

SANTIAGO AQUEDUCT COMMISSION
QUARTERLY MEETING
September 17, 2020

Due to COVID-19, this meeting will be conducted as a teleconference pursuant to the provisions of the Governor's Executive Orders N-25-20 and N-29-20, which suspend certain requirements of the Ralph M. Brown Act. Members of the public may not attend this meeting in person.

Participation by members of the Santiago Aqueduct Commission will be from remote locations. Public access and participation will only be available telephonically/electronically.

To virtually attend the meeting and to be able to view any presentations or additional materials provided at the meeting, please join online via Webex using the link and information below:

Via Web:

<https://irwd.my.webex.com/irwd.my/j.php?MTID=mc98bd7fc9d95a55086bb63dbf6fc8cd4>

Meeting Number (Access Code): 126 152 2388

Meeting Password: bMsageJM838 (26724356 from phones and video systems)

After joining the meeting, in order to ensure all persons can participate and observe the meeting, please select the "Call in" option and use a telephone to access the audio for the meeting by using the call-in information and attendee identification number provided. If you do not have access to a computer, dial (510) 338-9438 (followed by the # sign). To join the meeting, enter the Meeting Number (Access Code) above.

As courtesy to the other participants, please mute your phone when you are not speaking.

PLEASE NOTE: Participants joining the meeting will be placed into the Webex lobby when the Commission enters closed session. Participants who remain in the "lobby" will automatically be returned to the open session of the Board once the closed session has concluded. Participants who join the meeting while the Commission is in closed session will receive a notice that the meeting has been locked. They will be able to join the meeting once the closed session is over.

CALL TO ORDER 8:00 a.m.

ROLL CALL

ATTENDANCE:

Commissioners

TCWD – Don Chadd _____

ETWD – Kathryn Freshley _____

MNWD – Kelly Jennings _____

SMWD – Donald Bunts _____

MWDOC – Jeffery Thomas _____

IRWD – Mary Aileen Matheis _____

Staff

Paul Cook _____

Kevin Burton _____

Eileen Lin _____

Cheryl Clary _____

Malcolm Cortez _____

Diane Squyres _____

Legal Counsel:

Allison Burns, SYC&R _____

PUBLIC COMMENT NOTICE

If you wish to address the Board of Directors on any item, please submit a request to speak via the “chat” feature available when joining the meeting virtually. Remarks are limited to three minutes per speaker on each subject. You may also submit a public comment in advance of the meeting by emailing comments@irwd.com before 3:00 p.m. on Wednesday, September 16, 2020.

ALL VOTES SHALL BE TAKEN BY A ROLL CALL VOTE.

COMMUNICATIONS

1. Pledge of Allegiance
2. Public Comments
3. Determine the need to discuss and/or take action on item(s) introduced that came to the attention of the Commission subsequent to the agenda being posted.

CONSENT ITEMS – Receive and file

- | | |
|--|--|
| <ol style="list-style-type: none">4. <u>MINUTES OF COMMISSION MEETING – DECEMBER 19, 2019</u>5. <u>2019-20 FINANCIAL REPORT</u><ol style="list-style-type: none">a. Ratify Disbursement Resolution No. 695 dated January 2020.b. Ratify Disbursement Resolution No. 696 dated February 2020.c. Ratify Disbursement Resolution No. 697 dated April 2020.d. Ratify Disbursement Resolution No. 698 dated June 2020.e. Receive and file Financial Statement dated June 30, 2020. | |
|--|--|

ACTION ITEM

- | | |
|--|--|
| <ol style="list-style-type: none">6. <u>BAKER PIPELINE EXPOSURE THROUGH SANTIAGO CREEK
CONSULTANT SELECTIONS – MCGEHEE / MORI / BURTON</u> | |
|--|--|

Recommendation: That the Santiago Aqueduct Commission authorize the General Manager to execute a Professional Services Agreement with West Yost in the amount of \$46,990 for engineering services, authorize the General Manager to execute a Professional Services Agreement with NMG Geotechnical in the amount of \$19,764 for geotechnical services, and authorize the General Manager to execute a Professional Services Agreement with Harmsworth & Associates in an amount not to exceed \$50,000 for environmental permitting services for the Baker Pipeline Exposure through Santiago Creek, Project 11615.

REPORTS

7. GENERAL MANAGER'S REPORT – COOK
8. ENGINEER'S REPORT – BURTON
9. MWDOC'S REPORT
10. ATTORNEY'S REPORT
11. COMMISSIONER'S COMMUNICATION

Commissioners may discuss meetings, communications, correspondence, or other items of general interest relating to matters within the Commission's jurisdiction. There will be no voting or formal action taken.

OTHER BUSINESS

12. 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 Santiago Aqueduct Commission in connection with a matter subject to discussion or consideration at an open meeting of the Commission will be available electronically via the Webex meeting noted. Upon request, the District will provide for written agenda materials in appropriate alternative formats, and reasonable disability-related modification or accommodation to enable individuals with disabilities to participate in and provide comments at public meetings. Please submit a request, including your name, phone number and/or email address, and a description of the modification, accommodation, or alternative format requested at least two days before the meeting. Requests should be emailed to comments@irwd.com. Requests made by mail must be received at least two days before the meeting. Requests will be processed swiftly, granted whenever possible and any doubts will be resolved in favor of accessibility.

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**MINUTES OF THE QUARTERLY MEETING
OF THE SANTIAGO AQUEDUCT COMMISSION**

December 19, 2019

The quarterly meeting of the Santiago Aqueduct Commission (“SAC”) was duly noticed and was held at 8:00 a.m. on December 19, 2019 at the Sand Canyon Board Room of the Irvine Ranch Water District, 15600 Sand Canyon Avenue, Irvine, California. Chairman MATHEIS called the meeting to order at 8:03 a.m. ALLISON BURNS recorded the Minutes of the meeting.

COMMISSIONERS PRESENT

MARY AILEEN MATHEIS, Irvine Ranch Water District (“IRWD”); ED MANDICH, Trabuco Canyon Water District (“TCWD”); DON BUNTS, Santa Margarita Water District (“SMWD”); KELLY JENNINGS, Moulton Niguel Water District (“MNWD”).

Also present were: PAUL COOK, General Manager, IRWD; CHERYL CLARY, Treasurer, IRWD; KEVIN BURTON, Engineer, IRWD; MALCOLM CORTEZ, Alternate Engineer, IRWD; EILEEN LIN, Alternate Treasurer, IRWD; MICHAEL PEREA, TCWD; DIANE SQUYRES, Administrative Secretary, IRWD; JESSICA CRAIG, IRWD; BARBARA MOURANT, IRWD; CHARLES BUSSLINGER, MWDOC; JEFF SMYTH, EOCWD; and ALLISON BURNS, General Counsel/Secretary.

COMMUNICATIONS

1. Pledge of Allegiance - The members of the Commission and the audience recited the pledge of allegiance to the flag of the United States of America.
2. Public Comments - No public comments.
3. Determine the need to discuss and/or take action on item(s) introduced that came to the attention of the Commission subsequent to the agenda being posted - No items added.

CONSENT ITEMS – Receive and file

4. MINUTES OF COMMISSION MEETING – MARCH 21, 2019. BUNTS moved to approve and consent to item 4, seconded by MANDICH and unanimously approved.
5. 2018-19 FINANCIAL REPORT. BUNTS moved to approve and consent to item 5 seconded by MANDICH and unanimously approved.
6. FISCAL YEAR 2018-19 FINANCIAL REPORT – CRAIG.

Jessica Craig presented the highlights of the year-end audit:

- Completed as of June 30, 2019. Clean opinion.

- The audited financial statements were provided to the Board as part of the agenda packet.
- As shown on page A6, total assets increased \$36,000 from the prior year due primarily to an increase in cash and investments attributable to higher member charges partially offset by a reduction in contract labor.
- Liabilities increased \$25,111 from the prior year due to landscape charges from prior periods not yet paid partially offset by two months less of payables related to reimbursements from member agencies for labor and administrative costs.
- As shown on page A7, total revenues increased \$23,000 from the prior year due primarily to a budget increase in member charges for landscape maintenance from the prior year.
- Exhibit B - Auditor communications. No disagreements with management during the audit.
- Exhibit C - Report on financial controls. Identified prior period adjustments revealing “significant deficiencies” in internal controls that have since been remedied.

BUNTS moved to approve and consent to item 6, seconded by JENNINGS and unanimously approved.

ACTION ITEMS

7. AMENDMENT NO. 9 TO THE SANTIAGO AQUEDUCT COMMISSION JOINT POWERS AGREEMENT – BURTON.

BURTON – This item brings to conclusion a matter that has been discussed over several years regarding the Irvine Company’s and County of Orange’s sale of capacity in the pipeline. The Irvine Company’s sale concluded last year. The County recently gave its approval to give up capacity it last used about 20 years ago; County staff did not even realize they had the capacity. The Assignment Agreement between IRWD and the County has gone through legal review and should go to the Board of Supervisors in February. The Agreement will transfer the County’s capacity in Reaches 1U, 2U, 3U and 4U to IRWD. Staff is bringing this item to the Commission now because we want to be ready with an approved Amendment so there will not be a need to call a Special Commission Meeting in March. If the Agreement is approved by the Board of Supervisors, Amendment No. 9 will go to the Member Agencies for approval by each Board. The Assignment Agreement and JPA Amendment are in the Agenda package. These documents remove the County as a represented agency by MWDOC. MWDOC will only represent East Orange County Water Agency. Staff recommends each agency take this item back to its respective Board after the IRWD/County Agreement is approved in February.

BUNTS moved to approve and consent to item 7 seconded by MANDICH and unanimously approved.

REPORTS

8. GENERAL MANAGER'S REPORT – COOK

Nothing to report.

9. ENGINEER'S REPORT-BURTON.

BURTON – Update on the pipeline: May 2019 cathodic protection survey: intermediate survey – checked 9 rectifiers and 9 of the 47 test stations. All rectifiers are working properly. Prior years have found discontinuities, none were found this year. Did find two test stations along the road parallel to pipeline – someone had graded the test stations out of existence. Likely the Irvine Company or County did the grading. Staff is following up to get test stations fixed and seek to recover costs from whomever did the grading. November 2019 survey just completed, but the report has not yet been submitted. The report will be presented at the next meeting.

10. MWDOC'S REPORT.

Nothing to report.

11. ATTORNEY'S REPORT.

Nothing to report.

12. COMMISSIONERS' COMMUNICATIONS

Nothing to report.

OTHER BUSINESS

14. ADJOURNMENT.

The meeting was adjourned at 8:18 a.m.

Respectfully submitted,

Allison E. Burns, Secretary

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SANTIAGO AQUEDUCT COMMISSION
DISBURSEMENT RESOLUTION NO. 695

January 2020

RESOLVED by Santiago Aqueduct Commission that items shown below be approved for payment and charges to the Contracting Agencies and to holders of capacity rights in the Santiago Aqueduct Commission in accordance with the policy with respect to standby charges, water surcharges and operation and maintenance costs adopted by this Commission on April 10, 1963: That the Contracting Public Agencies and other holders of capacity rights in said Santiago Aqueduct be called upon to pay this Commission for their respective shares of such items, and payments, such items and the distribution thereof are as follows:

OPERATIONS AND MAINTENANCE

1	AT&T	
	Charges for Nov	173.55
2	Stradling Yocca Carlson & Rauth	204.20
3	Southern California Edison	
	Charges for Nov - Dec 2019	372.44
4	Orange County Treasurer	1,430.92
5	DavisFarr	5,100.00
6	Kill-N-Bugs	4,020.00
7	TOTAL DISBURSEMENT RESOLUTION NO. 695	<u>\$ 11,301.11</u>

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SANTIAGO AQUEDUCT COMMISSION
DISBURSEMENT RESOLUTION NO. 696

February 2020

RESOLVED by Santiago Aqueduct Commission that items shown below be approved for payment and charges to the Contracting Agencies and to holders of capacity rights in the Santiago Aqueduct Commission in accordance with the policy with respect to standby charges, water surcharges and operation and maintenance costs adopted by this Commission on April 10, 1963: That the Contracting Public Agencies and other holders of capacity rights in said Santiago Aqueduct be called upon to pay this Commission for their respective shares of such items, and payments, such items and the distribution thereof are as follows:

OPERATIONS AND MAINTENANCE

1	AT&T	
	Charges for Dec 19-Jan 20	347.10
2	Stradling Yocca Carlson & Rauth	1,464.00
3	Southern California Edison	
	Charges for Jan 2020	175.04
4	Irvine Ranch Water District	
	Baker Pipeline Operation (Oct-Dec 2019)	3,666.51
	Baker Pipeline Maintenance (Oct-Dec 2019)	5,870.60
5	TOTAL DISBURSEMENT RESOLUTION NO. 696	<u>\$ 11,523.25</u>

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SANTIAGO AQUEDUCT COMMISSION
DISBURSEMENT RESOLUTION NO. 697

April 2020

RESOLVED by Santiago Aqueduct Commission that items shown below be approved for payment and charges to the Contracting Agencies and to holders of capacity rights in the Santiago Aqueduct Commission in accordance with the policy with respect to standby charges, water surcharges and operation and maintenance costs adopted by this Commission on April 10, 1963: That the Contracting Public Agencies and other holders of capacity rights in said Santiago Aqueduct be called upon to pay this Commission for their respective shares of such items, and payments, such items and the distribution thereof are as follows:

OPERATIONS AND MAINTENANCE

1	AT&T	
	Charges for Feb 20 - Mar 20	347.10
2	Stradling Yocca Carlson & Rauth	784.00
3	Southern California Edison	
	Charges for Feb20 - Mar20	378.64
4	Kill-N-Bugs	3,570.00
5	Irvine Ranch Water District	
	Baker Pipeline Operation (Jan-Mar 2020)	3,546.36
	Baker Pipeline Maintenance (Jan-Mar 2020)	6,904.76
6	TOTAL DISBURSEMENT RESOLUTION NO. 697	<u>\$ 15,530.86</u>

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SANTIAGO AQUEDUCT COMMISSION
DISBURSEMENT RESOLUTION NO. 698

June 2020

RESOLVED by Santiago Aqueduct Commission that items shown below be approved for payment and charges to the Contracting Agencies and to holders of capacity rights in the Santiago Aqueduct Commission in accordance with the policy with respect to standby charges, water surcharges and operation and maintenance costs adopted by this Commission on April 10, 1963: That the Contracting Public Agencies and other holders of capacity rights in said Santiago Aqueduct be called upon to pay this Commission for their respective shares of such items, and payments, such items and the distribution thereof are as follows:

OPERATIONS AND MAINTENANCE

1	AT&T	
	Charges for Apr 20 - May 20	347.10
2	Stradling Yocca Carlson & Rauth	168.00
3	Southern California Edison	
	Charges for Apr - June 2020	573.84
4	Farwest Corrosion Control Company	13,300.00
5	Micheal Baker	14,455.00
6	Irvine Ranch Water District	
	Baker Pipeline Operation (Apr-May 2020)	2,364.24
	Baker Pipeline Maintenance (Apr-May 2020)	2,720.00
7	TOTAL DISBURSEMENT RESOLUTION NO. 698	<u>\$ 33,928.18</u>

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Santiago Aqueduct Commission
Statement of Net Position
For the Period Ended June 30, 2020

ASSETS

Current assets:

Cash and investments (1)	\$ 410,347
Receivables:	
Accounts receivable	6,077
Interest receivable	951
Prepayment	2,250
Total receivables	<u>9,278</u>
Total current assets	<u>419,625</u>

Noncurrent assets:

Capital assets, net of depreciation	<u>45,723</u>
Total noncurrent assets, net	<u>45,723</u>
TOTAL ASSETS	<u><u>465,348</u></u>

LIABILITIES

Current liabilities:

Account payable	<u>6,261</u>
TOTAL LIABILITIES	<u><u>6,261</u></u>

NET POSITION

Investment in capital assets	45,723
Unrestricted	413,364
TOTAL NET POSITION	<u><u>\$ 459,087</u></u>

(1) On March 21, 2019 the Commission adopted a resolution authorizing the use of existing cash to pay member fees for FY 2019-2020.

Santiago Aqueduct Commission
Statement of Revenues, Expenses and Changes in Net Position
For the Period Ended June 30, 2020

OPERATING REVENUES:

Water surcharge	\$ 30,971
Member charges (1)	-
Other Income	4,225
Total operating revenues	<u>35,196</u>

OPERATING EXPENSES:

Contract labor	6,789
Equipment usage	222
Utilities	2,236
Landscape	7,650
Cathodic protection monitoring and maintenance	36,169
Cathodic protection upgrade expense	2,100
Telemetry alarm	2,083
General and administrative:	
Audit	5,100
Insurance	7,148
Legal	2,816
Property taxes	-
Administration management	21,600
Other	688
Depreciation	<u>3,004</u>
Total operating expenses	<u>97,605</u>
Operating income (loss)	<u>(62,409)</u>

NONOPERATING REVENUES:

Interest income	5,670
Increase (decrease) in fair value of investments	913
Total nonoperating revenues	<u>6,583</u>
Increase (decrease) in net position	(55,826)


NET POSITION AT BEGINNING OF YEAR

514,913

NET POSITION AT END OF NOVEMBER

\$ 459,087

(1) On March 21, 2019 the Commission adopted a resolution authorizing the use of existing cash to pay member fees for FY 2019-2020. Therefore, member charges for the period ended June 30, 2020 is \$0.

September 17, 2020
Prepared and J. McGehee / R. Mori
submitted by: K. Burton
Approved by: Paul A. Cook 

SANTIAGO AQUEDUCT COMMISSION

BAKER PIPELINE EXPOSURE THROUGH SANTIAGO CREEK CONSULTANT SELECTIONS

SUMMARY:

A section of the Baker Pipeline is exposed through Santiago Creek in Irvine Regional Park. Staff solicited proposals from engineering firms for design services to address the exposure and from geotechnical firms for geotechnical exploration and laboratory analysis in the vicinity of the pipeline within the creek. Staff recommends the Santiago Aqueduct Commission:

- Authorize the General Manager to execute a Professional Services Agreement with West Yost in the amount of \$46,990 for engineering services;
- Authorize the General Manager to execute a Professional Services Agreement with NMG Geotechnical in the amount of \$19,764 for geotechnical services; and
- Authorize the General Manager to execute a Professional Services Agreement with Harmsworth & Associates in an amount not to exceed \$50,000 for environmental permitting services for the Baker Pipeline Exposure through Santiago Creek.

BACKGROUND:

During a site visit within the Irvine Regional Park for an unrelated project, DMc Engineering contacted IRWD about a partially exposed large diameter pipeline within Santiago Creek at the approximate locations shown on Exhibit “A”. IRWD staff subsequently confirmed that the exposed pipe is a portion of Reach 1U of the 54-inch diameter Baker Pipeline, located downstream of Santiago Lateral Turnout OC-33.

The Baker Pipeline was constructed in 1961 and was initially designed with approximately six feet of cover across Santiago Creek. Since that time, the Creek has widened by approximately 50 feet and scoured more than seven feet, which has resulted in the exposure of approximately 35 linear feet of the upper portion of the Baker Pipeline. Per the notification given to the Santiago Aqueduct Commission agencies on May 31, 2020, a survey of the exposed portions of pipe and the nearby area of Santiago Creek was conducted by DMc Engineering. To facilitate the recommendations provided, and in addition to the surveying work, DMc Engineering also prepared a conceptual cost estimate for lowering the pipeline through the Creek and Harmsworth & Associates prepared a jurisdictional delineation of the work area to identify the extent of potential permitting impacts.

To address the existing pipeline exposure and to minimize the potential for future exposure of additional portions of the pipeline, staff recommends the Baker Pipeline be lowered in depth by approximately 10 feet along its current alignment for approximately 350 feet across the width of Santiago Creek.

Consultant Selection – Engineering Design Services:

Staff requested proposals for engineering design services to lower the Baker Pipeline across Santiago Creek from DMc Engineering, Stantec, and West Yost. All three firms submitted proposals, and West Yost's proposal presented an excellent understanding of the project issues and contained a comprehensive scope of work to achieve the project goals. The consultant selection matrix is provided as Exhibit "B". West Yost's proposed design fee is \$46,990, and its scope of work and fee proposal are provided as Exhibit "C". Staff recommends the Santiago Aqueduct Commission authorize the General Manager to execute a Professional Services Agreement for engineering design services in the amount of \$46,990 with West Yost since its design approach, schedule, and staff hours are consistent with the project goals.

Consultant Selection – Geotechnical Services:

Staff requested proposals for a geotechnical exploration and laboratory analysis along the alignment of the Baker Pipeline in Santiago Creek from NMG Geotechnical and Ninyo & Moore. Both firms submitted proposals, and NMG's proposal presented an excellent understanding of the project, including experience performing the necessary soils testing and evaluations that may be needed to support a scour analysis of the Creek should it be requested by any of the jurisdictional agencies. The consultant selection matrix is provided as Exhibit "D". NMG's proposed design fee is \$19,764 and its scope of work and fee proposal are provided as Exhibit "E". Staff recommends the Santiago Aqueduct Commission authorize the General Manager to execute a Professional Services Agreement for geotechnical services in the amount of \$19,764 with NMG since its design approach, schedule, and staff hours are consistent with the project goals.

Consultant Selection – Environmental Permitting Services:

Staff contacted Harmsworth for guidance on potential permitting ramifications associated with work within and adjacent to Santiago Creek. Harmsworth has extensive experience with permitting support and environmental compliance activities coordinating with each of the jurisdictional agencies involved with the work. Harmsworth has also previously provided support to IRWD in similarly impacted drainage channels. Staff anticipates contracting with Harmsworth to provide all needed permitting support activities associated with the work. Staff recommends the Santiago Aqueduct Commission authorize the General Manager to execute a Professional Services Agreement for environmental permitting services in an amount not to exceed \$50,000 with Harmsworth & Associates.

At the Commission meeting, IRWD staff will present an overview, provided as Exhibit "F", that will summarize the project issues and goals, work completed to date, and a recommendation for next steps.

FISCAL IMPACTS:

As of June 30, 2020, the Santiago Aqueduct Commission's existing cash balance was \$327,000. To date, a total of \$24,130 has been expended on the project including \$21,150 to DMc Engineering for the site survey and conceptual cost estimate, \$1,050 to Harmsworth & Associates for the jurisdictional delineation, and \$1,930 for staff to manage these efforts. The total funding amount needed to support the work completed to date and the recommendations presented is \$140,884, which can be fully funded by the existing cash balance. Additional funding, which will be established separately, will be required to support construction.

ENVIRONMENTAL COMPLIANCE:

This project is subject to the California Environmental Quality Act (CEQA). In conformance with the California Code of Regulations Title 14, Chapter 3, Section 15004, the appropriate environmental document will be prepared when "meaningful information" becomes available.

RECOMMENDATION:

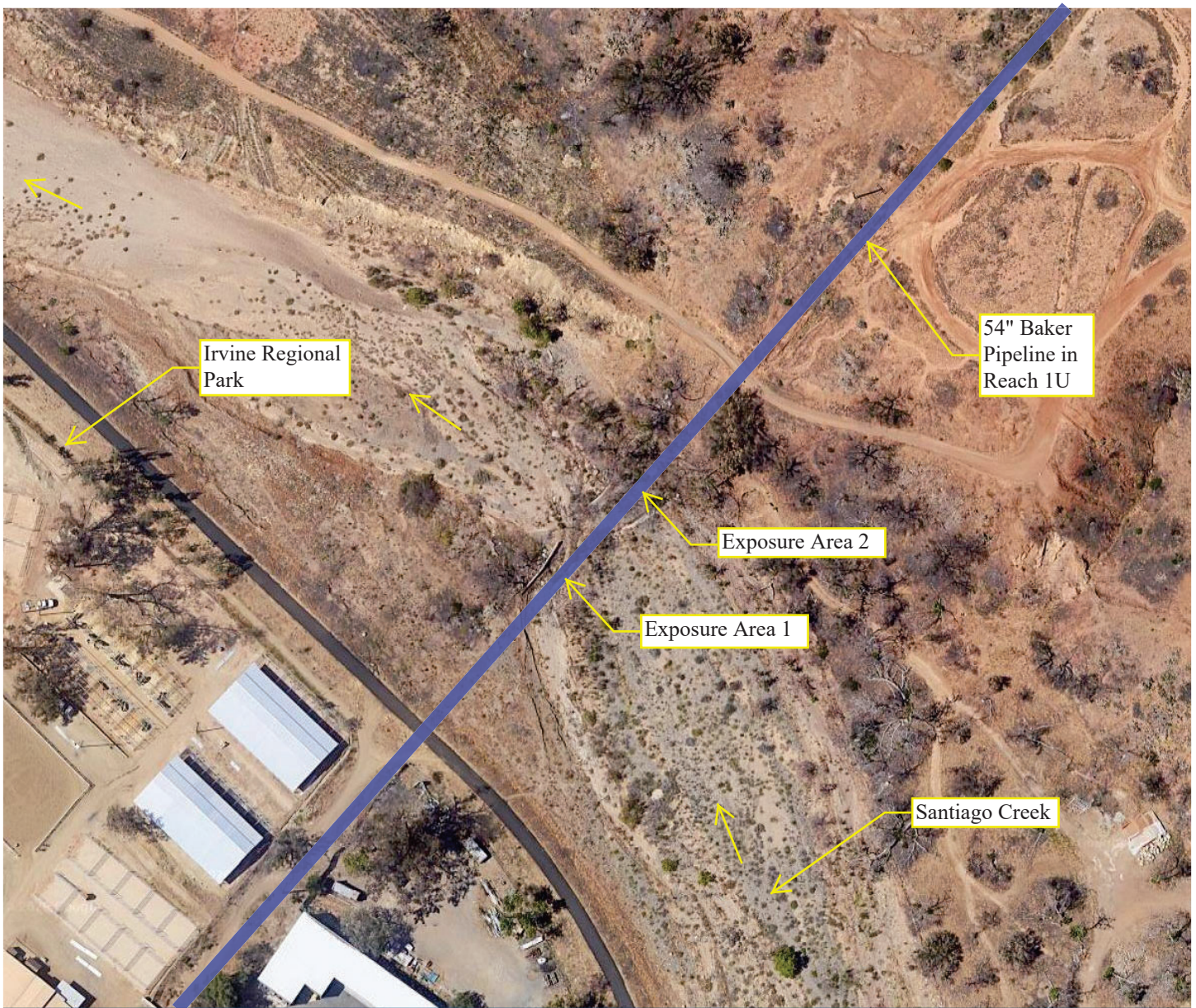
That the Santiago Aqueduct Commission authorize the General Manager to execute a Professional Services Agreement with West Yost in the amount of \$46,990 for engineering services, authorize the General Manager to execute a Professional Services Agreement with NMG Geotechnical in the amount of \$19,764 for geotechnical services, and authorize the General Manager to execute a Professional Services Agreement with Harmsworth & Associates in an amount not to exceed \$50,000 for environmental permitting services for the Baker Pipeline Exposure through Santiago Creek, Project 11615.

LIST OF EXHIBITS:

- Exhibit "A" – Location Map
- Exhibit "B" – Consultant Selection Matrix for Engineering Design Services
- Exhibit "C" – West Yost Scope of Work and Fee Proposal
- Exhibit "D" – Consultant Selection Matrix for Geotechnical Services
- Exhibit "E" – NMG Geotechnical Scope of Work and Fee Proposal
- Exhibit "F" – Overview Presentation

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Exhibit "A"
Location Map



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Exhibit "B"

CONSULTANT SELECTION MATRIX

Baker Pipeline Exposure Through Santiago Creek Engineering Design Services				
Item	Description	West Yost	Stantec	DMc Engineering
A	<u>PROPOSAL CONTENTS</u>			
	<u>Ranking</u>	1	2	3
B	<u>SCOPE OF WORK</u>			
Task		Fee	Fee	Fee
	Project Management	\$6,551	\$22,628	\$0
	Project Manual	\$9,696	\$6,820	\$8,000
	Construction Plans	\$20,109	\$44,784	\$17,120
	Utility Research	\$2,152	\$1,232	\$0
	Permits	\$3,768	\$10,144	\$5,260
	Schedule	\$542	\$4,776	\$0
	Cost Estimate	\$2,154	\$3,544	\$3,920
	Deliverables	\$2,018	\$0	\$2,310
	Other	-	\$5,160	\$10,260
	TOTAL FEE	\$46,990	\$99,088	\$46,870

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September 3, 2020

SENT VIA: EMAIL

Joe McGehee, P.E.
Senior Engineer – Capital Projects
Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92618

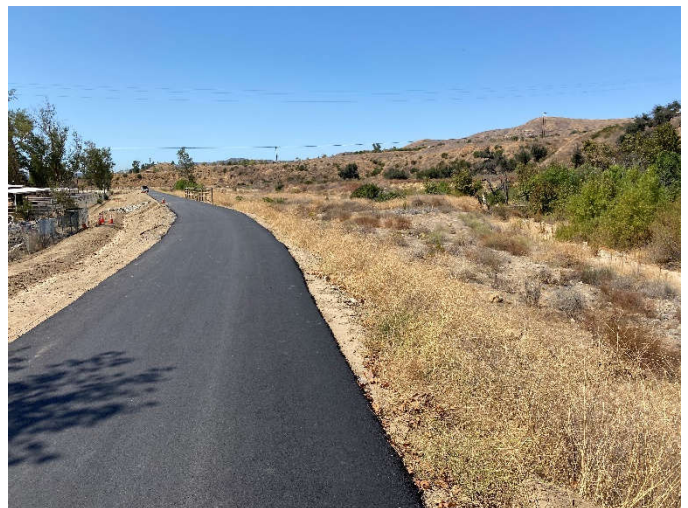
SUBJECT: Proposal for Engineering Design Services for the Santiago Aqueduct Commission / Baker Pipeline Relocation Improvements in Santiago Creek

Dear Joe:

The purpose of this letter proposal is to provide the Irvine Ranch Water District (IRWD) with a proposed Scope of Services, budget, and schedule to provide engineering design services for the Baker Pipeline Relocation Improvements project (Project) in Santiago Creek.

PROJECT UNDERSTANDING

The Santiago Aqueduct Commission (SAC) is a joint powers agency formed to finance, construct, and maintain the Baker Pipeline. Constructed in 1962, the pipeline extended the Metropolitan Water District of Southern California (MWD) Santiago Lateral approximately 15-miles to supply south Orange County with MWD untreated water. According to the SAC audited financial statements dated June 30, 2019, the member agencies currently include IRWD, El Toro Water District, Santa Margarita Water District, Trabuco Canyon Water District, County of Orange, East Orange County Water District, and Moulton Niguel Water District, with IRWD being responsible for operation and maintenance of the pipeline.





Currently, the SAC/Baker Pipeline supplies untreated MWD water and local surface water from Irvine Lake to the 28.1 million gallon per day Baker Water Treatment Plant. The Baker Water Treatment Plant provides increased water supply reliability to the services areas of five south Orange County agencies, including IRWD, El Toro Water District, Moulton Niguel Water District, Santa Margarita Water District, and Trabuco Canyon Water District. As such, the reliability of this pipeline is critical to the

south Orange County potable water supply.

The SAC/Baker Pipeline crosses Santiago Creek within the Irvine Regional Park in the City of Orange. Although the pipeline initially was designed to provide approximately eight feet of cover, sediment transport within the creek has caused the pipeline to be partially exposed in two locations and resulted in minimal cover over the pipeline within the creek. To provide a reliable supply of untreated water to the Baker Water Treatment Plant, IRWD intends to reconstruct the pipeline with additional cover to prevent further exposure due to scour within the Santiago Creek.

Based on the information provided by IRWD, West Yost assumes the Baker Pipeline engineering design will include the following:

- To eliminate the requirement for a new permanent easement for the pipeline, the new pipeline will be in the same horizontal location as the existing pipe.
- Preparation of a detailed scour analysis of Santiago Creek over the pipe alignment is not required.
- The relocated Baker Pipeline will be initially designed with ten feet of cover. After receiving the Geotechnical Investigation Report, we will review this assumption, discuss our recommendations, and possibly adjust the vertical alignment of the pipeline.
- No temporary by-pass facilities will be required as the Baker Water Treatment Plant will be supplied with untreated water from the Irvine Lake Pipeline while the Baker Pipeline is being relocated.
- The relocated Baker Pipeline is initially assumed to be 54-inch diameter cement mortar-lined and coated steel pipe with a concrete encasement. However, we will discuss the merits and related costs of a reinforced concrete cap, slurry, or a steel casing through Santiago Creek.

- A project staging and laydown area near the work will be negotiated with OC Parks during the design and included in the Project Manual.
- The Baker Pipeline will be relocated from bank to bank of the Santiago Creek, a length of approximately 300 feet.
- Harmsworth Associates will be responsible for all CEQA processes. However, we provide them with any figures or descriptions that are required to complete their work.
- OC Parks will be the only permitting agency that is not included in Harmsworth's scope of work. As was executed in prior water and sewer infrastructure projects within OC Parks' jurisdiction, OC Parks will likely request support from OC Public Works.

SCOPE OF SERVICES

The proposed Scope of Services is based on the information presented in the pre-proposal meeting on August 20, 2020 and provided in emails from Joe McGehee on August 13, August 20, and August 31, 2020. The scope is for the engineering design and permitting for the 54-inch diameter SAC/Baker Pipeline Relocation Improvements in Santiago Creek, including any required ancillary facilities, including cathodic protection test stations, and a combination air relief and release/vacuum valve assemblies.

The Scope of Services will consist of the following tasks. Should changes to the approved scope be necessary to successfully complete the Project, West Yost will proactively discuss those recommended modifications to our Scope of Services with Joe McGehee, IRWD's Project Manager. If the project team agrees to modify the contracted scope, West Yost will prepare and submit a Variance Request to IRWD for consideration. We understand that no changes to the scope will be initiated prior to your written approval.

The following describes each of the key tasks necessary to perform this proposed Scope of Services.

Task 1. Project Management

We will perform project management activities to verify adherence to scope, schedule, and budget; promote efficient communication between West Yost, IRWD, OC Parks, and Harmsworth Associates; and implement an effective quality control/quality assurance program.



A. Prepare Project Status Reports

West Yost will prepare Bi-Weekly and Monthly Project Status Reports.

Bi-Weekly Status Reports will be submitted by email every other Monday, unless that Monday is an IRWD holiday. We will also prepare Monthly Status Reports that will be submitted with the monthly billing invoices.

1. Bi-Weekly Status Report

Due to the relatively small scope of this Project, the Bi-Weekly Status Reports will be brief, usually only one to two paragraphs. Each report will summarize progress for the past two weeks, anticipated work to be accomplished the coming two weeks, and, most importantly, any decisions that need to be made or items required to stay on schedule.

2. Monthly Status Reports

Each monthly status report will be submitted with the billing invoice. It will contain more information than the Bi-Weekly Status Reports, including the percent complete for each task and the progress as compared to the established budget and schedule. The Project schedule will be updated and included with the Monthly Status Reports when modifications are required.

B. Meetings

West Yost will prepare and submit meeting agendas for your review and concurrence at least three working days prior to each meeting. Based on the anticipated meeting agenda, we will propose attendees that we believe will add significant value to the discussions.

We will prepare draft and final meeting notes for all meetings and submit them to you for review within three working days of the meeting. The meeting notes will emphasize decisions made and action items.

1. Kick-off Meeting

We believe that the kick-off meeting is an extremely important first step in delivering a successful project. One of our goals will be to understand Joe's preferred communication methods: if he prefers office calls, cell phone calls, emails, texts, etc. We will also discuss lines of communications for the Project team.

The kick-off meeting will also be a time for us to present our approach, the Scope of Services, and the schedule to the entire team. It is much better to make any adjustments to the Project before significant work has been initiated. We will discuss our approach to obtaining an encroachment permit with OC Parks.

2. Coordination Meeting with OC Parks



Based on information provided by IRWD, we understand that the Baker Pipeline is within the Irvine Regional Park (Park) where crossing Santiago Creek. As the Park is managed by OC Parks, OC Parks will require an encroachment permit for all work within the Park. Our proposed Project Manager has recently successfully completed pipeline improvement projects within areas managed by OC Parks, including Laguna Niguel Regional

Park and Aliso Beach Park. For the Aliso Beach Park project in 2018, our project for South Coast Water District installed cured-in-place pipe within existing gravity sewers, completed spot repairs, and rehabilitated several of the manholes. After introducing the project goals and probable work and sequence with the Park Ranger, we met at the proposed project site to show them where the work would take place and what area we would like to request for the storage yard, requested temporary traffic detours within the parking lot, and discussed the anticipated durations for construction activities. Based on the proposed project description, OC Parks invited key OC Public Works team members to assist them. At the field meeting, our team provided OC Parks and Public Works staff with a clear understanding of the project and obtained all OC Park's constraints on work hours, work areas, preferred access locations, and noise limitations. The construction then went extremely smoothly.

Based on this success, we propose a similar approach for the project. We will initiate contact with the OC Parks Irvine Regional Park Ranger. After they thoroughly understand our project, we will recommend a field meeting with all key Orange County staff

members. At that field walk, we propose to show them the proposed work area, storage area, and access points and discuss a tentative schedule. The meeting goals will be to obtain favorable constraints to minimize the costs to IRWD, minimize any park visitor complaints, and minimize change of condition change orders from the construction contractor.

We plan to coordinate with OC Parks so that the contractor will be able to easily obtain an encroachment permit before starting construction without any changes of condition. We plan to initiate contact with OC Parks staff after the 90% construction plans and Project Manual submittal.

3. Review Meetings

After IRWD has completed your reviews of our submittals, our Project Manager will meet with Joe to review the District's comments. Based on the social distancing requirements due to COVID-19 and the extent of the comments, this meeting could be in person, over the phone, or by using Microsoft Teams. These short meetings will assist us in understanding the District's concerns and how we should address each one. We have found that a short meeting can save significant time in responding to plan check comments.



C. Quality Control and Quality Assurance

1. Risk Management

West Yost will identify potential risks associated with the Project. Our risk management process will then include risk analysis and mitigation. Robert will be responsible for risk monitoring and control. This task will minimize the potential for the project being delivered over budget, behind schedule, or without District and/or OC Parks support.

2. Quality Control/Quality Assurance

Quality is extremely important to West Yost. We were founded on and have built a reputation for providing high quality work products and client service. Our Quality Assurance/Quality Control (QA/QC) Policy is an integral component of company-wide policies and is included in our employee manual for each person in the company to read, understand, and acknowledge.

We believe that QA is process oriented with a focus on error prevention. West Yost's QA/QC program consists of two key principles: 1) to make sure the work is done correctly the first time and 2) to clearly define and communicate goals and expectations with our clients and team members.

The goal of our QA/QC policy is to ensure that project deliverables and services meet the firm's expected quality standards. Our QA/QC policy approach is focused on having senior staff with subject matter experience/expertise review all project deliverables prior to submission to the client. The following is a general list of company-wide QA/QC review requirements:

- Documents will not leave the office without review by another person capable of conducting a competent review of the information.
- Figures will not be released without a review to check for conformance with the figure standards.
- Spreadsheets will be reviewed, and internal formulas checked to confirm their functionality.
- Calculations will be reviewed to ensure they are correct.
- Design drawings will be checked for conformance with West Yost and IRWD standards and scope of work and for effectively presenting the design information necessary to complete the work.
- Methodologies and preliminary results will be checked for compliance with project objectives.
- Documents, such as Project Manuals, will be prepared in compliance with the Word Processing (WP) Manual – no project deliverable defined under this bullet will go out the door without going through WP compliance review. The QC Reviewer will initial as "REVIEWED BY" on the covers of TMs and memos. Reports have a signature line for QA/QC.

Task 1 Deliverables

- Bi-Weekly Status Reports by email.
- Monthly Status Reports with monthly billing.
- Meeting agendas at least three days before each meeting.
- Meeting notes within three working days after each meeting.
- Upon request by IRWD, we will provide QA/QC documentation, including issues and resolution documentation that we prepare.

Task 2. Design

After the Notice to Proceed is issued, West Yost will commence design of the facilities as described in our Project Understanding. To successfully complete the design for IRWD, we propose to perform the following services.

Task 2.1. Project Manual

West Yost will prepare the Project Manual in standard IRWD format using IRWD templates and complete the front-end documents and bidding and contract sections of the Project Manual. IRWD's general Technical Specifications will be used and supplemented, as necessary.

The Project Manual will clearly define the following:

- Environmental constraints
- Any mitigating measures as defined by the CEQA process
- Geotechnical conditions, including depth to groundwater
- OC Parks Encroachment Permit Conditions
- Facilities to be removed, including concrete encasement

Task 2.2. Construction Plans

A. Construction Plans

We will prepare detailed construction plans in the latest version of AutoCAD and using NCS V4.0 layering standards, on 22-inch by 34-inch sheets using IRWD's standard border template. Existing IRWD utilities will be identified on the plan view by as-built plan set number with the pipeline material and IRWD pressure zone labeled. The construction plans will be prepared using NAVD 88 and NAD 83 survey standards. The proposed drawing list is shown in the Table 1.

Table 1. Preliminary Construction Plans Index

Sheet No.	Drawing No.	Sheet Title
1	G-1	Title Sheet
2	G-2	Location Map, Vicinity Map, and Drawing Index
3	G-3	General Notes, Symbols, Agency Index, and Abbreviations
4	C-1	SAC/Baker Pipeline Plan & Profile Sta. 10+00 to 13+00
5	C-2	Civil Details – Work Area and Restoration
6	M-1	Mechanical Details – Connections

B. Steel Pipe Wall Thickness Calculations

West Yost will perform steel pipe calculations in accordance with American Water Works Association Manual M-11 Steel Water Pipe – A Guide for Design and Installation. We will calculate minimum wall thicknesses for the following:

- Handling
- Internal pressure
- External dead loads
- External live loads
- Deflection
- Buckling pressure

We will prepare a summary of the steel pipe design and provide the calculations in a combined PDF.

Task 2.3. Utility Research

West Yost will access our Underground Service Alert (USA) Digalert on-line account to determine all utilities that have documented facilities in vicinity of our project site. We will generate a utility tracking log in Microsoft Excel of all the facilities owners, including OC Parks, Cox Communications, Southern California Edison, Southern California Gas Company, and others. We will prepare utility request letters to each, describing our project and work area. We will also provide the estimated construction period. In the letters, we will request record drawings for their facilities and information on any projects planned for our project area in the next few years. We will email or use regular mail as required by the agency to send our requests.

Our utility tracking log will be updated as information is provided to us. For agencies that do not respond to our request, we will follow up with additional requests. The utilities tracking log will be provided to IRWD with the 90% complete drawings. Special emphasis will be placed on improvements that have recently been installed and those that are planned for the next year.

While visiting the proposed project site on August 26, 2020, our engineers noted that buried facilities were being installed along the Irvine Park Trail. We have noted during past projects that some recent improvements have not been entered into the existing facilities GIS files or database when we made our data request. Therefore, our inquiry was returned with incorrect information in that facilities were



near our proposed work. We will verify that all existing facilities that can be visually confirmed are shown on our drawings.

We have also had projects that have installed facilities in our proposed alignment right before we started construction. In 2019, our Project Manager had designed a pipeline for Three Valleys Municipal Water District in a very crowded Miramar Avenue in Claremont. Less than one month before our pipeline construction, Golden State Water Company installed a watermain using a horizontal alignment that was one foot from our proposed alignment. We were required to quickly analyze alternative alignments and prepare a delta revision to not impede the progress of our construction contractor and incur delay charges. We believe that better communications during the utilities research could have greatly reduced the likelihood of this unfortunate situation.

Task 2.4. Permit

West Yost will coordinate with OC Parks to understand all encroachment permit conditions and set up for the construction contractor to easily and quickly be able to obtain the required encroachment permit for the construction of the proposed pipeline. We have included a \$1,500 permit allowance within the budget for direct reimbursement of actual permit fees.

In addition to the encroachment permit, a temporary construction easement may be required. Using the coordination approach described in our Coordination with OC Parks subtask, we anticipate understanding and documenting any construction constraints that could include noise levels as the work will be so close to the horses and their stables, working in Santiago Creek when rain storms are possible or probable, and working in the area during high fire periods and during historically high park use time periods.



Task 2.5. Project Schedule

We have prepared a proposed project schedule in Microsoft Project. This schedule is based on our experience in executing similar projects for the District. As discussed during the pre-proposal meeting, the resource agency permitting process may be more challenging and require more time than the engineering design. If this proves true, West Yost would be able to delay any tasks as appropriate to not get ahead of the process.

As discussed above in the Project Management task, West Yost will update the schedule in Microsoft Project and provide to IRWD with the monthly status reports.

Task 2.6. Opinion of Probable Construction Cost

West Yost will provide IRWD with detailed and itemized engineer's estimate of probable construction cost for the 100% and final design deliverables. The construction cost estimate will be updated as necessary and will be formatted to match the breakdown of the bid items.

Task 2.7. Final Design Deliverables

To properly execute this design project, West Yost will provide IRWD with design deliverables at the following completing stages:

- a. 90% Complete Construction Plans and Project Manual (PDF only)
- b. 100% Complete Construction Plans, Project Manual and Engineer's Estimate of Probable Construction Costs (PDF only)
- c. Final Construction Plans, Project Manual and Engineer's Estimate of Probable Construction Costs (PDF only)

Task 2 Assumptions

- IRWD will provide survey base file in AutoCAD.
- IRWD will provide basis of bearing and benchmark.
- IRWD will provide limits of 25-foot wide Baker Pipeline easement through Santiago Creek.
- IRWD will provide site specific geotechnical investigation to be included by reference to the Project Manual.
- IRWD will provide all final CEQA documents so that we may include any mitigation measures and/or project environmental constraints.

Task 2 Deliverables

- West Yost will provide our utility research log and any reference plans requested by IRWD.
- West Yost will prepare and provide steel wall thickness calculations in accordance with AWWA M-11.
- 90% Complete Construction Plans and Project Manual (PDF only)
- 100% Complete Construction Plans, Project Manual and Engineer's Estimate of Probable Construction Costs (PDF only)
- Final Construction Plans, Project Manual and Engineer's Estimate of Probable Construction Costs (PDF only)
- Project Schedule updates as required.

PROJECT BUDGET

West Yost's proposed level of effort and budget for each of the tasks described above is shown in the attached table. West Yost will perform the Scope of Services described above on a time-and-materials basis, at the billing rates set forth in West Yost's attached 2020 Billing Rate Schedule, with a not-to-exceed budget of \$46,990. Any additional services not included in this Scope of Services will be performed only after receiving written authorization and a corresponding budget augmentation.

SCHEDULE

West Yost has prepared a preliminary Gantt project schedule in Microsoft Project that is included as part of this proposal letter. Although the Project schedule is partially controlled by the survey data, geotechnical investigation report and CEQA process, West Yost could accelerate the design schedule, if advantageous for the optimum construction window during the year.

Thank you for providing West Yost the opportunity to be of continued service to the Irvine Ranch Water District. We look forward to working with you on this important project. Please call at (949) 324-2091 or email at rreid@westyost.com if you have any questions or require additional information.

Sincerely,

WEST YOST

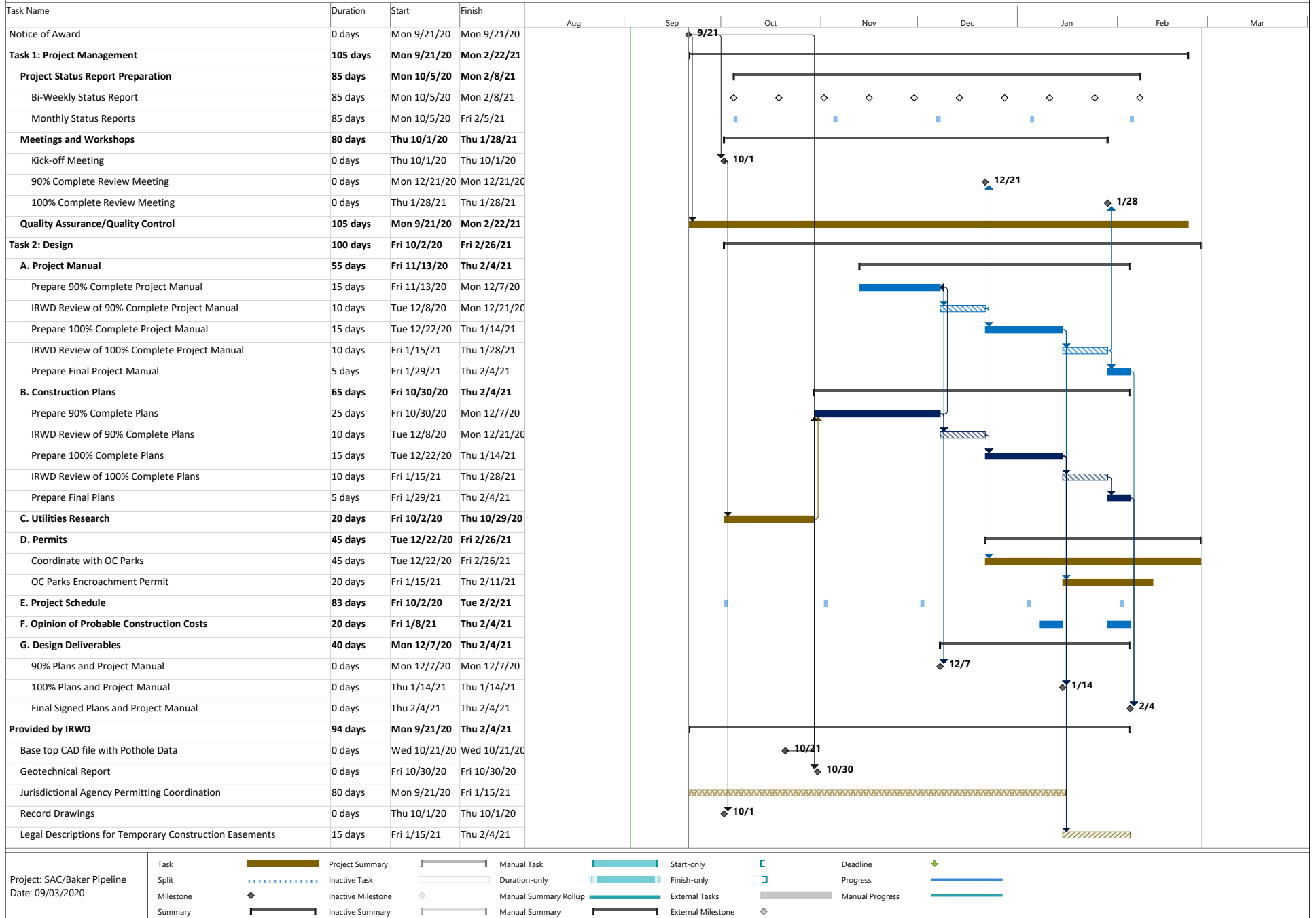


Robert S. Reid, PE
Principal Engineer II
RCE #49624

cc: Stephen Dopudja

Attachments: Preliminary Project Schedule
Proposed Project Budget

IRVINE RANCH WATER DISTRICT
SAC/Baker Pipeline Relocation in Santiago Creek
Proposed Project Schedule



IRVINE RANCH WATER DISTRICT
SAC/Baker Pipeline Relocation in Santiago Creek
Proposed Project Budget



Task No.	Task	Stephen Dopudja QA/QC	Robert Reid Project Manager	Anne Girtz Project Engineer	Jack Riedel Lead Pipeline Designer	CAD Designer	Administrative Assistant	Total West Yost Hours	West Yost Labor Fee	Other Direct Costs	Total Fee
		\$ 298	\$ 272	\$ 198	\$ 155	\$ 138	\$ 135				
1	Project Management		16	8			4	28	\$ 6,476.00	\$ 75.00	\$ 6,551.00
2	Design										
	A. Project Manual	4	4	32			8	48	\$ 9,696.00		\$ 9,696.00
	B. Construction Plans	6	6	22	60	21	1	116	\$ 20,109.00		\$ 20,109.00
	C. Utilities Reseach			2		12		14	\$ 2,052.00	\$ 100.00	\$ 2,152.00
	D. Permits		2		4	8		14	\$ 2,268.00	\$ 1,500.00	\$ 3,768.00
	E. Project Schedule		1				2	3	\$ 542.00		\$ 542.00
	F. Opinion of Probable Costs	1	1	8				10	\$ 2,154.00		\$ 2,154.00
	G. Design Deliverables	2		3		6		11	\$ 2,018.00		\$ 2,018.00
	Grand Total	13	30	75	64	47	15	244	\$ 45,315.00	\$ 1,675.00	\$ 46,990.00

Exhibit "D"

CONSULTANT SELECTION MATRIX

Baker Pipeline Exposure Through Santiago Creek Geotechnical Services			
Item	Description	NMG Geotechnical	Ninyo & Moore
A	<u>PROPOSAL CONTENTS</u>		
	<u>Ranking</u>	1	2
B	<u>SCOPE OF WORK</u>		
TASK		Fee	Fee
1	Project Management	\$900	\$471
2	Initiation and Background Research	\$2,316	\$1,534
3	Subsurface Exploration	\$7,124	\$5,570
4	Laboratory Testing	\$2,582	\$1,500
5	Geotechnical Analysis	\$3,588	\$2,470
6	Final Report	\$3,254	\$4,783
	TOTAL FEE	\$19,764	\$16,328

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Exhibit "E"

August 27, 2020

Project No. 20081-01

To: Irvine Ranch Water District
Engineering Department
15600 Sand Canyon Avenue
Irvine, California 92618

Attention: Mr. Joe McGehee

Subject: Proposal for Geotechnical Exploration Adjacent to Baker Pipeline, Santiago Creek,
County of Orange, California

INTRODUCTION

At your request, NMG Geotechnical, Inc. (NMG) is pleased to present this proposal for geotechnical exploration adjacent to an exposed portion of the Baker Pipeline within Santiago Creek in the County of Orange. Our proposal is based on our knowledge of the regional geologic conditions, our experience with repair of Irvine Ranch Water District (IRWD) facilities upstream in Santiago Creek, a preliminary background review, a site reconnaissance, correspondence with you, and our experience on similar projects with IRWD.

NMG QUALIFICATIONS

NMG was founded in 1994, has served IRWD for over 25 years, and has been providing on-call services to the district since March 2001. NMG's team of licensed professionals has extensive experience with the assessment and characterization of geologic conditions, hazards, constraints and impacts to a site. Our engineering geologists collect critical site information and work closely with our geotechnical engineers to provide recommendations and solutions to the project team at various stages of a project's design and construction process. We have a lengthy history of developing innovative solutions to geotechnical issues which have significantly enhance project feasibilities, design programs, budgets, and schedules.

Our onsite soil and materials laboratory is capable of performing a multitude of soil engineering tests, in accordance with Caltrans and ASTM guidelines. Our laboratory is AASHTO and City of Los Angeles certified, has Caltrans certification, and is an accepted soil laboratory by California DSA. We are aware of the importance of meeting project schedules and the demand for streamlined services, as well as the ever increasing need to support sustainable and low impact projects. NMG is a Small Business Enterprise (SBE) as certified by the State of California, as well as other agencies.

PROPOSED PROJECT AND EXISTING SITE CONDITIONS

Based on our review of your request for proposal via e-mail on August 17, 2020, we understand that IRWD is planning to remove the existing pipeline across the creek bed and replace that section with a new 54-inch steel pipeline in the same alignment with a minimum of 10 feet of cover. The existing pipeline is partially exposed in the creek bed of Santiago Creek.

The creek bed consists of young alluvial deposits that consist primarily of sands and gravels. The banks of the creek expose older alluvium and the slope on the north side of the creek bed exposes bedrock of the Paleocene-aged Silverado Formation. Historic high groundwater at the site is as shallow as 10 feet below existing grade. The creek bed and adjacent banks are mapped by the State of California as potentially liquefiable, due to the possible presence of unconsolidated sands/gravels and shallow groundwater.

SCOPE OF SERVICES

NMG performed a site reconnaissance on August 24, 2020 to evaluate feasibility of access for a drill rig. Site access is through Irvine Regional Park at the terminus of Jamboree Road in Orange County. Site access limitations plus the rocky nature of the alluvium would typically call for backhoe test pits, but in order to limit ground disturbance to the vegetation in the active channel, we propose to use a rubber track-mounted drill rig. Based on our site visit, we assume two borings will be needed, one on either side of the existing storm drain. The borings will be drilled, sampled and logged in order to characterize the subsurface geologic and groundwater conditions. Laboratory testing will include shear strength, sieve analysis and sand equivalent for analysis of scour potential (if needed) and shoring design and corrosivity analysis related to the proposed steel pipeline. Our scope of services will include the following:

- Review of historic aerial photographs and available geotechnical reports.
- Site reconnaissance to mark the boring locations and coordinate underground utility clearance with Underground Service Alert (USA) to clear the boring locations. In accordance with the Orange County Health Care Agency (OCHCA) requirements for drilling into the water table, a well permit will be obtained.
- Excavate two to three borings with an 8-inch, hollow-stem-auger, limited-access, rubber track-mounted drill rig and conduct soil sampling in the upper 25 to 30 feet adjacent to the pipeline alignment. We propose to backfill the borings with soil cuttings and compact the cuttings in lifts with a tamping foot mounted to the drill rig.
- Laboratory testing consisting of in-place moisture content and density of in-situ soils (14 samples), sieve analysis (4), direct shear (4), sand equivalent (2), corrosion suite (2) and maximum dry density (1 sample).
- Engineering and geologic analysis will include preparation of geotechnical boring logs and geologic map, preparation of a geologic cross-section along the alignment of the pipeline, analysis of laboratory test results, evaluation of groundwater and soil conditions adjacent to the existing pipeline, interpretation of underlying geologic units, and evaluation of onsite soils with respect to shoring design and use as backfill materials.

- Preparation of a report documenting our evaluation, presenting the laboratory test results and including recommendations for construction of the new pipeline.

Our scope of work does not include assessment of environmental issues.

COST ESTIMATE

Our estimate for the scope of services described herein is summarized below. The attached Table 1 provides details of how we arrived at these estimates.

1. Project Initiation and Background Research	\$ 2,316
2. Subsurface Exploration	\$ 7,124
3. Laboratory Testing	\$ 2,582
4. Geotechnical Analysis	\$ 3,588
5. Report Preparation	\$ 3,254
6. Project Management	\$ 900

TOTAL: \$19,764

We propose to provide the scope of services described herein on a time-and-materials basis. Charges will be accrued in accordance with the attached Professional Fee Schedule.

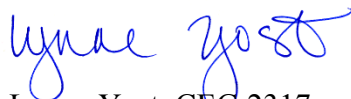
SCHEDULE

We are prepared to initiate field exploration with your verbal authorization to proceed. Please note, the field exploration phase will require approximately 1 to 4 weeks to execute (including marking the locations, Underground Service Alert notification, meeting with representatives of IRWD and drilling). Laboratory testing, analyses and report preparation will require another 2 to 3 weeks following the completion of field exploration.

If you have any questions regarding this proposal, please contact the office. We appreciate the opportunity to offer our services.

Respectfully submitted,

NMG GEOTECHNICAL, INC.



Lynne Yost, CEG 2317
Principal Geologist



Ted Miyake, RCE 44864
Principal Engineer

LY/TM/je

Attachments: Table 1 – Cost Breakdown
2019 Professional Fee Schedule

Distribution: (1) Addressee (E-Mail)

**TABLE 1
COST BREAKDOWN**

20081-01
August 27, 2020

IRWD Santiago Creek Bank Erosion Evaluation				
Geotechnical Design Services				
<i>Work Category</i>	<i>Staff Level</i>	<i>Hours/Qty</i>	<i>Unit/Rate</i>	<i>Cost</i>
1. Project Initiation, Background Research & Site Reconnaissance				
	Project Eng/Geo	6	\$146	\$ 876
	Principal/Associate	8	\$180	\$ 1,440
			Subtotal:	\$ 2,316
2. Field Exploration				
Selecting and Mark Boring Locations and USA Clearance	Project Engr./Geo.	4	\$146	\$ 584
Meeting with IRWD at Drilling Locations	Principal/Associate	2	\$180	\$ 360
OCHCA Well Permit				\$ 800
Rubber-Track Mounted Limited Access				
Hollow-Stem Auger Borings - 3 borings 20 to 30 feet deep	Drill Rig	8	\$370	\$ 2,960
(Prevailing Wage)	Rig Mob/Demob			\$ 600
Field Staff	Project Engr./Geo.	10	\$146	\$ 1,460
	Principal/Associate	2	\$180	\$ 360
			Subtotal:	\$ 7,124
3. Laboratory Testing				
	Moisture/Density	20	\$28	\$ 560
	Direct Shear	4	\$200	\$ 800
	Sand Equivalent	2	\$93	\$ 186
	Corrosion	2	\$200	\$ 400
	Grain Size/Sieve	4	\$104	\$ 416
	Maximum Dry Density	1	\$220	\$ 220
			Subtotal:	\$ 2,582
4. Geotechnical Analysis				
Boring Logs, Geologic Map and Geologic Cross Section	Senior Staff	15	\$114	\$ 1,710
Laboratory Data	Project Engr./Geo.	3	\$146	\$ 438
Geologic and Engineering Interpretation	Principal/Associate	4	\$180	\$ 720
Principal Review	Principal/Associate	4	\$180	\$ 720
			Subtotal:	\$ 3,588
5. Geotechnical Report				
	Project Engr./Geo.	10	\$146	\$ 1,460
	Principal/Associate	6	\$180	\$ 1,080
	Tech Illustrator	5	\$96	\$ 480
	Word Processor	3	\$78	\$ 234
			Subtotal:	\$ 3,254
6. Project Management, Coordination, Meetings				
	Principal/Associate	5	\$180	\$ 900
			Subtotal:	\$ 900
			TOTAL:	\$ 19,764

2019 PROFESSIONAL FEE SCHEDULE

HOURLY RATES BY STAFF CATEGORY

Principal and Associate Engineer/Geologist	\$180
Project Engineer/Geologist	\$146
Senior Staff Engineer/Geologist	\$114
Supervisory Technician	\$114
Staff Engineer/Geologist	\$104
Senior Project Technician	\$104
Project Technician	\$ 96
Staff Technician	\$ 86
Special Inspector	\$ 86
CAD Drafter/Technical Illustrator	\$ 96
Word Processor	\$ 78
Technical Assistant	\$ 66
Prevailing Wage (Soil Technician/Special Inspection Services)	\$118


LABORATORY TESTING

Moisture Content – ASTM D2166	\$ 19	Hydroconsolidation/Collapse – ASTM D5333	\$130
Moisture Content & Density	\$ 28	Undisturbed Direct Shear – ASTM D3080	\$200
Atterberg Limits – ASTM D4318	\$160	Undisturbed Direct Shear – Slow – ASTM D3080	\$290
Particle-Size Sieve Analysis – ASTM D422	\$104	Remolded Direct Shear – ASTM D3080	\$250
Finer than No. 200 Sieve – ASTM D1140	\$ 72	Remolded Direct Shear – Slow – ASTM D3080	\$380
Hydrometer Analysis – ASTM D422	\$124	Residual Direct Shear – ASTM D3080	\$580
Maximum Dry Density – ASTM D1557	\$220	R-Value – CT301/ASTM D2844	\$250
Maximum Dry Density with Oversize		Asphalt Maximum Density – CT308	\$250
Particle – ASTM D1557	\$250	Concrete, Mortar or Grout Compression	
Caltrans 216 Maximum Density	\$200	(per cylinder/cube/prism)	\$ 28
Sand Equivalent – ASTM D2419	\$ 93	CMU Grouted Prisms	
Soluble Sulfate Content	\$ 65	- Compression Test ≤8" x 8" x 16"	\$ 195
Expansion Index – ASTM D4829	\$166	- Compression Test >8" x 8" x 16"	\$ 270
Consolidation – ASTM D2435	\$205	Gunite/Shotcrete Panel Coring & Testing	\$109
- For time-rate, add \$38/increment			
- For remolded, add \$54/specimen			
- For reload, add \$105/cycle			

NOTES

1. No additional charges for field vehicle usage, nuclear gauge, or overtime work (except for prevailing wage and double time).
2. Heavy equipment (i.e. drill rig, backhoe, CPT) charges will be invoiced at cost.
3. Delivery and outside reproduction charges will be invoiced at cost.
4. Outside laboratory test charges will be invoiced at cost.


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Santiago Aqueduct Commission

Baker Pipeline Exposure through Santiago Creek

September 17, 2020



1

Agenda

- Background
- Work Completed to Date
- Recommendations
- Budget
- Schedule
- Next Steps

Irvine Ranch Water District

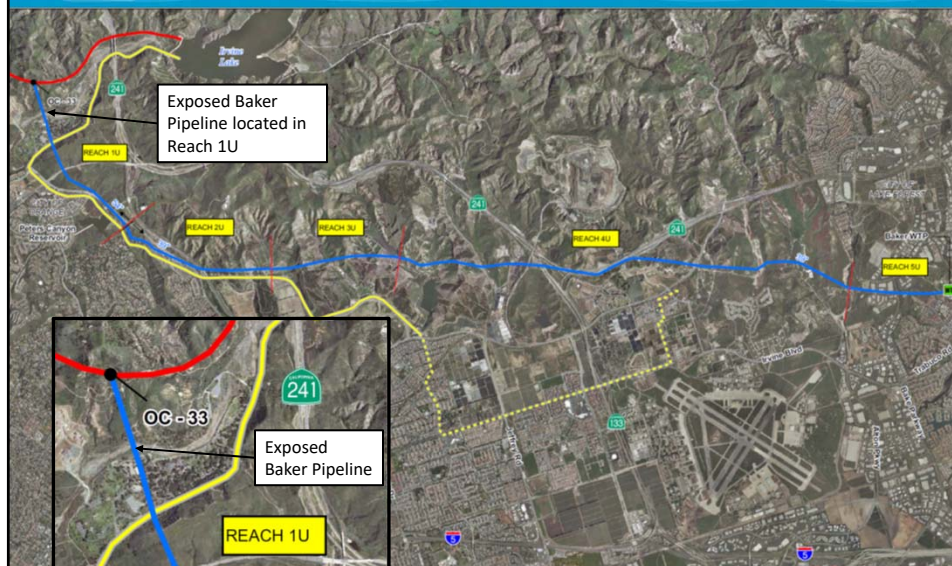
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Background

- In April 2020, staff confirmed that two sections of the 54-inch Baker Pipeline (Reach 1U) across Santiago Creek were exposed
 - Exposure No. 1: About 20 LF of exposed pipeline (pipe crown)
 - Exposure No. 2: About 15 LF of exposed pipeline (concrete encasement)
- Pipeline constructed in 1961 and designed with about 6-feet of cover across Santiago Creek
- Santiago Creek has since widened by about 50-feet and scoured more than 7-feet in depth

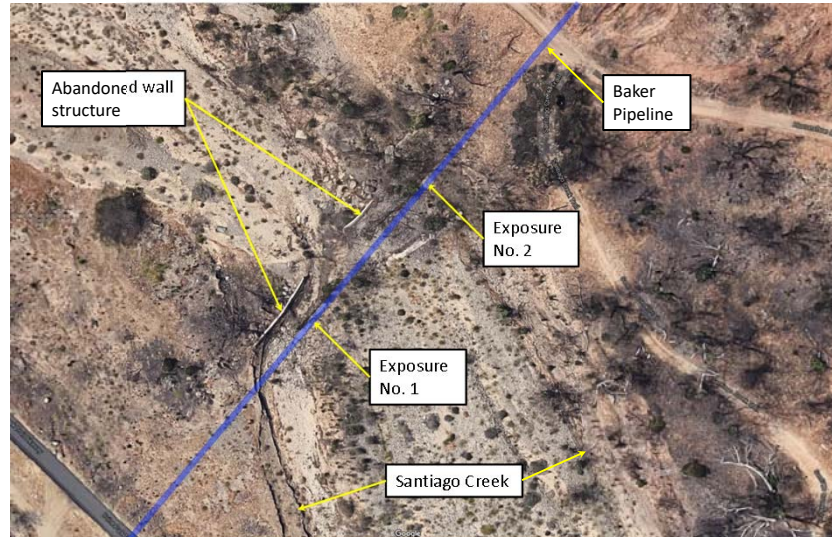
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Baker Pipeline Alignment



4

Background – Location of Exposures



Irvine Ranch Water District

5

5

Background – Location of Exposure No. 1



Irvine Ranch Water District

6

6

Work Completed to Date

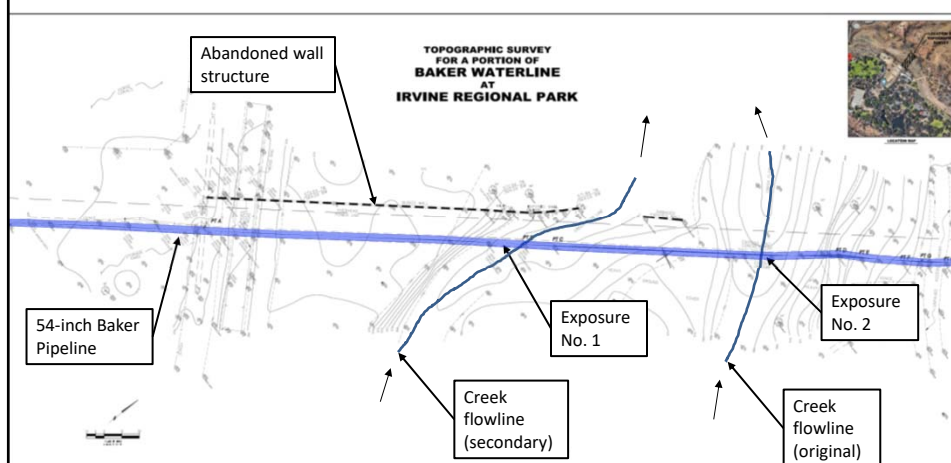
- Several activities were advanced to develop a response plan to the pipeline exposures
 - Conduct topographic survey
 - Perform initial jurisdictional delineation of the project area
 - Review permitting impacts with Harmsworth & Associates
 - Develop concepts for addressing pipeline exposures
 - Interim protection consideration
 - Permanent relocation
 - Develop conceptual level capital cost estimates
 - Obtain proposals for engineering design and geotechnical services

Irvine Ranch Water District

7

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Work Completed – Topographic Survey

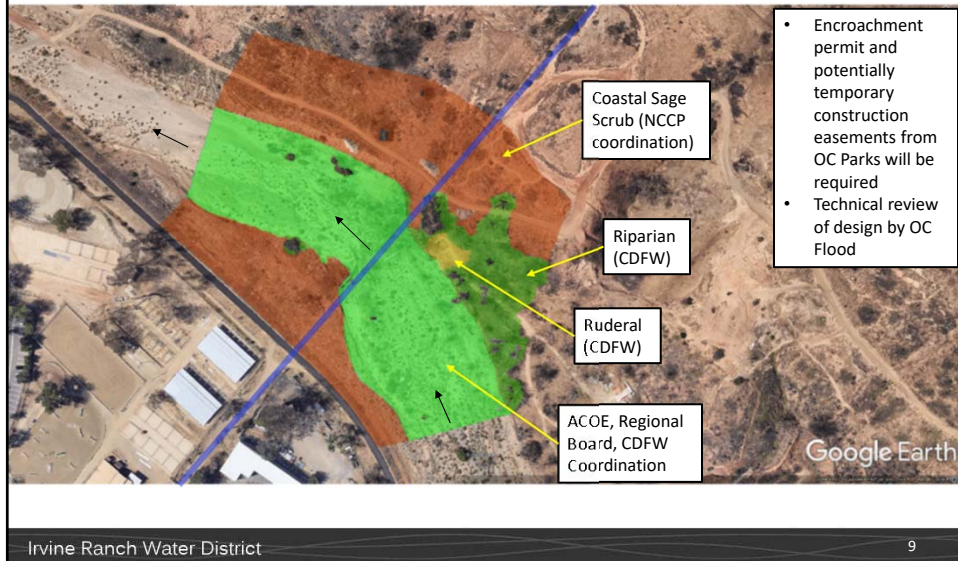


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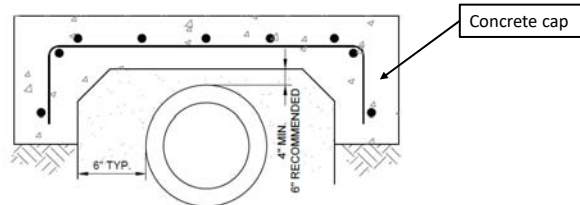
Work Completed – Jurisdictional Delineation



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Work Completed – Interim Protection Consideration

- Place reinforced concrete cap over exposed portions of pipe until permanent relocation can be constructed
- Several concerns and challenges with this approach
 - Current pipeline exposure not likely considered emergency by jurisdictional agencies so full permitting process will be required
 - Concrete would extend vertically into creek secondary flow line, which may further alter creek drainage pattern
 - Not a viable permanent solution



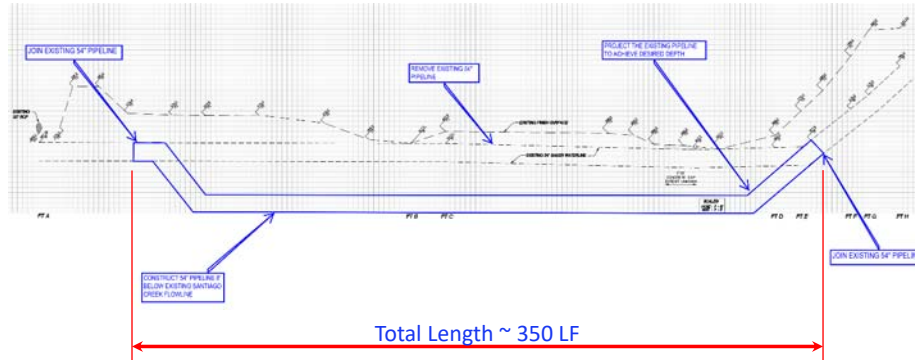
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Work Completed – Permanent Relocation

- To address existing exposures and to minimize potential future exposures, staff recommends lowering the depth of the pipeline by about 10-feet in its current alignment



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Work Completed – Conceptual Capital Costs

- DMc Engineering prepared conceptual capital cost estimates

SUMMARY	
Technical, Permits and Fees ⁽¹⁾	\$155,890.00
Mobilization	\$17,000.00
Shutdown and Dewater 54"	\$15,200.00
Excavate Alignment	\$60,000.00
Lay 54" Pipe	\$169,000.00
Tie-in at Join Points on Existing Waterline	\$107,200.00
Pressure Test	\$8,000.00
Restore Site	\$69,000.00
Contingency for Items Associated With this Preliminary Estimate (30%)	\$180,387.00
Contingency for Unknown Items Not Identified In this Preliminary Estimate (10%)	\$60,129.00
Total Probable Estimated Costs	\$841,806.00

(1) Includes estimated soft costs for engineering design, construction management and inspection, and permitting

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Work Completed – Proposals for Engineering and Geotechnical Services

- **Engineering services proposals received**
 - DMc Engineering - \$46,870
 - Stantec - \$99,088
 - West Yost - \$46,990
 - Scope includes 90%, 100%, final construction plans, project manual, and encroachment permit coordination
- **Geotechnical services proposals received**
 - NMG Geotechnical - \$19,764
 - Ninyo & Moore - \$16,328
 - Scope includes two borings up to 30 feet deep, laboratory testing, and soils analysis

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Consultant Selection Recommendations

- **Staff recommends contracting with**
 - West Yost for engineering services in the amount of \$46,990
 - Excellent understanding of project issues and comprehensive scope of work
 - Recent successful pipeline work with IRWD delivered on schedule and on budget
 - Experience with SAC/IRWD pipeline design requirements
 - NMG Geotechnical for geotechnical services in the amount of \$19,764
 - Extensive knowledge of the Santiago Creek
 - Recent nearby soils analysis within the Boy Scouts of America property
 - Harmsworth & Associates for environmental permitting service in an amount not-to-exceed \$50,000

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Budget – Overall Project

- As of June 30, 2020, the SAC existing cash balance was \$327,000
 - \$24,130 expended to date
 - \$116,754 needed to support the recommendations presented herein
 - Existing cash balance can fully fund work completed to date and recommendations presented herein
- Total estimated capital cost for the entire project is \$842,000
 - Existing cash balance can not fund entire project
 - Additional funding of about \$515,000 will be needed to support completion of the project

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Schedule

- Project will be completed in accordance with the following milestones
 - Begin design, permitting, and geotechnical work Oct 2020
 - Complete design Feb 2021
 - Complete permitting May 2021
 - Begin construction Jun 2021
 - Complete construction Oct 2021

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Next Steps

- Begin geotechnical analysis
- Kickoff pipeline design
- Confirm recommended pipe relocation depth and construction method
- Confirm permitting requirements and finalize scope of work with Harmsworth & Associates
- Make initial contact with OC Parks and jurisdictional agencies to begin the permitting process

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Questions



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