



**ENGINEERING/OPERATIONAL COMMITTEE MEETING AGENDA
TRABUCO CANYON WATER DISTRICT
32003 DOVE CANYON DRIVE, TRABUCO CANYON, CA
VIDEO/AUDIO BROADCAST MEETING
JANUARY 6, 2021 AT 7:00 AM**

COMMITTEE MEMBERS

Edward Mandich, Committee Chair
Stephen Dopudja, Committee Member
Don Chadd, Committee Member Alternate

DISTRICT STAFF

Fernando Paludi, General Manager
Michael Perea, District Secretary
Lorrie Lausten, District Engineer
Gary Kessler, Water System Superintendent
Jason Stroud, Maintenance Superintendent

AGENDA NOTE:

*Due to the spread of COVID-19 and as authorized by the Governor's Executive Order, Trabuco Canyon Water District will be holding this Engineering/Operational Committee Meeting by video broadcast (**Go To Meeting**), and will be available by either video conference or telephone audio as follows:*

Video Conferencing: You can join the meeting from your computer, tablet, or smartphone by clicking on the following link: <https://global.gotomeeting.com/join/597863693>

Telephone Audio: [1 866 899 4679](tel:18668994679) (Toll Free)
Access Code: 597-863-693

Persons desiring to monitor the Committee meeting agenda items may download the agenda and documents on the internet at www.tcwd.ca.gov.

You may submit public comments by email to the Board at mperea@tcwd.ca.gov. In order to be part of the record, emailed comments on meeting agenda items must be received by the District, at the referenced e-mail address, not later than 7:00 a.m. (PDT) on the day of the meeting.

CALL MEETING TO ORDER

VISITOR PARTICIPATION

Members of the public wishing to address the Board regarding a particular item on the agenda are requested to submit public comments by email to the Board at mperea@tcwd.ca.gov. The Committee Chair will call on the visitor following the Committee's discussion about the matter. Committees do not constitute a quorum of the Board of Directors and Committee Members cannot make decisions on matters. The Committee makes recommendations only to the Board of Directors. Members of the public will be given the opportunity to speak to the Committee prior to making a recommendation on the matter. For persons desiring to make verbal comments and utilizing a translator to present their comments into English reasonable time accommodations, consistent with State law, shall be provided. Please limit comments to three minutes.

ORAL COMMUNICATION

Members of the public who wish to make comment on matters not appearing on the agenda are requested to submit oral communication by email to the Board at mperea@tcwd.ca.gov. Under the requirements of State Law, Directors cannot take action on items not identified on the agenda and will not make decisions on such matters. The Board President may direct District Staff to follow up on issues as may be deemed appropriate. For persons desiring to make verbal comments and utilizing a translator to present their comments into English reasonable time accommodations, consistent with State law, shall be provided. Please limit comments to three minutes.

TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING AGENDA | JANUARY 6, 2021

COMMITTEE MEMBER COMMENTS

REPORT FROM THE GENERAL MANAGER

ADMINISTRATIVE MATTERS

PRESENTER(S): FERNANDO PALUDI, GENERAL MANAGER
MICHAEL PEREA, DISTRICT SECRETARY

ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP

RECOMMENDED ACTION:

Approve the following Engineering/Operational Committee Meeting Recap(s) and recommend that the Board receive and file same (Consent Calendar).

1. December 2, 2020

ENGINEERING MATTERS

PRESENTER(S): FERNANDO PALUDI, GENERAL MANAGER
MICHAEL PEREA, ASSISTANT GENERAL MANAGER
LORRIE LAUSTEN, DISTRICT ENGINEER

ITEM 2: DISCUSSION AND POSSIBLE ACTION(S) RELATED TO THE PROPOSED PALOMA SQUARE DEVELOPMENT (DOVE CANYON PLAZA) AND OTHER RELATED MATTERS

RECOMMENDED ACTION:

Committee to Recommend to the Board of Directors to receive and file the Parking Demand Study completed by AGA Engineers, Inc.

ITEM 3: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING PORTER PROPERTY RESERVOIR PLANNING LEVEL CONSTRUCTION COST ESTIMATE

RECOMMENDED ACTION:

Committee to receive information at the time of the Committee Meeting.

ITEM 4: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING BELL CANYON SEWER LIFT STATION REHABILITATION PROJECT

RECOMMENDED ACTION:

Committee to receive information at the time of the Committee Meeting.



**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING AGENDA | JANUARY 6, 2021**

ITEM 5: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING RECYCLED WATER PUMP STATION PAVING PROJECT

RECOMMENDED ACTION:

Approve and recommend the Board of Directors ratify a Construction Contract with Champion Paving for the Recycled Water Pump Station Paving Project in the amount of \$17,590, with a contingency of \$4,000, for a not to exceed amount of \$21,590 (Action Calendar).

ITEM 6: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING WASTEWATER TREATMENT PLANT ACCESS ROAD SLURRY SEAL PROJECT

RECOMMENDED ACTION:

Approve and recommend the Board of Directors ratify a Construction Contract with Mission Paving and Sealing, Inc. for the Wastewater Treatment Plant Access Road Slurry Project in the amount of \$17,200 (Action Calendar).

ITEM 7: OTHER ENGINEERING AND OPERATIONS PROJECT UPDATES

1. Falcon Estates Development
2. Saddle Crest Development
3. Joplin Property/SCADA Upgrade
4. Dimension Water Treatment Plant Waste Tank Replacements
5. Silvertree Lane Pipeline Replacement
6. Other Projects

RECOMMENDED ACTION:

Committee to receive project status updates at time of the Committee Meeting.

OPERATIONAL MATTERS

**PRESENTER(S): GARY KESSLER, WATER SYSTEM SUPERINTENDENT
MICHAEL PEREA, ASSISTANT GENERAL MANAGER
JASON STROUD, MAINTENANCE DEPARTMENT SUPERINTENDENT**

ITEM 8: WATER SYSTEM UPDATES

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

ITEM 9: WASTEWATER SYSTEM UPDATES

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

ITEM 10: MAINTENANCE DEPARTMENT UPDATES

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.



**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING AGENDA | JANUARY 6, 2021**

REGULATORY AND OTHER MATTERS

ITEM 11: OTHER MATTERS/REPORTS

RECOMMENDED ACTION:

Hear Other Matters/Reports that may have arisen after the posting of the agenda.

ADJOURNMENT

AVAILABILITY OF AGENDA MATERIALS

Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the Trabuco Canyon Water District Board of Directors in connection with a matter subject to discussion or consideration at an open meeting of the Board of Directors are available for public inspection at the Trabuco Canyon Water District Administrative Facility, 32003 Dove Canyon Drive, Trabuco Canyon, California (District Administrative Facility) or will be posted online on the District's website located at www.tcwd.ca.gov. If such writings are distributed to members of the Board less than 72 hours prior to the meeting, they will be available online at www.tcwd.ca.gov at the same time as they are distributed to the Board Members, except that, if such writings are distributed immediately prior to or during the meeting, they will be posted online on the District's website located at www.tcwd.ca.gov.

COMPLIANCE WITH THE REQUIREMENTS OF CALIFORNIA GOVERNMENT CODE SECTION 54954.2

In compliance with California law and the Americans with Disabilities Act, if you need special disability-related modifications or accommodations, including auxiliary aids or services in order to participate in the meeting, or if you need the agenda provided in an alternative format, please contact the District Secretary at (949) 858-0277, at least 48 hours in advance of the scheduled Board meeting. Notification at least 48 hours prior to the meeting will assist the District in making reasonable arrangements to accommodate your request. The Board Meeting Room is wheelchair accessible.

The District may conduct future meetings electronically (via teleconferencing) during the current ongoing emergency situation.



**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | JANUARY 6, 2021**

ADMINISTRATIVE MATTERS

ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP

RECOMMENDED ACTION:

Approve the following Engineering/Operational Committee Meeting Recap(s) and recommend that the Board receive and file same (Consent Calendar):

1. *December 2, 2020*

CONTACTS (staff responsible): PALUDI/PEREA



TRABUCO CANYON WATER DISTRICT ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP | DECEMBER 2, 2020

DIRECTORS PRESENT

Ed Mandich, Committee Chair
Stephen Dopudja, Committee Member

STAFF PRESENT VIA CONFERENCE CALL

Fernando Paludi, General Manager
Michael Perea, Assistant General Manager/District Secretary
Lorrie Lausten, District Engineer
Gary Kessler, Water Department Superintendent
Jason Stroud, Maintenance Department Superintendent
Karen Warner, Senior Accountant

PUBLIC PRESENT VIA CONFERENCE CALL

None

CALL MEETING TO ORDER

Director Mandich called the December 2, 2020 Engineering/Operational Committee Meeting to order at 7:02 AM. Public access to the meeting was made available by video broadcast.

VISITOR PARTICIPATION

No comments were received.

ORAL COMMUNICATION

No comments were received.

COMMITTEE MEMBER COMMENTS

None

REPORT FROM THE GENERAL MANAGER

Mr. Paludi reported the Board President has recommended all future public meetings be held virtually due to the increased spread of COVID-19 in the County.

Mr. Paludi provided a brief update on the impacts of the recent Southern California Edison (SCE) Public Safety Power Shutoff, and he commended the efforts of the Water Emergency Response Organization of Orange County (WEROC) staff for assisting the District with mutual aid for a mobile backup power generator for the Falcon Booster Pump Station.

ITEM 1: ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP

Mr. Paludi presented the Engineering/Operational Committee Meeting Recap for Committee review in accordance with the agenda.

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP | DECEMBER 2, 2020**

RECOMMENDED ACTION

The Committee recommended that the Engineering/Operational Committee Meeting Recap be forwarded to the Board of Directors for approval (Consent Calendar).

Director Mandich recused himself from meeting business and exited to the Board Room at approximately 7:05 am.

ITEM 2: DISCUSSION AND POSSIBLE ACTION(S) RELATED TO THE PROPOSED PALOMA SQUARE DEVELOPMENT (DOVE CANYON PLAZA) AND OTHER RELATED MATTERS

Mr. Paludi presented this matter for Committee consideration, and he reported that District staff has not been contacted by any of the parties involved with this matter. Ms. Lausten presented the DRAFT Parking Capacity Study performed by AGA Engineers for Committee review, and she reported that the traffic counts correlate with the number of people. Discussion occurred concerning certain elements of the Study.

RECOMMENDED ACTION:

The Committee received the status update. There was no action taken.

Director Mandich returned to the Board Room at approximately 7:18am and resumed his participation on the remaining business.

ITEM 3: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING PORTER PROPERTY RESERVOIR PLANNING LEVEL CONSTRUCTION COST ESTIMATE

Mr. Paludi presented this matter for Committee consideration, and he reported that District staff is currently working with Tetra Tech Engineering on this project. Ms. Lausten provided a brief review of the schedule with the Committee, and she mentioned that a DRAFT report will be presented to the Committee for review in January 2021.

RECOMMENDED ACTION:

Committee to receive information at the time of the Committee Meeting.

ITEM 4: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING BELL CANYON SEWER LIFT STATION REHABILITATION PROJECT

Ms. Lausten provided a brief project update for the Committee, and she presented an updated project schedule for Committee review. Discussion occurred concerning mobilization timeline and residential traffic impacts and concerns. Ms. Lausten reported that District staff has consulted with Orange County Fire Authority (OCFA) and Dove Canyon Master Association (DCMA)

RECOMMENDED ACTION:

Committee to receive information at the time of the Committee Meeting.

ITEM 5: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING TRABUCO CANYON WATER DISTRICT'S SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYSTEM UPGRADE PROJECT

Ms. Lausten provided a brief project status update, and she reviewed an updated project schedule with the Committee. Mr. Paludi reported that District staff has been working with Orange County Public Works (OCPW) to upgrade the existing repeater antenna located on the onsite reservoir tank, and he briefly discussed the associated challenges. Director Mandich recommended forwarding this matter to the Board for further discussion and action.

RECOMMENDED ACTION:

The Committee recommended forwarding this matter to the Board of Directors for further discussion and possible action (Action Calendar).

ITEM 6: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING THE PROPOSED BARNEBURG SEWER LIFT STATION DRY PIT PIPING REPAIRS AND INSTALLATION

Mr. Paludi introduced this matter for Committee review, and he mentioned that this project was previously reviewed with the Finance/Audit Committee. Mr. Perea provided a brief overview of the planned repairs at the facility, and he reported that District staff have updated the project scope of work and requested updated proposals from the preferred vendors. Mr. Perea recommended the Board of Directors approve a contract with SS Mechanical for the planned facility repairs. Director Mandich recommended forwarding the matter the Board of Directors for further discussion and possible action.

RECOMMENDED ACTION:

The Committee recommended forwarding this matter to the Board of Directors for further discussion and possible action (Action Calendar).

ITEM 7: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING THE DIMENSION WATER TREATMENT PLANT WASTE TANKS AND BACKWASH SUMP PUMP REPLACEMENT

Mr. Paludi presented this matter for Committee consideration. Ms. Lausten delivered a PowerPoint presentation which provided an overview of the condition of the backwash tanks at Dimension Water Treatment Plant (DWTP). Ms. Lausten reported that District staff has requested proposals from preferred vendors for the replacement of the onsite tanks and associated backwash pumps, and she recommended forwarding this matter to the Board of Directors for further discussion and possible action.

RECOMMENDED ACTION:

The Committee recommended forwarding this matter to the Board of Directors for further discussion and possible action (Action Calendar).

ITEM 8: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING THE OAKS AT TRABUCO, LLC ENGINEERING STUDY

Mr. Paludi provided a brief update on this matter for Committee review, and he reported that District staff is currently preparing a scope of work for an engineering study on the condition of the onsite wastewater treatment facility at the The Oaks at Trabuco development. Discussion occurred concerning the study scope of work and timeline for completion. Director Mandich recommended to bring this matter back to the Committee at a later date.

RECOMMENDED ACTION:

The Committee took no action on this matter.

ITEM 9: OTHER ENGINEERING AND OPERATIONS PROJECTS

1. Saddle Crest Development

Mr. Paludi introduced this matter for Committee review, and he provided a brief review of the ongoing discussions with the developer. Discussion occurred concerning facility testing/acceptance process and the potential impacts of certain legal changes in ownership.

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP | DECEMBER 2, 2020**

2. Heritage Lift Station Site and Security Improvements

Ms. Lausten presented this project for Committee review, and she mentioned this project was budgeted for Fiscal Year 2020/2021. Ms. Lausten reported that this project includes grading, paving, and the construction of a security and wall and access gate.

3. Asset Management/Condition Assessment Study

Mr. Paludi provided a brief update on this project, and he mentioned that District staff would like to contract with an independent, third-party consultant to provide a global evaluation of the CMMS, SCADA, GIS, and system modeling software solutions.

4. Silvertree Lane Pipeline Replacement

Ms. Lausten provided a brief update on this project, and she reported that the infrastructure improvements for this project are completed and that only the paving improvements remain. Mr. Paludi complimented District staff for their hard work on this project.

5. Trabuco Creek Bridge Replacement

Ms. Lausten provide a brief update on this OCPW bridge/road alignment project, and she presented a handout with the approved design and impacts for Committee review.

6. Other Projects

There were no other project updates reported.

RECOMMENDED ACTION

Committee to receive project status updates at time of the Committee Meeting.

ITEM 10: WATER SYSTEM UPDATES

Mr. Kessler reviewed the projects and repairs for November 2020, and he provided the additional highlights:

1. Water Operations staff worked with contractor, Southwest Hydrotech and serviced 5 PRV's throughout the District service area.
2. Water Operations staff flushed 19 fire hydrants in the Sky Ridge Community (this completes flushing for this cycle).
3. Water Operations staff repaired a struck air vac on Wood Canyon located in the Santiago Estates Community (again).
4. Water Operations staff worked with contractor, Ferreira Construction to finish the installation of new water main on Silvertree Lane.

Mr. Kessler reviewed the Monthly Water System Operations Summary with the Committee, and he provided a brief update on fire hydrant flushing efforts during the prior month. Mr. Kessler reported that Ridgeline Booster Pump Station experienced shut down/start up issues during the SCE PSPS which resulted in Cooks Reservoir spilling overnight.

RECOMMENDED ACTION

The Committee received the status update.

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING RECAP | DECEMBER 2, 2020**

ITEM 11: WASTEWATER SYSTEM UPDATES

Mr. Perea reviewed the projects and repairs for November 2020, and he provided the additional highlights:

1. Wastewater Operations staff worked with Maintenance Department staff to replace the failed West Sequencing Batch Reactor (SBR) Hoffman Blower.
2. Wastewater Operations staff modified/upgraded the Duckweed Barrier System to improve the aesthetic appearances of Dove Lake.
3. Wastewater Operations staff worked with Maintenance Department to assist Duthie Power Services on repairs to the WWTP Backup Power Generator.
4. Wastewater Operations staff responded to a possible sewer odor issues in the Portola Hills Service Area; Operations cleaned the sewer line and found no issues.

Mr. Perea reviewed the Monthly Wastewater System Operations Summary, and he reported that Mr. Travis Jones, Wastewater Operations Chief Plant Operator, had recently resigned from the District; Mr. Perea reported that Mr. Oscar Ulloa had been promoted to Chief Plant Operator position.

RECOMMENDED ACTION

The Committee received the status update. There was no action taken.

ITEM 12: MAINTENANCE DEPARTMENT UPDATES

Mr. Stroud reviewed the projects and repairs for November 2020, and he provided the additional highlights:

1. Maintenance Department staff assisted Harbor Pointe Air Control with the Air Condition project inside the blower room at the Wastewater Treatment Plant.
2. Maintenance Department staff office remodel partially complete.
3. Maintenance Department staff assisted Duthie Power Services with the standby generator repairs done at the Topanga Booster pump station, Barneburg Sewer lift station, and Wastewater Treatment Plant.
4. Maintenance Department staff assisted Hydrotech Electric with the electrical repairs noted from the EMASS Program

RECOMMENDED ACTION

The Committee received the status update. There was no action taken.

ITEM 13: OTHER MATTERS/REPORTS

There were no other matters or reports provided to the Committee.

RECOMMENDED ACTION

There was no action taken.

ADJOURNMENT

Director Mandich adjourned the December 2, 2020 Engineering/Operational Committee Meeting at 8:09 AM.

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | JANUARY 6, 2021**

ENGINEERING MATTERS

ITEM 2: DISCUSSION AND POSSIBLE ACTION(S) RELATED TO THE PROPOSED PALOMA SQUARE DEVELOPMENT (DOVE CANYON PLAZA) AND OTHER RELATED MATTERS

Trabuco Canyon Water District (TCWD or District) owns the Administration Facility and the property upon which it resides; the property is adjacent to the Dove Canyon Plaza commercial center. On July 24, 2019, Dove Canyon Recovery Acquisition, LLC (DCRA), the owner of Dove Canyon Plaza, with their consultant William Lyon Homes (now Taylor Morrison) submitted a proposal to the City of Rancho Santa Margarita (City) for a change in use from commercial to residential. The proposed project is titled "Paloma Square." The initial submittal to the City, and all subsequent submittals, project information, and correspondence between City and William Lyon Homes/Taylor Morrison related to Paloma Square are available on the City's website. The District's website, under the "Community" tab, also includes information and correspondence regarding proposed project.

Due to the potential impacts of the Paloma Square development to the District's Administration Facility, District Staff, working with AGA Engineers, Inc., completed a Parking Capacity Study (Exhibit 1).

More information may be presented at the time of the meeting.

FUNDING SOURCE:

General Fund

FISCAL IMPACT:

\$10,000

ENVIRONMENTAL COMPLIANCE:

Not applicable

RECOMMENDED ACTIONS:

Committee to Recommend to the Board of Directors to receive and file the Parking Demand Study completed by AGA Engineers, Inc.

EXHIBIT(S):

1. Parking Capacity Study – Draft

CONTACTS (staff responsible): PALUDI/PEREA/LAUSTEN



December 7, 2020

Ms. Lorrie Lausten, P.E.
District Engineer
Trabuco Canyon Water District
32003 Dove Canyon Drive
Trabuco Canyon, California 92679

RE: Parking Demand Study for the Trabuco Canyon Water District and Paloma Square Condominium Project

Dear Ms. Lausten:

AGA Engineers, Inc. (AGA) is pleased to present to you this letter report that provides the results of the parking demand study regarding the proposed Paloma Square Condominium Project adjacent to the Trabuco Canyon Water District (District) facility in the City of Rancho Santa Margarita. The goal of the study was to determine what the parking demand is when there are events at the District facility and if there will be an adequate supply of parking spaces for those events if the Paloma Square Condominium Project were to replace the existing Dove Canyon Plaza shopping center.

Study Area

The District facility is located off Dove Canyon Drive and is adjacent to the shopping center. The District and the shopping center share the only access off Dove Canyon Drive (see **Figure 1**). Based on conversation with District staff, there is an existing reciprocal parking/access agreement between the District and the property owner of the shopping center. Therefore, the District currently utilize the shopping center's parking for events that require additional parking.



Figure 1 – Study Area

AGA Engineers, Inc.

211 E Imperial Hwy., Suite 208, Fullerton, CA 92835
(714) 992-4592 E-Mail: aga@agaengineersinc.com

For the parking demand survey, the parking areas that were utilized during the District event were separated into zones (shown on **Figure 2**). Based on the existing parking configuration for both the District and the shopping center, the District has 35 parking spaces on-site, which includes five spaces (Zone 3) that is shared with the shopping center. Zones 1 and 2 are on the District's property and have a total of 30 parking spaces. Typically, Zone 2 is utilized by office and operations staff and is fully occupied. The parking areas (Zones 4-9) for the shopping center were evaluated based on the proximity to the District. The parking areas outside of these zones were not considered based on the events evaluated, but were checked periodically during the surveys to see if people going to the District would park there. The parking spaces for Zones 4-9 total 124 parking spaces. Therefore, the total available parking for Zones 1-9 are 159 parking spaces. There is also available street parking along Dove Canyon Drive (Zones 20 and 21). For Zones 20 and 21, there are approximately 102 parking spaces available (assuming 20 foot per parking space) and this does not include the temporary parking for the park on the north side of Dove Canyon Drive. During the school year (Pre-COVID-19 conditions), it was observed that students from Santa Margarita High School park along Dove Canyon Drive. During the morning to early afternoon (3:00 pm), this area is heavily parked with only approximately ten available spaces to park on Dove Canyon Drive.

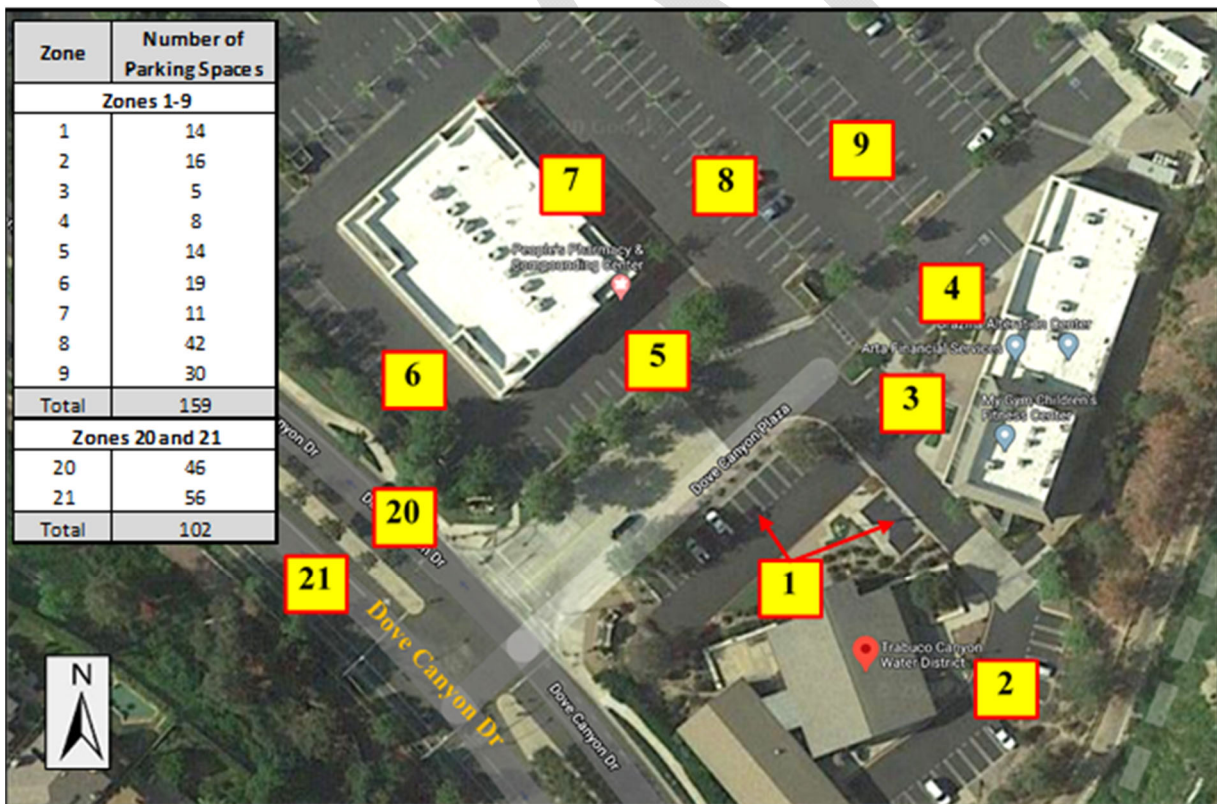


Figure 2 - Parking Zones

The current owner of the shopping center proposes to develop the site into a residential property that will include 120 multifamily units. The proposed project will have gated access and continue to share the existing access with the District. **Figure 3** shows the proposed site plan. Due to the proposed project's layout, the District's available parking will be restricted to the parking spaces on the District's property (existing Zones 1 and 2 = 30 parking spaces), potentially the existing area for Zone 3 (five parking spaces) and the on-street parking along Dove Canyon Drive (Zones 20 and 21). For this evaluation, it will be assumed that the District will be able to continue to use the five parking spaces for Zone 3. Therefore, due to the residential project, the available on-site parking for the District will be limited to 35 parking spaces. During school hours (before 3:00 pm weekdays), there are only approximately ten available parking spaces on Dove Canyon Drive. Therefore, during school hours, the total available parking spaces for the District would be 45 parking spaces for the project scenario.

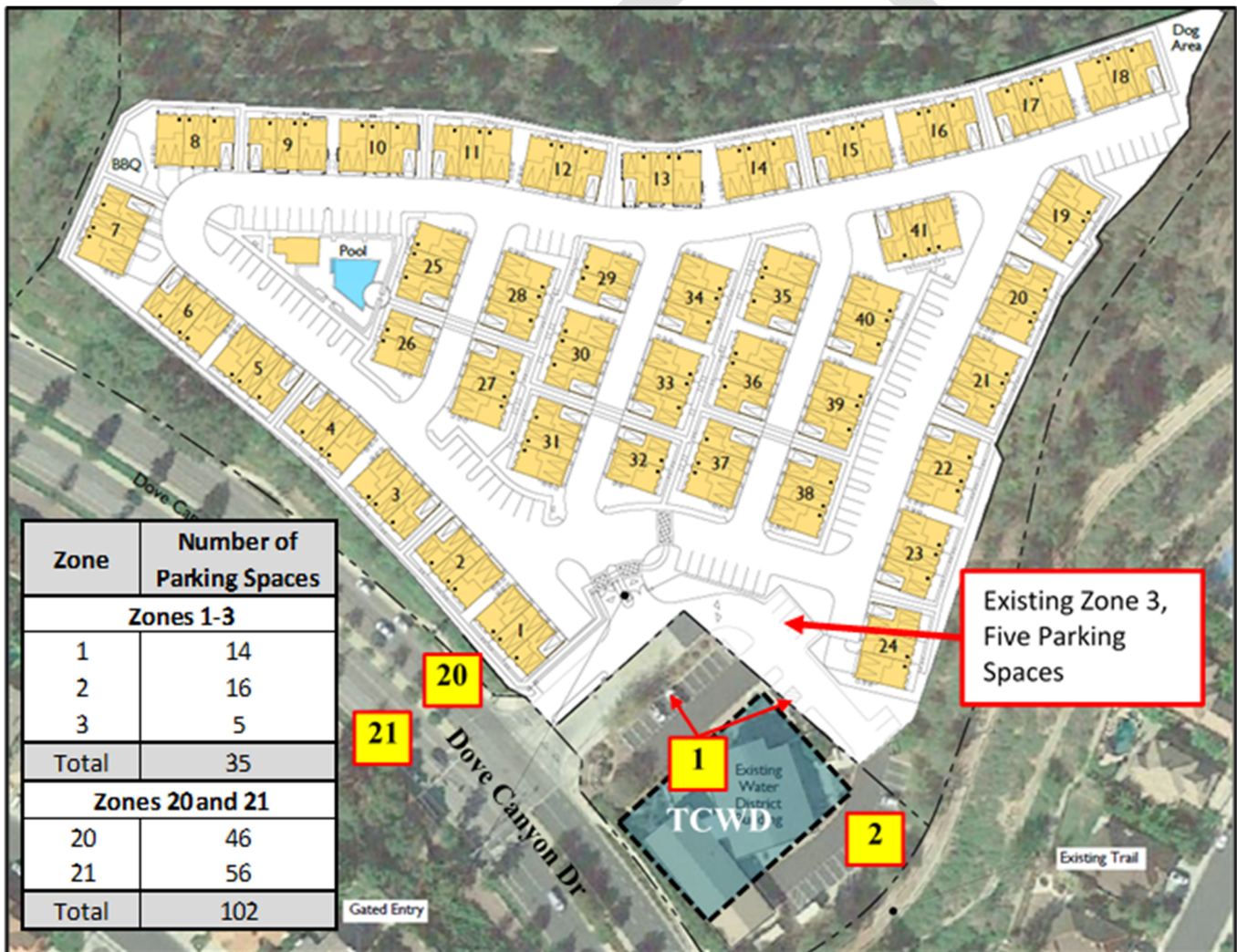


Figure 3 – Proposed Site Plan

Typically, there are monthly meetings held at the District facility. The larger meetings with a typical attendance over 30 are shown below. A complete list of meetings at the District is attached.

Monthly Meeting (Typical Attendance)

- District Board (45)
- District staff (30)
- Bi-Monthly, South Orange County Agencies' Group (50)
- Community Associations of Rancho (CAR) (45)
- Dove Canyon Master Association (30)
- Robinson Ranch Homeowners Association (45)
- Trabuco Highlands Community Association (45)
- Walden Homeowners Association (45)
- Rancho Trabuco Girls Softball (35)
- Santa Margarita/Trabuco Hills Pop Warner (35)

Based on discussions with the District, three events were evaluated to determine what the parking demand for those events are and if there will be available parking for these events if the proposed residential project site is developed. The three events AGA evaluated in 2020 were the **South Orange County Agencies' Group** meeting, the State Primary Election voting day and the Presidential Election voting day. Due to the COVID-19 pandemic, the District had to cancel their most popular annual event, Water Awareness Day. The event generates a significant turn out from the public with activities and food for families and is generally held in early May. For the three surveyed events, since there was ample available parking in the shopping center (probably due to the COVID-19 conditions), only vehicles that parked for the District event were counted. The parking demand not only included demand for the event, but included the typical parking demand for District staff operations at the facility.

Event 1 – **South Orange County Agencies' Group** Meeting (January 28, 2020)

Based on the evaluation, the peak parking demand occurred at 12:30 pm and there were 32 occupied spaces for the District facility (see **Table 1**). This includes members of the meeting as well as the day-to-day District staff. However, the District mentioned that attendance was down for this meeting and it occurred after the holidays which therefore might account for the drop in attendance. AGA could not determine who was going to the District facility for the meeting or work (staff), it is estimated that half of the 32 were for the meeting since approximately half of those arrived at the time for the meeting. Per

the District, typically there are about 50 attendees for this meeting. It was also noticed that there was single occupancy for the vehicles that parked at the time of the meeting. Therefore, if the meeting had the typical demand of 50 attendees, there would be insufficient on-site parking. As mentioned beforehand, during the school year (Pre-COVID-19 conditions), the on-street parking is utilized by Santa Margarita High School students and is generally 90 percent full (ten available parking spaces). Therefore, it is unlikely that there will be adequate parking for a typical South Orange County Agencies' Group meeting with the proposed residential project.

Table 1 – South Orange County Agencies' Group Meeting (Jan, 28, 2020)

Time	Parking Zones		Total TCWD Parking Demand
	1-3	4-9	
11:30 AM	19	0	19
12:00 PM	30	1	31
12:30 PM	31	1	32

Event 2 – Primary Election Voting Day (March 3, 2020)

The second event involved the Primary Election Voting Day on Tuesday, March 3, 2020. The District facility was open for voters prior to this day, but it was estimated that this would be the peak day for the voter turn-out. The District provided the number of voters who electronically checked-in (see below). It does not include the mail-in/drop off ballots.

- Saturday, February 29th : 69 voters
- Sunday, March 1st : 65 voters
- Monday, March 2nd : 158 voters
- Tuesday, March 3rd : 890 voters

Based on the Tuesday, March 3rd survey, the peak parking demand of 68 parking spaces occurred at 3:30 pm (see Table 2). The demand ranged from 50 to the low 60s throughout most of the day. Therefore, there would not be adequate parking for the project scenario during the school hours (before 3:00 pm) as the total parking capacity for the project scenario is 45 parking spaces. After 3:00 pm on a typical school day, there would be adequate parking for such an event, due to the available on-street parking along Dove Canyon Drive.

*Table 2 – Primary Election Voting Day
(Mar 3, 2020)*

Time	Parking Zones		Total TCWD Parking Demand
	1-3	4-9	
7:00 AM	17	7	24
7:30 AM	18	6	24
8:00 AM	21	9	30
8:30 AM	23	11	34
9:00 AM	26	18	44
9:30 AM	27	26	53
10:00 AM	27	24	51
10:30 AM	29	22	51
11:00 AM	26	22	48
11:30 AM	32	22	54
12:00 PM	30	27	57
12:30 PM	27	17	44
1:00 PM	27	13	40
1:30 PM	23	20	43
2:00 PM	20	21	41
2:30 PM	24	27	51
3:00 PM	29	27	56
3:30 PM	33	35	68
4:00 PM	29	38	67
4:30 PM	21	28	49
5:00 PM	26	34	60
5:30 PM	28	33	61
6:00 PM	27	37	64
6:30 PM	22	26	48
7:00 PM	26	26	52
7:30 PM	24	25	49
8:00 PM	13	16	29

Event 3 – Presidential Election Voting Day (November 3, 2020)

The third event involved the Presidential Election Voting Day on Tuesday, November 3, 2020. Similar to the Primary Election Voting Day, the District facility was open for voters prior to this day, but it was again estimated that the peak day for the voter turn-out would be on Tuesday, the day of the election. Below are the number of voters who electronically checked-in (does not include the mail-in/drop off ballots).

- Friday, October 30th : 615 voters
- Saturday, October 31st : 287 voters
- Sunday, November 1st : 343 voters
- Monday, November 2nd : 569 voters
- Tuesday, November 3rd : 720 voters

The data provided by the District shows that Tuesday, November 3rd had the highest turn-out, although there was a high number of voters on Friday, October 30th and Monday, November 2nd. Based on the Tuesday, November 3rd survey, the peak parking demand of 50 parking spaces occurred at 2:00 pm (see **Table 3**). Therefore, there would not be adequate parking for the project scenario during the school hours (before 3:00 pm) as the total parking capacity for the project scenario is 45 parking spaces. After 3:00 pm on a typical school day, there would be adequate parking for such an event, due to the available parking along Dove Canyon Drive. As the voter turn-out was quite large on Friday and Monday of the voting period, the parking demand could have been similar to that on Election Day. The survey spreadsheets for the Primary and Presidential Election days are attached.

*Table 3 – Presidential Election Voting Day
(Nov 3, 2020)*

Time	Parking Zones		Total TCWD Parking Demand
	1-3	4-9	
11:00 AM	26	0	26
11:30 AM	30	9	39
12:00 PM	27	9	36
12:30 PM	30	18	48
1:00 PM	24	14	38
1:30 PM	25	18	43
2:00 PM	31	19	50
2:30 PM	25	18	43
3:00 PM	24	0	24
3:30 PM	29	10	39
4:00 PM	23	24	47
4:30 PM	24	17	41
5:00 PM	26	8	34
5:30 PM	24	13	37
6:00 PM	25	12	37
6:30 PM	24	10	34
7:00 PM	24	8	32
7:30 PM	24	9	33
8:00 PM	23	4	27

Ms. Lorrie Lausten, P.E.

December 7, 2020

Page 8 of 8

As stated earlier, Zone 2 (16 parking spaces), the parking area behind the District facility, is typically occupied with office and operations staff with little or no available parking for guests. Therefore, the on-site available parking for guests is from Zone 1 and 3, which total 19 parking spaces.

Based on the evaluations of the three events, there would be insufficient available parking (on-site and off-site) at the District facility with the proposed residential project during school hours, before 3:00 pm, on a weekday. For the monthly meetings during school hours, if the typical attendance were to occur, there could be instances where there is not sufficient parking for the meeting. For District meetings after 3:00 pm on a typical weekday and on a weekend where there are no adjacent events nearby (Santa Margarita High School), there would be sufficient parking for those meetings with approximately 102 on-street parking spaces in addition to the 19 on-site parking spaces from Zones 1 and 3.

A large event such as the Water Awareness Day, has activities for guests on-site and therefore no parking is available in Zones 1-3 and all parking (staff and guests) is required in the shopping area and on Dove Canyon Drive. For the project scenario, available parking will only be via Dove Canyon Drive (102 parking spaces). Based on past Water Awareness Day events, the event draws over 300 guests over a four-hour period. Therefore, it could be possible that there were approximately 75-100 vehicles parked (assume three-four people per vehicle occupancy) for only guests at one time. The project scenario will most likely have inadequate parking for such an event and would need additional parking resources. Also, since there is no available parking on-site for this scenario, handicapped parking is also not available, and motorists may also drop off and pick up guests within the site. Based on the proposed site plan's entrance from Dove Canyon Drive, there is not enough room for a drop-off/pick-up area on-site, especially if no parking is allowed. There could be queuing concerns that will impact Dove Canyon Drive which should be evaluated for such an event.

If you have any questions, please feel free to email me at greg@agaengineersinc.com.

Respectfully submitted,



Greg Wong, P.E.

Vice President

Attachments – District Meeting list, Primary Election Voting Data, Presidential Election Voting Data

1 AGA Engineers, Inc. - TCWD Parking Demand Study (REV).docx



**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | JANUARY 6, 2021**

ENGINEERING MATTERS

**ITEM 3: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING PORTER PROPERTY RESERVOIR PLANNING
LEVEL CONSTRUCTION COST ESTIMATE**

Trabuco Canyon Water District (District) owns an approximately 120-acre property commonly known as the "Porter Property". In April 2002, the District purchased the property with a potential purpose of placement of District facilities, including onsite domestic water and non-domestic water reservoirs. At the September 2, 2020 Engineering/Operational Committee Meeting, the Committee recommended that District staff evaluate the feasibility of constructing a reservoir on the District's Porter Property and bring the matter back for Board consideration. District staff worked with Tetra Tech to prepare a planning level evaluation for an onsite reservoir on the District's Porter Property and the Draft Study is attached as Exhibit 1

More information may be presented at the time of the meeting.

FUNDING SOURCE:

General Fund and Developer Fees

FISCAL IMPACT:

\$131,091

ENVIRONMENTAL COMPLIANCE:

Not applicable

RECOMMENDED ACTION:

Committee to receive information at the time of the Committee Meeting.

EXHIBIT(S):

1. Porter Property Planning Level Study and Cost Estimate-Draft

CONTACTS (staff responsible): PALUDI/LAUSTEN

DRAFT Memorandum

Date: December 18, 2020

To: Lorrie Lausten P.E. (Trabuco Canyon Water District)

From: Kyle Bohn P.E.

Project: Harris Grade Reservoir Siting Study **Project Number:** 200-09339-20001

Subject: Porter Property Planning Level Construction Cost Estimate

BACKGROUND AND OBJECTIVE

In 2016 the Trabuco Canyon Water District (District) completed the “Domestic Water Storage and Reservoir Siting Study” to determine locations within the District’s service area for additional water storage for future planned developments and emergencies. The study identified four sites within the District’s service area to be potential locations for future reservoirs, one of which was the Harris Grade Reservoir Site. Tetra Tech completed the Harris Grade Reservoir Siting Study, exploring the feasibility of constructing a new tank at the Harris Grade site.

As a supplement to the Harris Grade Reservoir Siting Study, the District requested that Tetra Tech prepare a planning level construction cost estimate for a new reservoir to be constructed at the District’s Porter Property. The intent of this planning level estimate is to compare construction costs for new reservoirs at the Harris Grade site and the Porter Property. The Porter Property was also identified by the 2016 Domestic Water Storage and Reservoir Siting Study to have an appropriate surface elevation to be able to float on the Harris Grade Pressure Zone (1504-feet). Additionally, the 2016 study identified the Porter Property to be located near future planned developments.

This technical memorandum presents a planning level construction cost estimate for the construction of a new reservoir at the District’s Porter Property, including the design criteria and assumptions that were used in developing the planning level estimate.

PROJECT LOCATION

The District’s Porter property is a 120-acre parcel of land near the eastern edge of the District’s service area. The majority of the site is undeveloped with unpaved access roads throughout the site. Elevations at the property range from approximately 1200-feet to just over 1600-feet. The main paved access entrance to the site is from Shadow Rock Lane within a residential neighborhood. The site is bounded by the residential properties to the south, a nursery to the west, Trabuco Canyon and Trabuco Creek to the north and Cleveland National Forest to the East.

Located to the southwest of the Porter Property is the District’s Shadow Rock Detention Basins and Pumping Station. The detention basins and pumping station are part of the District’s Urban Water Recovery Project,

capturing storm runoff to be treated and conveyed for reuse in the District’s recycled water system. Figure 1 shows the District’s Porter property and surrounding area.

AVAILABLE INFORMATION

The following available information was used to develop this memorandum.

- Engineering Study (Draft) for Dove Canyon and Robinson Ranch Recycled Water Pump Station Rehabilitation – Phase 1 (Engineering Study)
- Preliminary Porter Property road alignment over Google Earth image received from the District on September 3, 2020
- Domestic Water Storage and Reservoir Siting Study, March 2016
- Available USGS elevations and images to approximate elevation and location of the tank pad and pipeline alignment
- Compilation of Previous Reports Due Diligence for Porter Ranch Property Trabuco Canyon, California, November 2001

DESIGN CRITERIA

The following is a summary of minimum design criteria and assumptions used to develop preliminary construction costs.

Table 1 – Design Criteria Summary

Tank Material: Welded carbon steel

Reservoir Design Standards: The new tank shall be designed to the following design standards

1. California Department of Drinking Water (DDW) requirements outlined in the California Code of Regulations Title 22 “Design and Construction of Water Distribution Reservoirs”
2. American Water Works Association (AWWA): Standard D100; “Welded Carbon Steel Tanks for Water Storage”
3. Trabuco Canyon Water District Standard Plans and Specifications

Minimum Storage Volume: 2.25 MG

Floor Elevation: 1474-feet

High Water Level Elevation (Match Harris Grade Pressure Zone): 1504-feet

Sidewater Depth: 30-feet

Minimum Required Clearance Around Tank: 12-feet

Inlet/Outlet Piping and Valves: 16-inch separate inlet and outlet connections (assumes similar fill/draw rate as the Harris Grade Tank)

Overflow and Drain: A drain pipeline or concrete v-ditch will be required to convey site drainage, tank overflow and tank drain water down the access road to the Shadow Rock Detention Basin.

Electrical Service: Service from the Shadow Rock Pump Station

Storage Requirements

The new reservoir will be a minimum of 2.25 MG based on the following storage requirements:

1. A minimum of 1.38 million gallons (MG) of additional storage is required within the District to meet the requirements of the Water Reliability Emergency Storage (WRES) fund. District customers are contributing to the WRES fund, which is reserved for an additional 2.0 MG storage within the District. A portion of the required storage has been built at the Saddlecrest development (0.62 MG) in 2019, but the remaining 1.38 MG is still pending.
2. A minimum of 0.87 MG of storage is required for the future Saddleback Meadows development.

Tank Size

The proposed steel tank will be located to provide a HWL of approximately 1504-feet, so that the new tank will float on the Harris Grade pressure zone. This results in a pad elevation of approximately 1474-feet. Dimensions of the proposed tank are summarized in the table below.

Table 2 – Steel Tank Dimensions

Tank Inside Diameter: 116-feet

Tank Height: 32-foot steel shell plus 3-foot radius steel knuckle (35-foot wall height)

Tank High Water Level: 30-feet above finished floor

Site Grading and Tank Location

Tetra Tech reviewed the existing site topography utilizing topographic information from USGS. The Porter Property is a large expansive property with several ridge lines and the Trabuco Creek flowing through it.

The location of the tank was established by the following:

1. A pad constructed either completely in fill or cut at elevation 1474 feet
2. Located as close as practical to the Shadow Rock Lane entrance to minimize road and pipeline construction as well as tank construction costs.

The elevations at the property range from approximately 1200-feet to just over 1600-feet. There is a low point on the westerly side of the property. The site varies in grades with flatter slopes along western side of the property and steeper slopes to the east.

We reviewed both a filled pad and cut pad scenario and based on our review of the existing topography a pad cut into the steepening portion of the site results in less earthwork. For the purposes of this memorandum it was assumed the slope would be cut back at a slope of 2:1 to provide a flat pad. We have assumed a reservoir pad with a diameter of 176 feet, providing for a clearance around the tank for construction access and a future 15-foot wide access road.

Geotechnical investigation should be completed during preliminary design to verify the suitability of the site for a tank and to provide geotechnical design recommendations, and geotechnical hazards.

The proposed tank location is shown in Figure 2.

Site Access

Approximately 2,300 linear feet of existing unpaved access road traverses between the proposed tank location and the Shadow Rock entrance. The existing access road varies from 12 to 16-feet wide. For the purposes of this memorandum a 16-foot wide paved access road has been assumed from the Shadow Rock Lane entrance to the reservoir site. During preliminary design the access road should be further evaluated to confirm the appropriate design vehicle can access the site.

Grades along the existing access road range from 5% to 10% up to approximately 300 feet west of the proposed reservoir site, where the slope of the access road begins to increase to approximately 20%. Typically, at grades greater than 12% to 14% concrete trucks will not be able to carry full loads, resulting in increased construction costs during the pouring of the tank foundation and other concrete placement. To facilitate construction of the tank and future access at the site it is recommended that approximately 300 feet of new access road be designed with a maximum slope of 10% connecting the tank site to the existing access road. The proposed access road has been assumed to wrap around the tank. A preliminary sketch of the new access road and tank location is shown in the attached Figure 2.

Inlet and Outlet Piping and Appurtenances

We have assumed the design of the new tank will include the following inlet and outlet piping design features:

- Separate inlet and outlet connections designed to fill and draw from the tank at opposite sides to promote tank mixing.
- The fill and draw rates of the reservoir have been assumed to be similar to those of the Harris Grade Reservoir, resulting in 16-inch diameter inlet and outlet tank connections.
- Flexible expansion joints installed at all tank connections to protect the piping and tank against differential settlement or movement during a seismic event.
- An altitude valve will be placed on the tank inlet to prevent the tank from overflowing.

A common 16-inch inlet and outlet line will need to convey water from the new tank, down the site access road, to a suitable connection point within the District's system. For the purposes of this memorandum, the District has requested the 16-inch pipeline connect to a 16-inch pipeline within Plano Trabuco Drive. The proposed connection point is at Robinson Ranch Road and Plano Trabuco Drive, as shown in the Figure 3, attached.

Drain and Overflow Piping

The proposed reservoir will be designed with an overflow structure to prevent the tank from overflowing. The overflow structure will feature an air gap to a catch basin which will convey the water to the on-site drainage system.

A tank drain will be provided to remove unusable water from the reservoir. This is usually the last few feet that cannot be sent to the system and/or any wash down water due to tank cleaning. On a steel tank a flush type cleanout will be provided through the tank wall, near the bottom of the tank wall. The cleanout will convey water through an air gap into the on-site drainage system.

Site Drainage

Site surface runoff will be collected from the drainage basin surrounding the tank. Concrete v-ditches will intercept surface flows and convey these around the tank site. On-site grading will result in surface flows draining away from the tank and being collected in either a pipe or directed to a concrete v-ditch. Off-site and on-site drainage will need to be conveyed along the access road from the tank site. Based on the topography there is a low spot on the site. It is assumed that the collected water can be drained to the Shadow Rock Detention Basin. For the purposes of this technical memorandum an 18-inch diameter storm drain was assumed. During future preliminary design development, the contributing off-site water shed, and the collected on-site surface flows should be determined. The permanent drainage facilities should also consider flow rates from a reservoir overflow event and the drainage facilities should be designed to convey the controlling flow scenario.

The proposed storm drain alignment used for this study is shown on Figure 4.

GEOTECHNICAL FINDINGS

A geotechnical site assessment was completed in 2001 by URS consisting of a review of previous geotechnical reports, a review of published regional geologic maps and reports, and a limited geological site reconnaissance. No subsurface field investigation or laboratory testing was performed.

The report found that the site is generally underlain by sedimentary and volcanic rock, with local areas of alluvial and slope wash deposits. Summarized below are the geological characteristics of the site.

- Western part of the property is underlain by conglomerate of the Trabuco Formation (weakly indurated, uncemented, massively bedded, and has boulders up to 7-feet in diameter).
- Northern part of the property in Arroyo Trabuco by alluvial deposits (generally consist of sand, gravel, and boulders that are unconsolidated)
- Eastern part of the property by Santiago Volcanic rock

Faulting and Seismicity: There are no known active or potentially active faults traversing the site.

The 2001 Geotechnical Site Assessment recommended the following geological hazards be further investigated, as they may be present at the site.

- Earthquake-induced ground motions and land slide potential
- Location of the Aliso fault trace
- Flooding and liquefaction
- Surficial failures and erosion

PERMITTING

It is anticipated that permitting and coordination with the following agencies will be required:

- County of Orange
- Regional Water Quality Control Board
- California Department of Drinking Water
- Encroachment permit for pipeline from the City of Rancho Santa Margarita
- Environmental permits: In 2001 URS completed a Phase 1 Environmental Site Assessment (ESA) Review and Update on the District's Porter Property. The ESA recommended that a wetland delineation survey be completed to better define the status of the on-site drainages to better define the status of the on-site drainages as wetlands that could be jurisdictional and/or require mitigation if impacted by development. Based on the wetland delineation survey a Corps of Engineers Section 404 permit and California Division of Fish and Game Section 1601 agreement may be required. Additionally, the ESA recommended a protocol survey for the Quino Checkerspot Butterfly habitat was recommended.

Continued permit coordination and development should continue in preliminary and final design.

CONSTRUCTION CONSIDERATIONS

The following items were considered when developing this memorandum.

Site Access: It is anticipated that minor grading and clearing of brush and trees along the edges of the access road will be required. During preliminary design the access road should be evaluated to confirm required design vehicles can access the site.

Work Area: 30-feet of work area around the tank has been provided. The contractor will require additional staging and laydown area during construction. It has been assumed that a temporary laydown area will be graded near the reservoir site and will be further developed during preliminary design.

Construction Water: It has been assumed the Contractor can get temporary construction water from the 8-inch PVC waterline in Shadow Rock Lane.

Electrical Service: An electrical service for the new reservoir site can be pulled from the same source as the Shadow Rock Pump Station. For the purposes of this memorandum it has been assumed overhead electrical lines will convey power to the new reservoir site.

Grading and Drainage Impacts: Runoff from the access road and reservoir site will be captured by gutters and collected in a drain line, conveying the water to the Shadow Rock Detention Basins.

The amount of runoff from a new tank and paved access road will decrease the overall site permeability consequently increasing overall site runoff. During preliminary design the District may be required to provide an on-site BMP to treat runoff prior to discharging it.

CONSTRUCTION PHASING AND DURATION

Construction Phasing

In general, the following construction sequencing is recommended.

1. Site access road rough grading and improvements: Tree and brush removal, pruning, and rough grading along the access road to accommodate construction vehicles.
2. Site preparation: clearing of the site and preparing the site for grading activities.
3. Perform rough grading of reservoir pad.
4. Construct new tank, onsite piping, new 16-inch pipe to Plano Trabuco Road, valving, drains, overflow, new 18-inch storm drain to the Shadow Rock Detention Basin, electrical, etc.
5. Disinfect and hydrotest new tank.
6. Fill tank and bring new reservoir online.
7. Complete final site grading, final access road paving, landscaping, and miscellaneous site work.

Further refinement of the construction sequencing and phasing should be undertaken during the preliminary and final design phases of this project.

Construction Duration

The construction duration of this project is expected to require approximately 19 months with the following required durations:

1. Site access road rough grading and improvements – 1 month
2. Reservoir construction including; grading operations, shoring, piping and appurtenances, and 18-inch storm drain to Shadow Rock Detention Basins – 9 months
3. 16-inch pipeline to Plano Trabuco – 6 months
4. Piping connections – 2 weeks
5. Reservoir disinfection and testing – 2 weeks
6. Final grading, site work, landscaping, and miscellaneous work – 2 months

PLANNING LEVEL CONSTRUCTION COST

The table below compares the estimated planning level construction costs for a new tank at the Porter Property and a new tank at the Harris Grade site. The construction costs for the Harris Grade tank were developed for the Harris Grade Siting Study.

Table 3 – Planning Level Construction Cost Estimate

	Porter Property 2.25 MG Tank	Harris Grade 2.7 MG Tank
Estimated Construction Cost	\$9,100,000	\$6,100,000
30% Contingency	\$2,700,000	\$1,800,000
TOTAL ESTIMATED CONSTRUCTION COST	\$11,800,000	\$7,900,000

An estimated breakdown of construction costs is attached in the appendix.

In general, the costs for the new Harris Grade Reservoir are a more developed preliminary engineer's construction cost estimate, while the Porter Property estimate is a planning level estimate with more assumptions and unknowns.

In addition to the assumptions outlined in the memorandum above the following assumptions were made in developing the planning level estimate for the Porter Property Tank.

- **Geotechnical:** It was assumed that from a geotechnical standpoint this project including access road, reservoir location, and grading concept is feasible. A future geotechnical investigation should be conducted to confirm our assumptions.
- **Electrical Service:** The cost of the electrical service can vary greatly depending on SCE's existing infrastructure. The cost for an electrical service to the site can be anywhere from \$500,000 to \$1,000,000. For the purposes of this memorandum \$750,000 was assumed for the electrical service cost.
- **Site Drainage:** It has been assumed that the Shadow Rock Detention Basin and pump station can accommodate the site runoff and an overflow event. An 18-inch diameter storm drain pipe was assumed to convey runoff from the reservoir site to the Shadow Rock Detention Basin.
- **Trench Excavation and Safety Measures** were assumed to be 2% of the pipeline costs
- **Inlet/Outlet Piping:** It was assumed that the fill draw rate of the tank will be similar to that of the Harris Grade Reservoirs. 16-inch piping was assumed.

HARRIS GRADE AND PORTER PROPERTY SITE EVALUATION

The Harris Grade site has more existing infrastructure surrounding it than the Porter Property (existing reservoir site, access road, electrical service, adjacent property owners, etc) resulting in more difficult construction, and additional coordination.

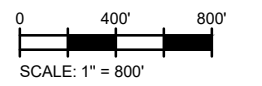
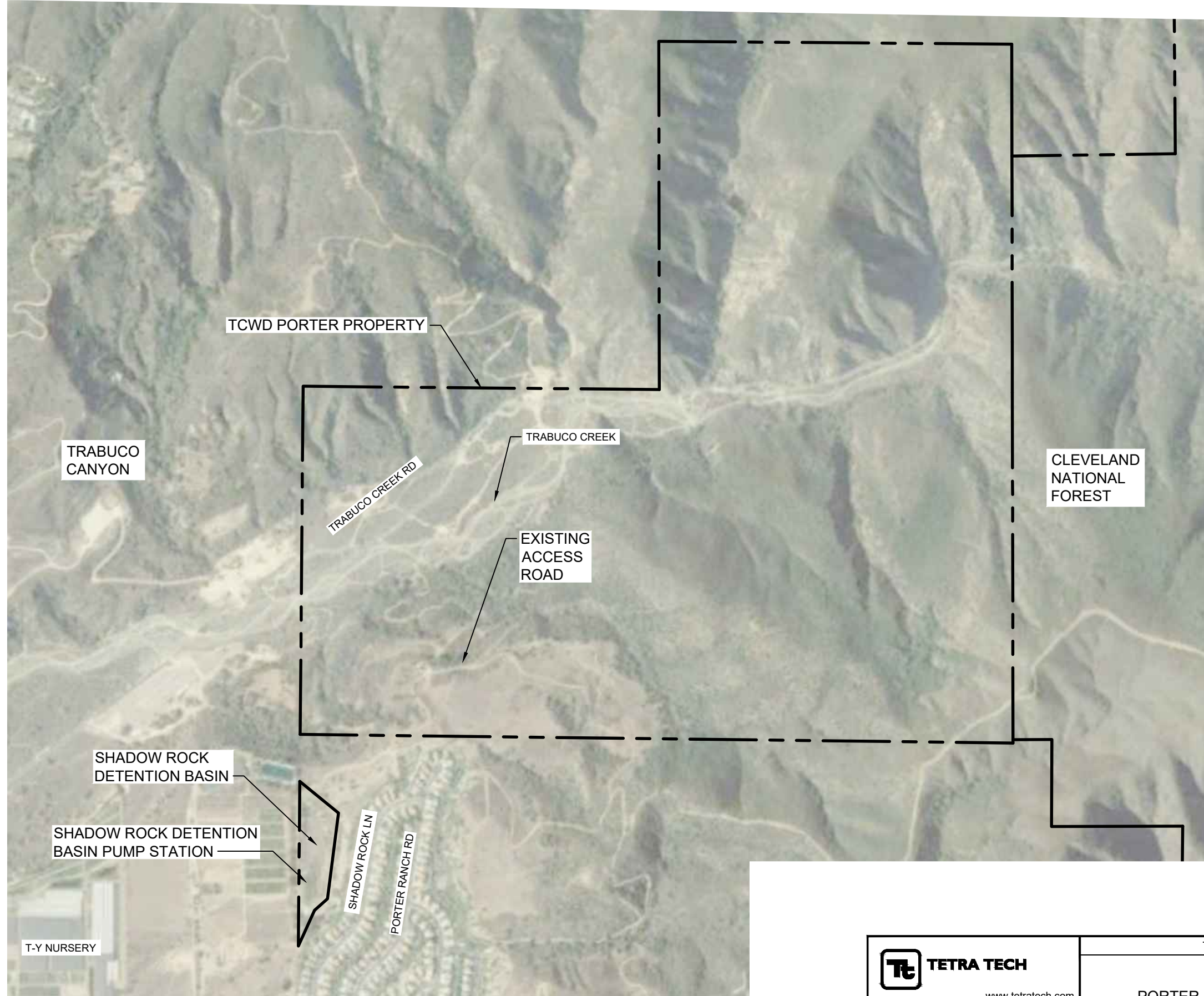
The Porter Property is mostly undeveloped and requires new infrastructure to be built to the site, resulting in additional costs to develop the site.

Summarized in the table below is an evaluation of constructability issues at each site.

Table 4 – Harris Grade and Porter Property Site Evaluation		
	Porter Property 2.25 MG Tank	Harris Grade 2.7 MG Tank
Impacts to System	No storage impacts during construction	District has 0.42 MG less storage during construction due to the removal of the existing tank at the Harris Grade Site
Contractor Work Area and Staging Area	Additional grading may be required to grade a flat pad for additional Contractor staging.	Reduced work area and staging area, will require phased staging of materials and coordination with adjacent property owners to secure the lower staging area.
Site Access	2,300 linear feet of paved site access road will need to be constructed	Minor grading improvements to existing access road will be required
Inlet/Outlet Piping	10,000 linear feet of 16-inch piping is required to tie into system.	400 linear feet of 16-inch piping is required to tie into system
Site Drainage	3,500 linear feet of drain pipe is required.	Site can sheet flow off the property, no additional storm drain is required.
Electrical Service	An electrical service will need to be taken to the site approximately 3,500 linear feet away.	A new electrical service is not required.
Coordination/Permitting	Minimal coordination required with adjacent property owners.	Requires coordination with the Forest Service and adjacent property owners to secure staging areas.

Tetra Tech is prepared to meet with the District to discuss this technical memorandum.

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TRABUCO CANYON WATER DISTRICT

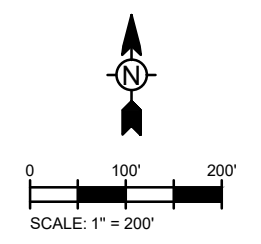
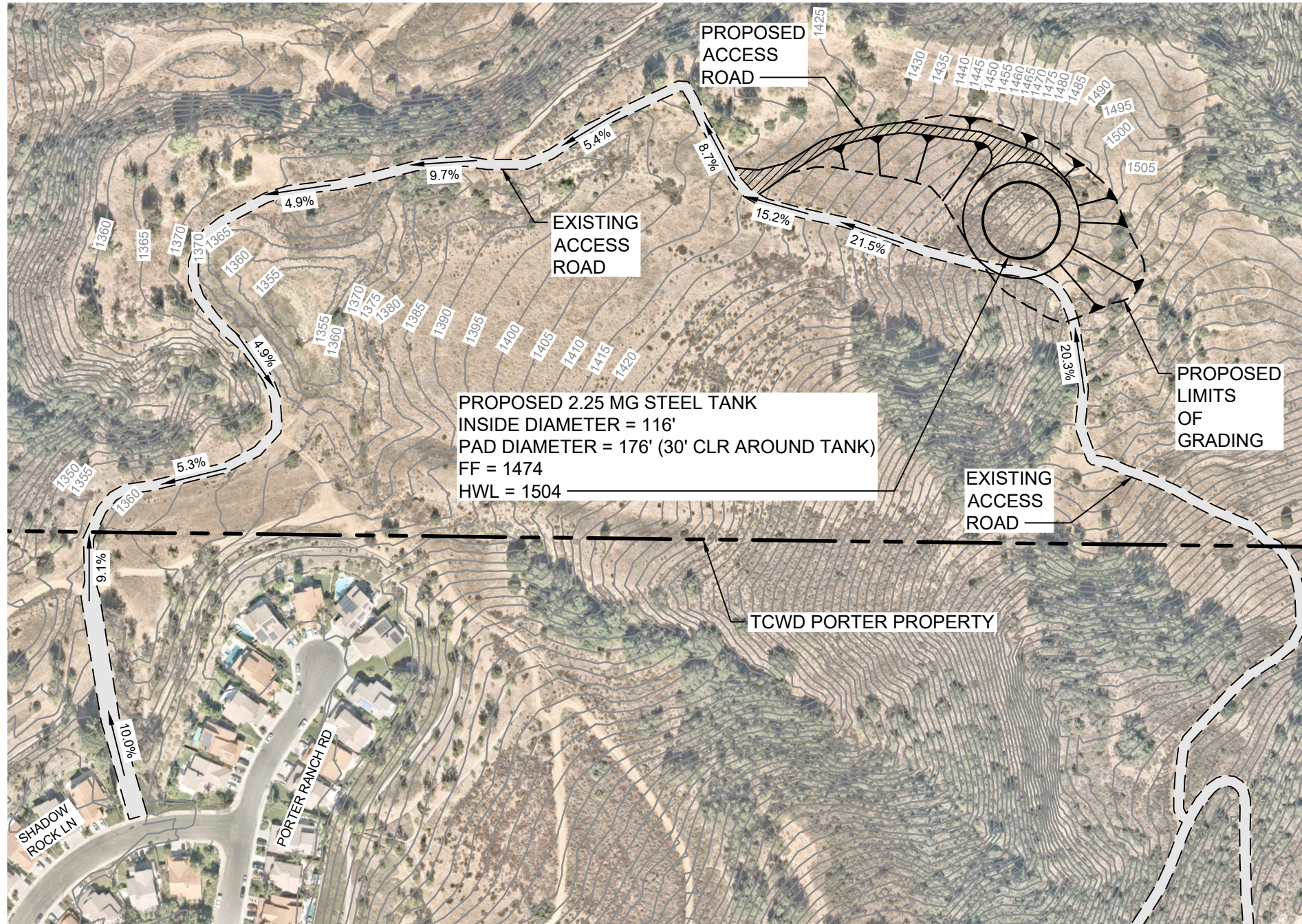
PORTER PROPERTY OVERALL SITE PLAN


Project No.:	200-09339-20001
Date:	DECEMBER 2020
Designed By:	KMB
FIGURE	
1	

Bar Measures 1 inch

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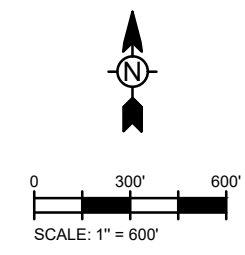
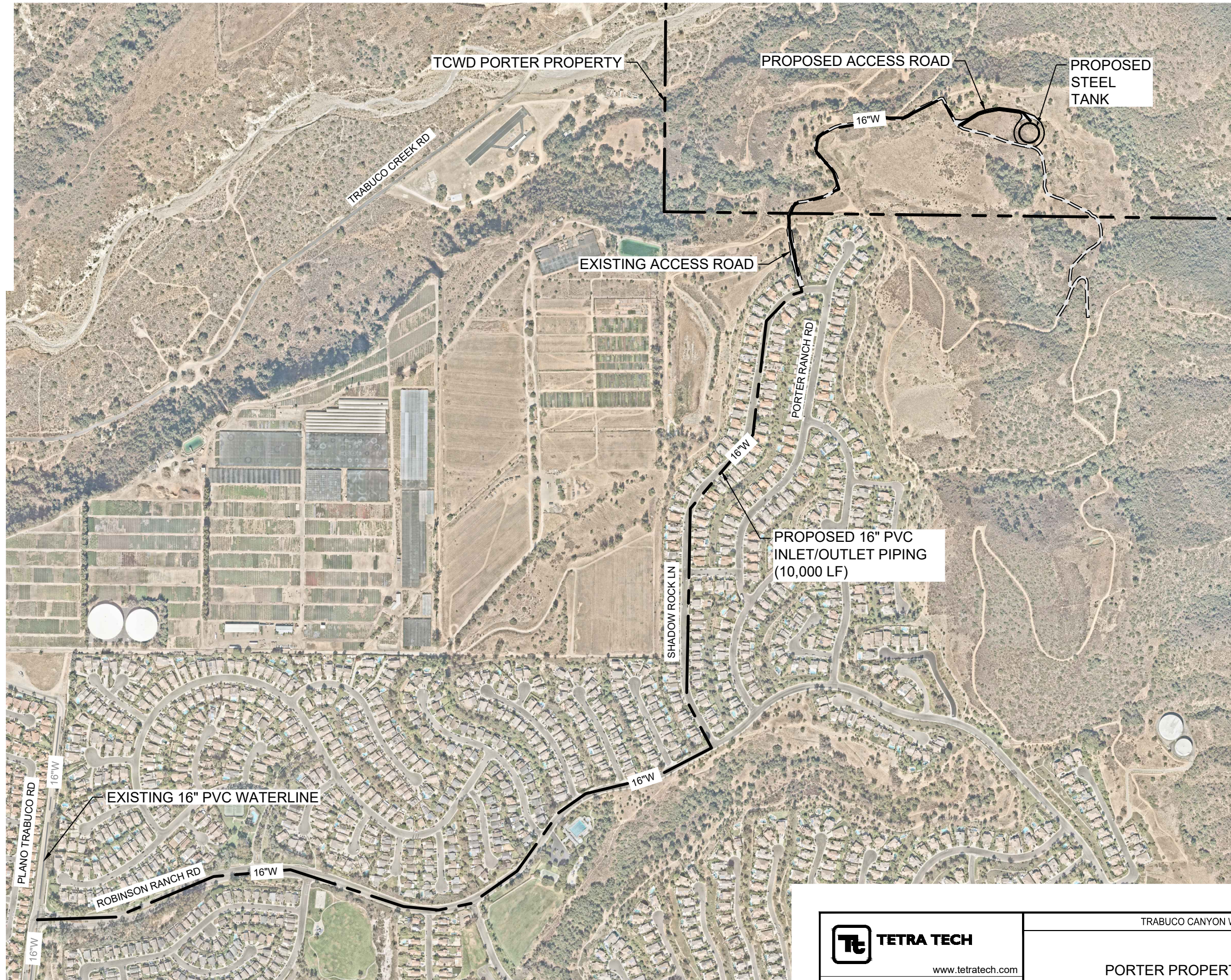


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	PORTER PROPERTY TANK LOCATION AND ACCESS ROAD	Date: DECEMBER 2020 Designed By: KMB
		FIGURE 2

Bar Measures 1 inch

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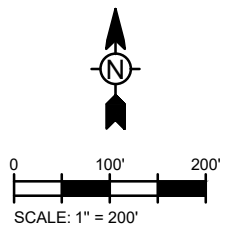
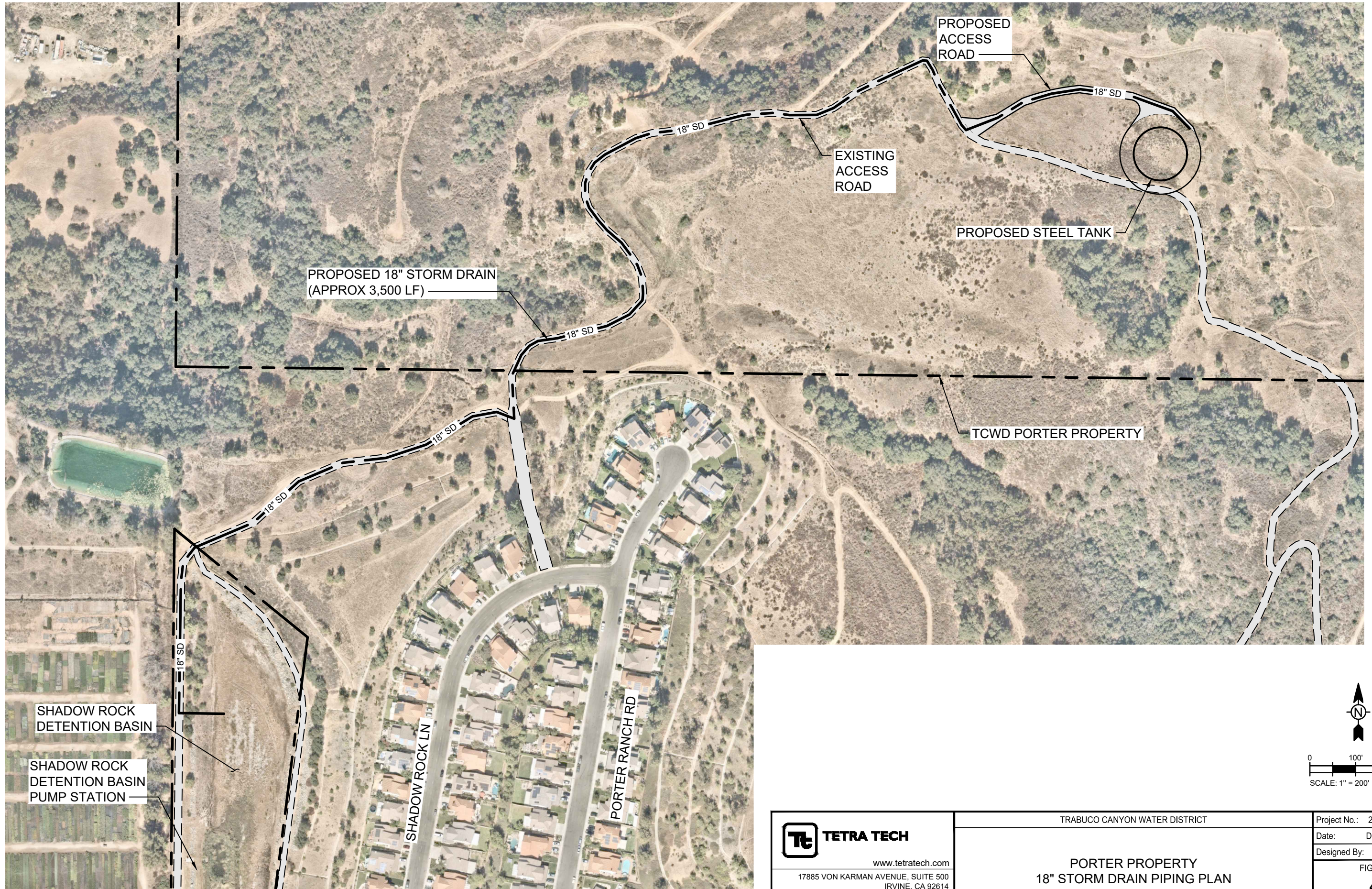
PORTER PROPERTY PIPING PLAN

Project No.:	200-09339-20001
Date:	DECEMBER 2020
Designed By:	KMB
FIGURE	3

Bar Measures 1 inch

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TRABUCO CANYON WATER DISTRICT

**PORTER PROPERTY
 18" STORM DRAIN PIPING PLAN**

Project No.:	200-09339-20001
Date:	DECEMBER 2020
Designed By:	KMB
FIGURE 4	

Bar Measures 1 inch

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TRABUCO CANYON WATER DISTRICT
Porter Ranch Property - 2.25 MG Tank
Planning Level Construction Cost Estimate

DATE: December 18, 2020
 Project No.: 200-09339-20001

Porter Property					
Item No.	Description	Total	Unit	Unit Cost	Total
1	Mobilization and Demobilization	1	LS	\$425,000	\$425,000
2	Trench excavation and safety measures	1	LS	\$87,000	\$87,000
3	Clear and grub site	1	LS	\$15,000	\$15,000
4	Construct access road improvements	1	LS	\$840,000	\$840,000
5	Site grading	1	LS	\$175,000	\$175,000
6	Storm Drain Piping	1	LS	\$700,000	\$700,000
7	Inlet/outlet piping along access road	1	LS	\$690,000	\$690,000
8	Implement interim erosion control and BMP maintenance	1	LS	\$20,000	\$20,000
9	Construct 2.25 MG Steel Tank	1	LS	\$1,632,000	\$1,632,000
10	Furnish and Install yard piping	1	LS	\$130,000	\$130,000
11	Construct 16-inch piping in street to Plano connection point	1	LS	\$2,782,500	\$2,782,500
12	Construct miscellaneous site work and AC Paving	1	LS	\$668,000	\$668,000
13	Electrical Improvements	1	LS	\$750,000	\$750,000
14	Disinfection Startup and testing	1	LS	\$20,000	\$20,000
15	Environmental Mitigation Measures and Monitoring	1	LS	\$150,000	\$150,000
Sub Total:					\$9,084,500
30% Contingency:					\$2,715,500
TOTAL:					\$11,800,000

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | JANUARY 6, 2021**

ENGINEERING MATTERS

ITEM 4: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING BELL CANYON SEWER LIFT STATION REHABILITATION PROJECT

Trabuco Canyon Water District (District) owns and operates the Bell Canyon Lift Station (Station) in the Dove Canyon community. The station was built in the late 1980’s as part of the Dove Canyon Development and is located at the end of Bell Canyon Drive. The station lifts sewage from 130 homes via a 4” PVC force main, 4500 LF to a manhole at the intersection of Willowglade and Golf Ridge Dr., which then gravity flows to Golf Club Lift Station.

The station footprint is 30’x15’ and includes a wet well with two sets of submersible pumps working in series, a dry pit/valve vault, electrical/MCC panel, a chlorine tank and a backup diesel generator. On September 2, 2019, a complete failure of the station occurred and required Wastewater Operations and Maintenance Staff to install an emergency bypass system to prevent a Sanitary Sewer Overflow (SSO). Two days later, operations were able to restore service to one set of pumps, removed the bypass system and installed a temporary pumping system to back up the operational pumps.

District staff, along with JIG Consultants, identified areas that required rehabilitation and replacement, and completed a bid package for this work in April 2020. At the May 20, 2020 Regular Board Meeting, the Board of Directors authorized the General Manager to execute a contract with Ferreira Construction for the Bell Canyon Lift Station Rehabilitation in the amount of \$1,496,228, with a \$75,000 contingency, for a not to exceed amount of \$1,571,228. At the June 15, 2020 Regular Board Meeting, the Board of Directors authorized the General Manager to execute a contract with Butier Engineering, Inc. for Construction Management Services in the amount of \$180,830.

The original construction completion date was December 2020; however, submittals and equipment procurement have been significantly affected by shutdowns due to the coronavirus, pushing the completion date to May 2021 (Exhibit 1). The following is the budget for the project:

BELL CANYON LIFT STATION REHABILITATION PROJECT		
ITEM	TASK DESCRIPTION	BUDGET
1	Construction – Ferreira Construction (Includes \$75,000 Allowance for Field Orders and \$75,000 Approved Contingency)	\$1,571,228
	• Fence Revision	\$12,468.00
	• Wet Well Replacement	\$52,952.93
	• By-Pass Valve Relocation	\$5,369.67
	<i>Total</i>	\$70,790.60
2	Geotechnical Site Investigation, Vibration Monitoring, Video Survey, Additional Boring - GMU Geotechnical	*\$17,300.00
3	Engineering Design/Services During Construction – JIG Consultants	\$117,625.00
4	Construction Management/Inspection-Butier	\$180,830.00
5	Site Survey – DMc Engineering	\$5,280.00
6	Easement Procurement - DMc Engineering/CPSI Right-of-Way Services	*\$4,000.00
7	Service/Meter Plan/Arc Flash Study - SCE	*\$3,000.00
	Total:	\$1,899,263.00

*Estimated

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | JANUARY 6, 2021**

FUNDING SOURCE:

Emergency Reserves

FISCAL IMPACT:

\$1,899,000.00 (FY19-20 & FY20-21)

ENVIRONMENTAL COMPLIANCE:

Notice of Exemption was filed with the County of Orange on June 16, 2020

RECOMMENDED ACTION:

Committee to receive information at the time of the Committee Meeting.

EXHIBIT(S):

1. Bell Canyon Lift Station Construction Notice

CONTACTS (staff responsible): PALUDI/LAUSTEN



Construction Notice

Bell Canyon Sewer Lift Station Rehabilitation Project **December 2020**

WHO: Trabuco Canyon Water District (TCWD), project owner; Ferreira Construction, contractor.

WHEN: Construction will begin on January 4 and is expected to be complete in May 2021.

WHERE: 23294 Bell Canyon Dr., Trabuco Canyon CA 92679 (See map on reverse).

PROJECT SUMMARY: Bell Canyon Sewer Lift Station (Station) was built in the late 1980's as part of the Dove Canyon Development and is located at the end of Bell Canyon Drive. The Station collects and lifts sewage from 130 homes through a force main (4" pipe) 4,500 feet in length, to a manhole at the intersection of Willowglade and Golf Ridge Dr., after which the sewage gravity flows to Golf Club Sewer Lift Station. The Station is in need of a major upgrade of the pumps, valves, piping, appurtenances, electrical components and backup generator.

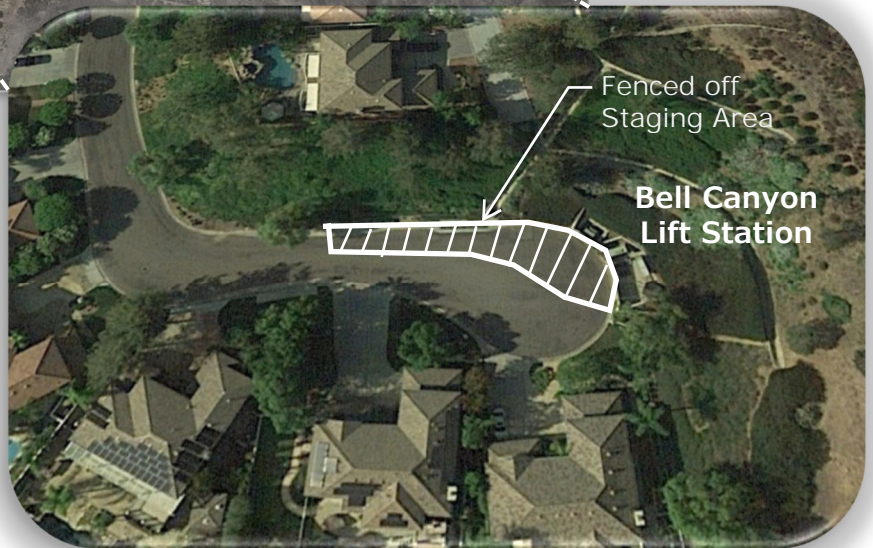
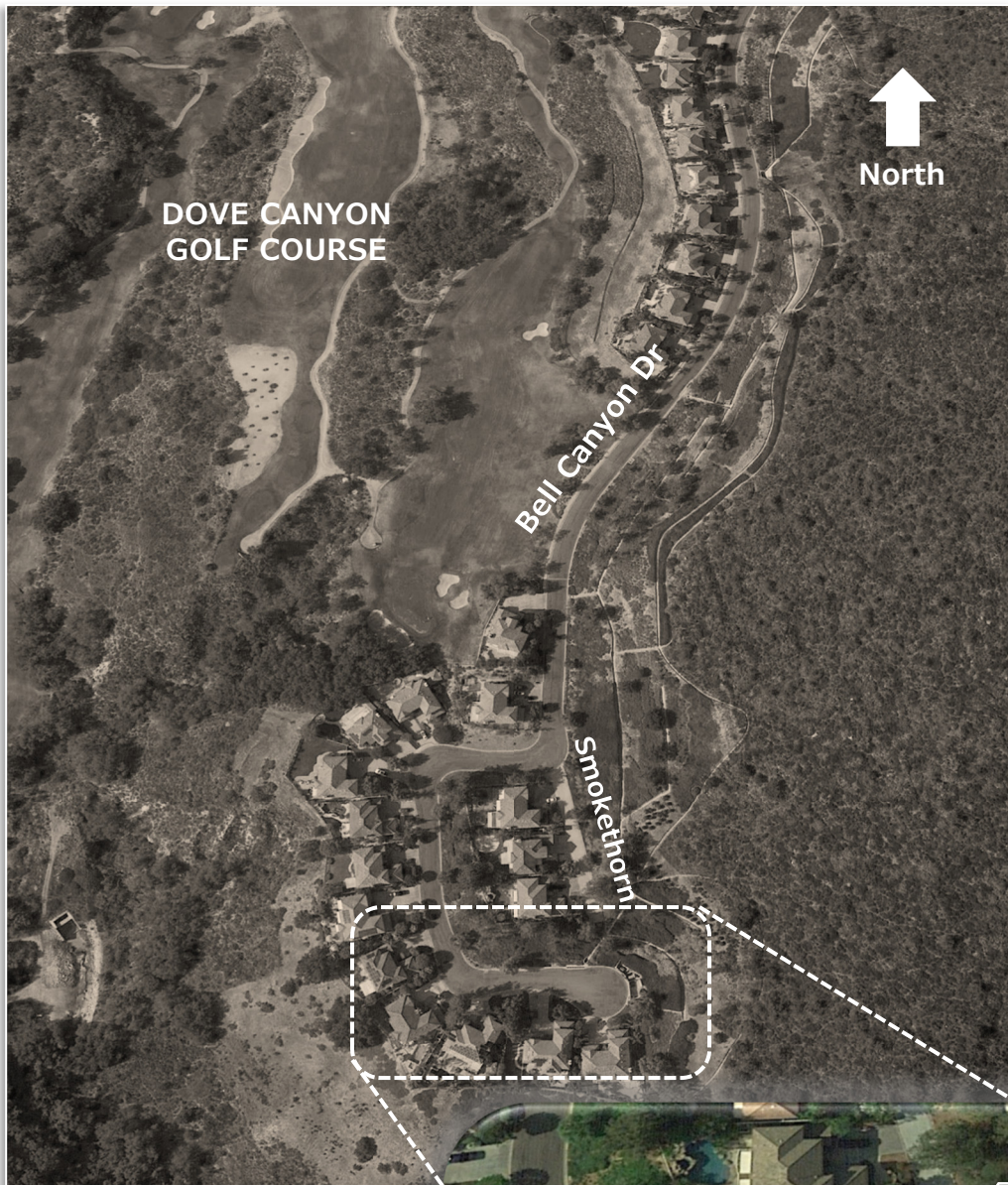
PROJECT IMPACTS: Construction traffic, including trucks and some heavy equipment will affect Bell Canyon Drive as well as Dove Canyon Drive during work hours. A portion of the cul-de-sac at the end of Bell Canyon Drive will be fenced off for the duration of construction (see inset on project map).

ENVIRONMENTAL COMPLIANCE: The project must conform and adhere to several environmental compliance measures and restrictions that will be monitored by certified contractors with reports submitted to TCWD and the appropriate regulatory agencies. Environmental compliance requirements, beyond the control of TCWD or its contractor, may result in impacts to the construction schedule and time for completion.

WORK HOURS: 8:00 a.m. to 5:00 p.m., Monday through Friday.

QUESTIONS: Any questions regarding the project may be directed to TCWD's District Engineer Lorrie Lausten at llausten@tcwd.ca.gov or (949) 858-0277 x130.





BELL CANYON SEWER LIFT STATION REHABILITATION PROJECT

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | JANUARY 6, 2021**

ENGINEERING MATTERS

ITEM 5: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING RECYCLED WATER PUMP STATION PAVING PROJECT

The Dove and Robinson Ranch Recycled Water Pump Stations (DCRRPS) provides treated effluent from the Robinson Ranch Wastewater Treatment Plant Reclaimed Water Reservoir to the Dove Canyon, Robinson Ranch, and Trabuco Highlands communities. In August 2020, a major overhaul of the station was completed. At that time, District Staff proposed to remove the trench paving from the electrical contractor and allocate those funds towards paving the entire site with a separate paving contractor. District staff, working with GMU Geotechnical, received two (2) bids for the work as summarized below:

CONSTRUCTION BIDS	
Company	Bid
Champion Paving	\$17,590.00
Mission Paving and Sealing	\$24,550.00

FUNDING SOURCE:

General Fund

FISCAL IMPACT (PROJECT BUDGET):

\$21,590.00

ENVIRONMENTAL COMPLIANCE:

Notice of Exemption

RECOMMENDED ACTION:

Approve and recommend the Board of Directors ratify a Construction Contract with Champion Paving for the Recycled Water Pump Station Paving Project in the amount of \$17,590, with a contingency of \$4,000, for a not to exceed amount of \$21,590 (Action Calendar).

EXHIBIT(S):

None

CONTACTS (staff responsible): PALUDI/LAUSTEN

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | JANUARY 6, 2021**

ENGINEERING MATTERS

**ITEM 6: DISCUSSION AND POSSIBLE ACTION(S) CONCERNING WASTEWATER TREATMENT PLANT ACCESS ROAD
SLURRY SEAL PROJECT**

The service road to the Robinson Ranch Wastewater Treatment Plant was rehabilitated in 2018 at a cost of \$284,000.00 via full-depth reclamation (FDR) with cement treatment. It was anticipated at that time that District Staff would come back to slurry seal the road within one-year to extend its service life. Due to the ongoing construction project at the Dove/Robinson Ranch Recycled Pump Station, this work was delayed. District staff, working with GMU Geotechnical, received three (3) bids for the Emulsion Aggregate Slurry Seal (EAS) as summarized below:

CONSTRUCTION BIDS	
Company	Bid
Mission Paving and Sealing	\$17,200.00
Champion Paving	\$19,392.00
Martin Contracting	\$19,380.00

FUNDING SOURCE:

General Fund

FISCAL IMPACT:

\$17,200.00

ENVIRONMENTAL COMPLIANCE:

Notice of Exemption

RECOMMENDED ACTION:

Approve and recommend the Board of Directors ratify a Construction Contract with Mission Paving and Sealing, Inc. for the Wastewater Treatment Plant Access Road Slurry Project in the amount of \$17,200 (Action Calendar).

EXHIBIT(S):

None

CONTACTS (staff responsible): PALUDI/LAUSTEN

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | JANUARY 6, 2021**

ENGINEERING MATTERS

ITEM 7: OTHER ENGINEERING AND OPERATIONS PROJECT UPDATES

1. Falcon Estates Development
2. Saddle Crest Development
3. Joplin Property/SCADA Upgrade
4. Dimension Water Treatment Plant Waste Tank Replacements
5. Silvertree Lane Pipeline Replacement
6. Other Projects

RECOMMENDED ACTION:

Committee to receive project status updates at time of the Committee Meeting.

EXHIBIT(S):

1. County of Orange Letter Regarding Joplin Property
2. DWTP Tank Layout
3. Silvertree Lane Pavement Repair Photos

CONTACTS (staff responsible): PALUDI/PEREA/LAUSTEN

STAFF MEMBERS

Fernando Paludi, General Manager
Michael Perea, District Secretary
Cindy Byerrum, District Treasurer
Atkinson, Andelson, Loya, Ruud & Romo
District General Legal Counsel



BOARD OF DIRECTORS

Michael Safranski, President
Don Chadd, Vice President
Glenn Acosta, Director
Stephen Dopudja, Director
Edward Mandich, Director

December 18, 2020

VIA E-MAIL

Mat Miller, Chief Real Estate Officer
CEO Real Estate
County of Orange
333 W. Santa Ana Blvd., 3rd Floor
Santa Ana, CA 92701

Re: Trabuco Canyon Water District – SCADA System Repeater and Access – County of Orange – Joplin Ranch Property

Dear Mr. Miller,

This letter is provided as a follow up to prior discussions between Trabuco Canyon Water District (District) staff and Orange County (County) staff concerning the District's existing and operating Supervisory Control and Data Acquisition (SCADA) Repeater Antenna and related connections (collectively, the "Repeater") currently mounted on one of the water reservoir tanks located on the County's Joplin Ranch property ("Joplin Property").

As has been discussed on several occasions with County staff in the Land Development Team over the past nine months and most recently in a meeting on November 30, 2020, the District is upgrading its SCADA network and strongly desires to work cooperatively and expeditiously with the involved County departments to find a means to maintain Repeater capability for the District at the Joplin Property. The District is encouraged by County staff's stated commitment to begin working on an operating license with the District to maintain a new Repeater in the current location or facilitate its relocation within the Joplin Property on a separate freestanding structure (which might have the advantage of removing concerns regarding the existing tank placement and might also serve to expedite the authorization process).

As you know the District is the drinking water utility service provider in this area of the County and, like the County, is an "essential service" provider during the COVID-19 pandemic situation. The Repeater is fundamental to the District's drinking water and fire flow operations to residents and the local community, including the Joplin Property. Recent multiple wildfires and

Public Safety Power Shutoffs in the area serve to emphasize the importance to public safety of maintaining a robust and reliable communication network.

The Repeater has, in various forms, been in place on the Joplin Property for over thirty years and County staff has been well aware its presence and the District's access to it for maintenance purposes. Currently, the District is implementing a critical upgrade of its entire SCADA network and our studies confirm that the Joplin Property, given its elevation and location within the District's service territory, is uniquely situated to be the hub of the network's backbone system. In fact, the new SCADA evaluation has determined that alternative locations for the Repeater are not only infeasible, potentially requiring a tower several hundred feet in height, but would burden District ratepayers significantly more than the cost of maintaining the Repeater at the Joplin Property.

I would like to highlight that the District and the County have a long history of working cooperatively on various facilities issues important to both County management and the provision of various services to local residents and the community. The District has specifically rendered assistance to Orange County Public Works (OCPW) in a number of instances including, but not limited to:

- The District granted permission to OCPW for excavation and access rights for creek re-alignment upstream of the Trabuco Canyon Bridge over District property in February, 2019, and to install monitoring cameras for debris flow in November, 2019.
- The District granted permission to OCPW to install barriers and signage on District property to mitigate overcrowding on the Trabuco Creek roadways in March, 2019.
- The District diligently advised and assisted OCPW in response to a formal demand to restore water service to the Joplin Property in March, 2020 so that it could serve a critical purpose in the County's response to COVID-19. District staff was instrumental in quickly coordinating with vendors to perform on-site water tank cleaning and disinfection, and with regulatory staff from Orange County Health Care Agency and the State Water Resources Control Board to ensure that restored water service was safe and compliant in terms of human consumption.


These are only a few examples from recent months. District assistance with management and operations of County facilities on the Joplin Property extends back over a number of decades.

In summary, the District seeks the County's cooperation to ensure that the District can keep and upgrade its Repeater on the Joplin Property, either in its current location or on a separate free-standing structure. The District is of the view that an authorization or license to operate would only need to extend for the period during which the County continues to own the Joplin Property. It is the District's current understanding that the County is in the process of drafting such a license agreement and I look forward to receipt of this draft for District review at the earliest convenience.

We look forward to working with the County on this matter.

Sincerely,

TRABUCO CANYON WATER DISTRICT

A handwritten signature in black ink, appearing to read "Fernando Paludi". The signature is stylized with large, overlapping loops and a long horizontal stroke at the end.

Fernando Paludi, General Manager

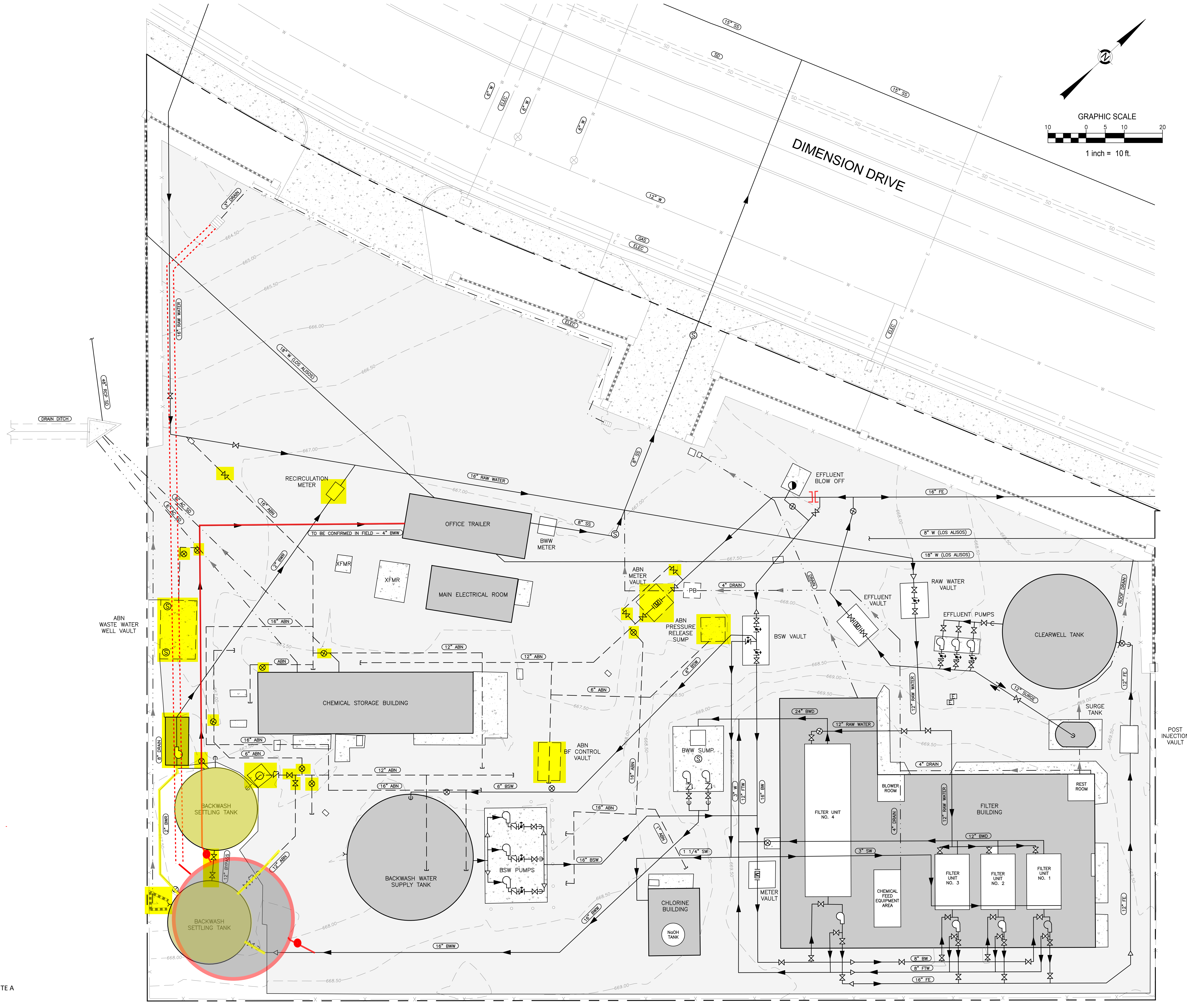
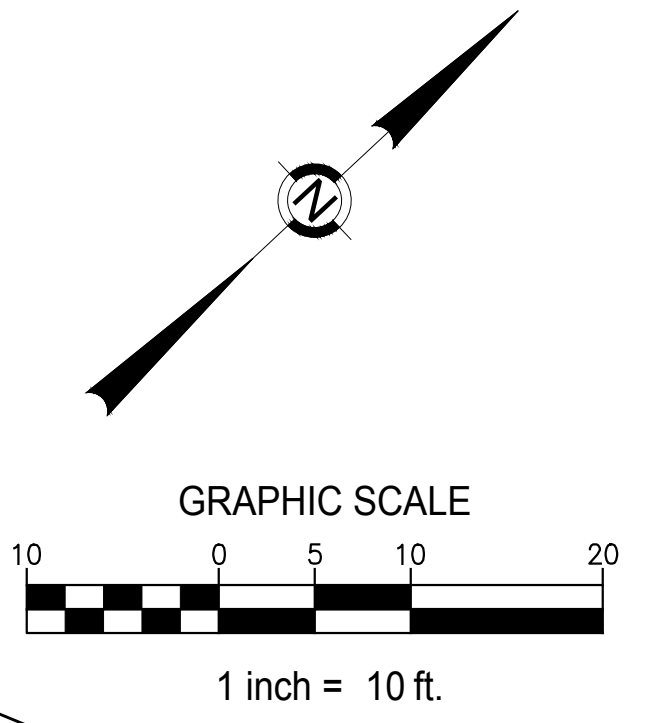
cc: Brian Bauer, Real Estate Land Development Manager

LEGEND:

- | | | | |
|--|---------------------|--|---------------------------|
| | EXISTING LINE | | BLOW OFF |
| | ABANDONED LINE | | PUMP |
| | DRAIN LINE | | GATE VALVE |
| | FENCE | | BUTTERFLY VALVE |
| | BLOCK WALL | | CHECK VALVE |
| | PROPERTY LINE | | PRESSURE REDUCING VALVE |
| | CENTERLINE | | METER |
| | WATER LINE | | REDUCER |
| | STORM DRAIN LINE | | CAP |
| | GAS LINE | | PIPE ELBOW |
| | ELECTRIC LINE | | OVERFLOW |
| | CONTOUR LINE | | PIPE CONTINUATION |
| | CONCRETE | | FLOW ARROW |
| | ASPHALT CONCRETE | | BOLLARD |
| | BUILDING/STRUCTURE | | ELECTRIC BOX |
| | ABANDONED VAULT | | UTILITY BOX/VAULT/PULLBOX |
| | SIZE-IDENTIFICATION | | SANITARY SEWER MANHOLE |

ABBREVIATIONS:

- | | |
|------|--------------------------|
| ABN | ABANDONED |
| AC | ASBESTOS CEMENT |
| BF | BACKFLOW |
| BW | BACKWASH |
| BSW | BACKWASH SUPPLY WATER |
| BWD | BACKWASH WASTE DRAIN |
| BWR | BACKWASH WATER RECOVERY |
| BWW | BACKWASH WASTE WATER |
| ELEC | ELEC |
| FE | FILTERED EFFLUENT |
| FTW | FILTER TO WASTE |
| PB | PULL BOX |
| RCP | REINFORCED CONCRETE PIPE |
| SD | STORM DRAIN |
| SS | SANITARY SEWER |
| SW | SURFACE WASH |
| W | WATER |
| XFMR | TRANSFORMER |



	CALL TOLL FREE 811		318 W KATELLA AVE, SUITE A
	TWO WORKING DAYS BEFORE YOU DIG		ORANGE, CA 92867
CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION WORK. SEE GENERAL NOTES FOR FURTHER INFORMATION.		www.jigconsultants.com	

NO.	DATE	REVISIONS

DESIGN: JT	DATE:
DRAWN: JT	ENGINEER: JOSEPH I. GUTIERREZ RCE 55604
CHECKED: JG	PRINCIPAL ENGINEER: LORRIE LAUSTEN RCE 67027

TRABUCO CANYON WATER DISTRICT
DIMENSION WATER TREATMENT PLANT

EXISTING SITE PLAN

SHEET OF

C:\Users\jg\OneDrive\Documents\Projects\2024\12-2024-5-18pm by JIG CAD 2

Silvertree Lane Paving Improvements



Silvertree Lane Paving Improvements



**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | JANUARY 6, 2021**

OPERATIONAL MATTERS

ITEM 8: WATER SYSTEM UPDATES

The following is a brief report of the water system for **December 2020**.

Projects and Repairs

1. Water Operations staff changed out one curb stop on Brighton in the Dove Canyon Community.
2. Water Operations staff cleaned all water filters (18) at the Trabuco Creek Ground Water Treatment Facility and changed out all chemical feed lines.
3. Water Operations staff repaired one isolation valve and worked with contractor, Ferreira Construction to replace one hydrant axillary valve on Foxtail Lane in the Dove Canyon.

Monthly Water System Operations Summary

The Monthly Water System Operations Summary is attached for the Committee's review. Any anomalies will be presented at the time of the Engineering/Operational Committee Meeting.

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

EXHIBITS

1. Monthly Water System Operations Summary

CONTACTS (staff responsible): PALUDI/KESSLER

**TRABUCO CANYON WATER DISTRICT
MONTHLY WATER SYSTEM OPERATIONS SUMMARY**

2020													
DIMENSION WTP													
	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	TOTAL
SAC METER AC/FT	152	166	128	68	147	13	Offline	199	264	248			1,385
BACKWASH AC/FT	5	4	4.0	3	5	1	0	3	5	5	5		40
FLUSHWATER AC/FT	9	9	9.0	5	9	2	0	9	10	8	8		78
WTP EFFLUENT AC/FT	153	168	128	68	151	10	0	199	268	252	195		1,592
Wells													
TRABUCO CREEK GWTF	0	0	0	68	81	58	59	25	0	0	0		291
US WELL AC/FT	0	0	0	0	0	0	0	0	0	0	0		0
AMP WATER													
SMWD AC/FT	0	0	0	0	0	36	10	4	0	0	0		50
IRWD AC/FT	0	0	0	0	0	111	122	24	0	0	0		257
TOTAL SUPPLY													
AC/FT	153	168	128	136	232	197	191	252	268	252	195		2,172
CFS DAILY AVERAGE	2.4	2.9	2.1	2.3	3.8	3.3	3.1	4.0	4.5	4.1	3.3		3.3
AC/FT PER DAY	4.9	5.8	4.1	4.5	7.5	6.6	6.2	8.1	8.9	8.1	6.5		6.5
OPERATIONS in GAL.													
WTP DOMESTIC	28,424	26,778	32,688	18,700	37,176	3,740	75	59,242	45,254	43,758	42,412		338,247
WWTP DOM	6,000	20,570	14,630	11,110	27,170	22,800	23,430	17,710	16,170	15,070	10,546		185,206
OPERATIONS (AF)													
SUPPLEMENT TO RW	0	0	0	0	0	0	0	0	0	0	0		0
LOSSES in GAL.													
FLUSHING (gal.)	144,000	468,000	0	0	0	0	384,000	198,000	210,000	186,000	355,200		1,945,200
SEWER CLEANING (gal.)	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000		55,000
LINE BREAKS (gal.)	1,000	350,000	350,000	30,000	5,000	1,000	0	1,000	350,000	0	0		1,088,000
SYSTEM DEMAND **													
CFS DAILY AVERAGE	2.4	2.9	2.0	2.2	3.7	3.3	3.1	4.0	4.5	4.1	3.2		3.2
AC/FT PER DAY	4.9	5.7	4.1	4.5	7.4	6.6	6.2	8.1	9.0	8.1	6.4		6.5
RESERVOIR STORAGE													
MONTHLY AVG (MG)	8.8	8.6	8.8	8.9	8.6	8.8	8.5	8.2	8.8	8.7	8.8		9
DAYS OF STORAGE	4	3	4	4	3	4	3	3	4	4	4		4
ZONES (AF)													
RIDGELINE PS	Offline	Offline	Offline	Offline	20	10	122	199	252	237	174		1,014
EL TORO P.S.	153	168	128	68	131	111	122	24	0	0	0		905
TOPANGA	3	2	2	1	3	3	4	4	4	3	3		32
FALCON	0.5	0.6	0.2	0.2	0.7	0.7	0.8	0.8	0.8	0.6	0.5		6
ROSE PRV/ OAKS	3	3	3	5	6	6	7	7	6	6	Inop.		52
CANYON CREEK	0.2	0.3	0.2	0.2	0.3	0.4	0.4	0.6	0.6	0.4	0.2		4
ROSE P.S.	0.2	0.1	1.5	0.3	1.5	0.8	0.8	1.4	0.9	0.8	0.9		9
ROBINSON RANCH	26	30	19	24	49	47	56	73	81	72	67		544
DOVE CANYON	60	63	51	39	87	91	97	99	90	90	45		812
PORTOLA HILLS	8	11	9	8	11	13	16	15	16	15	14		136

* Usage estimated new meter installed

** Excludes Operational use, losses, and supplement to Recycled Water Reservoir (RW)

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | JANUARY 6, 2021**

OPERATIONAL MATTERS

ITEM 9: WASTEWATER SYSTEM UPDATES

The following is a brief report of the wastewater system for **December 2020**.

Projects and Repairs

1. Wastewater Operations staff worked with the Maintenance Department and Hydrotech Electrical to install/relocate underground utilities at the Heritage Sewer Lift Station, including a new electrical conduit for the security gate opening system and domestic water service for the existing eye wash station.
2. Wastewater Operations staff installed a temporary odor control system to mitigate odors at the sewer force main to gravity line transition on Golf Ridge Drive in the Dove Canyon community.
3. Wastewater Operations staff started the raw wastewater influent sampling period for the Crystal Canyon WWTP at The Oaks at Trabuco.
4. Wastewater Operations staff assisted the Water Operations with the repair of a domestic system valve on Foxtail Lane in the Dove Canyon community.

Sewer System Management Plan (SSMP) Report

1. *SSMP Communication Program*: The purpose of the program is to communicate on a regular basis with the public on the development, implementation, and performance of TCWD's SSMP. Status updates on the work and type of work performed on the sewer system will be provided, including sewer line and manhole cleaning, system repairs, lift station cleaning, and updates from satellite facilities:

- Sewer System – Cleaned **6000** feet of gravity sewer line
- Satellite and Contract Facilities:
 - The Oaks at Trabuco Wet Well was pumped out **6** times.
 - O'Neill Park Sewer System (Gravity Sewer, Lift Station, and Force Main)
 - Status: Ok | Repairs: None
- Sewer System Quarterly Report:
 - Next Scheduled Report – **January 2021**

2. *SSMP Program Audits*: Periodic internal audits shall be conducted, at a minimum every two years, with reports kept on file. The audit shall focus on evaluating the effectiveness of the SSMP and TCWD's compliance with the mandatory elements of TCWD's SSMP:

- Next scheduled Report Due: **January 2022**

Monthly Recycled Water System Operations Summary

The Monthly Recycled Water System Operations Summary is attached for the Committee's review. Any anomalies will be presented at the time of the Engineering/Operational Committee Meeting.

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

EXHIBITS

1. Monthly Recycled Water System Operations Summary
2. Sewer System Quarterly Report – Fourth Quarter 2020

CONTACTS (staff responsible): PALUDI/PEREA

TRABUCO CANYON WATER DISTRICT | NON-DOMESTIC WATER SYSTEM SUMMARY - 2020

RECYCLED WATER SUPPLY															
	MAX	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	TOTAL	FIVE YEAR AVG
WWTP Reclaimed Water Production, AF	78.3	50.4	45.4	38.4	35.7	58.6	50.7	51.0	50.5	41.9	49.1	49.3		521.0	550.04
Reclaimed Reservoir Level, FT	1274.5	1,270.5	1,272.0	1,274.1	1,270.8	1,266.5	1,269.5	1,267.0	1,266.5	1,260.0	1,250.5	1,253.2		-	-
Reclaimed Reservoir Free Board, FT	25.5	4.0	2.5	0.4	3.7	8.0	5.0	7.5	8.0	14.5	24.0	21.3		-	-
Reclaimed Reservoir Storage, AF	145.5	122.8	128.6	139.9	125.2	99.6	117.4	102.7	99.6	69.6	37.1	44.5		-	-
Supplemental Domestic Water Added, AF	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	72.88

RECYCLED WATER SYSTEM DEMAND															
NON DOMESTIC WATER USER	ALLOC. AF	8% JAN	17% FEB	25% MAR	33% APR	42% MAY	50% JUN	58% JUL	67% AUG	75% SEP	83% OCT	92% NOV	100% DEC	TOTAL	ALLOC. %
Dahlia Court	8.2	0.3	0.3	0.1	0.3	0.6	0.3	0.3	0.2	0.2	0.2	0.2		3.1	37%
Dove Canyon Golf Course	106.7	3.8	10.4	2.5	9.4	40.5	36.7	55.6	42.6	39.1	31.6	9.7		282.0	264%
Dove Canyon Master Association	279.3	3.6	7.2	2.5	4.7	23.3	21.1	27.4	24.5	29.4	20.5	8.5		172.9	62%
Robinson Ranch	80.2	0.4	1.5	0.4	0.7	3.1	3.0	4.5	3.8	4.7	3.1	1.3		26.5	33%
Trabuco Highlands	159.7	1.7	4.0	1.5	1.8	10.0	8.6	11.6	9.0	9.5	9.6	19.4		86.7	54%
City of RSM	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.0		0.0	34%
Construction Water	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	N/A
Sakaïda Nursery	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0%
SMWD	N/A	18.3	3.2	16.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9		43.8	N/A
TY Nursery	17.9	0.0	0.0	0.0	0.0	0.0	5.3	12.0	0.0	0.0	0.0	0.0		17.3	97%
TOTAL, AF	653.2	28.1	26.7	23.4	16.9	77.5	75.0	111.5	80.1	83.0	65.1	45.1		632.3	97%
PERCENTAGE OF NDW ALLOCATION/YEAR		4%	8%	12%	15%	26%	38%	55%	67%	80%	90%	97%			
TOTAL ANNUAL AVG. NDW AVAILABLE**	774.36														

URBAN RUNOFF CAPTURE AND REUSE															
DISTRICT FACILITY		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	FIVE YEAR AVG
Shadow Rock Detention Basin Production		0.0	0.0	0.0	0.0	0.0	1.6	1.2	1.1	0.9	0.6	1.1		6.4	21.2
Dove Tick Creek Production*	Dry Season	0.0	0.0	0.0	0.0	0.0	1.9	5.1	3.0	6.3	0.07	0.0		16.3	102.7
	TCWD Portion	0.0	0.0	0.0	0.0	0.0	1.0	2.5	1.5	3.2	0.03	0.00		8.2	-
	SMWD Portion	0.0	0.0	0.0	0.0	0.0	1.0	2.5	1.5	3.2	0.03	0.00		8.2	-
Dove Lake Water Pumped		0.0	0.0	0.0	0.0	0.0	49.7	49.7	49.7	14.9	0.0	0.0		164.0	201.7
Dove Lake Free Board, Ft		0.0	0.0	0.0	0.0	0.0	3.0	5.0	8.5	9.0	9.5	9.5		-	-
Dove Lake Storage		180.0	180.0	180.0	180.0	180.0	160.0	147.0	88.0	79.0	79.0	79.0		-	-
Total Rainfall, In.		0.2	0.4	3.4	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0		8.8	14.5

* SMWD share of Dove/Tick Pump Station Dry Season Water is 50% of production.
 ** Based on 5-Year Average Reclaimed Water Reservoir Base Supply & Recycled Water Production

TRABUCO CANYON WATER DISTRICT
Sewer System Management Plan (SSMP) Quarterly Report

Report Date: December 31, 2020
Report Period: Fourth Quarter 2020 - Oct. to Dec. 2020
Prepared By: Oscar Ulloa

District Sub-Section	Santiago/Portola Hills			Dove Canyon			Rancho Cielo/Walden			Robinson Ranch/Trabuco Highlands		
	Total Amount	Amount Completed	% Completed	Total Amount	Amount Completed	% Completed	Total Amount	Amount Completed	% Completed	Total Amount	Amount Completed	% Completed
Sewer Line Cleaned, Feet	44,625	20,740	46%	64,135	57,969	90%	29,865	1,314	4%	59,170	2,116	4%
Manholes, Inspected/Cleaned	205	89	43%	212	195	92%	124	11	9%	236	10	4%
Manholes Needing Repair	0	0	0%	0	0	0%	0	0	0%	0	0	0%
Wet Wells, Inspected/Cleaned	2	0	0%	3	3	100%	1	1	100%	2	2	100%
Lift Stations, Inspected/Maintained	2	2	100%	3	3	100%	1	1	100%	2	2	100%
Grease Interceptors Inspected	1	1	100%	5	5	100%	5	5	100%	n/a	n/a	n/a

Note: All Sewage Lift stations are inspected 3-4 times a week

Contract Services	O'Neill Park/OCFA		
	Total Amount	Amount Completed	% Completed
Sewer Line Cleaned, Feet	12,700	0	0%
Manholes, Inspected/Cleaned	95	0	0%
Manholes Needing Repair	0	0	0%
Wet Wells, Inspected/Cleaned	1	1	100%
Lift Stations, Inspected/Maintained	1	1	100%
Grease Interceptors Inspected	0	0	0%

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | JANUARY 6, 2021**

OPERATIONAL MATTERS

ITEM 10: MAINTENANCE DEPARTMENT UPDATES

The following is a brief report of the wastewater system for **December 2020**.

Projects and Repairs

1. Maintenance Department staff borrowed an emergency generator from Moulton Niguel Water District, for the Falcon Booster Pump Station due to the fire in Silverado and Modjeska Canyon. Hydrotech Electric was used for the connection.
2. Maintenance Department staff conducted a generator test at Ridgeline Booster Pump Station with CAT and Hydrotech Electric to tune the emergency generator for 100% operation.
3. Maintenance Department staff have completed the Biennial Inspection of Terminals (BIT) program.
4. Maintenance Department staff did repair work on the West Hoffman blower at the Robinson Ranch Waste Water Treatment Plant. The main skid was re-mounted to the floor by the contractor, Wicked Welding Mobile Fabrication. Hydrotech Electric found a main breaker malfunctioning and prepped it for replacement. There was also a Variable Frequency Drive (VFD) upgrade to the control motor startup. Repair work continuing into January.
5. Maintenance Department staff ordered four (4) new Baldor booster pumps from Tekdraulics, for the Rose Well Treatment Facility.
6. Maintenance Department staff assisted Hydrotech Electric on the lighting upgrades at the Golf Club Sewer Lift Station and the Dimension Water Treatment plant.
7. Maintenance Department staff worked with Sanitation Operations and Hydrotech Electric to install underground utilities at the Heritage Sewer Lift Station. This includes a new electrical conduit for the electric gate. Along with a new potable water lateral for the hose bibs and eye-wash station.
8. Maintenance Department staff had Fleet Services install a new winch cable on the Roll-Off (Slide Rail) truck.

RECOMMENDED ACTION:

Committee to receive system status updates. No action required.

EXHIBITS

None

CONTACTS (staff responsible): PALUDI/STROUD

**TRABUCO CANYON WATER DISTRICT
ENGINEERING/OPERATIONAL COMMITTEE MEETING | JANUARY 6, 2021**

**REGULATORY AND OTHER MATTERS
ITEM 11: OTHER MATTERS/REPORTS**

Other Matters/Reports from the General Manager and/or District staff may be provided at the time of the Engineering/Operational Committee Meeting.

RECOMMENDED ACTION:

Hear Other Matters/Reports that may have arisen after the posting of the agenda.

EXHIBITS

None

CONTACTS (staff responsible): PALUDI