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September 21, 2022

TO: LOCSD Utilities Advisory Committee

FROM: Ron Munds, General Manager

SUBJECT: **Agenda Item 6 - 09/21/2022 Utilities Advisory Committee Meeting**
Water Supply Resiliency Intertie Project

STAFF RECOMMENDATION

Review and Provide Recommendations to the Board

DISCUSSION

Background

In September 2021, the Board provided direction for staff to investigate alternative water supply resiliency project to address current and future water demands of the District. The direction and action of the Board were based on a County Regional Water Infrastructure Resiliency Plan (Plan) completed in 2021, which ranked Los Osos as one of the top five most vulnerable communities for future water supplies because of its single source, local groundwater.

The options in the Plan identified the State Water Project and Whale Rock Reservoir as potential water sources. Since Whale Rock Reservoir is a raw water source which would require the construction of a treatment facility, the focus became a connection to the Chorro Valley State Water pipeline which branches off the Coastal Branch of the state project near San Luis Obispo and runs to Morro Bay.

Operationally, the conceptual plan is to utilize supplemental water as a strategy to help, in the short-term, balance and add long-term resiliency to the groundwater basin. The District is committed to the basin management strategies in the Los Osos Basin Plan, but with the changing climate and unknowns of future weather events like extended drought periods; it is prudent and good planning to consider other water sources.

Water Resiliency Project Components

There are two components to the project being considered, one being the pipeline and the second securing additional water for the community. The following is a summary of the components.

Intertie Pipeline

The attached Technical Memorandum prepared by the Wallace Group provides a high-level snapshot of the pipeline alignment with the three options that were considered along with a realistic cost estimate for the preferred alternative.

Staff and District Engineer had several meetings with County and City of Morro Bay staff to discuss the project alignment and the challenges that may be encountered during design and construction. Wallace Group considered the escalation in the cost of labor and material when developing the cost estimate. As recent history shows, it's hard to predict costs too far into the future because of supply chain issues and inflation. The estimated cost of the pipeline in 2022 dollars is $8 million.

Water Supply
The State Water Project is undergoing some significant changes both at the State and local levels. The State has instituted new water management tools, which make it easier to purchase and sell water in the system. Additionally, the County holds approximately 14,000 acre-feet of un-allocated water, which the Board of Supervisors has indicated needs to be allocated in the near future to remove the property tax burden from properties not benefitting from the project.

These changes, plus the willingness of some State Water subcontractors wanting to sell some of their excess allocation, provide the District a unique opportunity to secure water for the community. Inquiries and negotiations on multiple fronts are complicated but staff is confident that there will be water available as the separate prospects unfold.

Next Steps

The following are the next steps if the committee recommends and the Board decides the intertie pipeline project should move forward.

- Send a correspondence to the County expressing the District's interest in acquiring State Water
- Continue negotiations to secure water, preferably Table A water, which is a more assured and reliable water contract
- Move forward with the environmental work based on the preliminary preferred design presented in the Technical Memorandum in order to position the project for future grant and other funding

MEMORANDUM

Los Osos CSD
Los Osos CSD Water Supply Resiliency Inter-Tie

Date: August 29, 2022

To: Ron Munds, General Manager

From: Rob Miller, PE; Steven Tanaka, PE

Subject: Water Supply Resiliency Intertie

This memorandum provides technical information on a potential Water Supply Resiliency Inter-tie (Project) for the Los Osos CSD, that would allow for the delivery of available surplus potable water from outside water sources to the District. Climate change and extended drought conditions on the West Coast are a reality, and must be planned for by all local water agencies. Ensuring the District's water supply is reliable and resilient is the driver for this memorandum.

The Project would allow delivery of potable water to the District's water distribution system, thereby reducing the amount of local groundwater pumping from the Los Osos Groundwater Basin (thus providing further protection against seawater intrusion). The Project could also serve other future purposes, not currently identified, that may benefit other entities such as the City of Morro Bay. This memorandum does not delve into water allocations/water rights issues as it may pertain to deliveries of water to the District; rather this memorandum focuses on technical aspects of conveying available potable water to the District's potable water system.

The Project would require an inter-tie, or physical connection to a local water transmission facility, to allow transport of potable water to the District's water system. This would essentially be a vault with piping, meter, and valves (and pump station if necessary), that would allow the controlled and metered flow of potable water to the Los Osos CSD. The only identified nearby water transmission system is the Chorro Valley Pipeline (CVP), which delivers State Water to the City of Morro Bay. An inter-tie to the CVP would need to be constructed near South Bay Boulevard and Highway 1 in the City of Morro Bay, and a roughly 2.5-mile pipeline from this location to the District's water system (at Santa Ysabel Avenue/South Bay Boulevard). The intertie project would include the following elements:

1. New 12" pipeline, around 2.5 miles in length, extending from near Highway 1/South Bay Boulevard southerly to the community of Los Osos, north of South Bay Boulevard/Santa Ysabel Avenue. The pipeline is expected to be a 12" PVC C900 Class 235 pipeline, except at bridge crossings and in the vault where the pipeline would be ductile iron. There would be two creek crossings along South Bay Boulevard, at Chorro Creek and Los Osos Creek. This pipeline diameter would be more than adequate to serve water delivery needs to the District; however, the majority of pipeline construction costs are with the trench, backfill and pavement restoration works, and it is recommended that

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this 12" pipeline be constructed now, in the event there are future identified needs for the District, and/or other local communities.

2. Inter-tie or turn-out, connecting to the Chorro Valley Pipeline, which includes valving, tie-in to the 18" CVP, and metering vault. It is envisioned the metering vault would include a check valve to safeguard against the potential to introduce water in the CVP.

It is assumed that the intertie would be designed for a normal flow rate equal to 200 AFY, fed at a uniform rate 24 hours per day, 48 weeks out of the year, accounting for an assumed 4 week period each Fall when State Water pipeline is shut down for maintenance. Thus, the maximum flow rate would be 0.3 cubic feet per second (cfs), or 134 gpm. For a pipe length of ~13,000 LF, dynamic headloss is around 0.7 feet. If accounting for bends, fittings, valves, and flow meter, headloss may be around 1 foot to 2 feet (0.5 to 1 psi).

Based on review of available information on the CVP, it is estimated that the hydraulic gradeline of the CVP, near South Bay Boulevard and Highway 1 in Morro Bay, is approximately 275 feet. The HGL of the Los Osos CSD system is estimated at 240 feet based on the elevation/height of the 16th Street Tank. The HGL of the City of Morro Bay's water distribution system in the vicinity of South Bay Boulevard/Highway 1 is estimated to be 255 feet. **Confirmation of the hydraulic gradeline of the CVP will require further evaluation**; however, this makes sense relative to the fact that CVP water is introduced into the Morro Bay water system without further pumping at the turnout.

Options for Tie-In To Chorro Valley Pipeline

There are several options for tie-in to the CVP, to supply potable water to LOCSD. Each of these three options would require a suitable location for the turn-out/vault near the CVP, and would require an undercrossing by jack and bore encased crossing. Each of these options also requires the inter-tie pipeline to extend through the intersection of South Bay Boulevard and Quintana Road, which is highly congested due to construction of the Morro Bay WRF and various pipelines required to convey raw and treated wastewater to and from the new plant (at the northerly terminus of South Bay Boulevard, north of Highway 1). The three likely points of connection were identified for tie-in to the CVP, as follows (see Figure 1):

1. Option 1. This location is east of South Bay Boulevard/Highway 1, adjacent to and east of an existing trailer park. This requires the pipeline to extend northerly to Quintana Road, then head east on Quintana Road, before crossing under Highway 1.
2. Option 2. This location would require extending the inter-tie pipeline westerly along Quintana Road (past Morro Bay Lift Station No. 3) in the vicinity of the mortuary, before crossing under Highway 1. As with Option 1, this alignment will likely be very difficult given the extent of utility congestion in Quintana Road in this area.
3. Option 3. This location requires extending the inter-tie pipeline under the overpass at Highway 1along South Bay Boulevard. It is believed that this

alignment may be virtually impossible given the extent of utilities in South Bay Boulevard, from Quintana Road to the new Morro Bay WWTP.

Other Considerations. Other considerations for this Project include:

- Stagnant Water. When this intertie is not used, stagnant water in the pipeline would need to be purged prior to each use. A single pipe volume is roughly 75,000 gallons that would need to be purged and discharged, each time the inter-tie use is initiated. The District has identified that the existing Basin at South Bay Boulevard and Santa Ysabel would be used to receive blowoff/purge water from the pipeline flushing, which would be recharged to the local groundwater basin. The conveyance pipeline would include valves and controls to purge water to the basin, prior to entry into the District's water system. This would be very similar to a pump-to-waste feature for a potable water well.
- Utility Congestion. As mentioned prior, at Quintana Road and South Bay Boulevard, there is significant utility congestion due to the new sewer pipelines recently installed for the Morro Bay Water Reclamation Facility (WRF). See Figure 2. Getting a pipeline through to the CVP in this area will be challenging, particularly with respect to achieving adequate sanitary separate per California Division of Drinking Water (DDW) separation regulations. The least undesirable option would be to select Option 1 as the probable tie-in point for this evaluation.

Cost Considerations

A preliminary opinion of cost was developed for this potential Project. As stated above, it is assumed that Option 1 would be the preferred tie-in location, as it would have the least amount of utility interference with pipelines associated with the Morro Bay WRF. The following was assumed:

- ~13,000 LF of 12" PVC C900 Pipe
- Two creek/bridge crossings on South Bay Boulevard
- Single point of connection at LOCSD (South Bay Boulevard/Santa Ysabel), plus blowoff facilities to purge water.
- Engineering and CM combined, 20% of construction
- Administrative costs at 5% of construction
- Environmental review/, $60,000
- Environmental monitoring during construction $75,000

This conceptual cost estimate is expressed in current day (Year 2022) dollars, and must be escalated to future years depending on timing of the Project. The preliminary cost opinion for this Project, expressed in Year 2022 dollars, is $8 Million. The conceptual cost for this inter-tie is included in Table 1.

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Table 1. Conceptual Cost Summary

Category	Item	Cost, $
CONSTRUCTION	Pipeline	$ 5,050,000
	Vault/Turnout	$ 150,000
	Blowoff/Control Valve	$ 25,000
Subtotal:		**$ 5,225,000**
DESIGN/CM	Design	$ 522,500
	CM	$ 522,500
	Administrative@5%	$ 261,250
	Environmental Review	$ 60,000
	Environmental Monitoring During Construction	$ 75,000
Subtotal:		**$ 1,441,250**
PROJECT TOTAL		$ 6,666,250
	Contingency@20%	$ 1,333,250
GRAND TOTAL		**$ 7,999,500**

REFERENCES:

1. Waterworks Engineers. City of Morro Bay Water Reclamation Facility Project, Lift Stations and Offsite Pipelines, Bid Set, Volume 3 – Drawings. May 2020
2. Carollo Engineers. Onewater Morro Bay, Final. October 2018.
3. Water Systems Consulting, Inc. Capacity Assessment of the Coastal Branch, Chorro Valley, & Lopez Pipelines. December 2011.

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1 inch = 1,250 Feet

Figure 1

Los Osos Morro Bay Resiliency Intertie

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MAP DOC: 7/13/22
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EXHIBIT NOTES:
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Figure 2. Utility Congestion at Quintana Road/South Bay Boulevard