



Midpeninsula Regional  
Open Space District

# Memorandum

DATE: October 23, 2024  
MEMO TO: Board of Directors  
THROUGH: Ana Ruiz, General Manager *AR*  
FROM: David Liefert, Water Resources Specialist DL  
SUBJECT: Johnston Ranch Ponds Project Update

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## SUMMARY

The Johnston Ranch Ponds Project aims to improve water storage capacity to support agricultural activities while simultaneously enhancing sensitive aquatic habitats. The removal of two dams on Arroyo Leon Creek in the early 2000s resulted in a significant reduction in water availability for farming, impacting roughly 40% of the farmable land at Johnston Ranch. Following the Midpeninsula Regional Open Space District's (District) purchase of the Johnston Ranch Uplands portion of the Johnston Ranch property from Peninsula Open Space Trust (POST) in 2024, the District and San Mateo Resource Conservation District (RCD) partnered to reconstruct the existing Stock Pond and build a new agricultural reservoir (Agricultural Reservoir) to create a total of roughly 40 acre-feet (AF) of new water storage. Expanding the Stock Pond will improve habitat for known California red-legged frog (CRLF) and potential San Francisco garter snake (SFGS). Constructing a new Agricultural Reservoir will provide water to irrigate 53 acres of farmable land without the need for new diversions from Arroyo Leon Creek. The partnership therefore accomplishes both habitat and agricultural goals for the Johnston Ranch Uplands and Johnston Ranch farm property, retained by POST. A substantial grant has been secured by the RCD to complete the work. However, the estimated construction cost of \$3.26 to 4.6 million exceeds the available grant funding, leaving a funding gap of \$1.06 to 2.32 million. The District and RCD will refine the project design to better determine the outstanding funding need, at which point a funding agreement between the District and the RCD will be developed for Board consideration and approval.

## BACKGROUND

POST purchased the Johnston Ranch property in the late 1990s around the same time as Central California Coast coho and steelhead were listed under the Endangered Species Act. By 2001, concerns from the California Department of Fish and Wildlife and National Marine Fisheries Service led to the decommissioning of two dams on Arroyo Leon Creek within the Johnston Ranch property to protect the dwindling salmonid population. Opening the dams improved conditions for upstream fish migration, but permanently reduced water storage for farming. Since then, agricultural operations at Johnston Ranch have struggled to maintain farmable acreage due to the loss of a summer irrigation supply. Removal of the instream reservoirs decreased the area of land in agricultural production by approximately 40%, and a significant portion of the remaining 85 acres in production today are left fallow during prolonged droughts.

To expand summer water supply and protect Arroyo Leon Creek fisheries, POST worked with the farming tenant to improve four off-stream storage reservoirs that fill by a combination of runoff, groundwater pumping, and diversions from Arroyo Leon Creek. However, these reservoirs did not replace the capacity of the old in-stream storage. The RCD has played a key role in investigating how to improve water storage and in 2019 hired a consultant to prepare conceptual designs, cost estimates, and a water availability assessment. The goal of these studies was to reconstruct the Stock Pond on the Johnston Ranch Uplands property, which is the smallest of the existing reservoirs, to create roughly 40 AF of water storage annually to irrigate 53 acres of farmable land without the need for new diversions from Arroyo Leon Creek. Once constructed, a forbearance agreement would restrict dry-season diversions from the creek.

The Stock Pond also provides aquatic habitat for listed species and stock water for cattle grazing within the 644-acre Uplands portion of Johnston Ranch, which was purchased by the District in May 2024 and is now part of Miramontes Ridge Open Space Preserve. Preceding the District's purchase of the Johnston Ranch Uplands, the RCD and POST selected the Stock Pond as the most suitable for reconstruction based on its proximity to the farmland and its severely reduced capacity, estimated at just one acre-foot due to sedimentation in the Stock Pond. By 2020, the RCD had prepared conceptual designs for expanding the Stock Pond to roughly 40 AF for an estimated cost of \$2.5 to 3.3 million. In June 2023 the Department of Water Resources awarded the RCD grant funds to design, permit, and implement the Stock Pond reconstruction project by 2026, with \$2.25 million allocated for construction fees. However, the 2020 cost estimate exceeded the implementation grant funds because the volume of excavated soils greatly exceeded the amount of fill material required to build the new reservoir, requiring offsite disposal.

## **DISCUSSION**

### *Restoration Opportunities*

In January 2023, the Stock Pond earthen berm sustained minor damage from the 2022-23 winter storms. Although immediate action was not required to repair the damage, the event highlighted the need to improve the Stock Pond not only for increased agricultural and stock water value, but also for safety.

At the same time, District staff identified the need for other onsite restoration work for special status species such as CRLF and SFGS and initiated studies for a District-led restoration project to provide a restored outflow channel and riparian corridor connecting the Stock Pond to Arroyo Leon Creek. This restoration will address hillside erosion resulting from the pond outfall being routed away from the Stock Pond's watershed into an adjacent drainage. If pursued separately from the RCD-led Stock Pond reconstruction project, preliminary designs indicate the needed restoration work will cost approximately \$500,000 to 850,000.

District staff and the RCD therefore evaluated the feasibility of partnering to combine District-led channel restoration work and to improve the RCD design for the Stock Pond reconstruction to maximize the restoration benefits of both projects and minimize offsite mitigation requirements. Under this partnership, the RCD would manage one combined project and serve as lead agency under CEQA. This approach better serves the District's mission to protect and restore the environment and encourage viable agricultural use as well as the RCD's mission to build a thriving environment for all. It also provides valuable mitigation to offset project impacts as required by state and federal regulations.

### Alternative Project Design

With support from the RCD, in 2024, the District hired a consultant to prepare an alternative conceptual design and cost estimate that accomplishes the District's restoration goals and implements POST and the RCD's decades-long effort to replace agricultural water supplies. The outcome is a two-pond system where the Stock Pond is improved for habitat value, expanded to roughly 13 AF, and conveys water via gravity pipeline to a newly constructed 25-AF Johnston Ranch Agricultural Reservoir used for irrigation supply. The new Agricultural Reservoir would be situated on the District-owned Johnston Ranch Uplands property yet serve the POST-owned Johnston Ranch farm property. Separation of the Stock Pond and Johnston Ranch Agricultural Reservoir enables clear management, monitoring, and maintenance responsibilities among the District, RCD, POST, and farm operator, resolves the imbalance of excavated soil and fill material in the 2020 conceptual design, and meets all project objectives.

A water availability analysis indicates that the runoff generated in an average year will fill both the Stock Pond and Reservoir and intermittently flow to Arroyo Leon Creek through the restored riparian corridor. The District would operate the Stock Pond to (1) maintain water availability for habitat and stock water (first priority), (2) supply water to the Reservoir for irrigation (second priority), and (3) allow surplus water to flow to Arroyo Leon Creek (third priority). The cumulative outcome of the proposed partnership is highly desirable because it accomplishes the goals of the District, RCD, and POST, and supports the farming operation.

### Alignment with Agricultural Policy

The proposed District-RCD partnership supports several policies within the District's Agricultural Policy:

- Policy AG-1: In the coastside protection area, the fee purchase and protection of agricultural lands will focus on properties that also provide benefits for sensitive habitat and natural resource values and/or compatible low intensity recreational opportunities. In the coastside protection area, the preservation of significant agricultural lands without significant natural resource or public access benefits, such as row crops, should be supported through partnerships and led by partners.
- Implementation Measure d): In the coastside protection area work in partnership with organizations like Peninsula Open Space Trust (POST) to prevent the conversion or loss of intensive agricultural lands through funding contributions with the ultimate goal of transferring these lands to private farmers subject to land protections such as agricultural conservation easements.
  - Project Benefit: By partnering with POST and the RCD, the project will improve agricultural water security and put 53 acres of farmland back into production, returning the total irrigated farmland to 136 acres.
- Policy AG-4: Provide necessary infrastructure and incentives to support and improve agricultural operations, where appropriate.
- Implementation Measure b): Develop water infrastructure to support agricultural operations that also maintains and protects natural resource values.
  - Project Benefit: The Stock Pond will be expanded and recontoured into a 13 AF habitat pond and drain seasonally into the 25 AF Agricultural Reservoir. The Stock Pond will

be managed to support CRLF breeding and manage invasive bullfrogs. The Agricultural Reservoir will be designed to exclude wildlife and sediment buildup for reliable agricultural operation. Erosion will be addressed and the riparian corridor to Arroyo Leon will be restored.

- Implementation Measure f): Prioritize investment in water infrastructure that has direct natural resource benefit, such as distribution of water to improve grazing management and livestock rotation in grassland habitats or investing in storage, distribution to reduce reliance on instream water use and the improvement or creation of stock ponds that also provide critical habitat.
  - Project Benefit: The Stock Pond will improve stock water availability for the Conservation Grazing Program while simultaneously protecting streamflow in Arroyo Leon Creek during the low-flow dry season through a forbearance agreement between the RCD and farm owner.
- Policy AG-7: Encourage environmentally sensitive and sustainable agricultural practices on District lands that preserve and protect water quality and riparian habitats.
- Implementation Measure e): Identify and replace diversions that strain naturally limited water sources, especially those that significantly impact special status species, with other reliable sources (e.g., wells, retention ponds, etc.) (Resource Management Policies WR-8).
  - Project Benefit: The project will protect federally threatened steelhead and endangered coho in Arroyo Leon Creek by using abundant surface runoff to meet onsite water demand. The farm's irrigation infrastructure will be upgraded from 60% to 80% efficiency to reduce water demands.

### Cost Estimate

The Alternative Project Design accomplishes the goals of the District and RCD, but costs are higher because the project supports both agricultural operations and habitat restoration. In order to meet anticipated project costs, the District and RCD are preparing to enter into a partnership to fund and implement the project.

The remaining design and permitting fees to complete the District/RCD partnership will be paid for by the RCD's grant. The RCD will serve as lead agency under CEQA and provide project management, technical expertise, and construction oversight, resulting in less District staff time compared to if the restoration work was pursued separately.

The construction cost estimate of the alternative design was produced by the design consultant and refined by a third-party cost estimator. Construction fees to construct both reservoirs and complete the District-recommended restoration work range from \$3.26 to 4.6 million. The RCD's grant will cover up to \$2.25 million, leaving an implementation funding gap of between \$1.06 to \$2.32 million, inclusive of the District-recommended restoration work (estimated at up to \$850,000).

<b>Johnston Ranch Uplands Habitat and Agricultural Improvements - Cost Estimate for Future Implementation</b>	<b>Total Estimated Cost Range</b>	
	<b>Low End</b>	<b>High End</b>
Stock Pond Reconstruction & District-recommended Restoration Work	\$1,701,000	\$2,320,000
Agricultural Reservoir Construction	\$1,511,000	\$2,224,000
Construction Permit Fees	\$44,000	\$52,000
<b>Total Project Fees (inclusive of restoration work)</b>	<b>\$3,256,000</b>	<b>\$4,596,000</b>
<b>Funding Gap</b>	<b>\$1,006,000</b>	<b>\$2,371,000</b>

## **NEXT STEPS**

The RCD and District will continue to work in partnership to produce 65% designs and begin permitting of the Johnston Ranch Agricultural Reservoir and Stock Pond through the remainder of the fiscal year. Investigations through the end of this calendar year will include:

- Geotechnical studies
- Refining the water availability analysis
- Biological resource evaluations
- Grazing access planning
- Water management development

The District and RCD will continue to refine the project design to better determine the outstanding funding need, at which point a funding agreement between the District and the RCD will be developed for Board consideration and approval.

Attachment(s):

1. Project Site Map
2. Project Conceptual Design



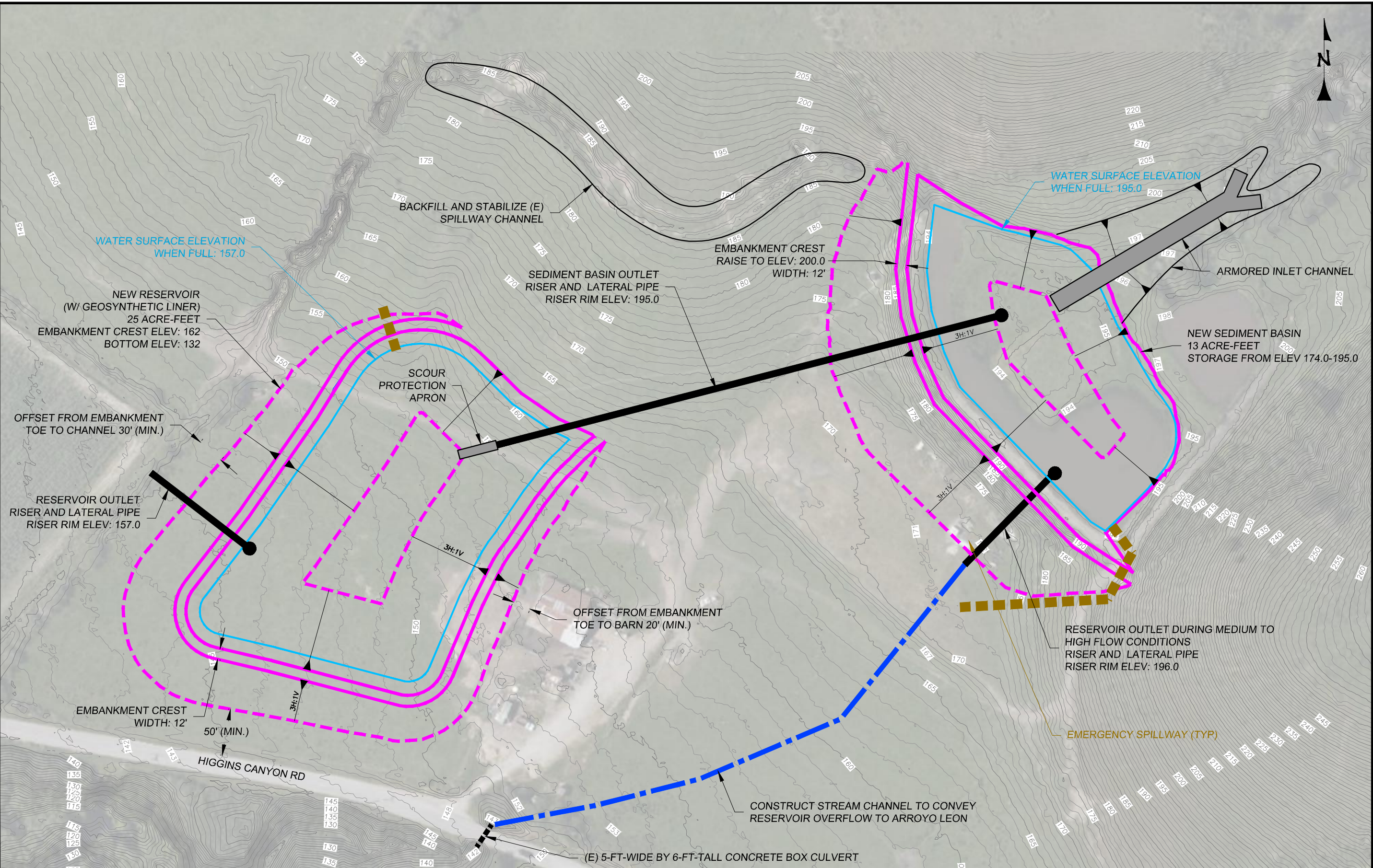
### Johnston Ranch Uplands, Miramontes Ridge Preserve

- |                               |                                      |
|-------------------------------|--------------------------------------|
| <b>Trail (classes)</b>        | ..... Abandoned / Unmaintained Trail |
| Paved Road                    | <b>Road Centerline (major)</b>       |
| Unpaved All-Season Road       | Arterial                             |
| Unpaved Seasonal Road         | Highway                              |
| Trail                         | Preserve Boundary (fill)             |
| Abandoned / Unmaintained Road |                                      |

Midpeninsula Regional  
Open Space District  
(MROSD)  
8/27/2024



Data Source(s): Esri, Airbus DS, USGS, NGA, NASA, CCGAR, N Robinson, NCEAS, NIS, OS, NMA, GeoBlast, FEMA, Intermap and the GIS user community, Golden Gate National Parks Conservancy and San Mateo County



**DRAFT**  
 NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:  
 MIDPENINSULA REGIONAL  
 OPEN SPACE DISTRICT

POND  
 OPTION WEST  
 OF BARN

JOHNSTON RANCH  
 CONCEPT LEVEL DESIGN

DESIGNED BY: BZ  
 DRAWN BY: KB  
 CHECKED BY: MW  
 DATE: 5/7/24  
 JOB NO.: 20-013

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS  
 0 1"

FIG.1

**SITE PLAN**  
 SCALE: 1" = 50'

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