



**CITY OF BOULDER
JOINT CITY COUNCIL and OPEN SPACE BOARD OF TRUSTEES
AGENDA ITEM**

MEETING DATE: February 22, 2024

AGENDA TITLE

Consideration of a request from the City of Boulder's Utilities Department to use and manage an approximately 2.2-acre portion of the Van Vleet Open Space property to construct, access, operate and maintain elements of the South Boulder Creek Flood Mitigation Project, pursuant to the disposal procedures of Article XII, Section 177 of the City of Boulder Charter, and related matters.

PRESENTERS

Nuria Rivera-Vandermyde, City Manager
Dan Burke, Director, Open Space and Mountain Parks
Joe Taddeucci, Director, Utilities
Lauren Kilcoyne, Deputy Director, OSMP
Bethany Collins, Real Estate Sr. Manager, OSMP
Don D'Amico, Senior Resource Project Manager, OSMP
Brandon Coleman, Civil Engineer Manager, Utilities

EXECUTIVE SUMMARY

This agenda item is for consideration of a request received by the Open Space and Mountain Parks Department (OSMP) on Dec. 15, 2023 from the City of Boulder's Utilities Department (Utilities) to dispose of by transferring to Utilities the ongoing use and management of an approximately 2.2-acre portion shown on **Attachment A, Figure 1** (Transfer Area) of the city-owned Van Vleet Open Space (OSMP Property, **Attachment B**) necessary to construct, access, operate and maintain floodwall, outlet works, and groundwater conveyance system infrastructure as part of Utilities' South Boulder Creek Flood Mitigation project (Flood Project). The documents related to the Utilities request, except for the title reports, can be found as **Attachment C**. The Flood Project is intended to protect life and safety by addressing flooding in

the area known as the West Valley via construction of a regional detention facility and floodwall upstream of US Highway 36.

The Utilities request comes after many years of analysis, project design and planning activities involving the OSMP Property and the adjacent property owned by the University of Colorado (CU), generally known as “CU South,” (**Attachment A, Figure 6**) and numerous board and council meetings and extensive public engagement. Certain elements of the [CU South Annexation Agreement](#) are also coupled to elements of this request as further detailed in this memo. Consistent with the [City of Boulder Open Space and Mountain Parks Department Guidance for License and Disposal Requests Involving Open Space Lands \(March 2022\)](#) (OSMP’s L&D Guidance), the request received from Utilities describes the expected temporary and permanent impacts to the OSMP Property from the Flood Project, the expected benefits from the proposed dedication of land and water rights to OSMP, and mitigation, restoration, and monitoring plans to address Flood Project impacts including:

1. As detailed in the CU South Annexation Agreement, and contingent upon full permitting of the Flood Project (which includes approval for Utilities to use the Transfer Area), the city intends to acquire approximately 119 acres of land currently designated as OS-O under the Boulder Valley Comprehensive Plan (BVCP) shown in **Attachment A, Figure 6** (OS-O Site), as well as 30.2 shares of Dry Creek No. 2 ditch shares (Water Rights) from CU using Utilities enterprise funds and designate them for management by OSMP. If the disposal by transferring the use and management of the Transfer Area to Utilities is recommended and approved by the Open Space Board of Trustees (OSBT), it is anticipated that OSBT will also include a recommendation to City Council on the acquisition of the OS-O Site and the Water Rights, consistent with Article XII, Section 175(c) of the City of Boulder Charter. No open space funds will be used towards the acquisition of the OS-O Site or Water Rights.
2. The Flood Project also proposes in collaborative partnership with OSMP to use the OS-O Site to mitigate the unavoidable environmental impacts from the Flood Project. Restoration and ecological enhancement of the OS-O Site (Mitigation Project) includes increased floodplain and habitat connectivity, wetland and upland habitat creation, protection of existing wetlands and threatened and endangered species, and creation and/or enhancement of Ute ladies’- tresses Orchid (*Spiranthes diluvialis*, “ULTO”) and Preble’s Meadow Jumping Mouse (*Zapus hudsonius preblei*, “PMJM”) habitats. The Mitigation Project, generally diagrammed in **Attachment A, Figure 5**, is designed to meet or exceed federal and local agency mitigation requirements. The Mitigation Project will also address prior OSBT and OSMP staff recommendations and feedback for how to compensate for the expected ecological impacts on OSMP property from the Flood Project. While OSMP staff will provide expertise and oversight, no open space funds will be used towards direct costs of the Mitigation Project.

If approved, management control of the Transfer Area will be transferred to Utilities and the OS-O Site and Water Rights will be designated for management by OSMP. Since land cannot be conveyed between two city departments, because title to all open space land is held by the City of Boulder, the transfer and designation will be accomplished via an Interdepartmental

Memorandum of Understanding (Conveyance IDMOU), consistent with Section 8-8-11, “Transfer of Open Space Lands,” B.R.C. 1981 and following the disposal process set forth in City Charter, Article XII, Sections 175(a) and 177. The Conveyance IDMOU will outline the terms and responsibilities related to the use and management of the Transfer Area to be transferred to Utilities and the acquisition of the OS-O Site and Water Rights for OSMP management and will include provisions for reversion back to OSMP management if the Transfer Area is no longer used or needed by Utilities in the future. The Conveyance IDMOU will also define the responsibilities and permitted use of the OS-O Site by Utilities to execute the Mitigation Project as part of the Flood Project.

Additional agreements between Utilities and OSMP will include the long-term requirements and responsibilities of the Flood Project (including the Mitigation Project and groundwater conveyance system) detailed in a “Mitigation and Monitoring IDMOU,” as well as a “Temporary Construction IDMOU” to guide the temporary construction impacts and restoration on approximately 1.9 acres of the OSMP Property (Temporary Construction Area, shown on **Attachment A, Figure 2**). The Temporary Construction Area is only needed during the construction phase of the Flood Project and will remain under the ongoing management of OSMP (management of this area will not be transferred to Utilities). These agreements will provide specific terms and conditions related to temporary disturbance and access during construction of the Flood Project and restoration, monitoring, maintenance, and departmental cooperation for the OS-O site and the groundwater conveyance system. The activities associated with these two IDMOUs do not require OSBT or City Council action.

Additionally, and in parallel with this request, Utilities is pursuing annexation of the approximately 4.1 acres of the OSMP Property (the Transfer Area plus the Temporary Construction Area) utilized for the Flood Project and a portion of the US Highway 36 right-of-way so the entire Flood Project will be located within Boulder city limits. Because the portion of the OSMP Property proposed for annexation is currently open space located in Area III and designated Open Space – Acquired (OS-A) under the BVCP, at a future meeting OSBT will be asked to provide a recommendation to City Council on the proposed annexation consistent with City Charter, Article XII, Sec. 175.e and the OSBT recommendation will be provided to City Council as part of City Council’s future consideration of the annexation application.

In summary, this memo will detail:

- The request from Utilities to transfer ongoing control, use and management of an~2.2-acre portion of the OSMP Property (Transfer Area).
- The temporary use and restoration of ~1.9 acres of the OSMP Property during construction of the Flood Project (Temporary Construction Area).
- The potential acquisition of the ~119-acre OS-O Site and Water Rights by the City for OSMP management, which is contingent, in part, on approval of the transfer of the use and management of the Transfer Area to Utilities.
- The use of the OS-O Site by Utilities for the Mitigation Project which is contingent on the transfer of the use and management of the

- Transfer Area to Utilities and the acquisitions of the OS-O site by the City and designation for management by OSMP.
- OSMP staff assessment of Utilities' request within the framework of OSMP's L&D Guidance.
 - OSMP staff summary of Utilities' request related to the elements of the [June 9, 2021 OSBT Resolution](#).

Terms used in this memo (in alphabetical order):

- BVCP – Boulder Valley Comprehensive Plan
- Conveyance IDMOU – IDMOU related to the provisions of the transfer of the ongoing use and management of the Transfer Area to Utilities and OS-O Site and Water Rights to OSMP
- CU – University of Colorado
- CU South – ~300-acre property currently owned by CU (**Attachment A, Figure 6**); approximately 155 acres of which will be acquired by the City for the Flood Project and OS-O Site
- Flood Project – South Boulder Creek Flood Mitigation Project
- IDMOU – Interdepartmental Memorandum of Understanding
- Mitigation and Monitoring IDMOU – IDMOU related to the Mitigation Project on the OS-O Site and monitoring of the groundwater conveyance system and environmental mitigation
- Mitigation Project – Restoration and enhancement of the 119-acre OS-O Site
- OS-A – OSMP Property designated as “Open Space – Acquired” under the BVCP
- OSBT – Open Space Board of Trustees
- OSMP – Open Space and Mountain Parks
- OSMP Property – Van Vleet Open Space property (**Attachment B**)
- OSMP's L&D Guidance – Open Space and Mountain Parks Department's Guidance for License and Disposal Requests Involving Open Space Lands
- OS-O Site – 119 acres currently owned by CU to be acquired by using the Utilities enterprise fund, dedicated to OSMP, and used for the Mitigation Project and pen space purposes (**Attachment A, Figure 6**)
- PMJM – Preble's Meadow Jumping Mouse
- SBCSNA – South Boulder Creek State Natural Area
- Temporary Construction Area – Approximately 1.9 acres of the OSMP Property needed for construction during the Flood Project and that will remain under OSMP management (**Attachment A, Figure 2**)
- Temporary Construction IDMOU – IDMOU related to the use of the Temporary Construction Area during the Flood Project and provisions for restoration of the area
- Transfer Area – Approximately 2.2 acres of the OSMP Property requested by Utilities for ongoing use and management for the Flood Project (**Attachment A, Figure 1**)
- ULTO – Ute ladies'-tresses Orchid
- USACE – U.S. Army Corps of Engineers
- USFWS – U.S. Fish and Wildlife Service

- Water Rights – 30.2 shares of Dry Creek No. 2 ditch shares currently owned by CU to be acquired by Utilities, dedicated to OSMP and used for the Mitigation Project and other open space purposes

STAFF RECOMMENDATION

OSMP staff recommends the Open Space Board of Trustees and City Council make the following motions related to this request:

The Open Space Board of Trustees moves to adopt a resolution to approve and recommend that City Council approve the request from the City of Boulder's Utilities Department to use and manage an approximately 2.2-acre portion of the Van Vleet Open Space property to construct, access, operate and maintain elements of the South Boulder Creek Flood Mitigation Project, pursuant to the disposal procedures of City Charter, Article XII, Sec. 177 that will be documented in an Interdepartmental Memorandum of Understanding between the Utilities Department and the Open Space and Mountain Parks Department, that includes the following provisions:

1. Prior to use or management of the approximately 2.2-acre Transfer Area by the Utilities Department, the City will acquire the approximately 119-acre OS-O Site and 30.2 shares of Dry Creek Ditch No. 2 Water Rights from the Regents of the University of Colorado at no cost to the Open Space fund and in a manner that is consistent with Paragraph 12, "Conveyance of Land," of the Annexation Agreement between the City of Boulder and The Regents of the University of Colorado recorded in the records of the Boulder County Clerk and Recorder at Reception Number 03916406 on September 27, 2021. Said land and water rights will be managed by the Open Space and Mountain Parks Department for open space purposes, subject to the Utilities Department's use for the Mitigation Project.
2. The OS-O Site and Water Rights acquired for open space purposes will be used by the Utilities Department for the Mitigation Project in consultation with OSMP staff, until the restoration goals and regulatory and contractual requirements related to the Flood Project are completed.
3. The 1.9-acre Temporary Construction Area used by the Utilities Department during construction of the Flood Project will be restored to the satisfaction of Open Space and Mountain Parks Department staff.
4. The Transfer Area will revert to Open Space and Mountain Parks Department management if the Flood Project is not fully permitted or otherwise able to be constructed, or if the Transfer Area is no longer used or needed by the Utilities Department in the future.

And

The City Council moves to approve the request from the City of Boulder's Utilities Department to use and manage an approximately 2.2-acre portion of the Van Vleet Open Space property to construct, access, operate and maintain elements of the South Boulder Creek Flood Mitigation Project, pursuant to the disposal procedures of City Charter, Article XII, Sec. 177 that will be documented in an Interdepartmental Memorandum of Understanding between the Utilities Department and the Open Space and Mountain Parks Department, that includes the following provisions:

1. Prior to use or management of the approximately 2.2-acre Transfer Area by the Utilities Department, the City will acquire the approximately 119-acre OS-O Site and 30.2 shares of Dry Creek Ditch No. 2 Water Rights from the Regents of the University of Colorado at no cost to the Open Space fund and in a manner that is consistent with Paragraph 12, "Conveyance of Land," of the Annexation Agreement between the City of Boulder and The Regents of the University of Colorado recorded in the records of the Boulder County Clerk and Recorder at Reception Number 03916406 on September 27, 2021. Said land and water rights will be managed by the Open Space and Mountain Parks Department for open space purposes, subject to the Utilities Department's use for the Mitigation Project.
2. The OS-O Site and Water Rights acquired for open space purposes will be used by the Utilities Department for the Mitigation Project in consultation with OSMP staff, until the restoration goals and regulatory and contractual requirements related to the Flood Project are completed.
3. The 1.9-acre Temporary Construction Area used by the Utilities Department during construction of the Flood Project will be restored to the satisfaction of Open Space and Mountain Parks Department staff.
4. The Transfer Area will revert to Open Space and Mountain Parks Department management if the Flood Project is not fully permitted or otherwise able to be constructed, or if the Transfer Area is no longer used or needed by the Utilities Department in the future.

COMMUNITY SUSTAINABILITY ASSESSMENTS AND IMPACTS

- **Economic** – The approval of the transfer of ongoing use and management of the Transfer Area would facilitate the Flood Project which will protect an estimated 2,500 people and 260 structures, which includes 1,100 dwelling units, in an area that experience extensive flood damage and economic impacts in the 2013 flood. The flood mitigation project will avoid future damage to this area as a result of flooding up to a 100-yr event and will reduce the impact in this area in larger storm events and mitigate the overtopping of US Highway 36.

- **Environmental** - The Mitigation Project connected to the request from Utilities will meet OSBT and City Council requirements to mitigate for impacts to city open space land and resources, add significant acreage of restored wetlands and habitat to the OSMP system, reconnect the South Boulder Creek floodplain, and reduce habitat fragmentation.
- **Social** – The Flood Project will protect residents and residences located in the “West Valley” area, including the Frasier Meadows senior community, but construction of the Flood Project and Mitigation Project will also impact the historic recreation patterns of community members utilizing the existing CU South property.

OTHER IMPACTS

- **Fiscal** – No costs associated with the Flood Project, Mitigation Project or acquisitions related to the request will come from the open space fund. The flood mitigation, acquisitions and environmental restoration will be funded using Utilities enterprise bond funds as approved in the 2024 budget.
- **Staff time** - Sufficient funding for OSMP staff time is available to perform the work necessary to process this request and collaborate with Utilities on the planning and design for the Flood Project and Mitigation Project as well as drafting of agreements associated with this request.

RESPONSES TO QUESTIONS FROM COUNCIL AGENDA COMMITTEE

None

BOARD AND COMMISSION FEEDBACK

None

PUBLIC FEEDBACK

None

BACKGROUND

A flood mitigation plan for South Boulder Creek was approved by City Council in 2015. The plan includes three phases with the first phase being a regional detention facility upstream of US Highway 36 on and near the CU South Property culminating in the proposed Flood Project. The Flood Project would provide flood protection for approximately 2,500 residents and 260 structures which include 1,100 dwelling units. This includes flood mitigation in the neighborhoods of East Boulder, Frasier Meadows and Keewaydin Meadows, referred to as the West Valley. This Flood Project has been identified as one of the most important flood mitigation efforts for the city. The area flooded significantly in 2013. The Flood Project would also mitigate flooding that would overtop US Highway 36 during a 1% (100-yr) flood. US Highway 36 is a critical access into the city during an emergency event like a flood and heavily trafficked by regular commuters. In the context of climate change the Flood Project does not mitigate flooding from a 0.2% (500-yr) flood but does benefit the community by reducing flows that would overtop US Highway 36 and flood the West Valley area of the city during a 500-yr flood event. While flooding is not eliminated it is reduced in the West Valley for these larger flood events that may become more frequent due to climate change.

Additionally, the 2015 BVCP update included “CU South Guiding Principles” ([page 123 of the BVCP](#)) to guide the University of Colorado and City of Boulder in specifying uses, services, utilities, and planning on the CU South site. This ultimately resulted in the CU South Annexation Agreement that was approved by City Council in Fall 2021. The #1 principle in the BVCP is for flood mitigation: “protecting the City of Boulder and Boulder County residents from future flooding events is a primary driver.” To support this principle, maps and policies in this section of the BVCP identify the location of flood mitigation infrastructure along US Highway 36, at the time referenced as “new berm.”

ANALYSIS

As outlined in OSMP’s L&D Guidance, for OSMP staff to adequately consider and provide a recommendation for a disposal/transfer request, information is necessary to determine how/if a disposal will impact Open Space Charter purposes and resources; what overall benefits there may be to the city’s open space program and system, as well as the general public; and what alternatives may be available where the same goals can be achieved without the transfer/disposal of open space land. The following is a summary of the materials received from Utilities to-date, assembled according to topic sections in OSMP’s L&D Guidance:

I. Benefits and Impacts

a. Impacts and benefits to open space land, purposes, or uses

The Flood Project includes the transfer of the ongoing use and management of the approximately 2.2-acre Transfer Area to Utilities for flood mitigation infrastructure and maintenance as well as the temporary use of the approximately 1.9-acre Temporary Construction Area during construction of the Flood Project (see **Attachment A, Figures 1 and 2**). These areas of the OSMP Property include high-value resources further described below, however, Utilities has worked diligently to design the Flood Project to minimize impacts and maximize mitigation and restoration, including reducing through project design the acreage of OSMP Property needed for the Flood Project and the acquisition and restoration of the OS-O Site and Water Rights for transfer to OSMP.

The OS-O Site (**Attachment A, Figure 6**) will be acquired pursuant to the CU South Annexation Agreement and dedicated to OSMP for open space purposes. In addition to this OS-O site, the Water Rights will be acquired and dedicated to OSMP to support the Mitigation Project and allow for future management and irrigation needs within the Dry Creek No. 2 Ditch service area. While the OS-O Site will be under the general management of OSMP, Utilities will have the performance obligations associated with the Mitigation Project on the OS-O Site until the restoration goals and permit requirements have been completed consistent with the capital improvement project and terms of the IDMOUs.

Areas within the Temporary Construction Area, and even possibly within the Transfer Area, will also be restored to the degree possible under the guidance of OSMP staff consistent with the terms to be described in the Temporary Construction IDMOU.

b. Impacts and benefits to OSMP programs and/or the general public

The Flood Project would provide flood protection for approximately 2,500 residents and 260 structures which include 1,100 dwelling units. This includes flood mitigation in the neighborhoods of East Boulder, Frasier Meadows and Keewaydin Meadows, referred to as the West Valley. This Flood Project has been identified as one of the most important flood mitigation efforts for the city. While flooding is not eliminated it is reduced in the West Valley for these larger flood events that may become more frequent due to climate change.

Additionally, acquisition and restoration of the OS-O Site will provide a buffer from any future development on the remainder of the CU South Property and, together with the Water Rights, will allow for substantial restoration to occur in the South Boulder Creek floodplain consistent with OSMP Charter Purposes and OSMP Master Plan strategies including the following:

1. Creating wetlands, riparian habitat and native grasslands that will be contiguous with existing high-quality habitat on adjacent OSMP land that is part of the South Boulder Creek State Natural Area (“SBCSNA”).
2. Establishing floodplain connectivity by removing the levee on CU South thereby reducing habitat fragmentation in the South Boulder Creek floodplain.
3. Adding significant acreage to the OSMP system in the South Boulder Creek floodplain.
4. Adding high value water rights to the OSMP water portfolio to support native habitat and local agriculture.

A potential public impact will include the alteration to historic and current public use patterns within the Flood Project area and on the OS-O Site during construction of both the Flood Project and the Mitigation Project. The OS-O Site will be closed to the public during Mitigation Project construction and, consistent with new OSMP acquisitions and regulatory oversight, will remain closed until all permit conditions have been satisfied and a management plan for this newly acquired OSMP area is developed. During OSMP planning processes that guide the development of a land management plan, OSMP staff will evaluate resource management and infrastructure needs of the property and consider public use, ongoing agricultural operations and protection of the sensitive environmental resources. OSMP will also carefully consider programmatic budget and resource impacts and opportunities related to the acquisition and management of the OS-O Site – a large property adjacent to the urban interface.

c. Impacts and benefits to threatened and endangered species, wetlands, floodplains, or other sensitive features and resources

The OSMP Property is located within the SBCSNA - an area designated by the State of Colorado in 1999 in recognition of the high-quality habitat and unique native plant communities. The OSMP Property is also used for seasonal cattle grazing and portions are irrigated for hay production. Numerous irrigation ditches and small drainage channels extend through the OSMP property, including the Dry Creek Ditch No. 2.

Open Space resources on the portion of the OSMP Property that will be impacted by the Flood Project include wet meadow wetlands, emergent marshes, mesic tallgrass native grasslands, and willow shrublands. These resources provide habitat for PMJM and ULTO which are protected under the federal Endangered Species Act. In addition to occupied habitat for the PMJM, a portion of the impact area includes habitat designated under the Endangered Species Act as “Critical Habitat” for PMJM. The area is also habitat for the Northern Leopard Frog (*Rana pipiens*), a Tier 1 species of conservation concern in Colorado.

A summary of the impacts to regulated resources on the OSMP Property and in the total Flood Project area (including CU South) is presented in **Table 1** and generally depicted in **Attachment A, Figures 3 and 4**.

Table 1: Flood Project Temporary and Permanent Impacts on Wetlands and Threatened Species (species considered to be threatened under the Endangered Species Act of 1973)

Regulated Resources	Project Total (rounded)		OSMP Property (rounded)	
	Temporary Impacts (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)
Flood Project Area	46.1	77.8	1.9	2.2
USACE jurisdictional wetlands	0.0	0.0	0.0	0.0
Boulder-regulated wetlands*	5.9	6.1	1.0	1.2
Boulder buffer zone (50-feet)	0.0	32.8	0.0	0.0**
PMJM noncritical habitat	2.2	4.0	1.7	2.0
PMJM critical habitat	0.3	0.8	0.2	0.2
ULTO habitat	0.0	7.5	1.2	1.3

* Wetlands not regulated by USACE are assumed to be regulated by the City of Boulder

** Buffer impacts which will be mitigated in place are considered zero impact.

These environmental impacts are required to be mitigated by federal and local agencies that oversee protection of these resources and compliance with federal and local laws. Based on the presence of wetlands under federal jurisdiction in the Viele channel where the outlet works will be constructed, the lead federal agency for the Flood Project will be the U.S Army Corps of Engineers (USACE) which oversees compliance with Section 404 of the Clean Water Act. The outlet works construction in the Viele channel does not meet the threshold for mitigation required in the nationwide permitting process. However, the USACE is required to consult with the U.S. Fish and Wildlife Service (USFWS) for impacts to federally designated threatened and endangered species. The Flood Project will also be subject to the City of Boulder Stream, Wetlands and Water Body Protection Ordinance, including compliance with permit terms and conditions.

The mitigation necessary to meet permitting requirements is proposed to occur on the OS-O Site located in the historic South Boulder Creek floodplain. The Mitigation Project aims to maximize ecological restoration across the site while meeting or exceeding the expected permit requirements. The following objectives have and will continue to guide design efforts and overlap with goals identified by OSMP and OSBT:

- Minimize impacts on existing wetlands and buffer zones.
- Avoid impacts to irrigation ditches.
- Reduce impacts to habitats of threatened species.
- Increase ecological connectivity between the restoration area and South Boulder Creek.
- Address hydrology and ensure the long-term sustainability of wetlands and uplands.
- Incorporate restoration in the surrounding landscape.

Wetland restoration on the OS-O Site will be achieved by re-grading the site to establish the proper hydrology to support wetlands. Once wetland hydrology has been established, the site will be revegetated with native seed and plants. The restored wetlands are intended to resemble historical South Boulder Creek floodplain features, including overflow channels (i.e. “oxbows”). These features may result in formative overland flow during extreme flood events, with hydrology primarily supported by groundwater and precipitation in most years. The Mitigation Project design, generally depicted in **Attachment A, Figure 5** will result in a wetland complex of approximately 52 acres. Existing wetlands and habitat for the threatened species have been incorporated into the design. The design seeks to expand wetland function through excavation and grading, controlling undesirable species, and expanding habitat suitable for the threatened species throughout the ecological project area.

d. Land management and stewardship considerations

Additional land management and stewardship considerations related to the Flood Project and transfer request include:

1. Removal of the existing levee around the CU South property to allow for floodplain and ecological connectivity to the adjacent open space and for the Flood Project to better function hydraulically. Existing environmental resources adjacent to the levee will be protected during levee removal.
2. Contouring and restoration that can occur on the US Highway 36 side and visual design/painting on the OSMP side of the floodwall to help mitigate scenic viewshed impacts from the floodwall.
3. Additional Water Rights will enhance OSMP’s agricultural activities within the service area.
4. In parallel with the request, Utilities is pursuing annexation of the approximately 4.1 acres of the OSMP Property (the Transfer Area plus the Temporary Construction Area) utilized for the Flood Project and a portion of the US Highway 36 right-of-way so the entire Flood Project will be located within Boulder city limits which reduces jurisdictional uncertainties. The annexation would be contingent on approval of the disposal by the transfer of the use and management of the Transfer Area. The annexation application will be processed consistent with the requirements of the BVCP and the City of Boulder Revised Code and Charter. Because a portion of the proposed annexation area is currently open space and designated OS-A (Open Space – Acquired) under the BVCP, OSBT will also be asked to provide a

recommendation on the proposed annexation consistent with City Charter, Article XII, Section 175(e).

II. Alternatives

a. Alternatives (locations, methods and costs) available or considered by the requestor and why they are not being pursued.

The Storm and Flood Utility follows a project lifecycle approach that starts with floodplain mapping to identify flooding risk, mitigation planning to evaluate alternatives to a system approach to flood mitigation, and design and construction for the selected flood mitigation projects. The flood mitigation approach for South Boulder Creek followed this approach starting in 2001 with floodplain mapping that was accepted by FEMA in 2004. Flood mitigation alternatives were considered in the [South Boulder Creek Flood Major Drainageway Plan](#) adopted by City Council in 2015. This plan identified regional detention upstream of US Highway 36 primarily on the CU South Property as the first phase of flood mitigation.

Following approval of the South Boulder Creek Flood Major Drainageway Plan in 2015, the city needed to provide land use goals for the CU South Property, including flood mitigation, protection of open space land, and resource restoration. The BVCP Guiding Principles for CU South were developed and accepted in 2017 by Boulder City Council and Boulder County Commissioners and allowed for design of the Flood Project.

Between 2017 and 2020, alternative designs for South Boulder Creek flood mitigation were developed, assessed, and reviewed by staff, OSBT and City Council. On June 16, 2020, City Council voted and directed staff to continue design of a 100-year mitigation design, known as Variant 1, while concurrently exploring whether an upstream model, identified by OSBT, would improve flood mitigation effectiveness, reduce costs, decrease environmental impacts, or increase the likelihood of receiving applicable permits and permissions as compared to the Variant 1 option. An update on the upstream model was provided to City Council on Jan. 5, 2021, following a unanimous motion by OSBT stating that, “Given the identified impacts and construction costs, the [OSBT] does not support the proposed Upstream Option as conceptualized, designed and presented...” Based on this information provided to City Council, staff started working on preliminary design of Variant 1, 100-year design option.

The variant designs that City Council considered in June 2020 to make their decision on Variant 1 are summarized below and documented [HERE](#).

All three options were presented to City Council using **Table 2** to summarize how each met the evaluation criteria used for the project at the time. A key design criterion for the Flood Project has been minimizing or eliminating environmental resource impacts and continues to be a key focus of the Flood Project.

Table 2: Flood Mitigation Variant 1 Options Evaluation Criteria Matrix

Evaluation Criteria	Option 1 (100-yr)	Option 2 (500-yr)	Option 3 (200-yr)
Downstream flood benefits	Least flood protection	Most flood protection	More flood protection
Adaptability for climate change	Least adaptable	Most adaptable	More adaptable
Total project cost	Least expensive	Most expensive	Most expensive
Design, permitting and construction schedule	Least unknowns	More unknowns	More unknowns
Long-term operations and maintenance requirements	Similar for all options		
Groundwater mitigation complexity	Similar for all options		
Riparian connectivity and habitat enhancement opportunities	Most opportunities	Least opportunities	Less opportunities
Length, height and size of dam	Smallest	Largest	Middle
Wetlands and open water impacts	Least impacts	More impacts	Most impacts
Threatened and Endangered Species habitat impacts	Least impacts	Most impacts	Most impacts

Note: Darker cells show more alignment with Project Evaluation Criteria

A “No Action” or “Status Quo” alternative was considered in the South Boulder Creek Major Drainageway Plan. The status quo relies on existing systems and floodplain regulations and provided no flood benefit to the community and the flood risk would remain in its current conditions. Significant flooding of South Boulder Creek including overtopping of US Highway 36 was experienced in 1969 and 2013.

Condemnation is not an alternative acquisition strategy in this situation, because the City is the owner of the Transfer Area which is currently managed by OSMP.

III. Inventories, Studies and Surveys

- Map or maps identifying impacts and/or infrastructure from the proposed action at a scale requested by OSMP*
- Map or maps delineating sensitive areas or features including natural and cultural resources and wetlands and floodplain boundaries at a scale requested by OSMP*
- Results of environmental or resource studies, surveys or assessments conducted by or on behalf of the requestor or requested by OSMP*
- Inventory or data on environmental setting which could include details such as adjacent land uses, geology, hydrology, flora, and fauna*

All Figures referenced in this request have been included as Attachment A.

- Figure 1: Transfer Area
- Figure 2: Construction Area Including Transfer Area and Temporary Construction Area
- Figure 3: Environmental Resources Overview
- Figure 4: Environmental Resources in the Transfer Area and Temporary Construction Area
- Figure 5: Mitigation Project Plan
- Figure 6: CU South Property with OS-O Site

Environmental and resource surveys have been conducted in coordination with OSMP staff and include wetland delineations, ULTO surveys, groundwater monitoring, and cultural resources evaluation. A draft Biological Assessment (BA) has been prepared to determine the presence or absence of threatened and endangered species or their habitat within or adjacent to the Flood Project and Mitigation Project areas. Due to the sensitive nature of the content of the reports, aggregate data will be integrated into the Mitigation Project.

A summary of adjacent land uses, geology, hydrology, flora and faunae are included on the Flood Project website [HERE](#).

IV. Review and Recommendations by Other Agencies

- a. Proof of consultation or required permit(s) with/from identified agencies
- b. Proof of compliance with land use requirements

The Utilities department will be required to obtain the following permits in order to construct the Flood Project:

- CDOT Right-of-Way and Access permit
- USACE Clean Water Act Section 404 permit with consultations possible from:
 - U.S. Fish and Wildlife Service
 - Environmental Protection Agency
 - Colorado Department of Public Health and Environment
 - State Historical Preservation Office
- FEMA Conditional Letter of Map Revision
- City of Boulder Wetland Permit
- Colorado Office of the State Engineer Design Approval
- Boulder County Floodplain Development Permit

The Flood Project team has requested and received a Jurisdictional Determination from the US Army Corp of Engineers with regards to “Waters of the U.S.” for wetland impacts. The USACE will be the lead federal agency for permitting based on impacts to “Waters of the U.S.”

The Utilities department has been coordinating with the respective regulatory agencies and will submit formal permit applications if the transfer of the use and management of the Transfer Area is approved.

V. Mitigation, Restoration and Monitoring Plans

- a. *Proposed on- or off-site mitigation*
- b. *Detail of mitigation requirements of other agencies*
- c. *Restoration and monitoring plans, including revegetation and weed control*

For the purposes of this memo, the term “mitigation” means the enhancement and creation of resources to offset unavoidable impacts from the Flood Project and “restoration” means the in-place repair of a temporarily impacted or disturbed area.

Mitigation Project

The construction of the Flood Project will have unavoidable permanent impacts to 77.8 acres of land in the South Boulder Creek floodplain, approximately 2.2 acres of which are on OSMP land with the remaining impacted acreage on CU South. Suitable mitigation areas on OSMP land along South Boulder Creek were considered and evaluated during project planning. However, it was determined that not enough suitable land on OSMP was available to mitigate all impacts. Upon further coordination with OSMP staff, the area identified to best mitigate the environmental impacts from the Flood Project was the OS-O Site. The OS-O Site, as well as the Water Rights will be acquired from CU by the City/Utilities through the terms outlined in the CU South Annexation Agreement and then placed under OSMP management for open space purposes. Acquiring the OS-O Site provides the city with an exceptional opportunity to protect and restore a large, historic area of the South Boulder Creek Floodplain that has been significantly impacted by past mining operations and fragmented by a levee constructed between the property and OSMP land to the east.

This proposed Mitigation Project on the OS-O Site exceeds local and federal permitting requirements for the Flood Project and seeks to create or enhance existing wetland and upland habitat including potential habitat for PMJM and ULTO. The proposed approach and concepts for the Mitigation Project have been presented and discussed at several OSBT meetings and were initially presented to the OSBT on [January 11, 2023](#). The Mitigation Project design has been further developed to a 60% design level and incorporated into the Flood Project and is shown in **Attachment A, Figure 5**.

The Flood Project design includes updated groundwater and geotechnical information that was collected since completion of the alternatives analysis. This includes an additional 12 borings and 9 groundwater well installations. The Flood Project also expanded the environmental resources surveys to include the entire OS-O Site to better inform the Mitigation Project design. The Mitigation Project includes removal of the existing levee around the CU South property to allow for floodplain and environmental connectivity to the adjacent open space and for the Flood Project to better function hydraulically. Existing environmental resources adjacent to the levee will be protected during levee removal.

The Mitigation Project design seeks to create a diverse wetland complex that includes willow shrublands, wet meadows and emergent marshes. Generally, the restored shrublands will occur in higher elevation wetland areas and in the southern ponds; wet meadow wetlands will occur in the mid-elevational ranges; and emergent marshes will occur at the lowest elevations in the mitigation area.

Wetland areas containing ULTO habitat are not included in wetland mitigation acreage as work in these areas will be avoided. Work in the levee interior consists largely of wetland

re-establishment, with a small amount of rehabilitation occurring in the SW/NE trending wetland that cuts across the mitigation area. Buffer zone mitigation will result from enhancing the existing wetland buffer and creating buffer habitat through upland restoration. The existing levee footprint in the Mitigation Project area is included as buffer zone mitigation acreage and will be a key restoration area following levee removal. A summary of the resources impacted by the Flood Project (including the impacts on the CU South property), required mitigation and acres of habitat generated for the entire Flood Project are shown in **Table 3**. The mitigation ratios required by regulatory agencies for the resources impacted are also included in **Table 3**.

Table 3: South Boulder Creek Environmental Mitigation Summary

Environmental Resource Type	Flood Project Impact Area (acres)	Required Mitigation Ratio	Required Mitigation Area (acres)	Mitigation Project Habitat Generation (acres)	Area in Excess of Required (acres)
Boulder Wetlands	6.1	2:1	12.2	36.7	24.5
Boulder Wetland Buffer	32.8	1:1	32.8	32.1	-0.7
PMJM Critical Habitat (Permanent Impacts)	0.8	7:1	5.6	5.6	0.0
PMJM Critical Habitat (Temporary Impacts)	0.3	4:1	1.2	1.2	0.0
PMJM Occupied Habitat (Permanent Impacts)	4.0	4:1	16.0	82.3	66.3
PMJM Occupied Habitat (Temporary Impacts)	2.2	3:1	6.6	6.6	0.0
ULTO Habitat	7.5	2:1	15.0	42.3	27.3

** Wetlands not regulated by USACE are assumed to be regulated by the City of Boulder*

*** Buffer impacts which will be mitigated in place are considered zero impact.*

Groundwater Conveyance System

Existing groundwater conditions on and adjacent to the OSMP Property have helped to create the high-quality habitat found here. The Flood Project proposes a groundwater conveyance system to be installed in the underground secant pile wall to convey groundwater past the floodwall/spillway and help reduce impacts to habitat upstream and downstream from the floodwall/spillway. The groundwater conveyance system will consist of an aggregate collection trench upstream of the underground secant pile wall and an aggregate distribution trench downstream of the secant pile wall. Groundwater will be transferred from the collection trench to the distribution trench with connector pipes. The collection and distribution trenches will allow collection of groundwater south and distribution of groundwater north of the spillway to mimic natural groundwater flow. Valves will be installed in the connector pipes to adjust flow as necessary to achieve desired groundwater conditions.

The groundwater conveyance system is intended to match existing groundwater conditions on OSMP property adjacent to the project. Groundwater modeling was performed using data from monitoring wells and geotechnical data to evaluate potential changes to groundwater levels resulting from Flood Project facilities. This data was also used to design the groundwater conveyance system. Monitoring the groundwater wells and habitat upstream and downstream of the floodwall will be key to ensuring the groundwater conveyance system is operating as designed. Valves in the connector pipes can be adjusted as necessary to ensure groundwater flow is appropriate to support wetlands and other resources on OSMP land. The Mitigation and Monitoring IDMOU will be executed contemporaneous with the Conveyance IDMOU and include a detailed monitoring plan with study design, monitoring schedule, success criteria and adaptive management options for the groundwater conveyance system. In the unlikely event the system does not operate as designed, adaptive management will be employed to correct deficiencies. Adaptive management options may include repair/modification of the system, extending the monitoring term, acquiring additional water rights for the properties and/or, creating additional mitigation.

Restoration

The Temporary Construction Area, and possibly select areas within the Transfer Area, will be restored under the guidance of OSMP staff and pursuant to terms in the Temporary Construction IDMOU which will include seeding and weed control specifications and warranties. Open space funds will not be used towards direct restoration activities.

VI. Valuation, Costs and Timelines

The Flood Project, including the purchase of the OS-O Site and the Mitigation Project, is estimated to cost \$63 million. The Flood Project, including acquisitions, mitigation and restoration, is solely funded by the Storm/Flood Utility Enterprise Fund and at no cost to the open space fund. Currently, the cost estimates are included below:

Cost Item	2022 Cost Estimate (millions)
Flood Project Construction	\$51
Earth Fill	\$4
OS-O Site	\$2.8
OS-O Mitigation Project	\$5
Total Project Cost	\$62.8

The Flood Project is currently planned to begin construction in early 2025. Approval of this transfer request will facilitate the permit approvals that will be worked on in 2024.

No appraisal or official valuation was performed for the Transfer Area, however based on comparable values of similar non-developable land, the per acre value is likely around \$10-\$15,000 per acre. Utilities will acquire approximately 44 acres of the OS-O Site at no cost and will pay CU \$2.8 million, or \$37,500 per acre for the remaining 75 acres of the OS-O Site. In addition, OSMP will receive Water Rights at no cost to the open space

fund. The estimated monetary value of the OS-O Site plus the value of the Water Rights proposed for transfer to OSMP, far exceeds the monetary value of the Transfer Area proposed for transfer to Utilities.

VII. Project or Site-Specific Information Documents – links to drafts/finals and brief discussion of each

a. Drafts of legal documents associated with the request (may be provided by OSMP Staff)

The Conveyance IDMOU, Temporary Construction IDMOU and Mitigation and Monitoring IDMOU will be drafted cooperatively by OSMP, Utilities and CAO staff. Process documents associated with proposed annexation of the portion of the OSMP Property used for the Flood Project will be drafted by Planning and Development Services department staff in coordination with Utilities, OSMP and CAO staff.

b. Preliminary title reports

Preliminary title reports for the OS-O Site have been provided to OSMP for review.

c. Additional related information

- [CU South Annexation Agreement](#)
- [June 9, 2021 OSBT Resolution](#)

At their June 9, 2021 meeting, the OSBT approved a resolution (2021 Resolution) to forward to City Council detailing conditions the board wanted to be fulfilled or addressed to its satisfaction prior to considering a disposal (transfer) of the OSMP Property for the Flood Project. Staff provides a summary of how the conditions of the 2021 Resolution have been or will be addressed in **Attachment D**. The staff recommendation includes proposed action by OSBT in the form of another resolution (2024 Resolution) which will include a statement from the OSBT indicating the conditions have been satisfactorily addressed.

SUMMARY

To summarize the key issues of the transfer request from Utilities and associated matters:

- The request from Utilities to transfer ongoing control, use and management of the approximately 2.2-acre Transfer Area so long as the Transfer Property continues to be used for flood mitigation purposes.
- The temporary use of approximately 1.9 acres of the OSMP Property during construction of the Flood Project, followed by restoration of this area.
- The acquisition of the ~119-acre OS-O Site and Water Rights using the Utilities enterprise fund for management by OSMP, which is

- contingent, in part, on approval of the transfer of the use and management of the Transfer Area to Utilities.
- The use of the OS-O Site by Utilities for the Mitigation Project which is contingent on the transfer of the use and management of the Transfer Area to Utilities and the acquisition of the OS-O site by the city and designation for management by OSMP.
 - The development and implementation of a monitoring plan for the groundwater conveyance system to help ensure that current groundwater conditions will continue upstream and downstream of the floodwall post floodwall construction.

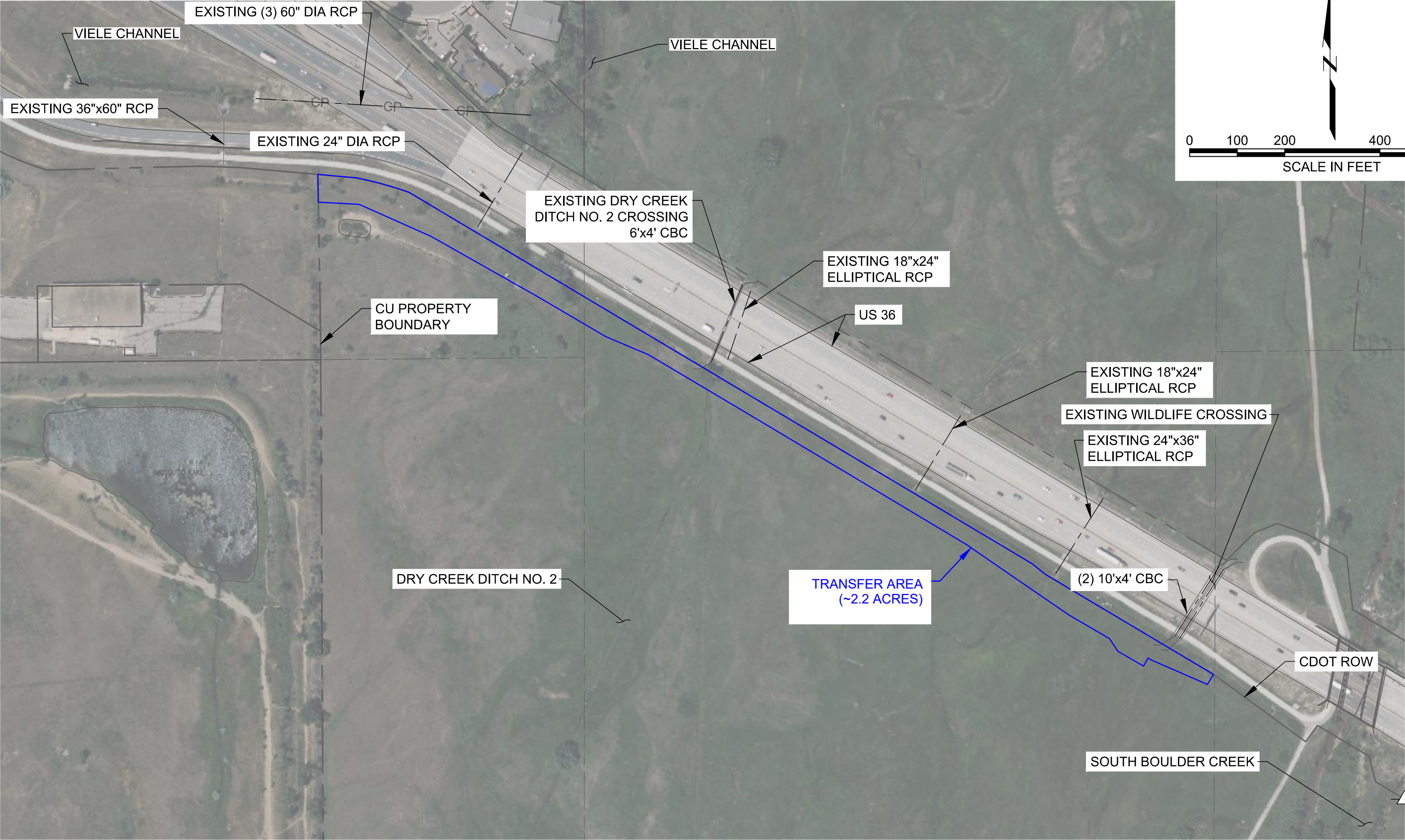
NEXT STEPS

No OSBT or Council consideration and deliberation of this transfer request will take place at the Feb. 22, 2024 meeting. OSBT will have consideration and deliberation at its March 13, 2024 meeting and, if recommended and approved, City Council will consider the matter at its March 21, 2024 meeting. A proposed OSBT Resolution recommending that City Council approve the disposal by transferring management of open space property consistent with the terms and conditions outlined in this memorandum is attached as **Attachment E**.

ATTACHMENT(S)

- **Attachment A: Figures**
 - Figure 1: Transfer Area
 - Figure 2: Construction Area Including Transfer Area & Temporary Construction Area
 - Figure 3: Environmental Resources Overview
 - Figure 4: Environmental Resources in the Transfer Area & Temporary Construction Area
 - Figure 5: Mitigation Project Plan
 - Figure 6: CU South Property with OS-O Site
- **Attachment B: Van Vleet Open Space Property Map**
- **Attachment C: South Boulder Creek Flood Mitigation Project OSMP Disposal Request**
- **Attachment D: Staff Summary Related to June 9, 2021 Resolution**
- **Attachment E: Proposed OSBT Resolution 2024-01**

ATTACHMENT A: FIGURES



**PRELIMINARY
NOT FOR CONSTRUCTION**



SOUTH BOULDER CREEK
REGIONAL DETENTION FACILITY

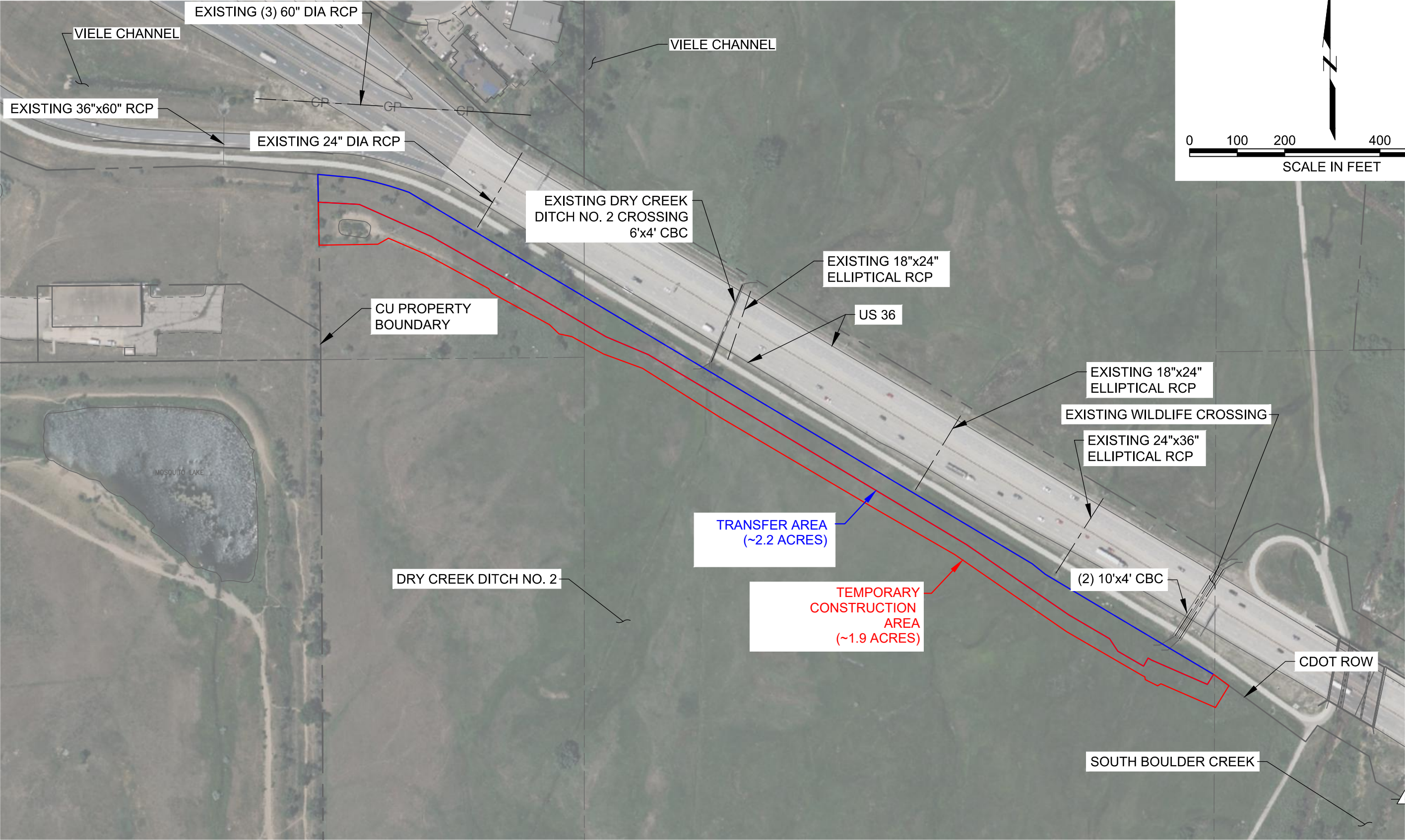
TRANSFER AREA

PROJECT NO. 16134

DECEMBER 2023

FIGURE 1

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**PRELIMINARY
NOT FOR CONSTRUCTION**



SOUTH BOULDER CREEK
REGIONAL DETENTION FACILITY

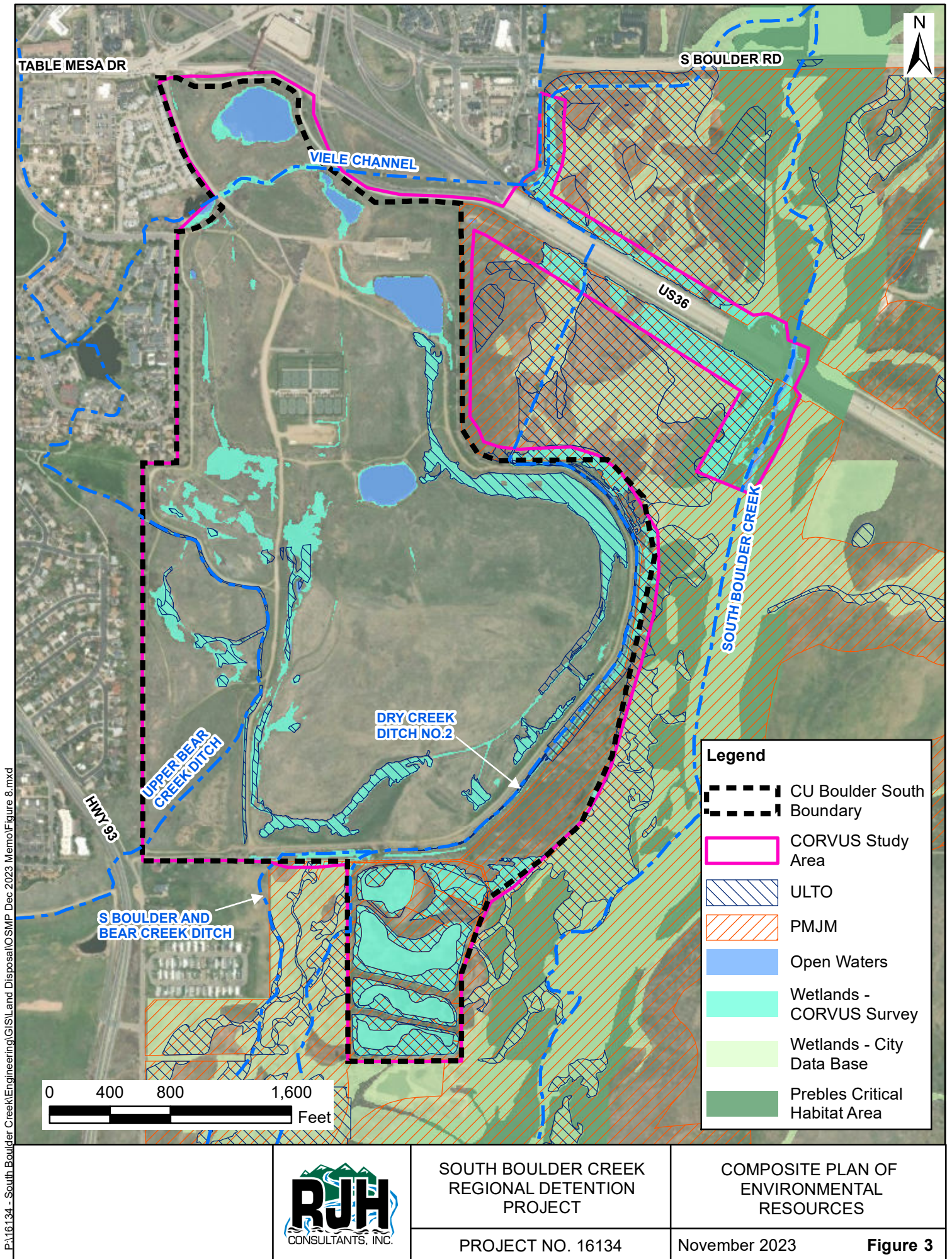
PROJECT NO. 16134

TRANSFER AND
TEMPORARY
CONSTRUCTION AREA

DECEMBER 2023

FIGURE 2

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SOUTH BOULDER CREEK
REGIONAL DETENTION
PROJECT

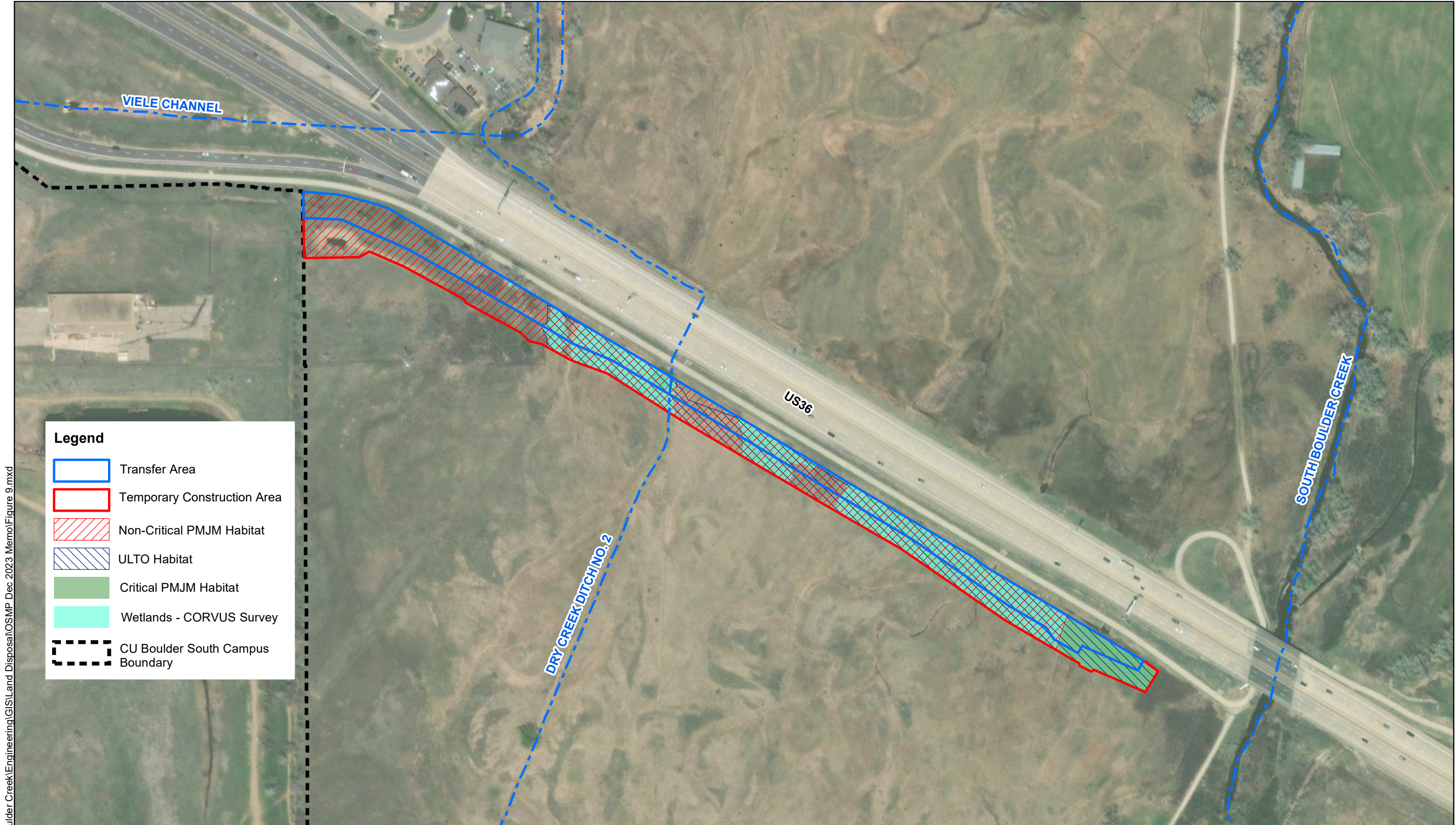
PROJECT NO. 16134

COMPOSITE PLAN OF
ENVIRONMENTAL
RESOURCES

November 2023

Figure 3

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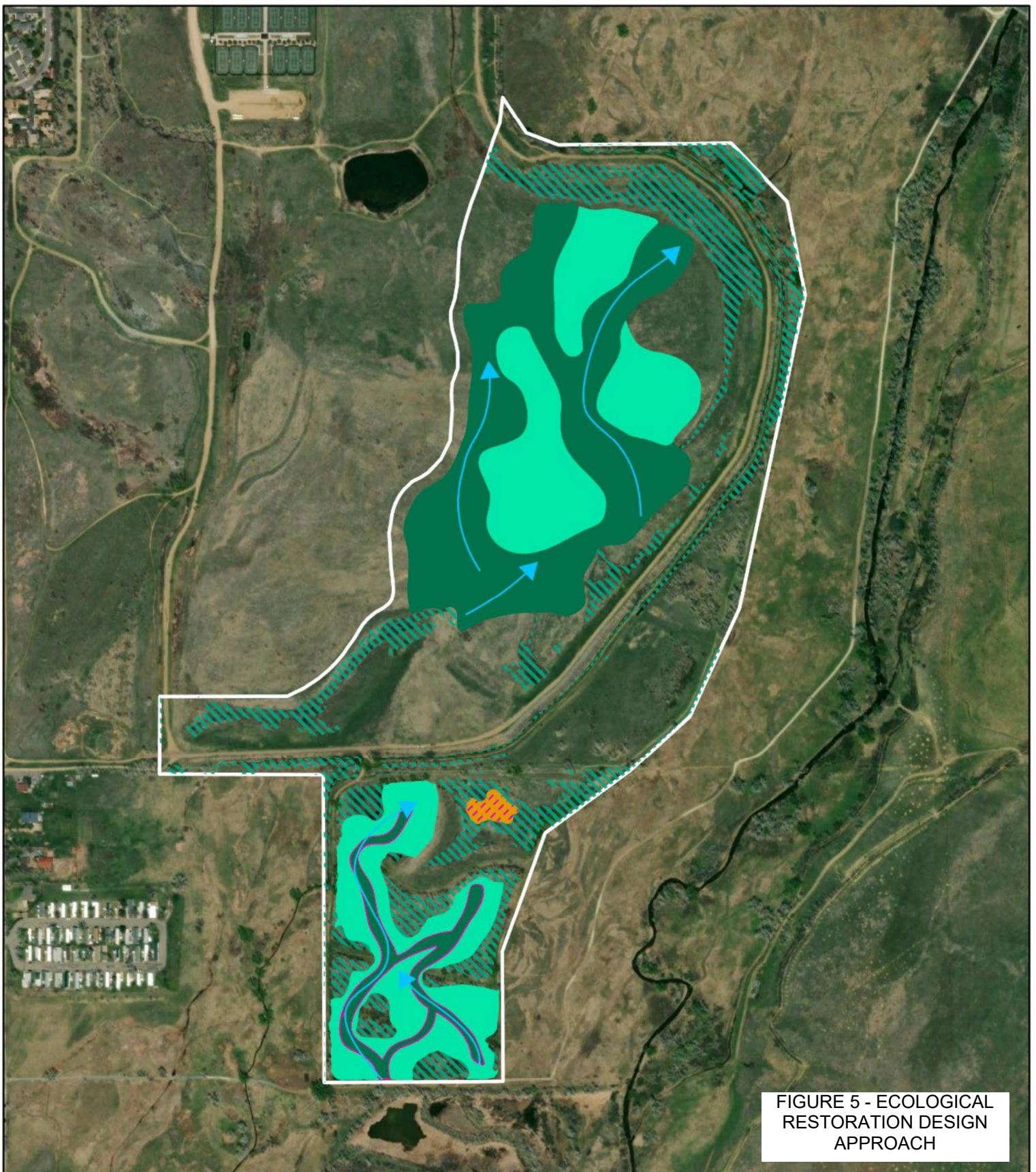


FIGURE 5 - ECOLOGICAL RESTORATION DESIGN APPROACH

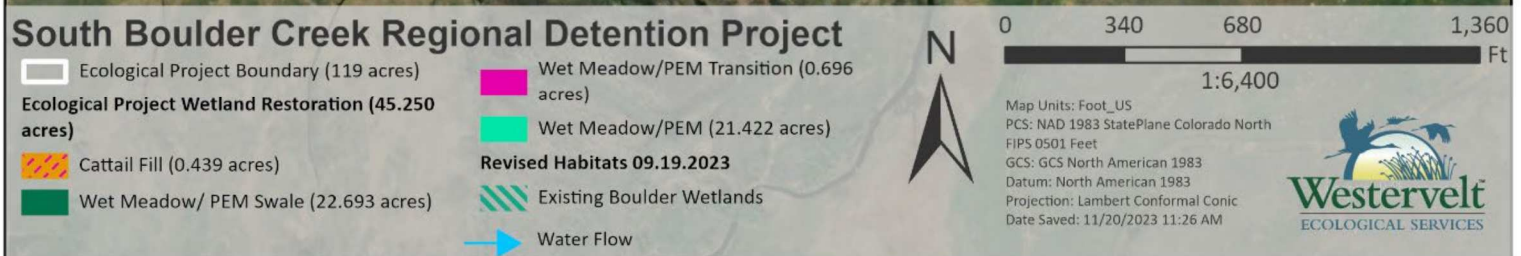
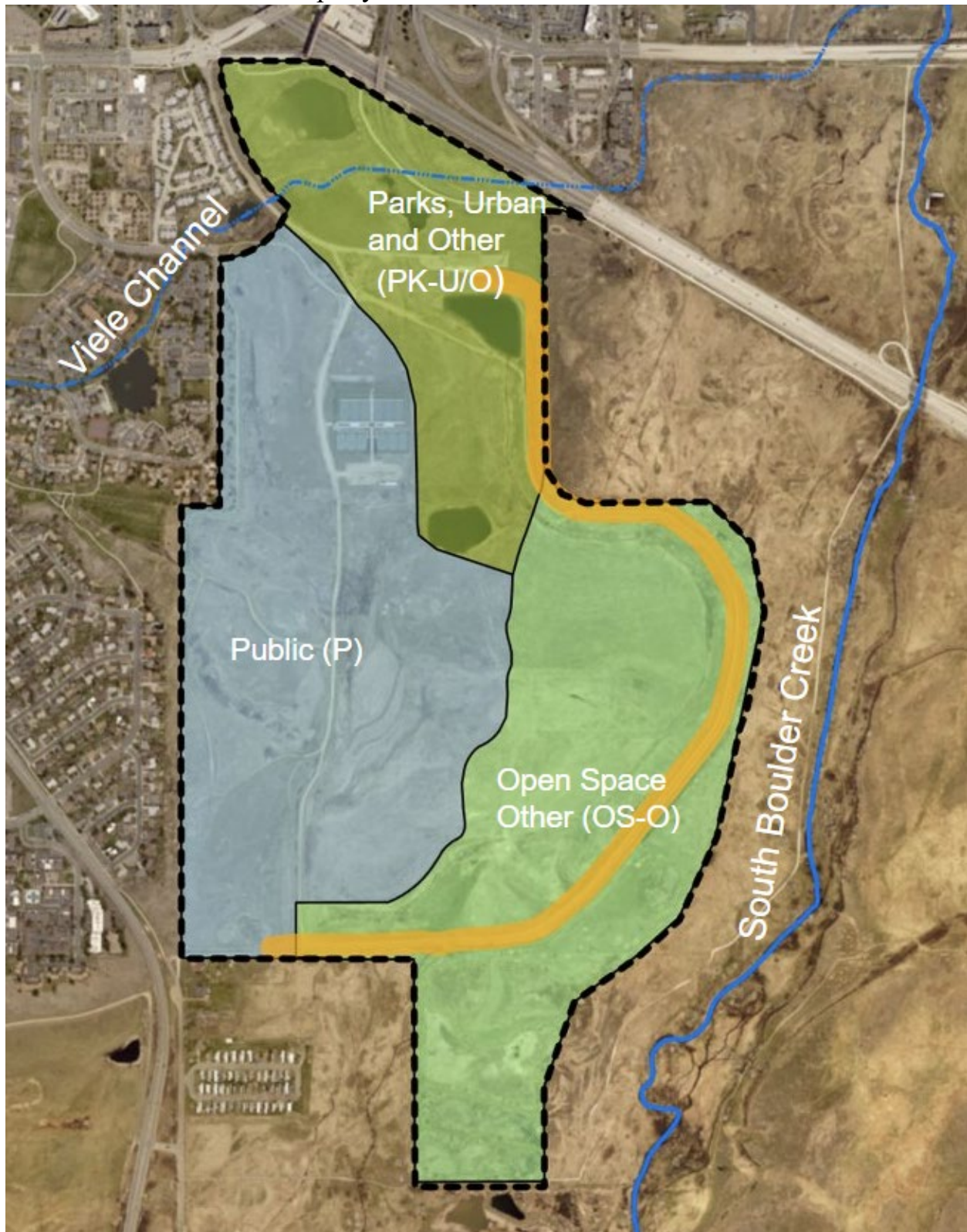
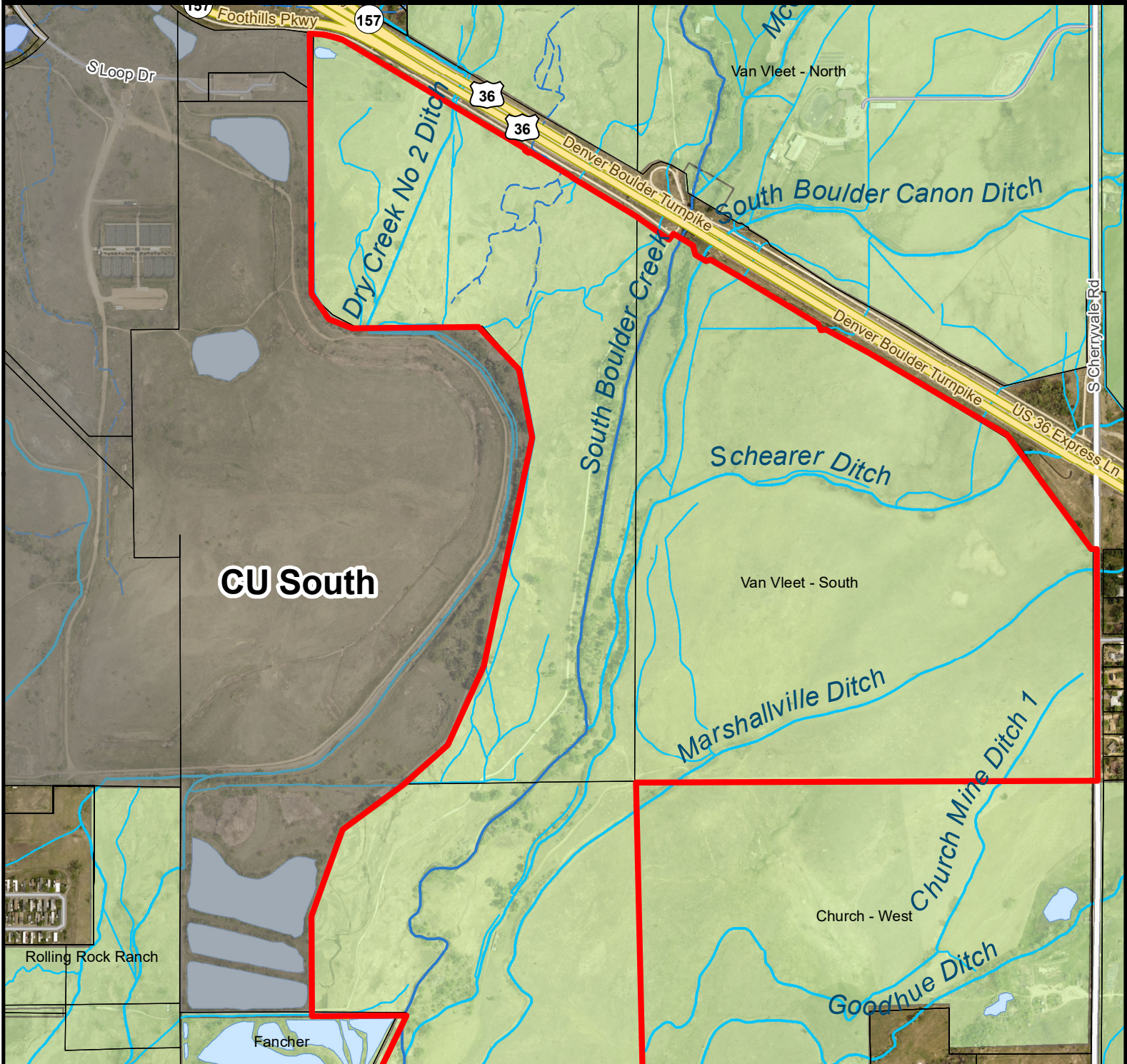


FIGURE 6: CU South Property with OS-O Site



Attachment B-Van Vleet Open Space Property



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The City of Boulder has provided the data as a public service and offers no guarantees or warranties, expressed or implied, as to the accuracy and/or completeness of the information contained hereon. The City of Boulder makes no warranties about the dataset and disclaims liability for all uses of the datasets, to the fullest extent permitted by applicable law.

0 360 720 1,080 1,440 Feet

Legend

- Subject Property
- Properties Managed by COB Parks and Recreation
- University of Colorado
- OSMP Ownership
- OSMP Easement



December 15, 2023

Dan Burke
Open Space and Mountain Parks Director
City of Boulder
Open Space and Mountain Parks
2520 55th Street
Boulder, CO 80301

RE: South Boulder Creek Flood Mitigation Project OSMP Disposal Request

Dear Dan,

During its June 16, 2020, meeting, City Council selected a project alternative and directed staff to proceed with design for the South Boulder Creek Flood Mitigation Project. A portion of the land needed for the flood project is designated as city open space, which has certain procedural requirements per city charter. Project design is now 60% complete and has sufficient detail for project permits and landowner approvals needed to meet the late 2024 construction schedule. Accordingly, and as planned in our project coordination meetings, I am writing to request initiation of disposal proceedings for the 2.18 acres of open space associated with the South Boulder Creek (SBC) Flood Mitigation Project.

The application materials, linked below, have been compiled based on the information in OSMP's "*Guidance for License and Disposal Requests Involving Open Space Lands*" and are intended to strike an appropriate balance between important life-safety objectives for flood mitigation while limiting and mitigating environmental impacts to sensitive and important city open space resources.

Application links:

- [Written narrative](#)
- [Figures](#)
- [Appendix 1 – Title Reports](#)

Please feel free to reach out if you have any questions or need additional information to complete our application materials. Thank you for the collaboration from you and OSMP department staff, and we look forward to working with you on this request.

Sincerely,

Joe Taddeucci, P.E.

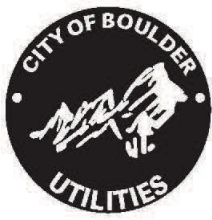
Director of Utilities
City of Boulder

Cc:

Brandon Coleman
Chris Douglass
Bethany Collins
Don Damico
Jessica Pault-Atiase
Leila Behnampour

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- 2 -



City of Boulder Utilities

South Boulder Creek Flood Mitigation Disposal Request Application

Requestor name and contact information

City of Boulder Utilities Department:

Joe Taddeucci, Director of Utilities
C: (720) 635-6970
taddeucci@bouldercolorado.gov
Public Works - Utilities Department
1739 Broadway | Boulder, CO 80302

Brandon Coleman, Civil Engineering Manager, Storm/Flood Utility
O: (303) 441-4232
colemanb@bouldercolorado.gov
Public Works – Utilities Department
1739 Broadway | Boulder, CO 80302

Overview and Purpose of Disposal Request

An estimated 600 structures and 3,500 people are located in the South Boulder Creek floodplain within city limits. Over the last 80 years, South Boulder Creek has significantly flooded six times, with overtopping of US36 happening in 1969 and 2013. A flood mitigation plan for South Boulder Creek was approved by City Council in 2015. The plan includes three phases with the first phase being a regional detention facility upstream of U.S. 36 (the “Project”) on and near the property commonly referred to as CU South. The Project would protect approximately 2,300 residents and 260 structures from a 1% chance (100-yr) flood on South Boulder Creek.

The Project will include a dam and flood storage that requires use of city owned open space land along U.S. 36 for the construction of a spillway/floodwall.

This land is 2.18 acres adjacent to U.S. 36 for the permanent location of the Project and is known as the Floodwall/Spillway disposal area (the “Disposal Area”) shown in **Figure 1**.

The purpose of this request is for OSMP staff to provide a recommendation on the disposal to the Open Space Board of Trustees (OSBT) on the Disposal Area for permanent use for proposed flood infrastructure.

Temporary impacts associated with the Disposal Area are also referenced in this request but are planned to be restored for continued open space uses through an Interdepartmental Memorandum of Understanding between Utilities and OSMP departments. Temporary impacts associated with construction of the Spillway/Floodwall are 1.88 acres and will not require disposal. The total construction footprint for the Spillway/Floodwall construction is 4.06 acres which includes the Disposal Area. This total area is shown in **Figure 2**.

The Project includes environmental mitigation of 119 acres in the historic South Boulder Creek floodplain that will be acquired by the City from the University of Colorado Boulder (CU-Boulder) and restored to meet and

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exceed regulatory mitigation requirements for the environmental impacts from the project. The terms and conditions for this acquisition are subject to the CU South Annexation Agreement. The 119 acres will be designated open space to be managed by OSMP at the completion of the mitigation project after it has met all success criteria for regulatory approval.

Regulatory agencies with jurisdiction

There are several regulatory agencies with jurisdiction over the Project:

- **Colorado Office of the State Engineer (SEO):** The embankment dam, spillway, and appurtenances will collectively comprise a jurisdictional dam that will be regulated by the SEO. The dam will also retain stormwater runoff, and the runoff will need to be released within a specified time to meet SEO water right's requirements.
- **Colorado Department of Transportation (CDOT):** A portion of the spillway and a portion of the outlet works will be located within the CDOT ROW along US36 and the City will need to obtain a CDOT access permit.
- **U.S. Army Corps of Engineers (USACE):** A Clean Water Act Section 404 permit will be needed to construct the Project due to anticipated construction in jurisdictional Waters of the US. The USACE will be the lead regulatory agency for this permit. Other agencies that may consult with the USACE regarding the 404-permit application are expected to include the U.S. Fish & Wildlife Service, Environmental Protection Agency, Colorado Department of Public Health and Environment, and the State Historical Presentation Office.
- **Federal Emergency Management Agency (FEMA):** The Project will impact the regulatory floodplain along SBC and will require obtaining a Conditional Letter of Map Revision from the FEMA prior to construction.
- **City of Boulder:** A City Wetland Permit will be required to construct the Project because of anticipated impacts to wetlands. This permit will be obtained from the City Planning Department. Other City permits are anticipated to be required to construct the Project, but these will be obtained by the contractor.

A. Benefit and Impact Assessment

The Disposal Area will impact existing OSMP property on the Van Vleet property and be used for flood mitigation infrastructure to mitigate South Boulder Creek flooding. These permanent impacts will be mitigated to meet and exceed regulatory requirements for wetlands and threatened and endangered species. The mitigation will occur on 119 acres of historic South Boulder Creek floodplain adjacent to the Van Vleet property. The 119 acres will be acquired pursuant to the CU South annexation agreement and turned over to OSMP management for open space uses after restoration goals and permit requirements have been met. In addition to this restored area 30.2 shares in Dry Creek Ditch No. 2 would be acquired and turned over to OSMP to allow for future management and irrigation needs in the restoration area.

The Project would provide flood protection for approximately 2,500 residents and 260 structures which include 1,100 dwelling units. This includes flooding in the neighborhoods of East Boulder, Fraser

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Meadows and Keewaydin Meadows, referred to as the West Valley. This flood mitigation project has been identified as one of the most important flood mitigation efforts for the city, and the area flooded significantly in 2013. The Project would also mitigate flooding that would overtop US36 during a 1% (100-yr) flood. US36 is a critical access into the city during an emergency event like a flood and heavily trafficked by regular commuters. In the context of climate change the Project does not mitigate flooding from a 0.2% (500-yr) flood but does benefit the community by reducing flows that overtop US36 and flooding of the West Valley area of the city. While flooding is not eliminated it is reduced in the West Valley for these larger flood events that may become more frequent due to climate change.

Open space resources on the Van Vleet property that will be impacted by the Project include wet meadow wetlands, emergent marshes, mesic tallgrass native grasslands, and willow shrublands. These resources provide habitat for Preble's meadow jumping mouse ("PMJM") and Ute ladies'-tresses orchid ("ULTO") which are protected under the federal Endangered Species Act. In addition to occupied habitat for the PMJM, a portion of the impact area includes habitat designated under the Endangered Species Act as "Critical Habitat" for PMJM. The area is also habitat for the Northern Leopard Frog (*Rana pipiens*), a Tier 1 species of conservation concern in Colorado. The existing environmental resources in the vicinity and adjacent to the Disposal Area are shown in **Figure 3**.

The Disposal Area is located within the SBC State Natural Area, an area recognized as having high-quality natural features of state-wide significance through the Colorado Natural Areas Program. The SBC State Natural Area was designated by the state of Colorado in 2000 in recognition of the high-quality habitat and plant communities. The Disposal Area is also used for cattle grazing seasonally, and portions are irrigated for hay production. Numerous irrigation ditches and small drainage channels extend through the OSMP property, including Dry Creek Ditch No. 2.

A summary of the regulated resources and impacts in the Disposal Area are summarized in **Table 1** and shown in **Figure 4**.

Table 1: Detention Project Temporary and Permanent Impacts on Wetlands and T&E Species

Regulated Resources	Project Total		OSMP	
	Temporary Impacts (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)
Detention Project Impacts	46.10	77.8	1.88	2.18
USACE jurisdictional wetlands	0.00	0.00	0.00	0.00
Boulder-regulated wetlands*	5.90	6.05	0.96	1.15
Boulder buffer zone (50-feet)	-	32.77	-	-
PMJM noncritical habitat	2.24	3.95	1.68	1.99
PMJM critical habitat	0.29	0.80	0.20	0.18
ULTO habitat	0.00	7.51	1.21	1.33

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**Wetlands not regulated by USACE are assumed to be regulated by the City of Boulder*

These environmental impacts are required to be mitigated by federal and local agencies that oversee protection of these resources and compliance with federal and local laws. The lead federal agency for the Project will be the U.S Army Corps of Engineers (USACE) which oversees compliance with the Clean Water Act. Through this process the USACE consults with the U.S. Fish and Wildlife Service (USFWS) for impacts to federally designated threatened and endangered species. The project will also be subject to the City of Boulder wetlands ordinance, including compliance with permit terms and conditions.

The mitigation to meet permitting requirements is proposed to occur on 119 acres to be acquired from CU-Boulder in the historic South Boulder Creek floodplain. The Project aims to maximize ecological restoration across the site while meeting or exceeding the expected detention project mitigation requirements. The following objectives have and will continue to guide design efforts and overlap with goals identified by OSBT:

- Minimize impacts on existing wetlands and buffer zones.
- Avoid impacts to irrigation ditches.
- Reduce impacts to T&E species habitats.
- Increase ecological connectivity between the restoration area and SBC.
- Address hydrology and ensure the long-term sustainability of wetlands and uplands.
- Incorporate restoration in the surrounding landscape.

Wetland restoration in the form of rehabilitation and re-establishment will be achieved through excavating material and native seeding. The existing wetlands will be rehabilitated by placing fill material on the interior of the ponds and reseeding them with native vegetation. This will promote native vegetation and reduce the presence of Typha species, which currently occupy the southern ponds as a monoculture. The restoration site is intended to resemble historical SBC floodplain remnant overflows. These features may result in formative overland flow during extreme flood events, with hydrology primarily supported by groundwater and precipitation in most years. The ecological project design will result in a wetland complex of approximately 51.6 acres. Existing wetlands and T&E species habitats have been incorporated into the design. The design seeks to expand wetland function through excavation and grading, control undesirable species, and expand T&E habitat throughout the ecological project area.

B. Alternatives Analysis

The Storm and Flood Utility follows a project lifecycle approach that starts with floodplain mapping to identify flooding risk, mitigation planning to evaluate alternatives to a system approach to flood mitigation, and design and construction for the selected flood mitigation projects. The flood mitigation approach for South Boulder Creek followed this approach starting in 2001 with floodplain mapping that was accepted by FEMA in 2004. Flood mitigation alternatives were considered in the [South Boulder Creek Flood Major Drainageway Plan](#) adopted by city council in 2015.

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This plan identified regional detention upstream of US36 primarily on the CU South property as the first phase of flood mitigation.

To provide land use goals for the CU South Property, including flood mitigation, protection of Open Space, and resource restoration. The BVCP Guiding Principles for CU South developed and accepted in 2017 by Boulder City Council and Boulder County Commissioners and allowed for design of the Project.

Between 2017 and 2020, alternative designs for South Boulder Creek flood mitigation were developed, assessed, and reviewed by staff and City Council. On June 16, 2020, City Council voted and directed staff to continue design of a 100-year mitigation design, known as Variant 1, while concurrently exploring whether an upstream model, identified by OSBT, would improve flood mitigation effectiveness, reduce costs, decrease environmental impacts, or increase the likelihood of receiving applicable permits and permissions as compared to the 100-year option. An update on the upstream model was provided to City Council on January 5, 2021, following a unanimous motion by OSBT stating that, “Given the identified impacts and construction costs, the [OSBT] does not support the proposed Upstream Option as conceptualized, designed and presented...” Based on this information, staff started working on preliminary design of Variant 1, 100-year design option. The variant designs that City Council considered in June 2020 to make their decision on Variant 1 are summarized below and documented [HERE](#).

All three options were presented to City Council using **Table 2** to summarize how each met the evaluation criteria used for the project at the time. A key design criteria for the Project has been minimizing or eliminating environmental resource impacts and continues to be a key focus of the Project.

Table 2: Flood Mitigation Variants Evaluation Criteria Matrix

Evaluation Criteria	Option 1 (100-yr)	Option 2 (500-yr)	Option 3 (200-yr)
Downstream flood benefits	Least flood protection	Most flood protection	More flood protection
Adaptability for climate change	Least adaptable	Most adaptable	More adaptable
Total project cost	Least expensive	Most expensive	Most expensive
Design, permitting and construction schedule	Least unknowns	More unknowns	More unknowns
Long-term operations and maintenance requirements	Similar for all options		
Groundwater mitigation complexity	Similar for all options		
Riparian connectivity and habitat enhancement opportunities	Most opportunities	Least opportunities	Less opportunities
Length, height and size of dam	Smallest	Largest	Middle
Wetlands and open water impacts	Least impacts	More impacts	Most impacts
Threatened and Endangered Species habitat impacts	Least impacts	Most impacts	Most impacts

Note: Darker cells show more alignment with Project Evaluation Criteria

Condemnation does not apply because the City is the owner of the Disposal Area.

C. Maps, Studies, Surveys, and Assessments

The Utilities department has commissioned ecological restoration studies alongside preliminary (30%) and 60% engineering design reports, both of which have been shared with OSMP staff and presented to the OSBT.

All Figures referenced in this request have been included as Attachment 1.

Figure 1: Disposal Area

Figure 2: Construction Area Including Disposal Area

Figure 3: Environmental Resources Overview

Figure 4: Environmental Resources in the Disposal Area

Figure 5: Environmental Mitigation Plan

The project has been presented to the OSBT for design updates and to provide information on specific requests.

Environmental surveys are available upon request and have been developed in coordination with OSMP staff. These include wetland surveys, Threatened and Endangered Species surveys, groundwater monitoring, Ute's Ladies Tresses Orchid surveys, and cultural resources evaluation.

A summary of adjacent land uses, geology, hydrology, flora and faunae are included [HERE](#).

D. Review and Recommendations by Other Agencies

The Utilities department will be required to obtain the following permits in order to construct the Project:

- CDOT Right-of-Way and Access permit
- USACE Clean Water Act Section 404 permit with consultations possible from:
 - U.S. Forest and Wildlife Service
 - Environmental Protection Agency
 - Colorado Department of Public Health and Environment
 - State Historical Preservation Office
- FEMA Conditional Letter of Map Revision
- City of Boulder wetland permit
- Colorado Office of the State Engineer Design Approval

The Project has requested and received a Jurisdictional Determination from the US Army Corp of Engineers with regards to Waters of the US for wetland impacts. The USACE will be the lead federal agency for permitting based on impacts to Waters of the US.

The Utilities department has been in coordination with the respective regulatory agencies and will submit formal permit applications if the OSMP disposal request is approved.

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The Disposal Area is designated as Open Space-Acquired (OS-A) in the Boulder Valley Comprehensive Plan. This designation applies to land already acquired by the City or Boulder County for open space purposes. The proposed use of this area is specifically for the stormwater and flood utility, and flood control projects of this nature are typically constructed along creeks without regard to the underlying zoning or land use designation. The Project will be constructed in compliance with the urban service standards for stormwater management and flood control in the BVCP and all applicable city, county, state, and federal requirements.

In addition, the 2015 BVCP update included “CU South Guiding Principles” ([page 123 of the BVCP](#)) to guide the University of Colorado and City of Boulder in specifying uses, services, utilities, and planning on the CU South site. This ultimately resulted in the CU South Annexation Agreement that was approved by City Council in Fall 2021. The #1 principle in the BVCP is for flood mitigation: “protecting the City of Boulder and Boulder County residents from future flooding events is a primary driver”. To support this principle, maps and policies in this section of the BVCP identify the location of flood mitigation infrastructure along U.S. 36, at the time referenced as “new berm”.

E. Mitigation and Restoration Plans

The Project will require environmental mitigation to account for impacts to wetlands, and threatened and endangered species. The proposed area for this mitigation is 119 acres on the CU South property with a land use designation of OS-O under the Boulder Valley Comprehensive Plan. The proposed approach and concepts were presented to the Open Space Board of Trustees on [January 11, 2023](#). The mitigation design has been further developed to a 60% design level and incorporated into the Project and is shown in **Figure 5**.

In coordination with OSMP staff the Project has proposed a mitigation approach for all 119 acres of OS-O. This mitigation plan will exceed permitting requirements for the Project and create or enhance existing wetland habitat and potential habitat for PMJM and ULTO. The design also includes updated groundwater and geotechnical information that was collected since completion of the alternatives analysis. This included an additional 12 borings and 9 groundwater well installations. The Project also expanded the environmental resources survey to include all 119 acres of the OS-O to better inform the mitigation design and concept. A summary of the mitigation plan habitats and environmental enhancements is shown in **Table 3**.

Table 3: South Boulder Creek Environmental Mitigation Summary

Environmental Resource Type	Project Mitigation Requirements (acres)	Mitigation Plan Habitat Generation (acres)
USACE Wetlands	0.0	0.00
Boulder Regulated Wetlands	27.264	36.708
Boulder Wetland Buffer Zone	27.985	32.106

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PMJM Occupied Habitat	35.850	88.930
PMJM Critical Habitat	6.804	6.804
ULTO Habitat	22.752	42.326

The Project also includes removal of the existing levee around the CU South property to allow for floodplain and environmental connectivity to the adjacent open space and for the Project to better function hydraulically. The proposed levee removal approach focuses on removing the levee down to adjacent natural ground while protecting existing environmental resources around the levee.

Groundwater Conveyance System

A groundwater conveyance system will be installed in association with the secant pile wall to convey groundwater past the spillway alignment and reduce impacts from the spillway/floodwall secant pile foundation. The groundwater conveyance system will consist of an aggregate collection trench upstream of the secant pile wall and an aggregate distribution trench downstream of the secant pile wall. Groundwater will be transferred from the collection trench to the distribution trench with connector pipes. The collection and distribution trenches will allow collection of groundwater south and distribution of groundwater north of the spillway to mimic natural groundwater flow.

Groundwater modeling was performed to evaluate simulated impacts to groundwater levels resulting from Project facilities. The groundwater system design is intended to match existing groundwater conditions in the areas adjacent to the project on OSMP property. Valves will be installed along the connector pipes and will allow for future adjustment of the groundwater conveyance system function. The wells used to develop the groundwater model may be incorporated into future groundwater monitoring related to the function of the groundwater conveyance system.

Wetland Restoration & Function

The environmental mitigation design seeks to create three wetland types throughout the wetland restoration complex: grassland shrub-scrub/PSS, wet meadow/PEM, and wet meadow/PEM swale (Figure 3). Generally, restored grassland shrub-scrub/PSS wetlands will occur in higher elevation wetland areas; small grassland shrub-scrub/PSS wetland rehabilitation will occur in the southern ponds; wet meadow/PEM wetlands will occur in the mid-elevational ranges; and wet meadow/PEM swale wetlands will occur at the lowest elevations in the mitigation area.

Wetland areas containing ULTO habitat have been omitted from wetland mitigation acreage as work in these areas will be avoided. Work in the levee interior consists largely of wetland re-establishment, with a small amount of rehabilitation occurring in the SW/NE trending wetland that cuts across the mitigation area. Due to the presence of existing wetlands in the southern ponds area of the site, all designed wetlands in this area have been classified as rehabilitation. Buffer zone mitigation will result from enhancing the existing wetland buffer and creating buffer habitat through upland restoration. The existing levee footprint in the ecological project area is included as buffer zone mitigation acreage and will be a key restoration area following levee removal. The mitigation generation ratios used for the site are summarized in **Table 4**.

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Table 4: Mitigation Generation Ratios

Mitigation Type	Mitigation Generation Ratio
Boulder re-established wetlands	1:1
Boulder re-habilitated wetlands	2:1
Boulder buffer zone creation	1:1
Boulder buffer zone enhancement	4:1
Boulder/USFWS PMJM wetland and upland creation	1:1
Boulder/USFWS enhancement	4:1
Boulder/USFWS ULTO creation	1:1

F. Valuation, Costs, and Timelines

In discussions with OSMP, Utilities learned that an appraisal and exchange options are not needed.

The Project, including the purchase of the OS-O and the environmental mitigation discussed previously, is estimated to cost \$63 million. The Project is solely funded by the Storm/Flood Utility Enterprise Fund with no OSMP dollars included. Currently, the cost estimates are included below, and mitigation/restoration costs are highlighted in blue:

Cost Item	2022 Cost Estimate (millions)
Regional Detention Facility Construction	\$51
Earthfill	\$4
OS-O land purchase	\$3
OS-O restoration	\$5
Total Project Cost	\$63

The Project is currently planned to begin construction in early 2025. This request will facilitate the permit approvals that will be worked on in 2024.

G. Project or Site-Specific Information

- **Drafts of legal documents associated with the request (may be provided by OSMP staff)**

Legal documents to be prepared by OSMP staff.

- **Preliminary title reports**

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Full property title reports provided as **Appendix 1**.

- **Any additional request-, project-, or site-specific information requested by OSMP staff**

The OSBT passed a motion on [June 9, 2021](#), to outline conditions for the Utilities department to fulfill and/or address prior to considering a disposal request. Utilities has fulfilled and/or addressed all conditions, summarized below:

1. ***Funding: The City has secured, without use of any money from OSMP or the Open Space Fund, all funding necessary to (a) design and construct the Project and (b) satisfy all of the conditions set forth below. The costs for the following items shall also not be directly or indirectly incurred by OSMP or the Open Space Fund, except for necessary OSMP staff time: (1) the transfer and dedication of land and water rights, (2) the planning and implementation of comprehensive environmental mitigation, (3) regulatory consultation, permitting and compliance, and (4) contracts for the restoration and monitoring work.***

The city's Utilities department has secured all funding necessary, as approved by City Council in the 2024 budget, to design and construct the flood mitigation project, via the department's use of enterprise bond funds, without use of any money from OSMP or the Open Space Fund. No funding from OSMP will be used for land and water rights; comprehensive environmental mitigation; regulatory consultation, permitting, and compliance; or restoration and monitoring work.

2. ***Escrow: The City has deposited into escrow the amount of money the OSMP reasonably projects will be needed to pay for implementation of the Environmental Mitigation Plan set forth below (the Escrowed Funds). The Escrowed Funds must be subject to terms in the Inter-Departmental MOU. Such Escrowed Funds shall be used only to pay for implementation of the Environmental Mitigation Plan and for no other purpose until the complete satisfaction of all of the Environmental Mitigation Plan requirements as determined in the reasonable judgment of OSMP. If the Escrowed Funds are not sufficient to pay for all of the Environmental Mitigation Plan requirements, the City must replenish the Escrowed Funds as necessary from sources other than the OSMP budget or Open Space Fund.***

All environmental mitigation costs and land acquisition have been included in the total Project cost estimates that were approved by City Council in the 2024 budget. Monitoring of the success of the environmental mitigation and function of the groundwater conveyance system will be in conjunction with OSMP staff and success criteria and monitoring requirements for the groundwater conveyance system will be developed by Utilities in consultation with OSMP.

3. ***Permits:***

All required, necessary and appropriate permits and approvals related to the Project have been

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obtained from all applicable federal, state, and local regulatory authorities, including, but not limited to, the U.S. Army Corps of Engineers, Federal Emergency Management Agency, the U.S. Fish and Wildlife Service, the Colorado Department of Natural Resources-State Engineer's Office, the Colorado Department of Transportation, and the City.

The Project has numerous permits to obtain prior to construction and staff have been working with the respective agencies on permitting approach and submittals. The construction cannot proceed without the permit approvals and a disposal decision can further advance the design components on OSMP to facilitate permit approvals.

4. Studies. The City or a federal agency as part of their permitting process for the Project has prepared an Environmental Impact Statement and a Site-Specific Biological Assessment for the Project.

The Project has prepared a biological assessment including all environmental studies referenced in this request to meet federal regulatory requirements. Approval of the 404 permit will address all environmental reporting required at a federal level. In addition, the Project will require a City of Boulder wetland permit to address site specific impacts to wetlands.

5. Floodwall:

The Public Works-Utilities Department has conducted analyses and planning to incorporate into and achieve a project design sufficient to support all permitting and to determine levels of impacts and associated mitigation requirements for:

5.1 A minimal footprint for the Floodwall;

The Project has worked with OSMP staff to review and reduce impacts from the Floodwall/Spillway. The Floodwall/Spillway alignment has been shifted during the design process to minimize impacts to OSMP while considering the CDOT right-of-way and existing utility conflicts. The alignment is currently between 16ft and 50ft from the CDOT Right-of-Way.

5.2 the most limited construction impact footprint of the Project;

Based on the revised alignment the construction footprint for the Project has been reduced from 5 acres to 4.06 acres. The construction methodology and sequencing in this area has been reviewed by OSMP and contractors on the team to further reduce construction impacts as the design progresses. The 4.06 acres is the maximum construction footprint needed and may be further reduced through design efforts. Utilities staff will continue to consult with OSMP staff and consider ways to further reduce the construction footprint, where appropriate, as the design is finalized.

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5.3 A termination of the eastern end of the Floodwall that is as far away from South Boulder Creek as possible;

The east termination of the Floodwall/Spillway has been located as far away from South Boulder Creek as possible based on elevations for the Floodwall/Spillway.

5.4 The determination of a minimum of acreage of OSMP land needed for maintaining the Floodwall and the Groundwater Conveyance System; and

The minimum acreage of OSMP property for permanent use (OSMP Disposal Area) is 2.18 acres and temporary impacts is 1.88 acres (Construction Area), which includes the OSMP disposal area.

5.5 A Groundwater Conveyance System through the Floodwall that maintains existing groundwater conditions on the site.

The Project includes a Groundwater Conveyance System that maintains existing groundwater conditions. This system and design has been presented to OSBT on [December 1, 2021](#).

- 6. Replacement property (119 acres):** The City has acquired from CU, and dedicated to OSMP, at no cost to OSMP and without use of the Open Space Fund, unencumbered fee simple title to the entire 119 acres designated as Open Space-Other (OS-0) in the Boulder Valley Comprehensive Plan, which are part of the 168-acre Boulder County Tax Parcel #1577090000024 (the Replacement Property). The transfer of title to these 119 acres of land by CU to the City can offset some of the costs of restoring the floodplain incurred by the City due to previous decisions by CU to construct and reinforce a larger levee that separates the property from the South Boulder Creek floodplain, to drain and dewater the lands behind the levee and to not restore the previously mined lands as originally required by the permit from the Colorado Mined Land Reclamation Board.

Pursuant to the CU South annexation agreement, CU will convey to the City 119-acres from the University of Colorado Boulder to be used as Open Space land that is currently designated as OS-O. Acquisition of the property will happen when all project approvals are in place. No OSMP funds are included in the acquisition and the OS-O acquisition is included the total Project costs.

- 7. *Environmental Mitigation Plan: OSMP and the Public Works-Utilities Department will jointly develop an Environmental Mitigation Plan approved by OSMP, OSBT and City Council (the Environmental Mitigation Plan). The plan will include the following mitigation measures, and shall be implemented and paid for from the Escrowed Funds:***

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7.1. Habitat Mitigation Area: The development of new habitat having a wide diversity of high-quality plants and associated native plant communities and habitats (collectively, the Habitat Mitigation Area) within the Replacement Property will be defined in the Environmental Mitigation Plan. The Environmental Mitigation Plan shall include a provision authorizing OSMP to engage a qualified third-party wetland ecologist, a qualified third-party groundwater hydrologist, and other necessary consultants (the Third-Party Experts), all of whom shall be determined by OSMP. The OSMP shall be the lead department within the City for the preparation and implementation of the Environmental Mitigation Plan and shall consult with the Third-Party Experts in the preparation of such Plan.

OSMP staff has reviewed and provided input on the Environmental Mitigation and Project as it related to impacts and mitigation for environmental resources in the area. Utilities will be the be responsible for monitoring for success of the environmental mitigation area with support from OSMP staff.

7.1.1 Acreage: The Environmental Mitigation Plan shall address restoration of the entire 119 acres of Replacement Property together with contingencies and adaptive management for any effects of future flooding. Some portions of this restoration may be done as part of regulatory compliance.

The Environmental Mitigation Plan includes all 119 acres of OS-O.

7.2. Monitoring: The Environmental Mitigation Plan shall include success criteria and a detailed plan to monitor (a) the quantity and quality of the Habitat Mitigation Areas to be created under such Plan, and (b) the direct and indirect impacts of the Project on other OSMP land, including the possible impacts on the Up-Gradient and Down-Gradient Wetlands discussed below. The Third-Party Experts shall assist in the development of such monitoring plan and shall monitor and assess the quantity and quality of the Habitat Mitigation Areas on an ongoing basis and make recommendations as to any actions needed to create or maintain the same, as directed by OSMP. Monitoring results will inform the need for any corrective actions to achieve successful restoration of Habitat Mitigation Areas and will be incorporated into the Environmental Mitigation Plan, as will required monitoring timeframes and standards for release. Such standards shall include an inventory of federally listed species ten years following construction of the Project.

The monitoring of the Environmental Mitigation Plan will be overseen by the appropriate regulatory agencies (USACOE and City of Boulder, including OSMP). This monitoring will include federally-listed species with the USFWS.

7.3. Down-Gradient and Up-Gradient Wetlands: The Environmental Mitigation Plan must also include written plans for the protection of both the Down-Gradient and Up-Gradient Wetlands, which plans shall include (a) engineered features in the Floodwall to allow passage of sufficient groundwater under or through the Floodwall to maintain the amount and quality

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of both the Down-Gradient and Up-Gradient Wetlands, and (b) the monitoring plan described in Paragraph 7.2 above. The Third-Party Experts shall assist in the development of such plan, prepare a baseline study of the existing quantity and quality of such wetlands, monitor and assess the ongoing quality and quantity of both the Down-Gradient and Up-Gradient Wetlands, and identify corrective actions that will be used to restore the quality and quantity of the Wetlands, as directed by OSMP.

OSMP will provide monitoring recommendations including success criteria for monitoring of the Groundwater Conveyance System and the upgradient and downgradient wetlands. Utilities will develop the final monitoring plan in coordination with OSMP.

7.4. Removal of Levee: The Environmental Mitigation Plan will include provisions for the removal of the existing flood levee on the CU South Property and the revegetation of the land under the levee or land damaged by the removal of such levee. The plan will include all such revegetation measures deemed necessary by OSMP.

Removal of the existing CU South levee has been included in the Environmental Mitigation Plan.

7.5. Water Rights: The Environmental Mitigation Plan will require that the City obtain from CU the ownership of all water rights appurtenant to or historically associated with the 308-acre CU South property, including but not limited to shares in the Dry Creek Ditch No. 2 Company, and dedicate the same to OSMP to allow for irrigation of the Replacement Property in perpetuity. Any required realignment of the existing Dry Creek Ditch No.2 or additional laterals or structures needed to allow delivery of water to the Replacement Property will be included in the Environmental Mitigation Plan.

The acquisition of the 30.2 shares of Dry Creek Ditch No. 2 is provided for in the CU South Annexation Agreement and will proceed after all approvals for the Project have been secured. These shares will be purchased by the City as part of the Project, without the use of OSMP or Open Space Fund monies.

7.6. Other Damage: The Environmental Mitigation Plan must include provisions to ensure that any damage that may be caused to Open Space Lands upgradient of the Floodwall Acres due to the detention of water by the Floodwall will be repaired. The plan will include provisions ensuring that the City will commit to fund and implement any and all such corrective measures deemed necessary by OSMP.

Appropriate maintenance activities and restoration will be developed in coordination with OSMP for OSMP property.

7.7. Other Permits: If any federal permit required for the Project requires environmental mitigation measures that are stricter or more favorable to the environment than those required
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under this Resolution, those shall be incorporated into the Environmental Mitigation Plan. If any such federal permit contains requirements that are less strict or less favorable to the environment than those required under this Resolution, as determined by OSMP, the terms of this Resolution shall continue to apply.

The Environmental Mitigation Plan currently exceeds regulatory requirements for mitigation of habitat and Threatened and Endangered Species.

7.8. Limited CU Use: OSMP shall make available to CU some portion of acreage of the Replacement Property, for the mitigation of impacts from CU's development of its property on federal- and state-listed plant and animal species and wetlands. Such mitigation efforts will be coordinated and managed by the City. CU will fund the mitigation work for its required mitigation acreage in advance.

Collaboration for environmental mitigation is outlined in the CU South Annexation agreement.

7.9. Other Environmental Impacts: The Environmental Mitigation Plan must also address any and all environmental impacts from the Project that are not addressed in this Resolution, such as (i) the groundwater analysis referenced in plans for the OSBT August 2021 study session, (ii) the design, construction, operation, and maintenance guidelines for the Groundwater Conveyance System associated with the Floodwall, or (iii) the Environmental Impact Statement and a Site-Specific Biological Assessment for the Project, and (iv) any flood storage requirement from future flooding.

See previous responses.

- 8. Community benefits provisions: The City will secure the following community benefits that OSBT believes may best be obtained through the annexation agreement regarding the CU South Property.***

8.1 Land Transfer: The transfer from CU to the City of the unencumbered fee title to the Replacement Property (see # 6) to then be transferred and dedicated to OSMP.

The University will transfer 80-acres to the City of Boulder, once agreement conditions are met, of which 36 acres are expected to be used for flood mitigation and 44 acres will be dedicated to Open Space after environmental mitigation is complete. In addition, the Utilities will purchase the remaining 75 acres for a total 119 acres designated OS-O, pursuant to the terms and conditions outlined in the annexation agreement.

8.2 Landscape Screening: Because the removal of the levee, the trees along it, and non-native trees in the floodplain restoration area will make the CU development much more visible from the adjoining OSMP lands and from Highway 36, CU shall include landscaping and plantings as part of the development of its property to screen structures and to protect the existing

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viewshed.

Not applicable recommendation for CU development.

8.3 Noise and Light: The proposed CU development will be adjacent to OSMP property and has the potential to degrade the habitat quality, wildlife use, and visitor experience on the adjacent OSMP lands by introducing light and noise pollution that does not exist today. Accordingly, CU and the City agree to conduct a baseline study to establish current conditions and agree to specific provisions to ensure that use of the CU property, initially or as it may change over time, will not result in light and noise pollution impacts on the adjacent OSMP land, including but not limited to that from nighttime sports lighting and amplified sound systems even if the same would otherwise be allowed under City codes.

Not applicable recommendation for CU development and addressed in CU South Annexation Agreement.

8.4 Water Rights: The transfer from CU to the City of all Dry Creek Ditch No. 2 Company water rights appurtenant to or associated with the 308-acre CU South Property, and all decreed or permitted wells on the Replacement Property, to be transferred and dedicated to OSMP.

See response to Item 7.5 no wells will be developed for water supply related to project only monitoring wells will be installed.

- 9. Trails: The location of any trails on the Replacement Property and the regulations which apply to the use of those trails will only occur and be determined through the normal OSMP public planning process.***

Not applicable related to future management of the environmental mitigation area.

- 10. No other use of OSMP lands: Nothing in this Resolution authorizes the City to use or damage any Open Space Lands outside of the boundaries of the Floodwall Acres for the Project. Any temporary use of Open Space Lands outside of the Floodwall Acres needed for construction activities related to the Project shall be made only after approval of such activities by the OSBT, and then subject to such terms and conditions as may be reasonably required by the OSBT. To the maximum extent feasible all excavating, staging, delivery of material, and other construction activities related to the Project, and all ongoing access to the Floodwall and related monitoring systems, shall take place in the area between the Floodwall and Highway 36 rather than upgradient of the Floodwall.***

The Project is working with OSMP on any temporary agreements that will be needed outside of the OSMP Disposal area for construction.

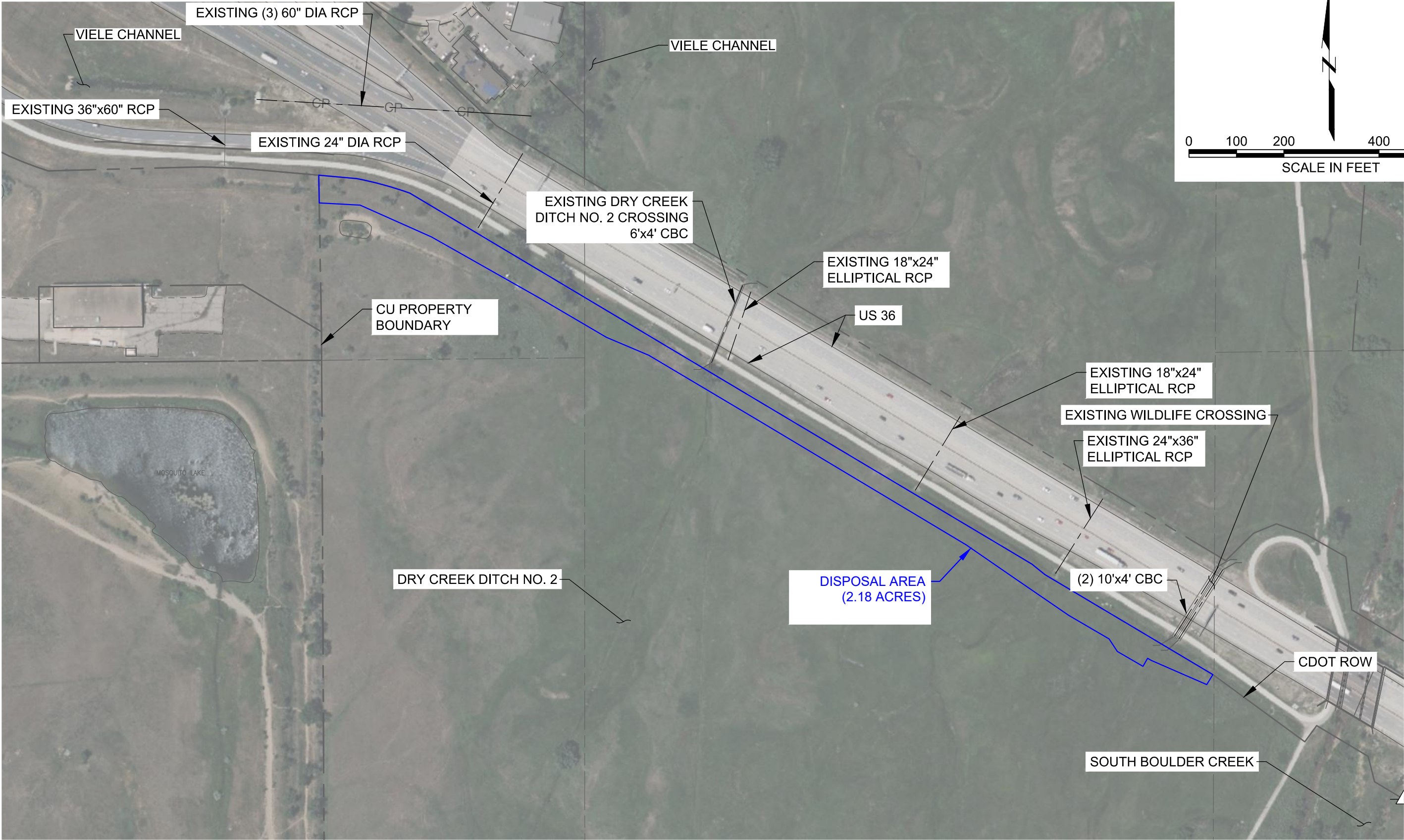
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11. No precedent: Nothing in this Resolution regarding disposal of the Floodwall Acres should be interpreted or construed as setting any precedent for future disposals of OSMP lands.

Acknowledged.

12. Decommissioning and City Ownership. The Inter-Departmental MOU will include provisions that if the Floodwall is ever decommissioned, no longer needed for flood protection, or abandoned by the City, the City will (a) remove the Floodwall and associated features and facilities, (b) restore the Floodwall Acres to a natural condition reasonably acceptable to OSMP, (c) re-establish the natural flow of groundwater through the Floodwall Acres, and (d) transfer management of the Floodwall Acres back to OSMP, all at no cost to OSMP and without use of the Open Space Fund. The City shall maintain ownership of the Floodwall Acres and shall not sell or otherwise transfer ownership or management of this land to any third party or support the taking of this land by a third party.

Acknowledged.



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**PRELIMINARY
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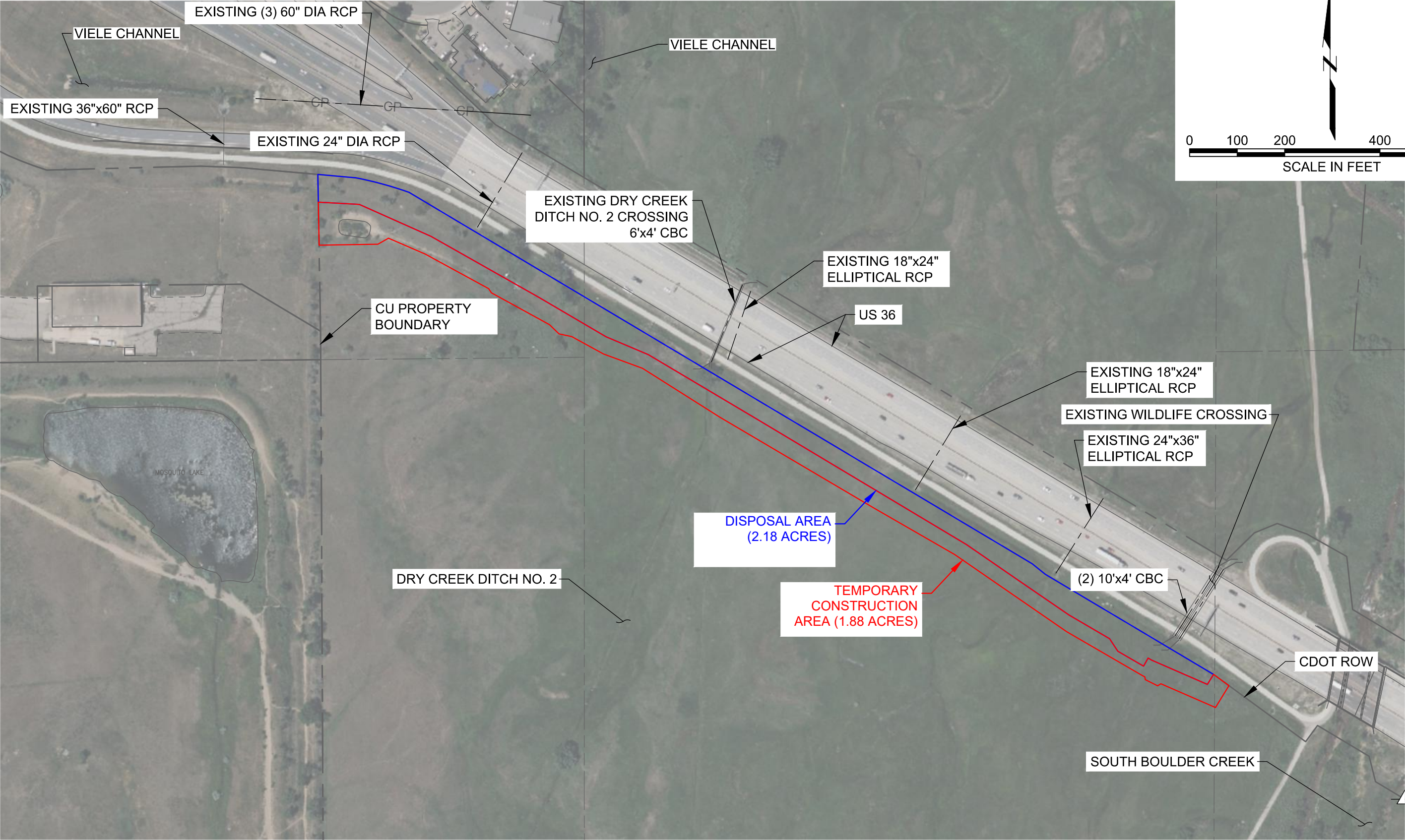
SOUTH BOULDER CREEK
REGIONAL DETENTION FACILITY

PROJECT NO. 16134

DISPOSAL AREA

DECEMBER 2023

FIGURE 1



**PRELIMINARY
NOT FOR CONSTRUCTION**



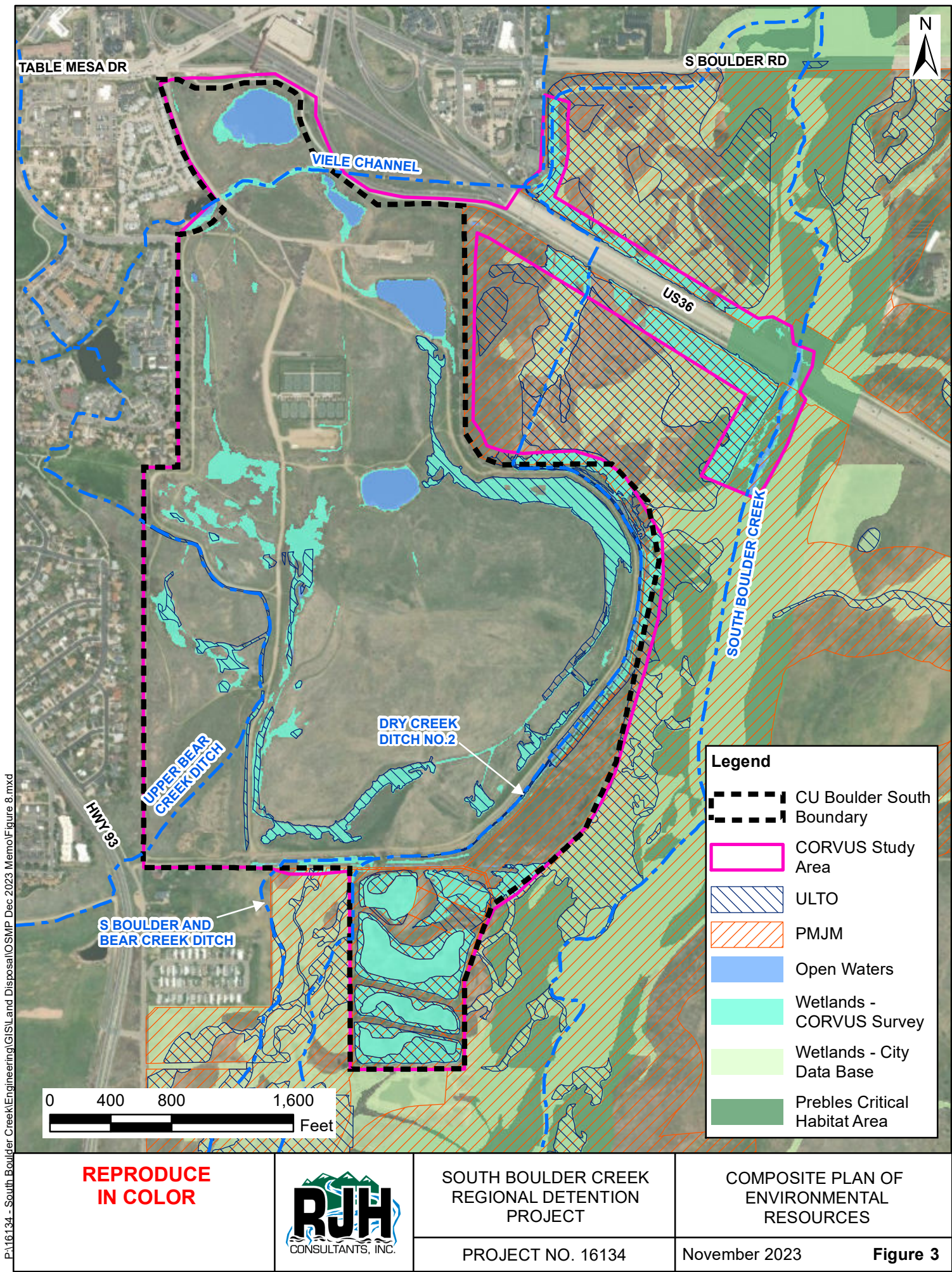
SOUTH BOULDER CREEK
REGIONAL DETENTION FACILITY

CONSTRUCTION AREA
INCLUDING
DISPOSAL AREA

PROJECT NO. 16134

DECEMBER 2023

FIGURE 2



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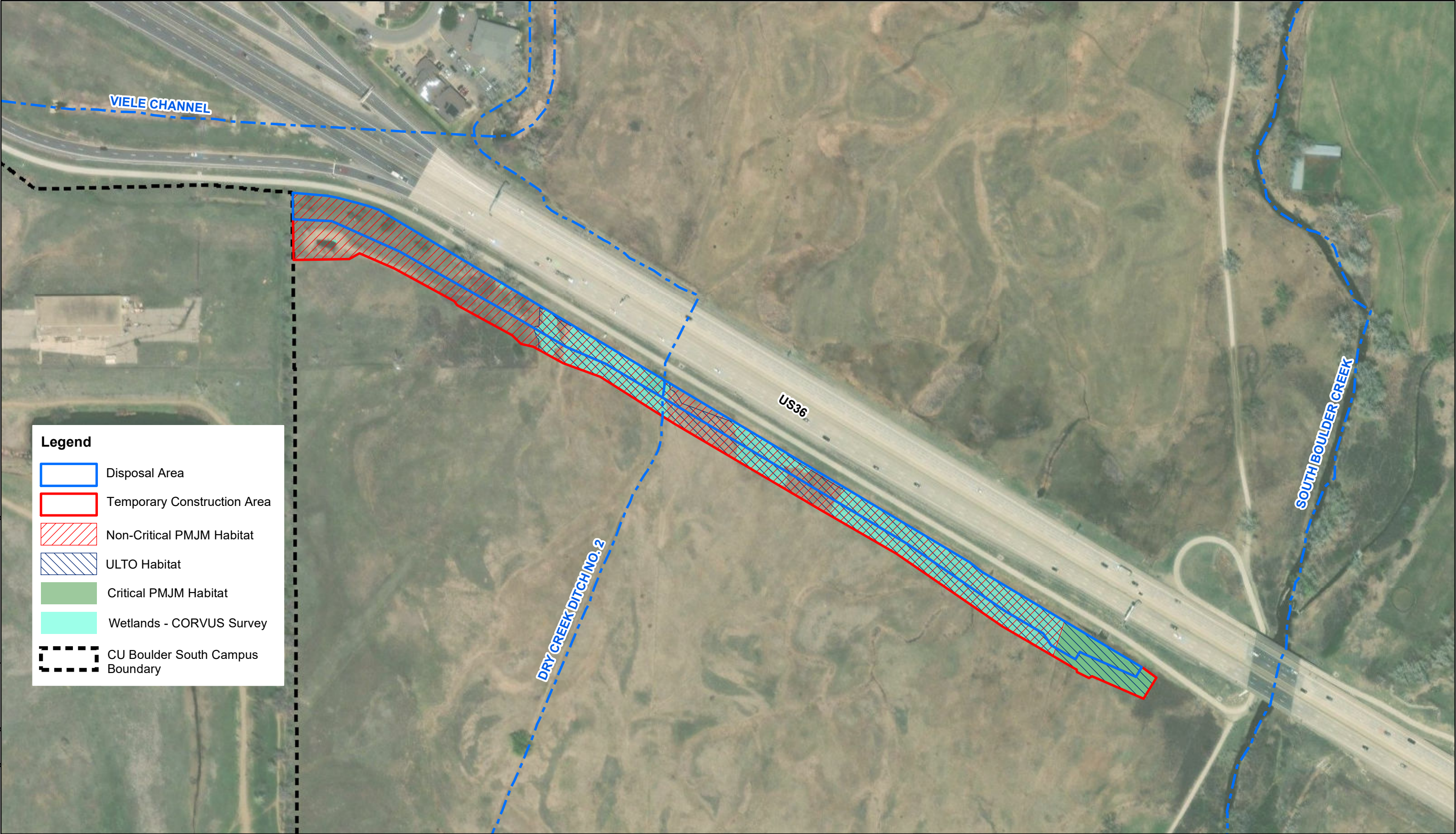
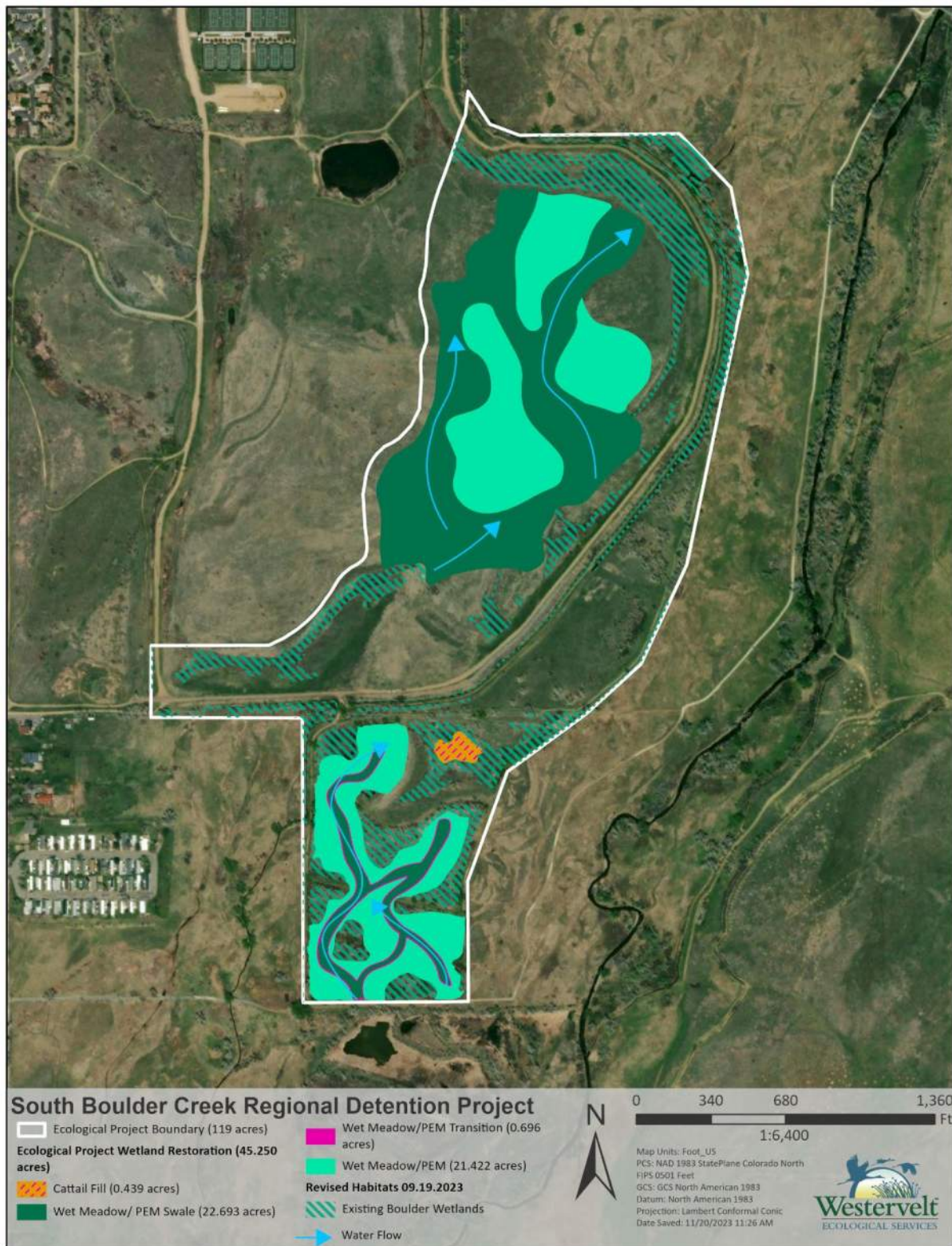


Figure 11. Ecological Project 60 Percent Design Approach



ATTACHMENT D

Staff Summary Related to June 9, 2021 Resolution

At their June 9, 2021 meeting, the OSBT approved a resolution ([June 9, 2021 Resolution](#)) to forward to City Council detailing conditions the board wanted to be fulfilled or addressed to its satisfaction prior to considering a disposal (transfer) of the OSMP Property for the Flood Project. Below, staff provides a summary of how the conditions of the resolution have been or will be addressed.

1. Funding.
Utilities has secured all funding necessary, as approved by City Council in the 2024 budget to design, construct and mitigate for the Flood Project, via the department's use of enterprise funds, without use of any money from OSMP or the Open Space Fund. No funding from OSMP will be used for land and water rights acquisition; the Mitigation Project; regulatory consultation, permitting, and compliance; or restoration and monitoring work.
2. Escrow.
All environmental mitigation costs and land acquisition have been included in the total project cost estimates that were approved by City Council in the 2024 budget. Monitoring of the success of the Mitigation Project and function of the groundwater conveyance system will be in conjunction with OSMP staff and success criteria and monitoring requirements for the groundwater conveyance system will be developed by Utilities in consultation with OSMP.
3. Permits.
The Flood Project has numerous permits to obtain prior to construction and Utilities staff have been working with the respective agencies on permitting approach and submittals. The acquisition of land from CU (including the OS-O Site) and construction cannot proceed without the permit approvals, and a decision on this transfer request will further advance the Flood Project and Mitigation Project designs to facilitate permit approvals.
4. Studies.
A biological assessment to address federally designated T&E Species will be submitted as part of the USACE 404 permit. Approval of the USACE Section 404 permit will address all environmental reporting required at a federal level and an environmental impact statement is not required. In addition, the Flood Project will require a City of Boulder wetland permit to address site specific impacts to wetlands.
5. Floodwall.
 - 5.1 *A minimal footprint for the Floodwall*
Flood Project staff have worked with OSMP staff to review and reduce impacts from the floodwall/spillway. The floodwall/spillway alignment has been shifted during the design process to minimize impacts to OSMP while considering the CDOT right-of-way and existing utility conflicts. The alignment is currently between 16ft and 50ft from the CDOT Right-of- Way. This shift has reduced the acreage of the Transfer Area from what was estimated during 30% Project Design stage.
 - 5.2 *The most limited construction impact footprint of the Project;*
Based on the revised alignment the construction footprint for the Flood Project has been reduced during 60% Flood Project design from 5 acres to 4.1 acres. The construction methodology and sequencing in this area has been reviewed by OSMP and contractors on the team to further reduce construction impacts as the design

progresses. The 4.1 acres is the maximum construction footprint needed and may be further reduced through constructability review and consultation with OSMP staff.

5.3 A termination of the eastern end of the Floodwall that is as far away from South Boulder Creek as possible;

Through Flood Project design, the east termination of the Floodwall/Spillway has been located as far away from South Boulder Creek as possible based on elevations for the floodwall/spillway. Also, the design of the terminus has been angled to further reduce impacts to the OSMP Property.

5.4 The determination of a minimum of acreage of OSMP land needed for maintaining the Floodwall and the Groundwater Conveyance System;

The acreage of OSMP Property needed for permanent use (Transfer Area) is approximately 2.2 acres and temporary use is approximately 1.9 acres (Temporary Construction Area) **Attachment A, Figures 1 and 2.**

5.5 A Groundwater Conveyance System through the Floodwall that maintains existing groundwater conditions on the site.

The Project includes a Groundwater Conveyance System that maintains existing groundwater conditions. This system and design was presented to OSBT on [December 1, 2021](#) and has been discussed at numerous other OSBT meetings. The Mitigation and Monitoring IDMOU will include a detailed monitoring plan with study design, monitoring schedule, success criteria and adaptive management options for the groundwater conveyance system.

6. Replacement Property – 119 Acres.

As detailed in this memo and the CU South Annexation Agreement, the 119-acre OS-O Site cannot be acquired by Utilities until the Flood Project is fully approved, which requires the approved transfer of the use and management of the Transfer Area. However, OSBT and City Council can make the transfer of the use and management of the Transfer Area contingent on acquisition of the OS-O Site for OSMP management. No OSMP funds are included in the acquisition, and the OS-O Site acquisition is included in the total Flood Project costs.

7. Environmental Mitigation Plan.

As detailed further in this memo, Utilities and OSMP staff have worked closely with Utilities consultants toward development of the Mitigation Project and will continue to refine it as the design of the Flood Project is finalized. The final Mitigation and Monitoring IDMOU will contain terms related to mitigation requirements, monitoring, success criteria and adaptive management options. Additionally, OSBT and City Council can make transfer of the use and management of the Transfer Area contingent on a final Mitigation Project plan that is acceptable to both OSMP and Utilities.

7.1 Habitat Mitigation Area:

OSMP staff has reviewed and provided input on the Mitigation Project as it relates to impacts and mitigation for environmental resources in the area. Utilities will be responsible for monitoring the success of the environmental mitigation area with support from OSMP staff.

7.1.1. Acreage:

The Mitigation Project includes all 119 acres of OS-O.

7.2 Monitoring:

The monitoring of the Mitigation Project will be overseen by the appropriate regulatory agencies (USACE and City of Boulder, including OSMP pursuant to the

terms of the Mitigation and Monitoring IDMOU). This monitoring will include federally-listed species with the USFWS.

7.3 Down-Gradient and Up-Gradient Wetlands:

OSMP will provide monitoring recommendations including success criteria for monitoring of the Groundwater Conveyance System and the upgradient and downgradient wetlands. Utilities will develop the final monitoring plan in coordination with OSMP.

7.4 Removal of Levee:

Removal of the existing CU South levee is included in the Mitigation Project.

7.5 Water Rights

The acquisition of the 30.2 shares of Dry Creek Ditch No. 2 is provided for in the CU South Annexation Agreement and will proceed after all approvals for the Flood Project have been secured. These shares will be used for open space purposes and purchased by the City as part of the Flood Project, without the use of open space funds.

7.6 Other Damage:

Appropriate maintenance activities and restoration will be developed in coordination with OSMP for OSMP property.

7.7 Other Permits:

The Mitigation Project design currently exceeds regulatory requirements for mitigation of habitat and impacts on T&E Species.

7.8 Limited CU Use:

Collaboration for environmental mitigation is outlined in the CU South Annexation agreement.

7.9 Other Environmental Impacts

All foreseeable impacts will be addressed in the Mitigation Project.

8. Community Benefits Provisions.

The CU South Annexation Agreement was executed on September 21, 2021 and includes provisions related to land and water rights transfer (at paragraphs 12 and 13 of the annexation agreement).

8.1 Land Transfer: The transfer from CU to the City of the unencumbered fee title to the Replacement Property (see # 6) to then be transferred and dedicated to OSMP.

Pursuant to the terms of the CU South Annexation Agreement, CU will transfer 80-acres to the City of Boulder, once agreement conditions are met, of which 36 acres are expected to be used for flood mitigation and the remaining 44 acres, along with an additional 75 acres purchased by the City using Utility enterprise will then be designated for management by OSMP for open space purposes, subject to Utilities' performance obligations associated with the Mitigation Project until the restoration goals and permit requirements have been completed consistent with the capital improvement project and terms of the IDMOUs.

8.4 Water Rights: The transfer from CU to the City of all Dry Creek Ditch No. 2 Company water rights appurtenant to or associated with the 308-acre CU South Property, and all decreed or permitted wells on the Replacement Property, to be transferred and dedicated to OSMP.

See response to Item 7.5. No wells will be developed for water supply related to Flood Project, and only monitoring wells will be installed.

Provisions related to lighting and noise impacts to the adjacent open space (identified in 8.3 of the Resolution) can be found in the CU South Annexation Agreement (at paragraph 14), however those are relevant to any future CU development and not to the Flood Project.

9. Trails.

The conditions pertaining to trail connections from the CU South property were also incorporated into the CU South Annexation Agreement at paragraph 22.c. Additionally, the OS-O site will remain closed to the public during the Mitigation Project and until all permit conditions have been satisfied and management recommendations are developed during applicable OSMP planning processes where OSMP staff evaluate resource management and infrastructure needs of the property which consider public use, ongoing agricultural operations and protection of the sensitive environmental resources.

10. No Other Use of OSMP Lands.

Temporary, restorable use of open space lands are not typically reviewed and approved by OSBT, however to the extent they are currently known related to the Flood Project and Mitigation Project, they are described in this memo and will be included in the terms of the Temporary Construction IDMOU.

11. No Precedent.

All disposal/transfer requests are processed and considered within the framework of the City of Boulder Charter and OSMP's L&D Guidance in an effort to maintain consistency.

12. Decommissioning and City Ownership.

The Conveyance IDMOU will include terms related to termination of use and reversion of the OSMP Property which would be at the discretion of OSMP staff at the time that such matters were to be encountered.

Attachment E - forthcoming in
an addendum memo