into the permanent Agreement regarding the Clinton Reservoir dead storage pool attached hereto as Attachment J." Resolution of the Blue River Decree Issues occurred on March 9, 2018.

D. Paragraph 3 of Exhibit J to the CRCA states that "To effectively provide water from the dead storage pool, the Reservoir Company will be responsible for the installation and operation of a pumping system sufficient to deliver up to 801 acre feet to Ten Mile Creek. The Reservoir Company may only utilize water from the dead storage pool as Reservoir Yield during periods when the pumping system is operational."

E. Since the effective date of the CRCA, the probability that the Reservoir Company would be required to physically pump from the dead pool storage is projected to remain lower than expected for approximately the next 20 to 25 years. This is in part due to the Reservoir Company's shareholders' current use of water, which is at 50% of total shares.

F. The Reservoir Company has issued "Class A" shares, which is associated with the original shares of stock that were issued per the 1992 Clinton-Fraser Agreement. There are 12,000 Class A shares in total. The Reservoir Company has also issued "Class B" shares, which represent storage that more recently became available in Clinton Reservoir's "dead pool". There are 2,670 Class B shares in total.

G. Because there remains capacity in the Clinton Reservoir for certain Reservoir Company shareholders to utilize a portion of their Class B shares in addition to Class A

shares for approximately the next 20 to 25 years, Denver and the Reservoir Company are willing to include terms in this Agreement providing for alternatives to use the Clinton Reservoir dead pool in lieu of first installing a pumping system.

H. With the Resolution of the Blue River Decree Issues, Denver and the Reservoir Company are now ready to execute this modified version of Exhibit J to the CRCA.

Agreement

Now, therefore, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Denver agrees to allow the Reservoir Company to utilize the dead storage pool of Clinton Gulch Reservoir to increase the Reservoir Yield under the terms herein. The capacity of the dead storage pool of Clinton Gulch Reservoir that can be accessed by pumping is 801 acre feet.

2. The 801 acre feet of water associated with the dead storage pool shall be considered an additional 267 acre feet of Reservoir Yield under paragraph 1(a) of the Clinton Agreement. Alternately, at the election of the Reservoir Company, all or a portion of the 801 acre feet of the dead storage pool can be used to produce up to 67% of the existing 1,200 acre feet of Reservoir Yield in the fourth year of four consecutive years that are not allowable fill years. Under either alternative, such water will be available for use in the same manner, and may be used for the same purposes and in the same manner, as are established in the Clinton Agreement, including repayment water owed to Denver and the snowmaking ratio of not more than 5 to 1 (or such other ratio based on the amount of credited snowmaking return flow established by subsequent decrees); provided, however, that the combined annual volume of water for snowmaking amounts under the Clinton Agreement and this Agreement shall not exceed 6,000 acre feet.

3. To effectively provide water from the dead storage pool, the Reservoir Company will be responsible for the installation and operation of a pumping system sufficient to deliver up to 801 acre feet to Ten Mile Creek. The Reservoir Company may only utilize water from the dead storage pool as Reservoir Yield during periods when the pumping system is operational, subject to the provisions of paragraph 4, below.

4. If the pumping system is not yet operational at the time the Reservoir Company's shareholders desire to use water from the dead storage pool, the following terms will apply to the Reservoir Company's use of the dead pool storage:

a. The Reservoir Company shareholders may use water stored in the dead pool attributable to their Class B dead pool shares prior to the pumping system becoming fully operational until such time when the cumulative amount of storage in Clinton Gulch Reservoir that has been credited to Denver by the Reservoir Company's shareholders, including both Class A and Class B shares, totals 1,000 acre feet on or before August 1st of any Clinton Reservoir accounting year.

b. At such time that the volume of water credited to Denver in any one accounting year totals 1,000 acre feet, the Reservoir Company will construct infrastructure necessary for deploying and removing a submersible pump ("Removable Pump Infrastructure"), which includes, but is not limited to: the submersible pump sled (without pump) and pump discharge pipeline. Construction of these components will be deemed complete when the submersible pump sled (without pump), and submersible pipeline, connected to the outlet pipeline are in position at the bottom of the reservoir. The Reservoir Company will be solely responsible for the design and construction of the Removable Pump Infrastructure.

c. At such time when the cumulative amount of storage in Clinton Gulch Reservoir credited to Denver's account, including both Class A shares and Class B shares, totals at least 2,400 acre feet on or before August 1st of any Clinton Gulch Reservoir accounting year, the Reservoir Company shall limit its use of Clinton Gulch Reservoir during the ensuing accounting years. Such use shall be limited to the volume of water in Clinton Reservoir, excluding the dead pool less the total volume of water credited to Denver's account.

5. Alternatively, the shareholders may increase their use of Clinton Reservoir water in the ensuing accounting years, over and above the amount described in paragraph 4 above, through utilization of unused portions of the dead pool if the Reservoir Company has installed a pump on the submersible pump sled, connected the pump to the pump discharge pipeline, deployed the dead pool pumping system to the location in the reservoir from which it can pump the full 801 acre feet of dead pool volume, and demonstrated the dead pool pumping system is capable of delivering the full dead pool volume of water through the outlet pipeline to Ten Mile Creek over a period of not more than 70 days by the start of the accounting year (August 1st). For determining the capability of the dead pool pump station to deliver 801 acre feet in 70 days, the pumping system should be tested for a period of not less than six hours at a capacity of not less than 5.8 cubic feet per second ("cfs") before the system is deemed to satisfy the conditions set forth in this paragraph. The Reservoir Company will be solely responsible for completing the tasks identified above.

6. The Reservoir Company will notify Denver in writing when any of the conditions described in paragraphs 4.a-c, or 5 occur.

7. The term of this Agreement shall be perpetual. Nothing in this Agreement is deemed to modify or amend the Clinton Agreement, as amended by the CRCA. Denver and the Reservoir Company may modify this Agreement by written amendment of this Agreement.

8. Except as expressly modified by this Agreement, the CRCA shall remain in full force and effect.

Executed as of the date first set forth above.

ATTEST:

By: _____
Secretary

CLINTON DITCH AND RESERVOIR COMPANY

By: _____
President

Date: 9/20/18

ATTEST:

By: _____
DocuSigned by:
PEDE0A34D77B464...
Secretary

CITY AND COUNTY OF DENVER, acting by and through its
BOARD OF WATER COMMISSIONERS

By: _____
DocuSigned by:
2DB3279B8048435...
President

Date: 11/8/2018

Approved as to Form:

_____
DocuSigned by:
Daniel J. Arnold
F251B67846FB43C...
Office of General Counsel

THIRD AMENDMENT TO CLINTON RESERVOIR - FRASER RIVER WATER AGREEMENT

THIS AMENDMENT to the Clinton Reservoir - Fraser River Water Agreement ("Clinton Agreement"), ("Amendment") is made and entered into between the Clinton Ditch & Reservoir Company ("Company"), P.O. Box 712, Frisco, Colorado 80443, and the City and County of Denver, acting by and through its Board of Water Commissioners ("Board"), a municipal corporation of the State of Colorado whose address is 1600 W. 12th Avenue, Denver, Colorado 80204.

WHEREAS, the Board and several entities in Summit and Grand Counties entered into the Clinton Agreement, dated July 21, 1992, as amended by Amendment to Clinton Reservoir – Fraser River Water Agreement executed on October 23, 2013, and the 2016 Amendment to Clinton Reservoir – Fraser River Water Agreement dated October 26, 2016; and

WHEREAS, the Company represents the interests of all the parties to the Clinton Agreement who are shareholders in the Company; and

WHERAS, the Board and the Company, along with several other West Slope entities, have executed the Colorado River Cooperative Agreement, dated September 26, 2013, as amended by First Amendment to the Colorado River Cooperative Agreement (Re: Exhibit J – Agreement Regarding Use of Clinton Reservoir Dead Pool Storage) dated September 30, 2018 (collectively, "CRCA").

WHEREAS, the CRCA requires that Upon Resolution of Blue River Decree Issues which have been resolved, the Board and the Company will modify their existing 1992 Clinton Agreement to add the spillway enlargement water (up to a maximum of 500 acre feet).

WHEREAS, Water Court decrees were entered in Case Nos. 18CW3200 (dead storage pool) and 18CW3210 (spillway enlargement).

NOW, THEREFORE, the parties agree as follows:

1. Pursuant to Article III.C.1 of the CRCA, the new whereas clause added by the October 23, 2013 Amendment of the Clinton Reservoir – Fraser River Water Agreement shall be revised to read as follows:

> Whereas, by decree of the District Court in and for Water Division No. 5, State of Colorado ("Water Court"), in Case No. 98CW57, Clinton Reservoir was granted a Use Enlargement and Second Filling in the amount of 4,250 acre feet for domestic, municipal, industrial, snowmaking, recreation, fish and wildlife propagation, and augmentation purposes, both on the eastern and western slopes of Colorado; by decree of the Water Court in Case No. 06CW252 a water right was granted for the Clinton Gulch Reservoir 1st Enlargement and Refill Right for an additional 210 acre feet, which water right was changed and amended by decree of the Water Court in Case No. 18CW3200; and by decree of the Water Court in Case No. 18CW3210 a

water right was granted for the Clinton Gulch Reservoir 2nd Enlargement and Refill Right for the additional 500 acre feet for domestic, municipal, irrigation, industrial, snowmaking, recreation, fish and wildlife propagation, and augmentation purposes, both on the eastern and western slopes of Colorado for use in the Denver Water Board's municipal water system and for direct or indirect use in Summit and Grand Counties by the shareholders of the Clinton Ditch & Reservoir Company. All references to Clinton Reservoir herein collectively refer to the storage rights decreed in Case Nos. W-2559, 98CW57, 06CW252, 18CW3200 and 18CW3210;

2. Pursuant to Articles III.C.4 and III.C.6 of the CRCA, paragraph 1(a) of the Clinton Agreement shall be amended to read as follows:

(a) The Water Board will subordinate its Two Forks Reservoir water rights, and operate its Blue River Diversion Project water rights (more particularly described in the attached Exhibit A) so as to allow Clinton Reservoir to store up to 4,960 acre feet in an accounting year, which is the period from August 1 to July 31. Such storage in Clinton Reservoir will operate under the Water Board's prior fill agreement with the Bureau of Reclamation, and the Water Board will be obligated to meet the paper fill requirements of Green Mountain Reservoir. The maximum fill of 4,960 acre feet will produce 4,901 acre feet of useable water. Based on the drought period of 1953-1957, this 4,901 acre feet of useable water is calculated to produce a reliable annual yield for Clinton Reservoir of 1,633.67acre feet (the "Reservoir Yield"). Alternatively, at the election of the Reservoir Company, all or a portion of the dead storage pool of 801 acre feet plus the 500 acre feet decreed in Case No. 18CW3210 can be used to produce Reservoir Yield in the fourth year of four consecutive years that are not allowable fill years.

3. Pursuant to Article III.C.6. of the CRCA, the water from the total reservoir useable capacity (4,901 acre feet), including the dead storage pool and spillway enlargement, will be allocated to shareholders of the Company on a pro rata basis based on their shares of stock as either fourth year supply, or one-third of that amount will be so allocated as an increase in the Reservoir Yield of Clinton Reservoir, as that term is defined in the 1992 Clinton Reservoir- Fraser River Water Agreement.

4. Except as specifically amended in this Amendment or previous amendments, the Clinton Agreement shall remain in full force and effect. The effective date of this Amendment is the date it is executed by the appropriate representative of the Board.

CLINTON DITCH & RESERVOIR COMPANY

By: Bruce Herbon
Chairman

AND ITS ATTORNEY

By: Glenn Porzak
General Counsel

CITY AND COUNTY OF DENVER,
acting by and through its
BOARD OF WATER COMMISSIONERS

ATTEST:
DocuSigned by:
[signature]
Secretary

By: DocuSigned by: Paula Herzmark
President

Dated: 10/23/2019

APPROVED:

By: DocuSigned by: M. K.
Mike King
Chief External Affairs Officer

REGISTERED AND COUNTERSIGNED:
CITY AND COUNTY OF DENVER

By: DocuSigned by: [signature]
Timothy A. O'Brien, CPA

DS JG

APPROVED AS TO FORM:

By: DocuSigned by: Casey Funk
General Counsel

APPENDIX B

Water Quality Analysis

Appendix B

Tables B1-B4

Table B-1		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Existing Conditions in Tenmile Creek (Baseline)	Flow [cfs]	13.9	10.9	9.6	9.0	8.94	10.0	17.2	80.2	186	55.5	25.5	17.4
	Hardness [mg/L]	540	685	835	680	950	1000	---	320	180	200	305	495
	Sulfate [mg/L]	510	820	425	750	1100	1000	---	305	140	185	325	475
	Zinc [ug/L]	78.0	65.0	92.0	96.0	100	110	---	60.5	86.5	16.5	21.5	42.0
	Iron (T) [ug/L]	195	36.5	40.5	28.0	560	70.0	---	250	170	26.5	28.0	48.0
	Iron [ug/L]	13.0	3.5	26.5	---	11.5	25.0	---	30.0	15.0	11.0	12.5	13.5
	Molybdenum (T) [ug/L]	---	710	---	---	---	995	---	360	130	33.0	---	860
	Tempearture (degC)	2.89	1.08	0.560	0.240	0.150	-0.160	---	5.59	8.81	13.2	9.74	7.50
	Dissolved Oxygen (mg/L)	9.2	10.1	8.6	9.79	10.5	9.80	---	9.15	8.12	8.08	8.48	8.53

Table B-2		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Additional Storage in Clinton Gulch Reservoir (Proposed Action)	Flow [cfs]	0.00	0.000	0.000	0.000	0.000	0.000	0.000	2.71	9.1	2.84	0.94	0.00
	Hardness [mg/L]	48.0	54.0	---	---	---	56.0	---	---	49.0	52.0	49.5	---
	Sulfate [mg/L]	11.7	14.8	---	---	---	19.2	---	---	13.5	14.5	14.0	---
	Zinc [ug/L]	---	120.0	---	---	---	---	---	---	---	---	---	---
	Iron (T) [ug/L]	---	4780.0	---	---	---	---	---	---	111.0	83.0	40.0	---
	Iron [ug/L]	---	1820.0	---	---	---	---	---	---	---	---	---	---
	Molybdenum* (T) [ug/L]	4.70	5.93	---	---	---	4.75	---	---	4.51	5.06	5.19	---
	Tempearture (degC)	---	4.75	---	---	---	3.70	---	---	6.55	4.50	11.8	---
	Dissolved Oxygen (mg/L)	---	6.4	---	---	---	5.8	---	---	7.0	4.7	5.1	---

Table B-3		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Estimated Condition in Tenmile Creek (from Proposed Action)	Flow [cfs]	13.9	10.86	9.60	8.96	8.94	10.02	17.2	77.5	177	52.7	24.5	17.4
	Hardness [mg/L]	540	685	---	---	---	1000	---	---	187	208	315	---
	Sulfate [mg/L]	510	820	---	---	---	1000	---	---	146	194	337	---
	Zinc [ug/L]	---	65.0	---	---	---	---	---	---	---	---	---	---
	Iron (T) [ug/L]	---	37	---	---	---	---	---	---	173	23	27.5	---
	Iron [ug/L]	---	3.5	---	---	---	---	---	---	---	---	---	---
	Molybdenum (T) [ug/L]	---	710	---	---	---	995	---	---	136	35	---	---
	Tempearture (degC)	---	1.08	---	---	---	-0.16	---	---	8.93	13.6	9.7	---
	Dissolved Oxygen (mg/L)	---	10.1	---	---	---	9.80	---	---	8.18	8.26	8.61	---

Table B-4		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	BAI	15% of BAI	Max Change
Incremental Impact in Tenmile Creek from Proposed Action	Flow [cfs]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-2.71	-9.1	-2.84	-0.94	0.00	NA	NA	-9.06
	Hardness [mg/L]	0.0	0.0	---	---	---	0.0	---	---	6.71	7.97	9.84	---	NA	NA	9.84
	Sulfate [mg/L]	0.0	0.0	---	---	---	0.0	---	---	6.48	9.18	12.0	---	NA	NA	12.0
	Zinc [ug/L]	---	0.0	---	---	---	---	---	---	---	---	---	---	102	15.3	---
	Iron (T) [ug/L]	---	0.0	---	---	---	---	---	---	3.0	-3.0	-0.46	---	934	140	3.02
	Iron [ug/L]	---	0.0	---	---	---	---	---	---	---	---	---	---	NA	NA	---
	Molybdenum (T) [ug/L]	---	0.0	---	---	---	0.0	---	---	6.42	1.50	---	---	NA	NA	6.42
	Tempearture (degC)	---	0.0	---	---	---	0.0	---	---	0.116	**0.468**	-0.079	---	2.39	0.359	**0.468**
	Dissolved Oxygen (mg/L)	---	0.0	---	---	---	0.0	---	---	0.056	0.183	0.132	---	-0.540	-0.081	0.183

APPENDIX C

Mitigation Plans

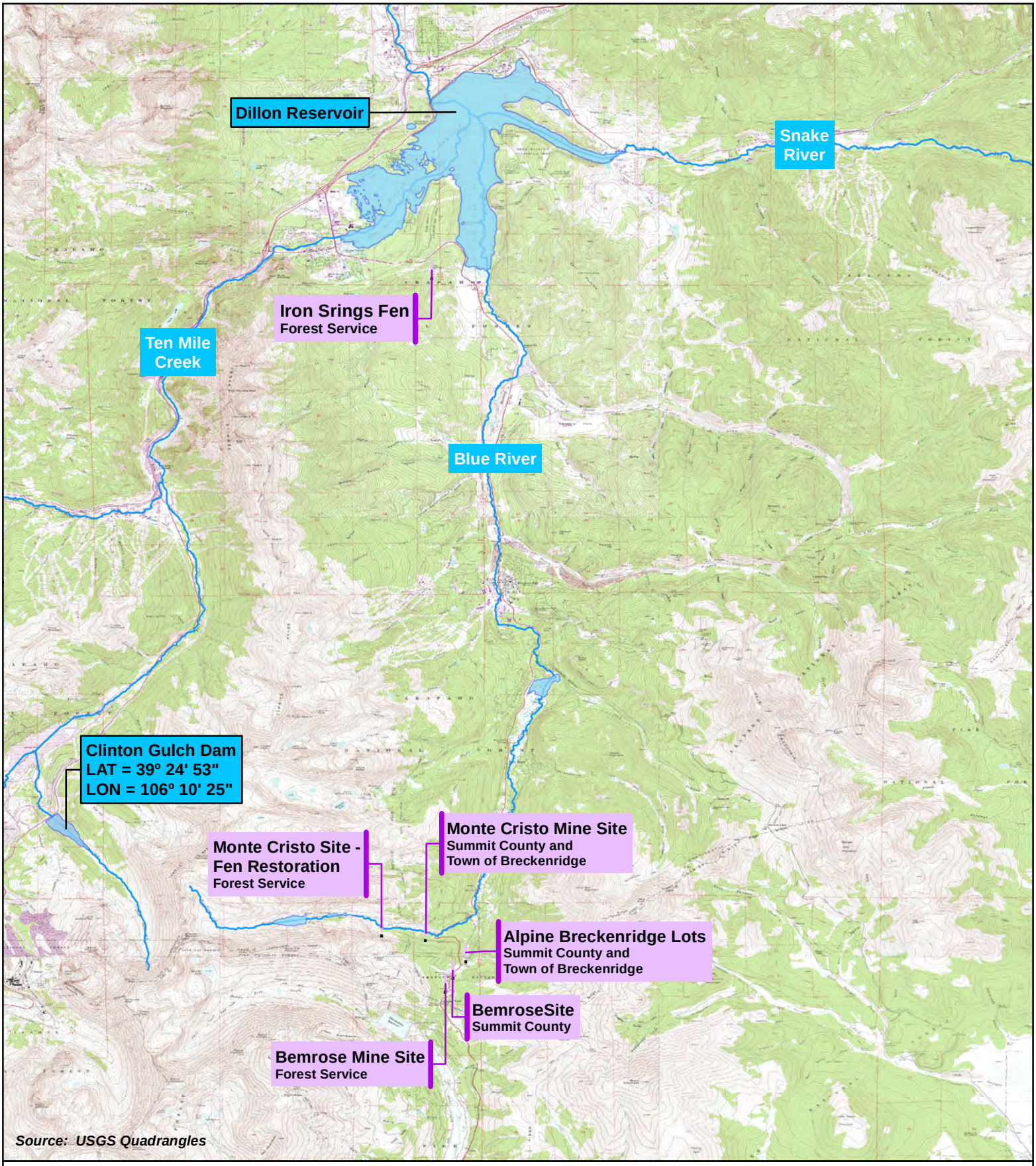


Figure C-1

Clinton Ditch and Reservoir Company
Wetland Mitigation Plans Site Map

Miles

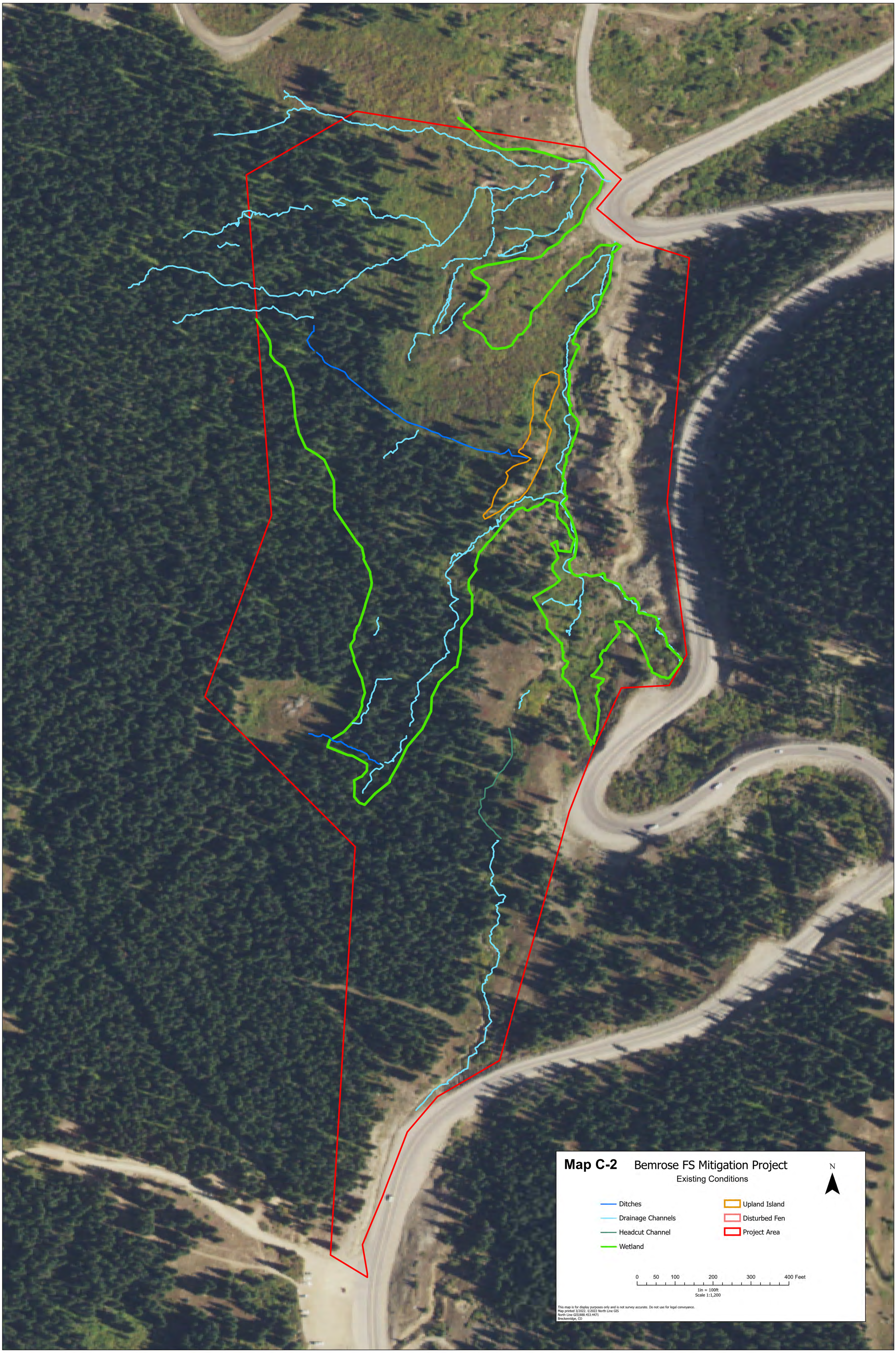
0 1.25 2.5 5

Date: 2022-12-05
File: 423-7.12.3
Drawn: ABS
Approved:

BEMROSE MINE SITE

Forest Service

Existing Condition and Conceptual Restoration Plan


Map C-2
Bemrose FS Mitigation Project
Existing Conditions
N
Ditches
Drainage Channels
Headcut Channel
Wetland
Upland Island
Disturbed Fen
Project Area
0 50 100 200 300 400 Feet
1in = 100ft
Scale 1:1,200
This map is for display purposes only and is not survey accurate. Do not use for legal conveyance.
Map printed 3/2022. ©2022 North Line GIS
North Line GIS|888.453.4471
Breckenridge, CO

Ditch blocks in drain ditch to be installed by hand work. Restores flows to channel.

Headcut channel to be restored

Restoration Acreage

Area	Acres
Wetland Water Supply Restoration Area	2.64
Mine Waste Restoration Area	0.89
Road Restoration Area	0.14
Fen Graded	0.25
Excavation Drain	0.03
Ditch Blocks Backfill	0.19
Fen Rehabilitation	0.99

Map C-3

Bemrose FS Mitigation Project

- Ditches
- Drainage Channels
- Headcut Channel
- Contours 3ft
- Wetland
- Restored Flow
- Upland Island
- Project Area
- Hydrology Restored to Forest Wetland
- Wetland Water Supply Restoration Area
- Fen Rehab
- Ditch Blocks Backfill
- Fen Graded
- Excavation Drain
- Peat Stockpile
- Mine Waste Restoration Area
- Road Restoration Area

0 50 100 200 300 400 Feet

1in = 100ft
Scale 1:1,200

N

North Line GIS|888.453.4471
Breckenridge, CO

BEMROSE Site

Summit County and Town of Breckenridge

Existing Condition and Conceptual Restoration Plan


Map C-4
Bemrose County Parcel
Existing Conditions
N
Culverts
Streams
Streams Estimated
Contours 3ft
Parcels
Wetland
Pond
0
50
100
200 Feet
1in = 50ft
Scale 1:600
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Breckenridge, CO
Imagery: Esri 2019

Map C-5 Bemrose County Parcel

Restoration Acreage

Area	Acres
Wetland	3.56
Restoration Areas	2.14
Fill Disposal	0.92

- Culverts
- Streams
- Streams Estimated
- Contours 3ft
- Fill Disposal
- Restoration Area
- Parcels
- Wetland
- Pond

N

0 50 100 200 Feet

1in = 50ft
Scale 1:600

Map printed 01/2022. ©2022 North Line GIS
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Breckenridge, CO

Alpine Breckenridge Lots

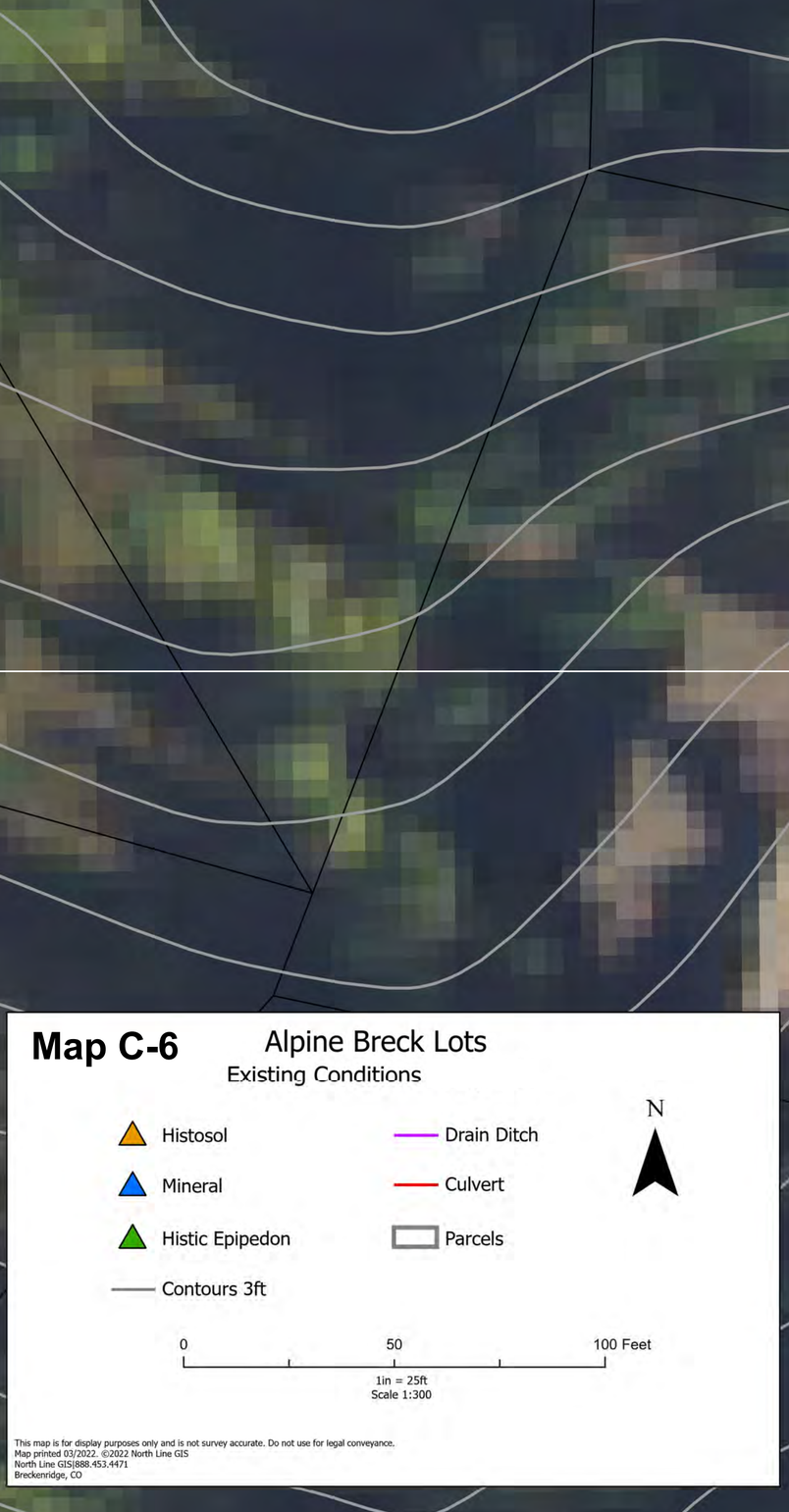
Summit County and Town of Breckenridge

Existing Condition and Conceptual Restoration Plan

Map C-6

Alpine Breck Lots

Existing Conditions



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Breckenridge, CO

Restoration Acreage

Area	Acres
Upland	0.24
Historic Borrow Area	0.07
Fen Re-Establishment	0.34
Roadwork Area	0.04

Map C-7 Alpine Breck Lots

- Histosol
- Mineral
- Histic Epipedon
- Contours 3ft
- Drain Ditch
- Culvert
- Parcels
- Roadwork Area
- Historic Borrow Area
- Fen Re-Establishment
- Upland

N

0 50 100 Feet

1in = 25ft
Scale 1:300

Monte Cristo Mine Site

Summit County and Town of Breckenridge

Overall Property, Existing Condition, Conceptual Restoration Plan


McDill RD (CR 854)
McCullough Gulch RD (CR 851)
Blue Lakes RD (CR 850)
CR 855
State Hwy 9
CR 869
CR 805
Map C-8
Monte Cristo
N
Road Centerline
Parcels
Mine Structure
Monte Cristo Site
0
50
100
200
300 Feet
1in = 75ft
Scale 1:900
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Breckenridge, CO

MINING CLAIMS

MONTE CRISTO CREEK

Engineered Channel

Unnamed Creek

QUANDARY VILLAGE SUBDIVISION LANDS

COLORADO SPRINGS UTILITY DISTRICT LANDS

QUANDARY VILLAGE SUBDIVISION LANDS

QUANDARY VILLAGE SUBDIVISION LANDS

QUANDARY VILLAGE SUBDIVISION LANDS

Legend

- Monte Cristo Gulch Boundary (10 acres)
- Delineation Extent (7 acres)
- Parcel Boundaries

Wetland Boundaries

- Forested (0.90 acre)
- Scrub-Shrub (3.07 acres)

Other Features

- Eroded Dam
- Mine Tailings
- Engineered Channel

N

SUMMIT COUNTY OPEN SPACE PARCELS

Monte Cristo Gulch Existing Conditions

SUMMIT COUNTY, COLORADO

March 2016

100 50 0 100 Feet

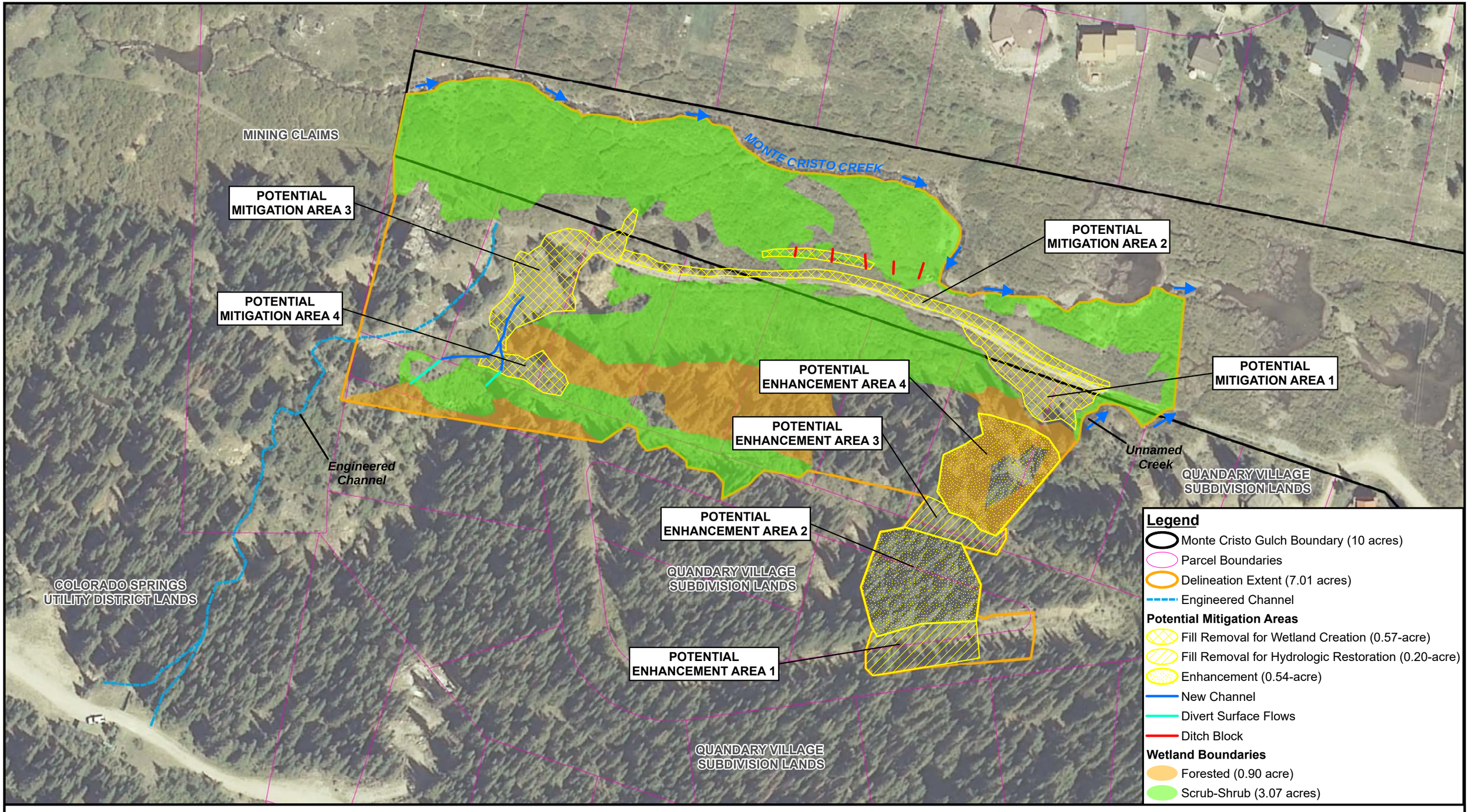
Map Scale: 1:1,200
1 Inch = 100 Feet at Tabloid Layout

Claffey Ecological Consulting, Inc.

Datum: NAD_1983_UTM_Zone_13N
Source: Summit County Imagery 2010
GIS Prepared by Esa Crumb

Figure C-9

~~Figure 1~~



N

April 2016

SUMMIT COUNTY OPEN SPACE PARCELS
Monte Cristo Gulch Site Plan
SUMMIT COUNTY, COLORADO

100 50 0 100 Feet

Map Scale: 1:1,200
1 Inch = 100 Feet at Tabloid Layout

Claffey Ecological Consulting, Inc.

Datum: NAD_1983_UTM_Zone_13N
Source: Summit County Imagery 2010
GIS Prepared by Esa Crumb

Figure C-10

~~Figure 2~~

Monte Cristo Site – Fen Restoration

Forest Service

Overall Property, Existing Condition, Conceptual Restoration Plan

Map C-11 Monte Cristo - Forest Service

- Swale
- Histosol
- Outlet Channel
- Observation Point
- Cabin
- Historic Mining Grading
- Fen
- Monte Cristo Creek Banks
- Road Centerline
- Road
- Disposal Area

0 37.5 75 150 Feet

1in = 40ft
Scale 1:480

N

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Breckenridge, CO

Blue Lakes RD (CR 850)

Fen


11050
fen
11060
11070
11080
11090
Monte Cristo
Observation Points
Historic Mining Grading
Outlet Channel
Swale
Cabin
Histosol
Fen
Road, .0794752528894101 Acres
Parcel
Contours
Map C-12
N
W
E
S
0
5
10
20
30
40
Yards
Map created by North Line GIS on 11/12/18

IRON SPRINGS

Mitigation Site

Iron Fen

Map C-13

buried logs
incised chann
miners ditch ends
start of mire
Wells
Quagmire
Histosol
Mineral
Culvert
GW Discharge
Peat Mound
Pit
Questionable
Observation Point
Culvert
Ditch
Wetland
Parcel
Excavated 2, 0.043 Acres
berm fill, 0.105 Acres
buried logs, 0.028 Acres
corduroy mat, 0.021 Acres
excavated 1, 0.151 Acres
graded 1, 0.053 Acres

N

0 75 150 300 Feet

Scale: 1:650

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Breckenridge, CO

Imagery: North Line GIS 09/2019