

**NORTH BAY WATER REUSE AUTHORITY  
TECHNICAL ADVISORY COMMITTEE**

Monday, May 11, 2015

Agenda

Novato Sanitary District, 500 Davidson Street, Novato, CA 94945

Consultants unable to attend in person may call in: 1-866-906-7447 Pass Code: 2428170#

9:30 a.m.

	1.		Call to Order and Self Introductions
<b>Page 1</b>	2.	Action	Approval of Agenda
	3.		Public Comments
<b>Pages 2 – 4</b>	4.	Action	Consent Items a. April 27, 2015 TAC Meeting Minutes
<b>Page 5 Page 6</b>	5.	Information	Report from the Program Manager a. Action Items from April 27, 2015 Meeting
	6.	Discussion	Phase 2 Working Discussion <ul style="list-style-type: none"> <li>● Process Overview</li> <li>● Data needs and required follow-up</li> <li>● Identifying Your Values: Ranking Objectives and Subobjectives update</li> <li>● Scoring Weighting and Ranking Individual Projects</li> <li>● Member Agency Direction regarding Schedule</li> </ul>
<b>Pages 7 - 15</b>	7.	Action	Possible Addition of New Member Agencies to Phase 2 – Budget and Cost Sharing Issues
	8.	Information	Items from Committee, Agency Staff, or Consultants
	9.	Information	Items for Next Agenda (June 22, 2015 at Novato Sanitary District)

The North Bay Water Reuse Authority complies with ADA requirements and will attempt to reasonably accommodate individuals with disabilities upon request. Please contact **Chuck Weir at 510-410-5923** with any questions. .

**North Bay Water Reuse Authority  
Technical Advisory Committee  
Meeting Minutes  
April 27, 2015**

**1. Call to Order and Self Introductions**

Chair Healy called the Technical Advisory Committee (TAC) meeting to order at 11:35 a.m. on Monday, April 27, 2015. The meeting was held at Novato City Hall Council Chambers, 901 Sherman Avenue, Novato, CA 94945.

## Committee Members Present

Tim Healy, Chair	Napa Sanitation District
Pam Jeane, Vice Chair	Sonoma Valley County Sanitation District
Grant Davis	Sonoma County Water Agency
Liz Lewis	Marin County
Susan McGuire	Las Gallinas Valley Sanitary District
Drew McIntyre	North Marin Water District
Phillip Miller	Napa County
Dan St John	City of Petaluma

## Others Present

Chuck Weir, Program Manager	Weir Technical Services
Kevin Booker	Sonoma County Water Agency
Ginger Bryant	Bryant & Associates
Jenny Gain	Brown and Caldwell
Robin Gordon	Data Instincts
Jim Graydon	Kennedy Jenks Consultants
Jason Holley	City of American Canyon
Susan Huang	Kennedy Jenks Consultants
Craig Lichty	Kennedy Jenks Consultants
Mark Millan	Data Instincts
Mike Savage	Brown and Caldwell
Jake Spaulding	Sonoma County Water Agency
Dawn Taffler	Kennedy Jenks Consultants
Leah Walker	City of Petaluma

**2. Approval of the Agenda**

The TAC unanimously approved the agenda as presented.

**3. Public Comments**

There were no public comments.

**4. Consent Calendar****4.a March 23, 2015 TAC Meeting Minutes**

The March 23, 2015 TAC Meeting Minutes were unanimously approved as presented.

## 5. Report from the Program Manager

The Report from the Program Manager included the following items:

### 5.a Action Items from the March 23, 2015 Meetings

The TAC reviewed the Action Item List and noted that all items were current.

## 6. Summarize Board Meeting and List Action Items

The TAC discussed the Board meeting and noted the following action items:

- a. Funding for FY2015/16 with no change in previously approved member agency cost sharing was approved by the Board.
- b. City of American Canyon was approved as an Associate Member and SCWA can issue an invoice for the \$5,000 annual membership.
- c. Blank and summarized score sheets for ranking the objectives and subobjectives will be sent to the TAC for use in discussing with their Boards. The goal would be for each Phase 2 agency to have one complete set ready for the May 11, 2015 TAC meeting.

## 7. Phase 2 Working Discussion

Mike Savage and Dawn Taffler led the TAC in a discussion of the following items:

- Process Overview
- Identifying Your Values: Ranking Objectives and Subobjectives
- Scoring Weighting and Ranking Individual Projects
- Scoring and Weighting to Rank Projects
- Member Agency Direction

There was discussion regarding how to quantify the potable offset benefit of storage systems: based on size, or number of times the facility is filled and emptied. The number of times filled appeared to be the preferred method.

## 8. Reallocation of Unused Phase 1 Funding

The TAC discussed various options listed in the agenda report for reallocation of unused Phase 1 Funding. The TAC concluded that carrying over funds to Phase 2 or leaving the funds unassigned were not viable options. The TAC agreed that the language in the MOU was flexible enough to allow multiple agencies to benefit from any unused funding. Sonoma County Water Agency may have between \$2-4 Million of unused Phase 1 Funding and will bring a final number to the TAC at a future meeting. As an action item, the TAC unanimously agreed that if funds were reallocated, Exhibits B and C of the Memorandum of Understanding (MOU) would be updated to reflect the revised allocations. The TAC further agreed that as described in the MOU expenses for Phase 1 would be reallocated as described in the MOU dating back to FY2005/06 and continuing to the conclusion of Phase 1.

## 9. Modification of Bryant & Associates Agreement for FY2015/16 to Increase the Retainer for The Ferguson Group from \$6,500 to \$8,500 per Month

The TAC discussed the rationale for increasing The Ferguson Group's (TFG) monthly retainer for FY2015/16 as described in the memo from Ginger Bryant. The TAC noted that there would be no change in the FY2015/16 Budget or Member Agency cost allocations and that the funding would be coming from unspent funds for the Triple Bottom Line analysis that is currently in Brown and Caldwell's agreement. This will eventually require a modification to both agreements by the SCWA Board with approval by the NBWRA Board. Following discussion and as an

action item, the TAC unanimously agreed that SCWA modify the agreement with Bryant & Associates for FY2015/16 to increase the retainer for TFG from \$6,500 to \$8,500 per month.

### **10. Possible Addition of New Member Agencies to Phase 2 – Budget and Cost Sharing Issues**

The TAC discussed the budget and cost sharing issues associated with City of American Canyon becoming a new Associate Member (approved by the Board April 27, 2015 prior to the TAC meeting) and the possibility of Marin Municipal Water District rejoining as a Phase 2 member. Issues discussed included: status as an Associate Member, budget impacts for engineering and environmental services for new or modified projects that have not been part of the current process, responsibility for increased costs, the buy-in fee as described in the MOU, addressing the concept of “once you’re in, you’re in for the duration,” and deadlines for decisions. No specific recommendations were decided by the TAC. Instead, as an action item, the TAC requested that the consultants review all the issues and bring specific recommendations for consideration at the May 11, 2015 TAC meeting.

### **11. Items from Committee, Agency, Staff, or Consultants**

Kevin Booker noted that the TAC will be receiving an email from Andria Loutsch with questions regarding the IRWMP application. Phil Miller will forward a link to a video from the California State Association of Counties recognizing Napa County’s Flood Control Program.

### **12. Items for Next Agenda, May 11, 2015 at Novato Sanitary District**

Action items included the following:

1. B&C will send blank objective and subobjective rating sheets as well as summarized sheets from the April 27, 2015 Board Meeting.
2. TAC members will bring completed Member Agency objective and subobjective sheets to the meeting.
3. Funding for FY2015/16 with no change in previously approved member agency cost sharing was approved by the Board. SCWA can issue invoices for FY2015/16.
4. City of American Canyon was approved as an Associate Member and SCWA can issue an invoice for the \$5,000 annual membership.
5. SCWA will amend the agreement with Bryant & Associates to increase the retainer for The Ferguson Group from \$6,500 to \$8,500 per month.
6. If Phase 1 funds are reallocated, Exhibits B and C of the Memorandum of Understanding (MOU) will be updated to reflect the revised allocations. The TAC further agreed that as described in the MOU expenses for Phase 1 will be reallocated as described in the MOU dating back to FY2005/06 and continuing to the conclusion of Phase 1.
7. The TAC requested that the consultants review all the issues associated with adding new projects and agencies to Phase 2 and bring specific recommendations for consideration at the May 11, 2015 TAC meeting.

There being no further business, Chair Healy adjourned the meeting at 1:20 p.m.

**ITEM NO. 5 REPORT FROM THE PROGRAM MANAGER**

The Report from the Program Manager includes the following items:

5.a Action Items from April 27, 2015 Meeting

The list of Action Items is attached for the TAC's information. All items are completed or in progress.

Item No. 6 Phase 2 working Discussion

The consultant team will lead the TAC in a discussion of projects and ranking criteria. Topics will include:

- Process Overview
- Identifying Your Values : Ranking Objectives and Subobjectives
- Scoring Weighting and Ranking Individual Projects
- Scoring and Weighting to Rank Projects
- Member Agency Direction

Item No. 7 Possible Addition of New Member Agencies to Phase 2 – Budget and Cost Sharing Issues

Please refer to the separate agenda report for this item.

## NBWRA Board and TAC Short-Term Action Item List

Meeting Date: April 27, 2015

Task	Responsible Party	Due Date	Status	Completion Date
Submit application for 2015/16 WaterSMART Phase 2 Feasibility Study	B&C, Bryant, SCWA, TAC	3/1/2015	Application will be for \$450,000 and will not include TBL or environmental work at this time. Application submitted.	2/27/2015
Finalize List of Phase 2 Projects for Feasibility Study	Board, TAC, Consultants	TBA	Minor changes discussed on March 23, 2015. Projects to be prioritized for the Feasibility Study. Possible additions if new members participate in Phase 2.	
Send blank objective and subobjective rating sheets as well as summarized sheets from the April 27, 2015 Board Meeting to the TAC. TAC to discuss with their Boards as needed and bring completed sheets to the May 11, 2015 TAC meeting.	B&C, TAC	5/11/2015	In process.	
Address possible City of American Canyon Phase 2 Project	Holley, Healy, Consultants	4/27/2015	City of American Canyon approved as an Associate Member April 27, 2015. Current plan is for the City and Napa San to work on a joint storage project. SCWA can issue a \$5,000 invoice to the City.	
Add Phase 1 project costs to the Phase 1 project status report as a separate page.	Weir, Spaulding	4/15/2015	No new updates.	
Draft FY2015/16 Budget	Consultant team	4/15/2015	Budget and Member Agency cost sharing for FY2015/16 approved by the Board on April 27, 2015. SCWA can issue invoices to the member agencies.	
Consultants to review all the issues associated with adding new projects and agencies to Phase 2 and bring specific recommendations for consideration at the May 11, 2015 TAC meeting.	Consultant team	5/11/2015	To be discussed at May 11, 2015 TAC meeting.	
Amend the agreement with Bryant & Associates to increase the retainer for The Ferguson Group from \$6,500 to \$8,500 per month.	SCWA	6/30/2015	In process.	
Proposal to BAIRWMP	SWCA, member agencies, CDM, B&C	4/20/2015	Proposal Submitted April 20, 2015. Total Project cost is \$26,900,000. Projects include Las Gallinas, Novato San, Petaluma, Sonoma Valley, and Napa San. Questions received from Andria Loutsch from BAIRMP on April 27, 2015.	4/20/2015
Reallocation of Phase 1 Funds.	SCWA, Weir, TAC	TBD	If Phase 1 funds are reallocated, Exhibits B and C of the Memorandum of Understanding (MOU) will be updated to reflect the revised allocations. As described in the MOU expenses for Phase 1 will be reallocated dating back to FY2005/06 and continuing to the conclusion of Phase 1.	
Consultants begin ensuring that all documents added to the website meet accessibility standards.	Weir/B&C/Bryant/SCWA	11/30/2014	Only compliant documents now added to website. Currently this has limited documents to Agenda cover sheets and minutes. Requires additional research and effort to implement for presentations and complex reports.	Ongoing
Share notices regarding conference presentations and award programs with the TAC.	All	Ongoing		

**ITEM NO. 7 POSSIBLE ADDITION OF NEW MEMBER AGENCIES TO PHASE 2 – BUDGET AND COST SHARING ISSUES**

**Action Requested:** That the TAC discuss and agree on conditions for the possible addition of City of American Canyon (in conjunction with Napa Sanitation District) and Marin Municipal Water District.

The TAC discussed this issue at the April 27, 2015 meeting and requested that the consultant team provide recommendations for its consideration at the May 11, 2015 meeting. The NBWRA has always been open to accepting new member agencies and doing its best to accommodate their needs to become part of the program. Two agencies have expressed interest in participating in Phase 2:

- City of American Canyon (City) is considering a joint project with Napa Sanitation District (Napa San) and has been approved as an Associate Member.
- Marin Municipal Water District opted out of Phase 2 at the conclusion of the Scoping Study. They paid the first \$25,000 installment to become a Phase 2 member prior to dropping out and becoming an Associate Member. They are considering returning as a full member for Phase 2.

There are a variety of issues that should were reviewed by the consultant team, including:

1. Status as an Associate Member, which is defined by the MOU. The MOU states, “Associate Members may not sponsor current projects in Phase 1 or Phase 2 but may partner with Member Agencies.”
2. What are the budget impacts of adding new or expanded projects to the scope for engineering and environmental analysis? If costs are increased, who pays? Note that there are unused TBL funds that can offset some cost increases, but likely not all.
3. The MOU requires a buy-in fee for new members to help offset the investment made by Phase 1 participants to reach this stage of the program.
4. How to address the concept adopted for Phase 1, “once you’re in, you’re in for the duration”?
5. Other Issues.

The consultant team has discussed the issues and has the following analysis and recommendations:

**City of American Canyon**

City of American Canyon became an Associate Member effective April 27, 2015. Their joint project is described in the attached Project Description from Napa San and the City. The Project does not include any connections to the City and thus, the Phase 2 Project Area shouldn’t

change. It is one of four options to be evaluated. It is important to note that only one of these options would likely ever be built. The estimated cost is \$25,000,000. It is possible that this project may increase the costs for the feasibility study, but the costs should not be significant. Additional costs will be shared on the current basis of cost sharing and reallocation of costs will occur at some point in the future. If there are increased costs, they can be covered by using funds from the triple bottom line analysis that will not be conducted. An amendment to the Brown & Caldwell agreement will be needed to accommodate this. This results in no changes to the current cost sharing method or member agency cost allocations. The City has expressed its willingness to pay for any additional costs through an arrangement with Napa San.

It should be noted that the situation between the City and Napa San is similar to the previous relationships between North Marin Water District (NMWD)/Las Gallinas Valley Water District, NMWD/Novato Sanitary District, and Napa County/Napa San. Once projects were fully analyzed NMWD and Napa County became full members for Phase 1.

#### Recommendations for City of American Canyon

1. At this time there are no recommendations to the current cost sharing methodology.
2. If there are increased costs for the feasibility study, an amendment to the Brown & Caldwell (B&C) agreement is needed by moving funds from the triple bottom line analysis to the feasibility study. This does not change the total value of the B&C agreement.
3. At some point a better defined project may result in a project specific to the City and they would need to become a full member subject to all terms and conditions of the Memorandum of Understanding.

#### **Marin Municipal Water District**

Marin Municipal Water District (MMWD) is currently evaluating options for projects that could fit well in Phase 2. There has been some discussion of MMWD rejoining Phase 2. MMWD was a member for the scoping study, paid its initial instalment of \$25,000 for full membership, and then opted to become an associate member prior to the onset of the feasibility study. The consultant team has discussed the issues and has developed recommendations for MMWD.

#### Recommendations for Marin Municipal Water District

1. Require a commitment for their Phase 2 participation by the June 22 Board/TAC meeting. They may not have a project cost completed by then, so we can wait until July 20 for that number so a final recommendation on cost implications and revised cost sharing can be presented to the Board at the July 27, Board/TAC meetings.
2. As a Phase 2 participant, MMWD should be responsible for the following costs:

- FY14/15 Phase 2 and Joint Use costs. Joint Use costs for FY14/15 were \$30,188. Their share of Phase 2 costs for FY14/15 will be based on their estimated project cost, which they will provide by July 20. B&C has indicated that adding an additional member and project(s) adds \$104,000 to the Phase 2 budget for FY15/16 and the cost sharing will be adjusted based on the new total and MMWD's percentage of project costs. The other agency costs should go down for FY2015/16. MMWD becomes a member subject to all cost implications in the FY16/17 budget and beyond until Phase 2 is completed.
- MMWD will have to pay the rest of its buy-in fee using the 0.6% of their project cost minus the \$25,000 already paid.

#### Other Issues and Recommendations

1. For FY2015/16, the increase in feasibility costs for American Canyon and MMWD will come from TBL costs already in B&C's contract.
2. It is not yet known if the increase in environmental effort will be totally covered by unused TBL costs.
3. Amend B&C Agreement to move \$24,000 from TBL to Bryant & Associates for the extra \$2,000 per month retainer for TFG. This was approved by the TAC at the April 27, 2015 meeting.
4. Amend B&C agreement to move \$104,000 (if MMWD rejoins for Phase 2) plus something for American Canyon from TBL costs to cover the increased costs for feasibility efforts. The net change to B&C's agreement is a reduction of \$24,000. This can be done in conjunction with the Bryant & Associates amendment for TFG.
5. A second amendment may be needed to B&C's agreement for FY2016/17 for additional environmental effort for MMWD and Napa San/American Canyon storage project. We will not know if TBL can cover all of that until the revised effort is quantified.

#### **Recommendations**

It is recommended that the TAC discuss the issues outlined above and approve the recommendations discussed for City of American Canyon, Marin Municipal Water District, and consultant agreement amendments as described herein.



## Project Description

From: Tim Healy, Napa Sanitation District (NSD)  
Jason Holley, City of American Canyon

Subject: NSD Seasonal Storage Alternative 4 - Jamison Ranch (1,000 AF)

---

### PURPOSE

Napa Sanitation District (NSD) and the City of American Canyon (City) are considering the feasibility of storing recycled water on the Jamison Ranch property (Figure 1). This document serves to:

- develop one proof-of-concept for storage on the Jamison Ranch property that yields approximately 1,000 acre-feet of usable storage volume,
- estimate the reservoir footprint, earthwork volumes and construction costs, and
- identify potential challenges with the design concept, both in terms of constructability and environmental issues.

### BACKGROUND

Both agencies currently recycle large volumes of their treated wastewater generated during the summer months. During the wet-weather months, when irrigation demands are low and influent flows are high, both agencies discharge wastewater to the Napa River. While this system is effective for reducing river discharges during the dry-weather period; low influent flows into the treatment plant combined with limited storage-volume, makes it impractical to make a significant expansion of the recycled-water distribution system. Thus, additional seasonal-storage capacity is needed to recycle water generated during the wet-weather months. Such an approach could be expected to improve reliability and recovery of the recycled-water supply while simultaneously providing additional potable-water offsets.

NSD and the City are interested in identifying suitable reservoir sites that could provide seasonal storage of recycled water. One such site, known as Jamison Ranch, is located near the intersection of North Kelly Road and State Highway 12 (Figure 1). The same site is being considered by NSD for Seasonal Storage Alternative 3 – Jamison Ranch (400 AF), which would include construction of a new above ground pond to store approximately 400 AF of secondary effluent.

The design concept for Seasonal Storage Alternative 4 – Jamison Ranch (1,000 AF), explored in this document, provides a concept-level design of a 1,000 AF below grade recycled water storage reservoir that would be shared by the City and NSD. A combined project such as this provides the following benefits:

- The reservoir can be sited on publicly-owned land, thereby reducing negative impacts to private land owners
- A new seasonal-storage reservoir will allow increased reclamation of treated wastewater, thereby reducing permitted discharges to the Napa River
- Increased reclamation from both agencies provides offsets to potable-water demands and regional groundwater supplies
- A single joint-use reservoir minimizes environmental impacts while also reducing cost impacts to rate payers

**Figure 1 - Vicinity Map**



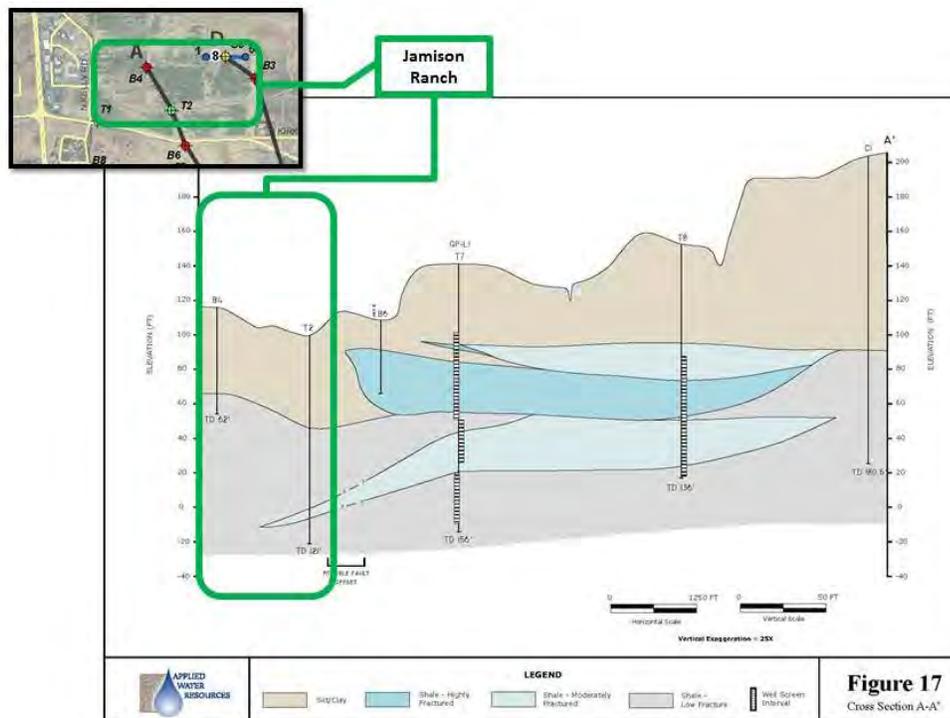
## RESERVOIR-SITE ANALYSIS

### Geotechnical

A previous report<sup>1</sup> examined the feasibility of this site for aquifer storage and recovery. This document was repurposed to be used as the preliminary basis of understanding relative to basic geotechnical properties in the vicinity (Figure 2).

- The site is covered by about 30 to 50 feet of Quaternary alluvium consisting unconsolidated clay and silt
- In several areas, the report noted organic clays in the upper 10 feet
- Depth to groundwater ranges from 3 to 15 feet across the site
- Soils are expected to be very soft and saturated, especially the area near Sheehy Creek
- The alluvium would have no value as an aggregate
- The harder bedrock is composed of fractured shale, but that is below the alluvium (i.e. 30 to 50 feet below grade)
- If the top 30 to 50 feet of saturated alluvium was excavated, the underlying shale could be mined for aggregate (essentially a quarry)

**Figure 2 - Soil Profile**



Source: Applied Water Resources, 2008. "Evaluation of the Hydrogeologic Feasibility of Aquifer Storage and Recover." Agreement No. 4600003668. AB 303 GRANT: Local Groundwater Assistance Program. Prepared for Napa Sanitation District and California Department of Water Resources. May 2008.

<sup>1</sup> Investigation of the Hydrogeological Feasibility of Aquifer Storage and Recovery, Applied Water Resources, May 2008.

### Design Concept

A conceptual layout was prepared to estimate the earthwork volumes, environmental impacts and costs related to such a project (Figure 3). The following preliminary assumptions were made for purposes of establishing a basis of design:

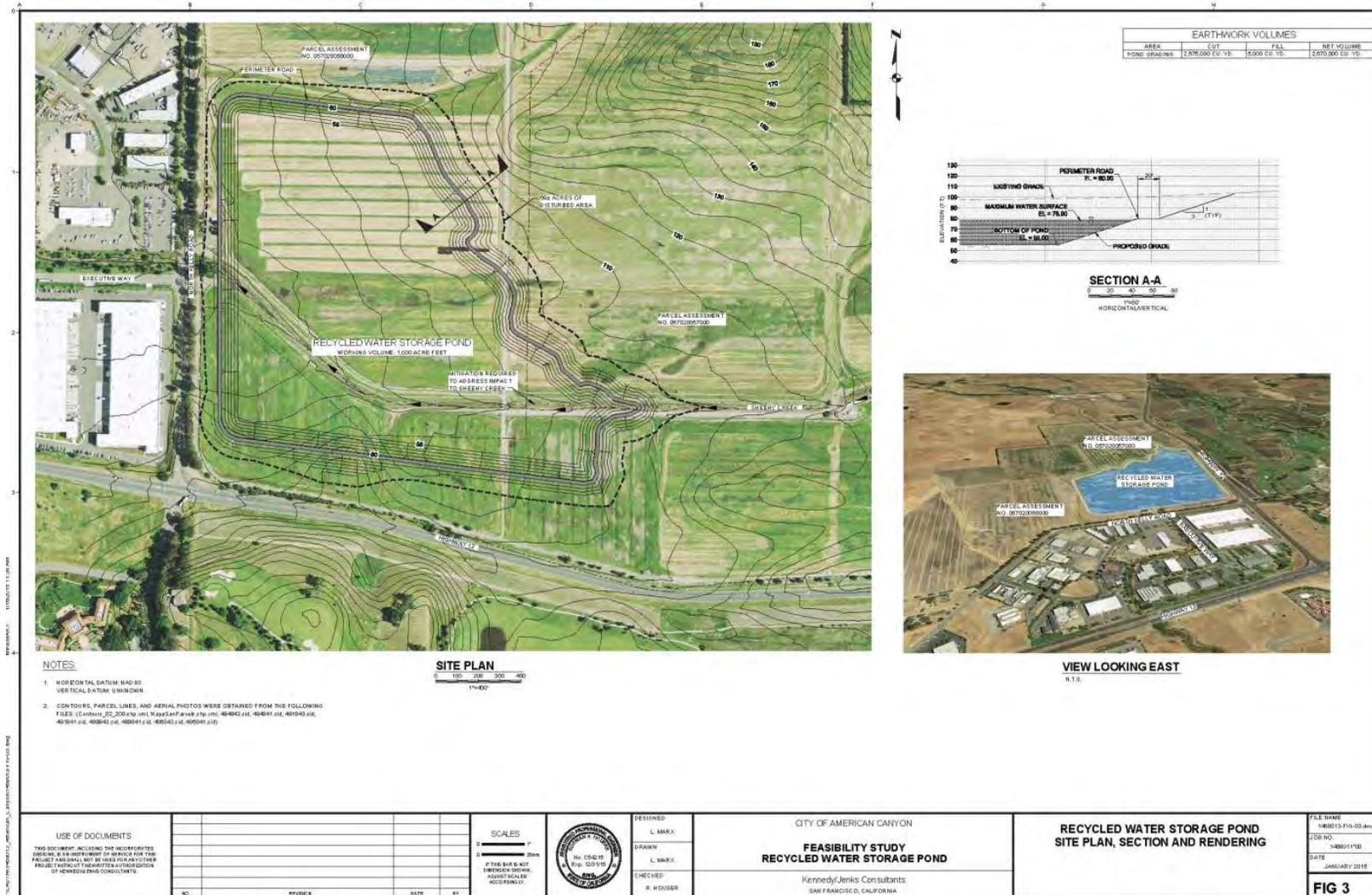
- 1,000 acre-feet of usable storage volume
- Site straddles two parcels:
  - ✓ 057020056000
  - ✓ 057020057000
- El. 78' maximum water-surface elevation
- El. 55' bottom elevation
- El. 80' at top of reservoir
- 3:1 cut and fill slopes
- Conveyance facilities (i.e. pump station, pipelines, etc) are not included in this design concept

Preliminary estimates of construction footprint and earthwork volumes are summarized in Table 1.

**Table 1 - Earthwork Estimates**

Measurement	Units	Value	notes
<b>Pond Area</b>	Square-feet	<b>3.0 million</b>	<b>incl. 50' temporary construction easement around reservoir perimeter</b>
	Acres	<b>69</b>	
<b>Pond Volume</b>	Million Gallons	<b>326 million</b>	
	Acre-feet	<b>1,030</b>	
<b>Cut</b>	Cubic Yards	<b>2,675,000</b>	<b>does not include over-excavation (if required)</b>
<b>Fill</b>	Cubic Yards	<b>5,000</b>	
<b>Net Cut</b>	Cubic Yards	<b>2,670,000</b>	

Figure 3 – Recycled Water Storage and Site Plan, Section and Rendering



### Constructability and Environmental Considerations

- With a depth to groundwater ranging between 3 to 15 feet below ground surface, extensive dewatering should be anticipated to facilitate earthwork activities at the site
- There is an existing ephemeral creek (Sheehy Creek) that runs East to West across the reservoir site. Potential permitting issues and environmental impacts could be serious impediments to implementing this design concept. It may be possible to avoid this issue by shifting the reservoir northward such that the southern boundary of the reservoir provides a 100-foot buffer from the creek. This would also eliminate impacts to Parcel No. 057020057000.
- Existing topography slopes toward the reservoir site. It may be possible to capture storm-water runoff for storage in the reservoir. Alternatively, a drainage system would be required to intercept and divert runoff around the reservoir
- California Code of Regulations, Title 27, requires an engineered liner and leak detection system for recycled-water impoundments
- High groundwater levels in the vicinity could require the use of pressure-relief valves or an underdrain system to prevent buoyant uplift of the liner when water levels in the reservoir are low
- Constructing the reservoir without the use of berms or levees eliminates the need for oversight and approval by the California Division of Safety of Dams

### Construction Costs

The engineer's estimate of probable construction costs is \$25 million. This value was determined from quantity takeoffs for site work, earth work, concrete, mechanical, electrical and other reservoir related components. The following allowances were applied:

- 3% allowance for field general conditions
- 15% contractor OH&P
- 25% construction contingency
- 3% escalation to midpoint of construction
- 1.75% bonds and insurance

This estimate does not include any allowance for property-acquisition related activities, engineering, or permitting. Conveyance facilities and costs to pump and distribute recycled water from the reservoir are not included in the project costs provided herein.

*Note: Application of US Bureau of Reclamation contingencies to satisfy the Title XVI Feasibility Study requirements will result in an opinion of probable total project capital costs of \$27.5 mil.*