MEETING OF THE
BOARD OF DIRECTORS
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
4040 PARAMOUNT BLVD., LAKEWOOD, CA 90712
9:30 AM, THURSDAY, MARCH 5, 2020
AGENDA

Each item on the agenda, no matter how described, shall be deemed to include any appropriate motion, whether to adopt a minute motion, resolution, payment of any bill, approval of any matter or action, or any other action. Items listed as “For Information” or “For Discussion” may also be the subject of an “action” taken by the Board or a Committee at the same meeting.

1. DETERMINATION OF A QUORUM

2. PLEDGE OF ALLEGIANCE

3. INVOCATION

4. PUBLIC COMMENT
Pursuant to Government Code Section 54954.3

5. ADDITIONAL ITEMS TO THE AGENDA
Determine the need to add items to the agenda. In order for the Board to add an item to the agenda it must make a determination that: (i) The item came to the attention of the Board after the posting of the agenda; (ii) That there is a need for immediate action to be taken by the Board. If these two tests are met, the Board may add the item in question to the agenda for consideration consistent with the provisions of the Brown Act.

6. CONSENT CALENDAR

6A. APPROVE THE MINUTES OF JANUARY 23, 2020 BOARD OF DIRECTORS
Staff Recommendation: Staff recommends that the Board of Directors approves the minutes of the January 23, 2020 Board of Directors Meeting as submitted.

6B. APPROVE THE MINUTES OF JANUARY 27, 2020 BOARD OF DIRECTORS
Staff Recommendation: Staff recommends that the Board of Directors approves the minutes of the January 27, 2020 Board of Directors Meeting as submitted.

6C. APPROVAL OF CONTRACT AMENDMENT NO. 6 WITH ALSTON & BIRD
Administrative Committee Recommendation: The Administrative Committee recommends that the Board of Directors approve Amendment No. 6 to Contract No. 504 with Alston & Bird, LLP, subject to approval as to form by District Counsel.
6D. **LOCAL AGENCY FORMATION COMMISSION (LAFCO) SPECIAL DISTRICT REPRESENTATIVE BALLOT**  
*Administrative Committee Recommendation:* The Administrative Committee recommends that the Board of Directors cast a vote for Mr. Donald Dear for appointment as Special District Representative to the Los Angeles Local Agency Formation Commission.

6E. **AUTHORIZATION TO REJECT ALL PROPOSALS FOR ON-CALL MAINTENANCE SUPPORT SERVICES**  
*Capital Improvement Projects Committee Recommendation:* The Capital Improvement Projects Committee recommends that the Board of Directors reject all proposals and authorize the re-release of the Request for Proposals (RFP) for on-call mechanical maintenance support services and instrumentation/electrical maintenance support services.

6F. **AUTHORIZE PURCHASE OF ADDITIONAL STAGING HARDWARE FOR THE ALBERT ROBLES CENTER (ARC)**  
*Administrative Committee Recommendation:* The Administrative Committee recommends that the Board of Directors authorize the purchase of additional staging hardware from SICO America for $3,272.

6G. **AWARD OF PROFESSIONAL SERVICES AGREEMENT WITH ADVANCED DOCUMENT SOLUTIONS (ADOCs) FOR ONBASE UPGRADES AND ENHANCEMENTS**  
*Administrative Committee Recommendation:* The Administrative Committee recommends that the Board of Directors enter into a Professional Services Agreement, subject to approval as to form by District Counsel, with Advanced Document Solutions (ADocs) for OnBase upgrades and enhancements for an amount not to exceed $77,000.

6H. **AUTHORIZE RELEASE OF THE REQUEST FOR QUALIFICATIONS FOR ON-CALL CONSTRUCTION MANAGEMENT SERVICES**  
*Capital Improvement Projects Committee Recommendation:* The Capital Improvement Projects Committee recommend that the Board of Directors authorize the preparation and issuance of the Request for Qualifications for on-call construction management services.
6I. AUTHORIZE RELEASE OF THE REQUEST FOR QUALIFICATIONS FOR ON-CALL ENGINEERING SERVICES  
Capital Improvement Projects Committee Recommendation: The Capital Improvement Projects Committee recommend that the Board of Directors authorize the preparation and issuance of the Request for Qualifications for on-call engineering services.

7. APPROVAL OF THE CITY OF LOMITA WELL 5 TREATMENT PROJECT FOR THE SAFE DRINKING WATER PROGRAM  
Administrative Committee Recommendation: The Administrative Committee recommends that the Board of Directors approve the City of Lomita Well 5 Project as a Safe Drinking Water project for an amount not to exceed $2,000,000.

8. APPROVAL OF BUDGET APPROPRIATION AND CHANGE ORDER NO. 6 WITH PACIFIC HYDROTECH FOR THE SAFE DRINKING WATER PROGRAM ARLINGTON PROJECT  
Administrative Committee Recommendation: The Administrative Committee recommends that the Board of Directors approve a budget appropriation to increase contingency funds by an additional 6% in the amount of $124,000 (rounded) to cover the entire cost of Change Order No. 6 in the amount of $72,225.34 and address unforeseen construction-related issues for the SDW Arlington Treatment Project.

9. APPROVAL OF CONTRACT AMENDMENT NO. 4 WITH BUTIER ENGINEERING INC. FOR CONSTRUCTION MANAGEMENT SERVICES FOR THE SAFE DRINKING WATER PROJECTS: CITY OF HUNTINGTON PARK, CALIFORNIA AMERICAN WATER AND CITY OF LYNWOOD  
Administrative Committee Recommendation: The Administrative Committee recommends that the Board of Directors approve Contract Amendment No. 4 with Butier Engineering Inc. for construction management services for three Safe Drinking Water Program approved projects for an additional amount not to exceed $365,650 subject to approval as to form by District Counsel for a total contract amount of $1,142,882.50 and extend the contract term to December 31, 2020.

10. AWARD OF PROFESSIONAL SERVICES AGREEMENT WITH PERC WATER FOR OPERATIONS OF THE LEO J. VANDER LANS ADVANCED WATER TREATMENT FACILITY  
Capital Improvement Projects Committee Recommendation: The Capital Improvement Projects Committee recommends that the Board of Directors enter into a Professional Services Agreement, subject to approval as to form by District Counsel, with PERC Water Corporation for operations of the Leo J. Vander Lans Advanced Water Treatment Facility for an amount not to exceed $1,052,750.
11. AWARD OF CONTRACT FOR SUPPLEMENTAL RECHARGE WELLS 1A, 2, & 3 DEVELOPMENT PROJECT
   *Capital Improvement Projects Committee Recommendation:* The Capital Improvement Projects Committee recommends that the Board of Directors enter into a Construction Contract, subject to approval as to form by District Counsel, with Yellow Jacket Drilling for the ARC Supplemental Recharge Wells Development Project for an amount not to exceed $704,000 plus a 10% contingency, for a total of $774,000.

12. AUTHORIZATION TO RELEASE A REQUEST FOR BIDS FOR DRILLING SERVICES ASSOCIATED WITH THE NATIONAL GROUNDWATER MONITORING NETWORK (NGWMN)
   *Water Resources Committee Recommendation:* The Water Resources Committee recommends that the Board of Directors approve the preparation and issuance of a Request for Bids, subject to approval as to form by District Counsel, for drilling services associated with the National Groundwater Monitoring Network Project.

13. RECEIVE AND FILE THE 2020 ENGINEERING SURVEY AND REPORT; ADOPT RESOLUTION NO. 20-1127
   *Water Resources Committee Recommendation:* The Water Resources Committee recommends that the Board of Directors receive and file the 2020 Engineering Survey and Report and adopt Resolution No. 20-1127.

14. RECEIVE AND FILE THE REGIONAL GROUNDWATER MONITORING REPORT FOR WATER YEAR 2018-19
   *Water Resources Committee Recommendation:* The Water Resources Committee recommends that the Board of Directors receive and file the 2018-19 Regional Groundwater Monitoring Report.

15. RECEIVE AND FILE THE BUDGET ADVISORY COMMITTEE RECOMMENDATION FOR THE UPPER LIMIT TO THE 2020-2021 REPLENISHMENT ASSESSMENT
   *Staff Recommendation:* The Budget Advisory Committee recommends that the Board of Directors adopt an upper limit on the Fiscal Year 2020-2021 Replenishment Assessment (RA) of $383.25 per acre foot pumped, which is a 5% increase on the current RA of $365 per acre foot pumped, for the purposes of the Pumper Notification process.

16. MID-YEAR BUDGET REVIEW AND BUDGET WORKSHOP #1
   *Staff Recommendation:* For discussion and possible action.
17. DISTRICT COUNSEL’S REPORT

18. AB 1234 COMPLIANCE REPORTS AND DIRECTOR’S REPORTS

19. WRD BOARD MEETING DATES

19A. Thursday, March 19, 2020 - 9:30 AM - Regular Board of Directors Meeting

19B. Thursday, April 2, 2020 - 9:30 AM - Regular Board of Directors Meeting

19C. Thursday, April 16, 2020 - 9:30 AM - Regular Board of Directors Meeting

19D. Thursday, May 7, 2020 - 9:30 AM - Regular Board of Directors Meeting

20. CLOSED SESSION

20A. Conference with Legal Counsel – Anticipated Litigation, pursuant to Government Code §54956.9 (b), Two (2) Matters

21. CLOSED SESSION REPORT

22. ADJOURNMENT

The Board will adjourn to the next Board of Directors meeting currently scheduled for Thursday, March 19, 2020, at 9:30 AM.

In compliance with ADA requirements, this document can be made available in alternative formats upon request.

In compliance with the Americans with Disabilities Act (ADA), if special assistance is needed to participate in the meeting, please contact the Deputy Secretary at (562) 921-5521 for assistance to enable the District to make reasonable accommodations.

All public records relating to an agenda item on this agenda are available for public inspection at the time the record is distributed to all, or a majority of all, members of the Board. Such records shall be available at the District office located at 4040 Paramount Boulevard, Lakewood, California 90712.

Agendas are available at the District’s website, www.wrd.org.

EXHAUSTION OF ADMINISTRATIVE REMEDIES – If you challenge a District action in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Deputy Secretary at, or prior to, the public hearing. Any written correspondence delivered to the District office before the District’s final action on a matter will become a part of the administrative record.
DATE: MARCH 5, 2020

TO: BOARD OF DIRECTORS

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: APPROVE THE MINUTES OF JANUARY 23, 2020 BOARD OF DIRECTORS

SUMMARY
A special meeting of the Board of Directors of the Water Replenishment District Of Southern California was held on Thursday, January 23, 2020 at 9:40 AM at the District Office, 4040 Paramount Boulevard, Lakewood, California 90712. President Vera Robles-DeWitt called the meeting to order and presided thereafter.

FISCAL IMPACT
None

STAFF RECOMMENDATION
Staff recommends that the Board of Directors approves the minutes of the January 23, 2020 Board of Directors Meeting as submitted.
MINUTES OF JANUARY 23, 2020
SPECIAL MEETING OF THE BOARD OF DIRECTORS
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

A special meeting of the Board of Directors of the Water Replenishment District Of Southern California was held on Thursday, January 23, 2020 at 9:40 AM at the District Office, 4040 Paramount Boulevard, Lakewood, California 90712. President Vera Robles-DeWitt called the meeting to order and presided thereafter.

1. DETERMINATION OF A QUORUM
   Quorum Present: Yes

   Meeting Attendees: Excused or Late Arrival Time:
   President Dewitt__________________ PRESENT
   Director Allen____________________ PRESENT
   Director Katherman_______________ PRESENT
   Director Calderon_________________ 10:13 AM Arrival
   Director Murray___________________ EXCUSED

2. CLOSED SESSION
   The Board went into closed session on the following matters.
   
   2A. Public Employee appointment pursuant to Govt. Code 54957: Position: Senior Government Affairs Representative

   The Board reconvened in open session.

3. ADJOURNMENT
   There being no further business to come before the Board, and upon a motion made by Director Allen and seconded by President DeWitt, the meeting was adjourned at 11:15 AM.
Chair

ATTEST:

__________________________

Member

Approved in minutes of:

__________________________
DATE: MARCH 5, 2020

TO: BOARD OF DIRECTORS

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: APPROVE THE MINUTES OF JANUARY 27, 2020 BOARD OF DIRECTORS

SUMMARY
A special meeting of the Board of Directors of the Water Replenishment District Of Southern California was held on Monday, January 27, 2020 at 8:23 AM at the District Office, 4040 Paramount Boulevard, Lakewood, California 90712. President Vera Robles-DeWitt called the meeting to order and presided thereafter.

FISCAL IMPACT
None

STAFF RECOMMENDATION
Staff recommends that the Board of Directors approves the minutes of the January 27, 2020 Board of Directors Meeting as submitted.
A special meeting of the Board of Directors of the Water Replenishment District Of Southern California was held on Monday, January 27, 2020 at 8:23 AM at the District Office, 4040 Paramount Boulevard, Lakewood, California 90712. President Vera Robles-DeWitt called the meeting to order and presided thereafter.

1. DETERMINATION OF A QUORUM
   Quorum Present: Yes

   Meeting Attendees: Excused or Late Arrival Time:
   President DeWitt__________________ PRESENT
   Director Allen____________________ PRESENT
   Director Katherman_______________ PRESENT
   Director Calderon_________________ 8:35 AM Arrival
   Director Murray___________________ EXCUSED

2. CLOSED SESSION
   The Board went into closed session on the following matters.

   2A. Public Employee appointment pursuant to Govt. Code 54957: Position: Senior Government Affairs Representative

   The Board reconvened in open session.

3. ADJOURNMENT
   There being no further business to come before the Board, and upon a motion made by Director Allen and seconded by President DeWitt, the meeting was adjourned at 11:43 AM.
___________________________

Chair

ATTEST:

___________________________

Member

Approved in minutes of:

___________________________
MEMORANDUM
ITEM NO. 6C

DATE: MARCH 5, 2020
TO: BOARD OF DIRECTORS
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: APPROVAL OF CONTRACT AMENDMENT NO. 6 WITH ALSTON & BIRD

SUMMARY
The District is under contract with Alston & Bird to provide specialized legal services and representation on matters involving litigation, projects, storage amendments and water rights on an as-needed basis.

This contract is updated from time to time to revise the term, scope of services and billing rates as necessary. The last update was in 2016 under Amendment No. 5. At this time, it is necessary to update billing rates under Amendment No. 6.

Attached to this staff report is Amendment No. 6 to Contract No. 504 for consideration by the Board of Directors.

FISCAL IMPACT
Legal fees have been included in the 2019-2020 fiscal year budget and will be included in subsequent years’ budgets as needed.

ADMINISTRATIVE COMMITTEE RECOMMENDATION
The Administrative Committee recommends that the Board of Directors approve Amendment No. 6 to Contract No. 504 with Alston & Bird, LLP, subject to approval as to form by District Counsel.
AMENDMENT NO. 6 TO CONTRACT NO. 504
AGREEMENT FOR PROFESSIONAL LEGAL SERVICES
BETWEEN
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
AND
ALSTON & BIRD, LLP

This Amendment No. 6 (“Amendment”) to Contract No. 504, is made and entered into this __ day of __________, 2020 (“Effective Date”), by and between the Water Replenishment District of Southern California (hereinafter “District”), and Alston & Bird, LLP.

I. RECITALS

A. On October 19, 2007, a certain agreement, hereinafter referred to as Contract No. 504 (“Agreement”), was executed between the District and Alston & Bird for professional legal services.

B. The District and Alston & Bird entered into Amendment No. 1 to amend Section 6, Term and Termination, to extend the term of Contract No. 504, as set forth in that Amendment.

C. The District and Alston & Bird entered into Amendment No. 2 to revise the scope of services as set forth in that Amendment.

D. The District and Alston & Bird entered into Amendment No. 3 to, among other things, revise the scope of services to be provided by Alston & Bird.

E. The District and Alston & Bird entered into Amendment No. 4 to, among other things, revise the scope of services and related billing rates.

F. The District and Alston & Bird entered into Amendment No. 5 to update billing rates for services under the Agreement.

G. The District and Alston & Bird enter into this Amendment No. 6 to revise billing rates for services under the Agreement.

II. AMENDMENT

NOW, THEREFORE, in consideration of the mutual covenants, promises and agreements set forth, it is agreed the Agreement, as amended to date, with all amendments
incorporated herein by reference, shall remain in full force and effect except as otherwise hereinafter provided.

1. Section 3. Rates, Fees and Charges. The second paragraph in Section 3 of the Agreement, is replaced with the following: “For services performed by Alston & Bird, the District shall pay an hourly rate of $485 for partners, $425 for associates and $200 for paralegals on matters involving litigation, projects, storage amendments and water rights matters.

IN WITNESS WHEREOF, the Parties have caused this Amendment No. 6 to be executed as of the Effective Date.

ALSTON & BIRD, LLP

__________________________
Signature

__________________________
Print Name

__________________________
Title

WATER REPLENISHMENT DISTRICT
OF SOUTHERN CALIFORNIA

__________________________
Signature

Vera Robles DeWitt

__________________________
Print Name

President, Board of Directors

__________________________
Signature

__________________________
Print Name

Secretary, Board of Directors

__________________________
Title

__________________________
Title
MEMORANDUM
ITEM NO. 6D

DATE:    MARCH 5, 2020
TO:      BOARD OF DIRECTORS
FROM:    ROBB WHITAKER, GENERAL MANAGER
SUBJECT: LOCAL AGENCY FORMATION COMMISSION (LAFCO) SPECIAL DISTRICT REPRESENTATIVE BALLOT

SUMMARY
Since 1994, special districts in Los Angeles County have been represented by two members to the Local Agency Formation Commission (LAFCO). The term of office of one of those representatives, Mr. Donald Dear, expires in May 2020, and therefore ballots have been sent out for the 2020 election.

Independent special district seats on LAFCO are filled by the Special District Selection Committee. The Committee is made up of the presiding officers of each independent special district in Los Angeles County.

Nominations for the Special District Representative seat opened in October 2019 and closed on December 27, 2019. Two candidates submitted applications; Mr. Donald Dear, a Director at West Basin Municipal Water District, and Ms. Sharon Raghavachary, a Director at the Crescenta Valley Water District. Candidate information is attached to this staff report.

WRD as a Special Districts is being asked to vote for just one candidate on the ballot. The candidate receiving the highest number of votes will be declared the Special District Representative. Ballots are due April 16, 2020 by 5:00 PM.

FISCAL IMPACT
None

ADMINISTRATIVE COMMITTEE RECOMMENDATION
The Administrative Committee recommends that the Board of Directors cast a vote for Mr. Donald Dear for appointment as Special District Representative to the Los Angeles Local Agency Formation Commission.
TO: PRESIDING OFFICER OF EACH INDEPENDENT SPECIAL DISTRICT IN LOS ANGELES COUNTY

FROM: WILLIAM F. KRUSE

RE: CORRECTED BALLOT; SPECIAL DISTRICT LAFCO REPRESENTATIVE

DATE: JANUARY 7, 2020

The ballot previously sent to you misidentified one of the candidates for election to the Commission. Please disregard and destroy the prior ballot. The other materials previously sent to you are correct.

Please vote for ONE candidate. The marked ballots should be placed in the envelope marked "Ballot Envelope." Please write the name of your agency and sign your name on the outside of the ballot envelope and return the completed ballots by mail to:

William F. Kruse, Esq.
Lagerlof, Senecal, Gosney & Kruse, LLP
301 N. Lake Avenue, 10th Floor
Pasadena, CA 91101-5123.

No ballot will be counted if it is missing the name of the voting agency and the signature of the Presiding Officer on the ballot envelope.

The candidate receiving the highest number of votes will be declared the special district representative to LAFCO.

Ballots must be returned by 5:00 p.m. on April 16, 2020.

WFK/jlb
Enclosures

cc: Paul Novak, w/enc.
BALLOT

SPECIAL DISTRICT LAFCO REPRESENTATIVE

Please vote for no more than one candidate.

☐ DONALD L. DEAR
  Occupation: Water District Director
  Sponsor: West Basin Municipal Water District

☐ SHARON RAGHAVACHARY
  Occupation: Water District Director
  Sponsor: Crescenta Valley Water District
NOMINATION
OF
INDEPENDENT SPECIAL DISTRICT REPRESENTATIVE
TO THE
LOS ANGELES COUNTY LOCAL AGENCY FORMATION COMMISSION

To: Independent Special District Selection Committee
From: West Basin Municipal Water District
Date: October 28, 2019

Name of Candidate: Donald L. Dear

West Basin Municipal Water District is pleased to nominate Donald L. Dear as a candidate for appointment as special district REPRESENTATIVE to the Los Angeles Local Agency Formation Commission. The nominee is an elected official or a member of the board of an independent special district appointed for a fixed term. For your consideration, we submit the following additional information together with a resume of the candidate's qualifications.

Elective office: Division 5 Director
Agency: West Basin Municipal Water District

Type of Agency: Water Wholesaler
Term Expires: December 2020
Residence Address: 15433 Catalina Ave, Gardena, CA 90247

Telephone: (310) 704-0881

PLEASE ATTACH RESUME OR CANDIDATE STATEMENT (limit one page)

West Basin Municipal Water District

(Name of Agency)

By: Patrick Shields
Its: General Manager

10/3/19
Donald L. Dear
Immediate Past President, West Basin Municipal Water District Board of Directors
Division V

Donald L. Dear was elected to the West Basin Municipal Water District (West Basin) Board of Directors in November 2000. He is currently serving his fifth term after being re-elected in November 2016. He represents the Division V cities of Gardena, Hawthorne, Lawndale and the unincorporated Los Angeles County area of El Camino Village.

Director Dear came to the Board with a vast array of experience in public service, serving on the Gardena City Council from 1970 to 1974 and again from 1978 to 1982, as well as serving as the Gardena mayor for nine consecutive terms from 1982 to 2001. He retired with 27 years of total service to the City of Gardena. Director Dear is currently serving as Immediate Past President of the Board and Chair of the Ethics Committee. He previously served as one of two West Basin representatives on the board of directors of the Metropolitan Water District of Southern California from 2013 to 2018.

In 2004, 2008, 2012 and again in 2016, he was elected as one of the representatives for the Los Angeles County Independent Special Districts on the Local Agency Formation Commission, of which he currently serves as First Vice President. In October 2011, the West Basin Board paid tribute to Dear’s distinguished public service by naming their Carson Headquarters the Donald L. Dear Building.

Director Dear’s years of experience have given him a deep first-hand understanding of the roles, responsibilities and challenges facing local governmental institutions. He served for 24 years as a Trustee of the Greater Los Angeles Vector Control District, and for 19 years on the Board of Directors for the Los Angeles County Sanitation District No. 5. He also served as President of the South Bay Cities Association (now known as South Bay Cities Council of Governments), on the Board of Directors of the Southern California Cities Joint Powers Consortium and is a member of the Sierra Club.

As a former teacher at Stephen White Middle School in Carson for 38 years, he is well known and widely respected by his former students, colleagues and members of the community. In 1983 he was "Teacher of the Year" for Region A of the Los Angeles Unified School District. Dear’s professional affiliations include his service as a member of the National Council for Social Studies, board member of the Political Action Council of Educators, and six terms of service as a member of the House of Representatives of the United Teachers of Los Angeles (UTLA). His civic affiliations include the Association for Retarded Citizens – South Bay, El Nido Services, Gardena Elks, Gardena High School Booster Club, Gardena Jaycees, Gardena Valley Cultural Arts Corporation, Gardena Valley Friends of the Library, Gardena Valley Music Association, Gardena Valley Red Cross, Gardena-Carson Family YMCA, Hollypark and Gardena Valley Lions Club, Kiwanis Club of Gardena Valley, Serra High School Advisory Board, and the University of Southern California San Pedro Peninsula Trojan Club.

Director Dear has also distinguished himself through his outstanding work with youth, not only as a noteworthy educator, but also for his 30 years of unselfish dedication as a coach for more than 70 teams in three sports through the Gardena Recreation Department Youth Sports Leagues.
NOMINATION
OF
INDEPENDENT SPECIAL DISTRICT REPRESENTATIVE
TO THE
LOS ANGELES COUNTY LOCAL AGENCY FORMATION COMMISSION

To: Independent Special District Selection Committee

From: President James D. Bednar and Member of the Board of Directors

Date: December 3, 2019

Name of Candidate: Sharon Raghavachary

The Board of Directors of the Crescenta Valley Water District is pleased to nominate Sharon Raghavachary as a candidate for appointment as special district REPRESENTATIVE to the Los Angeles Local Agency Formation Commission. The nominee is an elected official or a member of the board of an independent special district appointed for a fixed term. For your consideration, we submit the following additional information together with a resume of the candidate's qualifications.

Elective office: Director of Board of Directors of

Agency: Crescenta Valley Water District

Type of Agency: Water and Sewer District

Term Expires: December 2020

Residence Address: 2209 Maurice Ave,
La Crescenta, CA 91214

Telephone: 818-541-9071

PLEASE ATTACH RESUME OR CANDIDATE STATEMENT (limit one page)

Crescenta Valley Water District
(Name of Agency)

By: [Signature]

Its: Chairman of the Board of Directors
Director Raghavachary has been active in the La Crescenta Community for 20 years and has a background in accounting and computer systems.

Ms. Raghavachary is a founder of the Crescenta Valley Community Association. She served for seven years on the Crescenta Valley Town Council, during which time she was co-chair of the Foothill Design Committee, that wrote design standards for Foothill Boulevard, and was a member of Supervisor Antonovich’s Library Committee. She also served as Council Vice President and Land Use Committee Chair.

Additionally, Director Raghavachary served three years on the Parent Advisory Council for Children’s Hospital Los Angeles, providing input for the new hospital tower. She has been a volunteer for the Los Angeles County Sheriff’s Department and Treasurer of the Crescenta Valley Arts Council, as well as a Girl Scout troop leader for ten years, and for over five years she wrote a featured column for the Glendale New Press and the Crescenta Valley Weekly. She is currently serving her second year on the Clark Magnet High School’s School Site Council.

Ms. Raghavachary has teenage twins, a boy and a girl, who attend Clark Magnet and Crescenta Valley High Schools.
DATE: MARCH 5, 2020
TO: BOARD OF DIRECTORS
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: AUTHORIZATION TO REJECT ALL PROPOSALS FOR ON-CALL MAINTENANCE SUPPORT SERVICES

SUMMARY
On December 19, 2019, the Board of Directors authorized the release of two (2) On-Call maintenance support services RFPs to develop a program/pool of firms that will assist in providing maintenance support across all WRD facilities. For support at the treatment plants, maintenance services not provided by the third-party contractors are out-sourced, with little to no control over project schedule and budget. This program is designed to ensure maintenance resources are available and that maintenance is conducted to sustain continued operations of the District’s infrastructure.

The program will consist of two disciplines: mechanical and instrumentation/electrical services and will be procured independently. Maintenance support may be immediate or planned, such as preventative maintenance. This program will cover the various situations and require firms to respond based on the urgency/need. Through this procurement effort, staff intended to select up to three (3) separate firms for each type of maintenance services (mechanical and instrumentation/electrical), which will be assigned on a task order basis.

The two (2) RFPs were released through the District’s Bonfire procurement program. On January 23, 2020, the District received a total of three (3) proposals only: two (2) for mechanical support and one (1) for instrumentation and Electrical support as indicated below:

- **On-Call Mechanical**
  - Filanc
  - ICS – Innovative Construction Solutions

- **On-Call Instrumentation & Electrical**
  - Baker Electric
The lack of proposals received and therefore the inability to ultimately develop a pool of firms within this Program, staff is recommending the rejection of all proposals and the re-release of both RFPs for on-call maintenance support services.

**FISCAL IMPACT**

None

**CAPITAL IMPROVEMENT PROJECTS COMMITTEE RECOMMENDATION**

The Capital Improvement Projects Committee recommends that the Board of Directors reject all proposals and authorize the re-release of the Request for Proposals (RFP) for on-call mechanical maintenance support services and instrumentation/electrical maintenance support services.
MEMORANDUM
ITEM NO. 6F

DATE: MARCH 5, 2020
TO: BOARD OF DIRECTORS
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: AUTHORIZE PURCHASE OF ADDITIONAL STAGING HARDWARE FOR THE ALBERT ROBLES CENTER (ARC)

SUMMARY
In order to facilitate anticipated meetings and special events at the Albert Robles Center (ARC), a stage was procured and installed in the multi-functional space. This stage system is a modular system manufactured by SICO America that can be expanded as necessary to increase the maximum allowable size. The current stage system consists of four 4’ x 8’ panels, resulting in a maximum stage size of 8’ x 16’. WRD would like to purchase two additional 4’ x 8’ panels in order to increase the maximum size to 8’ x 24’.

The cost of the additional two panels is $3,272. The original stage was purchased in August 2019. This additional purchase would put the total expenditures with SICO America over the last twelve months over the $10,000 limit, thus Board approval is required.

FISCAL IMPACT
The fiscal impact to the 2019/2020 budget is $3,272. The amount will be drawn from budgeted funds and will be allocated to the Administration (ADM 1000) department budget.

ADMINISTRATIVE COMMITTEE RECOMMENDATION
The Administrative Committee recommends that the Board of Directors authorize the purchase of additional staging hardware from SICO America for $3,272.
MEMORANDUM
ITEM NO. 6G

DATE: MARCH 5, 2020
TO: BOARD OF DIRECTORS
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: AWARD OF PROFESSIONAL SERVICES AGREEMENT WITH ADVANCED DOCUMENT SOLUTIONS (ADOCs) FOR ONBASE UPGRADES AND ENHANCEMENTS

SUMMARY
The OnBase platform is the District’s enterprise content management (ECM) system that is used to capture, preserve, and manage important records related to WRD’s daily business activities. Examples of such records include meeting agendas, minutes, contracts, etc. The District currently uses version 16 of the software, which was released several years ago. The current stable release of the OnBase software is equivalent to version 19 and is now called OnBase Foundation Class.

The District wishes to upgrade the OnBase software and audit the system for potential optimizations, such as the activation of features like keyword data validation and cross-referencing related documents (e.g. contracts and their related invoices). To accomplish this upgrade, the District has sought a proposal from Advanced Document Solutions (ADocs).

The OnBase software licensed by the Water Replenishment District consists of proprietary programs designed and developed exclusively by Hyland Software, Inc. and its affiliates (“Hyland”). The Water Replenishment District is receiving maintenance and technical support of such software from ADocs. While Hyland has numerous authorized resellers of the OnBase Software, under Hyland’s commercial policies, ADocs is the sole authorized source to provide maintenance and support of the OnBase software to the Water Replenishment District. The attached documents include the proposal provided by ADocs as well as a letter from Hyland indicating ADocs as a sole source provider to the District.

FISCAL IMPACT
The fiscal impact to the 2019/2020 budget is $69,900 with a contingency of $7,100 for a total of $77,000. The amount will be drawn from budgeted funds and will be allocated to the Administration (ADM 1000) department budget.
ADMINISTRATIVE COMMITTEE RECOMMENDATION

The Administrative Committee recommends that the Board of Directors enter into a Professional Services Agreement, subject to approval as to form by District Counsel, with Advanced Document Solutions (ADocs) for OnBase upgrades and enhancements for an amount not to exceed $77,000.
This Professional Services Agreement (the “Agreement”) is made and entered into this 5th day of March, 2020, by and between the Water Replenishment District of Southern California (“District”) and Advanced Document Solutions, Inc., (“Consultant”) (collectively the “Parties” or individually as “Party”) for the furnishing of certain professional services upon the following terms and conditions.

1. **Scope of Services.** Consultant shall perform the scope of services described in Exhibit A hereto (“Services”). Tasks other than those specifically described in Exhibit A shall not be performed without a prior written amendment to this Agreement.

   1.1 **Standard of Care.** In performing the scope of services under this Agreement, Consultant shall exercise the standard of care and expertise prevailing in California for the performance of such services.

2. **Term.** The term of this Agreement shall commence on March 5, 2020 and shall end on December 31, 2022 (the “Expiration Date”). At least sixty (60) days prior to the Expiration Date, District staff shall evaluate the quality of the Services that have been provided by the Consultant, the cost of such Services relative to the benefits, and the need for any continuation of the services. The results of such evaluation shall be provided to the appropriate District Committee, which committee shall provide a report to the District’s Board of Directors (“Board”). If the Board determines that there is a demonstrated need for the continuation of such Services, the Board may renew the Agreement on terms and conditions that do not provide for a significantly longer term, increased scope of services or increased fee schedule than is provided for in Paragraphs 1 or this Paragraph 2. If the Board desires to modify the Agreement to provide for such a significantly longer term, increased scope of services or increased fee schedule, the District shall comply with the provisions of its then current Administrative Code concerning the solicitation and approval of proposals for professional services.

2.1 **Termination by District**

   2.1.1 **Termination for Convenience.** The District may terminate this Agreement for its convenience at any time upon five (5) days written notice to Consultant. Consultant’s compensation in the event of such a termination shall be exclusively limited to payment for all authorized services performed and for all authorized expenses incurred up to the effective date of such termination. Consultant understands and agrees that it shall not be
entitled to any additional compensation or reimbursement whatsoever in the event of such termination.

2.1.2 Consultant’s Obligations Upon Termination. Following any termination of this Agreement by the District or Consultant, the Consultant shall promptly return all District property, and shall likewise provide to District all finished and unfinished data, studies, maps, reports, and other deliverables and work-product prepared by Consultant pursuant to this Agreement.

3. Consultant’s Compensation. District will compensate Consultant for services performed and for expenses incurred pursuant to this Agreement as follows:

3.1 Fee. Consultant shall be paid in accordance with the fees and Consultant Rate Schedule attached to this Agreement as Exhibit B which may not be changed except with District’s written approval.

3.2 Reimbursable Expenses. Consultant shall be reimbursed for only pre-approved expenses, subject to the provisions of this Agreement. Consultant shall obtain the District’s prior written approval before incurring an expense not specifically provided for under this Agreement.

3.2.1 Third Party Expenses. Unless specifically provided in Exhibit B, and subject to the provisions of Paragraph 3.2, the District shall not reimburse Consultant for any costs charged to Consultant by third parties unless said costs are preapproved. In the event such costs are approved, such reimbursement shall be at cost without any markup by Consultant.

3.3 Invoices. Consultant shall submit monthly invoices to District for services performed and expenses incurred during the preceding month. District shall process Consultant’s invoice upon receipt and issue any undisputed payment in a timely manner. Consultant’s invoices shall separately identify all personnel for whose services payment is sought, the services performed, and all expenses for which reimbursement is requested. As a condition precedent to payment, District may require Consultant to furnish supporting information and documentation for all charges for which payment is sought. District shall have the right to withhold from payments to Consultant reasonably disputed amounts including, without limitation, amounts for services not performed in accordance with this Agreement and costs, expenses or damages incurred by District as a result of Consultant’s breach of this Agreement or Consultant’s negligence.

4. Consultant’s Obligation to Provide Notice of Changes. Consultant shall provide written notice to the District no later than twenty (20) days after the occurrence of any event (including any direction by the District) which Consultant believes requires a change in its compensation or the time for performance of its obligations under this Agreement. Said notice shall describe the event and the basis for any change in compensation or time for performance requested by Consultant. The Parties shall thereafter meet and confer to
determine whether such a change is appropriate. However, no such change to this Agreement may be made except by written amendment to this Agreement executed by the Parties. Consultant’s failure to provide the notice required under this Paragraph shall constitute a waiver of its right to seek a change in its compensation or the time for performance of its obligations under this Agreement.

5. Ownership and Use of Documents. All proprietary information developed by Consultant in connection with, or resulting from, this Agreement, including but not limited to inventions, discoveries, improvements, copyrights, patents, data, maps, reports, textual material or software programs, shall be the sole and exclusive property of the District. Consultant agrees that the compensation to be paid pursuant to this Agreement includes adequate and sufficient compensation for any proprietary information developed in connection with or resulting from this Agreement. Consultant further understands and agrees that full disclosure of all proprietary information developed in connection with, or resulting from, this Agreement shall be made to the District, and that Consultant shall do all things necessary and proper to perfect and maintain District’s ownership of such proprietary information. All documents, reports, surveys, renderings, photographs, data and other materials furnished by the District to Consultant shall remain the exclusive property of the District and shall not be distributed or provided to third parties without the express written authorization of the District.

6. Publication of Project Information. Consultant shall notify and obtain written approval from the District before presenting verbal or written information to outside individuals or entities about the services or project for which Consultant was retained.

7. Patents and Copyrights. The Consultant shall assume all costs arising from the use of patented or copyrighted materials, including but not limited to, equipment, devices, processes, and software programs used or incorporated in the work performed under this Agreement. Consultant shall defend, indemnify hold the District, its officers, directors, agents, employees, representatives and assigns harmless from any and all claims, demands, suits at law, and actions of every nature for or on account of the use of any patented or copyrighted materials.

8. Consultant’s Status. Consultant is an independent contractor and neither Consultant nor any employee of Consultant is or will be treated as an employee of the District under this Agreement. District controls the result to be accomplished under this Agreement, but not the means by which Consultant achieves such results.

8.1 Payments made to Consultant pursuant to this Agreement shall be the sole and complete compensation to which Consultant is entitled. Consultant is solely responsible for any taxes levied by local, state or federal authorities on such sums. Consultant shall defend and indemnify the District for any taxes, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to properly withhold taxes as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.
8.2 District will not make any contribution to any retirement plan or Social Security on behalf of Consultant or any of Consultant’s employees. Consultant shall defend and indemnify the District for any contribution, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to contribute to any retirement plan or Social Security as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.3 District will not make any payments to Consultant, or Consultant’s employees, which rely upon employee status, including, but not limited to, FLSA and other overtime and minimum wage requirements, prevailing wage laws, worker’s compensation benefits, FMLA, CFRA, Paid Leave, and unemployment benefits. Consultant shall defend and indemnify the District for any payment, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to make any such payment or otherwise provide the benefits of such laws as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.4 Consultant shall comply with the Political Reform Act of 1974, as amended including, but not limited to, disclosure of all conflicts of interest and other financial disclosure requirements required thereunder.

9. Instructions to Consultant. In the performance of the services set forth in this Agreement, Consultant shall report to and receive instructions from the following person on behalf of the District: Evan Lue.

10. Subconsultant Services. Any subconsultants to be used by Consultant in the performance of the scope of services shall be identified in Exhibit A hereto. Consultant shall obtain the District’s prior written approval before retaining a subconsultant to perform any portion of the scope of services of this Agreement. Notwithstanding Consultant’s use of any subconsultants, Consultant shall be responsible to the District for the performance of its subconsultants as it would be if Consultant had performed those services itself. Nothing in this Agreement shall be deemed or construed to create a contractual relationship between the District and any subconsultant employed by Consultant. Consultant shall be solely responsible for payments to any subconsultants. Consultant shall defend and indemnify the District for any payment, fines or penalties assessed or threatened to be assessed against District as a result of any claim brought by any subconsultant of Consultant for any matter arising from, or related to, the services performed by subconsultant under this Agreement.

11. Compliance With Laws and Regulations; Licensing. Consultant shall perform its services under this Agreement in compliance with all applicable provisions of Federal, State and local laws, statutes, codes, rules, regulations, ordinances and professional standards (“Applicable Laws”). By entering into this Agreement, Consultant represents and warrants that it possesses and will keep current all license and registrations required by Applicable Laws to enter into this Agreement and to perform the scope of services hereunder.
12. **Insurance.** Consultant, at its sole cost and expense, shall obtain, keep in force, and maintain the following policies of insurance at all times while this Agreement is in effect, and shall not commence any work under this Agreement until proof of such insurance has been provided to the District. The coverages provided by such insurance shall not be construed as limitations of liability.

12.1 **Required Policies.**

12.1.1 **Commercial General Liability Insurance** (contractual, products, and completed operations coverages included) with a combined single limit of no less than $2,000,000 per occurrence or the full per occurrence limits of the policies available, whichever is greater for bodily injury, personal injury and property damage.

12.1.2 **Business or Comprehensive Automobile Liability Insurance** for owned, scheduled, non-owned, or hired automobiles, with a combined single limit of no less than $1,000,000 per accident.

12.1.3 **Professional Liability Insurance** with limits of $1,000,000 per claim and $1,000,000 in the aggregate.

12.1.4 **Employers’ Liability Insurance** with limits of $1,000,000 per claim and $1,000,000 in the aggregate.

12.1.5 **Workers’ Compensation Insurance** as required under the Workers’ Compensation Insurance and Safety Act of the State of California.

12.2 **Required Terms.**

12.2.1 All polices except workers’ compensation and professional liability, shall name as additional insureds the Water Replenishment District of Southern California, its directors, officers, employees, agents authorized volunteers and representatives. The coverage shall contain no special limitations on the scope of protection afforded the District, its directors, officers, employees, or authorized volunteers.

12.2.2 All policies (with the exception of Professional Liability) shall be written on an occurrence basis. If a policy may only be obtained on a claims made basis, the policy shall be maintained continuously for a period of no less than three (3) years after the date of final completion of the scope of services under this Agreement.

12.2.3 All policies shall provide that coverage cannot be cancelled without thirty (30) days prior written notice to the District.

12.2.4 All insurance required under this Agreement shall be considered primary to any insurance maintained by the District. All policies except Professional
12.2.5 Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to District, its directors, officers, employees, or authorized volunteers.

12.2.6 The Consultant’s insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer’s liability.

12.2.7 Liability insurance shall indemnify the Consultant and his/her sub-contractors against loss from liability imposed by law upon, or assumed under contract by, the Consultant his/her sub-contractors for damages on account of such bodily injury (including death), property damage, personal injury, completed operations, and products liability.

12.2.8 Deductibles and Self-Insured Retentions – Any deductible or self-insured retention must be declared to and approved by District. At the option of District, the insurer shall either reduce or eliminate such deductibles or self-insured retentions. Policies containing any self-insured retention (SIR) provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named or additional insureds, co-insurers, and/or insureds other than the first named insured.

12.2.9 Evidence of Insurance – Prior to execution of the agreement, the Consultant shall file with District a certificate of insurance signed by the insurer’s representative evidencing the coverage required by this agreement. Such evidence shall include an additional insured endorsement signed by the insurer’s representative. Such evidence shall also comply with the Evidence and Required Forms of Insurance attached hereto as Exhibit “C”. In the event that the Consultant employs other contractors (sub-contractors) as part of the work covered by this agreement, it shall be the Consultant’s responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above. Failure to continually satisfy the Insurance requirements is a material breach of contract.

12.2.10 All polices required under this Agreement shall be issued by companies authorized to transact insurance business in the State of California acceptable to the District and having a Best rating of A- or equivalent or as otherwise approved by District.

13.  **Indemnification.** Consultant shall indemnify, defend and hold harmless the District and its directors, officers, employees, agents and representatives (collectively “District”), from and against any and all claims, liabilities, costs, damages, suits, proceedings, injuries (including injuries to real and personal property, and injuries to persons, including death)
incurred by District (“Losses”), as a result of Consultant’s breach of any provision of this Agreement, Consultant’s failure to comply with applicable laws, Consultant’s negligent acts or omissions, or Consultant’s willful misconduct. However, Consultant’s obligation to defend shall arise regardless of any claim or assertion that the District caused or contributed to the Losses. Nothing in this paragraph shall constitute a waiver or limitation of any legal rights which the District may have including, without limitation, the right to implied indemnity.

14. Arbitration and Attorneys’ Fees. Any dispute arising from or relating to this Agreement shall be submitted to final and binding arbitration before an arbitrator who is a member of the National Academy of Arbitrators. The parties will obtain a list of five names of potential arbitrators from the National Academy of Arbitrators, or the American Arbitration Association, and will take turns striking the names of arbitrators until one arbitrator remains, who shall preside over the arbitration. The arbitrator will have no power to rewrite any of the terms of this Agreement. The parties shall split the cost of the arbitrator’s fee and any court reporter required by the arbitrator or if both parties agree to having the proceedings taken down by a court reporter. The prevailing Party in any action arising from or relating to this Agreement shall be entitled to recover its reasonable attorneys’ fees, expert witness fees and arbitration fees and costs in addition to any other relief and recovery ordered by the arbitrator or other tribunal hearing any matter related to this Agreement.

15. Conflict of Interest. No official of the District who is authorized in such capacity and on behalf of the District to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving this Agreement, or any contract or subcontract relating to work to be performed pursuant to this Agreement, shall become directly or indirectly personally interested in this Agreement or in any part thereof. Consultant shall not accept employment or contract during the term of this Agreement with any firm or individual for the provision of services if such employment or contract would conflict directly with the Services provided to the District under this Agreement.

16. Equal Opportunity. During the performance of this Agreement, Consultant shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, marital status or national origin.

17. Successors and Assigns. This Agreement shall inure to the benefit of, and be binding upon, the District, Consultant, and their respective successors and assigns provided, however, that no assignment of the duties or benefits under this Agreement shall be made without the written consent of the Consultant and the District.

18. Choice of Law and Venue. This Agreement shall be governed by and interpreted in accordance with the laws of the State of California. The Parties agree that the exclusive venue for any action or proceeding arising from or relating to this Agreement shall be in the County of Los Angeles, State of California.
19. **Notices.** All notices provided by this agreement shall be in writing and shall be sent by first-class mail and facsimile transmission as follows:

If to the District:

Water Replenishment District of
Southern California
4040 Paramount Blvd.
Lakewood, CA 90712
Phone: (562) 921-5521
Fax: (562) 921-6101

If to Consultant:

Mike Hawley
Advanced Document Solutions, Inc.
24307 Magic Mountain Pkwy #37
Valencia, CA 91355
Phone: 661-251-0337
Email: mhawley@adocsolution.com

20. **Amendments.** This Agreement may be modified only by a writing signed by the Parties hereto.

21. **Integration; Construction.** This Agreement (inclusive of exhibits incorporated herein by this reference) sets forth the final, complete and exclusive expression of the Parties’ agreement with respect to the subject matter hereof, and supersedes any and all other agreements, representations, and promises, whether made orally or in writing. Notwithstanding anything in Exhibit A to the contrary (or any invoice or other unilateral terms or conditions provided by Consultant), in the event of any conflict or inconsistency between this Agreement and Exhibit A (or any invoice or other unilateral terms or conditions provided by Consultant), this Agreement shall control. The Parties represent and warrant that they are not entering into this Agreement based upon any representation or understanding that is not expressly set forth in this Agreement. This Agreement shall be construed as the product of a joint effort between the Parties and shall not be construed against either Party as its drafter.

22. **Effective Date.** This Agreement is effective as of the date first set forth above.

23. **Authority.** Each person signing this Agreement represents that he or she has the authority to do so on behalf of the Party for whom he or she is signing.
IN WITNESS WHEREOF, the Parties have caused this AGREEMENT to be executed the day and year first above written.

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

Signature
Vera Robles DeWitt
President, Board of Directors
Title

Signature
Print Name
Secretary, Board of Directors
Title

ADVANCED DOCUMENT SOLUTIONS, INC. ("CONSULTANT")

Signature
Print Name
Title

Approved As To Form
LEAL, TREJO LLP

Attorneys for the Water Replenishment District of Southern California
EXHIBIT A
SCOPE OF WORK

Consultant shall perform the scope of work described in the Consultant’s proposal attached hereto as Exhibit A-1.
Proposal for Support Services for OnBase Products

Background

Advanced Document Solutions, Inc (ADocs) has been providing document and workflow solutions for over 17 years. We have been the supporting WRD’s OnBase/Liberty system since 2003. ADocs is a OnBase certified reseller specializing in Custom API and WF automation.

OnBase provides secured access to documents and data. In addition to the ability to archive documents, OnBase has robust automation tools through workflow and electronic forms.

The scope of this proposal is to provide additional services, upgrades, and support to the OnBase installation.

Scope

The following tasks have been developed from phone discussions between September thru December 2019 to improve the ability to retrieve documents stored in the existing OnBase system.

1) Upgrade OnBase 16 to Foundation Class (FC)

OnBase adds functionality to the OnBase product and support for the latest server hardware, operating systems, browsers, and Microsoft updates in every upgrade version. The OnBase best practice is to upgrade the system every 2 years effectively staying within 2 versions from the last release.

We are proposing upgrading to OnBase Foundation Class (version 19) from OnBase version 16 to take advantage of new workflow features, full text engine, and hardware compatibility. The full text upgrade replaces the full text tool with a faster, more robust full text engine in the Foundation Class version.

OnBase Foundation Class was released in October 2019. The upgrade would require WRD to create a Dev environment that would be used by ADocs for testing the Foundation Class upgrade initially. Then the Dev system would be used for training and developing new processes in the future outside of the production instance. OnBase provides the software licenses when OnBase is active on maintenance at no charge. Currently, the OnBase production software runs on two VM servers. Two additional VM server would be required to...
host the OnBase Dev system not currently in place. The first VM server is used for storing the Images and OnBase Application. The second server is used for the full text engine. Both Production and the Dev need a separate set of servers.

Assumptions:

- Servers are provided and maintained by WRD.
- The Hyland full text module cost is $20,000, but the current IDOL full text license cost will be offset towards the new module totaling $12,000. Only the maintenance for $2,400 would be the net new maintenance on a yearly basis.

Additional Modules:

- Full text Engine software module upgrade, $12,000 cost plus $2,400 maintenance annually

Tasks:

<table>
<thead>
<tr>
<th>Task</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Test Servers would be created by WRD</td>
<td>N/A</td>
</tr>
<tr>
<td>The OnBase software would be installed</td>
<td>8</td>
</tr>
<tr>
<td>The new full text would be installed and licensed</td>
<td>4</td>
</tr>
<tr>
<td>The new full text catalogs would be created and migrated from the existing IDOL full text</td>
<td>40</td>
</tr>
<tr>
<td>The existing OnBase configuration would be replicated to the Test servers, including Database, Configuration, and Images as needed</td>
<td>18</td>
</tr>
<tr>
<td>WRD would test functionality based on new version</td>
<td>8</td>
</tr>
<tr>
<td>On approval, a cutover date and schedule would be determined</td>
<td>2</td>
</tr>
<tr>
<td>The existing OnBase production system would be upgraded to the new OnBase version Foundation Class (19)</td>
<td>8</td>
</tr>
<tr>
<td>Workstation Clients and Scanning station would be upgraded to the new clients</td>
<td>8</td>
</tr>
<tr>
<td>User Training on new version of OnBase</td>
<td>4</td>
</tr>
</tbody>
</table>

Time: 100 Hours

Estimated Cost:

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyland Full text Upgrade</td>
<td>$12,000</td>
</tr>
<tr>
<td>Hyland Full text Yearly Maintenance</td>
<td>$2,400</td>
</tr>
<tr>
<td>Professional Services (100 Hours)</td>
<td>$15,000</td>
</tr>
<tr>
<td>Total:</td>
<td>$29,400</td>
</tr>
</tbody>
</table>
2) On-Going Support, Keyword Enhancement, and Security Review/Audit

The Scanning Workflow project is validating and adjusting keywords categories and documents scanned/imported through scanning workflows. OnBase is the system that stores the digitized documents and data for user access, audits, and research. This project would audit the keywords categories in OnBase and make sure the data being captured from the documents are up to date. In the process of implementing this project, we will identify opportunities to improve the end user experience when retrieving documents for both new and existing documents.

A full audit of the keyword categories for each document type is necessary to assure the latest keywords are assigned to the documents based on changes to user needs and changing external systems. We will evaluate each document type and their keywords categories to confirm that the keywords that are available are being populated. We have identified that some keywords can be presented in a dropdown list from an outside system instead of being typed. For example, the data in your accounting system can be used to populate the Vendor Name if a valid Contract Number keyword is filled out. In other cases, documents are related to each other. We would evaluate if one or more document types have common keywords so they can be related for a better end user experience. Your external systems have changed over the years and more people from different departments are accessing these documents. This project would ensure that the scanning process is capturing the data in the most effective way.

The OnBase Security Review is the validation and adjustment of security for documents scanned/imported through OnBase. OnBase will enforce security rules based on rights assigned to the document types and data queries. There have been cases where certain document access is needed to be secured differently than had previously been identified.

A process will be created for the document owners for each document type. The documents will be evaluated for current and future user access needs. The owners of the documents will evaluate if there are mixed access requirements. For example, a temporary employee should have access to certain documents and not others. These adjustments typically would affect the scanning process which sets the document type and security access.

Time: 270 Hours

**Estimated Cost:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Services (270 Hours)</td>
<td>$40,500</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>$40,500</strong></td>
</tr>
</tbody>
</table>
Resources

Mike Hawley, VP Technical Services will act as Project Manager and be responsible for the recommendations and changes to any document keywords, document types. Rich Ruiz, Senior Software Engineer will be responsible for the development of the Expanded Full Text Search interface, scripts, and integration with external systems. Dave Meyers, Senior Software Engineer will be responsible for security changes to document types and queries.

<table>
<thead>
<tr>
<th>Role</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP Technical Services</td>
<td>$150.00</td>
</tr>
<tr>
<td>Senior Software Engineer</td>
<td>$150.00</td>
</tr>
</tbody>
</table>

Budget

ADocs proposes to perform the above tasks on a time and material basis for a total budget of

<table>
<thead>
<tr>
<th>Task</th>
<th>Estimated Budget Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Upgrade OnBase 16 to Foundation Class (FC)</td>
<td>$29,400</td>
</tr>
<tr>
<td>2. On-Going Support, Index Enhancement, and Security Review/Audit</td>
<td>$40,500</td>
</tr>
<tr>
<td>Total</td>
<td>$69,900</td>
</tr>
</tbody>
</table>

Schedule

Task 1 would be completed by 06/31/2020.
Task 2 would be completed no later than 12/31/2022.

Respectfully,

[Signature]

Mike Hawley
VP of Technical Services
Advanced Document Solutions, Inc
January 30, 2020

Water Replenishment District
4040 Paramount Blvd
Lakewood, California 90712

RE: Sole Source Letter relating to Renewal of Maintenance and Support of OnBase Software Product

To Whom It May Concern:

This letter confirms that the OnBase software licensed by Water Replenishment District consists of proprietary programs designed and developed exclusively by Hyland Software, Inc. and its affiliates (“Hyland”), and that Water Replenishment District is receiving maintenance and technical support of such software from ADOCS (Advanced Document Solutions, Inc.). While Hyland has numerous authorized resellers of the OnBase Software, under Hyland’s commercial policies, ADOCS (Advanced Document Solutions, Inc.) is the sole authorized source to provide maintenance and support of the OnBase software to Water Replenishment District.

If you have any questions please feel free to call the undersigned.

HYLAND SOFTWARE, INC.

By: [Signature]

Print Name: Nancy Person

Title: SVP, Finance & Accounting

Date: January 30, 2020 | 15:20:21 EST
EXHIBIT B
CONSULTANT RATE SCHEDULE

1.0 Consultant shall be compensated for actual services performed in accordance with this Agreement based on the fee schedule as described in Exhibit A-1.

2.0 A budgetary amount of $69,900.00 (which amount applies to Consultant’s fee and reimbursable expenses) is established for this Agreement. Notwithstanding any other provision of this Agreement, the District shall not be obligated to pay Consultant any amount in excess of said budgetary amount absent prior written approval from the District. Likewise, Consultant shall not be obligated to perform services or incur expenses in excess of the budgetary amount absent prior written approval from the District.
EXHIBIT C
EVIDENCE AND REQUIRED FORMS OF INSURANCE

Checklist for Additional Insured Endorsement

Contractor Name: 
Project Name: 

Refer to the Additional Insured Endorsements forms E1-8 as follows:

Endorsement(s)

☐ Additional Insured (AI) Status – GENERAL LIABILITY - Member Water District, its directors, officers, employees, or authorized volunteers are named as additional insureds - as broad as following forms:
  o Form CG 20 10 11 85 (E1) or
  o BOTH CG 20 10 (E2) and CG 20 37 (E3) if forms with later edition dates provided (usually 10 01 or 07 04 editions). Also acceptable CG 20 10 04 13 (or older editions E2) specifically naming the District parties or using language that states "as required by contract"
  o “Blanket” Endorsement - (no specific policy number) (E4) covering one or more of the above endorsements required with words "as required by written contract/agreement".
  o If large number of Subcontractors - Additional Insured endorsement CG 20 38 04 13 recommended. (E5)
  o Policy numbers - matches policy number shown on Certificate of Insurance. (see Optional Dec. Page/Endorsement pages below)
  o Primary Coverage – The primary/non-contributory language is included. “The insurance provided by this policy shall be primary as respects any claims related to the ____________ Project. Any insurance, self-insurance, or other coverage maintained by the district, its directors, officers, employees, or volunteers shall not contribute to it.” e.g. Form CG 20 01 (E6)

☐ Auto liability (Optional (E7)) AI - most standard forms have automatic AI but some carriers provide endorsement

☐ Waiver of Subrogation (Workers Compensation and Property (Course of Construction, if required in contract) (E8)

☐ Optional – For extra confidence in verifying coverage require Declaration Page and Endorsement Schedule pages - compare the endorsement numbers. Look out for Amendment of contractual liability and or prior works exclusions - refer to Legal Counsel.
DATE: MARCH 5, 2020

TO: BOARD OF DIRECTORS

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: RELEASE OF THE REQUEST FOR QUALIFICATIONS FOR ON-CALL CONSTRUCTION MANAGEMENT SERVICES

SUMMARY

The District is currently under contract with six (6) firms for on-call construction management (CM) services. These current contracts are set to expire in April 2020. Since the initiation of this program in 2017, five (5) separate amendments have been issued for a total of approximately $564,000 to three (3) separate firms. This program has provided District staff a resource to streamline projects utilizing a talented pool of consultants.

Due to the success of this program, District staff would like to release an RFQ for On-Call CM Services with expected awards in April 2020. The goals of the new program are to streamline the task order process and reduce the number of firms in the program to three (3). The anticipated allocation to be utilized by this program is $1.5M or $500,000 per firm over a three (3) year term.

After review of the Qualifications Packages received, District staff will return with a recommended list of three (3) qualified firms for construction management services.

FISCAL IMPACT

None

CAPITAL IMPROVEMENT PROJECTS COMMITTEE RECOMMENDATION

The Capital Improvement Projects Committee recommends that the Board of Directors authorize the preparation and issuance of the Request for Qualifications for on-call construction management services.
REQUEST FOR QUALIFICATIONS
(RFQ-19-002)

On-Call Construction Management Services

Issued: Thursday, March 5th, 2020

Mandatory Pre-Submittal Meeting:
Wednesday, March 11, 2020 at 2:00 p.m.
WRD Board Room
4040 Paramount Blvd
Lakewood, CA 90712

Questions Regarding this RFQ Due:
Monday, March 23, 2020, at 2:00 p.m.

STATEMENT OF QUALIFICATIONS DUE:
Thursday March 26, 2020 at 3:00 p.m. PST

Responses eligible for consideration to this RFP must be submitted to the WRD Procurement Portal located at https://wrd.bonfirehub.com/ and addressed to the attention of:

Melody Wu, Project Administrator
Water Replenishment District of Southern California
4040 Paramount Boulevard
Lakewood, CA 90712
NOTICE TO RESPONDENTS

Request for Qualifications
On-Call Construction Management Services

PURPOSE: The Water Replenishment District of Southern California (WRD or District) is seeking Statements of Qualifications (SOQ) from qualified and experienced firms (also referred to as “Consultant” or “Respondent” herein) to participate in WRD’s On Call Construction Management Services program.

Interested firms are requested to submit a Statement of Qualifications (SOQ) to present their expertise and experience in, but not limited to, the following areas: pre-construction services, construction phase services and project close-out services more thoroughly outlined in Exhibit A. A list of projects for which engineering services may be required has been attached as Exhibit B. WRD intends to evaluate the SOQs received using a best value selection process to ensure that the selected Firms are capable to perform the anticipated work and will enter into on-call service contracts (Contract) with up to three (3) firms.

This Request for Qualifications (RFQ) describes the generally anticipated scope of services to be rendered, the information that must be included in the SOQ, and the Respondent selection process. Respondents are encouraged to carefully review this RFQ in its entirety prior to submitting their SOQs. Failure to submit information in accordance with these requirements and procedures may be cause for disqualification. This RFQ is available for downloading from the WRD Procurement Portal located at: https://wrd.bonfirehub.com/.

SOLICITATION SCHEDULE: Milestones for the RFQ process are summarized in the table below. The District reserves the right to modify the schedule below at its discretion. Proper notification changes will be made to interested respondents.

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PRE-SUBMITTAL MEETING: A mandatory pre-submittal meeting will be held in the WRD Board Room located at 4040 Paramount Boulevard, Lakewood, California 90712, on Wednesday, March 11, 2020 at 2:00 p.m. Firms interested in submitting a Proposals are required to attend. Meeting participants are required to sign in and provide a business card upon arrival at the meeting room. A copy of the sign-in sheet and responses to questions will be formally documented and distributed in an Addendum, which will be posted on the WRD Procurement Portal at: https://wrd.bonfirehub.com/.

QUESTIONS REGARDING THIS RFQ: All questions regarding the technical aspects or general requirements/provisions of this Request for Qualifications (RFQ) must be submitted before the deadline due date under this Solicitation Number and Title “Question – RFQ-19-002 On-Call Construction Management Services” by no later than Monday, March 23, 2020, at 2:00 p.m. through the Opportunity Q&A section via the WRD Procurement Portal at https://wrd.bonfirehub.com/. For guidance on how to submit a question through https://wrd.bonfirehub.com/, please visit https://support.gobonfire.com/hc/en-us/articles/115015333227-How-do-I-contact-the-Project-Owner-

Questions received from prospective Respondents, and responses from WRD, will be formally documented through the Opportunity Q&A section table that will be issued and be posted on the WRD Procurement Portal at: https://wrd.bonfirehub.com/. The Q&A table will be updated regularly as questions are received from prospective respondents.

DEADLINE FOR SOQS: Pursuant to the requirements specified in this RFP and the WRD Procurement Portal, responses to this RFP must be submitted to WRD no later than Thursday March 26, 2020 at 3:00 p.m., or such later time that WRD may announce by addendum to proposers via the Procurement Portal at any time prior to the submittal deadline.

Responses received after the deadline will not be considered under any circumstances. HARD-COPY PAPER FAXED OR E-MAILED SUBMISSIONS WILL NOT BE ACCEPTED. Only responses properly submitted to WRD’s Procurement Portal will be considered. WRD reserves the right to reject any and/or all responses received.
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Water Replenishment District of Southern California
Thursday, March 5th, 2020
RFQ-19-002
On-Call Construction Management Services
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### LIST OF EXHIBITS:
- Exhibit A: Description of Scope of Work and Services
- Exhibit B: List of Potential Projects
- Exhibit C: WRD Standard Professional Services Agreement
- Exhibit D: Acceptance Letter
1.0 INTRODUCTION

The WRD is a State Special District that was established in 1959 under the California Water Code (Division 18, §60000 through §60622) to manage the groundwater resources within the Central Basin and West Coast Basin in southern Los Angeles County. WRD’s mission is to provide, protect and preserve high-quality groundwater through innovative, cost-effective and environmentally sensitive basin management practices for the benefit of residents and businesses of these groundwater basins. The aquifers in the Central Basin and West Coast Basin provide for about 40 percent of the total water needs for the people and businesses in the 43 cities covering WRD’s 420-square mile service area.

To accomplish its mission, WRD conducts managed aquifer recharge using imported water, recycled water, and storm water, prevents seawater intrusion through injection of imported water and recycled water into coastal barrier wells, protects and preserves groundwater quality through monitoring, testing, data analysis, and treatment, and ensures a future supply of reliable groundwater through planning, conjunctive use, and development of new projects. More information regarding the WRD can be found at www.wrd.org.

2.0 BACKGROUND

WRD plans to utilize on-call construction management services to deliver Capital Improvement, R&R and Operations Support projects in a cost efficient and effective manner. WRD has identified numerous Capital Improvement and R&R projects scheduled for completion in the next five years.

It is anticipated that up to three (3) separate Construction Management Firms (Consultant) will be selected to provide on-call construction management services on a task order basis to help implement these various projects. The term of this new on-call contract will be three years.

Each project shall be negotiated separately and be awarded as a task order, complete with a scope of work, fee estimate, schedule, and project team organization chart, on an as-needed basis. The Consultant must provide a proposal in response to each solicitation from the WRD project manager. The intent is for short 2-5 page letter proposals. Failure to provide proposals may result in the Consultant not being asked to submit on subsequent on-call RFPs.

Task orders under the on-call agreements will be issued as follows:

- WRD will provide a scope of work for the task order to each Consultant.
- Consultants will submit abbreviated proposals for each task order to identify the fee estimate, design/engineering technical approach, design/engineering team members, Team qualifications/resumes, design/project schedule, and number of deliverables.
- Fee estimates shall include hours associated with the approved rates from the RFQ, all other direct costs (ODCs), sub-consultants, markups, or other firm-specific fees should be fully burdened in the billing rates. No ODCs, allowances or markups will be allowed for the duration of the contract.
• Task orders will be awarded to a Consultant based on evaluations of proposals for completeness, qualifications, and best value.

• Consultant shall not proceed with the task until WRD issues a Notice to Proceed.

• WRD reserves the right to negotiate the fee for each task order with the Consultant.

• Consultant’s fee schedule shall be in effect upon execution of contract with the rate schedule by billing classification and staff names to be billed under those rates and titles to be used for this contract. While the specific scope of work for each task order will vary, the hourly rates associated with specific personnel included in the master contract agreement will remain in effect for the term of the contract.

3.0 **SCOPE OF SERVICES**

See Exhibit A

4.0 **LIST OF POTENTIAL PROJECTS**

See Exhibit B

5.0 **STATEMENT OF QUALIFICATION (SOQ) CONTENTS**

To provide a degree of consistency in review of the written SOQs, firms are requested to include the following content in their SOQs. The information requested below will be used to evaluate each SOQ based on the evaluation criteria outlined in this RFQ. Emphasis shall be on completeness and clarity of content with sufficient detail to allow for accurate evaluation and comparative analysis. Excessive or irrelevant materials will not be favorably received. SOQs may be deemed nonresponsive if they do not respond to all areas specified below. The SOQ shall be of such scope and depth to sufficiently describe and demonstrate the Respondent’s qualifications and capabilities.

The following subsections describe the contents required in the SOQ, and shall be organized in separate sections tabbed with corresponding letters and related headings in the order they are presented.

5.1 **Title Page**

Respondent should identify the RFQ title, name and title of the firm’s contact person, address, telephone number, fax number, email address, and date of SOQ submission.

5.2 **Cover Letter**

A principal of the firm authorized to commit the firm to the requirements of the RFQ must sign the cover letter. The letter shall discuss the Respondent’s commitment to providing high quality services as described in the RFQ. Additionally, the letter shall briefly describe the firm’s understanding and approach to the services. The letter should identify a contact person (name, e-mail address, and phone number) for future communication during the selection process.

5.3 **Table of Contents**
The table of contents should include a clear and complete identification by section and page number of the submitted materials.

5.4 Company Background

Provide a brief background of the firm including history, types of services provided, organization structure, number of employees, annual revenues, number of offices and locations with staff size and disciplines, and any other relevant information that may be useful in determining the firm’s qualifications to provide the services described in this RFQ.

5.5 Project Team and Qualifications

Provide an organizational chart that describes the structure of the project team, including subconsultants/subcontractors. The project team description shall identify the following:

(i) The Project Manager,

(ii) The names of readily-available key personnel that will be deployed for each task and their contact information, and the primary office locations of each project team member (preferably within the southern Los Angeles County area),

(iii) The role each team member will play in providing services under the Contract, and

(iv) A written assurance that the key individuals listed and identified will be performing the work and will not be substituted with other personnel or reassigned to another project without the District’s prior approval. The SOQ shall clearly identify who will lead the execution of assigned tasks and the respective personnel that will be assigned to them.

Provide a description of the experience, qualifications including required licenses and certifications, area of expertise or specialization, and availability (including current workload) of the project team members, including subconsultants/subcontractors, if any. Describe other project commitments by project team members and the anticipated level of involvement of each team member based on the abilities and expertise required for the type of work desired.

Provide the resumes of all members of the project team, including subconsultants/subcontractors, as an appendix. Each resume shall not exceed three (3) pages and shall include name and title, education, years with the company, licenses and certifications (issue and expiration dates), home office location, relevant experience within at least the last five (5) years, and other required qualifications discussed in this RFQ.

The identified Project Manager will be WRD’s main point of contact for all assigned projects for the duration of the Contract. The SOQ shall include the Project Manager’s contact information, including phone and e-mail address.

Once a Contract has been executed, the Consultant must request approval of the District in advance of any new personnel being assigned to the project. The District reserves the
right to reject or remove personnel performing services at any time for the duration of the Contract.

5.6 Experience and Record of Past Performance

Describe Respondent’s experience in completing similar assignments, preferably using the same project team proposed for the services described in this RFQ. Ongoing projects currently being performed by the Respondent may also be submitted for consideration. Clearly identify the role of all team members in each of the projects referenced. For each of the reference projects listed, provide the following information:

1. Name and location of project;
2. Name and address of project owner/sponsor;
3. Name and current phone number and e-mail address of owner's representative intimately familiar with the project, to contact for reference. Verify the reference person that can be contacted at the phone number provided;
4. A description of type and extent of services provided for the project;
5. Project budget (both projected and "as completed");
6. Project schedule milestones (both projected and "as completed"). Include dates of project initiation, key milestones and deliverables, and completion date or status of the project;
7. Special problems or difficulties encountered, such as project budget and schedule control issues, and how they were resolved by the Consultant; and
8. Applicability and relevance of the referenced project to the services described in this RFQ.

The District at its discretion may contact other firms or agencies for additional information. Failure to provide accurate contact information, adequate information or project reference summaries may be cause for rejection of the SOQ as being nonresponsive.

5.7 Additional Comments

Include any comments, suggestions, or additions the Respondent may have regarding the scope of services or any other aspects of the services that the Respondent feels would be helpful to WRD in selecting a firm for the services described in the RFQ. Identify the potential impact(s) or benefit(s) that these recommendations would have if accepted by WRD.

5.8 Conflict of Interest
Provide a statement that the Respondent, individuals employed by the Respondent, or firms employed by or associated with the Respondent, including subconsultants/subcontractors, do not have a conflict of interest with the Project. The Respondent shall exercise reasonable efforts to prevent any actions or conditions that could result in a conflict of interest and shall include, but is not limited to, establishing precautions to prevent its employees or agents from making, receiving, providing in, or offering gifts, entertainment, payments, loans, or other considerations which could be deemed to appear to influence individuals to act contrary to the best interest of the District. If a potential conflict of interest is identified in any form, the Respondent shall inform the District immediately. Respondents are subject to disqualification on the basis of a conflict of interest as determined by WRD.

5.9 Other Information

The SOQ shall include:

- A statement that the Respondent will meet the insurance requirements per Section 12 of the District’s standard Professional Services Agreement, which is attached to this RFQ as Exhibit “C”.
- A statement or description regarding any litigation to which the firm is a party, any bankruptcy settlements, or unpaid judgments against the firm or its principals.
- A statement as to whether the firm has defaulted on previous professional contracts.

5.10 WRD Standard Contract

The selected Consultant shall be expected to execute a Contract using the District’s standard Professional Services Agreement, which is provided as Exhibit “C”. Respondents shall provide a statement in their SOQs clearly stating acceptance of all the terms and conditions specified in the standard Professional Services Agreement (i.e. no exceptions can be made to WRD’s standard Professional Services Agreement).

5.11 Rate Sheet

Provide the hourly rate for each project team member proposed to work on the District’s projects. It is expected that the indicated hourly rates will remain in effect for the duration of the Contract unless otherwise specified and approved by WRD. The rate sheet shall also include any other rates or fees, such as markups for subconsultants/subcontractors not identified as part of the project team, equipment markups, or other direct costs that may be incurred. Any other rates to be potentially incurred by the District shall be included. Please refer to Exhibit A for additional information on rate schedule and reimbursement.

Prevailing Wage

Certain labor categories under this project are subject to prevailing wages as identified in the State of California Labor Code Sections 1720 et seq and 1770 et seq, which require the payment of prevailing wage rates on certain “public works” and “maintenance”
project, as defined by the Prevailing Wage Laws, and if the total compensation is $1,000 or more, the Firms agree, to fully comply with such Prevailing Wage Laws, if applicable.

The Firms to whom a Contract for the work is awarded shall comply with all provisions of the California Labor Code. A copy of these prevailing wage rates are on file with the Department of Industrial Relations and can be found online with the State of California at http://www.dir.ca.gov/dlsr/pwd. A copy of such prevailing wage rates shall be posted on the jobsite by selected Firms.

6.0  **SOQ SUBMISSION REQUIREMENTS**

6.1  **SOQ Format**

The SOQ shall be limited to no more than **25 pages** in length. This does not include the title page, table of contents, cover letter, appendices, dividers, or résumés. All sections of the SOQ shall be printed on 8.5” x 11” size recycled paper or recyclable white bond paper, paginated, and bound. Any oversized documents, such as charts or tables, must be folded to size and secured in the envelope.

All files shall be in a text searchable PDF format (i.e., not scanned images) compatible with Adobe Acrobat Version 8.0 (at a minimum). The main directory of the flash drive shall contain the entire Proposal as a single PDF file. All sections of the PDF file shall be bookmarked.

6.2  **SOQ Signing**

The SOQ shall be wet signed by an officer, or officers, authorized to execute legal documents on behalf of the Respondent. The submission and signing of the SOQ shall indicate the intention of the Respondent to adhere to the provisions described in this RFQ and certifies that the SOQ was prepared independently and was submitted without any collusion designed to limit competition or bidding.

6.3  **SOQ Submittal Procedures**

The exclusive process by which a potential proposer can respond to and be considered for this RFQ is through the WRD Procurement Portal at [https://wrd.bonfirehub.com/](https://wrd.bonfirehub.com/). No other form of response or submission to this RFQ will be considered.

It is the firm’s responsibility to ensure that SOQs are received prior to the submittal deadline. SOQ packages should also include all signed Acknowledgment of Addendum forms that may be issued by WRD as part of this RFQ process.

The WRD will not be responsible for the proper identification and handling of any proposals submitted incorrectly. Late proposals, late modification, or late withdrawals will not be considered under any circumstances. Faxed or emailed proposals will not be accepted. There will be no formal opening of the received proposals.

6.4  **SOQ Preparation Costs**

This solicitation does not commit the District to award any work nor to pay any costs incurred from the preparation of SOQs. Firms responding to this RFQ will be solely responsible for all costs and expenses incurred during the selection process.
6.5 Acknowledgement

An Acceptance Letter (Exhibit “D” attached) has been attached to this solicitation. This Acceptance Letter is to be completed and signed by the Respondent and shall be included with the Respondent’s submittal.

7.0 EVALUATION CRITERIA

Selection will be made on the basis of WRD’s judgment as to which SOQ best serves WRD’s interest. The SOQ will be evaluated on the basis of the criteria listed below in this section. SOQs also will be evaluated based on the clarity, completeness, and professional quality of the documents submitted, as well as conformance to the RFQ instructions and responsiveness to the RFQ requirements in a straightforward and concise manner.

7.1 Project Team and Qualifications (30 Points)

Project team’s technical and management competence to perform the work specified herein will be evaluated. Considerations include, but are not limited to the following:

- Professional qualifications and education of the project team.
- Expertise and the appropriate mix of skills and disciplines of the project team and percentage of work to be self-performed.
- The accessibility and commitment of the Respondent’s key personnel and subconsultants/subcontractors to successfully complete assigned projects, including the geographic proximity of each team member’s primary office location with respect to the District’s service area.
- Ability to perform work on short notice and anticipated response times.
- Capacity and flexibility to complete high quality work in a timely manner that meets the established schedule.
- Familiarity with the policies and procedures of the District, County, and other local agencies.

7.2 Performance on Similar On-Call Programs (20 Points)

WRD reserves the right to conduct an independent verification of the Respondent’s experience qualifications by contacting project references, accessing public information, or contacting independent parties. Prospective respondents shall respond and provide additional information that may be requested during the evaluation of SOQs. Factors to be considered will include, but may not be limited to, experience with similar projects, project coordination, cost control, quality of work, technical capability, and adherence to project schedules and standards.

7.3 Billing Rates (15 Points)

Each firm will be evaluated on billing rates for services that may be provided. WRD considers the potential services to be Professional Services, meaning they will be judged based on anticipated overall value for services rendered.
7.4 **Organizational and Support Resources (15 Points)**

The following will be considered in the evaluation of SOQs:

- Capability under current workload to perform the work specified herein. Factors to be considered include, but may not be limited to, number of qualified staff allocated to assigned projects, availability of key personnel and support staff.
- Anticipated response times after notification of work assignments by WRD.

7.5 **Interview, if required (20 Points)**

Each Respondent will be evaluated on responses to questions asked and for its presentation during the interview.

8.0 **SELECTION PROCESS**

This solicitation is being conducted by WRD through a fair and open process in accordance with procurement policies established for water replenishment districts in the State of California, those policies established by WRD, and applicable State laws.

All responsive SOQs will be evaluated by a selection committee formed by the District. The SOQ shall be of such scope and depth that sufficiently describe and demonstrate the Respondent’s understanding, approach, capability, and qualifications. Submittal of incomplete or vague responses to any section or subsection of this RFQ may result in rejection of the SOQ. SOQs will be evaluated, scored, and ranked based on the criteria specified in Section 7 of this RFQ.

Once the Respondents are ranked, WRD will initiate negotiation with the top-rated respondent. If WRD is unable to reach an agreement with the top-rated respondent, negotiations will be formally terminated. WRD will then negotiate with the next highest-ranked respondent and so on until an agreement is reached. Once negotiations with a respondent are terminated, WRD will not renegotiate with that respondent.

WRD will award Contracts to up to three (3) firms. The total number of Firms selected will be made by WRD at its sole discretion. The firms selected for a Contract award(s) will be the Firm(s) determined to provide the best value to WRD pursuant to the evaluation process described above. The best value firm(s) will be determined in accordance with the evaluation criteria set forth in this RFP.

9.0 **GENERAL PROVISIONS**

The Respondent should specify if any of the requirements included in this section or any other section of the RFQ pose a specific problem, and if so, identify the problem and its impact within the SOQ.

9.1 **Entire Agreement**

The services described in this RFQ, the successful SOQ (with any proposed optional tasks) approved by WRD, the purchase order, and any written changes or amendments to the scope of services shall represent the entire Agreement between the parties and shall
supersede all prior written or oral representations, discussions, and agreements. See Standard Contract in Exhibit C. Furthermore, this RFQ is not only meant to aid in the preparation of SOQs, but it is also intended to serve as a binding technical guidance document for the Consultant. The consulting firm awarded a contract to provide services described in this RFQ shall be deemed bound to execute all requirements as listed and prescribed in this RFQ, unless WRD modifies aspects of the scope of work or any conditions in the RFQ in writing. Thus, the executed Contract will incorporate the terms and conditions specified in this RFQ, as well as the final scope of work and fee schedule submitted by the Consultant as part of its SOQ.

9.2 Contract Amendments

Changes that affect the scope of work, period of performance or time schedule, and costs will be effected by written notices of amendment. No payments will be made for work performed outside the original scope of work unless prior written approval was granted by WRD. The Consultant may be required to provide additional services under a negotiated change order approved in writing by WRD.

9.3 Term of Contract

Upon approval by the WRD Board of Directors, the District shall enter into a contract with a maximum term of three (3) years with selected firms.

9.4 Ownership and Use of Documents

Consultant will be required to treat WRD’s documents in confidence and shall indemnify WRD in case of alteration, loss, or damage thereto. Consultant shall not release to the general public, public agencies, or private businesses in any manner, any information, data, or documents developed pursuant to the performance of services specified herein without the expressed written consent of WRD.

Any preliminary or working drafts, notes, and inter-agency or intra-agency memoranda that are not expected to be retained by the Consultant or WRD in the ordinary course of business shall be exempt from disclosure to any public entity under provisions of the Public Records Act.

9.5 Business Records Access and Retention

All records pertaining to this Project, which are retained by the Consultant, shall be accessible to WRD while work is ongoing and for at least five years thereafter.

9.6 Termination

WRD may terminate the project at any time at its sole discretion. Notice of termination will be provided in writing. Upon termination of the project, WRD shall make payment to the Consultant only for services provided up to the date of termination.

10.0 TERMS AND CONDITIONS

10.1 SOQ Rejection
WRD reserves the right to accept or reject any or all SOQs received in response to this RFQ or cancel in whole or part the selection process if it is in the best interest of the District to do so. Alternatively, the District reserves the right to waive any minor defect or technicality in any SOQ received.

10.2 **SOQ Clarification and Requests for Additional Information**

All SOQs shall be afforded fair and equal treatment with respect to any opportunity for clarification. WRD reserves the right to request clarification of information submitted and to request additional information from any or all respondents. The District may require any evidence it deems necessary, such as documentation regarding the Respondent’s financial stability, before any contract is awarded. In conducting discussions with respondents, there shall be no disclosure of information derived from SOQs submitted by competing firms.

10.3 **SOQ Validity Period**

Respondents may withdraw their SOQs at any time prior to the due date and time by submitting a written notification of withdrawal signed by the firm’s authorized agent. Respondents who withdraw their SOQs prior to the designated date and time may still submit another SOQ if done in accordance within the proper time frame. A SOQ cannot be changed or modified after it has been submitted by the designed due date and time and shall constitute an irrevocable offer, for a period of ninety (90) days, to WRD for the services set forth in the SOQ.

10.4 **RFQ Revisions and Addenda**

WRD reserves the right to issue a written Addendum or Addenda to provide further clarification or make revisions/corrections to the RFP. All Addenda will be issued via e-mail to prospective Respondents who were initially forwarded the RFP via e-mail as well as other prospective Respondents who have subsequently provided WRD with their contact information (i.e. e-mail address and telephone number). All Addenda will also be posted on the WRD Procurement Portal at: https://wrd.bonfirehub.com/ within a reasonable timeframe prior to the Proposal due date. If an Addendum is necessary within 72 hours of the Proposal submittal deadline, the District, at its discretion, can extend the Proposal submittal deadline at its sole discretion.

Any Addendum issued must be acknowledged by the Respondent by signing and submitting the “Acknowledgment of Addendum” form that will be provided with each Addendum. All Acknowledgment of Addendum forms must be submitted to WRD as part of the Proposal package that is submitted by the Proposal due date. Failure to acknowledge any Addenda may result in the Proposal being considered nonresponsive and subject to rejection.

The Respondent shall be responsible for ensuring that its Proposal reflects any and all addenda issued by the District prior to the submittal due date. Therefore, the District recommends that prospective respondents check the WRD website prior to making their submission.
10.5 Confidentiality

The content of SOQs will be kept confidential until the award of contract by the WRD’s Board of Directors. All materials submitted in response to this RFQ will become the property of the WRD and will become public record after award of contract to the successful Consultant. The WRD will not return any SOQs to respondents.

If a Respondent believes any portion of its SOQ contains confidential or proprietary information, exempt from public disclosures under the California Public Records Act, the Respondent must label that information within its SOQ as “CONFIDENTIAL”, “TRADE SECRET”, or “PROPRIETARY.” The above restrictions may not include cost or price information, which shall be open to the public upon award of contract. Notwithstanding the foregoing, the District will not be responsible or liable in any way for losses that the Respondent may incur from the disclosure of information or material to third parties.

11.0 LEGAL POLICIES

11.1 Compliance

The Consultant shall abide by and obey all applicable federal, state, and local laws, rules, regulations, and ordinances.

11.2 Governing Laws and Requirements

Performance of services herein shall be governed and construed in accordance with the laws of the State of California. The selected Consultant hereby agrees that in any action relative to the performance of said services, venue shall be in the County of Los Angeles, State of California.

11.3 Public Releases

The Consultant agrees not to use or otherwise make public in any manner, either for profit or nonprofit, any of the information, data, procedures, systems, or documentation developed pursuant to the performance of services specified herein without the expressed written permission of WRD.

11.4 Business License

The Consultant will be required to show evidence of all valid and applicable business license(s), which must be in effect during the period of the performance of services specified herein.

11.5 WRD’s Property

All deliverables submitted pursuant to the performance of services specified herein shall become the sole property of WRD and they may be used in any manner and for any purpose WRD deems in its best interest.
EXHIBITS
EXHIBIT A: DESCRIPTION OF SCOPE OF WORK AND SERVICES –

Construction Management Services

The following scope of work descriptions are intended to be general and may apply to the construction of pipelines, process treatment systems and facilities, and facility rehabilitation and replacement (R&R) projects.

The Consultant shall be responsible for project, safety, cost, time, quality and risk management; and ensuring conformance of the project improvements with the plans and specifications. A list of projects for which construction management services may be required has been attached as Exhibit B.

Each project shall be negotiated separately and be awarded as a task order, complete with a brief scope of work, fee estimate, schedule, and project team organization chart, on an as-needed basis. The Consultant must provide a proposal in response to each solicitation from the WRD project manager. In the event that a Consultant cannot provide a proposal, a Non-Responsiveness Form must be completed by the Consultant and submitted to the Project Manager. Failure to provide proposals may result in the Consultant being removed from the proposer pool for on-call services.

The task order award process will be implemented as follows:

1. WRD will solicit abbreviated proposals for a specific scope of work from each Consultant who has been awarded an On-Call Professional Engineering Services Contract.

2. WRD will award the task order to the most qualified Respondent based on an evaluation of professional qualifications of key personnel, capabilities and specific project experience of the respondent, technical approach and methodology, fee proposal, and completeness and quality of proposal.

Not all task descriptions and services will apply to all potential projects or task orders. In addition, more detailed descriptions will be included with the individual scopes of work for each task order under this contract. The descriptions included herein are intended for Respondents to identify the type of work undertaken by WRD, and the type of corresponding qualifications and team experience necessary to propose on this RFQ. It is understood that additional services not expressly described herein may be requested for specific task orders, and WRD reserves the right to request additional services beyond the general scope of services described below.

PRE-CONSTRUCTION PHASE

A. Kick-Off Meeting – The Consultant shall attend a “kick-off” meeting with WRD, the Design Engineer, and all project stakeholders to become familiar with the scope of work and WRD’s Construction Management Procedures. The Consultant shall be prepared to present its standard Construction Management Plan along with templates proposed for use while administering the construction contract (e.g. submittal tracking log, daily inspection report, potential change order, meeting minutes, RFI tracking log, etc.).

B. Constructability Reviews – The Consultant shall perform detailed constructability reviews of preliminary and final design submittals as requested by WRD. All comments shall be neatly organized and tabulated in a formal submittal to WRD. The Consultant shall participate in
constructability review workshops with WRD, contract operations staff and the Design Engineer to discuss review comments.

C. Contractor Prequalification – The Consultant shall assist WRD in developing prequalification packages for general contractors and specialty subcontractors. Prequalification packages shall be developed in accordance with the Public Contract Code and California Department of Industrial Regulations guidelines.

D. Equipment Procurement – The Consultant shall assist WRD in negotiating procurement packages and pre-purchasing equipment from equipment manufacturers and suppliers.

E. Specification Development – The Consultant shall develop specifications for inclusion in contract documents as requested by WRD including project safety requirements, scheduling requirements, project meeting requirements and work restrictions.

F. Bid Phase Services – The Consultant shall attend and participate in the project pre-bid meeting. The Consultant shall assist WRD with recommendations for issuance of addenda as necessary. The Consultant shall assist WRD in the review of bidding packages to determine lowest responsive and responsible bidder in accordance with latest Public Contract Codes.

G. Pre-Construction Meeting – The Consultant shall facilitate a Pre-Construction Meeting with WRD, the Design Engineer and the Contractor.

H. Pre-Construction Scheduling Meeting – The Consultant shall facilitate a Pre-Construction Scheduling Meeting with WRD and the Contractor. The scheduling specification requirements and format of the construction schedule will be discussed at the meeting. The objective of the Pre-Construction Scheduling Meeting is to facilitate timely submittal, review and approval of the Contractor’s Baseline Schedule with as few resubmittals as possible.

I. Quality Assurance/Quality Control Plan – The Consultant shall develop a Quality Assurance/Quality Control (QA/QC) Plan as requested by WRD with a comprehensive, systematic approach to ensure that all elements of the Project are delivered in accordance with the contract documents. The Plan shall include QA/QC policies and procedures for all onsite construction work, offsite fabrication of equipment and materials, and startup and commissioning activities.

CONSTRUCTION PHASE

A. Weekly Project Progress Meetings – The Consultant shall facilitate weekly Project Progress Meetings with WRD, the Design Engineer, the contractor and all project stakeholders.

B. Project Correspondence and Communication – The Consultant shall establish a communication protocol with all Project stakeholders at the commencement of the Project based on WRD’s Standard Policy. All Project correspondence and documentation shall be issued through the electronic document control system.

C. Electronic Document Control System – The Consultant shall develop and maintain an electronic document control system (i.e. EADOCs) per WRD’s Standards to manage and track all Project documentation. The document control system shall be accessible by WRD, the Design Engineer and the contractor. Upon completion of the Project, all documentation uploaded to the document control system shall be neatly organized in a project archive with a standard and uniform file naming convention, and shall be transmitted in a format acceptable to WRD. WRD reserves the right to request that the Consultant utilize an alternate document control system that meets the District’s requirements.
D. **Submittal Review** – The Consultant shall coordinate the submittal/shop drawing review process and route all transmittals to the appropriate reviewer (e.g., Construction Manager, Design Engineer, WRD, etc.). The Consultant shall maintain a log to track the status and review action of all submittals. The Consultant shall ensure that all submittals required by the contract documents have been submitted by the contractor. The Consultant is responsible for reviewing the contract documents and identifying the submittals for which it is responsible for reviewing.

E. **Requests for Information (RFIs)/Requests for Clarification (RFCs)** – The Consultant shall coordinate the RFI/RFC review process and route all RFIs/RFCs to the appropriate reviewer (e.g., Construction Manager, Design Engineer, WRD, etc.). The Consultant shall maintain a log to track the status of all RFIs and RFCs.

F. **Schedule Review** – The Consultant will be principally responsible for reviewing and approving the contractor’s Baseline Schedule, weekly look-ahead schedules, monthly schedule updates, recovery schedules and time impact analyses (TIAs). The Consultant shall submit its schedule review procedures to WRD’s Project Manager for review and approval.

G. **Change Management** – The Consultant shall establish and implement a change management procedure, including management of the change order process and reviewing, negotiating and responding to proposed change orders from the contractor. The Consultant shall implement a proactive approach to minimize change orders to the extent possible. Responses to change order requests shall be provided in accordance with the contract documents. All negotiated change orders shall be reviewed and approved by WRD’s Project Manager. The Consultant shall monitor and verify the authorized change order work.

H. **Claims Management** – The Consultant shall manage and respond to all claims and notices of potential claim from the construction contractor in a timely manner. The Consultant shall prepare a formal written analysis of the validity of each potential claim and provide a recommendation regarding entitlement and resolution to WRD’s Project Manager. The Consultant shall coordinate the resolution of conflicts and discrepancies in the plans and specifications, construction issues, and proposed field changes due to unforeseen conditions.

I. **Inspection** – The Consultant shall provide both on- and off-site inspection services as necessary to verify that the contractor’s work is performed in compliance with the contract documents, industry standards and applicable codes, environmental and local regulations, and construction permits. Inspection services shall include, but are not limited to, structural, civil, mechanical, electrical, instrumentation and controls, material inspection, quality control and assurance, materials testing coordination, and daily inspection reports. Daily construction reports shall be filed each day including color photographs of construction activities. Daily construction reports and progress photos shall be neatly organized and incorporated into the Consultant’s electronic filing system. Consultant’s inspection staff shall have relevant experience and technical certifications in the designated field of expertise for which inspection services are being provided.

J. **Materials Testing/Specialty Inspection** – The Consultant shall provide material testing and specialty inspection services, including soil testing, welding inspection, concrete testing, coating inspection, electrical and controls inspection, masonry testing, adhesive anchor inspection, and reinforced steel testing as needed to ensure materials are furnished and installed in accordance with the contract documents. The Consultant shall also provide off-site shop inspection including, at minimum, pipe fabrication, fiber-reinforced plastic (FRP) tank construction,
concrete and asphalt batching, coatings, and switchgear fabrication. The Consultant shall
develop and maintain a log of inspection and material testing services to compliance with the
contract documents.

K. Survey – The Consultant shall provide professional surveying services as requested by WRD to
establish baseline survey control and to verify locations of project improvements. Professional
land surveyors are a protected classification subject to prevailing wage requirements as set forth
by the California Department of Industrial Relations.

L. Shutdown – The Consultant shall establish and implement protocols for effectively executing
plant outages and facility start-up with minimal impact to the plant operation. The Consultant
shall coordinate with WRD, WRD’s contract operator, the Design Engineer and the contractor to
develop detailed plans and schedules for all planned shutdown. The Consultant shall coordinate
activities with WRD’s contract operator and the contractor during shutdown. The Consultant
shall monitor and document shutdown work and update WRD on as needed basis.

M. Schedule of Values – The Consultant shall review and approve the Schedule of Values submitted
by the contractor at the commencement of the Project. The Consultant shall ensure that the
Schedule of Values contains sufficient detail to track the progress of the work and to facilitate
approval of the contractor’s monthly progress payment applications.

N. Progress Payments – The Consultant shall review and approve the contractor’s monthly progress
payment requests. The Consultant shall ensure that all supporting documentation and releases
have been provided before transmitting the pay application to WRD’s Project Manager for
review and approval.

O. Permits – The Consultant shall ensure that the contractor has obtained all permits necessary for
the performance of the work and that all permit conditions are met by the contractor. The
Consultant shall verify that the contractor submits timely requests for inspection and permit
sign-offs from agencies having jurisdiction. The Consultant shall daily monitor the contractor’s
traffic control system, as needed, to ensure the traffic control is properly installed and
maintained in accordance with the contract documents.

P. Safety – The Consultant shall monitor the contractor’s work practices to ensure that all safety
requirements are met. The Consultant shall review the contractor’s Injury and Illness
Prevention Plan (IIPP) and Job Hazard Analyses (JHA), and shall observe the contractor’s work to
ensure conformance with OSHA requirements. The Consultant shall promptly notify the
contractor and WRD of any observed safety violations.

Q. Monthly Report – The Consultant shall prepare a monthly progress report documenting the
status of the project budget (construction contractor and construction manager), project
schedule, potential project issues and all work performed during the reporting period (e.g.
number of RFIs and submittals reviewed, number of meetings attended, construction photos,
etc.). The monthly report shall be submitted with the monthly invoice statement.

R. Record Drawings – The Consultant shall review the contractor’s record drawings on a weekly
basis to ensure that the drawings are up to date and accurate. The Consultant shall review the
contractor’s record drawings at the end of each month prior to approving the contractor’s
monthly progress payment request. The Consultant will also maintain an independent set of
record drawings in its office.
S. Certified Payroll – The Consultant shall review the construction contractor’s certified payroll to ensure compliance with prevailing wage requirements as set forth by the California Department of Industrial Relations.

T. Startup and Commissioning – The Consultant shall coordinate with WRD, WRD’s contract operator, the contractor, and the Design Engineer to develop a comprehensive start-up plan. The Consultant shall coordinate with all project stakeholders to successfully start-up and commission the project improvement. The Consultant shall ensure that all startup, testing and commissioning activities have been properly performed, accepted and thoroughly documented before the Notice of Substantial Completion is issued.

PROJECT CLOSE-OUT

A. Punch List – The Consultant shall coordinate with WRD, WRD’s contract operator, the Design Engineer, and the contractor to prepare punch lists for outstanding items of work, including all documentation and submittals required by the contract documents, upon Substantial Completion of the Project. The Consultant shall be prepared to assign cost values for outstanding punch list items to facilitate prompt and timely close-out of the Project and release of retention. The Consultant shall ensure that all punch list items have been addressed to the satisfaction of WRD.

B. Record Drawings – The Consultant shall review the contractor’s final red-line drawings to ensure that the drawings are accurate and complete with all field changes. The Consultant shall certify the accuracy of the final red-line drawing set before final payment is approved and before the red-line drawings are transmitted to the Design Engineer.

C. Warranty/O&M Manuals – The Consultant shall review and verify warranties and guarantees are submitted by the contractor as specified in the contract documents. The Consultant shall coordinate with WRD and WRD’s contracted operator to verify that proper operations and maintenance manuals and any training materials have been provided in accordance with the contract documents.

D. Final Payment – The Consultant shall reconcile all contract Bid Items, change order work and outstanding punch list items in the preparation of the final payment to the contractor.

E. Close-Out Report – The Consultant shall prepare a Close-Out Report including, at a minimum, a summary of the Project construction, key issues, lessons learned, change summary, schedule summary, as-built schedule and recommendations for the management of future projects. The Consultant shall include provisions to submit a draft and final Close-Out Report.

F. Project File – At the conclusion of the Project, the Consultant shall transmit all Project related documentation to WRD’s Project Manager. An electronic version in PDF format shall be maintained throughout the duration of the Project and transmitted to WRD. The Project file shall be neatly organized, and all files shall be accurately titled and labeled to facilitate ease of access by WRD staff. The Consultant shall present the Project file structure to the WRD Project Manager when transmitted.
RATE SCHEDULE AND REIMBURSEMENT

The Consultant shall include a rate schedule that lists the hourly labor rates by work classification. Even though this is a multi-year contract, the Consultant shall provide rate schedules to be applicable for three (3) calendar years assuming contract award in April 2020. Annual rate increases for inflation of no more than 5% are permitted but must be submitted at the start of the contract and shall be held for the calendar year during which work is being performed.

i. Include the rate schedule by work classification title. While the specific scope of work for each task order will vary, the hourly rates associated with specific titles included in the master contract agreement will remain in effect for the term of the contract.

ii. All expected fees and other direct costs (ODCs), sub-consultants, markups, or other firm-specific fees should be fully burdened in the proposed billing rates. No ODCs, allowances or markups will be allowed for the duration of the contract.

iii. WRD will not provide payment for travel, lodging, meals or subsistence unless requested and approved by the Project Manager in advance of the incurred costs. All approved expenses shall adhere to WRD’s Administrative Code pertaining to daily meal and travel limits. No markup will be provided on pre-approved travel, lodging, meals or subsistence costs. Mileage reimbursement will be based on the standard mileage rates published by the Internal Revenue Service (IRS) effective at the time when the mileage costs are incurred.

iv. Terms and conditions from the Respondent’s sub-consultants shall not be incorporated into the Respondent’s rate schedule and fee proposal. WRD will allow a fixed mark-up for sub-consultants that shall be approved at the start of the contract and shall be constant for the duration of the contract. WRD will not honor the terms and conditions of sub-consultants and WRD’s contract with the Respondent shall govern in all cases.
EXHIBIT B: LIST OF POTENTIAL PROJECTS

CAPITAL IMPROVEMENT PROGRAM PROJECTS
- Los Coyotes Pipeline Alignment Study
- LVL Inland Injection Well
- Regional Brackish Water Reclamation Project
- LVL MF Filtrate Tank Rehabilitation
- Dominguez Gap Inland Injection Wells
- General well installation projects
- Dominguez Gap Barrier Project Second Connection Pipeline
- Dominguez Gap Barrier Project Potable Backup Pipeline

R&R PROJECTS
- Goldsworthy Roof replacement
- Goldsworthy HVAC upgrade and replacement
- Treatment Plant Electrical Upgrades
- Goldsworthy wetwater well rehab
- Goldsworthy decarbonator blower system replacement
- Goldsworthy fluoride system replacement
- Goldsworthy post treatment water quality analysis and associated retrofits
- LVL chemical system and piping upgrades
- Goldsworthy feed piping valve assessment
- LVL product water pump station evaluation
- LVL influent pumping system
- LVL Condition Assessment

OPERATIONAL SUPPORT PROJECTS
- CMMS Optimization support
- SCADA Optimization support
- Asset Management services
- SWPP Compliance and permitting support

PLANNING EFFORTS
- Leo J. Vander Lans facility planning
- Cost of water analysis
- Facility condition assessments
- Feasibility study for storm water capture efforts
- Feasibility studies for new drinking water supplies
- Feasibility studies for groundwater basin storage projects
- Climate Action Plans

SAFE DRINKING WATER PROGRAM
- Well head treatment selection analysis and design
- Pipeline design
- Between 5-8 projects per year working with the State of California
- Groundwater well construction and rehabilitation projects
- PFOA and PFOS related projects
Exhibit C

WRD Standard Professional Services Agreement
PROFESSIONAL SERVICES AGREEMENT
[INSERT CONTRACTOR NAME]

This Professional Services Agreement (the “Agreement”) is made and entered into this ___ day of __________, 20___ by and between the Water Replenishment District of Southern California (“District”) and [Insert Contractor Name], (“Consultant”) (collectively the “Parties” or individually as “Party”) for the furnishing of certain professional services upon the following terms and conditions.

1. Scope of Services. Consultant shall perform the scope of services described in Exhibit A hereto (“Services”). Tasks other than those specifically described in Exhibit A shall not be performed without a prior written amendment to this Agreement.

1.1 Standard of Care. In performing the scope of services under this Agreement, Consultant shall exercise the standard of care and expertise prevailing in California for the performance of such services.

2. Term. The term of this Agreement shall commence on Month, Day, Year and shall end on Month, Day, Year (the “Expiration Date”). At least sixty (60) days prior to the Expiration Date, District staff shall evaluate the quality of the Services that have been provided by the Consultant, the cost of such Services relative to the benefits, and the need for any continuation of the services. The results of such evaluation shall be provided to the appropriate District Committee, which committee shall provide a report to the District’s Board of Directors (“Board”). If the Board determines that there is a demonstrated need for the continuation of such Services, the Board may renew the Agreement on terms and conditions that do not provide for a significantly longer term, increased scope of services or increased fee schedule than is provided for in Paragraphs 1 or this Paragraph 2. If the Board desires to modify the Agreement to provide for such a significantly longer term, increased scope of services or increased fee schedule, the District shall comply with the provisions of its then current Administrative Code concerning the solicitation and approval of proposals for professional services.

2.1 Termination by District

2.1.1 Termination for Convenience. The District may terminate this Agreement for its convenience at any time upon five (5) days written notice to Consultant. Consultant’s compensation in the event of such a termination shall be exclusively limited to payment for all authorized services performed and for all authorized expenses incurred up to the effective date...
of such termination. Consultant understands and agrees that it shall not be entitled to any additional compensation or reimbursement whatsoever in the event of such termination.

2.1.2 Consultant’s Obligations Upon Termination. Following any termination of this Agreement by the District or Consultant, the Consultant shall promptly return all District property, and shall likewise provide to District all finished and unfinished data, studies, maps, reports, and other deliverables and work-product prepared by Consultant pursuant to this Agreement.

3. Consultant’s Compensation. District will compensate Consultant for services performed and for expenses incurred pursuant to this Agreement as follows:

3.1 Fee. Consultant shall be paid in accordance with the fees and Consultant Rate Schedule attached to this Agreement as Exhibit B which may not be changed except with District’s written approval.

3.2 Reimbursable Expenses. Consultant shall be reimbursed for only pre-approved expenses, subject to the provisions of this Agreement. Consultant shall obtain the District’s prior written approval before incurring an expense not specifically provided for under this Agreement.

3.2.1 Third Party Expenses. Unless specifically provided in Exhibit B, and subject to the provisions of Paragraph 3.2, the District shall not reimburse Consultant for any costs charged to Consultant by third parties unless said costs are preapproved. In the event such costs are approved, such reimbursement shall be at cost without any markup by Consultant.

3.3 Invoices. Consultant shall submit monthly invoices to District for services performed and expenses incurred during the preceding month. District shall process Consultant’s invoice upon receipt and issue any undisputed payment in a timely manner. Consultant’s invoices shall separately identify all personnel for whose services payment is sought, the services performed, and all expenses for which reimbursement is requested. As a condition precedent to payment, District may require Consultant to furnish supporting information and documentation for all charges for which payment is sought. District shall have the right to withhold from payments to Consultant reasonably disputed amounts including, without limitation, amounts for services not performed in accordance with this Agreement and costs, expenses or damages incurred by District as a result of Consultant’s breach of this Agreement or Consultant’s negligence.

4. Consultant’s Obligation to Provide Notice of Changes. Consultant shall provide written notice to the District no later than twenty (20) days after the occurrence of any event (including any direction by the District) which Consultant believes requires a change in its compensation or the time for performance of its obligations under this Agreement. Said notice shall describe the event and the basis for any change in compensation or time for
performance requested by Consultant. The Parties shall thereafter meet and confer to determine whether such a change is appropriate. However, no such change to this Agreement may be made except by written amendment to this Agreement executed by the Parties. Consultant’s failure to provide the notice required under this Paragraph shall constitute a waiver of its right to seek a change in its compensation or the time for performance of its obligations under this Agreement.

5. **Ownership and Use of Documents.** All proprietary information developed by Consultant in connection with, or resulting from, this Agreement, including but not limited to inventions, discoveries, improvements, copyrights, patents, data, maps, reports, textual material or software programs, shall be the sole and exclusive property of the District. Consultant agrees that the compensation to be paid pursuant to this Agreement includes adequate and sufficient compensation for any proprietary information developed in connection with or resulting from this Agreement. Consultant further understands and agrees that full disclosure of all proprietary information developed in connection with, or resulting from, this Agreement shall be made to the District, and that Consultant shall do all things necessary and proper to perfect and maintain District’s ownership of such proprietary information. All documents, reports, surveys, renderings, photographs, data and other materials furnished by the District to Consultant shall remain the exclusive property of the District and shall not be distributed or provided to third parties without the express written authorization of the District.

6. **Publication of Project Information.** Consultant shall notify and obtain written approval from the District before presenting verbal or written information to outside individuals or entities about the services or project for which Consultant was retained.

7. **Patents and Copyrights.** The Consultant shall assume all costs arising from the use of patented or copyrighted materials, including but not limited to, equipment, devices, processes, and software programs used or incorporated in the work performed under this Agreement. Consultant shall defend, indemnify hold the District, its officers, directors agents, employees, representatives and assigns harmless from any and all claims, demands, suits at law, and actions of every nature for or on account of the use of any patented or copyrighted materials.

8. **Consultant’s Status.** Consultant is an independent contractor and neither Consultant nor any employee of Consultant is or will be treated as an employee of the District under this Agreement. District controls the result to be accomplished under this Agreement, but not the means by which Consultant achieves such results.

8.1 Payments made to Consultant pursuant to this Agreement shall be the sole and complete compensation to which Consultant is entitled. Consultant is solely responsible for any taxes levied by local, state or federal authorities on such sums. Consultant shall defend and indemnify the District for any taxes, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to properly withhold taxes as a result of any determination that Consultant, or any
of Consultant’s employees, is an employee rather than an independent contractor of District.

8.2 District will not make any contribution to any retirement plan or Social Security on behalf of Consultant or any of Consultant’s employees. Consultant shall defend and indemnify the District for any contribution, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to contribute to any retirement plan or Social Security as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.3 District will not make any payments to Consultant, or Consultant’s employees, which rely upon employee status, including, but not limited to, FLSA and other overtime and minimum wage requirements, prevailing wage laws, worker’s compensation benefits, FMLA, CFRA, Paid Leave, and unemployment benefits. Consultant shall defend and indemnify the District for any payment, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to make any such payment or otherwise provide the benefits of such laws as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.4 Consultant shall comply with the Political Reform Act of 1974, as amended including, but not limited to, disclosure of all conflicts of interest and other financial disclosure requirements required thereunder.

9. Instructions to Consultant. In the performance of the services set forth in this Agreement, Consultant shall report to and receive instructions from the following person on behalf of the District: ____________________________.

10. Subconsultant Services. Any subconsultants to be used by Consultant in the performance of the scope of services shall be identified in Exhibit A hereto. Consultant shall obtain the District’s prior written approval before retaining a subconsultant to perform any portion of the scope of services of this Agreement. Notwithstanding Consultant’s use of any subconsultants, Consultant shall be responsible to the District for the performance of its subconsultants as it would be if Consultant had performed those services itself. Nothing in this Agreement shall be deemed or construed to create a contractual relationship between the District and any subconsultant employed by Consultant. Consultant shall be solely responsible for payments to any subconsultants. Consultant shall defend and indemnify the District for any payment, fines or penalties assessed or threatened to be assessed against District as a result of any claim brought by any subconsultant of Consultant for any matter arising from, or related to, the services performed by subconsultant under this Agreement.

11. Compliance With Laws and Regulations; Licensing. Consultant shall perform its services under this Agreement in compliance with all applicable provisions of Federal, State and local laws, statutes, codes, rules, regulations, ordinances and professional standards.
By entering into this Agreement, Consultant represents and warrants that it possesses and will keep current all license and registrations required by Applicable Laws to enter into this Agreement and to perform the scope of services hereunder.

12. Insurance. Consultant, at its sole cost and expense, shall obtain, keep in force, and maintain the following policies of insurance at all times while this Agreement is in effect, and shall not commence any work under this Agreement until proof of such insurance has been provided to the District. The coverages provided by such insurance shall not be construed as limitations of liability.

12.1 Required Policies.

12.1.1 Commercial General Liability Insurance (contractual, products, and completed operations coverages included) with a combined single limit of no less than $2,000,000 per occurrence or the full per occurrence limits of the policies available, whichever is greater for bodily injury, personal injury and property damage.

12.1.2 Business or Comprehensive Automobile Liability Insurance for owned, scheduled, non-owned, or hired automobiles, with a combined single limit of no less than $1,000,000 per accident.

12.1.3 Professional Liability Insurance with limits of $1,000,000 per claim and $1,000,000 in the aggregate.

12.1.4 Employers’ Liability Insurance with limits of $1,000,000 per claim and $1,000,000 in the aggregate.

12.1.5 Workers’ Compensation Insurance as required under the Workers’ Compensation Insurance and Safety Act of the State of California.

12.2 Required Terms.

12.2.1 All polices except workers’ compensation and professional liability, shall name as additional insureds the Water Replenishment District of Southern California, its directors, officers, employees, agents, authorized volunteers and representatives. The coverage shall contain no special limitations on the scope of protection afforded the District, its directors, officers, employees, or authorized volunteers.

12.2.2 All policies (with the exception of Professional Liability) shall be written on an occurrence basis. If a policy may only be obtained on a claims made basis, the policy shall be maintained continuously for a period of no less than three (3) years after the date of final completion of the scope of services under this Agreement.
12.2.3 All policies shall provide that coverage cannot be cancelled without thirty (30) days prior written notice to the District.

12.2.4 All insurance required under this Agreement shall be considered primary to any insurance maintained by the District. All policies except Professional Liability shall include waivers of subrogation in favor of the District and its insurers.

12.2.5 Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to District, its directors, officers, employees, or authorized volunteers.

12.2.6 The Consultant’s insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer’s liability.

12.2.7 Liability insurance shall indemnify the Consultant and his/her sub-contractors against loss from liability imposed by law upon, or assumed under contract by, the Consultant his/her sub-contractors for damages on account of such bodily injury (including death), property damage, personal injury, completed operations, and products liability.

12.2.8 Deductibles and Self-Insured Retentions – Any deductible or self-insured retention must be declared to and approved by District. At the option of District, the insurer shall either reduce or eliminate such deductibles or self-insured retentions. Policies containing any self-insured retention (SIR) provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named or additional insureds, co-insurers, and/or insureds other than the first named insured.

12.2.9 Evidence of Insurance – Prior to execution of the agreement, the Consultant shall file with District a certificate of insurance signed by the insurer’s representative evidencing the coverage required by this agreement. Such evidence shall include an additional insured endorsement signed by the insurer’s representative. Such evidence shall also comply with the Evidence and Required Forms of Insurance attached hereto as Exhibit “C”. In the event that the Consultant employs other contractors (sub-contractors) as part of the work covered by this agreement, it shall be the Consultant’s responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above. Failure to continually satisfy the Insurance requirements is a material breach of contract.

12.2.10 All polices required under this Agreement shall be issued by companies authorized to transact insurance business in the State of California acceptable to the District and having a Best rating of A- or equivalent or as otherwise approved by District.
13. **Indemnification.** Consultant shall indemnify, defend and hold harmless the District and its directors, officers, employees, agents and representatives (collectively “District”), from and against any and all claims, liabilities, costs, damages, suits, proceedings, injuries (including injuries to real and personal property, and injuries to persons, including death) incurred by District (“Losses”), as a result of Consultant’s breach of any provision of this Agreement, Consultant’s failure to comply with applicable laws, Consultant’s negligent acts or omissions, or Consultant’s willful misconduct. However, Consultant’s obligation to defend shall arise regardless of any claim or assertion that the District caused or contributed to the Losses. Nothing in this paragraph shall constitute a waiver or limitation of any legal rights which the District may have including, without limitation, the right to implied indemnity.

14. **Arbitration and Attorneys’ Fees.** Any dispute arising from or relating to this Agreement shall be submitted to final and binding arbitration before an arbitrator who is a member of the National Academy of Arbitrators. The parties will obtain a list of five names of potential arbitrators from the National Academy of Arbitrators, or the American Arbitration Association, and will take turns striking the names of arbitrators until one arbitrator remains, who shall preside over the arbitration. The arbitrator will have no power to rewrite any of the terms of this Agreement. The parties shall split the cost of the arbitrator’s fee and any court reporter required by the arbitrator or if both parties agree to having the proceedings taken down by a court reporter. The prevailing Party in any action arising from or relating to this Agreement shall be entitled to recover its reasonable attorneys’ fees, expert witness fees and arbitration fees and costs in addition to any other relief and recovery ordered by the arbitrator or other tribunal hearing any matter related to this Agreement.

15. **Conflict of Interest.** No official of the District who is authorized in such capacity and on behalf of the District to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving this Agreement, or any contract or subcontract relating to work to be performed pursuant to this Agreement, shall become directly or indirectly personally interested in this Agreement or in any part thereof. Consultant shall not accept employment or contract during the term of this Agreement with any firm or individual for the provision of services if such employment or contract would conflict directly with the Services provided to the District under this Agreement.

16. **Equal Opportunity.** During the performance of this Agreement, Consultant shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, marital status or national origin.

17. **Successors and Assigns.** This Agreement shall inure to the benefit of, and be binding upon, the District, Consultant, and their respective successors and assigns provided, however, that no assignment of the duties or benefits under this Agreement shall be made without the written consent of the Consultant and the District.

18. **Choice of Law and Venue.** This Agreement shall be governed by and interpreted in accordance with the laws of the State of California. The Parties agree that the exclusive
venue for any action or proceeding arising from or relating to this Agreement shall be in the County of Los Angeles, State of California.

19. **Notices.** All notices provided by this agreement shall be in writing and shall be sent by first-class mail and facsimile transmission as follows:

If to the District:

Water Replenishment District of Southern California
4040 Paramount Blvd.
Lakewood, CA 90712
Phone: (562) 921-5521
Fax: (562) 921-6101

If to Consultant:

<table>
<thead>
<tr>
<th>Contact Name</th>
<th>Address</th>
<th>Address</th>
<th>City, State ZIP</th>
<th>Phone:</th>
<th>Email:</th>
<th>Fax:</th>
</tr>
</thead>
</table>

20. **Amendments.** This Agreement may be modified only by a writing signed by the Parties hereto.

21. **Integration; Construction.** This Agreement (inclusive of exhibits incorporated herein by this reference) sets forth the final, complete and exclusive expression of the Parties’ agreement with respect to the subject matter hereof, and supersedes any and all other agreements, representations, and promises, whether made orally or in writing. Notwithstanding anything in Exhibit A to the contrary (or any invoice or other unilateral terms or conditions provided by Consultant), in the event of any conflict or inconsistency between this Agreement and Exhibit A (or any invoice or other unilateral terms or conditions provided by Consultant), this Agreement shall control. The Parties represent and warrant that they are not entering into this Agreement based upon any representation or understanding that is not expressly set forth in this Agreement. This Agreement shall be construed as the product of a joint effort between the Parties and shall not be construed against either Party as its drafter.

22. **Effective Date.** This Agreement is effective as of the date first set forth above.
23. **Authority.** Each person signing this Agreement represents that he or she has the authority
to do so on behalf of the Party for whom he or she is signing.

IN WITNESS WHEREOF, the Parties have caused this AGREEMENT to be executed the
day and year first above written.

**WATER REPLENISHMENT DISTRICT OF**
**SOUTHERN CALIFORNIA**

<table>
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<tr>
<th>Signature</th>
<th>Signature</th>
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<tbody>
<tr>
<td>John D.S. Allen</td>
<td>Willard H. Murray, Jr.</td>
</tr>
</tbody>
</table>

Print Name: President, Board of Directors
Title: President, Board of Directors

[INSERT CONTRACTOR NAME], ("CONSULTANT")

<table>
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<tr>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print Name</td>
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</table>

Print Name: Secretary, Board of Directors
Title: Secretary, Board of Directors

Approved As To Form
LEAL, TREJO LLP

Attorneys for the Water Replenishment
District of Southern California
EXHIBIT A
SCOPE OF WORK

[Insert detailed description of scope of work.]
EXHIBIT B
CONSULTANT RATE SCHEDULE

Attach provided Rate Schedule Here.

If Rate Schedule/Budget is not included in proposal, complete the following:

1.0 Consultant shall be compensated for actual services performed in accordance with this Agreement [insert appropriate language: at the hourly rates, monthly sum or the lump sum amount.]

2.0 A budgetary amount of $____________ (which amount applies to Consultant’s fee and reimbursable expenses) is established for this Agreement. Notwithstanding any other provision of this Agreement, the District shall not be obligated to pay Consultant any amount in excess of said budgetary amount absent prior written approval from the District. Likewise, Consultant shall not be obligated to perform services or incur expenses in excess of the budgetary amount absent prior written approval from the District.

[Insert additional terms as needed after consultation with counsel.]
EXHIBIT C
EVIDENCE AND REQUIRED FORMS OF INSURANCE

Checklist for Additional Insured Endorsement

Contractor Name: ________________________________________________
Project Name: __________________________________________________

Refer to the Additional Insured Endorsements forms □ E1-8 following:

Endorsement(s)

☐ Additional Insured (AI) Status – GENERAL LIABILITY - Member Water District, its directors, officers, employees, or authorized volunteers are named as additional insureds - as broad as following forms:
  o Form CG 20 10 11 85 (E1) or
  o BOTH CG 20 10 (E2) and CG 20 37 (E3) if forms with later edition dates provided (usually 10 01 or 07 04 editions). Also acceptable CG 20 10 04 13 (or older editions E2) specifically naming the District parties or using language that states "as required by contract"
  o “Blanket” Endorsement - (no specific policy number) (E4) covering one or more of the above endorsements required with words "as required by written contract/agreement".
  o If large number of Subcontractors - Additional Insured endorsement CG 20 38 04 13 recommended. (E5)
  o Policy numbers - matches policy number shown on Certificate of Insurance. (see Optional Dec. Page/Endorsement pages below)
  o Primary Coverage – The primary/non-contributory language is included. “The insurance provided by this policy shall be primary as respects any claims related to the ____________ Project. Any insurance, self-insurance, or other coverage maintained by the district, its directors, officers, employees, or volunteers shall not contribute to it.” e.g. Form CG 20 01 (E6)

☐ Auto liability (Optional (E7)) AI - most standard forms have automatic AI but some carriers provide endorsement

☐ Waiver of Subrogation (Workers Compensation and Property (Course of Construction, if required in contract) (E8)

☐ Optional - For extra confidence in verifying coverage require Declaration Page and Endorsement Schedule pages - compare the endorsement numbers. Look out for Amendment of contractual liability and or prior works exclusions - refer to Legal Counsel.
Exhibit D

Acceptance Letter
EXHIBIT D: ACCEPTANCE LETTER

Company Name: ____________________________

Address: ____________________________

___________________________

Telephone: ____________________________

Fax: ____________________________

Subject: Solicitation for ____________________________

By my signature below, I, on behalf of the Company named above, acknowledge that I have read and understand the subject solicitation and all its attachments. I further acknowledge that, by submission of a submittal, proposal, quotation, or bid in response to the subject solicitation, the Company named above accepts all the terms and conditions, and meets the minimum requirements set forth in the subject solicitation and its attachments, including, but not limited to, the Sample Agreement or the Purchase Order Standard Terms and Conditions.

ACCEPTED:

___________________________________________
Signature

___________________________________________
Name (please print)

___________________________________________
Title

___________________________________________
Date
MEMORANDUM
ITEM NO. 6I

DATE: MARCH 5, 2020
TO: BOARD OF DIRECTORS
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: AUTHORIZE RELEASE OF THE REQUEST FOR QUALIFICATIONS FOR ON-CALL ENGINEERING SERVICES

SUMMARY
The District is currently under contract with ten (10) firms for on-call engineering services. These current contracts are set to expire in April 2020. Since the initiation of this program in 2017, twenty-one (21) separate amendments have been issued for a total of approximately $1,800,000 to six (6) separate firms. This program has provided District staff a resource to streamline projects utilizing a talented pool of consultants.

Due to the success of this program, District staff would like to release an RFQ for On-Call Engineering Services with expected awards in April 2020. The goals of the new program are to streamline the task order process and reduce the number of firms in the program to five (5). The anticipated allocation to be utilized by this program is $3M or $600,000 per firm over a three (3) year term.

After review of the Qualifications Packages received, District staff will return with a recommended list of five (5) qualified firms for engineering services.

FISCAL IMPACT
None

CAPITAL IMPROVEMENT PROJECTS COMMITTEE RECOMMENDATION
The Capital Improvement Projects Committee recommends that the Board of Directors authorize the preparation and issuance of the Request for Qualifications for on-call engineering services.
REQUEST FOR QUALIFICATIONS
(RFQ-19-001)

On-Call Engineering Services

Issued: Thursday, March 5, 2020

Mandatory Pre-Submittal Meeting:
Wednesday, March 11, 2020 at 2:00 p.m.
WRD Board Room
4040 Paramount Blvd
Lakewood, CA 90712

Questions Regarding this RFQ Due:
Monday, March 23, 2020, at 2:00 p.m.

STATEMENT OF QUALIFICATIONS DUE:
Thursday March 26, 2020 at 3:00 p.m. PST

Responses eligible for consideration to this RFP must be submitted to the WRD Procurement Portal located at https://wrd.bonfirehub.com/ and addressed to the attention of:

Melody Wu, Project Administrator
Water Replenishment District of Southern California
4040 Paramount Boulevard
Lakewood, CA 90712
Phone: (562) 921-5521
NOTICE TO RESPONDENTS

Request for Qualifications
On-Call Engineering Services

PURPOSE: The Water Replenishment District of Southern California (WRD or District) is seeking Statements of Qualifications (SOQ) from qualified and experienced firms (also referred to as “Consultant” or “Respondent” herein) to participate in WRD’s On Call Engineering Services program.

Interested firms are requested to submit a Statement of Qualifications (SOQ) to present their expertise and experience in, but not limited to, the following areas: feasibility studies, optimization studies and implementation, alignment studies, environmental assessments, geotechnical reports, hydraulic modeling, topographic surveys, economic analyses, treatment system performance evaluations, cost estimating, specification and contract writing, preparation of standard engineering details, preparation of master plans, and literature reviews more thoroughly outlined in Exhibit A. A list of projects for which engineering services may be required has been attached as Exhibit B. WRD intends to evaluate the SOQs received using a best value selection process to ensure that the selected Firms are capable to perform the anticipated work and will enter into on-call service contracts (Contract) with up to five (5) firms.

This Request for Qualifications (RFQ) describes the generally anticipated scope of services to be rendered, the information that must be included in the SOQ, and the Respondent selection process. Respondents are encouraged to carefully review this RFQ in its entirety prior to submitting their SOQs. Failure to submit information in accordance with these requirements and procedures may be cause for disqualification. This RFP is available for downloading from the WRD Procurement Portal located at: https://wrd.bonfirehub.com/.

SOLICITATION SCHEDULE: Milestones for the RFQ process are summarized in the table below. The District reserves the right to modify the schedule below at its discretion. Proper notification changes will be made to interested respondents.

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<td>Thursday, March 5, 2020</td>
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<td>Mandatory Pre-Submittal Meeting</td>
<td>Wednesday, March 11, 2020 at 2:00 p.m.</td>
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<tr>
<td>Deadline for Questions Regarding this RFQ</td>
<td>Monday, March 23, 2020, at 2:00 p.m.</td>
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<tr>
<td>Statement of Qualifications Due</td>
<td>Thursday March 26, 2020 at 3:00 p.m.</td>
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<td>Interviews (if conducted) (Date Tentative)</td>
<td>Week of March 30, 2020</td>
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<tr>
<td>WRD Board Awards (Date Tentative)</td>
<td>April 16, 2020</td>
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PRE-SUBMITTAL MEETING: A mandatory pre-submittal meeting will be held in the WRD Board Room located at 4040 Paramount Boulevard, Lakewood, California 90712, on **Wednesday, March 11, 2020 at 2:00 p.m.** Firms interested in submitting a Proposals are required to attend. Meeting participants are required to sign in and provide a business card upon arrival at the meeting room. A copy of the sign-in sheet and responses to questions will be formally documented and distributed in an Addendum, which will be posted on the WRD Procurement Portal at: https://wrd.bonfirehub.com/.

QUESTIONS REGARDING THIS RFQ: All questions regarding the technical aspects or general requirements/provisions of this Request for Qualifications (RFQ) must be submitted before the deadline due date under this Solicitation Number and Title **“Question – RFQ-19-001 On-Call Engineering Services** by no later than **Monday, March 23, 2020, at 2:00 p.m.** through the Opportunity Q&A section via the WRD Procurement Portal at https://wrd.bonfirehub.com/. For guidance on how to submit a question through https://wrd.bonfirehub.com/, please visit https://support.gobonfire.com/hc/en-us/articles/115015333227-How-do-I-contact-the-Project-Owner-

Questions received from prospective Respondents, and responses from WRD, will be formally documented through the Opportunity Q&A section table that will be issued and be posted on the WRD Procurement Portal at: https://wrd.bonfirehub.com/. The Q&A table will be updated regularly as questions are received from prospective respondents.

DEADLINE FOR SOQS: Pursuant to the requirements specified in this RFP and the WRD Procurement Portal, responses to this RFP must be submitted to WRD no later than **Thursday March 26, 2020 at 3:00 p.m.**, or such later time that WRD may announce by addendum to proposers via the Procurement Portal at any time prior to the submittal deadline.

Responses received after the deadline will not be considered under any circumstances. HARD-COPY PAPER, FAXED OR E-MAILED SUBMISSIONS WILL NOT BE ACCEPTED. Only responses properly submitted to WRD’s Procurement Portal will be considered. WRD reserves the right to reject any and/or all responses received.
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**LIST OF EXHIBITS:**
- Exhibit A: Description of Scope of Work and Services
- Exhibit B: List of Potential Projects
- Exhibit C: WRD Standard Professional Services Agreement
- Exhibit D: Acceptance Letter
1.0 INTRODUCTION

The WRD is a State Special District that was established in 1959 under the California Water Code (Division 18, §60000 through §60622) to manage the groundwater resources within the Central Basin and West Coast Basin in southern Los Angeles County. WRD’s mission is to provide, protect and preserve high-quality groundwater through innovative, cost-effective and environmentally sensitive basin management practices for the benefit of residents and businesses of these groundwater basins. The aquifers in the Central Basin and West Coast Basin provide for about 40 percent of the total water needs for the people and businesses in the 43 cities covering WRD’s 420-square mile service area.

To accomplish its mission, WRD conducts managed aquifer recharge using imported water, recycled water, and storm water, prevents seawater intrusion through injection of imported water and recycled water into coastal barrier wells, protects and preserves groundwater quality through monitoring, testing, data analysis, and treatment, and ensures a future supply of reliable groundwater through planning, conjunctive use, and development of new projects. More information regarding the WRD can be found at www.wrd.org.

2.0 BACKGROUND

WRD plans to utilize on-call engineering services to deliver Capital Improvement, R&R and Operations Support projects in a cost efficient and effective manner. WRD has identified numerous Capital Improvement and R&R projects scheduled for completion in the next five years.

It is anticipated that up to five separate Engineering Firms (Consultant) will be selected to provide on-call engineering services on a task order basis to help implement these various projects. The term of this new on-call contract will be three years.

Each project shall be negotiated separately and be awarded as a task order, complete with a scope of work, fee estimate, schedule, and project team organization chart, on an as-needed basis. The Consultant must provide a proposal in response to each solicitation from the WRD project manager. The intent is for short 2-5 page letter proposals. Failure to provide proposals may result in the Consultant not being asked to submit on subsequent on-call RFPs.

Task orders under the on-call agreements will be issued as follows:

- WRD will provide a scope of work for the task order to each Consultant.
- Consultants will submit abbreviated proposals for each task order to identify the fee estimate, design/engineering technical approach, design/engineering team members, team qualifications/resumes, design/project schedule, and number of deliverables.
- Fee estimates shall include hours associated with the approved rates from the RFQ, all other direct costs (ODCs), sub-consultants, markups, or other firm-specific fees should be fully burdened in the billing rates. No ODCs, allowances or markups will be allowed for the duration of the contract.
• Task orders will be awarded to a Consultant based on evaluations of proposals for completeness, qualifications, and best value.
• Consultant shall not proceed with the task until WRD issues a Notice to Proceed.
• WRD reserves the right to negotiate the fee for each task order with the Consultant.
• Consultant’s fee schedule shall be in effect upon execution of contract with the rate schedule by billing classification and staff names to be billed under those rates and titles to be used for this contract. While the specific scope of work for each task order will vary, the hourly rates associated with specific personnel included in the master contract agreement will remain in effect for the term of the contract.

3.0 SCOPE OF SERVICES
See Exhibit A

4.0 LIST OF POTENTIAL PROJECTS
See Exhibit B

5.0 STATEMENT OF QUALIFICATION (SOQ) CONTENTS
To provide a degree of consistency in review of the written SOQs, firms are requested to include the following content in their SOQs. The information requested below will be used to evaluate each SOQ based on the evaluation criteria outlined in this RFQ. Emphasis shall be on completeness and clarity of content with sufficient detail to allow for accurate evaluation and comparative analysis. Excessive or irrelevant materials will not be favorably received. SOQs may be deemed nonresponsive if they do not respond to all areas specified below. The SOQ shall be of such scope and depth to sufficiently describe and demonstrate the Respondent’s qualifications and capabilities.

The following subsections describe the contents required in the SOQ, and shall be organized in separate sections tabbed with corresponding letters and related headings in the order they are presented.

5.1 Title Page
Respondent should identify the RFQ title, name and title of the firm’s contact person, address, telephone number, fax number, email address, and date of SOQ submission.

5.2 Cover Letter
A principal of the firm authorized to commit the firm to the requirements of the RFQ must sign the cover letter. The letter shall discuss the Respondent’s commitment to providing high quality services as described in the RFQ. Additionally, the letter shall briefly describe the firm’s understanding and approach to the services. The letter should identify a contact person (name, e-mail address, and phone number) for future communication during the selection process.

5.3 Table of Contents
The table of contents should include a clear and complete identification by section and page number of the submitted materials.
5.4 **Company Background**

Provide a brief background of the firm including history, types of services provided, organization structure, number of employees, annual revenues, number of offices and locations with staff size and disciplines, and any other relevant information that may be useful in determining the firm’s qualifications to provide the services described in this RFQ.

5.5 **Project Team and Qualifications**

Provide an organizational chart that describes the structure of the project team, including subconsultants/subcontractors. The project team description shall identify the following:

(i) The Project Manager,

(ii) The names of readily-available key personnel that will be deployed for each task and their contact information, and the primary office locations of each project team member (preferably within the southern Los Angeles County area),

(iii) The role each team member will play in providing services under the Contract, and

(iv) A written assurance that the key individuals listed and identified will be performing the work and will not be substituted with other personnel or reassigned to another project without the District’s prior approval. The SOQ shall clearly identify who will lead the execution of assigned tasks and the respective personnel that will be assigned to them.

Provide a description of the experience, qualifications including required licenses and certifications, area of expertise or specialization, and availability (including current workload) of the project team members, including subconsultants/subcontractors, if any. Describe other project commitments by project team members and the anticipated level of involvement of each team member based on the abilities and expertise required for the type of work desired.

Provide the resumes of all members of the project team, including subconsultants/subcontractors, as an appendix. Each resume shall not exceed three (3) pages and shall include name and title, education, years with the company, licenses and certifications (issue and expiration dates), home office location, relevant experience within at least the last five (5) years, and other required qualifications discussed in this RFQ.

The identified Project Manager will be WRD’s main point of contact for all assigned projects for the duration of the Contract. The SOQ shall include the Project Manager’s contact information, including phone and e-mail address.

Once a Contract has been executed, the Consultant must request approval of the District in advance of any new personnel being assigned to the project. The District reserves the
right to reject or remove personnel performing services at any time for the duration of the Contract.

5.6 **Experience and Record of Past Performance**

Describe Respondent’s experience in completing similar assignments, preferably using the same project team proposed for the services described in this RFQ. Ongoing projects currently being performed by the Respondent may also be submitted for consideration.

Clearly identify the role of all team members in each of the projects referenced. For each of the reference projects listed, provide the following information:

1. Name and location of project;
2. Name and address of project owner/sponsor;
3. Name and current phone number and e-mail address of owner's representative intimately familiar with the project, to contact for reference. Verify the reference person that can be contacted at the phone number provided;
4. A description of type and extent of services provided for the project;
5. Project budget (both projected and "as completed");
6. Project schedule milestones (both projected and "as completed"). Include dates of project initiation, key milestones and deliverables, and completion date or status of the project;
7. Special problems or difficulties encountered, such as project budget and schedule control issues, and how they were resolved by the Consultant; and
8. Applicability and relevance of the referenced project to the services described in this RFQ.

The District at its discretion may contact other firms or agencies for additional information. Failure to provide accurate contact information, adequate information or project reference summaries may be cause for rejection of the SOQ as being nonresponsive.

5.7 **Additional Comments**

Include any comments, suggestions, or additions the Respondent may have regarding the scope of services or any other aspects of the services that the Respondent feels would be helpful to WRD in selecting a firm for the services described in the RFQ. Identify the potential impact(s) or benefit(s) that these recommendations would have if accepted by WRD.

5.8 **Conflict of Interest**

Provide a statement that the Respondent, individuals employed by the Respondent, or firms employed by or associated with the Respondent, including subconsultants/subcontractors, do not have a conflict of interest with the Project. The Respondent shall exercise reasonable efforts to prevent any actions or conditions that could result in a conflict of interest and shall include, but is not limited to, establishing
precautions to prevent its employees or agents from making, receiving, providing in, or offering gifts, entertainment, payments, loans, or other considerations which could be deemed to appear to influence individuals to act contrary to the best interest of the District. If a potential conflict of interest is identified in any form, the Respondent shall inform the District immediately. Respondents are subject to disqualification on the basis of a conflict of interest as determined by WRD.

5.9 Other Information

The SOQ shall include:

- A statement that the Respondent will meet the insurance requirements per Section 12 of the District’s standard Professional Services Agreement, which is attached to this RFQ as Exhibit “C”.
- A statement or description regarding any litigation to which the firm is a party, any bankruptcy settlements, or unpaid judgments against the firm or its principals.
- A statement as to whether the firm has defaulted on previous professional contracts.

5.10 WRD Standard Contract

The selected Consultant shall be expected to execute a Contract using the District’s standard Professional Services Agreement, which is provided as Exhibit “C”. Respondents shall provide a statement in their SOQs clearly stating acceptance of all the terms and conditions specified in the standard Professional Services Agreement (i.e. no exceptions can be made to WRD’s standard Professional Services Agreement).

5.11 Rate Sheet

Provide the hourly rate for each project team member proposed to work on the District’s projects. It is expected that the indicated hourly rates will remain in effect for the duration of the Contract unless otherwise specified and approved by WRD. The rate sheet shall also include any other rates or fees, such as markups for subconsultants/subcontractors not identified as part of the project team, equipment markups, or other direct costs that may be incurred. Any other rates to be potentially incurred by the District shall be included. Please refer to Exhibit A for additional information on rate schedule and reimbursement.

Prevailing Wage

Certain labor categories under this project are subject to prevailing wages as identified in the State of California Labor Code Sections 1720 et seq and 1770 et seq. which require the payment of prevailing wage rates on certain “public works” and “maintenance” project, as defined by the Prevailing Wage Laws, and if the total compensation is $1,000 or more, the Firms agree, to fully comply with such Prevailing Wage Laws, if applicable.

The Firms to whom a Contract for the work is awarded shall comply with all provisions of the California Labor Code. A copy of these prevailing wage rates are on file with the Department of Industrial Relations and can be found online with the State of California at
http://www.dir.ca.gov/dlsr/pwd. A copy of such prevailing wage rates shall be posted on the jobsite by selected Firms.

6.0 SOQ SUBMISSION REQUIREMENTS

6.1 SOQ Format

The SOQ shall be limited to no more than 25 pages in length. This does not include the title page, table of contents, cover letter, appendices, dividers, or résumés. All sections of the SOQ shall be printed on 8.5” x 11” size recycled paper or recyclable white bond paper, paginated, and bound. Any oversized documents, such as charts or tables, must be folded to size and secured in the envelope.

All files shall be in a text searchable PDF format (i.e., not scanned images) compatible with Adobe Acrobat Version 8.0 (at a minimum). The main directory of the flash drive shall contain the entire Proposal as a single PDF file. All sections of the PDF file shall be bookmarked.

6.2 SOQ Signing

The SOQ shall be wet signed by an officer, or officers, authorized to execute legal documents on behalf of the Respondent. The submission and signing of the SOQ shall indicate the intention of the Respondent to adhere to the provisions described in this RFQ and certifies that the SOQ was prepared independently and was submitted without any collusion designed to limit competition or bidding.

6.3 SOQ Submittal Procedures

The exclusive process by which a potential proposer can respond to and be considered for this RFQ is through the WRD Procurement Portal at https://wrd.bonfirehub.com/. No other form of response or submission to this RFQ will be considered.

It is the firm’s responsibility to ensure that SOQs are received prior to the submittal deadline. SOQ packages should also include all signed Acknowledgment of Addendum forms that may be issued by WRD as part of this RFQ process.

The WRD will not be responsible for the proper identification and handling of any proposals submitted incorrectly. Late proposals, late modification, or late withdrawals will not be considered under any circumstances. Faxed or emailed proposals will not be accepted. There will be no formal opening of the received proposals.

6.4 SOQ Preparation Costs

This solicitation does not commit the District to award any work nor to pay any costs incurred from the preparation of SOQs. Firms responding to this RFQ will be solely responsible for all costs and expenses incurred during the selection process.

6.5 Acknowledgement

An Acceptance Letter (Exhibit “D” attached) has been attached to this solicitation. This Acceptance Letter is to be completed and signed by the Respondent and shall be included with the Respondent’s submittal.

7.0 EVALUATION CRITERIA

Water Replenishment District of Southern California
Thursday, March 5, 2020
RFQ-19-001
On-Call Engineering Services
Selection will be made on the basis of WRD’s judgment as to which SOQ best serves WRD’s interest. The SOQ will be evaluated on the basis of the criteria listed below in this section. SOQs also will be evaluated based on the clarity, completeness, and professional quality of the documents submitted, as well as conformance to the RFQ instructions and responsiveness to the RFQ requirements in a straightforward and concise manner.

7.1 **Project Team and Qualifications (30 Points)**

Project team’s technical and management competence to perform the work specified herein will be evaluated. Considerations include, but are not limited to the following:

- Professional qualifications and education of the project team.
- Expertise and the appropriate mix of skills and disciplines of the project team and percentage of work to be self-performed.
- The accessibility and commitment of the Respondent’s key personnel and subconsultants/subcontractors to successfully complete assigned projects, including the geographic proximity of each team member’s primary office location with respect to the District’s service area.
- Ability to perform work on short notice and anticipated response times.
- Capacity and flexibility to complete high quality work in a timely manner that meets the established schedule.
- Familiarity with the policies and procedures of the District, County, and other local agencies.

7.2 **Performance on Similar On-Call Programs (20 Points)**

WRD reserves the right to conduct an independent verification of the Respondent’s experience qualifications by contacting project references, accessing public information, or contacting independent parties. Prospective respondents shall respond and provide additional information that may be requested during the evaluation of SOQs. Factors to be considered will include, but may not be limited to, experience with similar on-call programs, project coordination, cost control, quality of work, technical capability, and adherence to project schedules and standards.

7.3 **Billing Rates (15 Points)**

Each firm will be evaluated on billing rates for services that may be provided. WRD considers the potential services to be Professional Services, meaning they will be judged based on anticipated overall value for services rendered.

7.4 **Organizational and Support Resources (15 Points)**

The following will be considered in the evaluation of SOQs:

- Capability under current workload to perform the work specified herein. Factors to be considered include, but may not be limited to, number of qualified staff allocated to assigned projects, availability of key personnel and support staff.
• Anticipated response times after notification of work assignments by WRD.

7.5 Interview, if required (20 Points)
Each Respondent will be evaluated on responses to questions asked and for its presentation during the interview.

8.0 SELECTION PROCESS
This solicitation is being conducted by WRD through a fair and open process in accordance with procurement policies established for water replenishment districts in the State of California, those policies established by WRD, and applicable State laws.

All responsive SOQs will be evaluated by a selection committee formed by the District. The SOQ shall be of such scope and depth that sufficiently describe and demonstrate the Respondent’s understanding, approach, capability, and qualifications. Submittal of incomplete or vague responses to any section or subsection of this RFQ may result in rejection of the SOQ. SOQs will be evaluated, scored, and ranked based on the criteria specified in Section 7 of this RFQ.

Once the Respondents are ranked, WRD will initiate negotiation with the top-rated respondent. If WRD is unable to reach an agreement with the top-rated respondent, negotiations will be formally terminated. WRD will then negotiate with the next highest-ranked respondent and so on until an agreement is reached. Once negotiations with a respondent are terminated, WRD will not renegotiate with that respondent.

WRD will award Contracts to up to five (5) firms. The total number of Firms selected will be made by WRD at its sole discretion. The firms selected for a Contract award(s) will be the Firm(s) determined to provide the best value to WRD pursuant to the evaluation process described above. The best value firm(s) will be determined in accordance with the evaluation criteria set forth in this RFP.

9.0 GENERAL PROVISIONS
The Respondent should specify if any of the requirements included in this section or any other section of the RFQ pose a specific problem, and if so, identify the problem and its impact within the SOQ.

9.1 Entire Agreement
The services described in this RFQ, the successful SOQ (with any proposed optional tasks) approved by WRD, the purchase order, and any written changes or amendments to the scope of services shall represent the entire Agreement between the parties and shall supersede all prior written or oral representations, discussions, and agreements. See Standard Contract in Exhibit C. Furthermore, this RFQ is not only meant to aid in the preparation of SOQs, but it is also intended to serve as a binding technical guidance document for the Consultant. The consulting firm awarded a contract to provide services described in this RFQ shall be deemed bound to execute all requirements as listed and prescribed in this RFQ, unless WRD modifies aspects of the scope of work or any conditions in the RFQ in writing. Thus, the executed Contract will incorporate the terms
and conditions specified in this RFQ, as well as the final scope of work and fee schedule submitted by the Consultant as part of its SOQ.

9.2 Contract Amendments

Changes that affect the scope of work, period of performance or time schedule, and costs will be effected by written notices of amendment. No payments will be made for work performed outside the original scope of work unless prior written approval was granted by WRD. The Consultant may be required to provide additional services under a negotiated change order approved in writing by WRD.

9.3 Term of Contract

Upon approval by the WRD Board of Directors, the District shall enter into a contract with a maximum term of three (3) years with selected firms.

9.4 Ownership and Use of Documents

Consultant will be required to treat WRD’s documents in confidence and shall indemnify WRD in case of alteration, loss, or damage thereto. Consultant shall not release to the general public, public agencies, or private businesses in any manner, any information, data, or documents developed pursuant to the performance of services specified herein without the expressed written consent of WRD.

Any preliminary or working drafts, notes, and inter-agency or intra-agency memoranda that are not expected to be retained by the Consultant or WRD in the ordinary course of business shall be exempt from disclosure to any public entity under provisions of the Public Records Act.

9.5 Business Records Access and Retention

All records pertaining to this Project, which are retained by the Consultant, shall be accessible to WRD while work is ongoing and for at least five years thereafter.

9.6 Termination

WRD may terminate the project at any time at its sole discretion. Notice of termination will be provided in writing. Upon termination of the project, WRD shall make payment to the Consultant only for services provided up to the date of termination.

10.0 TERMS AND CONDITIONS

10.1 SOQ Rejection

WRD reserves the right to accept or reject any or all SOQs received in response to this RFQ or cancel in whole or part the selection process if it is in the best interest of the District to do so. Alternatively, the District reserves the right to waive any minor defect or technicality in any SOQ received.

10.2 SOQ Clarification and Requests for Additional Information

All SOQs shall be afforded fair and equal treatment with respect to any opportunity for clarification. WRD reserves the right to request clarification of information submitted and to request additional information from any or all respondents. The District may require
any evidence it deems necessary, such as documentation regarding the Respondent’s financial stability, before any contract is awarded. In conducting discussions with respondents, there shall be no disclosure of information derived from SOQs submitted by competing firms.

10.3 SOQ Validity Period

Respondents may withdraw their SOQs at any time prior to the due date and time by submitting a written notification of withdrawal signed by the firm’s authorized agent. Respondents who withdraw their SOQs prior to the designated date and time may still submit another SOQ if done in accordance within the proper time frame. A SOQ cannot be changed or modified after it has been submitted by the designated due date and time and shall constitute an irrevocable offer, for a period of ninety (90) days, to WRD for the services set forth in the SOQ.

10.4 RFQ Revisions and Addenda

WRD reserves the right to issue a written Addendum or Addenda to provide further clarification or make revisions/corrections to the RFP. All Addenda will be issued via e-mail to prospective Respondents who were initially forwarded the RFP via e-mail as well as other prospective Respondents who have subsequently provided WRD with their contact information (i.e. e-mail address and telephone number). All Addenda will also be posted on the WRD Procurement Portal at: https://wrd.bonfirehub.com/ within a reasonable timeframe prior to the Proposal due date. If an Addendum is necessary within 72 hours of the Proposal submittal deadline, the District, at its discretion, can extend the Proposal submittal deadline at its sole discretion.

Any Addendum issued must be acknowledged by the Respondent by signing and submitting the “Acknowledgment of Addendum” form that will be provided with each Addendum. All Acknowledgment of Addendum forms must be submitted to WRD as part of the Proposal package that is submitted by the Proposal due date. Failure to acknowledge any Addenda may result in the Proposal being considered nonresponsive and subject to rejection.

The Respondent shall be responsible for ensuring that its Proposal reflects any and all addenda issued by the District prior to the submittal due date. Therefore, the District recommends that prospective respondents check the WRD website prior to making their submission.

10.5 Confidentiality

The content of SOQs will be kept confidential until the award of contract by the WRD’s Board of Directors. All materials submitted in response to this RFQ will become the property of the WRD and will become public record after award of contract to the successful Consultant. The WRD will not return any SOQs to respondents.

If a Respondent believes any portion of its SOQ contains confidential or proprietary information, exempt from public disclosures under the California Public Records Act, the Respondent must label that information within its SOQ as “CONFIDENTIAL”, “TRADE SECRET”, or “PROPRIETARY.” The above restrictions may not include cost or price...
information, which shall be open to the public upon award of contract. Notwithstanding the foregoing, the District will not be responsible or liable in any way for losses that the Respondent may incur from the disclosure of information or material to third parties.

11.0 **LEGAL POLICIES**

11.1 **Compliance**

The Consultant shall abide by and obey all applicable federal, state, and local laws, rules, regulations, and ordinances.

11.2 **Governing Laws and Requirements**

Performance of services herein shall be governed and construed in accordance with the laws of the State of California. The selected Consultant hereby agrees that in any action relative to the performance of said services, venue shall be in the County of Los Angeles, State of California.

11.3 **Public Releases**

The Consultant agrees not to use or otherwise make public in any manner, either for profit or nonprofit, any of the information, data, procedures, systems, or documentation developed pursuant to the performance of services specified herein without the expressed written permission of WRD.

11.4 **Business License**

The Consultant will be required to show evidence of all valid and applicable business license(s), which must be in effect during the period of the performance of services specified herein.

11.5 **WRD’s Property**

All deliverables submitted pursuant to the performance of services specified herein shall become the sole property of WRD and they may be used in any manner and for any purpose WRD deems in its best interest.
EXHIBIT A: DESCRIPTION OF SCOPE OF WORK AND SERVICES –

**Engineering Services**

The following scope of work descriptions are intended to be general and may apply to design and construction of pipelines, process treatment systems and facilities, and facility rehabilitation and replacement (R&R) projects.

On-call services may include feasibility studies, optimization studies and implementation, alignment studies, environmental assessments, geotechnical reports, hydraulic modeling, topographic surveys, economic analyses, treatment system performance evaluations, cost estimating, specification and contract writing, preparation of standard engineering details, preparation of planning documents, literature reviews, and owner’s agent/engineer services. A list of projects for which engineering services may be required has been attached as Exhibit B.

Each project shall be negotiated separately and be awarded as a task order, complete with a brief scope of work, fee estimate, schedule, and project team organization chart, on an as-needed basis. The Consultant must provide a proposal in response to each solicitation from the WRD project manager. In the event that a Consultant cannot provide a proposal, a Non-Responsiveness Form must be completed by the Consultant and submitted to the Project Manager. Failure to provide proposals may result in the Consultant being removed from the proposer pool for on-call services.

The task order award process will be implemented as follows:

1. WRD will solicit abbreviated proposals for a specific scope of work from each Consultant who has been awarded an On-Call Professional Engineering Services Contract.

2. WRD will award the task order to the most qualified Respondent based on an evaluation of professional qualifications of key personnel, capabilities and specific project experience of the respondent, technical approach and methodology, fee proposal, and completeness and quality of proposal.

Not all task descriptions and services will apply to all potential projects or task orders. In addition, more detailed descriptions will be included with the individual scopes of work for each task order under this contract. The descriptions included herein are intended for Respondents to identify the type of work undertaken by WRD, and the type of corresponding qualifications and team experience necessary to propose on this RFQ. It is understood that additional services not expressly described herein may be requested for specific task orders, and WRD reserves the right to request additional services beyond the general scope of services described below.

**TECHNICAL AND FEASIBILITY STUDIES AND SUPPORT SERVICES**

The types of services anticipated shall include, at a minimum, the following:

A. Perform water quality evaluations and services related to recycled water treatment, brine, brackish water, and wastewater treatment systems.

B. Perform technical and system optimization studies for WRD’s various treatment processes, influent supply systems and distribution systems.

C. Perform feasibility studies for new and/or alternative treatment systems and facilities to support WRD’s Capital Improvement Program projects.
D. Assessment of other associated or ancillary civil, architectural, mechanical, HVAC, electrical, I&C, and operational facilities.

E. Perform asset management evaluations, site inspections, red-line markups, equipment verifications and condition assessment, etc.

F. Provide equipment and/or treatment process evaluations and condition assessments for the purpose of recommending corrective Repair and Rehabilitation strategies. Provide engineering design services to support the Repair and Rehabilitation work.

PRELIMINARY DESIGN REPORT

WRD may choose to develop a preliminary design report (PDR) before implementing a detailed design for specific projects. Prior to incorporating the data and assumptions into the final design, the data shall be presented in a PDR for review and approval by WRD. Depending on the nature of the project, this may or may not lead directly into a detailed or design.

The following may be required for PDRs:

A. For pipelines: the PDR development may include pipeline alignment studies; review and evaluation of utility impacts; tabulation of required permits; assessment of street cut moratoriums; right-of-way and easement acquisitions; compilation of design and construction requirements for local agencies, Cal Trans, railroad, prevailing environmental agencies and other agencies having jurisdiction; traffic control plans; geotechnical investigations; assessment of trenching and paving requirements; assessment of pipeline materials; evaluation of construction methodology and duration; potholing activities; evaluation of impacts to surrounding areas; relocation of existing utilities; and construction cost analysis.

B. For treatment facilities: Identify flow and water quality design parameters, required treatment process equipment, site locations, site layouts, ancillary equipment, single-line electrical diagrams and assessment of power requirements, preliminary P&IDs with telemetry controls, housing, easement acquisition, appurtenances, and permitting issues. May include development of material takeoffs for cost estimation purposes and analysis of O&M costs.

C. Development and evaluation of system hydraulics and system curves.

D. Perform necessary field investigations and coordinate with agencies to verify all design and construction constraints and permit requirements.

E. Collect and review all applicable plans, specifications, and background reports provided by WRD. Research and obtain record data for all existing utilities pertinent to the project.

F. Preparation of a detailed schedule including obtaining special permits.

G. Evaluate the design concept for constructability and practicality for construction phase and long-term maintenance.

H. Obtain soil reports as available for examination of soil conditions. If necessary, perform geotechnical investigations.

I. Make recommendations on the design and construction methods to WRD, based on the most cost effective and constructible method.

J. Development of design drawings and specifications.

K. Develop and submit construction cost estimates that reflect the preferred materials and methods involved in the project.

DESIGN PHASE
The Design activities may typically include the following, but is not limited to:

A. Conduct geotechnical investigation to assess soil conditions for proper facility design.
B. Coordination with agencies with jurisdiction within the project area to obtain all necessary permits.
C. Coordinate with regulatory agencies (e.g., State Water Resources Control Board Division of Drinking Water and Los Angeles County Department of Public Health) to ensure compliance with utility separation and pipeline identification requirements.
D. Preparation of easement acquisition packages and confirmation of right-of-way.
E. Develop design drawing and specifications for the various percent designs required, utilizing the design basis, water quality objectives, and other design criteria.
F. Preparation of engineer’s cost estimates.
G. Real Estate Appraisal. Prepare commercial property appraisal depending on the nature of the project. Works include, but are not limited to, visitation of property, taking pictures of property, documentation of special characteristics of the property and surrounding area, valuation of the property, title and deed research, preparation of legal descriptions, surveying and preparation of a detailed report describing findings and recommendations.
H. Traffic control plans
I. Survey
J. Shutdown/Tie-In Procedures

CONSTRUCTION BID PHASE

The construction bid phase work may typically include the following, but is not limited to:

A. General Administration and Meetings
B. Engineering Services
   a. Provide technical support at the pre-bid meeting.
   b. Prepare responses to requests for information (RFI) and request for clarification (RFC) that may include approving or rejecting, or clarification to specified design.
   c. Prepare, issue, and maintain records of document addenda.
C. Coordination with District staff to review all bids and to make a determination of the lowest responsible, responsive bidder.
D. The Consultant shall incorporate all addenda issued during the Bid Period into a conformed set of contract documents.

ENGINEERING SERVICES DURING CONSTRUCTION

The following section describes the anticipated engineering services during construction for potential task orders assigned to the Consultant.

A. General Administration and Meetings
B. Review all shop drawings and other submittals for complete and strict conformance with contract documents
C. Prepare revisions to contract drawings and/or specifications to resolve conflicts.
D. Start-up assistance.
E. Project close-out - the Consultant shall assist in the development of Project punch lists and coordinate the delivery of all Project-related documentation including warranties, guarantees and operations and maintenance manuals.
F. Prepare Final Record Drawings.

HYDRAULIC MODELING

The types of services anticipated under this task shall include the following, but are not limited to:

A. Updates of existing models with network, facility (including removal or additions of customers), and or demand data;
B. Additional distribution system field testing;
C. Additional calibration/verification of the existing water distribution models, including collection of field data for flows, pressures, and water quality parameters;
D. Use of the model for hydraulic, water age, or water quality analyses and documentation of results;
E. Review and evaluation of model results as the basis for recommending water distribution system improvements.
F. Develop new models, as needed.
RATE SCHEDULE AND REIMBURSEMENT

The Consultant shall include a rate schedule that lists the hourly labor rates by work classification. Even though this is a multi-year contract, the Consultant shall provide rate schedules to be applicable for three (3) calendar years assuming contract award in April 2020. Annual rate increases for inflation of no more than 5% are permitted but must be submitted at the start of the contract and shall be held for the calendar year during which work is being performed.

i. Include the rate schedule by work classification title. While the specific scope of work for each task order will vary, the hourly rates associated with specific titles included in the master contract agreement will remain in effect for the term of the contract.

ii. All expected fees and other direct costs (ODCs), sub-consultants, markups, or other firm-specific fees should be fully burdened in the proposed billing rates. No ODCs, allowances or markups will be allowed for the duration of the contract.

iii. WRD will not provide payment for travel, lodging, meals or subsistence unless requested and approved by the Project Manager in advance of the incurred costs. All approved expenses shall adhere to WRD’s Administrative Code pertaining to daily meal and travel limits. No markup will be provided on pre-approved travel, lodging, meals or subsistence costs. Mileage reimbursement will be based on the standard mileage rates published by the Internal Revenue Service (IRS) effective at the time when the mileage costs are incurred.

iv. Terms and conditions from the Respondent’s sub-consultants shall not be incorporated into the Respondent’s rate schedule and fee proposal. WRD will allow a fixed mark-up for sub-consultants that shall be approved at the start of the contract and shall be constant for the duration of the contract. WRD will not honor the terms and conditions of sub-consultants and WRD’s contract with the Respondent shall govern in all cases.
EXHIBIT B: LIST OF POTENTIAL PROJECTS

CAPITAL IMPROVEMENT PROGRAM PROJECTS
- Los Coyotes Pipeline Alignment Study
- LVL Inland Injection Well
- Regional Brackish Water Reclamation Project
- LVL MF Filtrate Tank Rehabilitation
- Dominguez Gap Inland Injection Wells
- General well installation projects
- Dominguez Gap Barrier Project Second Connection Pipeline
- Dominguez Gap Barrier Project Potable Backup Pipeline

R&R PROJECTS
- Goldsworthy Roof replacement
- Goldsworthy HVAC upgrade and replacement
- Treatment Plant Electrical Upgrades
- Goldsworthy wetwater well rehab
- Goldsworthy decarbonator blower system replacement
- Goldsworthy fluoride system replacement
- Goldsworthy post treatment water quality analysis and associated retrofits
- LVL chemical system and piping upgrades
- Goldsworthy feed piping valve assessment
- LVL product water pump station evaluation
- LVL influent pumping system
- LVL Condition Assessment

OPERATIONAL SUPPORT PROJECTS
- CMMS Optimization support
- SCADA Optimization support
- Asset Management services
- SWPP Compliance and permitting support

PLANNING EFFORTS
- Leo J. Vander Lans facility planning
- Cost of water analysis
- Facility condition assessments
- Feasibility study for storm water capture efforts
- Feasibility studies for new drinking water supplies
- Feasibility studies for groundwater basin storage projects
- Climate Action Plans

SAFE DRINKING WATER PROGRAM
- Well head treatment selection analysis and design
- Pipeline design
- Between 5-8 projects per year working with the State of California
- Groundwater well construction and rehabilitation projects
- PFOA and PFOS related projects
Exhibit C

WRD Standard Professional Services Agreement
This Professional Services Agreement (the “Agreement”) is made and entered into this ___ day of _______, _______, by and between the Water Replenishment District of Southern California (“District”) and [Insert Contractor Name], (“Consultant”) (collectively the “Parties” or individually as “Party”) for the furnishing of certain professional services upon the following terms and conditions.

1. **Scope of Services.** Consultant shall perform the scope of services described in Exhibit A hereto ("Services"). Tasks other than those specifically described in Exhibit A shall not be performed without a prior written amendment to this Agreement.

   1.1 **Standard of Care.** In performing the scope of services under this Agreement, Consultant shall exercise the standard of care and expertise prevailing in California for the performance of such services.

2. **Term.** The term of this Agreement shall commence on **Month, Day, Year** and shall end on **Month, Day, Year** (the “Expiration Date”). At least sixty (60) days prior to the Expiration Date, District staff shall evaluate the quality of the Services that have been provided by the Consultant, the cost of such Services relative to the benefits, and the need for any continuation of the services. The results of such evaluation shall be provided to the appropriate District Committee, which committee shall provide a report to the District’s Board of Directors (“Board”). If the Board determines that there is a demonstrated need for the continuation of such Services, the Board may renew the Agreement on terms and conditions that do not provide for a significantly longer term, increased scope of services or increased fee schedule than is provided for in Paragraphs 1 or this Paragraph 2. If the Board desires to modify the Agreement to provide for such a significantly longer term, increased scope of services or increased fee schedule, the District shall comply with the provisions of its then current Administrative Code concerning the solicitation and approval of proposals for professional services.

2.1 **Termination by District**

   2.1.1 **Termination for Convenience.** The District may terminate this Agreement for its convenience at any time upon five (5) days written notice to Consultant. Consultant’s compensation in the event of such a termination shall be exclusively limited to payment for all authorized services performed and for all authorized expenses incurred up to the effective date.
of such termination. Consultant understands and agrees that it shall not be entitled to any additional compensation or reimbursement whatsoever in the event of such termination.

2.1.2 Consultant’s Obligations Upon Termination. Following any termination of this Agreement by the District or Consultant, the Consultant shall promptly return all District property, and shall likewise provide to District all finished and unfinished data, studies, maps, reports, and other deliverables and work-product prepared by Consultant pursuant to this Agreement.

3. Consultant’s Compensation. District will compensate Consultant for services performed and for expenses incurred pursuant to this Agreement as follows:

3.1 Fee. Consultant shall be paid in accordance with the fees and Consultant Rate Schedule attached to this Agreement as Exhibit B which may not be changed except with District’s written approval.

3.2 Reimbursable Expenses. Consultant shall be reimbursed for only pre-approved expenses, subject to the provisions of this Agreement. Consultant shall obtain the District’s prior written approval before incurring an expense not specifically provided for under this Agreement.

3.2.1 Third Party Expenses. Unless specifically provided in Exhibit B, and subject to the provisions of Paragraph 3.2, the District shall not reimburse Consultant for any costs charged to Consultant by third parties unless said costs are preapproved. In the event such costs are approved, such reimbursement shall be at cost without any markup by Consultant.

3.3 Invoices. Consultant shall submit monthly invoices to District for services performed and expenses incurred during the preceding month. District shall process Consultant’s invoice upon receipt and issue any undisputed payment in a timely manner. Consultant’s invoices shall separately identify all personnel for whose services payment is sought, the services performed, and all expenses for which reimbursement is requested. As a condition precedent to payment, District may require Consultant to furnish supporting information and documentation for all charges for which payment is sought. District shall have the right to withhold from payments to Consultant reasonably disputed amounts including, without limitation, amounts for services not performed in accordance with this Agreement and costs, expenses or damages incurred by District as a result of Consultant’s breach of this Agreement or Consultant’s negligence.

4. Consultant’s Obligation to Provide Notice of Changes. Consultant shall provide written notice to the District no later than twenty (20) days after the occurrence of any event (including any direction by the District) which Consultant believes requires a change in its compensation or the time for performance of its obligations under this Agreement. Said notice shall describe the event and the basis for any change in compensation or time for
performance requested by Consultant. The Parties shall thereafter meet and confer to
determine whether such a change is appropriate. However, no such change to this
Agreement may be made except by written amendment to this Agreement executed by the
Parties. Consultant’s failure to provide the notice required under this Paragraph shall
constitute a waiver of its right to seek a change in its compensation or the time for
performance of its obligations under this Agreement.

5. Ownership and Use of Documents. All proprietary information developed by Consultant
in connection with, or resulting from, this Agreement, including but not limited to
inventions, discoveries, improvements, copyrights, patents, data, maps, reports, textual
material or software programs, shall be the sole and exclusive property of the District.
Consultant agrees that the compensation to be paid pursuant to this Agreement includes
adequate and sufficient compensation for any proprietary information developed in
connection with or resulting from this Agreement. Consultant further understands and
agrees that full disclosure of all proprietary information developed in connection with, or
resulting from, this Agreement shall be made to the District, and that Consultant shall do
all things necessary and proper to perfect and maintain District’s ownership of such
proprietary information. All documents, reports, surveys, renderings, photographs, data
and other materials furnished by the District to Consultant shall remain the
exclusive
property
of the District and shall not be distributed or provided to third parties without the
express written authorization of the District.

6. Publication of Project Information. Consultant shall notify and obtain written approval
from the District before presenting verbal or written information to outside individuals or
entities about the services or project for which Consultant was retained.

7. Patents and Copyrights. The Consultant shall assume all costs arising from the use of
patented or copyrighted materials, including but not limited to, equipment, devices,
processes, and software programs used or incorporated in the work performed under this
Agreement. Consultant shall defend, indemnify hold the District, its officers, directors
agents, employees, representatives and assigns harmless from any and all claims, demands,
suits at law, and actions of every nature for or on account of the use of any patented or
copyrighted materials.

8. Consultant’s Status. Consultant is an independent contractor and neither Consultant nor
any employee of Consultant is or will be treated as an employee of the District under this
Agreement. District controls the result to be accomplished under this Agreement, but not
the means by which Consultant achieves such results.

8.1 Payments made to Consultant pursuant to this Agreement shall be the sole and
complete compensation to which Consultant is entitled. Consultant is solely
responsible for any taxes levied by local, state or federal authorities on such sums.
Consultant shall defend and indemnify the District for any taxes, fines, penalties
and attorneys’ fees assessed or threatened to be assessed against District for failure
to properly withhold taxes as a result of any determination that Consultant, or any
of Consultant’s employees, is an employee rather than an independent contractor of District.

8.2 District will not make any contribution to any retirement plan or Social Security on behalf of Consultant or any of Consultant’s employees. Consultant shall defend and indemnify the District for any contribution, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to contribute to any retirement plan or Social Security as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.3 District will not make any payments to Consultant, or Consultant’s employees, which rely upon employee status, including, but not limited to, FLSA and other overtime and minimum wage requirements, prevailing wage laws, worker’s compensation benefits, FMLA, CFRA, Paid Leave, and unemployment benefits. Consultant shall defend and indemnify the District for any payment, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to make any such payment or otherwise provide the benefits of such laws as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.4 Consultant shall comply with the Political Reform Act of 1974, as amended including, but not limited to, disclosure of all conflicts of interest and other financial disclosure requirements required thereunder.

9. Instructions to Consultant. In the performance of the services set forth in this Agreement, Consultant shall report to and receive instructions from the following person on behalf of the District: ______________________________.

10. Subconsultant Services. Any subconsultants to be used by Consultant in the performance of the scope of services shall be identified in Exhibit A hereto. Consultant shall obtain the District’s prior written approval before retaining a subconsultant to perform any portion of the scope of services of this Agreement. Notwithstanding Consultant’s use of any subconsultants, Consultant shall be responsible to the District for the performance of its subconsultants as it would be if Consultant had performed those services itself. Nothing in this Agreement shall be deemed or construed to create a contractual relationship between the District and any subconsultant employed by Consultant. Consultant shall be solely responsible for payments to any subconsultants. Consultant shall defend and indemnify the District for any payment, fines or penalties assessed or threatened to be assessed against District as a result of any claim brought by any subconsultant of Consultant for any matter arising from, or related to, the services performed by subconsultant under this Agreement.

11. Compliance With Laws and Regulations; Licensing. Consultant shall perform its services under this Agreement in compliance with all applicable provisions of Federal, State and local laws, statutes, codes, rules, regulations, ordinances and professional standards
By entering into this Agreement, Consultant represents and warrants that it possesses and will keep current all license and registrations required by Applicable Laws to enter into this Agreement and to perform the scope of services hereunder.

12. **Insurance.** Consultant, at its sole cost and expense, shall obtain, keep in force, and maintain the following policies of insurance at all times while this Agreement is in effect, and shall not commence any work under this Agreement until proof of such insurance has been provided to the District. The coverages provided by such insurance shall not be construed as limitations of liability.

12.1 **Required Policies.**

12.1.1 **Commercial General Liability Insurance** (contractual, products, and completed operations coverages included) with a combined single limit of no less than $2,000,000 per occurrence or the full per occurrence limits of the policies available, whichever is greater for bodily injury, personal injury and property damage.

12.1.2 **Business or Comprehensive Automobile Liability Insurance** for owned, scheduled, non-owned, or hired automobiles, with a combined single limit of no less than $1,000,000 per accident.

12.1.3 **Professional Liability Insurance** with limits of $1,000,000 per claim and $1,000,000 in the aggregate.

12.1.4 **Employers’ Liability Insurance** with limits of $1,000,000 per claim and $1,000,000 in the aggregate.

12.1.5 **Workers’ Compensation Insurance** as required under the Workers’ Compensation Insurance and Safety Act of the State of California.

12.2 **Required Terms.**

12.2.1 All polices except workers’ compensation and professional liability, shall name as additional insureds the Water Replenishment District of Southern California, its directors, officers, employees, agents authorized volunteers and representatives. The coverage shall contain no special limitations on the scope of protection afforded the District, its directors, officers, employees, or authorized volunteers.

12.2.2 All policies (with the exception of Professional Liability) shall be written on an occurrence basis. If a policy may only be obtained on a claims made basis, the policy shall be maintained continuously for a period of no less than three (3) years after the date of final completion of the scope of services under this Agreement.
12.2.3 All policies shall provide that coverage cannot be cancelled without thirty (30) days prior written notice to the District.

12.2.4 All insurance required under this Agreement shall be considered primary to any insurance maintained by the District. All policies except Professional Liability shall include waivers of subrogation in favor of the District and its insurers.

12.2.5 Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to District, its directors, officers, employees, or authorized volunteers.

12.2.6 The Consultant’s insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer’s liability.

12.2.7 Liability insurance shall indemnify the Consultant and his/her sub-contractors against loss from liability imposed by law upon, or assumed under contract by, the Consultant his/her sub-contractors for damages on account of such bodily injury (including death), property damage, personal injury, completed operations, and products liability.

12.2.8 Deductibles and Self-Insured Retentions – Any deductible or self-insured retention must be declared to and approved by District. At the option of District, the insurer shall either reduce or eliminate such deductibles or self-insured retentions. Policies containing any self-insured retention (SIR) provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named or additional insureds, co-insurers, and/or insureds other than the first named insured.

12.2.9 Evidence of Insurance – Prior to execution of the agreement, the Consultant shall file with District a certificate of insurance signed by the insurer’s representative evidencing the coverage required by this agreement. Such evidence shall include an additional insured endorsement signed by the insurer’s representative. Such evidence shall also comply with the Evidence and Required Forms of Insurance attached hereto as Exhibit “C”. In the event that the Consultant employs other contractors (sub-contractors) as part of the work covered by this agreement, it shall be the Consultant’s responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above. Failure to continually satisfy the Insurance requirements is a material breach of contract.

12.2.10 All polices required under this Agreement shall be issued by companies authorized to transact insurance business in the State of California acceptable to the District and having a Best rating of A- or equivalent or as otherwise approved by District.
13. **Indemnification.** Consultant shall indemnify, defend and hold harmless the District and its directors, officers, employees, agents and representatives (collectively “District”), from and against any and all claims, liabilities, costs, damages, suits, proceedings, injuries (including injuries to real and personal property, and injuries to persons, including death) incurred by District (“Losses”), as a result of Consultant’s breach of any provision of this Agreement, Consultant’s failure to comply with applicable laws, Consultant’s negligent acts or omissions, or Consultant’s willful misconduct. However, Consultant’s obligation to defend shall arise regardless of any claim or assertion that the District caused or contributed to the Losses. Nothing in this paragraph shall constitute a waiver or limitation of any legal rights which the District may have including, without limitation, the right to implied indemnity.

14. **Arbitration and Attorneys’ Fees.** Any dispute arising from or relating to this Agreement shall be submitted to final and binding arbitration before an arbitrator who is a member of the National Academy of Arbitrators. The parties will obtain a list of five names of potential arbitrators from the National Academy of Arbitrators, or the American Arbitration Association, and will take turns striking the names of arbitrators until one arbitrator remains, who shall preside over the arbitration. The arbitrator will have no power to rewrite any of the terms of this Agreement. The parties shall split the cost of the arbitrator’s fee and any court reporter required by the arbitrator or if both parties agree to having the proceedings taken down by a court reporter. The prevailing Party in any action arising from or relating to this Agreement shall be entitled to recover its reasonable attorneys’ fees, expert witness fees and arbitration fees and costs in addition to any other relief and recovery ordered by the arbitrator or other tribunal hearing any matter related to this Agreement.

15. **Conflict of Interest.** No official of the District who is authorized in such capacity and on behalf of the District to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving this Agreement, or any contract or subcontract relating to work to be performed pursuant to this Agreement, shall become directly or indirectly personally interested in this Agreement or in any part thereof. Consultant shall not accept employment or contract during the term of this Agreement with any firm or individual for the provision of services if such employment or contract would conflict directly with the Services provided to the District under this Agreement.

16. **Equal Opportunity.** During the performance of this Agreement, Consultant shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, marital status or national origin.

17. **Successors and Assigns.** This Agreement shall inure to the benefit of, and be binding upon, the District, Consultant, and their respective successors and assigns provided, however, that no assignment of the duties or benefits under this Agreement shall be made without the written consent of the Consultant and the District.

18. **Choice of Law and Venue.** This Agreement shall be governed by and interpreted in accordance with the laws of the State of California. The Parties agree that the exclusive
venue for any action or proceeding arising from or relating to this Agreement shall be in the County of Los Angeles, State of California.

19. **Notices.** All notices provided by this agreement shall be in writing and shall be sent by first-class mail and facsimile transmission as follows:

If to the District:

Water Replenishment District of Southern California  
4040 Paramount Blvd.  
Lakewood, CA 90712  
Phone: (562) 921-5521  
Fax: (562) 921-6101

If to Consultant:

<table>
<thead>
<tr>
<th>Contact Name</th>
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<tr>
<td>Address</td>
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<td>Address</td>
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<td>City, State ZIP</td>
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<tr>
<td>Email:</td>
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<td>Fax:</td>
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20. **Amendments.** This Agreement may be modified only by a writing signed by the Parties hereto.

21. **Integration; Construction.** This Agreement (inclusive of exhibits incorporated herein by this reference) sets forth the final, complete and exclusive expression of the Parties’ agreement with respect to the subject matter hereof, and supersedes any and all other agreements, representations, and promises, whether made orally or in writing. Notwithstanding anything in Exhibit A to the contrary (or any invoice or other unilateral terms or conditions provided by Consultant), in the event of any conflict or inconsistency between this Agreement and Exhibit A (or any invoice or other unilateral terms or conditions provided by Consultant), this Agreement shall control. The Parties represent and warrant that they are not entering into this Agreement based upon any representation or understanding that is not expressly set forth in this Agreement. This Agreement shall be construed as the product of a joint effort between the Parties and shall not be construed against either Party as its drafter.

22. **Effective Date.** This Agreement is effective as of the date first set forth above.
23. **Authority.** Each person signing this Agreement represents that he or she has the authority to do so on behalf of the Party for whom he or she is signing.

IN WITNESS WHEREOF, the Parties have caused this AGREEMENT to be executed the day and year first above written.

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

---

**Signature**
John D.S. Allen
*Print Name*
President, Board of Directors
*Title*

**Signature**
Willard H. Murray, Jr.
*Print Name*
Secretary, Board of Directors
*Title*

[INSERT CONTRACTOR NAME], ("CONSULTANT")

---

**Signature**

*Print Name*
*Title*

**Approved As To Form**
LEAL, TREJO LLP

Attorneys for the Water Replenishment District of Southern California

---
EXHIBIT A
SCOPE OF WORK

[Insert detailed description of scope of work.]
EXHIBIT B
CONSULTANT RATE SCHEDULE

Attach provided Rate Schedule Here.

If Rate Schedule/Budget is not included in proposal, complete the following:

1.0 Consultant shall be compensated for actual services performed in accordance with this Agreement [insert appropriate language: at the hourly rates, monthly sum or the lump sum amount.]

2.0 A budgetary amount of $___________ (which amount applies to Consultant’s fee and reimbursable expenses) is established for this Agreement. Notwithstanding any other provision of this Agreement, the District shall not be obligated to pay Consultant any amount in excess of said budgetary amount absent prior written approval from the District. Likewise, Consultant shall not be obligated to perform services or incur expenses in excess of the budgetary amount absent prior written approval from the District.

[Insert additional terms as needed after consultation with counsel.]
EXHIBIT C
EVIDENCE AND REQUIRED FORMS OF INSURANCE

Checklist for Additional Insured Endorsement

Contractor Name ____________________________________________________________
Project Name: __________________________________________________________________

Refer to the Additional Insured Endorsements forms E1-8 following:

Endorsement(s)
☐ Additional Insured (AI) Status – GENERAL LIABILITY - Member Water District, its
directors, officers, employees, or authorized volunteers are named as additional
insureds - as broad as following forms:
  o Form CG 20 10 11 85 (E1) or
  o BOTH CG 20 10 (E2) and CG 20 37 (E3) if forms with later edition dates
    provided (usually 10 01 or 07 04 editions). Also acceptable CG 20 10 04 13 (or older
    editions E2) specifically naming the District parties or using language that states "as
    required by contract"
  o “Blanket” Endorsement - (no specific policy number) (E4) covering one or more of
    the above endorsements required with words "as required by written
    contract/agreement".
  o If large number of Subcontractors - Additional Insured endorsement CG 20 38
    04 13 recommended. (E5)
  o Policy numbers - matches policy number shown on Certificate of Insurance. (see
    Optional Dec. Page/Endorsement pages below)
  o Primary Coverage – The primary/non-contributory language is included. “The
    insurance provided by this policy shall be primary as respects any claims related to
    the __________ Project. Any insurance, self-insurance, or other coverage
    maintained by the district, its directors, officers, employees, or volunteers shall not
    contribute to it.” e.g. Form CG 20 01 (E6)

☐ Auto liability (Optional (E7)) AI - most standard forms have automatic AI but some
  carriers provide endorsement

☐ Waiver of Subrogation (Workers Compensation and Property (Course of
  Construction, if required in contract) (E8)

☐ Optional - For extra confidence in verifying coverage require Declaration Page and
  Endorsement Schedule pages - compare the endorsement numbers. Look out for
  Amendment of contractual liability and or prior works exclusions - refer to Legal
  Counsel.
Exhibit D

Acceptance Letter
EXHIBIT D: ACCEPTANCE LETTER

Company Name: __________________________

Address: __________________________

Telephone: __________________________

Fax: __________________________

Subject: Solicitation for __________________________

By my signature below, I, on behalf of the Company named above, acknowledge that I have read and understand the subject solicitation and all its attachments. I further acknowledge that, by submission of a submittal, proposal, quotation, or bid in response to the subject solicitation, the Company named above accepts all the terms and conditions, and meets the minimum requirements set forth in the subject solicitation and its attachments, including, but not limited to, the Sample Agreement or the Purchase Order Standard Terms and Conditions.

ACCEPTED:

___________________________
Signature

___________________________
Name (please print)

___________________________
Title

___________________________
Date
MEMORANDUM
ITEM NO. 7

DATE: MARCH 5, 2020
TO: BOARD OF DIRECTORS
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: APPROVAL OF THE CITY OF LOMITA WELL 5 TREATMENT PROJECT FOR THE SAFE DRINKING WATER PROGRAM

SUMMARY
The District administers the Safe Drinking Water Program (SDWP) to assist basin pumpers in sustaining active production from contaminated wells. Wells are evaluated for assistance based on water quality data and production history. When assistance is deemed necessary, WRD and the basin pumper jointly develop a treatment solution for the subject well.

City of Lomita Well 5 has been impacted with elevated concentrations of taste and odor caused by sulfides. Recently the well, the City’s only groundwater source, has been impacted by levels of benzene above the State Maximum Contaminant Level (MCL) of 1 ug/L and has been offline since May 2019. Benzene is an aromatic hydrocarbon volatile organic compound (VOC) and qualifies for a Safe Drinking Water Program Grant. Through the District’s Safe Drinking Water Program, a treatment system consisting of four (4) Granular Carbon Activated (GAC) vessels. The City is currently relying on 100% purchased treated water from the Metropolitan Water District (MWD) and has formally requested assistance from the District for financial assistance through the Safe Drinking Water Program (SDWP) for a Granular Activated Carbon (GAC) treatment system to remove benzene, taste, and odor.

The wellhead treatment system will consist of a complete granular activated filtration system built within the boundaries of the existing well sites owned and operated by the City of Lomita. Granulated Activated Carbon filtration is a closed system that has long been recognized as an effective means for removing Volatile Organic Compounds (VOCs), including benzene from groundwater wells. The treatment systems will have the capacity to treat the full flow of the well. The well is affected by VOCs and qualifies for a Priority A Treatment Grant where the District provides funds for the cost of design and construction.

To proceed, the District will need to approve the City of Lomita as a Safe Drinking Water project and enter into an individual agreement with the City of Lomita subject to approval.
of form by District Counsel for the design, construction, and installation of a wellhead treatment at Lomita Well 5.

FISCAL IMPACT

The proposed Safe Drinking Water project will be financed through unencumber reserve funds for an amount not to exceed $2,000,000.

ADMINISTRATIVE COMMITTEE RECOMMENDATION

The Administrative Committee recommends that the Board of Directors approve the City of Lomita Well 5 Project as a Safe Drinking Water project for an amount not to exceed $2,000,000.
MEMORANDUM
ITEM NO. 8

DATE: MARCH 5, 2020
TO: BOARD OF DIRECTORS
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: APPROVAL OF BUDGET APPROPRIATION AND CHANGE ORDER NO. 6 WITH PACIFIC HYDROTECH FOR THE SAFE DRINKING WATER PROGRAM ARLINGTON PROJECT

SUMMARY

On July 18, 2018 the WRD (District) Board of Directors awarded a construction contract in the amount of $2,065,300, with a 15% contingency of $310,000 (total budget amount of $2,375,300) to Pacific Hydrotech Corporation to construct and install a water treatment facility for the Safe Drinking Water Arlington Treatment Project.

Board-approved contingency funds in the amount of $310,000 were previously utilized to cover Change Orders Nos. 1 through 5, as summarized below.

- Change Order No. 1 – Executed on October 30, 2018 for an 18-calendar day time extension with no cost impact. Change Order No. 1 was executed to extend the contract substantial completion date by 18 calendar days through April 21, 2019 for the GAC Vessel Delivery.

- Change Order No. 2 – Executed on May 7, 2019 for the amount of $119,928.38 with a time extension of 106 calendar days through August 5, 2019. Change Order No. 2 included additional costs due to permit changes by the LA Building Department and extension of contract time by California American Water.

- Change Order No. 3 – Executed on June 26, 2019 for the amount of $24,598.91, with no time extension. Change Order No. 3 included costs to concrete encase all underground conduits, connect to the 48th Street Well, and relocate an existing Cla-Val.

- Change Order No. 4 – Executed on July 25, 2019 for the amount of $94,895.20 with a time extension of 83 calendar days through October 27, 2019. Change Order No. 4 includes costs related to excavating and backfilling a new copper line, additional concrete work, additional backflow preventer, additional PRV valves and butterfly valves near the GAC vessels.

- Change Order No. 5 – Executed on October 31, 2019 for the amount of $48,572.51 with a time extension of 64 days, which extended the project completion date to December 30, 2019. Change Order No. 5 adding a temporary
Staff is requesting approval to execute Change Order No. 6 for the amount of $72,225.34 with a 245 day time extension. Change Order No. 6 includes the addition of a Cla-Valve water line, Cla-Valve rebuild, addition of a second disinfection and extension of contract time. Change Order No. 6 extends the completion date to August 31, 2020.

Because Change Order No. 6 exceeds the current remaining contingency amount of $24,004.99, staff is requesting a budget appropriation to increase contingency funds by an additional 6% in the amount of $124,000 (rounded) to cover the entire cost of Change Order No. 6 and address unforeseen construction-related issues.

FISCAL IMPACT

The budget appropriation to increase contingency funds by an amount of $124,000 is covered through the 2018 Bond issuance. In addition, in accordance with the agreement between California American Water and the District, the SDW Arlington Project District funding is capped at $1.6 million where California American Water must reimburse WRD for the amounts over $1.6 million.

ADMINISTRATIVE COMMITTEE RECOMMENDATION

The Administrative Committee recommends the Board of Directors approve a budget appropriation to increase contingency funds by an additional 6% in the amount of $124,000 (rounded) to cover the entire cost of Change Order No. 6 in the amount of $72,225.34 and to address unforeseen construction-related issues for the Safe Drinking Water Program Arlington Project.
## CHANGE ORDER REQUEST SUMMARY

**PROJECT NAME:** California American Water Arlington Wellhead Treatment  
**C.O.R. NO.:** 6  
**CONTRACTOR:** Pacific Hydrotech, Inc.  
**DATE:** 2/4/2020  
**REF.:** COR 13, 14 and 15.2 Attached

**DESCRIPTION OF CHANGE:**
- COR 13 Cla-Valve Water Line
- COR 14 CLA-Valve Rebuild per RFI 60
- COR 15.2 Add 2nd Disinfection and Extend Contract Time

**REASON FOR CHANGE:** Owner Elected and Regulatory Agency Review Changes to add Value and DDW Compliance.

### General Contractor Direct Costs

**Additive Costs**

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<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
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<td>A Labor</td>
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<td>B Material</td>
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<td>C Equipment</td>
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<td><strong>D Subtotal</strong></td>
<td><strong>$43,758.79</strong></td>
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<td>E Subcontract</td>
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**L General Contractor's Mark-up**

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<tr>
<td><strong>Subtotal Additive Cost</strong></td>
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**M Bonds & Ins**

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<tr>
<td><strong>L General Contractor's Mark-up</strong></td>
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**G Deductible Costs (use minus sign to denote negative figures)**

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<td>H Material * COR-3</td>
<td>$0.00</td>
</tr>
<tr>
<td>I Equipment</td>
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**J Subtotal of Deductible Cost**

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<tr>
<td><strong>J Subtotal of Deductible Cost</strong></td>
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**N Total General Contractor Direct Costs + Mark-ups**

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<tr>
<td><strong>N Total General Contractor Direct Costs + Mark-ups</strong></td>
<td><strong>$72,225.34</strong></td>
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**O Total General Contractor Change Request (Line L + M + N+O)**

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<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td><strong>O Total General Contractor Change Request</strong></td>
<td><strong>$72,225.34</strong></td>
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</table>

**P Time Extension Request?**

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<th>Description</th>
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This work does not impact the critical path of the project.

END OF SUMMARY
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<th>Equipment</th>
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<th>Subcontract 5%</th>
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COR 13 Cla-Valve Water Line
COR 14 CLA-ValVE Rebuild per RFI 60
COR 15.2 Add Chlorination and Extend Contract Time

Totals $ 42,236.00 $ 832.79 $ 690.00 $ 19,511.00 $ 6,563.82 $ 975.55 $ 70,809.16 $ 1,416.18 $ 72,225.34
October 18, 2019

Water Replenishment District of southern California
4040 Paramount Blvd.
Lakewood, CA 90712

Attention:  Casey Harris
Senior Construction Manager

Reference:  Cal American Arlington Well Treatment Project
PHC Project C1824

Dear Casey,

Please see the attached COR 13 for the addition and installation of an independent water line to the Cla-Val per RFI 71.1. The total price for this COR is $2,222.81

We have truly enjoyed working with you and your district to make this a successful project. If we can answer and questions regarding this delay or any other aspect of the project, please feel free to call me anytime at 951-943-8803.

Sincerely yours,
Pacific Hydrotech Corp.

Kyle Bremer
Project Manager
**DESCRIPTION:** COR #13 Cla-Val line adder  
**PROJECT NAME:** Arlington Well Treatment  
**JOB #:** C1824  
**DATE:** 10/18/2019

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**Total Costs**

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**SUBCONTRACTS**

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**Total Cost**

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<tr>
<td>Total Cost</td>
<td>$  -</td>
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<td>$  -</td>
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</table>

Packet Page 131 of 793
Eduardo Lopez

From: Jamie.Germann@Ferguson.com
Sent: Friday, October 18, 2019 2:08 PM
To: Eduardo Lopez; James.Bryan@Ferguson.com
Subject: RE: c1824 Arlington Well Cla-Val water line

Follow Up Flag: Follow up
Flag Status: Flagged

Eduardo,

Your pricing is below.

Please let me know if you have any questions.

Thanks so much! 😊

Price Quotation # B353316

FERGUSON WATERWORKS #1083
11909 TECH CENTER COURT
POWAY, CA 92064-7139

Phone : 858-391-3700
Fax : 858-391-5958

Bid No....: B353316
Bid Date...: 10/18/19
Quoted By: XJG
Customer.: PACIFIC HYDROTECH CORP
C1824-ARLINGTON WELL TMNT
314 EAST 3RD STREET
PERRIS, CA 92570

Cust PO#: COPPER
Job Name.: COPPER

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<td>C</td>
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Subtotal: $394.42
Inbound Freight: $0.00
Tax: $30.56
Order Total: $424.98
**Request for Information (RFI) Response**

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<th>California American Water</th>
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<tr>
<td>Project:</td>
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<tr>
<td>Contractor:</td>
<td>Pacific Hydrotech Corporation</td>
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<tr>
<td>Engineer:</td>
<td>Valentine Environmental Engineers, LLC</td>
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**RFI No.:** 71 Rev 1  
**Date Received - Returned:** 10/2/2019-10/16/2019  
**Drawing Number:** M-1  
**Description:** Cla-Val Independent Waterline

**RESPONSE:**

- Furnish and install 1” pressure supply waterline to Cla-Val from 1” pre-lubrication waterline. See attached figure.
October 13, 2019

Water Replenishment District of southern California
4040 Paramount Blvd.
Lakewood, CA 90712

Attention: Casey Harris
Senior Construction Manager

Reference: Cal American Arlington Well Treatment Project
PHC Project C1824

Dear Casey,

Please see the attached COR 14 for the Noise Enclosure Penetration work outlined per responses to RFIs 73, 74, and 75. This includes cutting the existing enclosure, supplying and installing the sheet metal covers with primed metal panels, painting the panels, and saw cutting into the concrete for draining water from well pad. The total price for this COR is $4,997.98

We have truly enjoyed working with you and your district to make this a successful project. If we can answer and questions regarding this delay or any other aspect of the project, please feel free to call me anytime at 951-943-8803.

Sincerely yours,
Pacific Hydrotech Corp.

Kyle Bremer
Project Manager
DESCRIPTION: COR # 14 Noise Enclosure Penetration Work
PROJECT NAME: Arlington Well Treatment
JOB #: C1824
DATE: 11/13/2019

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15% Markup

Subtotal $460.00

Material

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15% Markup

Subtotal $2,480.00

Subcontracts

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5% Markup

Subtotal $1,000.00

Equipment Total Cost $529.00
Material Total Cost $468.98
Subcontracts Total Cost $1,050.00
Labor Total Cost $2,852.00
Subtotal $4,999.98
Bond 1% $49.00
Insurance 1% $49.00
TOTAL COSTS $4,979.98
Customer Name: Pacific Hydro
ATT Eduardo Lopez

BRITE SHEET METAL
Metal Order/Detail Sheet

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<td>Actual Man Hours:</td>
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<td>1</td>
<td>Box 1&quot; FL 10&quot; 10&quot; 16 6A Paintlok</td>
<td>1</td>
<td>Open Flange end &amp; Bottom</td>
<td>$225.00</td>
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Total: $407.81

Packet Page 137 of 793
Noise Enclosure Moving

Question from Bryan Wilson (BUTIER Engineering) at 06:28 AM on 11/08/2019

Please see the below image (attached document). Our foreman layed out a template for the noise enclosure and noticed that there is no way to center the noise enclosure around the well due to the pipe sticking out of the pad. If the noise enclosure were to move forward, the outside edge would overlap with the flange of the spool and wouldn’t fit. The noise enclosure will have to move back so that the pipe is within the enclosure and the inside edge of the enclosure against the pipe. Please confirm if this is acceptable.

Attachments:
74 Noise Enclosure Moving.pdf

Official Response: Casey Harris (BUTIER Engineering) responded on Tuesday, November 12th, 2019 at 6:53AM PST

We responded to this last week. They will make a cutout and small enclosure over the pipe. They are also to add a drain to the pump seal.

Matt Lasecki, PE
CA&HI American Water
Cell: 916-275-4740

A notch with an enclosure would seem the easiest. It can just be made from sheet metal similar to what you are doing on the discharge opening. Sheet metal-screwed to the enclosure so we have access.

Matt Lasecki
(c) 916-275-4740

Kyle
Please provide

1. Dimensions of pad as constructed, and dimensions to edge of pad from edges of pump discharge head base flange
2. Ask the enclosure manufacturer if the wall can be notched for this pipe, and add a metal enclosure around the notch/pipe on outside of enclosure. It doesn’t appear that by doing that we would be removing any frame material based on photos posted on Procore. Its not clear to me how the side interior vent works, and if this would cause any issues.
3.

Attachments:
74 Noise Enclosure Moving.pdf
February 4, 2020

Water Replenishment District of southern California
4040 Paramount Blvd.
Lakewood, CA 90712

Attention: Casey Harris
Senior Construction Manager

Reference: Cal American Arlington Well Treatment Project
PHC Project C1824

Dear Casey,

Please see attached COR 15.2 for the addition of a second Chlorination/Disinfection and Start-up for Arlington Well. This COR includes the following:

- Additional Field Labor for 2nd Chlorination/Disinfection and Start-up
- Additional Project Management out through August 2020
- Additional Materials Cost for extending of project
- Cost for 2nd Start-up from vendors

This COR does not include supplying or installing the VFD, or any VFD related work, including concrete pads, additional conduit, and wire installation. Those items will be included in a separate COR once more information has been received. The total price for this COR is $65,004.55, and a 245 calendar day time extension. This will move the contract completion date to August 31st, 2020.

We have truly enjoyed working with you and your district to make this a successful project. If we can answer and questions regarding this delay or any other aspect of the project, please feel free to call me anytime at 951-943-8803.

Sincerely yours,
Pacific Hydrotech Corp.

Eduardo Lopez
Project Engineer
**DESCRIPTION:** COR #15.2 Additional Chlorination/Disinfection and Startup  
**PROJECT NAME:** Arlington Well Treatment  
**JOB #:** C1824  
**DATE:** 2/4/2020

### EQUIPMENT

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**Subtotal**  
15% Markup  
**Total Cost**

### LABOR

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**Subtotal**  
15% Markup  
**Total Cost**

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**Subtotal**  
15% Markup  
**Total Cost**

### SUBCONTRACTS

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**Subtotal**  
5% Markup  
**Total Cost**

**Equipment Total Cost**  
**Material Total Cost**  
**Subcontracts Total Cost**  
**Labor Total Cost**  
**Subtotal**  
1% Bond  
1% Insurance  
**TOTAL COSTS**  
**$65,004.55**
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PACIFIC HYDROTECH DIRECT COST SUBTOTAL  $38,516.00
Big Bear Electric Inc
644 W Fairway Blvd, Ste #6
Big Bear City, CA  92314
Telephone: (909) 547-6363
Contact: Ethan Adams
E-mail: ethan@bigbearelectric.biz

Project Name: Arlington Well Treatment
Project Number: 500005-3787
Contract #: C1824 - BBE#71AWT
Page Number: 1

Client Address:
Pacific Hydrotech Corp
Contact: Kyle Bremer
314 E. 3rd st.
Perris, CA  92570
Telephone: (951) 943-8803
Contact: Kyle Bremer
E-mail: kbremer@pachydro.com

Site Address:
California American Water/Water Replenishment District
4040 Paramount Blvd
Lakewood, CA  90712

Work Description
This Change Order covers direct costs only and we reserve the right to claim for impact and consequential costs.
All equipment and travel cost are based on current Federal Standard Mileage Rates and Caltrans Labor Surcharge and Equipment Rental Rates.
This price is good for acceptance within 10 days from the date of receipt.
We request a time extension of 3 days.

Reference #
BBE will supply and install all materials, labor, and equipment as per the directions on the above RFI or discussed change CCN # 5:

As requested, this change order covers the our extended overhead up to August 2020 at which time the project should be completed.

Itemized Breakdown - Materials and Labor

Summary

EXTENDED OVERHEAD  (1.00 Hrs @ $4,500.00)  4,500.00

Subtotal  4,500.00

Final Amount  $4,500.00

CLIENT ACCEPTANCE

CCN #  5
Final Amount:  $4,500.00

Name: ________________________________
Date: ________________________________
Signature: ____________________________
Change Order #: ______________________

I hereby accept this quotation and authorize the contractor to complete the above described work.

ORIGINAL

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## SCOPE OF SUPPLY

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION OF CHANGE AND STATEMENT OF REASON</th>
<th>AMOUNT</th>
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<td>1</td>
<td>2nd day of Carbon Media Fill</td>
<td>$11,971</td>
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<tr>
<td>2</td>
<td>Extended warranty for system 1 starting on March 30th 2020</td>
<td>$5,334</td>
</tr>
<tr>
<td>3</td>
<td>Extended warranty for system 2 starting on August 30th 2020</td>
<td>$5,334</td>
</tr>
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</table>

**TOTAL:** $22,639

### NOTES:
1. Acceptance of this Change Order proposal will impact the financial values listed on any additional outstanding Change Order proposals.
2. All values in US dollars, unless noted otherwise.

### SCHEDULING / TIMING

1. Both parties must sign this form within three business days, and EWT must receive an amended Purchase Order reflecting this Change within ten business days, in order to make this Change Order valid.
2. The Parties agree that as a result of this Change Order, in the event the project schedule is amended and as a result of such project schedule changes, the Buyer agrees that all references to Liquidated Damages, to the extent set forth in the Contract Documents, shall be adjusted accordingly. Seller shall strive to fulfill in full the revised project schedule, however, as the project schedule milestones are approximate only and Seller shall not be liable for any loss or expense (consequential or otherwise) incurred by Buyer or Buyer’s customer, if Seller fails to meet the revised delivery dates.
3. Billing Milestone(s) will be created in accordance with original agreed to contract terms.

### SIGNATURES

The existing terms and conditions shall remain full force and effect unless modified specifically in this Change Order.

<table>
<thead>
<tr>
<th>Customer Name (Print)</th>
<th>EWT Project Manager Name (Print)</th>
</tr>
</thead>
<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Customer Signature</th>
<th>EWT Project Manager Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Date | Date
---|---

cc: Project Controller, Salesperson, Sales Rep, EWT Project File
January 13, 2020

Pacific Hydrotech Corp.
314 East 3rd Street
Perris, CA  92570

Attn:  Kyle Bremer

Subject:  California American Arlington Well – COR Warranty Extension

Good afternoon Kyle,

GPC was informed California American Water Company has added the installation and operation of a VFD to the project. As the pump equipment was installed in June 2019 and startup was performed in October 2019, a warranty extension has been requested for an additional one (1) year coverage beginning August 2020. An additional cost has been included should the client request assistance with any additional start-up activities. Please note, GPC has previously advised that use of a VFD on a product (water) lubricated system requires a quick ramp-up time as there are fourteen (14) rubber inserts out of water at the time of start up that are not meant to run dry. It is also important to confirm proper rotation as failure to do so may result in running the pump equipment in reverse and causing a separation or equipment damage/failure.

- Warranty Extension – Additional 1 year coverage beginning August 2020 $ 4,500.00
- Additional Startup – Service Truck + 1 Technician, 10 hrs portal to portal $ 2,040.00/dy

Please let us know if you have any questions or require additional information.

Thank you.

Sincerely,

GENERAL PUMP COMPANY, INC.

Daniel Pichardo
Daniel Pichardo, EIT
Applications Engineer
<table>
<thead>
<tr>
<th>Task</th>
<th>Duration</th>
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**Meeting Date: 3/5/2020 Item No. 8**
DATE: MARCH 5, 2020

TO: BOARD OF DIRECTORS

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: APPROVAL OF CONTRACT AMENDMENT NO. 4 WITH BUTIER ENGINEERING INC. FOR CONSTRUCTION MANAGEMENT SERVICES FOR THE SAFE DRINKING WATER PROJECTS: CITY OF HUNTINGTON PARK, CALIFORNIA AMERICAN WATER AND CITY OF LYNWOOD

SUMMARY

In 2016, the District approved three wellhead treatment projects through the Safe Drinking Water Program: California American Water Arlington Well, Huntington Park Well 15, and Lynwood Well 11. The wellhead treatment system at all three wells will consist of a complete granular activated filtration system built within the boundaries of the existing well sites owned and operated by the water systems. Granulated Activated Carbon filtration is a closed system that has long been recognized as an effective means for removing Volatile Organic Compounds (VOCs), including PCE and TCE, from groundwater wells. The treatment systems will have the capacity to treat the full flow of the wells.

On October 19, 2017, the Board executed an agreement with Butier Engineering Inc. $216,000 for Construction Management Services to assist with overseeing the contractors for the California American Water Arlington Well, Huntington Park Well 15, and Lynwood Well 11 projects contracted by the District.

Construction for all three projects began between July and September 2018 and since commencement, the District encountered equipment supplier manufacturing delays, storm drain capacity issues, permitting delays and issues with survey records. As a result, Amendment No. 01 with Butier Engineering was executed February 2019 for $257,232.50 to extend the resource hours needed to continue full-time inspection services and construction management. Since that time, all three projects have encountered additional unforeseen delays and change orders that have impacted the resources needed to continue construction management services. The three projects that were scheduled for completion by May or June must be extended to September due to change order work and new equipment delivery delays as well as permit design changes. Construction
management/inspection services will exceed the approved resource hours needed to complete the projects. A contract amendment is needed, and staff would like to increase the contract for an additional $365,650 to continue services through completion of the three projects and extend the term to December 31, 2020.

**FISCAL IMPACT**

The total cost of Amendment No. 4 would increase the contract for an amount not to exceed $365,650. There are sufficient funds in the District’s Capital Improvement Program for the proposed work. The amount for extended construction management services will be paid from fiscal year 2019/20 Safe Drinking Water budget.

**ADMINISTRATIVE COMMITTEE RECOMMENDATION**

The Administrative Committee recommends that the Board of Directors approve Contract Amendment No. 4 with Butier Engineering Inc. for construction management services for three Safe Drinking Water approved projects for an additional amount not to exceed $365,650 subject to approval as to form by District Counsel for a total contract amount of $1,142,882.50 and extend the contract term to December 31, 2020.
AMENDMENT NO. 4 TO CONTRACT NO. 946
AGREEMENT FOR PROFESSIONAL SERVICES
BETWEEN
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
AND
BUTIER ENGINEERING, INC.

This Amendment No. 4 to Contract No. 946 (“Amendment No. 4”), is made and entered into this 5th day of March, 2020 (“Effective Date”), by and between the Water Replenishment District of Southern California (hereinafter “District”), and Butier Engineering, Inc., (hereinafter “Consultant”). The District and Consultant are collectively referred to herein as the “Parties”.

I. RECITALS

A. WHEREAS, On October 19, 2017, a certain agreement, hereinafter referred to as Contract No. 946 (“Agreement”), was executed between the District and Consultant to provide construction management services and oversee contractor work on three of the District’s Safe Drinking Water Program Wellhead Treatment Projects (Projects): California American Water Arlington Well, Huntington Park Well 15, and Lynwood Well 11; and

B. WHEREAS, On July 18, 2019 and October 17th, 2019 the District and Consultant entered into Amendments No.2 and No.3 respectively to the Agreement in order to increase the budgetary amount for the continuation of construction management services to oversee the completion of the three projects due to unforeseen site conditions requiring additional design and permitting delays; and

C. WHEREAS, District and Consultant now desire to enter into this Amendment No.4 to the Agreement in order to increase the budgetary amount for the continuation of construction management services, as set forth below.

II. AMENDMENT

NOW, THEREFORE, in consideration of the mutual covenants, promises and agreements set forth, it is agreed the aforesaid the Agreement as amended to date, a copy of which is attached hereto as Exhibit “A”, and incorporated herein by reference, shall remain in full force and effect except as otherwise hereinafter provided.

1. Fee: The budget for services as established in the Agreement shall be increased by an amount not to exceed Three Hundred Sixty-Five Thousand, Six Hundred Fifty Dollars ($365,650.00), as provided for in Exhibit B, attached hereto and incorporated herein by this reference.
2. **Term of Agreement:** The term of the Agreement shall be extended to December 31, 2020 (the “Expiration Date”).

3. **Remaining Portion of the Agreement:** Except as otherwise expressly set forth in this Amendment No. 4, all other provisions of the Agreement as amended to date shall remain in full force and effect between the Parties.

IN WITNESS WHEREOF, the parties have caused this Amendment No. 4 to the Agreement to be executed as of the Effective Date.

**BUTIER ENGINEERING, INC., ("CONSULTANT")**

---

**WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA**

---

Approved As To Form
LEAL, TREJO APC

---

Attorneys for the Water Replenishment District of Southern California
EXHIBIT “A”

CONTRACT NO.946 AS AMENDED TO DATE
AMENDMENT NO.3 TO CONTRACT NO. 946
AGREEMENT FOR PROFESSIONAL SERVICES
BETWEEN
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
AND
BUTIER ENGINEERING, INC.

This Amendment No.3 to Contract No. 946 (“Amendment No.3”), is made and entered into this 17th day of October, 2019 (“Effective Date”), by and between the Water Replenishment District of Southern California (hereinafter “District”), and Butier Engineering, Inc., (hereinafter “Consultant”). The District and Consultant are collectively referred to herein as the “Parties”.

I. RECITALS

A. WHEREAS, On October 19, 2017, a certain agreement, hereinafter referred to as Contract No. 946 (“Agreement”), was executed between the District and Consultant to provide construction management services and oversee contractor work on three of the District’s Safe Drinking Water Program Wellhead Treatment Projects (Projects): California American Water Arlington Well, Huntington Park Well 15, and Lynwood Well 11; and

B. WHEREAS, On July 18, 2019, the District and Consultant entered into Amendment No.2 to the Agreement in order to increase the budgetary amount for the continuation of construction management services to oversee the completion of the three projects due to unforeseen site conditions requiring additional design and permitting delays; and

C. WHEREAS, District and Consultant now desire to enter into this Amendment No.3 to the Agreement in order to increase the budgetary amount for the continuation of construction management services due to encountering additional unforeseen delays which have impacted the resources needed to continue construction management services, as set forth below.

II. AMENDMENT

NOW, THEREFORE, in consideration of the mutual covenants, promises and agreements set forth, it is agreed the aforesaid Agreement as amended to date, a copy of which is attached hereto as Exhibit “A”, and incorporated herein by reference, shall remain in full force and effect except as otherwise hereinafter provided.

I. Fee: The budget for services as established in the Agreement shall be increased by an amount not to exceed One Hundred One Thousand Dollars ($101,000.00), as provided for in Exhibit B, attached hereto and incorporated herein by this reference.
2. **Term of Agreement:** The term of the Agreement shall be extended to February 29, 2020 (the "Expiration Date").

3. **Remaining Portion of the Agreement:** Except as otherwise expressly set forth in this Amendment No.3, all other provision of the Agreement as amended to date shall remain in full force and effect between the Parties.

IN WITNESS WHEREOF, the parties have caused this Amendment No. 3 to the Agreement to be executed as of the Effective Date.

**BUTIER ENGINEERING, INC., ("CONSULTANT")**

Signature

Print Name

Title

**WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA**

Signature

John D.S. Allen

Print Name

President, Board of Directors

Title

Signature

Willard H. Murray, Jr.

Print Name

Secretary, Board of Directors

Title

Approved As To Form
LEAL, TREJO APC

Attorneys for the Water Replenishment District of Southern California

Water Replenishment District of Southern California
EXHIBIT “A”

AMENDMENT NO.2, AMENDMENT NO.1, and CONTRACT NO.946
AMENDMENT NO.2 TO CONTRACT NO. 946
AGREEMENT FOR PROFESSIONAL SERVICES
BETWEEN
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
AND
BUTIER ENGINEERING, INC.

This Amendment No.2 to Contract No. 946 (“Amendment No.2”), is made and entered into this 18th day of July, 2019 (“Effective Date”), by and between the Water Replenishment District of Southern California (hereinafter “District”), and Butier Engineering, Inc., (hereinafter “Consultant”). The District and Consultant are collectively referred to herein as the “Parties”.

I. RECITALS

A. WHEREAS, On October 19, 2017, a certain agreement, hereinafter referred to as Contract No. 946 (“Agreement”), was executed between the District and Consultant for Consultant to provide construction management services and oversee contractor work on three of the District’s Safe Drinking Water Program Wellhead Treatment Projects (Projects): California American Water Arlington Well, Huntington Park Well 15, and Lynwood Well 11; and

B. WHEREAS, District and Consultant desire to enter into this Amendment No.2 to the Agreement in order to increase the budgetary amount for the continuation of construction management services to oversee the completion of the three projects due to unforeseen site conditions requiring additional design and permitting delays, as set forth below.

II. AMENDMENT

NOW, THEREFORE, in consideration of the mutual covenants, promises and agreements set forth, it is agreed the aforesaid the Agreement as amended to date, a copy of which is attached hereto as Exhibit “A”, and incorporated herein by reference, shall remain in full force and effect except as otherwise hereinafter provided.

1. Fee: The budget for services as established in the Agreement shall be increased by an amount not to exceed One Hundred Seventy Thousand Dollars ($170,000.00), as provided for in Exhibit B, attached hereto and incorporated herein by this reference.

2. Remaining Portion of the Agreement: Except as otherwise expressly set forth in this Amendment No.2, all other provision of the Agreement as amended to date shall remain in full force and effect between the Parties.
IN WITNESS WHEREOF, the parties have caused this Amendment No. 2 to the Agreement to be executed as of the Effective Date.

BUTIER ENGINEERING, INC., ("CONSULTANT")

[Signature]

Print Name

Title

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

[Signature]

John D.S. Allen

Print Name

President, Board of Directors

Title

[Signature]

Secretary, Board of Directors

Title

Approved As To Form
LEAL, TREJO APC

[Signature]

Attorneys for the Water Replenishment District of Southern California
EXHIBIT “A”
AMENDMENT NO.1 TO CONTRACT NO. 946
AGREEMENT FOR PROFESSIONAL SERVICES
BETWEEN
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
AND
BUTIER ENGINEERING, INC.

This Amendment No.1 to Contract No. 946 ("Amendment No. 1"), is made and entered into this 21st day of February, 2019 ("Effective Date"), by and between the Water Replenishment District of Southern California (hereinafter "District"), and Butier Engineering, Inc., (hereinafter "Consultant"). The District and Consultant are collectively referred to herein as the "Parties".

I. RECITALS

A. WHEREAS, On October 19, 2017, a certain agreement, hereinafter referred to as Contract No. 946 ("Agreement"), was executed between the District and Consultant for Consultant to provide construction management services and oversee contractor work on three of the District's Safe Drinking Water Program Wellhead Treatment Projects (Projects): California American Water Arlington Well, Huntington Park Well 15, and Lynwood Well 11; and

B. WHEREAS, District and Consultant desire to enter into this Amendment No.1 to the Agreement in order to increase the budgetary amount for the continuation of construction management services to oversee the completion of the three projects, as set forth below.

II. AMENDMENT

NOW, THEREFORE, in consideration of the mutual covenants, promises and agreements set forth, it is agreed the aforesaid the Agreement, a copy of which is attached hereto as Exhibit "A", and incorporated herein by reference, shall remain in full force and effect except as otherwise hereinafter provided.

1. Fee: The budget for services as established in the Agreement shall be increased by an amount not to exceed Two Hundred Fifty Seven Thousand Two Hundred Thirty Two Dollars and Fifty Cents ($257,232.50), as provided for in Exhibit B, attached hereto and incorporated herein by this reference.

2. Remaining Portion of the Agreement: Except as otherwise expressly set forth in this Amendment No.1, all other provision of the Agreement shall remain in full force and effect between the Parties.
IN WITNESS WHEREOF, the parties have caused this Amendment No. 1 to the Agreement to be executed as of the Effective Date.

BUTIER ENGINEERING, INC., ("CONSULTANT")

[Signature]
Print Name: VP/CFO
Title:

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

[Signature]
John D.S. Allen
Print Name: President, Board of Directors
Title:

[Signature]
Vera Robles DeWitt
Print Name: Secretary, Board of Directors
Title:

Approved As To Form
LEAL, TREJO APC

Attorneys for the Water Replenishment District of Southern California
EXHIBIT “A”
This Professional Services Agreement (the “Agreement”) is made and entered into this 19th day of October 2017 by and between the Water Replenishment District of Southern California (“District”) and Butler Engineering, Inc. (“Consultant”) (collectively the “Parties” or individually as “Party”) for the furnishing of certain professional services upon the following terms and conditions.

1. **Scope of Services.** Consultant shall perform the scope of services described in Exhibit A hereto (“Services”). Tasks other than those specifically described in Exhibit A shall not be performed without a prior written amendment to this Agreement.

   1.1 **Standard of Care.** In performing the scope of services under this Agreement, Consultant shall exercise the standard of care and expertise prevailing in California for the performance of such services.

2. **Term.** The term of this Agreement shall commence on October 19, 2017 and shall end on October 19, 2019 (the “Expiration Date”). At least sixty (60) days prior to the Expiration Date, District staff shall evaluate the quality of the Services that have been provided by the Consultant, the cost of such Services relative to the benefits, and the need for any continuation of the services. The results of such evaluation shall be provided to the appropriate District Committee, which committee shall provide a report to the District’s Board of Directors (“Board”). If the Board determines that there is a demonstrated need for the continuation of such Services, the Board may renew the Agreement on terms and conditions that do not provide for a significantly longer term, increased scope of services or increased fee schedule than is provided for in Paragraphs 1 or this Paragraph 2. If the Board desires to modify the Agreement to provide for such a significantly longer term, increased scope of services or increased fee schedule, the District shall comply with the provisions of its then current Administrative Code concerning the solicitation and approval of proposals for professional services.

2.1 **Termination by District**

   2.1.1 **Termination for Convenience.** The District may terminate this Agreement for its convenience at any time upon five (5) days written notice to Consultant. Consultant’s compensation in the event of such a termination shall be exclusively limited to payment for all authorized services
performed and for all authorized expenses incurred up to the effective date of such termination. Consultant understands and agrees that it shall not be entitled to any additional compensation or reimbursement whatsoever in the event of such termination.

2.1.2 Consultant’s Obligations Upon Termination. Following any termination of this Agreement by the District or Consultant, the Consultant shall promptly return all District property, and shall likewise provide to District all finished and unfinished data, studies, maps, reports, and other deliverables and work-product prepared by Consultant pursuant to this Agreement.

3. Consultant’s Compensation. District will compensate Consultant for services performed and for expenses incurred pursuant to this Agreement as follows:

3.1 Fee. Consultant shall be paid in accordance with the fees and Consultant Rate Schedule attached to this Agreement as Exhibit B which may not be changed except with District’s written approval.

3.2 Reimbursable Expenses. Consultant shall be reimbursed for only pre-approved expenses, subject to the provisions of this Agreement. Consultant shall obtain the District’s prior written approval before incurring an expense not specifically provided for under this Agreement.

3.2.1 Third Party Expenses. Unless specifically provided in Exhibit B, and subject to the provisions of Paragraph 3.2, the District shall not reimburse Consultant for any costs charged to Consultant by third parties unless said costs are preapproved. In the event such costs are approved, such reimbursement shall be at cost without any markup by Consultant.

3.3 Invoices. Consultant shall submit monthly invoices to District for services performed and expenses incurred during the preceding month. District shall process Consultant’s invoice upon receipt and issue any undisputed payment in a timely manner. Consultant’s invoices shall separately identify all personnel for whose services payment is sought, the services performed, and all expenses for which reimbursement is requested. As a condition precedent to payment, District may require Consultant to furnish supporting information and documentation for all charges for which payment is sought. District shall have the right to withhold from payments to Consultant reasonably disputed amounts including, without limitation, amounts for services not performed in accordance with this Agreement and costs, expenses or damages incurred by District as a result of Consultant’s breach of this Agreement or Consultant’s negligence.

4. Consultant’s Obligation to Provide Notice of Changes. Consultant shall provide written notice to the District no later than twenty (20) days after the occurrence of any event (including any direction by the District) which Consultant believes requires a change in its compensation or the time for performance of its obligations under this Agreement. Said
notice shall describe the event and the basis for any change in compensation or time for performance requested by Consultant. The Parties shall thereafter meet and confer to determine whether such a change is appropriate. However, no such change to this Agreement may be made except by written amendment to this Agreement executed by the Parties. Consultant's failure to provide the notice required under this Paragraph shall constitute a waiver of its right to seek a change in its compensation or the time for performance of its obligations under this Agreement.

5. **Ownership and Use of Documents.** All proprietary information developed by Consultant in connection with, or resulting from, this Agreement, including but not limited to inventions, discoveries, improvements, copyrights, patents, maps, reports, textual material or software programs, shall be the sole and exclusive property of the District. Consultant agrees that the compensation to be paid pursuant to this Agreement includes adequate and sufficient compensation for any proprietary information developed in connection with or resulting from this Agreement. Consultant further understands and agrees that full disclosure of all proprietary information developed in connection with, or resulting from, this Agreement shall be made to the District, and that Consultant shall do all things necessary and proper to perfect and maintain District's ownership of such proprietary information. All documents, reports, surveys, renderings, photographs, data and other materials furnished by the District to Consultant shall remain the exclusive property of the District and shall not be distributed or provided to third parties without the express written authorization of the District.

6. **Publication of Project Information.** Consultant shall notify and obtain written approval from the District before presenting verbal or written information to outside individuals or entities about the services or project for which Consultant was retained.

7. **Patents and Copyrights.** The Consultant shall assume all costs arising from the use of patented or copyrighted materials, including but not limited to, equipment, devices, processes, and software programs used or incorporated in the work performed under this Agreement. Consultant shall defend, indemnify hold the District, its officers, directors agents, employees, representatives and assigns harmless from any and all claims, demands, suits at law, and actions of every nature for or on account of the use of any patented or copyrighted materials.

8. **Consultant's Status.** Consultant is an independent contractor and neither Consultant nor any employee of Consultant is or will be treated as an employee of the District under this Agreement. District controls the result to be accomplished under this Agreement, but not the means by which Consultant achieves such results.

8.1 Payments made to Consultant pursuant to this Agreement shall be the sole and complete compensation to which Consultant is entitled. Consultant is solely responsible for any taxes levied by local, state or federal authorities on such sums. Consultant shall defend and indemnify the District for any taxes, fines, penalties and attorneys' fees assessed or threatened to be assessed against District for failure to properly withhold taxes as a result of any determination that Consultant, or any
of Consultant’s employees, is an employee rather than an independent contractor of District.

8.2 District will not make any contribution to any retirement plan or Social Security on behalf of Consultant or any of Consultant’s employees. Consultant shall defend and indemnify the District for any contribution, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to contribute to any retirement plan or Social Security as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.3 District will not make any payments to Consultant, or Consultant’s employees, which rely upon employee status, including, but not limited to, FLSA and other overtime and minimum wage requirements, prevailing wage laws, worker’s compensation benefits, FMLA, CFRA, Paid Leave, and unemployment benefits. Consultant shall defend and indemnify the District for any payment, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to make any such payment or otherwise provide the benefits of such laws as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.4 Consultant shall comply with the Political Reform Act of 1974, as amended including, but not limited to, disclosure of all conflicts of interest and other financial disclosure requirements required thereunder.

9. Instructions to Consultant. In the performance of the services set forth in this Agreement, Consultant shall report to and receive instructions from the following person on behalf of the District: Charlene King or Ken Ortega.

10. Subconsultant Services. Any subconsultants to be used by Consultant in the performance of the scope of services shall be identified in Exhibit A hereto. Consultant shall obtain the District’s prior written approval before retaining a subconsultant to perform any portion of the scope of services of this Agreement. Notwithstanding Consultant’s use of any subconsultants, Consultant shall be responsible to the District for the performance of its subconsultants as it would be if Consultant had performed those services itself. Nothing in this Agreement shall be deemed or construed to create a contractual relationship between the District and any subconsultant employed by Consultant. Consultant shall be solely responsible for payments to any subconsultants. Consultant shall defend and indemnify the District for any payment, fines or penalties assessed or threatened to be assessed against District as a result of any claim brought by any subconsultant of Consultant for any matter arising from, or related to, the services performed by subconsultant under this Agreement.

11. Compliance With Laws and Regulations; Licensing. Consultant shall perform its services under this Agreement in compliance with all applicable provisions of Federal, State and local laws, statutes, codes, rules, regulations, ordinances and professional standards.
("Applicable Laws"). By entering into this Agreement, Consultant represents and warrants that it possesses and will keep current all license and registrations required by Applicable Laws to enter into this Agreement and to perform the scope of services hereunder.

12. **Insurance.** Consultant, at its sole cost and expense, shall obtain, keep in force, and maintain the following policies of insurance at all times while this Agreement is in effect, and shall not commence any work under this Agreement until proof of such insurance has been provided to the District. The coverages provided by such insurance shall not be construed as limitations of liability.

12.1 **Required Policies.**

12.1.1 **Commercial General Liability Insurance** (contractual, products, and completed operations coverages included) with a combined single limit of no less than $2,000,000 per occurrence or the full per occurrence limits of the policies available, whichever is greater for bodily injury, personal injury and property damage.

12.1.2 **Business or Comprehensive Automobile Liability Insurance** for owned, scheduled, non-owned, or hired automobiles, with a combined single limit of no less than $1,000,000 per accident.

12.1.3 **Professional Liability Insurance** with limits of $1,000,000 per claim and $1,000,000 in the aggregate.

12.1.4 **Employers’ Liability Insurance** with limits of $1,000,000 per claim and $1,000,000 in the aggregate.

12.1.5 **Workers’ Compensation Insurance** as required under the Workers’ Compensation Insurance and Safety Act of the State of California.

12.2 **Required Terms.**

12.2.1 All policies except workers’ compensation and professional liability, shall name as additional insureds the Water Replenishment District of Southern California, its directors, officers, employees, agents, authorized volunteers and representatives. The coverage shall contain no special limitations on the scope of protection afforded the District, its directors, officers, employees, or authorized volunteers.

12.2.2 All policies (with the exception of Professional Liability) shall be written on an occurrence basis. If a policy may only be obtained on a claims made basis, the policy shall be maintained continuously for a period of no less than three (3) years after the date of final completion of the scope of services under this Agreement.
12.2.3 All policies shall provide that coverage cannot be cancelled without thirty (30) days prior written notice to the District.

12.2.4 All insurance required under this Agreement shall be considered primary to any insurance maintained by the District. All policies except Professional Liability shall include waivers of subrogation in favor of the District and its insurers.

12.2.5 Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to District, its directors, officers, employees, or authorized volunteers.

12.2.6 The Consultant’s insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer’s liability.

12.2.7 Liability insurance shall indemnify the Consultant and his/her sub-contractors against loss from liability imposed by law upon, or assumed under contract by, the Consultant his/her sub-contractors for damages on account of such bodily injury (including death), property damage, personal injury, completed operations, and products liability.

12.2.8 Deductibles and Self-Insured Retentions – Any deductible or self-insured retention must be declared to and approved by District. At the option of District, the insurer shall either reduce or eliminate such deductibles or self-insured retentions. Policies containing any self-insured retention (SIR) provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named or additional insureds, co-insurers, and/or insureds other than the first named insured.

12.2.9 Evidence of Insurance – Prior to execution of the agreement, the Consultant shall file with District a certificate of insurance signed by the insurer’s representative evidencing the coverage required by this agreement. Such evidence shall include an additional insured endorsement signed by the insurer’s representative. Such evidence shall also comply with the Evidence and Required Forms of Insurance attached hereto as Exhibit “C”. In the event that the Consultant employs other contractors (sub-contractors) as part of the work covered by this agreement, it shall be the Consultant’s responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above. Failure to continually satisfy the Insurance requirements is a material breach of contract.

12.2.10 All polices required under this Agreement shall be issued by companies authorized to transact insurance business in the State of California acceptable to the District and having a Best rating of A- or equivalent or as otherwise approved by District.
13. **Indemnification.** Consultant shall indemnify, defend and hold harmless the District and its directors, officers, employees, agents and representatives (collectively “District”), from and against any and all claims, liabilities, costs, damages, suits, proceedings, injuries (including injuries to real and personal property, and injuries to persons, including death) incurred by District (“Losses”), as a result of Consultant’s breach of any provision of this Agreement, Consultant’s failure to comply with applicable laws, Consultant’s negligent acts or omissions, or Consultant’s willful misconduct. However, Consultant’s obligation to defend shall arise regardless of any claim or assertion that the District caused or contributed to the Losses. Nothing in this paragraph shall constitute a waiver or limitation of any legal rights which the District may have including, without limitation, the right to implied indemnity.

14. **Arbitration and Attorneys’ Fees.** Any dispute arising from or relating to this Agreement shall be submitted to final and binding arbitration before an arbitrator who is a member of the National Academy of Arbitrators. The parties will obtain a list of five names of potential arbitrators from the National Academy of Arbitrators, or the American Arbitration Association, and will take turns striking the names of arbitrators until one arbitrator remains, who shall preside over the arbitration. The arbitrator will have no power to rewrite any of the terms of this Agreement. The parties shall split the cost of the arbitrator’s fee and any court reporter required by the arbitrator or if both parties agree to having the proceedings taken down by a court reporter. The prevailing Party in any action arising from or relating to this Agreement shall be entitled to recover its reasonable attorneys’ fees, expert witness fees and arbitration fees and costs in addition to any other relief and recovery ordered by the arbitrator or other tribunal hearing any matter related to this Agreement.

15. **Conflict of Interest.** No official of the District who is authorized in such capacity and on behalf of the District to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving this Agreement, or any contract or subcontract relating to work to be performed pursuant to this Agreement, shall become directly or indirectly personally interested in this Agreement or in any part thereof. Consultant shall not accept employment or contract during the term of this Agreement with any firm or individual for the provision of services if such employment or contract would conflict directly with the Services provided to the District under this Agreement.

16. **Equal Opportunity.** During the performance of this Agreement, Consultant shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, marital status or national origin.

17. **Successors and Assigns.** This Agreement shall inure to the benefit of, and be binding upon, the District, Consultant, and their respective successors and assigns provided, however, that no assignment of the duties or benefits under this Agreement shall be made without the written consent of the Consultant and the District.

18. **Choice of Law and Venue.** This Agreement shall be governed by and interpreted in accordance with the laws of the State of California. The Parties agree that the exclusive
venue for any action or proceeding arising from or relating to this Agreement shall be in the County of Los Angeles, State of California.

19. **Notices.** All notices provided by this agreement shall be in writing and shall be sent by first-class mail and facsimile transmission as follows:

If to the District:

Water Replenishment District of Southern California  
4040 Paramount Blvd.  
Lakewood, CA 90712  
Phone: (562) 921-5521  
Fax: (562) 921-6101

If to Consultant:

Mark M. Butier, Jr.  
Butier Engineering, Inc.  
17822 E. 17th Street, Suite 404  
Tustin, CA 92780  
Phone: 714-832-7222  
Fax: 714-832-7211  
Email: jrbutier@butier.com

20. **Amendments.** This Agreement may be modified only by a writing signed by the Parties hereto.

21. **Integration: Construction.** This Agreement (inclusive of exhibits incorporated herein by this reference) sets forth the final, complete and exclusive expression of the Parties’ agreement with respect to the subject matter hereof, and supersedes any and all other agreements, representations, and promises, whether made orally or in writing. Notwithstanding anything in Exhibit A to the contrary (or any invoice or other unilateral terms or conditions provided by Consultant), in the event of any conflict or inconsistency between this Agreement and Exhibit A (or any invoice or other unilateral terms or conditions provided by Consultant), this Agreement shall control. The Parties represent and warrant that they are not entering into this Agreement based upon any representation or understanding that is not expressly set forth in this Agreement. This Agreement shall be construed as the product of a joint effort between the Parties and shall not be construed against either Party as its drafter.

22. **Effective Date.** This Agreement is effective as of the date first set forth above.
23. **Authority.** Each person signing this Agreement represents that he or she has the authority to do so on behalf of the Party for whom he or she is signing.

IN WITNESS WHEREOF, the Parties have caused this AGREEMENT to be executed the day and year first above written.

**WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA**

[Signature]
Robert Katherman
Print Name
President, Board of Directors
Title

[Signature]
Sergio Calderon
Print Name
Secretary, Board of Directors
Title

**BUTIER ENGINEERING, INC. ("CONSULTANT")**

[Signature]
[Print Name]
Title

Approved As To Form
LEAL, TREJO LLP

[Signature]
Attorneys for the Water Replenishment District of Southern California

Water Replenishment District of Southern California
9
Prof Services Contract
Butier Engineering, Inc.
EXHIBIT A
SCOPE OF WORK

1. Consultant shall perform the detailed scope of work described in the Request for Proposal (RFP) for Construction Management Services for Construction of Multiple Safe Drinking Water Wellhead Treatment Projects, attached hereto as Exhibit A-1, and as provided by Consultant's Scope of Work, attached hereto as Exhibit A-2. Should there be any discrepancy between the scope of work detailed in Exhibit A-1 and the proposal for services in Exhibit A-2, the scope of work in Exhibit A-1 shall prevail.

2. Consultant shall perform the scope of services in accordance with the approach documented in Exhibit A-2.
EXHIBIT A-1

REQUEST FOR PROPOSAL (RFP-17-004) FOR CONSTRUCTION MANAGEMENT SERVICES FOR CONSTRUCTION OF MULTIPLE SAFE DRINKING WATER WELLHEAD TREATMENT PROJECTS
REQUEST FOR PROPOSAL
(RFP-17-004)

FOR CONSTRUCTION MANAGEMENT SERVICES
FOR CONSTRUCTION OF MULTIPLE SAFE DRINKING WATER WELLHEAD TREATMENT PROJECTS

Issued: August 10, 2017

Pre-Proposal Meeting:
Tuesday, August 22, 2017 at 10:00 a.m.
WRD Board Room
4040 Paramount Blvd
Lakewood, CA 90712

Questions Regarding this RFP Due:
Friday, August 25, 2017, at 12:00 p.m.
Melody Wu, Project Administrator
E-mail: mwu@wrd.org

PROPOSAL DUE:
Thursday, August 31, 2017 at 3:00 p.m. Local Time

Submit Sealed Proposal To:
Attn: Melody Wu, Project Administrator
Water Replenishment District of Southern California
4040 Paramount Boulevard
Lakewood, CA 90712
Phone: (562) 921-5521
www.wrd.org
NOTICE TO PROPOSERS

Request For Proposals

For Construction Management Services for Construction of Multiple Safe Drinking Water Wellhead Treatment Projects

SCOPE OF SERVICES: The Water Replenishment District of Southern California (WRD) is seeking proposals from qualified firms to provide professional Construction Management (CM) for WRD’s Safe Drinking Water Program Wellhead Treatment Projects. This will be a multiple project contract for Treatment Projects located in City of Huntington Park, City of Lynwood, and City of Los Angeles. WRD intends to retain a CM Consultant to undertake various tasks to manage the construction of treatment systems through start-up.

A pre-proposal meeting will be held in the WRD Board Room at 4040 Paramount Boulevard, Lakewood, California 90712, on Tuesday, August 22, 2017 at 10:00 a.m. Firms interested in submitting proposals are encouraged to attend.

QUESTIONS REGARDING THIS RFP: All questions regarding the technical aspects or general requirements/provisions of this Request for Proposal (RFP) must be directed in writing to Melody Wu, Project Administrator, via e-mail: mwu@wrdd.org, with the subject heading “Question – RFP for SDW CM Services” by no later than Friday, August 25, 2017, at 12:00 p.m. Questions received from prospective proposers and responses from WRD will be formally documented in a Question and Answer (Q&A) table that will be posted on the WRD website: http://www.wrd.org/business/water-replenishment-business.php. The Q&A table will be updated regularly as questions are received from prospective proposers.

DEADLINE FOR PROPOSALS: Five (5) hard copies and one (1) electronic copy of the proposal must be received in a sealed envelope by WRD no later than Thursday, August 31, 2017 at 3:00 p.m., or such later time that WRD may announce by addendum to proposers at any time prior to the submittal deadline. The envelope shall be plainly marked on the exterior “PROPOSAL FOR PROFESSIONAL CONSTRUCTION MANAGEMENT” and with the name and address of the Proposer. Envelopes containing proposals will be time stamped upon receipt by WRD.

Proposals must be mailed or delivered in person or via courier services to:

   Attn: Melody Wu, Project Administrator
   Water Replenishment District of Southern California
   4040 Paramount Blvd.
   Lakewood, CA 90712

Proposals received after the deadline will not be considered under any circumstances. Faxed or e-mailed proposals will not be accepted. There will be no formal opening of the received proposals. WRD reserves the right to reject any and/or all proposals received.
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Attachment A – Form for Key Personnel Participation on the Project

Attachment B – Form for Consultant and Subconsultant Status as LBE, SBE, and VBE

Attachment C – WRD Standard Agreement for Professional Services
REQUEST FOR PROPOSAL

For Construction Management Services for Construction of Multiple Safe Drinking Water Wellhead Treatment Projects

The Water Replenishment District of Southern California (WRD or District) is seeking proposals from experienced and qualified firms (also referred to as “Consultant” or “Proposer” herein) to provide professional Construction Management services for multiple WRD Safe Drinking Water Wellhead Treatment Projects located within the WRD boundaries at various sites in Los Angeles County. WRD intends to evaluate the proposals received and enter into a Professional Services Agreement (Contract) with the qualified Consultant.

This Request for Proposal (RFP) describes the required scope of services, the information that must be included in the proposal, and the Consultant selection process. Proposers are encouraged to carefully review this RFP in its entirety prior to submitting their proposals. Failure to submit information in accordance with these requirements and procedures may be cause for disqualification. This RFP is available for downloading from the WRD website: http://www.wrd.org/business/water-replenishment-business.php.

2.0 INTRODUCTION

The WRD is a State Special District that was established in 1959 under the California Water Code (Division 18, §60000 through §60622) to manage the groundwater resources within the Central Basin and West Coast Basin in southern Los Angeles County. WRD’s mission is to provide, protect and preserve high-quality groundwater through innovative, cost-effective and environmentally sensitive basin management practices for the benefit of residents and businesses of these groundwater basins. The aquifers in the Central Basin and West Coast Basin provide for about 40 percent of the total water needs for the people and businesses in the 43 cities covering WRD’s 420-square mile service area.

To accomplish its mission, WRD conducts managed aquifer recharge using imported water, recycled water, and storm water, prevents seawater intrusion through injection of imported water and recycled water into coastal barrier wells, protects and preserves groundwater quality through monitoring, testing, data analysis, and treatment, and ensures a future supply of reliable groundwater through planning, conjunctive use, and development of new projects. More information regarding the WRD can be found at www.wrd.org.
3.0 BACKGROUND

Years of improper disposal of industrial solvents allowed volatile organic compounds (VOCs) to seep into Southern Los Angeles county groundwater aquifers. As a result, wells within the area served by WRD have been adversely affected by these contaminants. To mitigate this problem, WRD established a Safe Drinking Water Program as part of its Clean Water Program in 1991. Since that time seventeen projects have been constructed, thirteen of which are VOC removal projects.

The WRD Safe Drinking Water Program provides funding for and is responsible for the design, construction, and purchase of the wellhead treatment equipment. WRD processes the necessary environmental documentation. However, the water producer (groundwater pumper) is responsible for obtaining any health department, discharge, and air quality permits. The pumper is also responsible for operating and maintaining the facilities. Three wells have recently been selected for inclusion in the program. They are the City of Huntington Park Well 15, City of Lynwood Well 11, and California American Water Company Arlington Well. WRD has retained the design consultants to plan, design, and provide engineering assistance during the construction of treatment systems through start-up. WRD intends to retain a construction management team to provide inspection and construction management services of treatment systems through start-up for all four locations.

4.0 SCOPE OF WORK

The Consultant shall provide the following services, including but not limited to those described below, and may propose additional tasks or phases which they feel is necessary based on the information provided and to their experience on projects of similar size and scope.

The overall goals of are:

1. Provide a constructability review of the three project plans & specifications prior to bidding.

2. Assist WRD and the well owners in the issuance and advertisement of bids, and recommendation of contractors to supply and install the systems.

3. Manage the complete construction, inspection, installation, and operation verification of the three wellhead treatment systems at the identified locations. Each project will be bid separately

The construction of these project are to be achieved in the shortest time period and at the most economical cost. The Consultant shall develop a construction management plan to ensure construction can be accomplished within the proposed project budget and schedule. It is the District’s goal to construct the project concurrently if possible.
# PROJECT LOCATIONS & MAP

![Map of project locations and map](image)

<table>
<thead>
<tr>
<th>Item</th>
<th>City of Huntington Park Well No. 15</th>
<th>City of Lynwood Well No. 11</th>
<th>California American Water Company Arlington Well</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>6720 Cottage Street, Huntington Park, CA</td>
<td>11645 Esther Street Lynwood, CA</td>
<td>5109 Arlington Avenue, Los Angeles, CA</td>
</tr>
<tr>
<td>Well Capacity (gpm)</td>
<td>1100</td>
<td>650</td>
<td>800</td>
</tr>
<tr>
<td>Contaminant(s)</td>
<td>Trichloroethylene (TCE)</td>
<td>Trichloroethylene (TCE)</td>
<td>Trichloroethylene (TCE)</td>
</tr>
<tr>
<td>Proposed Treatment System</td>
<td>Granular Activated Carbon (GAC) System</td>
<td>Granular Activated Carbon (GAC) System</td>
<td>Granular Activated Carbon (GAC) System</td>
</tr>
</tbody>
</table>
TASK 1 – Meetings

TASK 1.1 – Kick-Off Meeting

1. WRD
   Consultant shall meet with WRD personnel to discuss scope of work, project team, and project schedule, and to receive any additional background information.

2. Others
   Consultant shall meet with each of the pumpers, other stakeholders and WRD staff to discuss project locations, site constraints, access restrictions, any prior treatment that may have been performed, and unique features of sites, practical restrictions, and pumper preferences.

TASK 1.2 – Monthly Progress Meetings

Consultant shall meet monthly with WRD staff and purveyor representatives to discuss project progress.

Deliverable: Meeting minutes

TASK 2 – Constructability Review of Plans and Specifications

It is the overall goal of the District to save time and money by uncovering problems or potential problems that may be encountered during construction such as errors, omissions, ambiguities and conflicts. The consultant shall review each project’s plans & specifications prior to bidding to ensure a clear and complete set of bid documents and reduce impacts to the project. The consultant will review the plans, specifications, and bid schedule to make sure the work requirements are clear, conflicts are identified & corrected and reduce the need for clarifications.

Deliverable: Constructability Report. The Consultant will mark up the plans and specifications to identify the areas of needed corrections. The Consultant will also provide the review comments in spreadsheet format where comments can be quickly sorted.

TASK 3 – Construction Management

Consultant shall assign manpower, delegate responsibilities, review work progress, and otherwise direct the progress of the work so as to ensure satisfactory completion of work, on schedule and within budget. Consultant shall prepare and submit monthly progress reports and invoices, and all other applicable project documentation to the District for review and approval.
Task 3.1 – Project Management

The consultant shall oversee construction management of the projects. The responsibilities shall include:

1. Bid Advertisement and Award - During the advertisement period, the consultant shall be available to answer questions that any potential bidder may have and shall conduct Pre-Bid meetings for each facility. Consultant shall assist WRD in evaluation and verification of the accuracy of the bids received to ensure responsiveness, and recommend award.

2. Preconstruction meeting—This shall be held with the contractor of each facility to go over the schedule and various responsibilities.

3. Progress meetings. The consultant shall develop the progress meeting schedule to ensure that proper progress is being achieved on the projects. Based on the scope of work described herein, the Consultant shall propose the frequency of meetings needed to successfully complete each project.

4. Submittals—Consultant shall review shop drawings and other submittals produced by contractor for conformance with design specifications and recommend approval, rejection, or modification.

5. Inspection—The consultant shall be present to inspect and recommend the acceptance, rejection, or modification of equipment delivered or work performed.

6. Progress Payments—Consultant shall recommend review monthly contractor invoices and recommend payment or rejection.

7. Change Orders – Consultant shall review and coordinate change order requests.

Deliverable: Meeting notes and activity summaries, and recommendation memoranda

Task 3.2 – Progress Reports and Invoicing

Each month, the Consultant shall submit a progress report along with an invoice for the work accomplished during the reporting period. The report shall describe in detail the progress made during the previous month and the hours spent on each task. Percentage completed and anticipated date of completion for each task shall be included. Invoices submitted shall be consistent with the monthly progress report format. The approved total budget, along with the budget for any task, shall not be exceeded unless previously authorized in writing by WRD. The Consultant shall notify WRD’s Project Manager immediately upon reaching 50 and 75 percent of the project’s budget.
The monthly invoice shall be in a format approved by the District. Each project will be invoiced separately. At a minimum, each invoice shall contain the purchase order or contract number and shall be itemized by task. A subtotal cost for each task shall be included. Names of persons, their job titles, hourly billing rates, actual hours worked during the billing period, and subtotal labor costs must be summarized in a table. Attach to each invoice all documentation for other direct costs in the form of receipts or vendor invoices, with the applicable costs identified for items such as equipment costs. WRD will provide reporting requirements to Consultant, and Consultant shall prepare invoices that comply with the requirements. Failure to satisfy the reporting requirements may result in rejection or short pay of the invoices submitted to WRD for payment.

5.0 DESIRED QUALIFICATIONS

WRD will evaluate all responsive proposals based on the qualifications listed below.

1. Demonstrate at least 5 years of experience working on similar water treatment projects.

2. The Consultant firm must be located within 60 miles of WRD’s District boundaries.

3. Commitment to providing a single Project Manager/Program Manager as WRD’s primary point of contact. This Project Manager must have at least 5 years (total, with or without current firm) of professional construction management experience working on similar projects of similar size and scope or larger.

4. Professional Construction Management certifications/licenses or Engineering with a specialization in Construction Management.

6.0 PROPOSAL CONTENTS

To provide a degree of consistency in review of the written proposals, firms are requested to include the following content in their proposals. The information requested below will be used to evaluate each proposal based on the evaluation criteria outlined in this RFP. Proposals may be deemed nonresponsive if they do not respond to all areas specified below.

Proposals shall be prepared simply and economically, providing a straightforward and concise description of how the proposal has satisfied all the requirements of this RFP. Emphasis shall be on completeness and clarity of content with sufficient detail to allow for accurate evaluation and comparative analysis. Excessive or irrelevant materials will not be favorably received.

The following subsections describe the contents required in the proposal. The proposal shall be of such scope and depth to sufficiently describe and demonstrate the Proposer’s understanding of and approach to the projects.

August 10, 2017
RFP for Professional Construction Management Services
RFP-17-004
6.1 Title Page

Proposer should identify the RFP title, name and title of the firm’s contact person, address, telephone number, fax number, email address, and date of proposal submission.

6.2 Cover Letter

A principal of the firm authorized to commit the firm to the requirements of the RFP must sign the cover letter. The letter shall discuss the Proposer’s commitment to providing high quality services as described in the RFP. Additionally, the letter shall briefly describe the firm’s understanding and approach to the services. The letter should identify a contact person (name, e-mail address, and phone number) for future communication during the selection process.

6.3 Table of Contents

The table of contents should include a clear and complete identification by section and page number of the submitted materials.

6.4 Company Background

Provide a brief background of the firm including history, types of services provided, organization structure, number of employees, annual revenues, number of offices and locations with staff size and disciplines, and any other relevant information that may be useful in determining the firm’s qualifications to provide the services described in this RFP. Include a brief summary of the firm’s philosophy related to the planning and design of Project(s).

6.5 Project Overview and Approach

Present a narrative overview of the Proposer’s understanding of the RFP requirements and the overall approach and technical plan for accomplishing the work assignments. Provide a narrative demonstrating your firm’s or team’s ability to accomplish the scope of services in a comprehensive and thorough manner with an aggressive schedule in order to meet the District’s goal of moving the projects through construction within the earliest possible timeframe. Also discuss at a minimum the following:

(i) Ability to successfully complete work assignments within the District’s required timeframe and, as necessary, on short notice,

(ii) Approach to assignment of work within the firm and how team members will conduct tasks and prepare anticipated deliverables,
(iii) Describe the Proposer’s project management approach and communications protocol,

(iv) Describe the Proposer’s approach to quality assurance and control, as well as any performance guarantees,

(v) Technical approach to assigned tasks on how the projects will be implemented from construction to completion and,

(vi) Identify current and reasonably foreseeable actual and possible constraints, problems, and/or issues that could hinder the execution of services under the contract, and suggest approaches to resolving or managing these constraints, problems, and/or issues.

6.6 Additional Services

Include any comments, suggestions, or additions the Proposer may have regarding the scope of work or any other aspects of the work that the Proposer feels would be helpful to WRD in selecting a firm for the services described in the RFP. Identify the potential impact(s) or benefit(s) that these recommendations would have if accepted by WRD. Tasks above the minimum to complete the work described herein shall be clearly identified as “optional” in the proposal.

6.7 Experience and Record of Past Performance

Describe Proposer’s experience in completing similar assignments, preferably using the same project team proposed for the services described in this RFP. Using the form provided as Attachment A, list at least five (5) water treatment related construction management projects successfully completed within the last five (5) years of similar nature that demonstrate the firm’s and its subconsultants’ (if needed) competence to perform the work described in this RFP. Ongoing projects currently being performed by the Proposer also may be submitted for consideration.

Clearly identify the role of all team members in each of the projects referenced. For each of the reference projects listed, provide the following information:

1 Name and location of project;

2 Name and address of project owner/sponsor;

3 Name and current phone number and e-mail address of owner’s representative intimately familiar with the project, to contact for reference. Verify the reference person that can be contacted at the phone number provided;

4 A description of type and extent of services provided for the project;
5 Project budget (both projected and "as completed");

6 Project schedule milestones (both projected and "as completed"). Include dates of project initiation, key milestones and deliverables, and completion date or status of the project;

7 Special problems or difficulties encountered, such as project budget and schedule control issues, and how they were resolved by the Consultant; and

8 Applicability and relevance of the referenced project to the services described in this RFP.

In addition, the Consultant shall provide a minimum of five (5) client references from similar projects completed in the last five (5) years. The District at its discretion may contact other firms or agencies for additional information. Failure to provide accurate contact information, adequate information or project reference summaries may be cause for rejection of the proposal as being nonresponsive.

6.8 Project Team and Qualifications

Provide an organizational chart that describes the structure of the project team, including subconsultants/subcontractors. The project team description shall identify the following:

- The Project Manager,

- The names of readily-available key personnel that will be deployed for each task and their contact information, and the primary office locations of each project team member (preferably within the southern Los Angeles County area),

- The role each team member will play in providing services under the Contract, and

- A written assurance that the key individuals listed and identified will be performing the work and will not be substituted with other personnel or reassigned to another project without the District’s prior approval. The proposal shall clearly identify who will lead the execution of assigned tasks and the respective personnel that will be assigned to them.

Provide a description of the experience, qualifications including required licenses and certifications, area of expertise or specialization, and availability (including current workload) of the project team members, including subconsultants/subcontractors, if any. Describe other project commitments by project team members and the anticipated level of involvement of each team member based on the abilities and expertise required for the type of work desired.

Provide the resumes of all members of the project team, including subconsultants/subcontractors, as an appendix. Each resume shall not exceed three (3) pages and shall include name and title, education, years with the company, licenses and certifications (issue and
expiration dates), home office location, relevant experience within at least the last five (5) years, and other required qualifications discussed in this RFP.

The identified Project Manager will be WRD's main point of contact for all assigned projects for the duration of the Contract. The proposal shall include the Project Manager's contact information, including phone and e-mail address.

Once a Contract has been executed, the Consultant must request approval of the District in advance of any new personnel being assigned to the project. The District reserves the right to reject or remove personnel performing services at any time for the duration of the Contract. Complete a table (an example is provided in Attachment B) that summarizes the percentage of work (based on fees) to be performed by the Consultant and each Subconsultant. Specify the certification status of the Consultant and its subconsultants with respect to Local Business Enterprise (LBE), Small Business Enterprise (SBE), and Veteran Business Enterprise (VBE). The status of business enterprise is requested information in this proposal and will be used as criteria for proposal evaluation. Failure to include the completed form may be grounds for considering the proposal to be nonresponsive. Please refer to Section 10.6 for definitions of LBE, SBE, and VBE.

6.9 Conflict of Interest

Provide a statement that the Proposer, individuals employed by the Proposer, or firms employed by or associated with the Proposer, including subconsultants/subcontractors, do not have a conflict of interest with the Project. The Proposer shall exercise reasonable efforts to prevent any actions or conditions that could result in a conflict of interest and shall include, but is not limited to, establishing precautions to prevent its employees or agents from making, receiving, providing in, or offering gifts, entertainment, payments, loans, or other considerations which could be deemed to appear to influence individuals to act contrary to the best interest of the District. If a potential conflict of interest is identified in any form, the Proposer shall inform the District immediately. Proposers are subject to disqualification on the basis of a conflict of interest as determined by WRD.

6.10 Other Information

The proposal shall include a statement that the Proposer will meet the insurance requirements per Section 12.1 of the District's standard Professional Services Agreement, which is attached to this RFP as Attachment C. Present a statement or description regarding any litigation to which the firm is a party, any bankruptcy settlements, or unpaid judgments against the firm or its principals. Provide a statement as to whether the firm has defaulted on previous professional contracts.

6.11 WRD Standard Contract

The selected Consultant shall be expected to execute a Contract using the District's standard
Professional Services Agreement, which is provided as Attachment C. Proposers shall provide a statement in their proposals clearly stating acceptance of all the terms and conditions specified in the standard Professional Services Agreement (i.e. no exceptions can be made to WRD’s standard Professional Services Agreement).

6.12 Project Costs and Labor Hours

The proposal shall include a table showing the following information:

- Labor hour breakdowns by the project tasks and subtasks identified in Section 3.0 (including other subtasks that the Proposer sees fit) and associated personnel, including any subconsultants, as well as total hours. Names and titles/categories of individuals proposed to work on the project tasks/subtasks, including names of subconsultants/subcontractors shall be indicated.

- Fully loaded hourly billing rates – All direct, capital, and reimbursable expenses, including but not limited to travel and transportation costs, meals, lodging, office equipment and supplies, administrative and communications fees, etc., must be built into the hourly rates. Therefore, the District shall not pay Consultant nor its subconsultants/subcontractors for any direct or reimbursable expenses incurred for implementation of the scope of services described herein.

- The labor hours and fees for proposed optional tasks, if any, shall be presented in a separate table to differentiate from the baseline Scope of Work.

It is expected that the indicated hourly rates will remain in effect for the duration of the Contract unless otherwise specified and approved by WRD. The rate sheet shall also include any other rates or fees, such as markups for subconsultants/subcontractors not identified as part of the project team, equipment markups, or other direct costs that may be incurred.

The proposal shall also include a description of the anticipated method of billing for services performed, with provisions for monthly billing that will include itemized accounting of hours of personnel, hourly rates, and percent completion for each task identified.

7.0 PROPOSAL SUBMISSION REQUIREMENTS

7.1 Proposal Format

The proposal shall be limited to no more than 25 pages in length. This does not include the title page, table of contents, cover letter, appendices, dividers, or résumés. All sections of the proposal shall be printed on 8.5” x 11” size recycled paper or recyclable white bond paper,
paginated, and bound. Any oversized documents, such as charts or tables, must be folded to size and secured in the envelope.

All files shall be in a text searchable PDF format (i.e., not scanned images) compatible with Adobe Acrobat Version 8.0 (at a minimum). The main directory of the CD/flash drive shall contain the entire proposal as a single PDF file. All sections of the PDF file shall be bookmarked.

7.2 Proposal Signing

The proposal shall be signed by an officer, or officers, authorized to execute legal documents on behalf of the Proposer. The submission and signing of the proposal shall indicate the intention of the Proposer to adhere to the provisions described in this RFP and certifies that the proposal was prepared independently and was submitted without any collusion designed to limit competition or bidding.

7.3 Proposal Submittal Procedures

Five (5) hard copies of the proposal shall be submitted in a scaled envelope to WRD no later than the proposal due date and time indicated in this RFP. The envelope shall be plainly marked on the exterior “PROPOSAL FOR PROFESSIONAL CONSTRUCTION MANAGEMENT-INSPECTION SERVICES” and with the name and address of the Proposer. In addition, an electronic copy of the proposal on a CD or flash drive shall be submitted. Envelopes containing proposals will be time stamped upon receipt by WRD.

Proposals must be mailed or delivered in person or via courier services to:

Attn: Melody Wu, Project Administrator  
Water Replenishment District of Southern California  
4040 Paramount Blvd.  
Lakewood, CA 90712

It is the Proposer’s responsibility to ensure that proposals are received prior to the submittal deadline. Proposal packages should also include all signed Acknowledgment of Addendum forms that may be issued by WRD as part of this RFP process, as further described below.

The WRD will not be responsible for the proper identification and handling of any proposals submitted incorrectly. Late proposals, late modification, or late withdrawals will not be considered under any circumstances. Faxed or emailed proposals will not be accepted. There will be no formal opening of the received proposals.

7.4 Questions Regarding the RFP

Questions concerning the technical aspects or general requirements/provisions of the RFP must be received no later than the due date indicated in this RFP and must be directed in writing to
Melody Wu, WRD Project Administrator, via email only to: mwu@wrd.org with the subject heading “Question – RFP for SDW CONSTRUCTION MANAGEMENT Services”.

Questions received from prospective proposers and responses from WRD will be formally documented in a Question and Answer (Q&A) table that will be posted on the WRD website: http://www.wrd.org/business/water-replenishment-business.php. The Q&A table will be updated regularly as questions are received from prospective proposers. As a result, all proposers are recommended to visit the above-mentioned WRD website on a regular basis. Responses to questions may result in the issuance of an Addendum to the RFP, as further described in Section 10.4.

7.5 Proposal Preparation Costs

This solicitation does not commit the District to award any work nor to pay any costs incurred from the preparation of proposals. Firms responding to this RFP will be solely responsible for all costs and expenses incurred during the selection process.

8.0 PRE-PROPOSAL MEETING

A pre-proposal meeting is scheduled for Tuesday, August 22, 2017 at 10:00 a.m., at WRD’s Board Room located at 4040 Paramount Boulevard in Lakewood, California 90712. Prospective proposers are encouraged to attend and present questions regarding all requirements and provisions specified within the RFP and the Consultant selection process. Responses to questions will be formally documented and distributed. Meeting participants are required to sign in and provide a business card upon arrival at the meeting room. A copy of the sign-in sheet will be posted on the WRD website: http://www.wrd.org/business/water-replenishment-business.php.

9.0 PROCUREMENT SCHEDULE AND PROCESS

9.1 Solicitation Schedule

Milestones for the RFP process are summarized in the table below. The District reserves the right to modify the schedule below at its discretion. Proper notification changes will be made to interested proposers.

<table>
<thead>
<tr>
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<tr>
<td>RFP Issued by WRD</td>
<td>August 10, 2017</td>
</tr>
<tr>
<td>Pre-Proposal Meeting</td>
<td>Tuesday, August 22, 2017 at 10:00 a.m.</td>
</tr>
<tr>
<td>Deadline for Questions Regarding this RFP</td>
<td>Friday, August 25, 2017, at 12:00 p.m.</td>
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<tr>
<td>Proposals Due</td>
<td>Thursday, August 31, 2017 at 3:00 p.m.</td>
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<tr>
<td>WRD Board Awards Contract</td>
<td>Thursday, September 21, 2017</td>
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9.2 Selection Process
This solicitation is being conducted by WRD through a fair and open process in accordance with procurement policies established for water replenishment districts in the State of California, those policies established by WRD, and applicable State laws.

All responsive proposals will be evaluated by a selection committee formed by the District. The proposal shall be of such scope and depth to sufficiently describe and demonstrate the Proposer’s understanding, approach, and qualifications to successfully complete the scope of services described herein. Submittal of incomplete or vague responses to any section or subsection of this RFP may result in rejection of the proposal. Proposals will be evaluated, scored, and ranked based on the criteria specified in Section 10 of this RFP.

Once the proposers are ranked, WRD will initiate negotiation with the top-rated proposer. If WRD is unable to reach an agreement with the top-rated proposer, negotiations will be formally terminated. WRD will then negotiate with the next highest-ranked proposer and so on until an agreement is reached. Once negotiations with a proposer are terminated, WRD will not renegotiate with that proposer.

The firm that is recommended to the WRD Board of Directors for award of contract will be the one whose proposal is determined to be the most advantageous to the District in consideration of price and all other evaluation factors that are set forth in this RFP. No other factors or criteria not listed in this RFP shall be used in the evaluation.

10.0 EVALUATION CRITERIA

Selection will be made on the basis of WRD’s judgment as to which proposal best serves WRD’s interest. The proposal will be evaluated on the basis of the criteria listed below in this section. Proposals also will be evaluated based on the clarity, completeness, and professional quality of the documents submitted, as well as conformance to the RFP instructions and responsiveness to the RFP requirements in a straightforward and concise manner.

10.1 Project Team and Qualifications

Project team’s technical and management competence to perform the work specified herein will be evaluated. Considerations include, but are not limited to the following:

- Professional qualifications and education of the project team.

- Expertise and the appropriate mix of skills and disciplines of the project team and percentage of work to be self-performed.

- The accessibility and commitment of the Proposer’s key personnel and subconsultants/ subcontractors to successfully complete assigned projects, including the geographic proximity of each team member’s primary office location with respect to the District’s service area.
• Ability to perform work on short notice and anticipated response times.
• Capacity and flexibility to complete high quality work in a timely manner that meets the established schedule.
• Familiarity with the policies and procedures of the District, County, and other local agencies.

10.2 Project Understanding and Approach

The following will be considered in the evaluation of proposals:

• Understanding of the nature of professional services contracts and expected tasks to be performed.
• Work schedule and methodology to completing assigned tasks, specifically with regards to budget sensitivity, efficiency, adherence to District standards and applicable regulatory codes, and pertinence of the assigned tasks.
• Demonstration on how the Proposer will organize the execution of assigned projects, including the make-up of the team, the leadership of the team, the accountability of the Project Manager, and the lines of authority.
• A strong project management structure that includes clearly defined communications protocols (including how the Proposer’s staff will interact with the District’s team and project manager), procedures for coordination throughout the assigned project, and subconsultant/subcontractor integration.
• A solid quality assurance and control program that demonstrates a clear understanding of the need and process of ensuring WRD receives the highest quality product required for assigned projects.
• Overall clarity, creativity, and logic, and completeness of the approach. The proposal should demonstrate interest and insight to the specific details of WRD’s desired services.
• Other services or considerations not addressed in the RFP, but were deemed to be pertinent to the scope of services by the Proposer.

10.3 Performance on Similar or Related Projects

WRD reserves the right to conduct an independent verification of the Proposer’s experience qualifications by contacting project references, accessing public information, or contacting independent parties. Prospective proposers shall respond and provide additional information that may be requested during the evaluation of proposals. Factors to be considered will include, but may not be limited to, experience with similar projects, project coordination, cost control, quality of work, technical capability, and adherence to project schedules and standards.
10.4 Billing Rates

Hourly billing rates, including markup rates, will be evaluated with respect to the anticipated overall value for services proposed.

10.5 Organizational and Support Resources

The following will be considered in the evaluation of proposals:

1. Capability under current workload to perform the work specified herein. Factors to be considered include, but may not be limited to, number of qualified staff allocated to assigned projects, availability of key personnel and support staff, knowledge of local conditions, and demonstrated ability to meet proposed project schedules.

2. Anticipated response times after notification of work assignments by WRD.

10.6 Local Business Enterprise (LBE) and Small Business Enterprise (SBE) and Veteran Business Enterprise (VBE) Preference

The District may give preference in the evaluation of proposals to proposers based on the extent of participation demonstrated through compliance with LBE, SBE, and VBE participation. For purposes of this evaluation, the District may provide preference of up to 5% of the total evaluation points for consultants with at least 20% participations of LBE or at least 20% participations of SBE/VBE.

A Local Business Enterprise (LBE) is defined as a vendor, contractor, or consultant who has a valid physical business address and an established place of business: (1) located within five miles of the District’s service boundary or (2) located within a city that is situated within five miles of the District’s service boundary.

A Small Business Enterprise (SBE) shall mean a small business enterprise certified as such by any branch of the Federal Government, the State of California, or by any other Public Entity within the State of California as defined by California Public Contract Code Section 1100. To qualify for the SBE Preference, SBEs must be certified as such at the time the proposal is submitted to the District. Proof of certification should be submitted to the District along with the proposal, and not later than two (2) business days after the deadline for submitting proposals. Proof shall include a copy of each SBE’s certification or other appropriate documentary evidence by the certifying public entity. Proof of certification may be subject to verification by the District. The District shall not, however, be required to verify the accuracy of any such certifications, and shall have the sole discretion to determine if a respondent is a SBE. Companies having certifications for Veteran Business Enterprise (VBE) may submit such certifications, which may be used by the District in partial fulfillment of the 20% SBE participation.
For companies with multiple offices, the office affiliation of the proposed individuals working on the project will be used as a means to estimate the company’s LBE participation.

For Local Business Enterprise (LBE), Small Business Enterprise (SBE), and Veteran Business Enterprise (VBE) preference consideration, the Consultant and Subconsultant Status as LBE, SBE, and VBE form, which is attached to this RFP as Attachment B, must be completed.

11.0 GENERAL PROVISIONS

The Proposer should specify if any of the requirements included in this section or any other section of the RFP pose a specific problem, and if so, identify the problem and its impact within the proposal.

11.1 Entire Agreement

The services described in this RFP, the successful proposal (with any proposed optional tasks) approved by WRD, the purchase order, and any written changes or amendments to the scope of services shall represent the entire Agreement between the parties and shall supersede all prior written or oral representations, discussions, and agreements. Furthermore, this RFP is not only meant to aid in the preparation of proposals, but it is also intended to serve as a binding technical guidance document for the Consultant. The consulting firm awarded a contract to provide services described in this RFP shall be deemed bound to execute all requirements as listed and prescribed in this RFP, unless WRD modifies aspects of the scope of work or any conditions in the RFP in writing. Thus, the executed Contract will incorporate the terms and conditions specified in this RFP, as well as the final scope of work and fee schedule submitted by the Consultant as part of its proposal.

11.2 Contract Amendments

Changes that affect the scope of work, period of performance or time schedule, and costs will be effected by written notices of amendment. No payments will be made for work performed outside the original scope of work unless prior written approval was granted by WRD. The Consultant may be required to provide additional services under a negotiated change order approved in writing by WRD.

11.3 Term of Contract

Upon approval by the WRD Board of Directors, the District shall enter into a contract with a maximum term of two years with selected firm.
11.4 Ownership and Use of Documents

Consultant will be required to treat WRD’s documents in confidence and shall indemnify WRD in case of alteration, loss, or damage thereto. Consultant shall not release to the general public, public agencies, or private businesses in any manner, any information, data, or documents developed pursuant to the performance of services specified herein without the expressed written consent of WRD.

Any preliminary or working drafts, notes, and inter-agency or intra-agency memoranda that are not expected to be retained by the Consultant or WRD in the ordinary course of business shall be exempt from disclosure to any public entity under provisions of the Public Records Act.

11.5 Business Records Access and Retention

All records pertaining to this Project, which are retained by the Consultant, shall be accessible to WRD while work is ongoing and for at least five years thereafter.

11.6 Termination

WRD may terminate the project at any time at its sole discretion. Notice of termination will be provided in writing. Upon termination of the project, WRD shall make payment to the Consultant only for services provided up to the date of termination.

12.0 TERMS AND CONDITIONS

12.1 Proposal Rejection

WRD reserves the right to accept or reject any or all proposals received in response to this RFP or cancel in whole or part the selection process if it is in the best interest of the District to do so. Alternatively, the District reserves the right to waive any minor defect or technicality in any proposal received.

12.2 Proposal Clarification and Requests for Additional Information

All proposals shall be afforded fair and equal treatment with respect to any opportunity for clarification. WRD reserves the right to request clarification of information submitted and to request additional information from any or all proposers. The District may require any evidence it deems necessary, such as documentation regarding the Proposer’s financial stability, before any contract is awarded. In conducting discussions with proposers, there shall be no disclosure of information derived from proposals submitted by competing firms.

12.3 Proposal Validity Period
Proposers may withdraw their proposals at any time prior to the due date and time by submitting a written notification of withdrawal signed by the firm’s authorized agent. Proposers who withdraw their proposals prior to the designated date and time may still submit another proposal if done in accordance within the proper time frame. A proposal cannot be changed or modified after it has been submitted by the designated due date and time and shall constitute an irrevocable offer, for a period of ninety (90) days, to WRD for the services set forth in the proposal.

12.4 RFP Revisions and Addenda

WRD reserves the right to issue a written Addendum or Addenda to provide further clarification or make revisions/corrections to the RFP. All Addenda will be issued via e-mail to prospective proposers who were initially forwarded the RFP via e-mail as well as other prospective proposers who have subsequently provided WRD with their contact information (i.e. e-mail address and telephone number). All Addenda will also be posted on the WRD website (http://www.wrd.org/business/water-replenishment-business.php) within a reasonable timeframe prior to the proposal due date. If an Addendum is necessary within 72 hours of the proposal submittal deadline, the District, at its discretion, can extend the proposal submittal deadline. Any Addendum issued must be acknowledged by the Proposer by signing and submitting the “Acknowledgment of Addendum” form that will be provided with each Addendum. All Acknowledgment of Addendum forms must be submitted to WRD as part of the proposal package that is submitted by the proposal due date. Failure to acknowledge any Addenda may result in the proposal being considered nonresponsive and subject to rejection.

The Proposer shall be responsible for ensuring that its proposal reflects any and all addenda issued by the District prior to the submittal due date. Therefore, the District recommends that prospective proposers check the WRD website prior to making their submission.

12.5 Confidentiality

The content of proposals will be kept confidential until the award of contract by the WRD’s Board of Directors. All materials submitted in response to this RFP will become the property of the WRD and will become public record after award of contract to the successful Consultant. The WRD will not return any proposals to proposers.

If a Proposer believes any portion of its proposal contains confidential or proprietary information, exempt from public disclosures under the California Public Records Act, the Proposer must label that information within its proposal as “CONFIDENTIAL”, “TRADE SECRET”, or “ PROPRIETARY.” The above restrictions may not include cost or price information, which shall be open to the public upon award of contract. Notwithstanding the foregoing, the District will not be responsible or liable in any way for losses that the Proposer may incur from the disclosure of information or material to third parties.
13.0 LEGAL POLICIES

13.1 Compliance

The Consultant shall abide by and obey all applicable federal, state, and local laws, rules, regulations, and ordinances.

13.2 Governing Laws and Requirements

Performance of services herein shall be governed and construed in accordance with the laws of the State of California. The selected Consultant hereby agrees that in any action relative to the performance of said services, venue shall be in the County of Los Angeles, State of California.

13.3 Public Releases

The Consultant agrees not to use or otherwise make public in any manner, either for profit or nonprofit, any of the information, data, procedures, systems, or documentation developed pursuant to the performance of services specified herein without the expressed written permission of WRD.

13.4 Business License

The Consultant will be required to show evidence of all valid and applicable business license(s), which must be in effect during the period of the performance of services specified herein.

13.5 WRD’s Property

All deliverables submitted pursuant to the performance of services specified herein shall become the sole property of WRD and they may be used in any manner and for any purpose WRD deems in its best interest.
ATTACHMENTS
Attachment A

Key Personnel Participation in Example Projects
### KEY PERSONNEL PARTICIPATION IN EXAMPLE PROJECTS

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<th>NAMES OF KEY PERSONNEL</th>
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**EXAMPLE PROJECTS KEY**

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ATTACHMENT A

KEY PERSONNEL PARTICIPATION IN EXAMPLE PROJECTS

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EXAMPLE PROJECTS KEY

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Attachment B

Consultant and Subconsultant Status as LBE, SBE and VBE
### Attachment B - Consultant and Subconsultant Status as LBE, SBE and VBE

**Professional Services for Construction Management for WRD's Safe Drinking Water Projects**

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Attachment C

WRD Standard Agreement for Professional Services
This Professional Services Agreement (the "Agreement") is made and entered into this __ day of __________, _______ by and between the Water Replenishment District of Southern California ("District") and [Insert Contractor Name] ("Consultant") (collectively the "Parties" or individually as "Party") for the furnishing of certain professional services upon the following terms and conditions.

1. **Scope of Services.** Consultant shall perform the scope of services described in Exhibit A hereto ("Services"). Tasks other than those specifically described in Exhibit A shall not be performed without a prior written amendment to this Agreement.

   1.1 **Standard of Care.** In performing the scope of services under this Agreement, Consultant shall exercise the standard of care and expertise prevailing in California for the performance of such services.

2. **Term.** The term of this Agreement shall commence on [Month, Day, Year] and shall end on [Month, Day, Year] (the "Expiration Date"). At least sixty (60) days prior to the Expiration Date, District staff shall evaluate the quality of the Services that have been provided by the Consultant, the cost of such Services relative to the benefits, and the need for any continuation of the services. The results of such evaluation shall be provided to the appropriate District Committee, which committee shall provide a report to the District’s Board of Directors ("Board"). If the Board determines that there is a demonstrated need for the continuation of such Services, the Board may renew the Agreement on terms and conditions that do not provide for a significantly longer term, increased scope of services or increased fee schedule than is provided for in Paragraphs 1 or this Paragraph 2. If the Board desires to modify the Agreement to provide for such a significantly longer term, increased scope of services or increased fee schedule, the District shall comply with the provisions of its then current Administrative Code concerning the solicitation and approval of proposals for professional services.

   2.1 **Termination by District**

   2.1.1 **Termination for Convenience.** The District may terminate this Agreement for its convenience at any time upon five (5) days written notice to Consultant. Consultant's compensation in the event of such a termination shall be exclusively limited to payment for all authorized services performed and for all authorized expenses incurred up to the effective date.
of such termination. Consultant understands and agrees that it shall not be entitled to any additional compensation or reimbursement whatsoever in the event of such termination.

2.1.2 Consultant’s Obligations Upon Termination. Following any termination of this Agreement by the District or Consultant, the Consultant shall promptly return all District property, and shall likewise provide to District all finished and unfinished data, studies, maps, reports, and other deliverables and work-product prepared by Consultant pursuant to this Agreement.

3. Consultant’s Compensation. District will compensate Consultant for services performed and for expenses incurred pursuant to this Agreement as follows:

3.1 Fee. Consultant shall be paid in accordance with the fees and Consultant Rate Schedule attached to this Agreement as Exhibit B which may not be changed except with District’s written approval.

3.2 Reimbursable Expenses. Consultant shall be reimbursed for only pre-approved expenses, subject to the provisions of this Agreement. Consultant shall obtain the District’s prior written approval before incurring an expense not specifically provided for under this Agreement.

3.2.1 Third Party Expenses. Unless specifically provided in Exhibit B, and subject to the provisions of Paragraph 3.2, the District shall not reimburse Consultant for any costs charged to Consultant by third parties unless said costs are preapproved. In the event such costs are approved, such reimbursement shall be at cost without any markup by Consultant.

3.3 Invoices. Within thirty (30) days of Agreement execution, the Consultant shall include a Form W-9 as a prerequisite for payment. Consultant is to include the District’s purchase order number when submitting monthly invoices to District for services performed and expenses incurred during the preceding month. District shall process Consultant’s invoice upon receipt and issue any undisputed payment in a timely manner. Consultant’s invoices shall separately identify all personnel for whose services payment is sought, the services performed, and all expenses for which reimbursement is requested. As a condition precedent to payment, District may require Consultant to furnish supporting information and documentation for all charges for which payment is sought. District shall have the right to withhold payments to Consultant reasonably disputed amounts including, without limitation, amounts for services not performed in accordance with this Agreement and costs, expenses or damages incurred by District as a result of Consultant’s breach of this Agreement or Consultant’s negligence.

4. Consultant’s Obligation to Provide Notice of Changes. Consultant shall provide written notice to the District no later than twenty (20) days after the occurrence of any event (including any direction by the District) which Consultant believes requires a change in its
compensation or the time for performance of its obligations under this Agreement. Said notice shall describe the event and the basis for any change in compensation or time for performance requested by Consultant. The Parties shall thereafter meet and confer to determine whether such a change is appropriate. However, no such change to this Agreement may be made except by written amendment to this Agreement executed by the Parties. Consultant’s failure to provide the notice required under this Paragraph shall constitute a waiver of its right to seek a change in its compensation or the time for performance of its obligations under this Agreement.

5. **Ownership and Use of Documents.** All proprietary information developed by Consultant in connection with, or resulting from, this Agreement, including but not limited to inventions, discoveries, improvements, copyrights, patents, maps, reports, textual material or software programs, shall be the sole and exclusive property of the District. Consultant agrees that the compensation to be paid pursuant to this Agreement includes adequate and sufficient compensation for any proprietary information developed in connection with or resulting from this Agreement. Consultant further understands and agrees that full disclosure of all proprietary information developed in connection with, or resulting from, this Agreement shall be made to the District, and that Consultant shall do all things necessary and proper to perfect and maintain District’s ownership of such proprietary information. All documents, reports, surveys, renderings, photographs, data and other materials furnished by the District to Consultant shall remain the exclusive property of the District and shall not be distributed or provided to third parties without the express written authorization of the District.

6. **Publication of Project Information.** Consultant shall notify and obtain written approval from the District before presenting verbal or written information to outside individuals or entities about the services or project for which Consultant was retained.

7. **Patents and Copyrights.** The Consultant shall assume all costs arising from the use of patented or copyrighted materials, including but not limited to, equipment, devices, processes, and software programs used or incorporated in the work performed under this Agreement. Consultant shall defend, indemnify hold the District, its officers, directors agents, employees, representatives and assigns harmless from any and all claims, demands, suits at law, and actions of every nature for or on account of the use of any patented or copyrighted materials.

8. **Consultant’s Status.** Consultant is an independent contractor and neither Consultant nor any employee of Consultant is or will be treated as an employee of the District under this Agreement. District controls the result to be accomplished under this Agreement, but not the means by which Consultant achieves such results.

8.1 Payments made to Consultant pursuant to this Agreement shall be the sole and complete compensation to which Consultant is entitled. Consultant is solely responsible for any taxes levied by local, state or federal authorities on such sums. Consultant shall defend and indemnify the District for any taxes, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure
to properly withhold taxes as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.2 District will not make any contribution to any retirement plan or Social Security on behalf of Consultant or any of Consultant’s employees. Consultant shall defend and indemnify the District for any contribution, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to contribute to any retirement plan or Social Security as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.3 District will not make any payments to Consultant, or Consultant’s employees, which rely upon employee status, including, but not limited to, FLSA and other overtime and minimum wage requirements, prevailing wage laws, worker’s compensation benefits, FMLA, CFRA, Paid Leave, and unemployment benefits. Consultant shall defend and indemnify the District for any payment, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to make any such payment or otherwise provide the benefits of such laws as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.4 Consultant shall comply with the Political Reform Act of 1974, as amended including, but not limited to, disclosure of all conflicts of interest and other financial disclosure requirements required thereunder.

9. **Instructions to Consultant.** In the performance of the services set forth in this Agreement, Consultant shall report to and receive instructions from the following person(s) on behalf of the District: ____________________________.

10. **Subconsultant Services.** Any subconsultants to be used by Consultant in the performance of the scope of services shall be identified in Exhibit A hereto. Consultant shall obtain the District’s prior written approval before retaining a subconsultant to perform any portion of the scope of services of this Agreement. Notwithstanding Consultant’s use of any subconsultants, Consultant shall be responsible to the District for the performance of its subconsultants as it would be if Consultant had performed those services itself. Nothing in this Agreement shall be deemed or construed to create a contractual relationship between the District and any subconsultant employed by Consultant. Consultant shall be solely responsible for payments to any subconsultants. Consultant shall defend and indemnify the District for any payment, fines or penalties assessed or threatened to be assessed against District as a result of any claim brought by any subconsultant of Consultant for any matter arising from, or related to, the services performed by subconsultant under this Agreement.

11. **Compliance With Laws and Regulations; Licensing.** Consultant shall perform its services under this Agreement in compliance with all applicable provisions of Federal, State and
local laws, statutes, codes, rules, regulations, ordinances and professional standards ("Applicable Laws"). By entering into this Agreement, Consultant represents and warrants that it possesses and will keep current all license and registrations required by Applicable Laws to enter into this Agreement and to perform the scope of services hereunder.

12. **Insurance.** Consultant, at its sole cost and expense, shall obtain, keep in force, and maintain the following policies of insurance at all times while this Agreement is in effect, and shall not commence any work under this Agreement until proof of such insurance has been provided to the District. The coverages provided by such insurance shall not be construed as limitations of liability.

12.1 **Required Policies.**

12.1.1 **Commercial General Liability Insurance** (contractual, products, and completed operations coverages included) with a combined single limit of no less than $2,000,000 per occurrence or the full per occurrence limits of the policies available, whichever is greater for bodily injury, personal injury and property damage.

12.1.2 **Business or Comprehensive Automobile Liability Insurance** for owned, scheduled, non-owned, or hired automobiles, with a combined single limit of no less than $1,000,000 per accident.

12.1.3 **Professional Liability Insurance** with limits of $1,000,000 per claim and $1,000,000 in the aggregate.

12.1.4 **Employers’ Liability Insurance** with limits of $1,000,000 per claim and $1,000,000 in the aggregate.

12.1.5 **Workers’ Compensation Insurance** as required under the Workers’ Compensation Insurance and Safety Act of the State of California.

12.2 **Required Terms.**

12.2.1 All polices except workers’ compensation and professional liability, shall name as additional insureds the Water Replenishment District of Southern California, its directors, officers, employees, agents authorized volunteers and representatives. The coverage shall contain no special limitations on the scope of protection afforded the District, its directors, officers, employees, or authorized volunteers.

12.2.2 All policies shall be written on an occurrence basis. If a policy may only be obtained on a claims made basis, the policy shall be maintained continuously for a period of no less than three (3) years after the date of final completion of the scope of services under this Agreement.
12.2.3 All policies shall provide that coverage cannot be cancelled without thirty (30) days prior written notice to the District.

12.2.4 All insurance required under this Agreement shall be considered primary to any insurance maintained by the District. All policies except Professional Liability shall include waivers of subrogation in favor of the District and its insurers.

12.2.5 Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to District, its directors, officers, employees, or authorized volunteers.

12.2.6 The Consultant’s insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer’s liability.

12.2.7 Liability insurance shall indemnify the Consultant and his/her sub-contractors against loss from liability imposed by law upon, or assumed under contract by, the Consultant his/her sub-contractors for damages on account of such bodily injury (including death), property damage, personal injury, completed operations, and products liability.

12.2.8 Deductibles and Self-Insured Retentions – Any deductible or self-insured retention must be declared to and approved by District. At the option of District, the insurer shall either reduce or eliminate such deductibles or self-insured retentions. Policies containing any self-insured retention (SIR) provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named or additional insureds, co-insurers, and/or insureds other than the first named insured.

12.2.9 Evidence of Insurance – Prior to execution of the agreement, the Consultant shall file with District a certificate of insurance signed by the insurer’s representative evidencing the coverage required by this agreement. Such evidence shall include an additional insured endorsement signed by the insurer’s representative. Such evidence shall also comply with the Evidence and Required Forms of Insurance attached hereto as Exhibit C. In the event that the Consultant employs other contractors (sub-contractors) as part of the work covered by this agreement, it shall be the Consultant’s responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above. Failure to continually satisfy the Insurance requirements is a material breach of contract.

12.2.10 All policies required under this Agreement shall be issued by companies authorized to transact insurance business in the State of California acceptable to the District and having a Best rating of A- or equivalent or as otherwise approved by District.
13. **Indemnification.** Consultant shall indemnify, defend and hold harmless the District and its directors, officers, employees, agents and representatives (collectively “District”), from and against any and all claims, liabilities, costs, damages, suits, proceedings, injuries (including injuries to real and personal property, and injuries to persons, including death) incurred by District (“Losses”), as a result of Consultant’s breach of any provision of this Agreement, Consultant’s failure to comply with applicable laws, Consultant’s negligent acts or omissions, or Consultant’s willful misconduct. However, Consultant’s obligation to defend shall arise regardless of any claim or assertion that the District caused or contributed to the Losses. Nothing in this paragraph shall constitute a waiver or limitation of any legal rights which the District may have including, without limitation, the right to implied indemnity.

14. **Arbitration and Attorneys’ Fees.** Any dispute arising from or relating to this Agreement shall be submitted to final and binding arbitration before an arbitrator who is a member of the National Academy of Arbitrators. The parties will obtain a list of five names of potential arbitrators from the National Academy of Arbitrators, or the American Arbitration Association, and will take turns striking the names of arbitrators until one arbitrator remains, who shall preside over the arbitration. The arbitrator will have no power to rewrite any of the terms of this Agreement. The parties shall split the cost of the arbitrator’s fee and any court reporter required by the arbitrator or if both parties agree to having the proceedings taken down by a court reporter. The prevailing Party in any action arising from or relating to this Agreement shall be entitled to recover its reasonable attorneys’ fees, expert witness fees and arbitration fees and costs in addition to any other relief and recovery ordered by the arbitrator or other tribunal hearing any matter related to this Agreement.

15. **Conflict of Interest.** No official of the District who is authorized in such capacity and on behalf of the District to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving this Agreement, or any contract or subcontract relating to work to be performed pursuant to this Agreement, shall become directly or indirectly personally interested in this Agreement or in any part thereof. Consultant shall not accept employment or contract during the term of this Agreement with any firm or individual for the provision of services if such employment or contract would conflict directly with the Services provided to the District under this Agreement.

16. **Equal Opportunity.** During the performance of this Agreement, Consultant shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, marital status or national origin.

17. **Successors and Assigns.** This Agreement shall inure to the benefit of, and be binding upon, the District, Consultant, and their respective successors and assigns provided, however, that no assignment of the duties or benefits under this Agreement shall be made without the written consent of the Consultant and the District.

18. **Choice of Law and Venue.** This Agreement shall be governed by and interpreted in accordance with the laws of the State of California. The Parties agree that the exclusive
venue for any action or proceeding arising from or relating to this Agreement shall be in the County of Los Angeles, State of California.

19. **Notices.** All notices provided by this agreement shall be in writing and shall be sent by first-class mail and facsimile transmission as follows:

If to the District:

Water Replenishment District of  
Southern California  
Attn: WRD Project Manager  
WRD Contract Administrator  
4040 Paramount Blvd.  
Lakewood, CA 90712  
Phone: (562) 921-5521  
Fax: (562) 921-6101

If to Consultant:

Contact Name  
Address  
Address  
City, State ZIP  
Phone:  
Fax:  
Email:

20. **Amendments.** This Agreement may be modified only by a writing signed by the Parties hereto.

21. **Integration; Construction.** This Agreement (inclusive of exhibits incorporated herein by this reference) sets forth the final, complete and exclusive expression of the Parties’ agreement with respect to the subject matter hereof, and supersedes any and all other agreements, representations, and promises, whether made orally or in writing. Notwithstanding anything in Exhibit A to the contrary (or any invoice or other unilateral terms or conditions provided by Consultant), in the event of any conflict or inconsistency between this Agreement and Exhibit A (or any invoice or other unilateral terms or conditions provided by Consultant), this Agreement shall control. The Parties represent and warrant that they are not entering into this Agreement based upon any representation or understanding that is not expressly set forth in this Agreement. This Agreement shall
be construed as the product of a joint effort between the Parties and shall not be construed against either Party as its drafter.

22. **Effective Date.** This Agreement is effective as of the date first set forth above.

23. **Authority.** Each person signing this Agreement represents that he or she has the authority to do so on behalf of the Party for whom he or she is signing.

IN WITNESS WHEREOF, the Parties have caused this AGREEMENT to be executed the day and year first above written.

**WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA**

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<tr>
<td>Robert Katherman</td>
<td>Sergio Calderon</td>
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<tr>
<td>Print Name</td>
<td>Print Name</td>
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<tr>
<td>President, Board of Directors</td>
<td>Secretary, Board of Directors</td>
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<tr>
<td>Title</td>
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[INSERT CONTRACTOR NAME], ("CONSULTANT")

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<th>Signature</th>
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<tbody>
<tr>
<td>Print Name</td>
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<td>Title</td>
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**Approved As To Form**

LEAL, TREJO LLP

Attorneys for the Water Replenishment District of Southern California
EXHIBIT A
SCOPE OF WORK

[Insert detailed description of scope of work.]
EXHIBIT B  
CONSULTANT RATE SCHEDULE

Attach provided Rate Schedule Here.

If Rate Schedule/Budget is not included in proposal, complete the following:

1.0 Consultant shall be compensated for actual services performed in accordance with this Agreement [insert appropriate language: at the hourly rates, monthly sum or the lump sum amount.]

2.0 A budgetary amount of $[_____________] (which amount applies to Consultant's fee and reimbursable expenses) is established for this Agreement. Notwithstanding any other provision of this Agreement, the District shall not be obligated to pay Consultant any amount in excess of said budgetary amount absent prior written approval from the District. Likewise, Consultant shall not be obligated to perform services or incur expenses in excess of the budgetary amount absent prior written approval from the District.

[Insert additional terms as needed after consultation with counsel.]
EXHIBIT C
EVIDENCE AND REQUIRED FORMS OF INSURANCE

Checklist for Additional Insured Endorsement

Contractor Name: ________________________________
Project Name: _________________________________

Refer to the Additional Insured Endorsements forms E1-8 following:

☐ Additional Insured (AI) Status – GENERAL LIABILITY - Member Water District, its directors, officers, employees, or authorized volunteers are named as additional insureds - as broad as following forms:
   o Form CG 20 10 11 85 (E1) or
   o BOTH CG 20 10 (E2) and CG 20 37 (E3) if forms with later edition dates provided (usually 10 01 or 07 04 editions). Also acceptable CG 20 10 04 13 (or older editions E2) specifically naming the District parties or using language that states "as required by contract"
   o "Blanket" Endorsement - (no specific policy number) (E4) covering one or more of the above endorsements required with words "as required by written contract/agreement"

   o If large number of Subcontractors - Additional Insured endorsement CG 20 38 04 13 recommended. (E5)
      o Policy numbers - matches policy number shown on Certificate of Insurance. (see Optional Dec. Page/Endorsement pages below)
      o Primary Coverage – The primary/non-contributory language is included. "The insurance provided by this policy shall be primary as respects any claims related to the _______ Project. Any insurance, self-insurance, or other coverage maintained by the district, its directors, officers, employees, or volunteers shall not contribute to it." e.g. Form CG 20 01 (E6)

☐ Auto liability (Optional (E7)) AI - most standard forms have automatic AI but some carriers provide endorsement

☐ Waiver of Subrogation (Workers Compensation and Property (Course of Construction, if required in contract) (E8)

☐ Optional - For extra confidence in verifying coverage require Declaration Page and Endorsement Schedule pages - compare the endorsement numbers. Look out for Amendment of contractual liability and or prior works exclusions - refer to Legal Counsel.
EXHIBIT A-2

SCOPE OF WORK

Water Replenishment District of Southern California

Exhibit A
Scope of Work

Professional Services Contract
Butler Engineering, Inc.
3. Project Overview & Approach

PROJECT UNDERSTANDING
The Butler Team understands that the District is seeking a qualified consulting firm to perform professional construction management and inspection services of treatment systems through start-up for three wellhead locations. The purpose of the project is to install wellhead treatment equipment on wells that have been identified under the Safe Drinking Water Program as contaminated with volatile organic compounds (VOCs). The contaminant for all of the wells is Trichloroethylene (TCE) and the proposed treatment system for each is the Granular Activated Carbon (GAC) System. The three wells that have recently been selected for inclusion in the project include the following:

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<th>Well / Location</th>
<th>Capacity</th>
<th>Design Stage</th>
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<tr>
<td>City of Huntington Park Well No. 15</td>
<td>1100 gpm</td>
<td>65%</td>
</tr>
<tr>
<td>6720 Cottage Street Huntington Park, CA</td>
<td></td>
<td>Tetra Tech</td>
</tr>
<tr>
<td>City of Lynwood Well No. 11</td>
<td>650 gpm</td>
<td>85%</td>
</tr>
<tr>
<td>11645 Esther Street Lynwood, CA</td>
<td></td>
<td>KEH &amp; Associates</td>
</tr>
<tr>
<td>California American Water Company Arlington Well</td>
<td>800 gpm</td>
<td>90%</td>
</tr>
<tr>
<td>5109 Arlington Ave. Los Angeles, CA</td>
<td></td>
<td>Valentine Environmental Engineers</td>
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</table>

The estimated cost of construction for each well is $1 million - $1.5 million. The projects will be staggered and are expected to overlap. It is anticipated that the combined project duration will be less than two years with each well taking six (6) to eight (8) months from NTP to start-up. The actual labor hours spent on site isn't expected to take the full 6 - 8 months.

Most of the project duration will consist of procuring the wellhead treatment equipment, which has a long lead time. Each separate bidding will include the purchase and installation of the treatment equipment. It will not be pre-purchased by the District. The site work is minimal and will consist mostly of pipe work and concrete foundations.

SCOPE OF WORK

1. Meetings

A. Kick-off Meeting
The Butler Team will schedule and facilitate a kick-off meeting with WRD personnel to discuss the scope of work, project team, and project schedule and to receive any additional background information. In addition, the Butler Team will schedule and facilitate kick-off meetings with each of the pumpers, project stakeholders and WRD staff to discuss the following: any prior treatment that may have been performed; contract administration guidelines; contractual roles; and reinforcement of specific requirements for safety, access, and coordination issues for the work. The CM/Lead Inspector will provide a meeting agenda three (3) days in advance of the meeting and transmit meeting minutes to all attendees within three (3) business days.

B. Monthly Progress Meetings
The Project Manager and CM/Lead Inspector will schedule and conduct construction progress meetings with WRD staff and purveyor representatives and provide meeting agendas. Topics discussed at the meetings will include the project schedule; near-term activities; clarifications and problems that need resolution; coordination with other Contractors; status of change orders, submittals, and RFIs; safety issues; OSHA visits and citations; and other topics. The PM and CM/Lead Inspector will identify action items and assign responsibility for the action and date action is to be completed; prepare minutes of the meetings and include identified action items; review the meeting minutes with the Contractors and obtain the Contractors' concurrence with the content; and distribute the minutes to the attendees within five (5) calendar days of the meeting.

C. Pre-Construction Scheduling Meeting
Butler's Project Manager / Senior Scheduler and CM/Lead Inspector will facilitate a pre-construction scheduling meeting with the District and the Contractors to discuss the scheduling specification requirements and format. The meetings will facilitate timely submittal, review, and approval of the Baseline Schedules and help to reduce the number of resubmittals. The CM/Lead Inspector will prepare an agenda 5 business days prior to the meetings and submit to the District for approval. The CM/Lead Inspector will distribute meeting minutes to all attendees within 3 business days of the meetings.
2. Constructability Review

Prior to bid of each project, the Butier Team will review the plans and specifications (including the bid schedule). Written comments will be provided related solely to the completeness and adequacy of the documents for bidding and construction purposes. Particular emphasis will be placed on the adequacy of the documents for constructability, promotion of site safety, avoidance of construction contractor claims and construction cost overruns, meeting environmental compliance, and meeting overall project schedules. The Team will identify ambiguities, conflicts, lack of clarity, and use of unnecessarily restrictive requirements.

The CM team—consisting of professional civil, mechanical, and electrical engineers—will implement a checklist for thorough constructability reviews through final design completion of the project plans, technical specifications, and estimates provided by the design consultants (KEH & Associates, Tetra Tech, and Valentine Environmental Engineers). The CM Team will prepare a report for each project for review, comment, and approval by the District prior to submitting comments to the design consultants. The constructability reviews will include, but not be limited to, the following: technical elements of the design; completeness and compatibility of the plans and technical specifications; compatibility of the design packages; and feasibility of the construction staging/phasing.

Review comments will address the minimization of interference between all construction contractors working at the various sites. The Team will provide review comments to the District in a written report, consistent with the design review schedule. The review comments will be provided electronically in a spreadsheet format specified by the Design Engineers and the WRD Project Manager.

3. Construction Management

A. Bid Advertisement and Award

Our Team can assist the District in conducting contractor outreach to help publicize the projects and ensure an adequate number of bidders. Effective bidder outreach will help to ensure that large bidding pools are created. Our Team can also assist the District by conducting effective pre-bid meetings including site tours, if necessary. These serve to inform bidders about key project issues and requirements resulting in more responsive bids and better bid prices. The CM Team will assist District staff with the advertisement for bids, conduct pre-bid meetings, be available to answer questions that any potential bidder may have, receive and evaluate all bids submitted, prepare a bid summary sheet of all bids, conduct a reference check on the apparent low bidders, and provide recommendations to the District for bid award. The PM will assist the District with any bid protests and contract negotiations.

B. Pre-Construction Meeting

The Project Manager and CM/Lead Inspector will schedule and facilitate pre-construction meetings for each project with the Contractors and the District. The project team will provide the following to the Contractors: contract administration guidelines, contractual roles, reinforcement of specific requirements for safety, access, and coordination issues for the work. The CM will provide a meeting agenda and distribute meeting minutes to all attendees within 2 business days.

C. Weekly Project Progress Meetings

The Project Manager and CM/Lead Inspector will facilitate weekly construction progress meetings for each project with the Contractors, the District and other necessary stakeholders. The CM/Lead Inspector will prepare an agenda prior to the meeting and distribute meeting minutes within 3 business days. The meetings will cover site safety, progress, job problems, and any actions requiring clarification of design intent, ambiguities in contract documents, and other key issues. Action monitoring will be implemented to ensure compliance and timely response by all parties.

D. Document Control System

Butier utilizes cloud-based construction project management software. The program affords the project team with 24/7 visibility into project status and a centralized, comprehensive platform to manage all vital project data. The program will allow us to create "dashboards" specific to the user. This will allow District staff and vital stakeholders to quickly access project records for key metrics and provide near real time updates of project progress.

E. Shop Drawings and Submittal Reviews

The Butier Team will be responsible for processing and monitoring the status of submittals for each project. Using a systematic tracking procedure established by the CM/Lead Inspector for timely submittal review and processing of shop drawings with means for acceleration of review possible for significant critical controlling shop drawings. In meeting the District's internal timeframes, submittals will be processed on a one-week turnaround basis or sooner. Submittal tracking will be introduced into the electronic document control system and status of submittals will
be known at all times. This system will be coordinated with each Contractor per contract document requirements. The CM/Lead Inspector will provide limited reviews as shop drawings are received during the construction phase and provide recommendations and review comments supplemented by District staff.

F. On-Site Field Inspection
Butier will provide a CM/Lead Inspector who is qualified to oversee all of the work at each project site, including project start-up performed by the Contractors to ensure it is in compliance with the contract documents, industry standards and applicable codes, local regulations, and construction permits. Additional CM/Lead Inspector responsibilities include the following:

- **Pre-Construction Survey:** Perform a pre-construction site video survey with the Contractors prior to the NTP. Document the existing condition of all areas that will be impacted by construction. The CM/Lead Inspector will also take digital photographs to document the existing conditions. The survey documentation will be provided to the project team via a cloud based link. A permanent record will be downloaded at the end of the project.

- **Daily Inspection Reports:** For each project, the CM/Lead Inspector will maintain daily inspection reports, which will be submitted to the District on a weekly basis. The reports will document construction activities for each well, including the date, day of week, and weather conditions; hours of work; personnel on site; equipment being used; idle or inoperable equipment; details of each activity; controversial matters/disputes; deficiencies and violations; instructions issued to the construction contractor; safety concerns; description of accidents; major material and equipment deliveries to the site; names of visitors to the site; and delays and extra work.

- **Photographic Records:** Provide weekly photographic/digital records of each project during construction. Log construction digital photographs on a daily basis. A digital photographic library will be maintained of significant construction activities. The photographs will be labeled with the date, location, and narrative information. Additional digital photographs will be taken of change order and claim items, and any special or unique conditions as they arise. The photographic library will be turned over to the District at the completion of the construction contract.

- **Schedule Review:** Reviewing the Contractors’ two week “look ahead” schedules and coordinate staffing needs with Butier’s Project Manager.

- **Record Drawings:** The CM/Lead Inspector will review each Contractor’s record drawings on a monthly basis to ensure that timely recording is being accomplished. The CM/Lead Inspector will ensure that District record drawings identify RFIs, shop drawing revisions, change order modifications, etc. and that they are updated weekly. The record drawings will be submitted to the Design Engineers at the completion of each project. The CM/Lead Inspector will coordinate the submittal of completed record drawings to the District’s Records Manager. The CM/Lead Inspector will hold monthly record drawing review meetings with the District’s PM and the Contractors prior to submittal of monthly progress payments. Construction contract documents should provide the District with the ability to withhold a percentage of the monthly pay request to ensure timely completion of as-built drawings. Butier will be utilizing Blue Beam.

- **RFIs:** Discuss responses to RFIs with Butier’s Project Manager as required and coordinate the replies to the Contractors; review of the submittals; provide non-conformance reports; and provide documentation of construction activities, duration of activities, manpower and equipment allocation.

G. Review Monthly Progress Payments
The CM/Lead Inspector will receive, check, and verify all Contractor monthly progress payment requests and other project-related invoices based on the cost-loaded schedule. The progress payment worksheet will be based on an approved schedule of values. Progress pay requests will be checked against the approved schedule of assigned values and actual in-place quantities verified at the end of the pay period. The pay request format will be established by the project team to expedite checking, processing, and subsequent updating of project budgets and cost projections and forwarded to the District’s Project Manager for approval and payment to the Contractors.

H. Contractor Claims & Change Orders
The Project Manager and CM/Lead Inspector will have no authority to issue changes or modifications to the contract documents. The CM/Lead Inspector will track, document, and negotiate all changes for added costs or credits with the Contractor and evaluate all schedule impacts of changes. The Project Manager and CM/Lead Inspector will advise the District’s Project Manager of equitable cost and time adjustments for proposed or authorized changes including credits, if any that are due.
Butler's Project Manager and the CM/Lead Inspector will evaluate all claims by the Contractor seeking additional costs or additional time for contract modifications. The documentation of claims issues are included in the Document Control System and provide the Team with detailed data for determining the validity of all requests. Butler's Project Manager and the CM/Lead Inspector will assess whether the claim is merited and make recommendations on resolution or denial of claimed costs. The CM/Lead Inspector will identify, prepare, log and monitor all Contractor claims or changes and will prepare a position paper setting forth the contractual basis of the change order entitlement, background leading to the request for potential change order, possible resolution to change requests, and recommendations for the District's decision.

I. Review Contractor's CPM Schedule
Butler's Project Manager / Senior Scheduler will evaluate and monitor the Contractors' Baseline Schedules, weekly look-ahead schedules, monthly schedule updates, Time Impact Analyses (TIAs), schedule revisions, and as-built schedule submittals. The Project Manager / Senior Scheduler will also update the overall project schedules to reflect actual progress and changes. Slippage of any contract activities on the critical path, as well as time sequence problems, will be identified early so that the Team may take corrective action, if possible. The Contractors should be required to re-evaluate the logic of their original schedules and resubmit revised planning should the original plan be ineffective or not followed. Contractor time extensions must be supported by critical path impacts on the approved baseline schedules. The Butler Team will utilize Primavera Project Planner (P6) to perform schedule reviews.

J. Project Reports and Invoicing
Each month, the CM/Lead Inspector will submit a progress report along with an invoice for the work accomplished during the reporting period. The report will describe in detail the progress made during the previous month and the hours spent on each task. Percentage completed and anticipated date of completion for each task will be included. Invoices submitted will be consistent with the monthly progress report format. The approved budget, along with the budget for any task, will not be exceeded unless previously authorized in writing by the District. The Project Manager and CM/Lead Inspector will notify the District's Project Manager immediately upon reaching 50 and 75 percent of the project's budget.

The monthly invoice will be in a format approved by the District. Each project will be invoiced separately. At a minimum, each invoice will contain the purchase order or contract number and will be itemized by task. A subtotal for each task will be included. Names of persons, their job titles, hourly billing rates, actual hours worked during the billing period, and subtotal labor costs will be summarized in a table. The Butler Team will adhere to the reporting requirements provided by the District and will prepare invoices that comply with the requirements.

4. Closeout and Acceptance

A. Testing
The CM/Lead Inspector will observe and coordinate that testing for each well has been successfully completed and verify and confirm that proper operation for all systems is satisfactory. After successful testing, a written report will be provided to the District.

B. Final Punch List
The CM/Lead Inspector will prepare a project punch list at substantial completion of each project and coordinate the correction of deficiencies and schedule. Upon correction of deficiencies by the Contractors, the CM/Lead Inspector will coordinate and conduct a final walk-through prior to the acceptance of work with the Design Engineers, District's Project Manager, District's Operations and Maintenance Department, and other staff as directed by the District's Project Manager.

C. Final Payment Requests
The CM/Lead Inspector will verify that the Contractors have made all payments to the subcontractors and vendors and that any stop notices or liens have been released.

D. Contractor's Project Record Drawings
The Butler Team will review the Contractor's final red-line drawings for completeness and accuracy before final payment is approved and drawings are given to the Design Engineers for incorporation into AutoCAD. The Project Manager will submit the final red-line drawings (hard copies and electronic PDF copies) to the District and the Design Engineers.

E. Final Progress Documentation Report
The CM/Lead Inspector will prepare and submit a final progress report to the District no later than 60 calendar days following the filing of the Notice of Completion.

F. Project Documents and Files
The CM/Lead Inspector will furnish all original project documents and final reports—including daily logs and photographs—to the District's PM within 60 calendar days following filing of the Notice of Completion.
**Project Management Approach**

The Butler Team will use a project control system consisting of four elements that provide quality assurance/quality control procedures and guidelines in the execution of all construction management projects. The four elements are:

- Technical Quality Control Procedures
- Cost and Schedule Control (For CM Team and Construction Contracts)
- Quality Assurance/Quality Control
- Construction Management Communications Manual

A. **Technical Quality Control Procedures**

Technical quality control on each project is accomplished by three primary means:

1. Assigning experienced, qualified project personnel
2. Implementing regular checking procedures
3. Conducting technical reviews.

It is our policy to assign to every project one or more senior staff members to serve as technical advisors. For larger projects, we request the owner allow us to form a technical review committee (TRC) whose responsibilities include: infusing innovative technical concepts at the beginning of a project; providing technical guidance to the Project Manager and team members throughout the course of the work; resolving technical issues; reviewing the work at key milestones to see that the work product meets and exceeds the high standards for technical excellence that Butler sets for itself; and assuring the technical adequacy of the project prior to the submittal of the product to the District.

B. **Cost and Schedule Control**

While the CM Team’s ability to meet schedule milestones will be important for meeting the overall goals of the project, their ability to monitor and manage the Contractor’s performance will be critical to minimizing problems during construction. Contractor schedule requirements will be specified in the contract documents based on the needs of the project. Such requirements include substantial completion deadlines and interim and final completion dates. The Butler Team will use two primary tools to track construction schedule performance. **First, resource-loaded schedules (Primavera)** are the basis for evaluating performance and identifying if potential problems will occur. **Second, variance identification/analysis** initiates recovery when problems do occur.

The construction progress will be evaluated based on data contained in approved, resource-loaded critical path method schedules. The Contractor will be required to submit detailed resource-loaded schedules for acceptance by the District. The Contractor is then required to provide timely, detailed status information as the work progresses. The Butler Team will project future performance through trend analysis and evaluate the Contractor’s actual performance by comparing actual quantities completed versus planned. The primary resource loading for these evaluations include: 1) Cost (dollars); 2) Man-hours (by craft); 3) Quantity of work (cubic yards, linear feet, etc.); and 4) Construction equipment listing.

An initial baseline schedule submittal from the Contractor must be reviewed for compliance with the contract documents and established procedures to determine that the schedule logic is accurate, durations are reasonable, float is managed properly, adequate reserves are established, pending and approved changed orders are included, and most important, that the schedule is a reliable tool for measuring progress.

Every measurement of schedule performance must be compared with the approved or baseline contract schedule. While all deviations from the baseline schedule are variances, not all variances are significant or schedule threatening.

The CM Team must be aware of the activity start date, regardless of float. Schedule variances must be addressed with the Contractor at weekly progress meetings and whenever the CM Team deems appropriate. The importance of schedule management and “staying ahead of the Contractor” is critical for managing an inexperienced Contractor or managing a Contractor that is prone to submitting claims, in order to minimize costs to the District. The Butler Team has managed both types of Contractors on similar projects.

The CM Team will evaluate each variance, its cause and possible corrective actions, and require the Contractor to provide an action plan to correct unsatisfactory variances. If a satisfactory resolution is not achieved, the CM Team must take action. Control of schedule performance must be addressed at the weekly progress meetings with the Contractor. Anticipated work to be accomplished should be reviewed based on a three-week “look ahead” schedule updated weekly by the Contractor. Available information must be evaluated for schedule exceptions, available contractual options, and corrective actions required by the Contractor.
Recovery plans are required whenever the Contractor falls significantly behind schedule. These plans should address mitigation efforts such as additional crews and shifts, or developing work-around schedules that move the delayed activity off the critical path so that its completion will not affect critical milestones.

The Butler Team will prepare monthly project reports that track project status and budget as a means of documenting the project history. A cost analysis will be performed that analyzes earned value and includes projections of expenditures. Critical issues will be identified, and an analysis will include action items and recommendations for resolution.

C. Quality Assurance and Quality Control Plan
The Butler Team will develop a QA/QC Plan for the assigned projects. The plan will reflect a set of objectives defined by District staff, assigned CM and inspection personnel. The purpose will be to provide District staff with a disciplined format for measuring management policy objectives. In the future, the information derived should serve as a template for how the District can best utilize consultant staff to meet its short-term construction needs.

The plan will include the overall project QC procedures, as well as a comprehensive plan for testing, inspection, and documenting contractor compliance with the construction contract documents. The QA/QC Plan shall include provisions for the review of drawings, specifications, technical reports, memoranda, meeting summaries, calculations, and estimates, and may be developed from standards currently implemented by the District.

Procedures will be incorporated to ensure reviews by the District of all project documents, including both print and electronic, are addressed. The QA/QC Plan shall be organized into the following sections: 1) Organization and Responsibility; 2) Execution and Schedule; 3) Procedural Requirements; and 4) Project Quality Management Audits.

These sections define requirements and procedures for checking, reviewing, distributing, tracking, and controlling documents for QA/QC. The project specific QA/QC Plan shall be submitted and reviewed by the District prior to submittal of other project deliverables. The individuals performing QA/QC reviews shall be clearly indicated in the project organization chart. Deliverables shall contain a statement that the information contained in the submittal has been quality control checked in accordance with the QA/QC Plan.

D. Construction Management Manual
The Project Manager will prepare a Construction Management Communications Manual for each project to be approved by the District. The manual will include project correspondence and other forms of communication in accordance with the District’s document formatting standards. The Project Manager will prepare a written communications manual that accurately describes the CM organization, roles and responsibilities, reporting relationships, communication requirements, and construction management procedures.

The manual integrates the interdependent roles of the District, Construction Manager, Designer, and Construction Contractor through pre-construction, mobilization, construction, and acceptance of the phases of the work. The manual will include the project delivery plan for construction contracts master program (CPM) schedule, budgets, and cash flow. It will provide for the methodology of monitoring progress in pre-construction, mobilization, and construction phases for comparison of as-planned to base line planning, including milestone updating. The Communication Manual will include as a minimum, the following items:

- **Project Organization**: Individual assignments, responsibilities, phone numbers, lines of communication, and methods for interfacing with the District, local agencies, subcontractors, other contractors under contract to the District, and Contractor. Organization chart showing relationships between the parties involved at the sites.

- **Communication Management**: Document control systems and procedures; distribution lists for each type of project documentation; and examples of all required Contractor forms to transmit and formalize all RFIs, RFCs, submittals, and substitution requests.

- **Meeting and Notice Procedures**: Schedules, notices, agendas, reporting procedures, documentation requirements, and timely acceptance processes.

- **QA/QC**: Procedures, testing, factory inspection, coordination checks, and construction inspection activities for all project features, equipment and materials; and separate sections for each specification section.

- **Contract Administration**: Description of control systems and procedures utilizing Box.com for performing and documenting submittal reviews, clarifications, RFIs, change orders, claims management, contract closeout activities, and other contract administration procedures.
EXHIBIT B
CONSULTANT RATE SCHEDULE AND FEES

1.0 Consultant shall be compensated for actual services performed in accordance with this Agreement, per the project cost and labor hours attached hereto as Exhibit B-1.

2.0 A budgetary amount of $216,000.00 (which amount applies to Consultant’s fee and reimbursable expenses) is established for this Agreement. Notwithstanding any other provision of this Agreement, the District shall not be obligated to pay Consultant any amount in excess of said budgetary amount absent prior written approval from the District. Likewise, Consultant shall not be obligated to perform services or incur expenses in excess of the budgetary amount absent prior written approval from the District.
EXHIBIT B-1

PROJECT COST AND LABOR HOURS

Water Replenishment District of Southern California

Exhibit B
Consultant Rate Schedule

Professional Services Contract
Butier Engineering, Inc.

364170.3
7. Project Costs & Labor Hours

Proposed Fee

The proposed level of effort is based on the preliminary project schedule provided in the RFP. The final staffing plan will be based on schedules approved for each project. Staffing efficiencies will be realized based on overlapping construction schedules. It is our intent to oversee all three projects concurrently.

In-Plant Fabrication Inspection Scope

We would like to strongly suggest the budget include a contingency to provide in-plant fabrication/testing and inspection services authorized at the discretion of District staff. Upon determining the location of the fabrication shop, a specific risk assessment will be made and presented to the WRD management.

Rates for the Construction Management Team

Vehicle mileage, computers, computer software, printers, reproduction, prints, cell phone service, broadband service, delivery service, mail, telephone charges, office supplies, technical reference materials, training, and personal protective equipment (PPE) including hard hats, safety boots, work gloves, safety glasses and other PPE as required shall be billed at the attached rates per labor hour charged to the project.

Excluded from Rates

Trailer rental costs, installation of utilities, cost of utilities, cost of sanitary services, broadband / high speed connections, janitorial, furniture, travel and per diem outside the District's service area.
Water Replenishment District of Southern California  
CM Services for Construction of Multiple Safe Drinking Water Wellhead Treatment Projects  

Preliminary Staff Resource Plan and Level of Effort (Hours per month)  
Based on RFP: Preliminary Schedule  

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Additional Services (TBD)  

Total Proposed Fee  

$215,520
EXHIBIT C
EVIDENCE AND REQUIRED FORMS OF INSURANCE

Checklist for Additional Insured Endorsement

Contractor Name: ____________________________________________________________

Project Name: __________________________________________________________________

Refer to the Additional Insured Endorsements forms following:

Endorsement(s)

☐ Additional Insured (AI) Status – GENERAL LIABILITY - Member Water District, its directors, officers, employees, or authorized volunteers are named as additional insureds - as broad as following forms:
  o Form CG 20 10 11 85 (☐) or
  o BOTH CG 20 10 ☐ and CG 20 37 ☐ if forms with later edition dates provided (usually 10 01 or 07 04 editions). Also acceptable CG 20 10 04 13 (or older editions ☐) specifically naming the District parties or using language that states "as required by contract"
  o “Blanket” Endorsement - (no specific policy number) ☐ covering one or more of the above endorsements required with words "as required by written contract/agreement".
  o If large number of Subcontractors - Additional Insured endorsement CG 20 38 04 13 recommended. ☐
  o Policy numbers - matches policy number shown on Certificate of Insurance. (see Optional Dec. Page/Endorsement pages below)
  o Primary Coverage – The primary/non-contributory language is included. “The insurance provided by this policy shall be primary as respects any claims related to the Project. Any insurance, self-insurance, or other coverage maintained by the district, its directors, officers, employees, or volunteers shall not contribute to it.” e.g. Form CG 20 01 ☐

☐ Auto liability (Optional ☐) AI - most standard forms have automatic AI but some carriers provide endorsement

☐ Waiver of Subrogation (Workers Compensation and Property (Course of Construction, if required in contract) ☐

☐ Optional - For extra confidence in verifying coverage require Declaration Page and Endorsement Schedule pages - compare the endorsement numbers. Look out for Amendment of contractual liability and or prior works exclusions - refer to Legal Counsel.
EXHIBIT "B"
November 18, 2018

Ms. Charlene King, P.E.
Associate Engineer, Construction and Operations
Water Replenishment District of Southern California
4040 Paramount Blvd.
Lakewood, CA 0712

Subject: Butier Engineering, Inc.: Construction Management Services Contract Amendment for the Wellhead Treatment Projects

1. Huntington Park Well 15 Treatment Project:
   Project #0122612

2. California American Water Arlington Wellhead Treatment Project:
   Project #0122412

3. Lynwood Well 11 Treatment Project:
   Project #0122512

Dear Ms. King,

Butier Engineering respectfully requests a Construction Management Services Contract Amendment in the amount of $257,232.50 to continue to perform our contract scope of services on the subject projects. The original budget anticipated no City Permits, a GAC Supplier unable to deliver on time, unknown storm drain capacity for well flushing and startup discharges and problems with Survey Records.

The City of Huntington Park has also assumed a major role in the engineering, management and permitting requiring much more effort in coordinating their special requests, independent reviews and permits.

We intend to provide full-time inspection services through June of 2019 and on an as-needed basis for project close-out. This staffing approach will be updated monthly and commensurate with field activity.

If you have any questions regarding our request, please direct them to me for clarification at (714) 832-7222.

Respectfully Yours,

Butier Engineering, Inc.
Construction Managers, Consulting Engineers

Mark M. Butier, Jr.
Vice President/CFO

17822 E. 17th St.
Suite 404
Tustin, CA 92780
Tel (714) 832-7222
Fax (714) 832-7211
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June 19, 2019

Ms. Charlene King  
Associate Engineer, Construction and Operations  
Water Replenishment District of Southern California  
4040 Paramount Blvd.  
Lakewood, CA 90712

Subject:  Butier Engineering, Inc.: Construction Management Services Contract Amendment 2 for the Wellhead Treatment Projects

Huntington Park Well 15 Treatment Project:  
Project #0122612

California American Water Arlington Wellhead Treatment Project:  
Project #0122412

Lynwood Well 11 Treatment Project:  
Project #0122512

Dear Ms. King,

Butier Engineering respectfully requests a Construction Management Services Contract Amendment in the amount of $165,244.00 to continue to perform our contract scope of services on the subject projects.

The following chronology of delay along with anticipated delay that follows supports our request.

ARLINGTON

Delay 1. GAC delivery time by manufacturer is 14-16 weeks additional 18 calendar days was needed for project performance. Extend the contract completion date from April 3, 2019 to April 21, 2019.

Delay 2. City of Los Angeles permit process resulted in revised drawings and additional work scope adding 106 calendar days to the project completion time. Extend the contract from April 21, 2019 to August 16, 2019.

- Additional Permit Fees
- Vault Orientation Modifications
- 106-day Time Extension + overhead
- Added 12" Cross and Gate Valve
• Storage & Delivery costs from our valve supplier, GAC vessel supplier and PHC
• Addition of Drain and Nitrate Lines
• Addition of Static Mixers + installation
• Addition of Brooks Variable Flow Meter 2520
• Splitting of spool and adding two flanges surrounding static mixer Westfall 2800
• Extra work on demolition of concrete pad to over-excavate and pour new
• Extra work on grading

**Potential Delay 3.** Cal American has requested additional concrete encasement for electrical duct banks. Estimate 10 calendar days extend to August 26, 2019 price for this COR is $9,395.26.

**Potential Delay 4.** Extra pipe, appurtenances, and work needed to connect to the existing 48th street well pipe per RFI 46. The pipe has a week lead time and is keeping the contractor from finishing work in that area. Estimate 10 calendar days extend to September 5, 2019 price for this COR is $13,072.76.

**HUNTINGTON PARK**

**Delay 1.** Emerson Programming 10 cd April 24, 2019 to May 4, 2019

**Delay 2.** Replace Sand Separator 75 cd May 4, 2019 to July 18, 2019

**Delay 3.** Modify piping to retain NSF 61 rating 10 CD July 18, 2019 to July 28, 2019

**Potential Delay 4.** 6/12/19 New piping for the sand separator inlet and outlet drawing and review may result in a delay. Anticipate 14 cd July 28, 2019 to August 11, 2019

**Potential Delay 5.** 6/12/19 Emerson contract for programing is still not resolved as they are not able to sign a subcontract because of insurance requirements for the Project. Christina related we should plan on providing another vendor. Heath is currently working with another Company to provide programming services. Anticipate 14 cd from August 11, 2019 to August 28, 2019.

**Possible Delay 6.** 6/12/19 Contractor related there is an issue with seismic calculations as the existing pad will need to be modified. Contractor is working with his structural engineer on this. Contractor has released the sand separator for manufacturing and delivery by 7/4/19. City of Huntington Park also requested revised plans be provided to his Building & Safety Department after approval by TetraTech. Anticipate 20 day delay from August 28, 2019 to September 17, 2019.

**LYNWOOD**

**Delay 1.** Sand separator procurement and installation including additional repairs to discharge screen/system and start up may require baker tanks or pumper truck anticipate 103 cd May 20, 2019 to Aug 31, 2019.
We intend to provide full-time inspection services through October of 2019 and on an as-needed basis for project close-out. This staffing approach will be updated monthly and commensurate with field activity.

If you have any questions regarding our request, please direct them to me for clarification at (714) 832-7222.

Respectfully Yours,
BUTIER

Construction Managers, Consulting Engineers

Mark M. Butier, Jr.
Vice President/CFO
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<th>Percent</th>
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<td>Other</td>
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<td>Capital</td>
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<tr>
<td>Operating</td>
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**Table: Projected Revenue/Expenses**

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<tr>
<td>Total</td>
<td>$123,456</td>
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<tr>
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<tr>
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<td>$41,234</td>
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<tr>
<td>Operating</td>
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</table>

**Summary:**
- Total Revenue: $123,456
- Total Expenses: $41,234
- Net Income: $82,222

**Notes:**
- Budgeted for next fiscal year.
- Includes all major projects and initiatives.
EXHIBIT “B”
September 12, 2019

Ms. Charlene King  
Associate Engineer, Construction and Operations  
Water Replenishment District of Southern California  
4040 Paramount Blvd.  
Lakewood, CA 0712

Subject: Butier Engineering, Inc.: Construction Management Services Contract Amendment for the Wellhead Treatment Projects:

- Huntington Park Well 15 Treatment Project — Project #0122612
- California American Water Arlington Wellhead Treatment Project — Project #0122412
- Lynwood Well 11 Treatment Project — Project #0122512

Dear Ms. King,

Butier Engineering respectfully requests a Construction Management Services Contract Amendment in the amount of $100,620.00 to continue to perform our contract scope of services on the subject projects through January 2020. The original budget did not anticipate protracted DDW approval processes nor unforeseen conditions of equipment reaching the end of its service life such as sand separators.

The City of Huntington Park has also assumed a major role in the engineering, management and permitting requiring much more effort in coordinating their special requests, independent reviews, permits and providing programming services.

We intend to provide full-time inspection services through June of 2019 and on an as-needed basis for project close-out. This staffing approach will be updated monthly and commensurate with field activity.

If you have any questions regarding our request, please direct them to me for clarification at (714) 832-7222.

Respectfully Yours,

BUTIER  
Construction Managers, Consulting Engineers

Mark M. Butier, Jr.  
Vice President/CFO
## Preliminary Staff Resource Plan and Level of Effort (Hours per month)

Based on RFP: Preliminary Schedule

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February 10, 2020

Ms. Charlene King
Associate Engineer, Construction and Operations
Water Replenishment District of Southern California
4040 Paramount Blvd.
Lakewood, CA 0712

Subject: Butler Engineering, Inc.: Construction Management Services Contract Amendment for the Wellhead Treatment Projects
- Huntington Park Well 15 Treatment Project - [Project #0122612]
- California American Water Arlington Wellhead Treatment Project - [Project #0122412]
- Lynwood Well 11 Treatment Project - [Project #0122512]

Dear Ms. King,

Butler Engineering respectfully requests a Construction Management Services Contract Amendment in the amount of $365,650.00 to continue to perform our contract scope of services on the subject projects through December 2020 for the following reasons:

- The original budget did not anticipate continued DDW evaluation and change requirements not included in the original design.
- Several well equipment changes have been made to increase the value of the well sites for more economic distribution of water such as bypass structures to prevent intermittent stop and start up of the well pumps which would require more energy and result in greater waste of water.
- Enhanced equipment changes that added more sophisticated valving and in one case at the Arlington Well the addition of a Variable frequency drive to more accurately control flow. These enhancements required additional design and procurement of equipment and extended contractor performance for installation.

We intend to provide full-time inspection services through December of 2020 on an as-needed basis. This staffing approach will be updated monthly and commensurate with field activity.

If you have any questions regarding our request, please direct them to me for clarification at (714) 832-7222.

Respectfully Yours,

[Signature]

Butler Engineering, Inc.
Construction Managers, Consulting Engineers
### Testing Services

| Position                        | Name        | Firm          | Feb-20 Planned | Mar-20 Planned | Apr-20 Planned | May-20 Planned | Jun-20 Planned | Jul-20 Planned | Aug-20 Planned | Sep-20 Planned | Oct-20 Planned | Nov-20 Planned | Dec-20 Planned | TOTAL | Rate | Hour |
|---------------------------------|-------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------|------|------|
| Gas Environmental Assist        | J. Hernandez| Mentor & Moore|                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Senior Technician               | D. Davis    | Mentor & Moore|                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Technician                      | M. Hidalgo  | Mentor & Moore|                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Head Concrete Inspector         | P. Lane     | Mentor & Moore|                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Structural Steel/Welding Inspector | A. Bracey    | Mentor & Moore|                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Quality Engineer/Technologist/Scientist | R. Higler | Mentor & Moore|                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Concrete Testing                | R. Harris   | Mentor & Moore|                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Water Quality Change            | R. Morgan   | Mentor & Moore|                |                |                |                |                |                |                |                |                |                |                |        |      |      |

### Field CM Services

| Position                        | Name        | Firm          | Feb-20 Planned | Mar-20 Planned | Apr-20 Planned | May-20 Planned | Jun-20 Planned | Jul-20 Planned | Aug-20 Planned | Sep-20 Planned | Oct-20 Planned | Nov-20 Planned | Dec-20 Planned | TOTAL | Rate | Hour |
|---------------------------------|-------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------|------|------|
| Principal in Charge            | C. Harris   | Butler        | 60.00          | 60.00          | 60.00          | 60.00          | 60.00          | 60.00          | 60.00          | 60.00          | 60.00          | 60.00          | 60.00          | 2,430 | 100.00       | 243.00 |
| CM/Inspector                    | J. Johnson  | Butler        | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 1,440 | 155.00       | 237.50 |
| Start-Up Engineer (Mechanical)  | K. Kramer   | On-Site       | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 600.00 | 155.00       | 50.00  |
| Document Control                | R. Wilson   | Ruhner        | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 80.00          | 600.00 | 155.00       | 50.00  |

### Conclusivity

| Position                        | Name        | Firm          | Feb-20 Planned | Mar-20 Planned | Apr-20 Planned | May-20 Planned | Jun-20 Planned | Jul-20 Planned | Aug-20 Planned | Sep-20 Planned | Oct-20 Planned | Nov-20 Planned | Dec-20 Planned | TOTAL | Rate | Hour |
|---------------------------------|-------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------|------|------|
| Principal in Charge (Team Leader) | C. Harris   | Butler        |                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Structural Review               | T. White    | Butler        |                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Electrical Review               | J. Rodgers  | Ruhner        |                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Mechanical Superintendent       | K. Kramer   | On-Site       |                |                |                |                |                |                |                |                |                |                |                |        |      |      |

| Total Original Contract        |             |               |                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Total AMended Contract CO-1    |             |               |                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Additional Amount Requested CO-1|             |               |                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Total Proposed Fee CO-1        |             |               |                |                |                |                |                |                |                |                |                |                |                |        |      |      |

| Actual billed through August 2019 |             |               |                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Amount Remaining Ong Contract + CO-1 |             |               |                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Total Proposed Fee CO-2        |             |               |                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Additional Amount Requested CO-2|             |               |                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Total Proposed Fee CO-3        |             |               |                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Additional Amount Requested CO-3|             |               |                |                |                |                |                |                |                |                |                |                |                |        |      |      |
| Total Proposed Fee CO-4        |             |               |                |                |                |                |                |                |                |                |                |                |                |        |      |      |

| Total Proposed Fee CO-4        |             |               |                |                |                |                |                |                |                |                |                |                |                |        |      |      |

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**Water Replenishment District of Southern California**

**CM Services for Construction of Multiple Safe Drinking Water Wellhead Treatment Projects**

**Preliminary Staff Resource Plan and Level of Effort (Hours per month)**

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**Butler**

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**Packet Page 241 of 793**
MEMORANDUM
ITEM NO. 10

DATE: MARCH 5, 2020
TO: BOARD OF DIRECTORS
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: AWARD OF PROFESSIONAL SERVICES AGREEMENT WITH PERC WATER FOR OPERATIONS OF THE LEO J. VANDER LANS ADVANCED WATER TREATMENT FACILITY

SUMMARY
WRD has contracted with the Long Beach Water Department (LBWD) to provide operations services for the Leo J. Vander Lans (LVL) Advanced Water Treatment Facility (AWTF) since 2003. While this has been a successful relationship benefiting both WRD and LBWD, WRD staff recognize an opportunity to standardize operations between its two water recycling facilities, LVL and the Albert Robles Center (ARC).

PERC Water Corporation (PERC) is currently providing operations services for the ARC AWTF as a partner in the Design Build Entity (DBE) led by JF Shea Construction, Inc. The ARC transitional operations period is currently scheduled to end on December 31, 2020, and the DBE contract allows for two, one-year extensions, at WRD’s discretion.

Over the past several years, WRD has been asserting a stronger role in the operations of all of its facilities to ensure it has more input and control over opportunities for cost savings, process optimizations, final water production goals, and facility downtime requirements. WRD has already onboarded various contracts related to facility operations and maintenance (O&M), including contracts for chemicals, equipment services, and maintenance support services.

WRD is faced with a unique opportunity to realize a cost savings while also gaining valuable experience being more directly involved in day-to-day operations, without the steep learning curve and risk associated with immediately on-boarding operations staff. By contracting with PERC to operate LVL, WRD would have one common operator between the two water recycling facilities and can more easily standardize operational philosophies, procedures, and reporting. The contract period for LVL will be synchronized with the ARC contract period to allow sufficient time to prepare a detailed competitive Request for Proposals for both facilities, or permit a progressive growth towards in-house
operations. The contract period would be March 5, 2020 through December 31, 2020, with two, one-year extensions allowable at the discretion of the WRD Board of Directors.

A detailed scope of work is attached within the draft contract, and includes responsibilities currently performed by LBWD as well as several services not provided by LBWD, including:

- A total of six Full Time Equivalents (FTE) dedicated to LVL operations
- Development and Documentation of Standard Operating Procedures
- Update of the Operations Optimization Plan (OOP) required for regulatory compliance
- Utilization of WRD’s Computerized Maintenance Management System

In comparison to the historical monthly costs for LVL Operations, the PERC water proposal offers a cost effective alternative. The table below includes a comparison of the proposed PERC monthly fixed fee with the average monthly fee from LBWD. The actual monthly cost presented is an average of 17 months since 2016 where the facility was operated at an appreciable production (>3 million gallons per day (MGD) for more than 50% of the month).

<table>
<thead>
<tr>
<th>Monthly Period</th>
<th>Actual Avg Monthly Labor Cost</th>
<th>PERC Proposal Monthly Fixed Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>$115,335</td>
<td>$105,275</td>
</tr>
</tbody>
</table>

**FISCAL IMPACT**

The total cost of this contract is $947,475 with a contingency of $105,275 for a total of $1,052,750. There are sufficient appropriations in the current fiscal year LVL operating budget.

**CAPITAL IMPROVEMENT PROJECTS COMMITTEE RECOMMENDATION**

The Capital Improvement Projects Committee recommends that the Board of Directors enter into a Professional Services Agreement, subject to approval as to form by District
Counsel, with PERC Water Corporation for operations of the Leo J. Vander Lans Advanced Water Treatment Facility for an amount not to exceed $1,052,750.
This Professional Services Agreement (the “Agreement”) is made and entered into this **5 day of March, 2020**, by and between the Water Replenishment District of Southern California (“District”) and **PERC Water Corporation**, (“Consultant”) (collectively the “Parties” or individually as “Party”) for the furnishing of certain professional services upon the following terms and conditions.

1. **Scope of Services.** Consultant shall perform the scope of services described in Exhibit A hereto (“Services”). Tasks other than those specifically described in Exhibit A shall not be performed without a prior written amendment to this Agreement.

   1.1 **Standard of Care.** In performing the scope of services under this Agreement, Consultant shall exercise the standard of care and expertise prevailing in California for the performance of such services.

2. **Term.** The term of this Agreement shall commence on **March 5, 2020** and shall end on **December 31, 2020** (the “Expiration Date”). At least six (6) months prior to the Expiration Date, District staff shall evaluate the quality of the Services that have been provided by the Consultant, the cost of such Services relative to the benefits, and the need for any continuation of the services. The results of such evaluation shall be provided to the appropriate District Committee, which committee shall provide a report to the District’s Board of Directors (“Board”). If the Board determines that there is a demonstrated need for the continuation of such Services, the Board at its sole discretion may exercise the option to extend this Agreement by amendment for two additional one year terms, each extension shall be exercisable for a one year term (subject to the termination provisions contained in this Agreement).

2.1 **Termination by District**

   2.1.1 **Termination for Convenience.** The District may terminate this Agreement for its convenience at any time upon six (6) months written notice to Consultant. Consultant’s compensation in the event of such a termination shall be exclusively limited to payment for all authorized services performed and for all authorized expenses incurred up to the effective date of such termination. Consultant understands and agrees that it shall not be entitled to any additional compensation or reimbursement whatsoever in the event of such termination.
2.1.2  **Consultant’s Obligations Upon Termination.** Following any termination of this Agreement by the District or Consultant, the Consultant shall promptly return all District property, and shall likewise provide to District all finished and unfinished data, studies, maps, reports, and other deliverables and work-product prepared by Consultant pursuant to this Agreement.

3.  **Consultant’s Compensation.** District will compensate Consultant for services performed and for expenses incurred pursuant to this Agreement as follows:

3.1  **Fee.** Consultant shall be paid in accordance with the fees and Consultant Rate Schedule attached to this Agreement as Exhibit B which may not be changed except with District’s written approval.

3.2  **Reimbursable Expenses.** Consultant shall be reimbursed for only pre-approved expenses, subject to the provisions of this Agreement. Consultant shall obtain the District’s prior written approval before incurring an expense not specifically provided for under this Agreement.

3.2.1  **Third Party Expenses.** Unless specifically provided in Exhibit B, and subject to the provisions of Paragraph 3.2, the District shall not reimburse Consultant for any costs charged to Consultant by third parties unless said costs are preapproved. In the event such costs are approved, such reimbursement shall be at cost without any markup by Consultant.

3.3  **Invoices.** Consultant shall submit monthly invoices to District for services performed and expenses incurred during the preceding month. District shall process Consultant’s invoice upon receipt and issue any undisputed payment in a timely manner. Consultant’s invoices shall separately identify all personnel for whose services payment is sought, the services performed, and all expenses for which reimbursement is requested. As a condition precedent to payment, District may require Consultant to furnish supporting information and documentation for all charges for which payment is sought. District shall have the right to withhold from payments to Consultant reasonably disputed amounts including, without limitation, amounts for services not performed in accordance with this Agreement and costs, expenses or damages incurred by District as a result of Consultant’s breach of this Agreement or Consultant’s negligence.

4.  **Consultant’s Obligation to Provide Notice of Changes.** Consultant shall provide written notice to the District no later than twenty (20) days after the occurrence of any event (including any direction by the District) which Consultant believes requires a change in its compensation or the time for performance of its obligations under this Agreement. Said notice shall describe the event and the basis for any change in compensation or time for performance requested by Consultant. The Parties shall thereafter meet and confer to determine whether such a change is appropriate. However, no such change to this Agreement may be made except by written amendment to this Agreement executed by the Parties. Consultant’s failure to provide the notice required under this Paragraph shall
constitute a waiver of its right to seek a change in its compensation or the time for performance of its obligations under this Agreement.

5. **Ownership and Use of Documents.** All proprietary information developed by Consultant in connection with, or resulting from, this Agreement, including but not limited to inventions, discoveries, improvements, copyrights, patents, data, maps, reports, textual material or software programs, shall be the sole and exclusive property of the District. Consultant agrees that the compensation to be paid pursuant to this Agreement includes adequate and sufficient compensation for any proprietary information developed in connection with or resulting from this Agreement. Consultant further understands and agrees that full disclosure of all proprietary information developed in connection with, or resulting from, this Agreement shall be made to the District, and that Consultant shall do all things necessary and proper to perfect and maintain District’s ownership of such proprietary information. All documents, reports, surveys, renderings, photographs, data and other materials furnished by the District to Consultant shall remain the exclusive property of the District and shall not be distributed or provided to third parties without the express written authorization of the District.

6. **Publication of Project Information.** Consultant shall notify and obtain written approval from the District before presenting verbal or written information to outside individuals or entities about the services or project for which Consultant was retained.

7. **Patents and Copyrights.** The Consultant shall assume all costs arising from the use of patented or copyrighted materials, including but not limited to, equipment, devices, processes, and software programs used or incorporated in the work performed under this Agreement. Consultant shall defend, indemnify hold the District, its officers, directors, agents, employees, representatives and assigns harmless from any and all claims, demands, suits at law, and actions of every nature for or on account of the use of any patented or copyrighted materials.

8. **Consultant’s Status.** Consultant is an independent contractor and neither Consultant nor any employee of Consultant is or will be treated as an employee of the District under this Agreement. District controls the result to be accomplished under this Agreement, but not the means by which Consultant achieves such results.

8.1 Payments made to Consultant pursuant to this Agreement shall be the sole and complete compensation to which Consultant is entitled. Consultant is solely responsible for any taxes levied by local, state or federal authorities on such sums. Consultant shall defend and indemnify the District for any taxes, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to properly withhold taxes as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.2 District will not make any contribution to any retirement plan or Social Security on behalf of Consultant or any of Consultant’s employees. Consultant shall defend
and indemnify the District for any contribution, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to contribute to any retirement plan or Social Security as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.3 District will not make any payments to Consultant, or Consultant’s employees, which rely upon employee status, including, but not limited to, FLSA and other overtime and minimum wage requirements, prevailing wage laws, worker’s compensation benefits, FMLA, CFRA, Paid Leave, and unemployment benefits. Consultant shall defend and indemnify the District for any payment, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to make any such payment or otherwise provide the benefits of such laws as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.4 Consultant shall comply with the Political Reform Act of 1974, as amended including, but not limited to, disclosure of all conflicts of interest and other financial disclosure requirements required thereunder.

9. Instructions to Consultant. In the performance of the services set forth in this Agreement, Consultant shall report to and receive instructions from the following person on behalf of the District: Tom Knoell, Water Operations Superintendent.

10. Subconsultant Services. Any subconsultants to be used by Consultant in the performance of the scope of services shall be identified in Exhibit A hereto. Consultant shall obtain the District’s prior written approval before retaining a subconsultant to perform any portion of the scope of services of this Agreement. Notwithstanding Consultant’s use of any subconsultants, Consultant shall be responsible to the District for the performance of its subconsultants as it would be if Consultant had performed those services itself. Nothing in this Agreement shall be deemed or construed to create a contractual relationship between the District and any subconsultant employed by Consultant. Consultant shall be solely responsible for payments to any subconsultants. Consultant shall defend and indemnify the District for any payment, fines or penalties assessed or threatened to be assessed against District as a result of any claim brought by any subconsultant of Consultant for any matter arising from, or related to, the services performed by subconsultant under this Agreement.

11. Compliance With Laws and Regulations; Licensing. Consultant shall perform its services under this Agreement in compliance with all applicable provisions of Federal, State and local laws, statutes, codes, rules, regulations, ordinances and professional standards (“Applicable Laws”). By entering into this Agreement, Consultant represents and warrants that it possesses and will keep current all license and registrations required by Applicable Laws to enter into this Agreement and to perform the scope of services hereunder.
12. **Insurance.** Consultant, at its sole cost and expense, shall obtain, keep in force, and maintain the following policies of insurance at all times while this Agreement is in effect, and shall not commence any work under this Agreement until proof of such insurance has been provided to the District. The coverages provided by such insurance shall not be construed as limitations of liability.

12.1 **Required Policies.**

12.1.1 **Commercial General Liability Insurance** (contractual, products, and completed operations coverages included) with a combined single limit of no less than $2,000,000 per occurrence or the full per occurrence limits of the policies available, whichever is greater for bodily injury, personal injury and property damage.

12.1.2 **Business or Comprehensive Automobile Liability Insurance** for owned, scheduled, non-owned, or hired automobiles, with a combined single limit of no less than $1,000,000 per accident.

12.1.3 **Professional Liability Insurance** with limits of $2,000,000 per claim and $2,000,000 in the aggregate.

12.1.4 **Employers’ Liability Insurance** with limits of $1,000,000 per claim and $1,000,000 in the aggregate.

12.1.5 **Workers’ Compensation Insurance** as required under the Workers’ Compensation Insurance and Safety Act of the State of California.

12.1.6 **Pollution Liability** with limits no less than $2,000,000 per occurrence or claim, and $2,000,000 policy aggregate.

12.2 **Required Terms.**

12.2.1 All polices except workers’ compensation and professional liability, shall name as additional insureds the Water Replenishment District of Southern California, its directors, officers, employees, agents authorized volunteers and representatives. The coverage shall contain no special limitations on the scope of protection afforded the District, its directors, officers, employees, or authorized volunteers.

12.2.2 All policies (with the exception of Professional Liability) shall be written on an occurrence basis. If a policy may only be obtained on a claims made basis, the policy shall be maintained continuously for a period of no less than three (3) years after the date of final completion of the scope of services under this Agreement.
12.2.3 All policies shall provide that coverage cannot be cancelled without thirty (30) days prior written notice to the District.

12.2.4 All insurance required under this Agreement shall be considered primary to any insurance maintained by the District. All policies except Professional Liability shall include waivers of subrogation in favor of the District and its insurers.

12.2.5 Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to District, its directors, officers, employees, or authorized volunteers.

12.2.6 The Consultant’s insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer’s liability.

12.2.7 Liability insurance shall indemnify the Consultant and his/her sub-contractors against loss from liability imposed by law upon, or assumed under contract by, the Consultant his/her sub-contractors for damages on account of such bodily injury (including death), property damage, personal injury, completed operations, and products liability.

12.2.8 Deductibles and Self-Insured Retentions – Any deductible or self-insured retention must be declared to and approved by District. At the option of District, the insurer shall either reduce or eliminate such deductibles or self-insured retentions. Policies containing any self-insured retention (SIR) provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named or additional insureds, co-insurers, and/or insureds other than the first named insured.

12.2.9 Evidence of Insurance – Prior to execution of the agreement, the Consultant shall file with District a certificate of insurance signed by the insurer’s representative evidencing the coverage required by this agreement. Such evidence shall include an additional insured endorsement signed by the insurer’s representative. Such evidence shall also comply with the Evidence and Required Forms of Insurance attached hereto as Exhibit “C”. In the event that the Consultant employs other contractors (sub-contractors) as part of the work covered by this agreement, it shall be the Consultant’s responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above. Failure to continually satisfy the Insurance requirements is a material breach of contract.

12.2.10 All policies required under this Agreement shall be issued by companies authorized to transact insurance business in the State of California acceptable to the District and having a Best rating of A- or equivalent or as otherwise approved by District.
13. **Indemnification.** Consultant shall indemnify, defend and hold harmless the District and its directors, officers, employees, agents and representatives (collectively “District”), from and against any and all claims, liabilities, costs, damages, suits, proceedings, injuries (including injuries to real and personal property, and injuries to persons, including death) incurred by District (“Losses”), as a result of Consultant’s breach of any provision of this Agreement, Consultant’s failure to comply with applicable laws, Consultant’s negligent acts or omissions, or Consultant’s willful misconduct. However, Consultant’s obligation to defend shall arise regardless of any claim or assertion that the District caused or contributed to the Losses. Nothing in this paragraph shall constitute a waiver or limitation of any legal rights which the District may have including, without limitation, the right to implied indemnity.

14. **Arbitration and Attorneys’ Fees.** Any dispute arising from or relating to this Agreement shall be submitted to final and binding arbitration before an arbitrator who is a member of the National Academy of Arbitrators. The parties will obtain a list of five names of potential arbitrators from the National Academy of Arbitrators, or the American Arbitration Association, and will take turns striking the names of arbitrators until one arbitrator remains, who shall preside over the arbitration. The arbitrator will have no power to rewrite any of the terms of this Agreement. The parties shall split the cost of the arbitrator’s fee and any court reporter required by the arbitrator or if both parties agree to having the proceedings taken down by a court reporter. The prevailing Party in any action arising from or relating to this Agreement shall be entitled to recover its reasonable attorneys’ fees, expert witness fees and arbitration fees and costs in addition to any other relief and recovery ordered by the arbitrator or other tribunal hearing any matter related to this Agreement.

15. **Conflict of Interest.** No official of the District who is authorized in such capacity and on behalf of the District to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving this Agreement, or any contract or subcontract relating to work to be performed pursuant to this Agreement, shall become directly or indirectly personally interested in this Agreement or in any part thereof. Consultant shall not accept employment or contract during the term of this Agreement with any firm or individual for the provision of services if such employment or contract would conflict directly with the Services provided to the District under this Agreement.

16. **Equal Opportunity.** During the performance of this Agreement, Consultant shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, marital status or national origin.

17. **Successors and Assigns.** This Agreement shall inure to the benefit of, and be binding upon, the District, Consultant, and their respective successors and assigns provided, however, that no assignment of the duties or benefits under this Agreement shall be made without the written consent of the Consultant and the District.

18. **Choice of Law and Venue.** This Agreement shall be governed by and interpreted in accordance with the laws of the State of California. The Parties agree that the exclusive
venue for any action or proceeding arising from or relating to this Agreement shall be in the County of Los Angeles, State of California.

19. **Notices.** All notices provided by this agreement shall be in writing and shall be sent by first-class mail and facsimile transmission as follows:

If to the District:

**Water Replenishment District of Southern California**

4040 Paramount Blvd.

Lakewood, CA 90712

Phone: (562) 921-5521

Fax: (562) 921-6101

If to Consultant:

**Robert Nespeca**

959 South Coast Drive

Suite 315

Costa Mesa, California 92626

Phone: 714-352-7766

Email: bnespeca@percwater.com

20. **Amendments.** This Agreement may be modified only by a writing signed by the Parties hereto.

21. **Integration; Construction.** This Agreement (inclusive of exhibits incorporated herein by this reference) sets forth the final, complete and exclusive expression of the Parties’ agreement with respect to the subject matter hereof, and supersedes any and all other agreements, representations, and promises, whether made orally or in writing. Notwithstanding anything in Exhibit A to the contrary (or any invoice or other unilateral terms or conditions provided by Consultant), in the event of any conflict or inconsistency between this Agreement and Exhibit A (or any invoice or other unilateral terms or conditions provided by Consultant), this Agreement shall control. The Parties represent and warrant that they are not entering into this Agreement based upon any representation or understanding that is not expressly set forth in this Agreement. This Agreement shall be construed as the product of a joint effort between the Parties and shall not be construed against either Party as its drafter.

22. **Effective Date.** This Agreement is effective as of the date first set forth above.

23. **Authority.** Each person signing this Agreement represents that he or she has the authority to do so on behalf of the Party for whom he or she is signing.
IN WITNESS WHEREOF, the Parties have caused this AGREEMENT to be executed the
day and year first above written.

WATER REPLENISHMENT DISTRICT OF
SOUTHERN CALIFORNIA

Signature
John D.S. Allen
Print Name
President, Board of Directors
Title

Signature
Willard H. Murray, Jr.
Print Name
Secretary, Board of Directors
Title

PERC Water Corporation, ("CONSULTANT")

Signature
Print Name
Title

Approved As To Form
LEAL, TREJO LLP

Attorneys for the Water Replenishment
District of Southern California
EXHIBIT A
SCOPE OF WORK

Operations Expectations and Goals
The LVL AWTF is owned by the District and is designed to supply highly treated recycled water to the Alamitos Barrier to prevent seawater intrusion. This facility provides an essential local, sustainable resource to prevent the degradation of the drinking water supply utilized by millions of residents in the surrounding communities. Operations of the LVL Facility is an important contributor to water independence within the Southern Los Angeles County. As such, the Consultant must be responsive, willing, and innovative to ensure successful operations of the facility. WRD expects to achieve the highest online factor that meets the goal of providing a sustainable water supply to the Alamitos Barrier.

The Facility shall operate 24 hours a day, 7 days a week. The Alamitos Barrier demand is met in part through water supplied by the LVL AWTF. The Consultant will satisfy this demand with the highest percentage of advanced treated water possible, subject to:

- Available source water from the LA County Sanitation District Long Beach Water Reclamation Plant
- Facility operational readiness (i.e., system(s) functionality)
- Effluent discharge restrictions from LA County to the Alamitos Barrier

The Consultant will meet WRD’s requirement of proactive management to optimize Facility operations and maximum production through reduced plant shutdowns, inclusive of:

1. Evaluating and diagnose the operational issue(s)
2. Development of a corrective action work plan
3. Execution of the corrective action to resolve the issue
4. Notify WRD with the resolution or planned resolution

Staffing Plan
The Consultant will provide a staffing plan for operations staff on site daily: Monday to Sunday, ten (10) hour shifts per day. A total staff of six (6) full-time-equivalent (FTE) Consultant employees will be dedicated to ensuring the successful operation of the Facility. The LVL AWTF is a Class 4 treatment facility pursuant to Title 23, California Code of Regulations. Title 23, Article 3 specifies that the facility must employ a Chief Plant Operator (CPO) with a valid Grade 4 (or higher) certification as a water/wastewater treatment operator issued by the California State Water Resources Control Board Operator Certification Program. The Designated Operator-in-Charge (DOC) must possess a valid Grade 3 operator certification. At a Class 4 Facility, at least 50 percent of the operators shall possess a valid or operator-in-training certificate at the Grade 2 level or higher. The Consultant’s Project Manager must dedicate approximately seventy (70%) percent of their time to leading the on-site team, including supervising, training, etc. to ensure the Facility is operating per the contract and meeting all regulatory requirements.
Operational Contacts
For the duration of this contract, the Consultant shall designate an operational contacts. The Consultant’s staff will maintain regular communications with WRD and participate in operational meetings as requested to disseminate information related to Facility operations. Designated Consultant staff shall keep WRD apprised of situational events at the Facility that warrant corrective action and/or Facility shutdown. Further, the Consultant will notify entities associated with the LVL AWTF operations as needed, including, but not limited to the LA County Sanitation District Long Beach Water Reclamation Plant, LA County Department of Public Works and the Long Beach Water Department.

The Consultant scope of services will also consist of a number of additional tasks, which are highlighted at a minimum below:

Operational Tasks
- Provide all required staff to operate and manage the LVL AWTF as required by all State and Federal regulatory permits.
- Minimize any plant operating downtimes whenever possible by coordinating major activities in parallel with one another and/or during any schedule shutdowns.
- Employ a mechanism to anticipate and reduce the amount of unscheduled downtime events by measuring an asset’s failure rate, preventative maintenance frequency, cost and availability.
- Sample collection for compliance sampling (laboratory cost for certified lab services paid by WRD).
- Responsible for the safe and reliable operations of the LVL AWTF and all ancillary equipment while maintaining compliance with all State, Federal and governing compliance agency requirements.
- Management of all plant processes and ancillary equipment to ensure proper function, calibration, aesthetics and optimization, including coordinating with WRD vendors and service providers.
- Work in coordination with the LA County Sanitation District, LA County Department of Public Works (LACPW) and the Long Beach Water Department to provide a reliable and consistent delivery of product water to the Alamitos Sea Water Intrusion Barrier.
- Endeavor to maintain operation of the facility without interruption. When plant operation is interrupted due to the lack of supply water from the Long Beach Water Reclamation Plant, the Consultant will restart plant operations as soon as reasonably possible based on the return of supply influent and the ability to discharge to the Alamitos Barrier (per LACPW).
- Respond effectively to odor complaints, air emissions, noise complaints, etc.
- Designate a senior operator (CPO or DOC) to coordinate and schedule bulk chemical deliveries utilizing the WRD-supplied contracts to ensure adequate chemicals are present at all times for Facility operations.
Compliance Reporting Tasks

- Manage the compliance process, including schedule, sample collection, storage and delivery to the WRD-contracted laboratory for compliance analyses. Sample analyses for process control will be collected and analyzed onsite by the Consultant operators as needed, required and/or requested by WRD. (WRD shall provide laboratory selection for compliance analyses and be responsible for lab costs and fees including transportation)

- Preparation and submittal of all regulatory reports as required by law. The Consultant will furnish all reports upon completion of appropriate QA/QC measures to ensure data validity and correctness. Reports will be submitted to WRD with sufficient time to review, request corrections by the Consultant (as needed) and submit in the time required by each regulatory agency. Reports include, but are not limited to, the WDR Report (LA Regional Water Quality Control Board), SMR Report, Brine Calibration Meter Report and Surcharge Reports (LA County Sanitation District) and the CERS Report (Long Beach CUPA).

- In connection with any actual or alleged event of non-compliance with applicable law, the consultant shall: (1) fully and promptly respond to all inquiries, investigations, inspections, and examinations undertaken by any Governmental Body; (2) attend all meetings and hearings required by any Governmental Body; (3) provide all corrective action plans, reports, submittals and documentation required by any Governmental Body, and shall provide copies of any such plan, report, submittal or other documentation to Contractor and WRD; (4) in conjunction with WRD, communicate in a timely and effective manner with the general public as to the nature of the event, the impact on the public, and the nature and timetable for the planned remediation measures; (5) immediately upon receipt thereof, provide WRD with a true, correct and complete copy of any written notice of violation or non-compliance with applicable law, and true and accurate transcripts of any oral notice of non-compliance with applicable law, issued or given by any Governmental Body; and (6) provide WRD with an immediate written notice describing the occurrence of any event or the existence of any circumstance which does or may result in any such notice of violation or non-compliance to the extent Subcontractor has knowledge of any such event or circumstance, and of any legal proceeding alleging such non-compliance; (7) provide follow-up investigation report to WRD within required timeframe, following the immediate written notice describing the occurrence of any event or the existence of any circumstance which does or may result in any such notice of violation or non-compliance.

Management/Administrative Tasks

- Knowledge of all WRD service and vendor contracts. The Consultant shall call upon WRD service contracts where possible.

- Create a current spare parts inventory and organize spare parts warehouse as needed.

- Manage the spare parts inventory including the re-ordering of operational consumables as needed.

- Provide all personnel related expenses, uniforms, safety equipment & PPE, cell phones, laptop computers.

- Provide laboratory consumables for in-house sample analyses for process control.
• Maintain site safety in compliance with industry standards and applicable laws.
• At the completion of Transitional Operations, a set of draft Standard Operating Procedures (SOPs), which have utilized the WRD template, shall be developed, conditionally approved by WRD, with final SOPs approval within 180 days of the completion of Transition Operations. The Consultant will update SOPs as needed to reflect current Facility operations. SOPs will be reviewed and approved by WRD annually.
• Update Operations and Optimization Plan (OOP) within 180 days of commencement of services. OOP must be approved by the District and the LA Regional Water Quality Control Board.
• The onsite staff will setup, implement and utilize WRD’s CMMS Program (City Works) to track all preventative maintenance in full support of WRD’s Enterprise Asset Management Program.
• Produce monthly Operations Reports per WRD-provided template that includes, but is not limited to performance matrices such as Facility water production, brine discharge, energy consumption, chemical consumption and system-specific parameters such as membrane permeability, membrane cleanings, UV lamp status, etc.
• Produce monthly Asset Management Reports per WRD-provided template that documents calibrations and service performed by WRD service vendors.
• Respond in a timely and effective manner to all complaints and communication regarding the treatment and distribution of water.
• Ensure that the property on which the LVL AWTF is located is in a clean and orderly condition at all times.
• One vehicle for the Consultant staff utilization.
• Maintain site safety in compliance with industry standards and applicable laws. Hazardous waste including oil and lubricants shall be stored and disposed of in compliance with all regulatory and safety requirements.
• Clean organize and maintain mechanical shop.

Transitional Operations
The Consultant will draft a Transition Plan to detail a mutually agreeable transition schedule. The plan will be reviewed the plan with WRD and the current operations team to ensure all parties are in agreement, and allowing for a seamless transition of operations. A transition period of 60 days is anticipated. The Transition Plan will detail exactly how operational and regulatory responsibility will be addressed during the period.

During the first 30 days of the transition period, the current operator would lead the operation of the facility and also have regulatory responsibility. On day 31 the operational and regulatory responsibility will transition to the Consultant. During the remaining 30 days the current operator will remain onsite full time and provide support to the Consultant staff. Data transfer will be a detailed part of the plan to ensure all historical records are transferred to a permanent database.
# EXHIBIT B
## CONSULTANT RATE SCHEDULE

Fixed Fee – To include all tasks as detailed in Exhibit A

<table>
<thead>
<tr>
<th>Fixed Fee - Monthly</th>
<th>Total over 9-months</th>
</tr>
</thead>
<tbody>
<tr>
<td>$105,275</td>
<td>$947,475</td>
</tr>
</tbody>
</table>
EXHIBIT C
EVIDENCE AND REQUIRED FORMS OF INSURANCE

Checklist for Additional Insured Endorsement

Contractor Name: ____________________________________________________________
Project Name: ______________________________________________________________

Refer to the Additional Insured Endorsements forms E1-8 following:

Endorsement(s)

☐ Additional Insured (AI) Status – GENERAL LIABILITY - Member Water District, its directors, officers, employees, or authorized volunteers are named as additional insureds - as broad as following forms:
  ○ Form CG 20 10 11 85 (E1) or
  ○ BOTH CG 20 10 (E2) and CG 20 37 (E3) if forms with later edition dates provided (usually 10 01 or 07 04 editions). Also acceptable CG 20 10 04 13 (or older editions E2) specifically naming the District parties or using language that states "as required by contract"
  ○ “Blanket” Endorsement - (no specific policy number) (E4) covering one or more of the above endorsements required with words "as required by written contract/agreement".
  ○ If large number of Subcontractors - Additional Insured endorsement CG 20 38 04 13 recommended. (E5)
  ○ Policy numbers - matches policy number shown on Certificate of Insurance. (see Optional Dec. Page/Endorsement pages below)
  ○ Primary Coverage – The primary/non-contributory language is included. “The insurance provided by this policy shall be primary as respects any claims related to the ____________ Project. Any insurance, self-insurance, or other coverage maintained by the district, its directors, officers, employees, or volunteers shall not contribute to it.” e.g. Form CG 20 01 (E6)

☐ Auto liability (Optional (E7)) AI - most standard forms have automatic AI but some carriers provide endorsement

☐ Waiver of Subrogation (Workers Compensation and Property (Course of Construction, if required in contract) (E8)

☐ Optional - For extra confidence in verifying coverage require Declaration Page and Endorsement Schedule pages - compare the endorsement numbers. Look out for Amendment of contractual liability and or prior works exclusions - refer to Legal Counsel.
February 18, 2020

Tom Knoell, Water Operations Superintendent
Water Replenishment District of Southern California
4040 Paramount Blvd.
Lakewood, CA. 90712

RE: Operational Services

Mr. Knoell,

Thank you for giving PERC Water the opportunity to submit this proposal to operate and manage the Leo J. Vander Lans Advanced Water Treatment Facility (LVL AWTF or Facility). We have drafted the following scope of service based on our recent discussion and site visit.

**PERC Water Corporate Overview**

PERC Water Corporation, established in January 1998 as Pacific Environmental Resources Corp, is an innovative water infrastructure company that develops, designs, builds, operates and manages water infrastructure throughout the United States. We have designed more than 60 water infrastructure projects, 32 of which we have built and placed into operation over the past 20 years.

PERC Water’s Operating Services Division provides operation and management of water infrastructure and water utility systems. PERC Water’s operational philosophy is based on a completely transparent partnership with asset owners. We will partner with WRD to achieve consistent, reliable, efficient and cost conscience operation of the LVL AWTF. We strive to hire our project workforce locally at each of our geographic locations. We fully recognize, support and participate in local community development and always attempt to hire local individuals. Our past experience has taught us people care about their community and are often motivated by working within the community in which they reside.

PERC Water’s Corporate Philosophy is built on the highest standards beginning with equal opportunity employment and a focus on local hiring. As an equal opportunity employer we do not discriminate on the basis of actual or perceived race, religion, color, nationality, ancestry, disability, marital status, sex, gender identity and expression, age etc. Our management team is dedicated to this policy with respect to recruitment, hiring, placement, promotion, transfer, training, compensation, benefits and general treatment during employment. Additionally, we recognize the competitive advantage of having a diverse team and the benefits it can bring to our company and staff development. While our operators and managers are not represented by a union or bargaining unit, our wages exceed typical prevailing wage rates and offer an attractive fringe benefit package.
We are also very excited to partner with the WRD Board of Directors and staff to establish the “Future Water Workforce Program” (a.k.a. Intern Program for Water Operators) This internship program is our opportunity to benefit the communities we serve while at the same time improve our industry by guiding and developing the operational staff new to the field. We strive to give “first time” water professionals in the surrounding communities the opportunity to gain critical real-life experience and develop their knowledge in the water treatment field. We will be working with LA Trade-Tech to recruit students in their water and wastewater treatment programs and provide them with work experience, which may count towards their contact hours applied toward their water certifications. We hope to enroll additional local and community colleges into this program. We look forward to implementing this program in partnership with WRD and giving first time water professionals in the community the opportunity to gain experience and enhance their educational development while at the same time promoting the opportunities available in the field of water and wastewater.

Scope of Services

Operations Expectations and Goals

The LVL AWTF is owned by the Water Replenishment District (WRD or District) and is designed to supply highly treated recycled water to the Alamitos Barrier to prevent seawater intrusion. This facility provides an essential local, sustainable resource to prevent the degradation of the drinking water supply utilized by millions of residents in the surrounding communities. PERC Water recognizes and understands the importance and criticality of operating this Facility in contributing to water independence in the Southern Los Angeles County. Responsiveness, willingness and innovativeness are key underlying principles that PERC Water will employ to ensure successful operations of the facility. PERC Water will strive to achieve the highest online factor that meets the goal of providing a sustainable water supply to the Alamitos Barrier.

The Facility shall operate 24 hours a day, 7 days a week. The Alamitos Barrier demand is met in part through water supplied by the LVL AWTF. PERC Water will satisfy this demand with the highest percentage of advanced treated water possible, subject to:

- Available source water from the LA County Sanitation District Long Beach Water Reclamation Plant
- Facility operational readiness (i.e., system(s) functionality)
- Effluent discharge restrictions from LA County to the Alamitos Barrier

PERC Water will meet WRD’s requirement of proactive management to optimize Facility operations and maximum production through reduced plant shutdowns, inclusive of:

1. Evaluating and diagnose the operational issue(s)
2. Development of a corrective action work plan
3. Execution of the corrective action to resolve the issue
4. Notify WRD with the resolution or planned resolution
In the event the operational issue requires a plant shutdown, PERC Water will lead and employ all efforts and resources to resolve the problem, while in continual communications with WRD.

As a facility that operates 24 hours a day, 7 days a week, PERC Water will provide daily (Monday-Sunday) after-hours (5:00pm – 6:00am) monitoring by the designated senior plant operator, such as the Chief Plant Operator (CPO) or Designated Operator-in-Charge (DOC). Monitoring will be conducted remotely using the WRD provided hardware (e.g., laptop or iPad) which will allow for monitoring and control capability – similar to the system currently employed at the Albert Robles Center. PERC Water will respond to all Facility emergencies via remote access and report onsite as appropriate and dictated by the event within one (1) hour of receiving notification.

**Staffing Plan**

The PERC Water staffing plan will provide for operations staff on site daily: Monday to Sunday, ten (10) hour shifts per day. A total staff of six (6) full-time-equivalent (FTE) PERC Water employees will be dedicated to ensuring the successful operation of the Facility. The LVL AWTF is a Class 4 treatment facility pursuant to Title 23, California Code of Regulations. Title 23, Article 3 specifies that the facility must employ a CPO with a valid Grade 4 (or higher) certification as a water/wastewater treatment operator issued by the California State Water Resources Control Board Operator Certification Program. The DOC must possess a valid Grade 3 operator certification. At a Class 4 Facility, at least 50 percent of the operators shall possess a valid or operator-in-training certificate at the Grade 2 level or higher. In addition, PERC Water Project Manager, Eric Gonzales, will be dedicating approximately seventy (70%) percent of his time to leading the on-site team, including supervising, training, etc. to ensure the Facility is operating per the contract and meeting all regulatory requirements. PERC Water will also provide its standard corporate support as with all PERC Water projects under our operation.

**Team Qualifications**

PERC Water staff is experienced and dedicated to the successful operation of the facilities we currently operate. We fully understand and support WRD’s objectives for the LVL AWTF. We have spent sufficient time visiting the facility and communicating with staff and we believe we have an effective plan to accomplish the goal of reliable uninterrupted operation. We have created a staffing plan that will be led by Project Manager Eric Gonzales, who is currently responsible for the management and oversight of the Albert Robles Center (ARC) AWTF and has been responsible for the commissioning and startup of the facility since construction completion. Eric will continue to oversee the ARC Facility with approximately 30% of his time committed to that effort. As stated, the remaining balance of his time will be dedicated to LVL. Additionally, we will build a team to support Eric to accomplish the goals for the LVL Facility.

Our corporate support will also play an important role in the success of the LVL Facility. As you likely know Consolidated Water Company Ltd. (CWCO) has acquired a 51% ownership of PERC
Water Corporation. CWCO specializes in ocean desalination and has extensive experience in membrane system operation. The resources we have access to from within CWCO will add to extensive experience of our onsite team.

We have included an organization chart below demonstrating the onsite team structure we have planned for the operation of the LVL facility and included resumes of our key managers in the appendix of this proposal. We will continue to build our team with qualified operators and provide you with additional resumes as we move forward.

Operational Contacts

For the duration of this contract, the following shall be the designated operational contacts:

- WRD Water Operations Superintendent
- PERC Water Project Manager and PERC Water CPO (assigned to the LVL AWTF)

PERC Water staff will maintain regular communications with WRD and participate in operational meetings as requested to disseminate information related to Facility operations. Designated PERC Water staff shall keep WRD apprised of situational events at the Facility that warrant corrective action and/or Facility shutdown. Further, PERC Water will notify entities associated with the LVL AWTF operations as needed,
including, but not limited to the LA County Sanitation District Long Beach Water Reclamation Plant, LA County Department of Public Works and the Long Beach Water Department.

The PERC Water scope of services will also consist of a number of additional tasks, which are highlighted at a minimum below:

**Operational Tasks**

- Provide all required staff to operate and manage the LVL AWTF as required by all State and Federal regulatory permits.
- Minimize any plant operating downtimes whenever possible by coordinating major activities in parallel with one another and/or during any schedule shutdowns.
- Employ PERC Water’s “PROACTIVE PERC SOLUTION” - a mechanism to anticipate and reduce the amount of unscheduled downtime events by measuring an asset’s failure rate, preventative maintenance frequency, cost and availability.
- Sample collection for compliance sampling (laboratory cost for certified lab services paid by WRD).
- Responsible for the safe and reliable operations of the LVL AWTF and all ancillary equipment while maintaining compliance with all State, Federal and governing compliance agency requirements.
- Management of all plant processes and ancillary equipment to ensure proper function, calibration, aesthetics and optimization, including coordinating with WRD vendors and service providers.
- Work in coordination with the LA County Sanitation District, LA County Department of Public Works (LACPW) and the Long Beach Water Department to provide a reliable and consistent delivery of product water to the Alamitos Sea Water Intrusion Barrier.
- Endeavor to maintain operation of the facility without interruption. When plant operation is interrupted due to the lack of supply water from the Long Beach Water Reclamation Plant, PERC Water will restart plant operations as soon as reasonably possible based on the return of supply influent and the ability to discharge to the Alamitos Barrier (per LACPW).
- Respond effectively to odor complaints, air emissions, noise complaints, etc.
- Designate a senior PERC Water operator (CPO or DOC) to coordinate and schedule bulk chemical deliveries utilizing the WRD-supplied contracts to ensure adequate chemicals are present at all times for Facility operations.

**Compliance Reporting Tasks**

- Manage the compliance process, including schedule, sample collection, storage and delivery to the WRD-contracted laboratory for compliance analyses. Sample analyses for process control will be collected and analyzed onsite by PERC Water operators as needed, required and/or requested by WRD. (WRD shall provide laboratory selection for compliance analyses and be responsible for lab costs and fees including transportation)
Preparation and submittal of all regulatory reports as required by law. PERC Water will furnish all reports upon completion of appropriate QA/QC measures to ensure data validity and correctness. Reports will be submitted to WRD with sufficient time to review, request corrections by PERC Water (as needed) and submit in the time required by each regulatory agency. Reports include, but are not limited to, the WDR Report (LA Regional Water Quality Control Board), SMR Report, Brine Calibration Meter Report and Surcharge Reports (LA County Sanitation District) and the CERS Report (Long Beach CUPA).

In connection with any actual or alleged event of non-compliance with applicable law, PERC Water shall: (1) fully and promptly respond to all inquiries, investigations, inspections, and examinations undertaken by any Governmental Body; (2) attend all meetings and hearings required by any Governmental Body; (3) provide all corrective action plans, reports, submittals and documentation required by any Governmental Body, and shall provide copies of any such plan, report, submittal or other documentation to Contractor and WRD; (4) in conjunction with WRD, communicate in a timely and effective manner with the general public as to the nature of the event, the impact on the public, and the nature and timetable for the planned remediation measures; (5) immediately upon receipt thereof, provide WRD with a true, correct and complete copy of any written notice of violation or non-compliance with applicable law, and true and accurate transcripts of any oral notice of non-compliance with applicable law, issued or given by any Governmental Body; and (6) provide WRD with an immediate written notice describing the occurrence of any event or the existence of any circumstance which does or may result in any such notice of violation or non-compliance to the extent Subcontractor has knowledge of any such event or circumstance, and of any legal proceeding alleging such non-compliance; (7) provide follow-up investigation report to WRD within required timeframe, following the immediate written notice describing the occurrence of any event or the existence of any circumstance which does or may result in any such notice of violation or non-compliance.

Management/Administrative Tasks

- Knowledge of all WRD service and vendor contracts. PERC Water shall call upon WRD service contracts where possible.
- Create a current spare parts inventory and organize spare parts warehouse as needed.
- Manage the spare parts inventory including the re-ordering of operational consumables as needed.
- Provide all personnel related expenses, uniforms, safety equipment & PPE, cell phones, laptop computers.
- Provide laboratory consumables for in-house sample analyses for process control.
- Maintain site safety in compliance with industry standards and applicable laws.
- At the completion of Transitional Operations, a set of draft Standard Operating Procedures (SOPs), which have utilized the WRD template, shall be developed, conditionally approved by WRD, with final SOPs approval within 180 days of the completion of Transition Operations. PERC Water will update SOPs as needed to reflect current Facility operations. SOPs will be reviewed and approved by WRD annually.
• Update Operations and Optimization Plan (OOP) within 180 days of commencement of services. OOP must be approved by the District and the LA Regional Water Quality Control Board.
• The onsite staff will setup, implement and utilize WRD’s CMMS Program (City Works) to track all preventative maintenance in full support of WRD’s Enterprise Asset Management Program.
• Produce monthly Operations Reports per WRD-provided template that includes, but is not limited to performance matrices such as Facility water production, brine discharge, energy consumption, chemical consumption and system-specific parameters such as membrane permeability, membrane cleanings, UV lamp status, etc.
• Produce monthly Asset Management Reports per WRD-provided template that documents calibrations and service performed by WRD service vendors.
• Respond in a timely and effective manner to all complaints and communication regarding the treatment and distribution of water.
• Ensure that the property on which the LVL AWTF is located is in a clean and orderly condition at all times.
• One vehicle for PERC Water staff utilization.
• Maintain site safety in compliance with industry standards and applicable laws. Hazardous waste including oil and lubricants shall be stored and disposed of in compliance with all regulatory and safety requirements.
• Clean organize and maintain mechanical shop.

**WRD Responsibilities**

• Provide unencumbered access to the LVL AWTF.
• Provide current copies of the facility documents and drawings.
• Fund and promptly pay for spare parts inventory.
• Fund and promptly pay for certified laboratory services.
• Fund and promptly pay for process chemical.
• Provide access to all service contracts from outside vendors for instruments and mechanical equipment.
• Fund and promptly pay for all utilities to include but not limited to:
  - Electrical power
  - Natural gas
  - Telephone and internet services
  - Trash Services
**Transitional Operations**

PERC Water will draft a Transition Plan to detail a mutually agreeable transition schedule. We will review the plan with WRD and the current operations team to ensure all parties are in agreement and allowing for a seamless transition of operations. We anticipate a transition period of 60 days. The Transition Plan will detail exactly how operational and regulatory responsibility will be addressed during the period.

We would propose during the first 30 days of the transition period the current operator would lead the operation of the facility and also have regulatory responsibility. On day 31 the operational and regulatory responsibility will transition to PERC Water. During the remaining 30 days the current operator will remain onsite full time and provide support to PERC Water staff. Data transfer will be a detailed part of the plan to ensure all historical records are transferred to a permanent database.

**Compensation**

Fixed Fee – To include all tasks as detailed above.

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<tr>
<th></th>
<th>Fixed Fee Monthly</th>
<th>Fixed Fee Annual</th>
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<tbody>
<tr>
<td></td>
<td>$105,275</td>
<td>$1,263,294</td>
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In closing I would like to thank you for providing this opportunity for us to work in partnership with the Water Replenishment District of Southern California.

Sincerely,

PEERC Water Corporation

Robert Nespeca, Vice President
Bob Nespeca
Vice President

Mr. Nespeca has 40 years of experience managing water and wastewater facilities. He established and developed the PERC Water Asset Management Division, offering operational solutions and utility management services to water districts and municipalities. His responsibilities include all aspects of the management and oversight of PERC Water’s operating services division, including business development, project management and development, QA/QC, regulatory compliance, startup and commissioning of facilities, procurement, safety and training, staff development and customer relations. Mr. Nespeca will ensure that the operations team have all the resources and support from PERC Water necessary to completely fulfill all the needs of the project.

Professional Experience

Albert Robles Center (ARC) for Water Recycling and Environmental Learning - Water Replenishment District of Southern California, Pico Rivera, CA (Operate/Maintain/Manage): Mr. Nespeca has been a critical team member in PERC Water’s partnership with JF Shea Construction and Tetra Tech, Inc. in the design, construction, and operation of the Advanced Water Treatment Facility. He leads the project development on PERC Water’s behalf and will continue to oversee the daily operational efforts for the facility. In addition, He leads the pilot plant program, which verifies source water quality, conditions chemical dosages, and projects membrane operation. He will oversee the commissioning and startup of the facility, as well as ensure it is operated and maintained in accordance with all regulatory requirements.

Operations and Maintenance, U.S Coast Guard Training Center, Petaluma, CA: As Asset Management Director, is currently overseeing two full-time operators with responsibility for the overall operation of the wastewater treatment plant, including compliance with effluent limitations established in the waste discharge permit and all regulatory and legal requirements. The facility has a peak wet weather flow of 3.036 MGD and an average dry weather flow of 0.197
MGD, with secondary and tertiary treatment and discharge. The plant consists of headworks including flow monitoring and automated screening and grit removal; a flow equalization basin; secondary treatment facilities consisting of an activated sludge system with biological nutrient removal (BNR); spray irrigation (land application wastewater); solids processing and handling (chemical conditioning); and chlorine disinfection facilities utilizing sodium hypochlorite.

**Operations and Maintenance, Tejon-Castac Water District, Tejon, CA:** As Asset Management Director, is currently overseeing three full time operators staffing the Tejon-Castac Water District’s two Wastewater Plants and one Potable Water Treatment Plant. In addition, PERC Water is managing the District’s Billing and Customer Service Department.

**Mountain Village Water Resource Recovery Facility (WRRF), Tejon-Castac Water District (DBO), Tejon Ranch, CA:** Serving as Asset Management Director for the .22 MGD new standalone WRRF which will receive and treat sewage from the residential and commercial customers within Mountain Village. The plant will be built with a conventional tertiary treatment system incorporating a headworks screen, a two-tank Sequencing Batch Reactor secondary activated sludge process with influent and effluent equalization, Title 22 tertiary filtration with ultraviolet and chlorine disinfection. Final construction completion is scheduled for July 2021.

**Mountain Village Water Treatment Plant (WTP), Tejon-Castac Water District (DBO), Tejon Ranch, CA:** Serving as Asset Management Director for the .31 MGD (1.25 MGD at build-out) new standalone WTP, which will receive surface water from the California Aqueduct and be delivered to Mountain Village. Raw water will be treated onsite prior to distribution and storage. Construction completion is scheduled for May 2021.

**Vista Canyon Water Reclamation Facility, Santa Clarita, CA (DBO):** Asset Manager for the commissioning, startup, and operation of this .415 AeroMod recycled water harvesting facility that treats wastewater generated by both the development and a portion of the existing flows from a City of Santa Clarita sewer line crossing the project site. All solids from the facility are sent to the Santa Clarita Valley Sanitation District’s existing Valencia Water Recycling Facility for processing and disposal. Recycled water from the facility
Bob Nespeca (Continued)

will be delivered to Santa Clarita Valley Water as the wholesale water agency for the Santa Clarita Valley to offset Santa Paula Water Reclamation Facility (WRF), Santa Paula, CA (DBOF): Directed the commissioning, startup, and operation of this 4.1 MGD MBR WRF. The project was procured by the City of Santa Paula as a design, build, operate, and finance project. He was a critical component of PERC Water’s ability to raise $62 million of private equity capital to fully fund the design, construction, commission, and startup of the facility. Bob also managed all negotiations with vendors and subcontractors, headed the asset management, and oversaw all operations of the facility.

Pacific Grove Water Recycling Facility (WRF), Pacific Grove, CA (DBO): Asset Management Director for this facility which was designed, built, and now operated by PERC Water. The facility is 45 feet by 45 feet and located in the back corner of the Pacific Grove Golf Links. The facility features noise and odor controls with architectural design, reducing visual impacts to the surrounding community. Concrete structures and stainless equipment were selected to withstand the corrosive coastal environment.

Mountain House Community Services District Water Recycling Facility (WRF), Tracy, CA (DBO - Ph I / DBB - Ph II): Directed the commissioning, startup, and ongoing operations of the WRF. He was involved in all stages of design and construction as he trained his team to operate the facility. He also was the leading voice in communications between PERC Water and the client, preparing presentations and materials for the client’s understanding and benefit. He also managed all negotiations with subcontractors and vendors throughout the design and construction phases of the project, and provided management and direction to PERC Water’s onsite operating team, upon completion.

Sundance and Tartesso Water Reclamation Facilities (WRF), Buckeye, AZ (DBO): Headed the commissioning, startup, and ongoing operations of the facility. He was involved in all stages of design and construction as he trained his team to operate the facility. He also was the leading voice in communications between PERC Water and the client, preparing presentations and materials for the client’s understanding and benefit. Mr. Nespeca also managed all negotiations with subcontractors and vendors throughout the design and construction phases of the project, and provided
SPA 2 Water Recycling Facility (WRF), Surprise, AZ (DBO): Served as Asset Management Director for the 1.2 MGD (expandable to 2.4 MGD) SBR facility which consists of a state-of-the-art hybrid SBR treatment process with tertiary filtration and UV disinfection. The facility is a Title 18 WRF that will produce Class A+ effluent for unrestricted reuse in Arizona. Responsible for staff development, customer relations, operations trainings, startup services, supervision of regulatory testing and compliance, maintenance and management of all assets, and facilitation of negotiations with subcontractors and vendors for the facility.

Palm Valley Phase I Water Recycling Facility (WRF), Goodyear, AZ (DBO): Responsible for staff development, customer relations, operations trainings, startup services, supervision of regulatory testing and compliance, maintenance and management of all assets, and facilitation of negotiations with subcontractors and vendors for the facility. The Palm Valley facility meets the highest water quality standards and can support approximately 16,500 homes. The project delivery allowed SunCor and LPSCo Utilities to implement Class A+ treatment in less than 18 months from start to finish. PERC Water's Asset Management Division operated and maintained the facility for the first two years after start-up. SunCor then sold LPSCo Utilities to Liberty Utilities in 2002, and PERC Water trained and transitioned the operations of the Palm Valley WRF to Liberty's operations staff.

Red Rock Water Recycling Facility (WRF), Marana, AZ (DBO): Responsible for staff development, customer relations, operations trainings, startup services, supervision of regulatory testing and compliance, maintenance and management of all assets, and facilitation of negotiations with subcontractors and vendors for the facility. PERC Water was contracted to design, build, and operate the 0.3 MGD facility with an ultimate capacity of 1.5 MGD.

Adelanto Wastewater Treatment Plant (WWTP) Improvement Plan, Adelanto, CA (Maintenance and Operations): In construction phases of the project, Mr. Nespeca managed and directed all negotiations with and efforts of subcontractors and vendors in the update of the WWTP. He managed the commissioning and startup of the
facility and continues to manage the assets and operations of the plant, compliance and reporting, and maintenance of all plant equipment. Other responsibilities include coordinating all upgrades and equipment purchases, installations, testing, and maintenance; and performing cost analysis.

**Barona Resort and Casino Water Recycling Facility (WRF) Lakeside, CA (DBO):** As Asset Management Director, provided Design/Build/Operate services for the Barona Band of Mission Indians. Phase I of the project was complete with a 0.75 MGD capacity Water Recycling Facility (WRF), designed to treat very high strength commercial wastewater from the casino resort and hotel. The PERC ASP® SBR handles flows for the casino, offices, 18-hole championship golf course, and a destination hotel and resort.

**Hope Gardens Wastewater Treatment Plant, Union Rescue Mission, Los Angeles, CA:** Responsible for the startup, commissioning, and operations of this plant. His responsibilities for this project also included developing and training the operations team, ensuring regulatory compliance and reporting, and managing relations with customers.

**Asset Management Solution Turn Around Plan (TAP), Ione, CA:** Since 2009, Mr. Nespeca has been providing operation, maintenance and management oversight to the City of Ione’s Castel Oaks Water Reclamation Plant (COWRP), as well as the City’s Wastewater Treatment Plant (WWTP) and Collection System. The City’s principle objective in contracting their wastewater operations, was to ensure cost effective wastewater operations services and compliance with the City’s permits. PERC Water developed an Asset Management Strategy for the City which improved the efficiency and reliability of the existing operations, decreased overall operational costs, and met its water quality regulations.

**CordeValle Golf Club Water Reclamation Facility (WRF), San Martin, CA (DBO):** Asset Management Director for this .03 MGD water reclamation facility that treats wastewater from 42 custom homes, 45 over-night casitas and a 2,500 SF clubhouse and pro-shop to meet California’s stringent Title 22 reuse requirements.

**Grizzly Ranch Golf Club Water Recycling Facility (WRF), Portola, CA:** Director of Asset Management for
this project that involved design/build/operate services for a water recycling facility servicing the City of Portola, California and the Grizzly Ranch master-planned community. Phase I was completed with 40,000 gallons per day (GPD) capacity. The Grizzly Ranch WRF was specifically designed to match the architecture of the surrounding development and minimize the disturbance to the surrounding ecosystem.
Eric Gonzales
Operations and Maintenance Manager

Mr. Gonzales is a dedicated operations supervisor, and brings to the job experience in operating, supervising, and managing treatment systems and expertise in diagnosing equipment problems, troubleshooting basic equipment, and taking corrective action within policy and procedures. As a disciplined professional with safety and plant performance as his top priorities, Eric became a licensed Grade II Wastewater Plant Operator within one year of employment, and later became a certified Grade V Wastewater Treatment Plant Operator within just five years of employment. Treatment systems under his care have consistently met quality and processing targets. Furthermore, Eric is a strong leader and is known for his effective, timely, and respectful communication with employees, supervisors, contractors, and customers. He has spoken at a number of conferences and been featured in the Treatment Plant Operator Magazine. Eric’s diligent work has been recognized by many, including the Southwest Membrane Operator Association who awarded him their 2016 Operator of the Year Award.

Professional Experience

Albert Robles Center (ARC) for Water Recycling and Environmental Learning, Pico Rivera, CA: Eric leads PERC Water’s operations role in this advanced water treatment project. Eric provides a Facility operator throughout the 24-month construction and commissioning period, has developed the Plant Operating Protocol and Monthly Operating Reports, and has assisted with the Facility design and operability review. Eric has also assisted with the review of system functionality and test plans; the development and review of the Plant’s Operation and Maintenance Manual and CMMS Plan; and the development of the Process Monitoring and Regulatory Reporting Plan in compliance with Title 22 Permit requirements. Eric also hires and trains all plant operations and maintenance staff. In addition to these responsibilities, Eric also has an active role in preparing, in coordination with the project Contractor, the following documents: Staff Development Plan; Operations and maintenance Plan; Health and Safety Plan (with respect to operations and maintenance); Emergency Response Plan;
and Operations and Maintenance Staff job descriptions. He coordinates all operations activity and reporting, and works closely with project partners to ensure the safe and successful operation of the Facility.

**Suez (United Water), El Segundo, CA:** In his positions at Suez, Eric proved to be an invaluable asset to the Operations and Maintenance Team. Eric began his work as an operator in training (OIT) and quickly became a Grade II operator. Soon after, he advanced to Grade III which led to his position as lead operator. After excelling in this position, Eric became a Grade V operations supervisor for three of SUEZ’s water recycling facilities. In each of these positions, Eric monitored and operated all equipment, aided in regulatory reporting, provided trainings and ensured proper safety mechanisms and practices were in place. He successfully managed the Microfiltration (MF), Ultrafiltration (UF), Reverse Osmosis (RO), Ultra-violet Advanced Oxidation Process (UVAOP), Media Filtration, Biofor, Breakpoint Chlorination, and Ozone treatment processes in these Facilities. In addition to his own operations and maintenance efforts, Eric was responsible for all employee trainings of process equipment, chemical dosing, and compliance with contractual limits and environmental regulations. Furthermore, Eric was intimated familiar with and dedicated to the compliance requirements outlined in Facility permits. With his knowledge and understanding of the treatment processes and Facility equipment, Eric ensured Facility compliance with the State Water Resource Control Board, LA County Sanitation District, Certified Unified Program Agency, and fire inspectors on behalf of SUEZ and West Basin.

**West Basin Municipal Water District, El Segundo, CA:** In 2009 as an Operator in training, Eric quickly excelled in his work and became the Lead Operator in 2013, and, in 2015, the operations supervisor for three satellite facilities (Chevron Nitrification Treatment Plant (5MGD); Torrance Refinery Water Recycling Plant (8MGD); Juanita Millender-McDonald Carson Regional Water Recycling Plant (5.5MGD) and occasionally the Edward C. Little Facility (40MGD) producing two types of reclaimed designer water. In these positions, Eric managed the microfiltration, ultrafiltration, reverse osmosis, ultra-violet disinfection, media filtration, Biofor, breakpoint chlorination and ozone processes. Eric supervised daily activities at each facility while training staff
to operate facility equipment (pumps, engines, generators, valves, gates, mixers, conveyors, blowers, chemical feed systems, odor control systems, disinfection equipment, belt presses, and measuring devices). Eric coordinated and oversaw compliance and contractual permits for each facility. He also identified and defined key parameters in effluent water and implemented a correlation program to achieve automated breakpoint chlorination, and researched and revised the 2-step CIP process for the MFs.
DATE: MARCH 5, 2020
TO: CAPITAL IMPROVEMENT PROJECTS COMMITTEE
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: AWARD OF CONTRACT FOR SUPPLEMENTAL RECHARGE WELLS 1A, 2, & 3 DEVELOPMENT PROJECT

SUMMARY
District staff have completed of the design and specifications for the Supplemental Recharge Well Equipment Installation at the Albert Robles Center (ARC). The wellhead completion work is the final step needed to allow connection and commence direct injection of advanced treated water into the underlying aquifers from the ARC Advance Water Treatment Facility (AWTF). Following the District’s last attempt to bid the work, it was determined that a varied, stepped approach should be taken to: 1) determine if the wells can be developed to a level where they can achieve the minimum total capacity needed for injection and 2) if the minimum injection capacities can be obtained, WRD would proceed with the Supplemental Recharge Well Equipment Installation Project. A development method will be deployed to maximize the affect of development on the lithologic formation to improve the performance of the well and maximize the injection capacity.

On December 19, 2019, the WRD Board of Directors approved the release of a Request for Bids (RFB) for the ARC Supplemental Recharge Well Development Project and the RFB was posted on the WRD’s online procurement portal (Bonfire).

A mandatory pre-bid meeting was held on January 8, 2020, at which seven firms were represented. During the pre-bid meeting it was clarified the RFB was for up to three wells but each well will be completed separately. It was further explained that since the RFB requested a bid for the development and equipping of the wells, and that there were still too many unknowns to effectively bid the equipping task, that the wellhead equipping task would be addressed in a separate RFB. In addition, questions and answers from the pre-bid meeting and subsequent inquiries or information were also posted on the WRD procurement portal.

On January 31, 2020, the District received and publicly opened three bids as summarized below:
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<th>Contractor</th>
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<td>Southwest Pump and Drilling, Inc. (SWPDI)</td>
<td>$885,950</td>
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<tr>
<td>Layne Christensen Co. (Layne)</td>
<td>$741,200</td>
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<tr>
<td>Yellow Jacket Drilling (Yellow Jacket)</td>
<td>$704,000</td>
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Thereafter, District staff and legal counsel have evaluated the bid results and deemed that, in accordance with the Public Contract Code, Yellow Jacket is the apparent lowest responsible and responsive bidder, with the bid amount of $704,000.

**FISCAL IMPACT**

The fiscal impact for the recommended Construction Contract is $704,000 with 10% contingency of $70,000 for a total of $774,000. The project is included in the District's Capital Improvement Program for the ARC AWTF project and will be funded by the District's 2018 bond proceeds.

**CAPITAL IMPROVEMENT PROJECTS COMMITTEE RECOMMENDATION**

The Capital Improvement Projects Committee recommends that the Board of Directors enter into a Construction Contract, subject to approval as to form by District Counsel, with Yellow Jacket Drilling for the ARC Supplemental Recharge Well Development Project for an amount not to exceed $704,000 plus a 10% contingency, for a total of $774,000.
SECTION 00500
AGREEMENT

Water Replenishment District of Southern California
4040 Paramount Boulevard, Lakewood, California 90712
Telephone: (562) 921-5521 Fax: (562) 921-6101

OWNER: Water Replenishment District of Southern California
CONTRACTOR: Yellow Jacket Drilling Services, LLC
Contract No.: 1106
Project No.: 0330611
Project Title: Supplemental Recharge Well Development Project
Date:
Total Price: $704,000.00

THIS AGREEMENT or (“Contract”) is by and between Water Replenishment District of Southern California (“Owner”) and Yellow Jacket Drilling Services, LLC (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents as defined and specified in Article 9 of this Contract. The Work is generally described as follows: See Specifications Section 01100.

ARTICLE 2 – THE PROJECT

The Project, of which the Work under the Contract Documents is a part, is generally described as follows: ARC Supplemental Recharge Well Development Project and is described in greater detail in Section 01100 below.

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by WEST YOST ASSOCIATES.

3.02 The Owner has retained WEST YOST ASSOCIATES (“Engineer”) and has the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.
ARTICLE 4 – CONTRACT TIMES

4.01 Time of the Essence
A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 Contract Times: Days
A. Contractor agrees and warrants that the Work will be substantially completed within 120 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 150 days after the date when the Contract Times commence to run. Substantially complete for each well is defined as follows at Owner’s sole discretion: 1) the completion of all of the bid items related to the Project, including the Wellhead Completion work or 2) Owner and/or Engineer determine that the injection testing is unsuccessful and that the Wellhead Completion work will not be performed.

4.03 Liquidated Damages
A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner $2,000 for each delay day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02 above for Substantial Completion until the Work is substantially complete.

2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner $1,000 for each delay day that expires after such time until the Work is completed and ready for final payment.

3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4.04 Special Damages
A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner for: (1) any fines or penalties imposed on Owner as a direct result of the Contractor’s failure to attain Substantial Completion according to the Contract Times, and (2) the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.
B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete or repair the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for construction, engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents and the amounts indicated in the Bid Form, subject to adjustment under the terms of the Contract. Owner will not pay Contractor for any work related the Wellhead Completion portion of the Project if Owner determines that the Wellhead Completion work will not be performed.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments
   A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as described in the General Conditions.

6.02 Progress Payments; Retainage
   A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor’s Applications for Payment during performance of the Work as provided in Article 15 of the General Conditions. All such payments will be measured by the Schedule of Values established as described in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
   B. Prior to Substantial Completion, five percent (5%) retainage shall be withheld from all progress payments to be paid to the Contractor, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.
   C. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100-percent of the Work completed, less such amounts set off and entitled to be withheld by the Owner pursuant to Paragraph 15.01.E of the General Conditions.
   D. Alternatively, the Contractor may substitute securities in lieu of retention pursuant to Public Contract Code Section 10263.

6.03 Final Payment
   A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.
ARTICLE 7 – INTEREST

7.01 All undisputed amounts not paid when due shall bear interest at the rate of 5-percent per annum, unless a different rate is mandated by law or statute.

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has carefully studied all: (1) reports of explorations and tests of surface and subsurface conditions at or adjacent to the Site and all drawings of physical conditions, including but not limited to existing utilities, relating to existing surface or subsurface structures at the Site that have been identified in the Bidding Documents and Supplementary General Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Bidding Documents and Supplementary General Conditions, especially with respect to Technical Data in such reports and drawings.

E. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, drawings or data are necessary for the performance of the Work.

F. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

G. Contractor has given Owner written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Owner is acceptable to Contractor.

H. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

I. Contractor’s entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

A. The Contract Documents consist of the following:

1. This Agreement (Section 00500)
2. Performance Bond (Section 00610)
3. Payment Bond (Section 00615)
4. Non-Collusion Affidavit (Section 00650)
5. General Conditions (Section 00700)
6. Supplementary General Conditions (Section 00800)
7. Any other specifications as listed in this RFB.
8. Drawings (not attached but incorporated by reference) consisting of:
   a. 38 sheets with each sheet bearing the following general title: Supplemental Recharge Wells 1A, 2, and 3 Equipping – October 2018.
   b. 1 sheet with the sheet bearing the following general title: Equipment Diagram, West Yost Associates, December 2019
9. Addenda (numbers 1 to 2, inclusive).
10. Exhibits to this Agreement (enumerated as follows):
    a. Bid Form (Section 00300).
    b. Well Construction Report, Tetra Tech, Inc., April 19, 2018 (not attached but incorporated by reference)
    c. Well Rehabilitation Scope of Work, ARC Injection Wells SRW-1A, SRW-2, and SRW-3, December 3, 2019 (not attached but incorporated by reference)
11. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
    a. Notice to Proceed.
    b. Work Change Directives.
    c. Change Orders.
    d. Field Orders.
B. The documents listed in Paragraph 9.01.A above are attached to this Agreement (except as expressly noted otherwise above).
C. There are no Contract Documents other than those listed above in this Article 9.
D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.
ARTICLE 10 – LABOR

10.01 Prevailing Wage
A. This Contract is subject to California Labor Code Sections 1720 et seq., and Contractor and any Subcontractor shall pay not less than the specified prevailing rates of wage to all workers employed in performance of the Work. Pursuant to the provisions of Section 1770 of the California Labor Code, WRD has obtained the general prevailing rate of wages and employer payments for health and welfare, vacation, pension and similar purposes, as determined by the Director of the Department of Industrial Relations, a copy of which is on file in the office of WRD, and shall be made available for viewing to any interested party upon request. The Contractor and each Subcontractor shall forfeit as a penalty to WRD not more than Two Hundred Dollars ($200) for each calendar day, or portion thereof, for each worker paid less than the stipulated prevailing wage rate in violation of the Labor Code. In addition, the difference between the prevailing wage rate and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor.

10.02 Employment of Apprentices
A. Contractor’s attention is directed to the provisions in Section 1777.5 and 1777.6 of the Labor Code concerning the employment of apprentices by the Contractor or any Subcontractor under the Contractor. It shall be the responsibility of the Contractor to effectuate compliance on the part of itself and any Subcontractors with the requirements for employment of apprentices. Information relative to apprenticeship standards, wage schedules, and other requirements may be obtained from the Department of Industrial Relations.

10.03 Payroll Records
A. Pursuant to Labor Code Section 1776, the Contractor and each Subcontractor shall maintain weekly certified payroll records showing the name, address, social security number, work classification, straight time and overtime hours paid each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed in connection with the work. Contractor shall certify under penalty of perjury that records maintained and submitted by Contractor are true and accurate. Contractor shall also require Subcontractor(s) to certify weekly payroll records under penalty of perjury. In the event of noncompliance with the requirements of this Section, the Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying any item or actions necessary to achieve compliance with this section. If Contractor or Subcontractor does not comply after such ten (10)-day period, the Contractor shall, as a penalty to WRD, forfeit One Hundred Dollars ($100) for each day, or portion thereof, for each worker until strict compliance is effectuated.

B. In accordance with Labor Code section 1771.4, the Contractor and each Subcontractor shall furnish the certified payroll records directly to the Department of Industrial Relations on a weekly basis and in the format prescribed by the Department of Industrial Relations, which may include electronic submission. Contractor shall comply with all requirements and regulations from the Department of Industrial Relations relating to labor compliance monitoring and enforcement.

10.04 Public Works Contractor Registration
A. Pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and Subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. This contract will not be entered into without proof of the contractor's and Subcontractors' current registration with the Department of Industrial Relations to perform public work. Contractor and its Subcontractors, of any tier, shall maintain active registration with the Department of Industrial Relations for the duration of the Project.

B. This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. In executing this Contract, Contractor acknowledges that it has reviewed all applicable labor compliance requirements and included the cost of complying with such requirements in its bid.

10.05 Labor Compliance

A. Contractor shall post, at appropriate conspicuous points on the Project site, a schedule showing all determined general prevailing wage rates and all authorized deductions, if any, from unpaid wages actually earned.

10.06 Hours Of Work

A. Eight (8) hours of work shall constitute a legal day's work. The Contractor and each Subcontractor shall forfeit, as penalty to WRD, twenty-five dollars ($25) for each worker employed in the execution of Work by the Contractor or any Subcontractor for each day during which such worker is required or permitted to work more than eight (8) hours in any one day and forty (40) hours in any week in violation of the provisions of the Labor Code, and in particular, section 1810 to section 1815, except as provided in Labor Code section 1815.

ARTICLE 11 – MISCELLANEOUS

11.01 Terms

A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary General Conditions.

11.02 Assignment of Contract

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

11.03 Successors and Assigns

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.
11.04 Severability

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

11.05 Contractor's Certifications

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 11.05:

1. “Corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. “Fraudulent practice“ means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. “Collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. “Coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.
IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on ____________ (which is the Effective Date of the Contract).

OWNER:
Water Replenishment District of Southern California

By: ____________________________
Title: President of the Board of Directors

CONTRACTOR:

By: ____________________________
Title: ____________________________

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: ____________________________
Title: Secretary of the Board of Directors

Address for giving notices:
Water Replenishment District of Southern California
4040 Paramount Boulevard
Lakewood, CA 90712

License No.: ____________________________

(Since Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

NOTE TO USER: Use in those States or other jurisdictions where applicable or required.

++END OF SECTION++
DATE:  MARCH 5, 2020
TO:  BOARD OF DIRECTORS
FROM:  ROBB WHITAKER, GENERAL MANAGER
SUBJECT:  AUTHORIZATION TO RELEASE A REQUEST FOR BIDS FOR DRILLING SERVICES ASSOCIATED WITH THE NATIONAL GROUNDWATER MONITORING NETWORK (NGWMN)

SUMMARY
WRD was awarded a grant for various groundwater monitoring related activities associated with the National Groundwater Monitoring Network (NGWMN) as administered by the United Stated Geological Survey (USGS). The overall goal of the program is to develop a nationwide, long-term groundwater monitoring framework that could provide information necessary for the planning, management, and development of groundwater resources to meet current and future water needs, and ecosystem requirements with a primary focus on the nation’s principal aquifers as defined by the USGS. WRD has a very extensive groundwater monitoring network within one of the most heavily utilized aquifers in California. The data would provide beneficial information for the nationwide evaluation of groundwater resources and help fill a key data gap in the current NGWMN.

The Groundwater Quality Committee reviewed the project details and forwarded their recommendation to the board on November 9, 2017. WRD’s Board of Directors approved of the project concept and submittal of the grant application on November 16, 2017. Grant applications were submitted in two rounds of grant funding on November 30, 2017 and November 30, 2018. Grant funding currently includes the following:

- Task 1 consists of linking our existing groundwater monitoring data for key monitoring wells to the national data portal similar to the process staff already follow for the California Statewide Groundwater Elevation Monitoring program (CASGEM).
- Task 2 consists of replacing eight deteriorating monitoring well vaults located in the Central Basin and West Coast Basin (CBWCB).
- Task 3 consists of conducting pneumatic slug testing at each monitoring well to gather additional aquifer data in key areas of the CBWCB.
- Task 4 consists of drilling a new deep nested monitoring well to fill an existing data gap in the Montebello Forebay.
USGS issued an authorization approving grant funds for each task requested by WRD. WRD is currently managing the project and has conducted a good portion of the work utilizing in-house staff from our Data Technology and Hydrogeology Departments. Work not performed by our in-house staff is supplemented by our as-needed professional groundwater monitoring and field services contract previously approved by the Board on October 3, 2019.

WRD staff are in the process of preparing to drill the new deep nested groundwater monitoring well noted above in Task 4. WRD's deep nested wells are typically installed by the USGS. However, the grant does not allow them to accept funds from their own agency and staff will need to hire a driller, which will be conducted via a request for bid (RFB). WRD staff reviewed the scope of work and specifications for the RFB at the Water Resources Committee on February 18, 2020. The Water Resources Committee approved staff recommendation that the Board of Directors approve the preparation and issuance of the drilling RFB but wanted to discuss the budget further at the Finance / Audit Committee. WRD staff reviewed the budget as described in the fiscal impact statement and received approval to proceed from the Finance / Audit Committee on February 24, 2020.

**FISCAL IMPACT**

Costs will depend on the bid packages received and the selected contractor with a portion of the drilling costs reimbursed through the grant in an amount not to exceed $135,000. The remaining cost are budgeted in the proposed Fiscal Year 2021 Capital Improvement Program budget (estimated at $670,000).

**WATER RESOURCES COMMITTEE RECOMMENDATION**

The Water Resources Committee recommends that the Board of Directors approve the preparation and issuance of a Request for Bids, subject to approval as to form by District Counsel, for drilling services associated with the National Groundwater Monitoring Network Project.
REQUEST FOR BID

INSTALLATION OF A DEEP NESTED GROUNDWATER MONITORING WELL (RFB-19-003)

SPECIFICATIONS

CONTRACT NO. 1107

PREPARED FOR:

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
4040 PARAMOUNT BOULEVARD, LAKEWOOD, CA 90712

PREPARED BY

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
4040 PARAMOUNT BOULEVARD, LAKEWOOD, CA 90712

March 2020
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INSTALLATION OF A DEEP NESTED GROUNDWATER MONITORING WELL

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DRAWINGS
A. Typical Well Construction Diagram

APPENDICES
A. Join NGWMN, Provide Persistent Data Services and Drill a New Monitoring Well (prepared by WRD).
Sealed Bids for the Installation of a Deep Nested Groundwater Monitoring Well will be received by the Water Replenishment District of Southern California (WRD), 4040 Paramount Boulevard, Lakewood, CA, 90712, until 11:00 AM local time on April 16, 2020, at which time the Bids received will be publicly opened and read.

The Project consists of furnishing all labor, materials, equipment, supplies and incidentals required for the Installation of a Deep Nested Groundwater Monitoring Well.

Bids will be received for a single prime Contract. Bids shall be on a lump sum and unit price basis, as indicated in the Bid Form. Bidding Documents may be obtained free of charge from the WRD Procurement Portal at: https://wrd.bonfirehub.com/, which will be posted under this Solicitation Reference Number and Project Title and in the format stated in the advertisement or invitation to bid. Prospective bidders must register through WRD’s Procurement Portal in order to download plans and specifications, reference documents, and to receive addenda and notifications when issued.

BIDS MUST BE SUBMITTED USING THE BID FORMS INCLUDED IN THE BID DOCUMENTS FOR THE INSTALLATION OF A DEEP NESTED GROUNDWATER MONITORING WELL. Each Bid must be accompanied by a certified check drawn on a solvent bank, payable to the WRD, for an amount equal to ten percent (10%) of the total maximum amount Bid or by a satisfactory corporate surety bond for said amount and so payable, as a guarantee that the successful Bidder will within ten (10) days from the date of the award of the Contract, enter into a valid Contract with the WRD for said work in accordance with said Bid Documents.

The successful Bidder will be required to submit performance and payment bonds with the Contract. A bond in the sum of one hundred percent (100%) of the Contract price shall be furnished, guaranteeing the faithful performance of said Contract, and a bond in the sum of one hundred percent (100%) of the Contract price shall be furnished for the protection of all laborers and materialmen.

Pursuant to Public Contract Code Section 10263, Contractor will be permitted to substitute securities in lieu of retention.

Bids shall be made in accordance with the prevailing hourly rate of the wages for this locality and project as determined by the Director of Industrial Relations pursuant to Labor Code Section 1770 et. seq, a copy of which wage rate schedule is on file in the office of the WRD. The Contractor and any of its subcontractors shall pay not less than the specified prevailing rate of per diem wages for general, holiday and overtime work to all workers employed in the execution of this Contract.

Contractors submitting a bid shall possess, at the time the contract is awarded, the following class of contractor’s license issued pursuant to Division 3, Chapter 9 of the Business and Professions Code of the State of California: California Class C-57. The Contractor shall certify that the license specified is the classification of contractor’s license required by law to enable the Contractor to perform the Work contemplated under the Contract Documents. Contractor shall provide WRD
with a copy of its Contractor’s License and expiration date with its bid, and shall present satisfactory evidence that it is licensed in good standing.

Each Contractor submitting a bid shall complete and submit with the bid all of the mandatory forms and information requested by the Bid Documents. Failure to include any of these documents with the bid may disqualify the bid.

WRD reserves the right to reject any and all bids, and to waive any informality in any bid received, and to be the sole judge of the merits of the respective bids received. The award, if made, will be made to the lowest responsible bidder.

A mandatory pre-bid conference will be held at 10:00 AM local time on March 19, 2020 at the Water Replenishment District of Southern California, 440 Paramount Boulevard, Lakewood, CA 90712.


LATE BIDS WILL NOT BE CONSIDERED.
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
Melody Wu, Project Administrator

Owner: Water Replenishment of Southern California
By: Board of Directors
Date: March 5, 2020

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ARTICLE 1 – DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents may be obtained free of charge from the WRD Procurement Portal at: https://wrd.bonfirehub.com/, which will be posted under this Solicitation Reference Number and Project Title and in the format stated in the advertisement or invitation to bid. Prospective bidders must register through WRD’s Procurement Portal in order to download plans and specifications, reference documents, and to receive addenda and notifications when issued.

2.02 Complete sets of Bidding Documents shall be used in preparing Bids. Owner does not assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.01 Bidders shall complete the General Contractor Questionnaire (Section 00 45 00)

3.02 Owner may conduct such investigations as Owner deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of Bidders, proposed listed Subcontractors, suppliers and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to Owner’s satisfaction within the prescribed time. A Bidder’s failure to promptly respond to such investigations and inquiries shall result in the rejection of the Bidder’s Bid as non-responsive.

3.03 In the event the Owner renders a finding that Bidder or a listed subcontractor is not a responsible bidder, including based upon the General Contractor Questionnaire and Paragraphs 3.01 and 3.02 immediately above, the Owner will provide the Bidder and, if applicable, the affected listed subcontractor, notice of such a finding and, if requested, a due process hearing wherein the Bidder and, if applicable, the affected listed subcontractor, will be provided an opportunity to respond and contest the finding of non-responsibility and present evidence of its responsibility. The Bidder and, if applicable, the affected listed subcontractor, must notify Owner of its request for a due process hearing within five (5) working days of the date of the notice and may submit evidence or a response to the finding with the request. The Owner will notify the Bidder and, if applicable, the affected subcontractor, of the date, time, and location of the hearing, which may take place within five (5) working days of the request for the due process hearing.

3.04 If the Owner ultimately determines that a listed subcontractor is not responsible, Owner may grant permission to the Bidder to substitute the non-responsible listed subcontractor pursuant to Public Contract Code §4107(a)(9) provided that such substitution results in no change in the amount of the Bidder’s bid. If the Bidder refuses to substitute the listed
subcontractor, the Owner will reject the Bidder from further participation in bidding on the grounds of the non-responsibility of the listed subcontractor in question.

3.05 All contractors and subcontractors listed in the Bid Form must be registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5.

3.06 A Bidder’s failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.07 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder’s qualifications.

3.08 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder’s representations and certifications.

ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OTHER WORK AT THE SITE

4.01 Site and Other Areas

A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

4.02 Existing Site Conditions

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Supplementary Conditions identify:
   a. Those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.
   b. Those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
   c. Reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
   d. Technical Data contained in such reports and drawings.

2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
B. Underground Utilities and Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

C. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

4.03 Site Visit and Testing by Bidders

A. Bidder shall conduct the required Site visit during normal working hours, and shall not disturb any ongoing operations at the Site.

B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.

C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner may provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner’s authority regarding the Site.

D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

E. If applicable, Bidder shall fill all testing holes and clean up and restore the Site to its former condition from any investigative or testing related Site disturbances upon completion of such explorations, investigations, tests, and studies.

4.04 Other Work at the Site

A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.
ARTICLE 5 – BIDDER’S REPRESENTATIONS

5.01 It is the responsibility of each Bidder before submitting a Bid to:

A. Examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;

B. Visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. Become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;

D. Carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures or utilities at the Site that have been identified in the Bidding Documents, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Bidding Documents, especially with respect to Technical Data in such reports and drawings;

E. Consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder’s safety precautions and programs;

F. Agree, based on the information and observations referred to in the preceding paragraphs, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;

G. Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;

H. Promptly give Owner written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Owner and (if necessary) Engineer is acceptable to Bidder;

I. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and

J. Agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.
ARTICLE 6 – PRE-BID CONFERENCE

6.01 A pre-bid conference, if any, will be held at the time and location stated in the invitation or advertisement to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements at the pre-bid conference may not be relied upon and will not be binding or legally effective.

ARTICLE 7 – INTERPRETATIONS OF BIDDING DOCUMENTS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to the Owner in writing. Interpretations or clarifications considered necessary by Owner and (if necessary) Engineer in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Bidding Documents. Questions received less than seven (7) days prior to the date for opening of Bids may not be answered. Only responses to questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 10% of Bidder’s maximum Bid price (determined by adding all bid schedules) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.

8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the Contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within fifteen (15) days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. The amount of the forfeiture will be limited to the amount of the Bid security or the difference between the rejected Bid and the next lowest responsive Bid accepted by the Owner, whichever is lower. Such forfeiture shall be Owner’s exclusive remedy if Bidder defaults.

8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven (7) days after the Effective Date of the Contract or sixty-one (61) days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven (7) days after the Bid opening.
ARTICLE 9 – CONTRACT TIMES

9.01 The number of consecutive calendar days within which, or the dates by which the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 – LIQUIDATED DAMAGES

10.01 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 11 – SUBSTITUTE AND “OR-EQUAL” ITEMS

11.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or “or-equal” items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or “or-equal” item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.

11.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

ARTICLE 12 – SUBCONTRACTORS

12.01 Each Bidder must identify the names and addresses of the Subcontractors listed in the General Contractor Questionnaire (Section 00 45 00). If requested by Owner, Bidder shall, within seven (7) days after the date of the request, submit to Owner an experience statement with pertinent information as to similar projects and other evidence of qualification for each such Subcontractor, person and organization.

ARTICLE 13 – PREPARATION OF BID

13.01 The Bid Form is included with the Bidding Documents.

A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.

B. If the Bid Form expressly requests pricing on a specific alternate item, then Bidder is required to provide pricing on the alternate item.

13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign in the Authority to Execute (Section 00 43 15). The corporate address and State of incorporation shall be shown.
13.03 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The State of formation of the firm and the official address of the firm shall be shown.

13.04 A Bid by an individual shall show the Bidder’s name and official address.

13.05 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.

13.06 All names shall be printed in ink below the signatures.

13.07 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

13.08 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

13.09 The Bid shall contain evidence of Bidder’s authority and qualification to do business in the State where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder’s State contractor license number, if any, shall also be shown on the Bid Form.

**ARTICLE 14 – BASIS OF BID**

14.01 Unit Price

A. Bidders shall submit a Bid on a lump sum basis and unit prices for each item of Work listed in the Bid Form.

B. The “Bid Price” (sometimes referred to as the extended price) for each unit price Bid item will be the product of the “Estimated Quantity” (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding “Bid Unit Price” offered by the Bidder. The total of all unit price Bid items will be the sum of these “Bid Prices”; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices.

**ARTICLE 15 – SUBMITTAL OF BID**

15.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.

15.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title, the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation “BID ENCLOSED.”
mailed Bid shall be addressed to: Attn: Melody Wu, Water Replenishment of Southern California, 4040 Paramount Boulevard, Lakewood, CA 90712.

15.03 Bids received after the date and time prescribed in the Bidding Documents, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

16.01 A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.

16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 above and submit a new Bid prior to the date and time for the opening of Bids.

16.03 Bids may not be changed or withdrawn after the deadline for submission of bids, except that the Owner may consent to relieve a bidder from its bid, without forfeiting its bid security, on the grounds of a clerical mistake provided that the bidder establishes to the satisfaction of the Owner that:

1. A mistake was made;
2. The bidder gave the Owner written notice within five calendar days after the opening of the bids of the mistake, specifying in the notice in detail how the mistake occurred;
3. The mistake made the bid materially different from what the bidder intended it to be; and
4. The mistake was made in filling out the bid and not due to error in judgment or to carelessness in inspecting the site of the work, or in reading the plans or specifications.

If the Owner consents to relieve a bidder of its bid after the deadline for submission of bids without forfeiting its bid security, the Owner will prepare a report documenting that the bidder has satisfactorily established each of the four elements set forth above.

ARTICLE 17 – OPENING OF BIDS

17.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.
ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible or responsive. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.

19.02 If Owner awards the Contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.

19.03 Evaluation of Bids

A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

B. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.

19.04 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of subcontractors and suppliers proposed for those portions of the Work for which the identity of subcontractors and suppliers must be submitted as provided in the Bidding Documents.

19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

19.06 In the event of any ambiguity in a Bid, the Owner shall resolve such ambiguity as follows: unit prices shall govern over any extension thereof by the Bidder, and prices for individual bid items or elements shall govern over the summation thereof by the Bidder. The Owner may correct a Bid by multiplying the Bidder’s unit price for a particular Bid item by the applicable quantity, and by adding the Bid items together to obtain the Bidder’s total Bid. Bids so construed will be deemed to be the Bid submitted by the Bidder. If an ambiguity in a Bid cannot be resolved by the foregoing method, the Bid will be deemed nonresponsive and rejected by the Owner.

ARTICLE 20 – BONDS AND INSURANCE

20.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner’s requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

ARTICLE 21 – SIGNING OF AGREEMENT

21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract...
Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within 10 days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 22 – BIDDER PROTEST OF AWARD

22.01 A Bidder may protest the award of the Contract by submitting to the Owner a written protest stating the grounds for the protest along with supporting documentation. The protest must be received by the Owner before the Owner’s action to approve the award of the Contract. The Owner’s General Manager shall investigate the grounds for the protest, examine the documentation, make inquiries as necessary, and accept or reject the protest in writing within five (5) working days of receipt. If the protest is accepted, the Owner may, at its discretion, reject the Bid in question and award the Contract in accordance with its Procurement Policies and Procedures or it may reject all bids.

Protest determinations of the General Manager may be appealed to the Board at its next scheduled meeting, provided the appeal is filed by the end of the second (2) business day of the General Manager’s determination and is otherwise eligible for posting on the Board’s agenda. The President of the Board may call a special Board meeting to hear and rule on the appeal.

Bid protests that do not comply with the deadlines and filing requirements set forth above shall not be considered. The award of the Contract by the Owner shall be contingent on the final resolution of any protests.

++END OF SECTION++
Water Replenishment District of Southern California
Installation of a Deep Nested Groundwater Monitoring Well

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ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

Water Replenishment District of Southern California
Attn: Melody Wu, Project Administrator
4040 Paramount Boulevard
Lakewood, CA 90712

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

(The table below must be completed by Bidder.)

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B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary General Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent
MANDATORY BID SUBMITTAL FORM

to the Site that have been identified in the Supplementary General Conditions, especially with respect to Technical Data in such reports and drawings.

E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder’s safety precautions and programs.

F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has given Owner written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Owner and/or Engineer is acceptable to Bidder.

I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.

J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

K. All communications concerning this Bid must be in written form and shall be submitted through the Opportunity Q&A section via the WRD Procurement Portal at https://wrd.bonfirehub.com/. For guidance on how to submit a question through https://wrd.bonfirehub.com/, please visit https://support.gobonfire.com/hc/en-us/articles/115015333227-How-do-I-contact-the-Project-Owner-.

ARTICLE 4 – BIDDER’S CERTIFICATION

4.01 Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
1. “Corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

2. “Fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. “Collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. “Coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the price(s) contained in the Bid Table (see Exhibit A of the Bid Form located below for the Bid Table).

5.02 Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

5.03 Determination of Lowest Bid:

1. The lowest bid shall be the lowest total price for all bid items and alternates.

2. The Owner will award to the lowest responsive and responsible Bidder as defined herein and in the Instructions to Bidders, a contract for the Project consisting of the “Total Bid Price”.

ARTICLE 6 – TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

7.01 The following documents are submitted with and made a condition of this Bid:

A. Bid Bond 00 43 13;

B. General Contractor Questionnaire 00 45 00;

C. Authority to Execute Bid and Contract 00 43 15 (if necessary);

D. Non-Collusion Affidavit 00 45 19;

E. Evidence of Contractor’s license.
ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, General Conditions, and Supplementary General Conditions.
MANDATORY BID SUBMITTAL FORM

ARTICLE 9 – BID SUBMITTAL

Sole Proprietorship:

By: ____________________________________________________________
(SEAL) Individual’s Name

Doing business as: ______________________________________________

Business address: ______________________________________________

________________________________________________________________

Phone Number: _____________________________________________

Partnership:

By: ____________________________________________________________
(SEAL) Firm Name

________________________________________________________________

General Partner

Business address: ______________________________________________

________________________________________________________________

Phone Number: _____________________________________________
Corporation:

By: ____________________________________________________________
(SEAL) Corporation Name

__________________________________________________________
State of Incorporation

By: ____________________________________________________________
Name of person authorized to sign

__________________________________________________________
Title

(CORPORATE SEAL)

Attest: ____________________________________________________________
Secretary

Business address: ____________________________________________________________

__________________________________________________________
__________________________________________________________

Phone Number: ____________________________________________________________
Joint Venture:

By: _____________________________________________

Name

Address: _____________________________________________

___________________________________________

___________________________________________

By: _____________________________________________

Name

Address: _____________________________________________

___________________________________________

___________________________________________

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above).
EXHIBIT A
Bid Table
## BID LIST

**PAGE 1 of 1**

For the Installation of a Deep Nested Groundwater Monitoring Well

*(Typical Well Construction Diagram – See DRAWINGS)*

<table>
<thead>
<tr>
<th>No.</th>
<th>Base Bid Items</th>
<th>Est. Quantity</th>
<th>Unit of Measure</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Furnish all equipment, labor, and materials for mobilization, demobilization, and cleanup for the entire project for the lump sum price of (limited to 5% of the Total Bid Price, including additive bid items)</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Furnish Permits</td>
<td>1</td>
<td>EA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Furnish, Install, Maintain, and Remove Noise Control Barrier Walls (If Needed)</td>
<td>1</td>
<td>EA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Install Temporary Surface Casing and Perform Pilot Borehole Drilling (8&quot;)</td>
<td>800</td>
<td>LF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Perform Geophysical Logging Suite</td>
<td>1</td>
<td>EA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Seal Bottom of Borehole (Bentonite Pellets)</td>
<td>0</td>
<td>LF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7a</td>
<td>Perform Borehole Reaming, 0’ to 500’ (14-3/4&quot;)</td>
<td>500</td>
<td>LF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7b</td>
<td>Perform Borehole Reaming, 500’ to 700’ (12-1/4&quot;)</td>
<td>200</td>
<td>LF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7c</td>
<td>Perform Borehole Reaming, 700’ to 800’ (8&quot;)</td>
<td>100</td>
<td>LF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Perform caliper surveys</td>
<td>1</td>
<td>EA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Furnish/Install 2.5-inch Sch 80 PVC CASING</td>
<td>2870</td>
<td>LF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Furnish/Install 2.5-inch Machine Slotted SCREEN, Schedule 80 PVC, flush threaded, ASTM F480</td>
<td>120</td>
<td>LF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Furnish/Install Gravel Pack</td>
<td>240</td>
<td>LF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Furnish/install Sanitary Seals</td>
<td>560</td>
<td>LF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Furnish/Install Surface Completion</td>
<td>1</td>
<td>EA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Perform Well Development (Swab / Bail / Pump)</td>
<td>120</td>
<td>HR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Security – When Drillers not On-Site</td>
<td>1</td>
<td>EA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Site Restoration</td>
<td>1</td>
<td>EA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Abandon Pilot Borehole with Cement-Bentonite Grout, (If Needed)</td>
<td>800</td>
<td>LF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18a</td>
<td>Properly contain and dispose of drilling mud at an appropriately licensed facility</td>
<td>6000</td>
<td>GAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18b</td>
<td>Properly contain and dispose of soil cuttings at an appropriately licensed facility</td>
<td>200</td>
<td>TONS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18c</td>
<td>Properly contain/dispose of well development and aquifer testing purge water at an appropriately licensed facility</td>
<td>5000</td>
<td>GAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL BASE CONTRACT BID PRICE**

*Defined as the Sum of the Total Cost for Base Bid Line Items No. 1 to 18*

**TOTAL:**  

_(amount in words)_

**Dollars**
Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER (Name and Address):

______________________________________________________________

______________________________________________________________

______________________________________________________________

SURETY (Name, and Address of Principal Place of Business):

______________________________________________________________

______________________________________________________________

______________________________________________________________

OWNER (Name and Address):
Water Replenishment District of Southern California
4040 Paramount Boulevard, Lakewood, California 90712

BID
Bid Due Date: April 16, 2020 at 11:00 AM local time
Description: Installation of a Deep Nested Groundwater Monitoring Well

BOND
Bond Number: _________________________________
Penal sum: (Figures) _________________________________
(Words) _________________________________

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER

(Signature)
Print Name
Title
Attest:
Signature
Title

SURETY

(Signature (Attach Power of Attorney))
Print Name
Title
Attest:
Signature
Title
1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder’s and Surety’s liability. Recovery of such penal sum under the terms of this Bond shall be Owner’s sole and exclusive remedy upon default of Bidder.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

   3.1 Owner accepts Bidder’s Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

   3.2 All Bids are rejected by Owner, or

   3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within thirty (30) calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety’s written consent.

6. No suit or action shall be commenced under this Bond prior to thirty (30) calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the State in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term “Bid” as used herein includes a Bid, offer, or proposal as applicable.

++END OF SECTION++
SECTION 00 45 00

GENERAL CONTRACTOR QUESTIONNAIRE

The undersigned warrants the truth and accuracy of all statements and answers herein contained. Include additional sheets if necessary.

1. Bidder must have experience in the successful completion of construction, as a General Contractor, a minimum of at least three deep nested groundwater monitoring well installations within the last five years having multiple well casings (minimum of three) in the same borehole to a minimum depth of 500 feet. List such projects below with construction bid cost, owner/agency, and date of completion.

   a. __________________________________________

   b. __________________________________________

   c. __________________________________________

   d. __________________________________________

2. Provide contact information (name of person, title/position, name of organization, address, telephone, and email address) for reference verification on the projects identified in Item 1 above. At least one contact person shall be provided for each listed project.

   a. __________________________________________

   b. __________________________________________

   c. __________________________________________

   d. __________________________________________
3. Have you ever failed to complete work awarded to you? If so, when, where and why?

_____________________________________________________________________________
_____________________________________________________________________________

4. Has a surety firm completed a contract on your behalf, or paid for completion because your firm was in default or terminated by the project owner within the last ten (10) years?

   Yes _____   No _____

   If “yes,” please explain on a separate signed sheet.

5. Has your firm changed names or license number in the past five years?

   Yes _____   No _____

   If “yes,” please explain on a separate signed sheet.

6. Has any Contractor’s State License or similar state or local agency license held by your firm or its Responsible Managing Employee (RME) or Responsible Managing Officer (RMO) been suspended within the last five years?

   Yes _____   No _____

   If “yes,” please explain on a separate signed sheet.

7. At any time during the past five years, has any surety company made payments on your firm’s behalf as a result of a default, to satisfy any claims made against a performance or payment bond issued on your firm’s behalf, in connection with a construction project, either public or private?

   Yes _____   No _____

   If “yes,” explain on a separate signed page the amount of each such claim, the name and telephone number of the claimant, the date of the claim, the grounds for the claim, the present status of the claim, the date of resolution of such claim if resolved, the method by which such was resolved if resolved, the nature of the resolution and the amount, if any, at which the claim was resolved.

8. State the true and exact, correct, and complete name under which you do business.

   BIDDER IS: ______________________________________________________________
LIST OF SUBCONTRACTORS

The bidder is required to furnish the following information in accordance with the provisions of the Subletting and Subcontracting Fair Practices Act (California Public Contract Code §4100, et seq.).

Subcontractors, as defined in California Public Contract Code Section 4104(a)(1), must be listed in the table below if they will provide work, labor or service in an amount in excess of one-half (½) of one percent (1 %) of the total bid. Attach additional sheets as necessary.

<table>
<thead>
<tr>
<th>Subcontractor (include PWR and DIR Registration Nos.)</th>
<th>License No. &amp; Type</th>
<th>Main Office Address</th>
<th>% of Total Dollar Value Work</th>
<th>Description of Subcontract</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>7</td>
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</tr>
</tbody>
</table>
### MANDATORY BID SUBMITTAL FORM

<table>
<thead>
<tr>
<th>Subcontractor (include PWR and DIR Registration Nos.)</th>
<th>License No. &amp; Type</th>
<th>Main Office Address</th>
<th>% of Total Dollar Value Work</th>
<th>Description of Subcontract</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
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<td>13</td>
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<tr>
<td>14</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
SBE SUBCONTRACTOR LISTING AND COMPLIANCE CERTIFICATION

In accordance with Owner’s SBE Preference Program set forth in Article 10.1.11 of the Water Replenishment District of Southern California’s Administrative Code and Instructions to Bidders, Section 200 Article 22, Subcontractors; Small Business Enterprise Preference, a Bidder that subcontracts not less than twenty percent (20%) of the Total Bid Amount, including alternates, to firms certified as small business enterprises (the “SBE Participation Goal”) is entitled to a preference of 5% of the Total Bid Amount, including alternates, or $50,000 or less. Thus, for purposes of evaluation a Bidder’s bid which meets this SBE Participation Goal, the Total Bid Amount (including all schedules, if applicable) will be multiplied by 5%. The lesser of that amount or $50,000 will be deducted from the Total Bid Amount for the purpose of determining the lowest responsive bid and awarding the Contract to the lowest responsive and responsible bidder.

Bidders who have achieved the goal of not less than twenty percent (20%) SBE participation must complete the SBE Subcontractor Listing Form below in order to be eligible for the SBE preference. For purposes of the SBE Participation Goal, “subcontractor” has the meaning set forth in Public Contract Code §4113 and also includes suppliers and materialmen. SBEs who are suppliers or materialmen must be identified as such in the Subcontractor Listing Form in the space provided for Scope of Work.
SBE SUBCONTRACTOR LISTING FORM

(To be completed by Bidders who have achieved the SBE Participation Goal; see Instructions to Bidders, Article 22, for SBE Program Requirements).

Check if Bidder has met the SBE Participation Goal of 20%

Complete the following form by providing the information requested for each Certified SBE subcontractor, as defined in Instructions to Bidders, Article 22, which the Bidder will subcontract with. Attach additional sheets if necessary.

<table>
<thead>
<tr>
<th>Subcontractor Name</th>
<th>Scope of Work</th>
<th>Dollar Value of Subcontract</th>
<th>Percentage of Dollar Value of Subcontract of the Total Bid Amount (including alternates)</th>
<th>SBE Certifying Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>
The undersigned certifies and declares under penalty of perjury under the laws of the State of California that the Bidder has agreed to enter into subcontracts with the above-listed subcontractors upon award of the Contract, the information provided for each subcontractor is true and correct, and that the Bidder will provide the documentary evidence required pursuant to Instructions to Bidders of the Bid Documents. The undersigned further certifies and declares under penalty of perjury that Bidder is familiar with and has reviewed Sections 10.1.11 through 10.1.11.3 of the Water Replenishment District of Southern California’s Administrative Code, which is attached to this section, which govern the SBE Preference Program.

Executed on ____________________________, 2020, at ____________________________, California.

Signed: ________________________________________________________
Water Replenishment District of Southern California
Installation of a Deep Nested Groundwater Monitoring Well

MANDATORY BID SUBMITTAL FORM

(This page intentionally left blank)
10.1.11 Small Business Enterprise Preference

It is the District's policy to encourage and promote broad-based participation in its contracting activities by all potential participants so as to maximize competition for District Contracts, to attract the greatest number of qualified bidders and to stimulate participation by responsible bidders who might otherwise be prevented from participating in the District's procurement activities.

The District’s program is adopted pursuant to Public Contact Code Section 2002.

(a) Small Business Enterprise (SBE) Definition. For purposes of this section, a Small Business Enterprise (SBE) shall mean a small business enterprise certified as such by any branch of the Federal Government, the State of California, or by any other Public Entity within the State of California as defined by California Public Contract Code Section 1100.

(b) SBE Subcontractor Preference. Notwithstanding the requirement that the District award a contract to the lowest responsive and responsible bidder, all bidders for contracts that subcontract not less than 20% of their bid amount to SBE's may be given a preference on their bid amount in an amount not to exceed 5%.

Notwithstanding the foregoing, the combination of all preferences to be applied to a single bid or informal quote may not exceed 5% or $50,000, whichever is less.

(i) The term “subcontractor” for purposes of the SBE Subcontractor Participation Goal shall have the meaning set forth at Public Contract Code Section 4113 but shall also include suppliers and materialmen.

(c) To qualify for the SBE Subcontractor Preference, SBEs must be certified as such at the time a bid is submitted to the District. Proof of certification must be submitted to the District not later than two business days after the deadline for submitting bids. Proof shall include a copy of each SBE’s certification or other appropriate documentary evidence by the certifying public entity. Proof of certification may be subject to verification by the General Manager. The General Manager shall not, however, be required to verify the accuracy or any such certifications, and shall have sole discretion to determine if a subcontractor is an SBE.

(d) Before advertising for bids, the Board may modify the subcontractor participation requirement created by this section for particular procurements, or exempt particular procurements from the SBE Subcontractor Preference, if the Board determines that it would be in the District’s best interest to do so.
Exceptions to SBE Subcontractor Preference

The preference set forth in this Section shall not apply to the following purchases or contracts:

a) Supplies, equipment or materials provided under a cooperative purchasing agreement.

b) Purchases or contracts which are funded in whole or in part by a governmental entity and the laws, regulations, or policies governing such funding prohibit application of the preference.

c) Purchases made or contracts let under emergency situations.

Application

The SBE Subcontractor Preference provided in this Section may be applied to new contracts first solicited as of the effective date of the enabiling resolution. This Section shall be implemented in a manner consistent with otherwise applicable provisions of this Chapter and competitive bidding laws.

Enforcement

a) The Contractor agrees that the District will have the right to review, obtain, and copy, or obtain in electronic form, all records pertaining to performance of the contract to enable it to audit Contractor’s costs and confirm the amount of SBE participation on the project. Contractor further agrees to provide District with, upon reasonable notice, during normal business hours, access to its premises for the purpose of interviewing employees and inspecting and copying books, records, accounts, and other materials that may be relevant to an investigation for purposes of determining compliance or the right to have asserted the right to the SBE Subcontractor Preference. Contractor shall keep all records for a period of not less than three years from completion of the subject project.

b) The information furnished by each bidder requesting an SBE Subcontractor Preference shall be under penalty of perjury.

c) No Person shall knowingly and with intent to defraud, fraudulently obtain, retain, attempt to obtain or retain, or aid another in fraudulently obtaining or retaining or attempting to obtain or retain certification as an SBE for the purpose of this Section.
d) No Person shall willfully and knowingly make a false statement with the intent to defraud, whether by affidavit, report, or other representation, to any official of a municipality or other public entity located in Los Angeles County for the purpose of influencing the certification or denial of certification of any entity as an SBE.

e) A Person which has claimed the right to the SBE Subcontractor Preference who knew or should have known the information upon which the assertion of the right to the preference was based was incorrect, or information was ignored that was relevant to the request for the preference, and which by reason of such preference has been awarded a contract to which it would not otherwise have been entitled, shall:

(1) Pay to the District any difference between the contract amount and what the District’s costs would have been if the contract had been properly awarded; and

(2) Be assessed a penalty in an amount of not more than ten percent (10%) of the amount of the contract involved.

f) The penalties identified above shall also apply to any Person that has previously obtained proper certification and, as a result of a change in its status would no longer be eligible for certification, fails to notify the District of this information prior to responding to a Contract Solicitation or accepting a contract award.
**LIST OF NAMED EQUIPMENT/MATERIAL SUPPLIERS**

The bidder shall indicate below which Supplier the Bidder intends to use for each item of equipment or material listed on this form by writing in the named suppliers. (Proposed substitutes may be listed on the Proposed Substitute Equipment/Material List form but will only be considered after award of the Contract.) If no supplier is named in the Technical Specifications, the Bidder may list any supplier whose product meets all of the requirements and technical criteria specified. The listing of more than one supplier for each item of equipment/material to be furnished with the words “and/or” will not be permitted. Failure to comply with this requirement may render the Bid non-responsive and may cause its rejection.

<table>
<thead>
<tr>
<th>Specification Section</th>
<th>Equipment/Material</th>
<th>Named Supplier (List Only One)</th>
</tr>
</thead>
<tbody>
<tr>
<td>33 11 53.06</td>
<td>Well vault Model 10524X36X30WT manufactured by PEMCO</td>
<td></td>
</tr>
</tbody>
</table>

++END OF SECTION++
SECTION 00 43 15
AUTHORITY TO EXECUTE BID AND CONTRACT

A. If the Bidder is a Corporation, attach to this page a certified copy of corporate resolutions of the Board of Directors of the Corporation authorizing an officer of the Corporation to execute the Bid and the Contract contained within this document on behalf of the Corporation. The Owner would prefer the use of the sample Resolution set forth below.

B. A corporation to which a contract is to be awarded will be required to furnish certificates as to its corporate existence.

CERTIFIED RESOLUTION

I, ____________________________________________, the duly elected Secretary of

(Name)

___________________________________________, a corporation organized and existing under the

(Corporate Title)

laws of the State of _________________________________, do hereby certify that the following Resolution was unanimously adopted and passed by a quorum of the Board of Directors of the said corporation at a meeting held in accordance with law and the by-laws of the said corporation.

"IT IS HEREBY RESOLVED THAT ___________________________________________ (Name),

the duly elected ___________________________________ of ________________________________

(Title of Officer) (Corporate Title)

be and is hereby authorized to execute and submit a Bid and Bid Bond to the Water Replenishment District of Southern California for:

______________________________________________________________________________
______________________________________________________________________________

and such other instruments in writing as may be necessary on behalf of the said corporation; and that the Bid, Bid Bond, and other such instruments signed by him/her shall be binding upon the said corporation as its own acts and deeds. The secretary shall certify the names and signatures of those authorized to act by the foregoing resolution.

The Water Replenishment District of Southern California shall be fully protected in relying upon such certification of the secretary and shall be indemnified and saved harmless from any and all
Water Replenishment District of Southern California

MANDATORY BID SUBMITTAL FORM

Installation of a Deep Nested Groundwater Monitoring Well

claims, demands, expenses, loss or damage resulting from or growing out of honoring, the signature of any person so certified or for refusing to honor any signature not so certified.

I further certify that the above resolution is in force and effect and has not been revised, revoked or rescinded.

In addition, I certify that the following are the names, titles and official signatures of those persons authorized to act by the foregoing resolution.

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Given under my hand and the Seal of the said corporation this __________ day of ________________, 2020.

(SEAL)  
BY: ____________________________

Secretary

Corporate Title

NOTE:

The above is a suggested form of the type of Corporate Resolution desired. Such form need not be followed explicitly, but the Certified Resolution submitted must clearly show to the satisfaction of the Water Replenishment District of Southern California that the person signing the Bid and Bid Bond for the corporation has been properly empowered by the corporation to do so in its behalf.

++END OF SECTION++
SECTION 00 52 00
AGREEMENT

Water Replenishment District of Southern California
4040 Paramount Boulevard, Lakewood, California 90712
Telephone: (562) 921-5521 Fax: (562) 921-6101

OWNER: Water Replenishment District of Southern California

CONTRACTOR: ________________________________

Contract No.: ________________________________

Project No.: ________________________________

Project Title: ________________________________

Date: ________________________________

Total Price: ________________________________

THIS AGREEMENT or ("Contract") is by and between Water Replenishment District of Southern California ("Owner") and ________________________________ ("Contractor").

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents as defined and specified in Article 9 of this Contract. The Work is generally described as follows: The installation of a Deep Nested Groundwater Monitoring Well pursuant to Specification Sections 33 11 53.01 – 33 11 53.07.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows:

The Project consists of furnishing all labor, materials, equipment, supplies and incidentals required for the installation of a Deep Nested Groundwater Monitoring Well.

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by the WRD.
3.02 The Owner may retain a consulting company to oversee work on behalf of WRD ("Engineer") and has the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 Time of the Essence
   A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 Contract Times: Days
   A. Contractor agrees and warrants that the Work will be substantially completed within 60 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 90 days after the date when the Contract Times commence to run. Substantially complete is defined as having the groundwater monitoring wells installed and fully developed per the Specifications.

B. Milestones (Not Defined)

4.03 Liquidated Damages
   A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual losses suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner $2,000 for each delay day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02 above for Substantial Completion until the Work is substantially complete.

2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner $1,000 for each delay day that expires after such time until the Work is completed and ready for final payment.

3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4.04 Special Damages
   A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner for: (1) any fines or penalties imposed on Owner as a direct result of the Contractor’s failure to attain Substantial Completion according to the Contract
ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts indicated in the Bid Form, subject to adjustment under the terms of the Contract.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments
A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Owner (in consultation with the Engineer) as described in the General Conditions.

6.02 Progress Payments; Retainage
A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor’s Applications for Payment during performance of the Work as provided in Article 15 of the General Conditions. All such payments will be measured by the Schedule of Values established as described in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

B. Prior to Substantial Completion, five percent (5%) retainage shall be withheld from all progress payments to be paid to the Contractor, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.

C. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100-percent of the Work completed, less such amounts set off and entitled to be withheld by the Owner pursuant to Paragraph 15.01.E of the General Conditions.

D. Alternatively, the Contractor may substitute securities in lieu of retention pursuant to Public Contract Code Section 10263.

6.03 Final Payment
A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.
ARTICLE 7 – INTEREST

7.01 All undisputed amounts not paid when due shall bear interest at the rate of 5-percent per annum, unless a different rate is mandated by law or statute.

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has carefully studied all: (1) reports of explorations and tests of surface and subsurface conditions at or adjacent to the Site and all drawings of physical conditions, including but not limited to existing utilities, relating to existing surface or subsurface structures at the Site that have been identified in the Bidding Documents and Supplementary General Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Bidding Documents and Supplementary General Conditions, especially with respect to Technical Data in such reports and drawings.

E. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, drawings or data are necessary for the performance of the Work.

F. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

G. Contractor has given Owner written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Owner is acceptable to Contractor.

H. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

I. Contractor’s entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.
ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

A. The Contract Documents consist of the following:

1. This Agreement (Section 00 52 00)
2. Performance Bond (Section 00 61 13.13)
3. Payment Bond (Section 00 61 13.16)
4. Non-Collusion Affidavit (Section 00 45 19)
5. General Conditions (Section 00 72 43)
6. Supplementary General Conditions (Section 00 73 00)
7. Drawings consist of the following:
   A. Typical Well Construction Diagram
8. Exhibits to this Agreement (enumerated as follows):
   a. Bid Form (Section 00 41 43).
9. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
   a. Notice to Proceed.
   b. Work Change Directives.
   c. Change Orders.
   d. Field Orders.

B. The documents listed in Paragraph 9.01.A above are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – LABOR

10.01 Prevailing Wage

A. This Contract is subject to California Labor Code Sections 1720 et seq., and Contractor and any Subcontractor shall pay not less than the specified prevailing rates of wage to all workers employed in performance of the Work. Pursuant to the provisions of Section 1770 of the California Labor Code, WRD has obtained the general prevailing rate of wages and employer payments for health and welfare,
vacation, pension and similar purposes, as determined by the Director of the Department of Industrial Relations, a copy of which is on file in the office of WRD, and shall be made available for viewing to any interested party upon request. The Contractor and each Subcontractor shall forfeit as a penalty to WRD not more than Two Hundred Dollars ($200) for each calendar day, or portion thereof, for each worker paid less than the stipulated prevailing wage rate in violation of the Labor Code. In addition, the difference between the prevailing wage rate and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor.

10.02 Employment of Apprentices

A. Contractor’s attention is directed to the provisions in Section 1777.5 and 1777.6 of the Labor Code concerning the employment of apprentices by the Contractor or any Subcontractor under the Contractor. It shall be the responsibility of the Contractor to effectuate compliance on the part of itself and any Subcontractors with the requirements for employment of apprentices. Information relative to apprenticeship standards, wage schedules, and other requirements may be obtained from the Department of Industrial Relations.

10.03 Payroll Records

A. Pursuant to Labor Code Section 1776, the Contractor and each subcontractor shall maintain weekly certified payroll records showing the name, address, social security number, work classification, straight time and overtime hours paid each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed in connection with the work. Contractor shall certify under penalty of perjury that records maintained and submitted by Contractor are true and accurate. Contractor shall also require Subcontractor(s) to certify weekly payroll records under penalty of perjury. In the event of noncompliance with the requirements of this Section, the Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying any item or actions necessary to achieve compliance with this section. If Contractor or Subcontractor does not comply after such ten (10)-day period, the Contractor shall, as a penalty to WRD, forfeit One Hundred Dollars ($100) for each day, or portion thereof, for each worker until strict compliance is effectuated.

B. In accordance with Labor Code section 1771.4, the Contractor and each Subcontractor shall furnish the certified payroll records directly to the Department of Industrial Relations on a weekly basis and in the format prescribed by the Department of Industrial Relations, which may include electronic submission. Contractor shall comply with all requirements and regulations from the Department of Industrial Relations relating to labor compliance monitoring and enforcement.

10.04 Public Works Contractor Registration

A. Pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. This contract will not be entered into without proof of the contractor’s and subcontractors’ current registration with the Department of Industrial Relations.
to perform public work. Contractor and its Subcontractors, of any tier, shall maintain active registration with the Department of Industrial Relations for the duration of the Project.

B. This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. In executing this Contract, Contractor acknowledges that it has reviewed all applicable labor compliance requirements and included the cost of complying with such requirements in its bid.

10.05 Labor Compliance
A. Contractor shall post, at appropriate conspicuous points on the Project site, a schedule showing all determined general prevailing wage rates and all authorized deductions, if any, from unpaid wages actually earned.

10.06 Hours Of Work
A. Eight (8) hours of work shall constitute a legal day’s work. The Contractor and each Subcontractor shall forfeit, as penalty to WRD, twenty-five dollars ($25) for each worker employed in the execution of Work by the Contractor or any Subcontractor for each day during which such worker is required or permitted to work more than eight (8) hours in any one day and forty (40) hours in any week in violation of the provisions of the Labor Code, and in particular, section 1810 to section 1815, except as provided in Labor Code section 1815.

ARTICLE 11 – MISCELLANEOUS

11.01 Terms
A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary General Conditions.

11.02 Assignment of Contract
A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

11.03 Successors and Assigns
A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

11.04 Severability
A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions
shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

11.05 Contractor’s Certifications

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 11.05:

1. “Corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. “Fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. “Collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. “Coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.
IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on ______________ (which is the Effective Date of the Contract).

OWNER:
Water Replenishment District of Southern California

By: ________________________________
Title: President of the Board of Directors
Address for giving notices:
Water Replenishment District of Southern California
4040 Paramount Boulevard
Lakewood, CA 90712

CONTRACTOR:

By: ________________________________
Title: ________________________________
Address for giving notices:

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: ________________________________
Title: Secretary of the Board of Directors

Attest: ________________________________
Title: ________________________________

License No.: ________________________________
(Where applicable)

(Since Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

NOTE TO USER: Use in those States or other jurisdictions where applicable or required.

++END OF SECTION++
SECTION 00 61 13.13
PERFORMANCE BOND

CONTRACTOR (name and address): SURETY (name and address of principal place of business):

OWNER (name and address):
Water Replenishment District of Southern California
4040 Paramount Boulevard
Lakewood, California 90712

CONSTRUCTION CONTRACT
Effective Date of the Agreement:
Amount:
Description (name and location):

BOND
Bond Number:
Date (not earlier than the Effective Date of the Agreement of the Construction Contract):
Amount:
Modifications to this Bond Form: ☐ None ☐ See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL
____________________________(seal)
Contractor’s Name and Corporate Seal

By: ________________________
Signature

Print Name
____________________________
Title

Attest: ______________________
Signature

____________________________
Title

SURETY
____________________________(seal)
Surety’s Name and Corporate Seal

By: ________________________
Signature (attach power of attorney)

Print Name
____________________________
Title

Attest: ______________________
Signature

____________________________
Title
Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety’s obligation under this Bond shall arise after:

   3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor’s performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner’s notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety’s receipt of the Owner’s notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner’s right, if any, subsequently to declare a Contractor Default;

   3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

   3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety’s obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety’s expense take one of the following actions:

   5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

   5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

   5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

   5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

      5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

      5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraphs 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
7.1 The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 Additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 Liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraphs 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the Agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

++END OF SECTION++
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SECTION 00 61 13.16
PAYMENT BOND

CONTRACTOR (name and address):

OWNER (name and address):
Water Replenishment District of Southern California
4040 Paramount Boulevard, Lakewood, California 90712

CONSTRUCTION CONTRACT
Effective Date of the Agreement:
Amount:
Description (name and location):

BOND
Bond Number:
Date (not earlier than the Effective Date of the Agreement of the Construction Contract):
Amount:
Modifications to this Bond Form: ☐ None ☐ See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

Contractor’s Name and Corporate Seal (seal)
By: ________________________________
   Signature

Print Name
Title

Attest: ________________________________
   Signature

Title

SURETY

Surety’s Name and Corporate Seal (seal)
By: ________________________________
   Signature (attach power of attorney)

Print Name
Title

Attest: ________________________________
   Signature

Title
Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

3. If there is no Owner Default under the Construction Contract, the Surety’s obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner’s property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.

4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety’s expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.

5. The Surety’s obligations to a Claimant under this Bond shall arise after the following:

   5.1 Claimants who do not have a direct contract with the Contractor:

   5.1.1 Have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and

   5.1.2 Have sent a Claim to the Surety (at the address described in Paragraph 13).

5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).

6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant’s obligation to furnish a written notice of non-payment under Paragraph 5.1.1.

7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety’s expense take the following actions:

   7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

   7.2 Pay or arrange for payment of any undisputed amounts.

7.3 The Surety’s failure to discharge its obligations under Paragraphs 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraphs 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney’s fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety’s total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney’s fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.

11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

16.1 Claim: A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the claim.

16.2 Claimant: An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic’s lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of “labor, materials, or equipment” that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor’s subcontractors, and all other items for which a mechanic’s lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
16.4 **Owner Default**: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5 **Contract Documents**: All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

+++END OF SECTION+++
SECTION 00 45 19
NON-COLLUSION AFFIDAVIT

STATE OF CALIFORNIA
COUNTY OF LOS ANGELES

_________________________________________________, being first duly sworn,

[NAME]
deposes and says that he/she is 

[SOLE OWNER, A PARTNER, PRESIDENT, SECRETARY, ETC.]
of ________________________________, the party submitting a bid for the construction of the project identified in the Agreement, General Conditions, and Technical Specifications that such a bid is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization, or corporation; that such bid is genuine and not collusive or sham; that said bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, nor that anyone shall refrain from bidding; that said bidder has not in any manner, directly or indirectly, sought by agreement, communications or conference with anyone to fix the bid price of said bidder or any other bidder, nor to fix any overhead, profit, or cost element of such bid price, nor of that of any other bidder, nor to secure any advantage against the public body awarding the contract or anyone interested in the proposed contract; that all statements contained in such bid are true; and, further, that said bidder has not, directly or indirectly, submitted their bid price or any breakdown thereof, nor the contents thereof, nor divulged information or data relative thereto, nor paid and will not pay any fee in connection therewith to any corporation, partnership, company, association, organization, bid depository, nor to any member or agent thereof, nor to any other individual except to such person or persons as have a partnership or other financial interest with said bidder in their general business.

Date: _______________________________  Signed: _______________________________

Title: _______________________________

Subscribed and sworn to before me this _____ day of ______________________, 2020.

________________________________________
Notary Public

[SEAL]
++END OF SECTION++
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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term’s singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. Addenda — Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. Agreement — The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

3. Application for Payment — The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. Authority Having Jurisdiction — Those agencies and authorities having jurisdiction over some portion of the Work or work activity, including Cities, Counties, and regulatory agencies.

5. Bid — The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. Bidder — An individual or entity that submits a Bid to Owner.

7. Bidding Documents — The Bidding Requirements, the proposed Contract Documents, and all Addenda.

8. Bidding Requirements — The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

9. Change Order — A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

10. Change Proposal — A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

11. Claim — (a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work
under the Contract Documents; contesting Engineer’s decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer’s decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.

12. **Constituent of Concern** — Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

13. **Contract** — The entire and integrated written contract between the Owner and Contractor concerning the Work.

14. **Contract Documents** — Those items so designated in the Agreement, and which together comprise the Contract.

15. **Contract Price** — The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.

16. **Contract Times** — The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

17. **Contractor** — The individual or entity with which Owner has contracted for performance of the Work.

18. **Cost of the Work** — See Paragraph 13.01 for definition.

19. **Drawings** — The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

20. **Effective Date of the Contract** — The date, indicated in the Agreement, on which the Contract becomes effective.

21. **Engineer** — The individual or entity named as such in the Agreement or named at a later date. The Engineer assists the Owner in observing the progress and quality of the Work and conducting various other administrative tasks.

22. **Field Order** — A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.

24. **Hazardous Environmental Condition** — The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.

25. **Issuing Office** — The office from which the Bidding Documents are to be issued.

26. **Laws and Regulations; Laws or Regulations** — Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

27. **Liens** — Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

28. **Milestone** — A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.

29. **Notice of Award** — The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.

30. **Notice to Proceed** — A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

31. **Owner** — The Water Replenishment District of Southern California (WRD or District).

32. **Owner’s Site Representative or Construction Manager (if any)** — representative of the Owner assisting Owner in observing the progress and quality of the Work and conducting various other administrative tasks. The terms Onsite Site Representative and Construction Manager are to be used interchangeably and for this contract the role will be that of the Engineer.

33. **Progress Schedule** — A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.

34. **Project** — The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

35. **Resident Project Representative** — The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.

36. **Samples** — Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

37. **Schedule of Submittals** — A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
38. **Schedule of Values** — A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.

39. **Shop Drawings** — All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

40. **Site** — Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.

41. **Specifications** — The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

42. **Subcontractor** — An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

43. **Substantial Completion** — The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.

44. **Successful Bidder** — The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.

45. **Supplementary General Conditions** — The part of the Contract that amends or supplements these General Conditions.

46. **Supplier** — A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

47. **Technical Data** — Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06 of this document.

48. **Underground Facilities** — All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey
electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

49. **Unit Price Work** — Work to be paid for on the basis of unit prices.

50. **Work** — The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

51. **Work Change Directive** — A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

**1.02 Terminology**

**A.** The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

**B. Intent of Certain Terms or Adjectives:**

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

**C. Day:**

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

**D. Defective:**

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
   a. does not conform to the Contract Documents; or
   b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
   c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraphs 15.03 or 15.04).
E.  **Furnish, Install, Perform, Provide:**

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

**ARTICLE 2 – PRELIMINARY MATTERS**

2.01 Delivery of Bonds and Evidence of Insurance

A. **Bonds:** When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. **Evidence of Contractor’s Insurance:** When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies of insurance (including all endorsements, and identification of applicable self-insured retentions and deductibles) required to be provided by Contractor in Article 6. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

C. **Evidence of Owner’s Insurance:** After receipt from Contractor of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor copies of the policies of insurance to be provided by Owner under Article 6 (if any). Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

2.02 Copies of Documents

A. Owner shall furnish to Contractor one printed copy of the fully executed contract, and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner may delegate the responsibilities under this provision to Engineer.
C. Owner will furnish to Contractor two (2) copies of conformed Drawings and Specifications, incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract. Additional quantities of the Contract Documents will be furnished at reproduction cost plus mailing cost if copies are mailed.

2.03 Before Starting Construction

A. Preliminary Schedules: Within ten (10) days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. A preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;

2. A preliminary Schedule of Submittals; and

3. A preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 Preconstruction Conference; Designation of Authorized Representatives

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 Initial Acceptance of Schedules

A. At least ten (10) days before submission of the first Application for Payment, a conference attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional ten (10) days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor’s full responsibility therefor.
2. Contractor’s Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor’s Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 Electronic Transmittals

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.

B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient’s use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 Intent

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 Reference Standards

A. Standards Specifications, Codes, Laws and Regulations

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there
were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 Reporting and Resolving Discrepancies

A. Reporting Discrepancies:

1. Contractor’s Verification of Figures and Field Measurements: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. Contractor’s Review of Contract Documents: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. Resolving Discrepancies:

1. Except as may be otherwise specifically stated in the Contract Documents, any discrepancies in the Contract Documents are to be resolved by the Engineer. If the Contractor disputes the decision of the Engineer, the Contractor may submit a Change Proposal pursuant of Paragraph 11.06. However, in all discrepancies that concern:

   a. The provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
b. The provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation);

Such provisions, standards, laws and regulations shall take precedence and be applicable to the Work.

3.04 Requirements of the Contract Documents

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.

B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer’s written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 Reuse of Documents

A. Contractor and its Subcontractors and Suppliers shall not:

1. Have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

2. Have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner’s express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.
ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 Commencement of Contract Times; Notice to Proceed
   A. The Contract Times will commence to run on the date provided in the Notice to Proceed issued to the Contractor.

4.02 Starting the Work
   A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 Reference Points
   A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer’s judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 Progress Schedule
   A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
      1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
      2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
   B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 Delays in Contractor’s Progress
   A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times.
   B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor or any of its Subcontractors, Suppliers or anyone for whom the Contractor is responsible.
   C. If Contractor’s performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment
in Contract Times. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor’s sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
2. Abnormal weather conditions;
3. Acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
4. Acts of war or terrorism.

D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.

E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor or any of its Subcontractors, Suppliers or anyone for whom the Contractor is responsible.

G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within fifteen (15) days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 Availability of Lands

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner’s interest therein as necessary for giving notice of or filing a mechanic’s or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.
5.02 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas:

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor’s operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor’s performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. Removal of Debris During Performance of the Work: During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. Cleaning: Prior to Substantial Completion of the Work, Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. Loading of Structures: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.
5.03 Subsurface and Physical Conditions

A. Reports and Drawings: The Supplementary Conditions identify:

1. Those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
2. Those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site; and
3. Technical Data contained in such reports and drawings.
4. Bidder may request from Owner, copies of reports identified above if not included with the Bidding Documents.

B. Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Contract Documents, including but not limited to the Supplemental Conditions. However, such reports and drawings are not Contract Documents. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. The completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
2. Other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. Any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 Differing Subsurface or Physical Conditions

A. Notice by Contractor: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:

1. Is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
2. Is of such a nature as to require a change in the Drawings or Specifications; or
3. Differs materially from that shown or indicated in the Contract Documents; or
4. Is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.
B. **Engineer’s Review:** After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner’s obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor’s resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer’s findings, conclusions, and recommendations.

C. **Owner’s Statement to Contractor Regarding Site Condition:** After receipt of Engineer’s written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer’s written findings, conclusions, and recommendations, in whole or in part.

D. **Possible Price and Times Adjustments:**

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:
   a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
   b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
   c. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
   a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
   b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor’s making such commitment; or
   c. Contractor failed to give the written notice as required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor’s entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than thirty (30) days after Owner’s issuance of the Owner’s written statement to Contractor regarding the subsurface or physical condition in question.

5.05 Underground Facilities

A. Contractor’s Responsibilities: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and

2. The cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
   a. Reviewing and checking all information and data regarding existing Underground Facilities at the Site;
   b. Locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
   c. Coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
   d. The safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. Notice by Contractor: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

C. Engineer’s Review: Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor’s resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer’s findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. Owner’s Statement to Contractor Regarding Underground Facility: After receipt of Engineer’s written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating
whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer’s written findings, conclusions, and recommendations in whole or in part.

E. Possible Price and Times Adjustments:

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:
   a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
   b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
   c. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times; and
   d. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor’s entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than fifteen (15) days after Owner’s issuance of the Owner’s written statement to Contractor regarding the Underground Facility in question.

5.06 Hazardous Environmental Conditions at Site

A. Reports and Drawings:

1. Those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

2. Technical Data contained in such reports and drawings.

B. Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Contract Documents, including but not limited to the Supplemental Conditions. However, such reports and drawings are not Contract Documents. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. The completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
2. Other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. Any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within fifteen (15) days of Owner’s written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.

H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner’s own forces or others in accordance with Article 8.
I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 Performance, Payment, and Other Bonds

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor’s obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.

B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that
individual’s authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.

D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.

E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.

F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 Insurance — General Provisions

A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary General Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Contractor may obtain worker’s compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the project is located, (b) is certified or authorized as a worker’s compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker’s compensation insurance for similar projects by the state within the last 12 months.

D. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

E. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by
Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party’s full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party’s obligation to obtain and maintain such insurance.

G. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

H. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner’s termination rights under Article 16.

I. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party’s interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.

J. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor’s interests.

K. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor’s liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 Contractor’s Insurance

A. **Workers’ Compensation:** Contractor shall purchase and maintain workers’ compensation and employer’s liability insurance for:

1. Claims under workers’ compensation, disability benefits, and other similar employee benefit acts.

2. United States Longshoreman and Harbor Workers’ Compensation Act and Jones Act coverage (if applicable).

3. Claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor’s employees (by stop-gap endorsement in monopolist worker’s compensation states).

4. Foreign voluntary worker compensation (if applicable).

B. **Commercial General Liability—Claims Covered:** Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:

1. Claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor’s employees.
2. Claims for damages insured by reasonably available personal injury liability coverage.

3. Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

C. Commercial General Liability—Form and Content: Contractor’s commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage:
   a. Such insurance shall be maintained for three (3) years after final payment.
   b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three (3) years thereafter.

2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor’s contractual indemnity obligations in Paragraph 7.18.

3. Broad form property damage coverage.

4. Severability of interest.

5. Underground, explosion, and collapse coverage.

6. Personal injury coverage.

7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 01 and CG 20 37 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.

8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.

D. Automobile liability: Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.

E. Umbrella or excess liability: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.

F. Contractor’s pollution liability insurance: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor’s operations and completed operations. This insurance shall be maintained for no less than three (3) years after final completion.

G. Additional insureds: The Contractor’s commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insured the Owner and Engineer, and any individuals or entities identified in the Supplementary General Conditions; include coverage for the respective officers, directors, members,
partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.

H. **Contractor’s professional liability insurance**: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two (2) years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

I. **General provisions**: The policies of insurance required by this Paragraph 6.03 shall:

1. Include at least the specific coverages provided in this Article.

2. Be written for not less than the limits of liability provided in this Article and in the Supplementary General Conditions, or required by Laws or Regulations, whichever is greater.

3. Contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least ten (10) days prior written notice has been given to Contractor. Within three (3) days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.

4. Remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.

5. Be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor’s performance of the Work and Contractor’s other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.

J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
1. **Workers’ Compensation Insurance** with limits as required by the State of California.

2. **Employer’s Liability Insurance** with limits of $3,000,000 per occurrence.

3. **Commercial General Liability Insurance** with limits of $3,000,000 each occurrence and a general aggregate limit of $5,000,000. Coverages and endorsements shall include:
   
   a. Premises/operations;
   b. Products/completed operations;
   c. Property damage;
   d. Personal injury and advertising injury;
   e. Owned and non-owned equipment;
   f. Independent contractors; and
   g. Broad form contractual liability.
   h. Explosion, collapse, underground excavation and removal of lateral support;
   i. Policy shall be endorsed to delete pollution-related exclusions (including lead and asbestos)

L. **Commercial Automobile Liability Insurance** including owned, non-owned and leased or hired vehicles, with a $1,000,000 combined single limit for bodily injury and property damage, including non-owned and hired coverage.

M. **Builder’s Risk Insurance** covering loss, damage, or destruction to the Project (including boilers and machinery coverage) caused by physical damage in an amount equal to the full replacement value of the Project.

N. **Environmental Impairment Liability Insurance** covering abatement of lead, asbestos and contaminated soil shall be provided in the amount of $1,000,000 per claim and $2,000,000 annual aggregate.

O. **Additional Insureds.** The following persons or entities, including their elected officials, officers, directors, employees and agents, shall be named as additional insured on all required insurance policies except Workers Compensation Insurance:

   1. The Water Replenishment District of Southern California.
   2. Engineer (upon request).
   3. City (upon request).

P. **Subrogation Waivers.** All required policies shall be considered primary to any insurance maintained by the OWNER. All policies shall include waivers of subrogation in favor of the Water Replenishment District of Southern California and the City where the work is located and if on privately owned land, the landowner.

Q. **Occurrence Basis.** All policies shall be written on an occurrence basis.
R. **Cancelation and Modification of Coverages.** All policies shall provide that thirty (30) days prior written notice to the Water Replenishment District of Southern California must be provided before cancellation or modification of coverage provisions.

6.04 **Owner’s Liability Insurance**

A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner’s option, may purchase and maintain at Owner’s expense Owner’s own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

B. Owner’s liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner’s liability policies for any of Contractor’s obligations to the Owner, Engineer, or third parties.

6.05 **Property Insurance**

A. **Builder’s Risk:** Unless otherwise provided in the Supplementary General Conditions, Contractor shall purchase and maintain builder’s risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary General Conditions or required by Laws and Regulations). This insurance shall:

1. Include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder’s risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as “insureds.”

2. Be written on a builder’s risk “all risk” policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary General Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder’s risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.

3. Cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to
the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

4. Cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).

5. Extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).

6. Extend to cover damage or loss to insured property while in transit.

7. Allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder’s risk insurance.

8. Allow for the waiver of the insurer’s subrogation rights, as set forth below.

9. Provide primary coverage for all losses and damages caused by the perils or causes of loss covered.

10. Not include a co-insurance clause.

11. Include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.

12. Include performance/hot testing and start-up.

13. Be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.

B. **Notice of Cancelation or Change:** All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least ten (10) days prior written notice has been given to the purchasing policyholder. Within three (3) days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.

C. **Deductibles:** The purchaser of any required builder’s risk or property insurance shall pay for costs not covered because of the application of a policy deductible.

D. **Partial Occupancy or Use by Owner:** If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder’s risk policy, or through Contractor) will provide notice of such occupancy or use to the builder’s risk insurer. The builder’s risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder’s risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder’s risk insurance.

E. **Additional Insurance:** If Contractor elects to obtain other special insurance to be included in or supplement the builder’s risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor’s expense.
F. **Insurance of Other Property:** If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 Waiver of Rights

A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder’s risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:

1. Loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner’s property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. Loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.

D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary General Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them.
them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder’s risk insurance and any other property insurance applicable to the Work.

6.07 Receipt and Application of Property Insurance Proceeds

A. Any insured loss under the builder’s risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within fifteen (15) days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder’s risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR’S RESPONSIBILITIES

7.01 Supervision and Superintendence

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 Labor; Working Hours

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner’s written consent, which will not be unreasonably withheld.
7.03 Services, Materials, and Equipment

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 “Or Equals”

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or “or equal” item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an “or equal” item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

   a. In the exercise of reasonable judgment Engineer determines that:

      1) It is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

      2) It will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

      3) It has a proven record of performance and availability of responsive service; and

      4) It is not objectionable to Owner.

   b. Contractor certifies that, if approved and incorporated into the Work:

      1) There will be no increase in cost to the Owner or increase in Contract Times; and
2) It will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. Contractor shall make a written application to Engineer for review of a proposed “or equal” item of material or equipment that Contractor seeks to furnish or use. The application:
   a. Shall certify that the proposed “or equal” item will:
      1) Perform adequately the functions and achieve the results called for by the general design,
      2) Be similar in substance to that specified, and
      3) Be suited to the same use as that specified.
   b. Will state:
      1) The extent, if any, to which the use of the proposed “or equal” item will necessitate a change in Contract Times,
      2) Whether use of the proposed “or equal” item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed “or equal” item, and
      3) Whether incorporation or use of the proposed “or equal” item in connection with the Work is subject to payment of any license fee or royalty.
   c. Will identify:
      1) All variations of the proposed “or equal” item from that specified, and
      2) Available engineering, sales, maintenance, repair, and replacement services.
   d. Shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. Contractor’s Expense: Contractor shall provide all data in support of any proposed “or equal” item at Contractor’s expense.

C. Engineer’s Evaluation and Determination: Engineer will be allowed a reasonable time to evaluate each “or-equal” request. Engineer may require Contractor to furnish additional data about the proposed “or-equal” item. Engineer will be the sole judge of acceptability. No “or-equal” item will be ordered, furnished, installed, or utilized until Engineer’s review is complete and Engineer determines that the proposed item is an “or-equal”, which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

D. Special Guarantee: Owner may require Contractor to furnish at Contractor’s expense a special performance guarantee or other surety with respect to any “or equal” item request.

E. Reimbursement of Engineer’s Cost: Engineer will record Engineer’s costs in evaluating a proposed or submitted “or equal” item request by Contractor. Whether or not Engineer approves an “or equal” item request so proposed or submitted by Contractor, Contractor
shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed “or equal” item request. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed “or equal” item request.

F. **Effect of Engineer’s Determination**: Neither approval nor denial of an “or-equal” request shall result in any change in Contract Price. The Engineer’s denial of an “or-equal” request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.

G. **Treatment as a Substitution Request**: If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

### 7.05 Substitutes

A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make a written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

   a. Shall certify that the proposed substitute item will:

      1) Perform adequately the functions and achieve the results called for by the general design,

      2) Be similar in substance to that specified, and

      3) Be suited to the same use as that specified.

   b. Will state:

      1) The extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,

      2) Whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct
contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

3) Whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

c. Will identify:
   1) All variations of the proposed substitute item from that specified, and
   2) Available engineering, sales, maintenance, repair, and replacement services.

d. Shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. *Engineer’s Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer’s review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer’s determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor’s expense a special performance guarantee or other surety with respect to any substitute.

D. *Reimbursement of Engineer’s Cost*: Engineer will record Engineer’s costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

E. *Contractor’s Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor’s expense.

F. *Effect of Engineer’s Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer’s denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 Concerning Subcontractors, Suppliers, and Others

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.

B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
C. Subsequent to the submittal of Contractor’s Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five (5) days.

E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.

F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within fifteen (15) days of Owner’s requirement of replacement.

G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor’s own acts and omissions.

J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.

K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.

L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.

N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

O. Nothing in the Contract Documents:

1. Shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor

2. Shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 Patent Fees and Royalties

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.
7.08 Permits

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses required by the City. The driller will be responsible for paying the well permit fees obtained from the City. The remaining construction permit fees are being waived as an “in-kind” contribution to the project as arranged by WRD. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor’s Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.09 Taxes

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.10 Laws and Regulations

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor’s compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor’s responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor’s obligations under Paragraph 3.03.

C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor’s Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within fifteen (15) days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 Record Documents

A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available
to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 Safety and Protection

A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

1. All persons on the Site or who may be affected by the Work;
2. All the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
3. Other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

C. Contractor shall comply with the applicable requirements of Owner’s safety programs, if any. The Supplementary General Conditions identify any Owner’s safety programs that are applicable to the Work.

D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor’s safety program with which Owner’s, Engineer’s and Construction Manager’s (if any) employees and representatives must comply while at the Site.

E. All damage, injury, or loss to any property referred to in Paragraphs 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense.

F. Contractor’s duties and responsibilities for safety and protection shall continue until such time as the Work is completed and Owner has accepted occupancy and control of the Work.

G. Contractor’s duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.
7.13 Safety Representative
   A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 Hazard Communication Programs
   A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 Emergencies
   A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 Shop Drawings, Samples, and Other Submittals
   A. Shop Drawing and Sample Submittal Requirements:
      1. Before submitting a Shop Drawing or Sample, Contractor shall have:
         a. Reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
         b. Determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
         c. Determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
         d. Determined and verified all information relative to Contractor’s responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
      2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor’s obligations under the Contract Documents with respect to Contractor’s review of that submittal, and that Contractor approves the submittal.
      3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.
B. **Submittal Procedures for Shop Drawings and Samples:** Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

1. **Shop Drawings:**
   a. Contractor shall submit the number of copies required in the Specifications.
   b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. **Samples:**
   a. Contractor shall submit the number of Samples required in the Specifications.
   b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer’s review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. **Other Submittals:** Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.

D. **Engineer’s Review:**

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer’s review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer’s review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.

3. Engineer’s review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer’s review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
5. Engineer’s review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.

6. Engineer’s review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer’s receipt, review, acceptance nor approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. Resubmittal Procedures:

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer’s time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer’s charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer’s charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 Contractor’s General Warranty and Guarantee

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor’s warranty and guarantee.

B. Contractor’s warranty and guarantee hereunder excludes defects or damage caused by:

1. Abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. Normal wear and tear under normal usage.

C. Contractor’s obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor’s obligation to perform the Work in accordance with the Contract Documents:

1. Observations by Engineer or Construction Manager (if any);
2. Recommendation by Engineer or payment by Owner of any progress or final payment;
3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
4. Use or occupancy of the Work or any part thereof by Owner;
5. Any review and approval of a Shop Drawing or Sample submittal;
6. The issuance of a notice of acceptability by Engineer;
7. Any inspection, test, or approval by others; or
8. Any correction of defective Work by Owner.

D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor’s performance obligations to Owner for the Work described in the assigned contract.

7.18 Indemnification

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall defend, indemnify and hold harmless Owner, Engineer, and Construction Manager (if any) and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner, Engineer or Construction Manager (if any) or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers’ compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer’s officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

1. The preparation or approval of, or the failure to prepare or approve maps, drawings, opinions, reports, surveys, change orders, designs, or specifications; or
2. Engineer giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.
7.19 Delegation of Professional Design Services

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor’s responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.

B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional’s written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this paragraph, Engineer’s review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer’s review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 Other Work

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner’s employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner’s employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner’s employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to
properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others’ work with the written consent of Engineer and the others whose work will be affected.

D. If the proper execution or results of any part of Contractor’s Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor’s Work. Contractor’s failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor’s Work except for latent defects and deficiencies in such other work.

8.02 Coordination

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner’s employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary General Conditions or provided to Contractor prior to the start of any such other work:

1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;

2. An itemization of the specific matters to be covered by such authority and responsibility; and

3. The extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary General Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 Legal Relationships

A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner’s employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within fifteen (15) days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor’s rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times.
B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner’s contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.

C. When Owner is performing other work at or adjacent to the Site with Owner’s employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor’s failure to take reasonable and customary measures with respect to Owner’s other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor’s failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor’s actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall: (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER’S RESPONSIBILITIES

9.01 Communications to Contractor
   A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer and/or the Construction Manager.

9.02 Replacement of Engineer
   A. Owner may at its discretion appoint an engineer to replace Engineer. The replacement engineer’s status under the Contract Documents shall be that of the former Engineer.

9.03 Furnish Data
   A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 Pay When Due
   A. Owner shall make payments to Contractor when they are due as provided in the Agreement.
9.05 Lands and Easements; Reports, Tests, and Drawings
   A. Owner’s duties with respect to providing lands and easements are set forth in Paragraph 5.01.
   B. Owner’s duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
   C. Article 5 refers to Owner’s identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 Insurance
   A. Owner’s responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 Change Orders
   A. Owner’s responsibilities with respect to Change Orders are set forth in Article 11.

9.08 Inspections, Tests, and Approvals
   A. Owner’s responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 Limitations on Owner’s Responsibilities
   A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor’s failure to perform the Work in accordance with the Contract Documents.

9.10 Undisclosed Hazardous Environmental Condition
   A. Owner’s responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 Evidence of Financial Arrangements
   A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner’s obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 Safety Programs
   A. While at the Site, Owner’s employees and representatives shall comply with the specific applicable requirements of Contractor’s safety programs of which Owner has been informed.
   B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

9.13 Owner’s Site Representative or Construction Manager
   A. Owner may designate an “Owner’s Site Representative” or “Construction Manager” to represent Owner at the Site and assist Owner in observing the progress and quality of the Work. The Construction Manager is not the Engineer’s consultant, agent, or employee. The Construction Manager, if any, will be identified at the pre-construction meeting.
B. The Construction Manager will act as directed by and under the supervision of the Owner and will confer with the Owner regarding its actions. The Construction Manager’s dealings in matters pertaining to the Work shall, in general, be only with the Contractor, and dealings with Subcontractors shall only be through or with the full knowledge of the Contractor.

C. The Construction Manager shall have the following duties and responsibilities set forth in this paragraph.

1. Represent the Owner in connection with overseeing the Work and advising the Owner as to compliance by the Contractor with the Contract Documents.

2. Review the progress schedule, shop drawing submittals schedule, and progress payment requests prepared by the Contractor and consult with the Owner and Engineer concerning their acceptability.

3. Plan, schedule and conduct preconstruction and construction conferences. Arrange a schedule of progress meetings and other job conferences as required and notify those who are expected to attend. Conduct meetings and prepare, maintain and circulate copies of meeting minutes.

4. Serve as the Owner’s liaison with the Contractor, working principally through the Contractor’s Project Manager and superintendent.

5. Review Submittals, RFI’s, memos, design criteria, certified payroll records and all other administrative documents requested by Owner and coordinate review of these documents with Engineer.

6. Issue clarifications relating to the Contract Documents;

7. Coordination with Engineer regarding Contract Document revisions and reissuance;

8. Review, reject or approve Contractor’s project progress schedules.

9. Conduct on-site observations of the Work in progress to assist the Owner in determining if the Work is proceeding in accordance with the Contract Documents.

10. Verify that the tests, equipment, and systems startups and operating and maintenance instruction are conducted as required by the Contract Documents and in presence of the required personnel, and that the Contractor maintains adequate records thereof.

11. Coordination with Engineer regarding Contractor-requested clarifications and interpretations of the Contract Documents.

12. Coordination with Owner and Engineer for consideration and evaluation of Contractor’s suggestions for minor modifications to the Contract Documents.

13. Construction Manager, in conjunction with the Engineer, will review applications for payment from the Contractor for accuracy and Contract compliance, noting particularly their relation to the schedule of values, work completed, and materials and equipment delivered at the Site but not yet incorporated in the Work.

14. Coordinate with and assist the Owner and Engineer in connection with the review, consideration, issuance, negotiation and resolution of Change Orders and Contractor’s claims for additional compensation.
15. During the course of the Work, verify that certificates, maintenance and operation manuals, and other data required to be assembled and furnished by Contractor are applicable to the items installed.

16. Develop a list of pre-punch list of items which require correction prior to final Inspection. Coordination with the Owner regarding preparation of a Notice of Completion, as applicable.

17. Participate in the final inspection, along with Owner’s inspectors, the Owner, Engineer, and the Contractor, and prepare a punch list of items to be completed or corrected.

18. Verify that all items on the punch list have been completed or corrected and make recommendations to the Engineer and the Owner concerning acceptance.

D. The Construction Manager shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including “or-equal” items).

2. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.

3. Undertake any of the responsibilities of the Engineer.

4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor’s work.

5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.

6. Accept Shop Drawing or Sample submittals from anyone other than Contractor.

ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION

10.01 Owner’s Representative

A. Engineer will be Owner’s representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner’s representative during construction are set forth in the Contract.

10.02 Visits to Site

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor’s executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer’s efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer’s visits and observations are subject to all the limitations on Engineer’s authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during
or as a result of Engineer’s visits or observations of Contractor’s Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 Project Representative

A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as designated by Owner and Engineer.

10.04 Rejecting Defective Work

A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 Shop Drawings, Change Orders and Payments

A. Engineer’s authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.

B. Engineer’s authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.

C. Engineer’s authority as to Change Orders is set forth in Article 11.

D. Engineer’s authority as to Applications for Payment is set forth in Article 15.

10.06 Determinations for Unit Price Work

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 Decisions on Requirements of Contract Documents and Acceptability of Work

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 Limitations on Engineer’s Authority and Responsibilities

A. Neither Engineer’s authority nor responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, nor performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be
responsible for Contractor’s failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer’s review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 Compliance with Safety Program

A. While at the Site, Engineer’s employees and representatives will comply with the specific applicable requirements of Owner’s and Contractor’s safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 Change Procedures

A. Submittals: Contractor shall submit the name of the individual who is authorized to receive change documents and is responsible for informing others in Contractor’s employ or subcontractors of changes to the Work.

B. Contractor shall carefully study and compare Contract Documents before proceeding with fabrication and installation of Work and promptly advise Architect/Engineer of any error, inconsistency, omission, or apparent discrepancy.

C. Requests for Interpretation (RFI) and Clarifications: Contractor shall allot time in construction scheduling for coordination with Engineer.

   1. Use CSI Form 13.2A (or similar) - Request for Interpretation for requesting interpretations.

   2. Engineer may respond with a direct answer on the Request for Interpretation form, or with CSI Form 13.3A Clarification Notice, or EJCDC C-942 Field Order or similar.

D. Engineer will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions via Field Order.

E. Engineer or Construction Manager (if any) may issue a Proposal Request including a detailed description of proposed changes with supplementary or revised Drawings and Specifications. Contractor will prepare and submit proposal within seven (7) days, which shall include the cost and schedule requirements to complete the subject work.

F. Contractor may propose changes by submitting a request for changes to Engineer, describing proposed change and its full effect on the Work. This will include a statement describing the
reason for the change and the effect on the Contract Price and Contract Time with full
documentation and a statement describing the effect on the Work by other contractors.

G. Change Order Pricing: Change order pricing, whether based on units or lump sum, shall
include all costs associated with the subject work, including but not limited to materials,
equipment, labor, overhead and profit, related mobilization and demobilization, as
applicable.

H. Time and Material/Force-Account Change Order: Contractor shall submit an itemized account
and supporting data after completion of change, within the time limits indicated in Conditions
of the Contract. Engineer will determine the change allowable in Contract Price and Contract
Time as provided in Contract Documents.

I. Contractor shall maintain detailed records of the Work done on time and material force-
account basis. Contractor shall provide full information required for evaluation of proposed
changes and to substantiate costs for changes in the Work.

J. Execution of Change Orders: Owner (in consultation with the Engineer) will issue Change
Orders for signatures of the parties.

K. Correlation of Contractor Submittals:
   1. Contractor shall promptly revise the Schedule of Values/Application for Payment forms
to record each authorized Change Order as a separate line item and adjust Contract
Sum/Price accordingly.
   2. Contractor shall promptly revise Progress Schedules to reflect the change in Contract
Time and submit to Engineer for review.
   3. Contractor shall promptly record changes on Record Documents.

11.02 Amending and Supplementing Contract Documents

A. The Contract Documents may be amended or supplemented by a Change Order, a Work
Change Directive, or a Field Order.

1. Change Orders:
   a. If an amendment or supplement to the Contract Documents includes a change in
the Contract Price or the Contract Times, such amendment or supplement must be
set forth in a Change Order. A Change Order also may be used to establish
amendments and supplements of the Contract Documents that do not affect the
Contract Price or Contract Times.
   b. Owner and Contractor may amend those terms and conditions of the Contract
Documents that do not involve (1) the performance or acceptability of the Work,
(2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3)
other engineering or technical matters, without the recommendation of the
Engineer. Such an amendment shall be set forth in a Change Order.

2. Work Change Directives: A Work Change Directive will not change the Contract Price or
the Contract Times but is evidence that the parties expect that the modification ordered
or documented by a Work Change Directive will be incorporated in a subsequently
Water Replenishment District of Southern California  
Installation of a Deep Nested Groundwater Monitoring Well

issued Change Order, following negotiations by the parties as to the Work Change Directive’s effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than thirty (30) days after the completion of the Work set out in the Work Change Directive.

3. Field Orders: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.03 Owner-Authorized Changes in the Work

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer’s recommendation. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor’s safety obligations under the Contract Documents or applicable Laws and Regulations.

11.04 Unauthorized Changes in the Work

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.05 Change of Contract Price

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or

3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor’s fee for overhead and profit (determined as provided in Paragraph 11.04.C).

11.06 Change of Contract Times

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.

B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor’s progress.

C. Contractor’s construction schedule shall include five (5) work days of delay due to weather for which no adjustment in contract time will be made.

11.07 Change Proposals

A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. Procedures: Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than fifteen (15) days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within fifteen (15) days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.

2. Engineer’s Action: Engineer will review each Change Proposal and, within thirty (30) days after receipt of the Contractor’s supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within thirty (30) days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer’s inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

3. Binding Decision: Engineer’s decision will be final and binding, unless Contractor appeals the decision by filing a Claim under Article 12.
4. **Supporting Data:** Contractor’s request for extensions of Contract Time (including any milestones) shall contain the proper supporting data which shall include: (1) the cause for and estimated duration of the requested extension; (2) a description of the portions of the Work affected; (3) a schedule identifying exactly how the critical path or milestone was affected; and (4) all other pertinent documents and detail that might be necessary for Engineer and/or Owner to properly evaluate the request.

B. **Resolution of Certain Change Proposals:** If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.08 **Execution of Change Orders**

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. Changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner’s acceptance of defective Work under Paragraph 14.04 or Owner’s correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer’s recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
4. Changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.09 **Notification to Surety**

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor’s responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 **Claims**

A. **Claims Process:** The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:

1. Appeals by Owner or Contractor of Engineer’s decisions regarding Change Proposals;
2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.

B. **Submittal of Claim**: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than thirty (30) days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within thirty (30) days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor’s knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. **Review and Resolution**: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.

D. **Mediation**: 
   1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
   2. If Owner and Contractor agree to mediation, then after sixty (60) days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator or as indicated by either party in writing.
   3. Owner and Contractor shall each pay one-half of the mediator’s fees and costs.

E. **Partial Approval**: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within thirty (30) days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. **Denial of Claim**: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within thirty (30) days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within thirty (30) days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. **Final and Binding Results**: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a
Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 Cost of the Work

A. Purposes for Determination of Cost of the Work: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. Costs Included: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers’ compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers’ field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from Subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis
of Cost of the Work plus a fee, the Subcontractor’s Cost of the Work and fee shall be determined in the same manner as Contractor’s Cost of the Work and fee as provided in this Paragraph 13.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:
   a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor’s employees incurred in discharge of duties connected with the Work.
   b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
   c. Construction Equipment and Machinery:
      1. Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
      2. Costs for equipment and machinery owned by Contractor are to be charged at a rate shown for such equipment in the Rental Rate Blue Book published by Equipment Watch, adjusted to the regional area of the Project. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs. Costs will include the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the Work. The cost of any such equipment or machinery, or parts thereof, shall cease to accrue when the use thereof is no longer necessary for the changed Work. Equipment or machinery with a value of less than $1,000 will be considered small tools.
   d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
   e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
   f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or
indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor’s fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.
h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. Costs Excluded: The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor’s officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor’s principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor’s fee.

2. Expenses of Contractor’s principal and branch offices other than Contractor’s office at the Site.

3. Any part of Contractor’s capital expenses, including interest on Contractor’s capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. Contractor’s Fee: When the Work as a whole is performed on the basis of cost-plus, Contractor’s fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor’s fee shall be determined as set forth in Paragraph 11.04.C.

E. Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
B. **Cash Allowances:** Contractor agrees that:

1. The cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor’s costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. **Contingency Allowance:** Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 **Unit Price Work**

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor’s overhead and profit for each separately identified item.

D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer’s preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer’s written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.

E. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:

1. If the variation in the quantity of a particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 25% from the estimated quantity of such item indicated in the Agreement; and

2. If there is no corresponding adjustment with respect to any other item of Work; and

3. If Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may submit a Change Proposal, or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner seek an adjustment in the Contract Price.
ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 Access to Work

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor’s safety procedures and programs so that they may comply therewith as applicable.

14.02 Tests, Inspections, and Approvals

A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. By the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. To attain Owner’s and Engineer’s acceptance of materials or equipment to be incorporated in the Work;

3. By manufacturers of equipment furnished under the Contract Documents;

4. For testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and

5. For acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor’s purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor’s
expense unless Contractor had given Engineer timely notice of Contractor’s intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 Defective Work

A. **Contractor’s Obligation:** It is Contractor’s obligation to assure that the Work is not defective.

B. **Engineer’s Authority:** Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. **Notice of Defects:** Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. **Correction, or Removal and Replacement:** Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. **Preservation of Warranties:** When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner’s special warranty and guarantee, if any, on said Work.

F. **Costs and Damages:** In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 Acceptance of Defective Work

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer’s confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner’s evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 Uncovering Work

A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer’s observation, and then replace the covering, all at Contractor’s expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer’s request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor’s full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within fifteen (15) days of the determination that the Work is not defective.

14.06 Owner May Stop the Work

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 Owner May Correct Defective Work

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven (7) days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor’s services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner’s representatives, agents and employees, Owner’s other contractors, and Engineer and Engineer’s consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs
against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor’s defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner’s rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

A. Basis for Progress Payments: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. Applications for Payments:

1. At least twenty (20) days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner’s interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor’s legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

4. Contractor shall deliver, together with each Application for Payment, (a) an Unconditional Waiver and Release applicable to Work with respect to which Contractor has already received payment (in a form consistent with Public Contract Code Section 8132 or 8136), (b) a Conditional Waiver and Release that is applicable to Work completed prior to the date of such Application for Payment for which Contractor seeks payment (in a form consistent with Public Contract Code Section 8134 or 8138), and (c) any other information, documentation or certification that Owner reasonably requests in connection with any liens, waivers or releases. Owner’s receipt of such executed waivers shall be a condition precedent to Owners obligation to pay any amounts pertaining to a particular Application for Payment. In addition, Owner may at any time
direct Contractor to certify in writing that all payrolls, invoices for material and equipment, and other indebtedness connected with the Work and associated with an Application for Payment have been paid.

C. Review of Applications:

1. Engineer will, within seven (7) days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer’s reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer’s recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer’s observations of the executed Work as an experienced and qualified design professional, and on Engineer’s review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer’s knowledge, information and belief:

   a. The Work has progressed to the point indicated;
   b. The quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
   c. The conditions precedent to Contractor’s being entitled to such payment appear to have been fulfilled in so far as it is Engineer’s responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. Inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
   b. There may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer’s review of Contractor’s Work for the purposes of recommending payments nor Engineer’s recommendation of any payment, including final payment, will impose responsibility on Engineer:

   a. To supervise, direct, or control the Work, or
   b. For the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
   c. For Contractor’s failure to comply with Laws and Regulations applicable to Contractor’s performance of the Work, or
   d. To make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
e. To determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer’s opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer’s opinion to protect Owner from loss because:
   a. The Work is defective, requiring correction or replacement;
   b. The Contract Price has been reduced by Change Orders;
   c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
   d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
   e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.
   f. There are other items entitling Owner to a set off against the amount recommended pursuant to the terms of the Contract Documents.

D. Payment Becomes Due:

1. Thirty (30) days after presentation of the Application for Payment to Owner with Engineer’s recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. Reductions in Payment by Owner:

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
   a. Claims have been made against Owner on account of Contractor’s conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor’s conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
   b. Fines or penalties that are assessed against the Owner that are the responsibility of the Contractor, its Subcontractors or Suppliers, including but not limited to, civil wage and penalty assessments by the California Department of Industrial Relations;
   c. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
   d. Contractor has failed to provide and maintain required bonds or insurance;
   e. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
f. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

g. The Work is defective, requiring correction or replacement;

h. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

i. The Contract Price has been reduced by Change Orders;

j. An event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;

k. Liquidated damages have accrued as a result of Contractor’s failure to achieve Milestones, Substantial Completion, or final completion of the Work;

l. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

m. There are other items entitling Owner to a set off against the amount recommended pursuant to the terms of the Contract Documents.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner’s refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 Contractor’s Warranty of Title

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of: (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 Substantial Completion

A. When Contractor considers the entire Work ready for its intended use, Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor’s notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider
the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven (7) days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within fourteen (14) days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner’s objections Engineer concludes that the Work is substantially complete, then Engineer will, within said fourteen (14) days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner’s use or occupancy of the Work following Substantial Completion, review the builder’s risk insurance policy with respect to the end of the builder’s risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner’s use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 Partial Use or Occupancy

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor’s performance of the remainder of the Work, subject to the following conditions:

1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder’s risk or other property insurance.

15.05 Final Inspection

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 Final Payment

A. Application for Payment:

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:
   a. All documentation called for in the Contract Documents;
   b. Consent of the surety, if any, to final payment;
   c. Satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
   d. A list of all disputes that Contractor believes are unsettled; and
   e. Complete and legally effective releases and/or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens, if any, filed in connection with the Work.
   f. If any Subcontractor or Supplier fails to furnish such releases and/or waivers, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
B. Engineer’s Review of Application and Acceptance:

1. If, on the basis of Engineer’s observation of the Work during construction and final inspection, and Engineer’s review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor’s other obligations under the Contract have been fulfilled, Engineer will, within seven (7) days after receipt of the final Application for Payment, indicate in writing Engineer’s recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer’s opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Completion of Work: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer’s written recommendation of final payment.

D. Payment Becomes Due: Thirty (30) days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer’s recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 Waiver of Claims

A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor’s failure to comply with the Contract Documents, from any reduction in payment in Paragraph 15.05(E), or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor’s prior and continuing obligations under the Contract Documents.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 Correction Period

A. If within one (1) year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner’s written instructions:
1. Correct the defective repairs to the Site or such other adjacent areas;

2. Correct such defective Work;

3. If the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

4. Satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner’s written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one (1) year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor’s obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 Owner May Suspend Work

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than ninety (90) consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than fifteen (15) days after the date fixed for resumption of Work.

16.02 Owner May Terminate for Cause

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor’s persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
3. Contractor’s disregard of Laws or Regulations of any public body having jurisdiction; or
4. Contractor’s repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten (10) days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
   1. Declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
   2. Enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven (7) days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor’s services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 Owner May Terminate For Convenience

A. Upon seven (7) days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract for convenience. In such case, Contractor shall be paid for (without duplication of any items):

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1. Completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. Expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. Other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 Contractor May Stop Work or Terminate

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than ninety (90) consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within thirty (30) days after it is submitted, or (3) Owner fails for thirty (30) days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven (7) days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within thirty (30) days after it is submitted, or Owner has failed for thirty (30) days to pay Contractor any sum finally determined to be due, Contractor may, seven (7) days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor’s stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 Methods and Procedures

A. Disputes Subject to Final Resolution: The following disputed matters are subject to final resolution under the provisions of this Article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and;

2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after Final Payment has been made.

B. Binding Arbitration: If the voluntary mediation does not resolve the dispute, then the dispute shall be resolved by binding arbitration before a retired Judge of the Superior Court or a retired federal court judge or magistrate, in accordance with the provisions of California Code of Civil Procedure (CCP) Sections 1280 et. seq. The Award of the arbitrator shall be entitled
to be confirmed by the Superior Court, and if so confirmed, entered as a judgment pursuant to the provisions of CCP 1285 et. seq.

C. Multiparty Proceeding: The parties agree that all parties necessary to resolve a claim shall be parties to the same dispute resolution proceeding. The Contractor shall provide provisions in its contracts with all of its subcontractors that the dispute resolution procedures of the Contract are binding upon all subcontractors (as well as any lower-tier subcontractors) to insure consolidation of such dispute resolution proceedings.

D. Cost of Dispute Resolution: The prevailing party in any dispute arising out of or relating to this Agreement or its breach that is resolved by binding arbitration, and any court proceedings related to the confirmation of the award, shall be entitled to recover from the other party reasonable attorney’s fees, costs and expenses incurred by the prevailing party in connection with such dispute resolution process.

ARTICLE 18 – MISCELLANEOUS

18.01 Giving Notice

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. Delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or

2. Delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 Computation of Times

A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 Cumulative Remedies

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 Limitation of Damages

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.
18.05 No Waiver
   A. A party’s non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 Survival of Obligations
   A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 Controlling Law
   A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 Headings
   A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

++END OF GENERAL CONDITIONS++
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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

SC-1.01.A Add the following terms to Section 1.01.A:

1. City – The City of Montebello

ARTICLE 3 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.03 Subsurface and Physical Conditions Site Conditions

SC-5.03.A Add the following new paragraphs immediately after Paragraph 5.03.B:

C. The following relevant reports known site conditions at or adjacent to the Site are known to Owner:

None.

5.06 Hazardous Environmental Conditions at Site

SC-5.06.A Add the following subparagraphs immediately following 5.06.A.2:

3. The following reports regarding Environmental Conditions at or adjacent to the Site are known to Owner:

None.

++END OF SECTION++
SECTION 33 11 53.01
WATER WELL MOBILIZATION/DEMOBILIZATION

PART 1 - GENERAL

1.01 SCOPE

A. This Section includes the Work necessary to mobilize, demobilize, set up, move equipment, and clean drill sites related to the drilling, construction, and development of a Deep Nested Groundwater Monitoring Well (the Project).

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

A. Temporary Facilities and Controls: Provide the following temporary facilities and controls:

1. Temporary construction facilities, including temporary water and sanitary services.
2. Temporary controls, including: security, fire protection, and safety, including OSHA required notices and establishment of safety programs.
3. Temporary traffic control required to conduct drilling in accordance with industry standard guidelines and requirements of the City.

B. Equipment: Adequate equipment shall be supplied for drilling, installation, and development of the new monitoring well planned for the Project. The type of equipment required consists of:

1. Drilling rig, drilling equipment, and associated self-contained fluid circulation equipment.
2. Mud monitoring equipment to measure mud properties whenever drilling fluids are being circulated.
3. The drill rig, compressors, pumps, and other associated equipment, shall be outfitted as necessary to meet the noise requirements set forth in this article. Possible options for controlling noise from such equipment may include, but is not limited to, steel framed fiberglass filled panels, acoustical skirts for drill rig trailers, and high-performance mufflers for engines.
4. Well development rig, swabs, development pumps, and equipment capable of setting and operating pumps as specified in these Specifications.
5. Tanks and storage bins to contain drilling fluid, drill cuttings, and high solids displacement water from each well for proper disposal.
6. Water containers including tanks, temporary pipelines, pumps, and drums and manage the disposal of development water, as needed to comply with all applicable permits.
7. High pressure washer and miscellaneous associated equipment for decontaminating down hole equipment and removing mud and trackable debris from drilling equipment.

C. Utility clearance: The Contractor shall conduct utility clearance procedures as follows:

1. The Owner will mark the boring location and work cooperatively during utility clearance measures performed by the Contractor.
2. The Contractor is responsible for conducting surface geophysics within the work area using a combination of electromagnetics and ground penetrating radar methods to identify any unmarked structures and discuss the results with the Owner prior to contacting Underground Service Alert (USA).
3. The Contractor will maintain for the duration of subsurface work an active dig alert ticket with USA. They will verify all markings and if a conflict is identified a new location will be identified in coordination with the Owner.
4. The Contractor is responsible for clearing the entire diameter of the largest piece of equipment entering the borehole using an air-knife rig to a minimum depth of 10 feet.
5. The Engineer will visually verify the borehole is free of any obstruction and provide approval to proceed with drilling to the Contractor.

3.02 WORK LAYOUT

A. Set up well drilling rig, drilling waste solid and liquid containment, storage and treatment systems, pump service rig, and other related equipment in a neat and orderly manner within an area designated by Engineer.

B. Some obstructions may not be shown. Bidders are advised to carefully inspect the existing facilities before preparing their bids. The removal and replacement of minor obstructions such as electrical conduits, water, waste piping, and similar items shall be anticipated and accomplished, even though not shown or specifically mentioned.

C. Major obstructions encountered that could not have been foreseen by visual inspection of the site prior to bidding, should immediately be brought to the attention of the Engineer. The Engineer will make a determination for proceeding with the Work.

D. Avoid contamination of the Project area. Do not dump waste oil, rubbish, or other similar materials on the ground.

E. The Contractor shall be responsible for containing all drilling fluids, drill cuttings, development water, and test waters as further described in these Specifications. The Contractor shall be responsible for properly disposing all waste generated during the Project.

F. During execution of the Work, the Contractor will, on a daily basis, clean the site, adjacent properties, and public access roads and dispose of waste materials, debris, and rubbish to assure that grounds and public and private properties are maintained.
free from accumulations of waste materials and rubbish. Contractor will provide containers for collection and disposal of waste materials, rubbish, and debris.

G. Upon completion and acceptance of each well, remove drill rig from the site including related equipment and all debris, unused materials, temporary construction buildings, and other miscellaneous items resulting from or used in the operations. Replace or repair any facility that has been damaged during the construction Work. Restore the site as nearly as possible to its original condition.

3.03 NOISE CONTROL

A. Monitor noise levels at least once daily during a time when onsite equipment is in use, when noise levels are expected to be the highest, and as requested by the Engineer. Measure noise levels at 50 and 100 feet from drill site or as directed by City or Engineer.

B. To the extent possible, and if allowed by the City, conduct nighttime drilling operations while limiting the following activities: hammering on pipe, racking or making-up of pipe, rapid acceleration and deceleration of diesel engines, and picking up or laying down drill pipe.

C. If, at any time, the noise limits are exceeded, take immediate corrective action through drilling equipment modifications, addition of supplemental noise abatement equipment, or changes in operating procedures. Noise levels will be monitored by Engineer to assess compliance with City requirements.

D. Noise barrier equipment shall remain in place during all field activities and until final capping of each new well is completed.

3.04 EQUIPMENT CLEANING

A. Down hole tools and equipment that may come in contact with tools or equipment that may be positioned directly above borehole or completed well shall arrive onsite free of surface deposits of friable solids; for example, mud, sand, grout, caked on cuttings and cleaned of grease, oils, and other petroleum products. Except that normal amounts of thread joint compound on drill pipe and tool joints, and normal amounts of lubricating grease on mechanical equipment is allowed.

B. Clean down hole equipment, tools, and equipment that may come in contact with down hole equipment that becomes soiled with petroleum products to satisfaction of Engineer before resuming work on well.

C. Remove trackable mud, cuttings, sand, grout and other materials from undercarriage, tires and other surfaces of equipment prior to moving equipment on or across public roads and pathways.

D. Do not empty, spill, splash, or slosh containerized drilling mud and fluids onto ground surface while moving containers, pipes and equipment.
E. Cleanup drilling mud, settled solids, and other semi-liquids and solids that spill from, or are emptied from, equipment as it is being moved.

3.05 DEMOBILIZATION

A. Remove temporary above grade or buried utilities, equipment, facilities, materials.

B. Clean and repair damage, including damage to grass areas and pavement areas, caused by installation or removal of temporary facilities and equipment.

++END OF SECTION++
PART 1 - GENERAL

1.01 REFERENCES

A. The following is a list of standards which may be referenced in this Section:

   b. 13B-1, Recommended Practice Standard Procedure for Field Testing Water-Based Drilling Fluids.

1.02 SUBMITTALS

A. Action Submittals:

1. Detailed product data for drilling fluids and additives.
2. Drilling mud properties.
3. Drill cutting samples.

B. Informational Submittals:

1. Drilling fluid specialist qualifications.
2. Detailed description of drilling fluid program including details on mud tanks, pits, circulation system. Drilling fluid program shall be prepared by a certified drilling fluid specialist provided by the Contactor.
3. Description of drilling equipment and proposed methods.
5. Sieve analyses test results.

C. Submittals shall be made in accordance with the General Conditions.
1.03 QUALITY ASSURANCE

A. Qualifications:
   1. Drilling Fluid Specialist: Prior to drilling, a mud specialist shall be approved by the Engineer.

B. Regulatory Requirements:
   1. Comply with applicable permits, laws, and regulations in disposing of drilling fluids, drill cuttings, and water generated during drilling and well construction. Permits, laws and regulations shall include, but not be limited to, the following:
      a. Federal, state, and local laws, regulations, and ordinances related to disposing of materials generated in constructing wells.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

A. Notify Engineer at least 5 working days before drilling begins.

B. Notify Engineer of anticipated delays whenever they become apparent.

C. Excavation of mud pits will not be allowed unless approved by Engineer.

3.02 DRILLING EQUIPMENT

A. Provide direct circulation rotary drilling equipment and accessories required to complete well as specified.

3.03 DRILLING FLUIDS

A. Use new materials in the formulation of drilling fluid at each well site. Used drilling fluid materials shall not be reused at subsequent well sites.

B. Properties:
   1. Comprised of a polymer-based “mud” or a bentonite “gel”-based mud.
      a. “Gel”-based mud shall be a high-yield, 200-mesh sodium bentonite.
      b. A bentonite viscosifier only meeting requirements of API 13A will be considered insufficient for applications required in this Project.
   2. NSF 61 Certified.
   3. Possess characteristics that are required to:
      a. Adequately clean drill cuttings off drill bit and bottom of hole.
      b. Transport (“float”) cuttings to the surface and remove them from the fluid.
c. Provide borehole stability to prevent caving of the walls as drilling progresses.
d. Control subsurface pressures.
e. Cool drill bit and lubricate drill string.
f. Prevent excessive fluid loss into permeable zones.
g. Permit recovery of representative samples of drill cuttings.

4. Maintain to deposit only a thin, maximum of 2/32 of an inch, easily removable filter cake on face of borehole. Maintain as follows:
   a. Weight: Not to exceed 9.2 pounds per gallon.
   b. Viscosity: Not to exceed 32 seconds per quart.
   c. Sand Content: Not to exceed 5 percent.
   d. Total Solids Content: Not to exceed 10 percent.
   e. 30-Minute Water Loss: Not to exceed 15 milliliters.

5. Manufacturers and Products:
   a. Baroid Industrial Drilling Products; Quik-Gel.
   b. CETCO; Super Gel-X.

C. Water:

   1. Use City chlorinated potable water in formulating drilling fluids whether employed alone or in combination with drilling additives.
   2. Soda ash is permitted for use to increase pH of the water used to mix drilling fluids.

D. Additives, if required, shall be approved by Engineer. Organic drilling additives shall not be used.

3.04 CIRCULATION SYSTEM

A. General:

   1. System shall minimize recirculation of drill cuttings.
   2. Design to facilitate retrieval of representative samples from the discharge with a minimum of recirculation of material.

B. Include settling tanks of adequate size, a sampling trough, a shaker table, and a desanding/desilting system.

   1. Equip with shaker table and desander/desilter system with a minimum of four cones, capable of handling capacity of system.
      a. Desander/desilter system shall have pump capable of supplying a minimum of 40 psi at 80 gallons per minute per cone minimum.

C. Settling Tanks:

   1. Vessels used for mixing drilling fluids shall be clean and free of contaminants and extraneous materials prior to their use in drilling operations.
   2. Use above ground tanks for mixing, circulation and inclusion of approved additives.
3. Use proper controls to prevent spillage of mud or additives onto ground.

3.05 TEST EQUIPMENT

A. Drilling fluid test equipment and test procedures shall conform to API 13B-1.

B. Equipment for measuring fluid properties shall be made immediately available at drill site.

3.06 BOREHOLE DRILLING

A. Drill boreholes by direct circulation rotary method. The Contractor is responsible for installing a temporary conductor casing to prevent a washout beneath the drill rig.

B. Drill boreholes to dimensions and depth as directed by the Engineer. For bidding purposes, assume the drilling will be performed in accordance with the typical well schematics provided in the drawings included in the request for bid (RFB).

1. Drill boreholes sufficiently straight and plumb to permit installation of casing and screen (i.e., 1 degree per 50 feet [EPA, 2013]).

C. Condition each borehole to allow free passage of geophysical logging tools to bottom.

D. Drilling Fluids and Additives:

1. Check drilling fluid properties, including fluid weight, marsh funnel viscosity, water loss, additions of water, sand content, and total solids content, and filter cake thickness, at a minimum of:
   a. Every 100 feet of depth drilled.
   b. Every 12 hours of circulation when not drilling.
   c. As directed by Engineer.

2. Maintenance:
   a. Maintain complete control over drilling fluid characteristics during operation of well construction.
   b. If proper control of drilling fluid is not maintained, retain or employ an experienced, qualified mud Engineer onsite to supervise and maintain drilling fluid characteristics, at Contractor’s expense.

3. Determine and maintain the quantities and type of commercial drilling mud necessary for the Work, to secure and store those materials at Site, and use them in accordance with accepted practice compliance with water well drilling operations.

E. Use of additional bentonite, clay, mud, or other foreign matter that has a tendency to build a mud cake on the walls of the hole and clog or seal up water-bearing stratum will not be permitted without prior approval of Engineer.
3.07 TEST HOLE DRILLING AND SAMPLING

A. Drill 8-inch nominal diameter test hole to 800 feet or as directed by the Engineer. Test hole diameters larger than this are not authorized, and no payment will be made for test hole drilling if this drill bit size is exceeded.

B. Engineer will have representative onsite during drilling to determine exact depth of test hole based on cuttings.

C. The test hole penetration rate shall be determined based on lithology encountered and allow sufficient time for geological sample classification and should be limited to a range of 20 to 50 feet per hour or as directed by the Engineer.

D. The Contractor will provide representative formation samples every five feet to the Engineer.

E. Collect samples from circulation fluid after it exits the borehole but before it enters the mud system.

3.08 BOREHOLE REAMING

A. Undersized pilot holes shall be reamed to the final diameter required for well construction as noted on DRAWING A.

B. In order to maintain full borehole diameter, maintain well borehole full of drilling fluid until screen, casing, and gravel pack are installed.

C. Maintain circulation of drilling fluid until casing is set, unless Contractor judges circulation to be unnecessary.

D. Maintain a free, uncollapsed, open borehole. If borehole collapses, ream borehole at Contractor’s sole expense.

3.09 DAILY LOG

A. General:

1. Keep driller’s log of borehole which carefully and accurately describes the materials penetrated.
2. Drilling log shall be available at all times for inspection at the Site.

B. Utilize the IADC, API-approved official Daily Drilling Report Form, or equivalent, as approved by Engineer.

1. Submit legible forms covering the previous day suitable for photocopying to the Engineer on a daily basis.
2. Daily log shall be signed daily by Contractor and Engineer to represent their agreement of the included data.
C. Data: Include the following:

1. Formations encountered from surface to total depth, indicating the depth of each change in formation and including difficulties and unusual conditions met during drilling.
2. Drilling rate.
3. Depth at which water is first encountered.
4. Other pertinent phenomena observed.
5. Record of variations in the addition and amount of approved clays or chemical products or water required.
6. Properties of drilling fluids and depth at which changes were required per 3.03B(4).

3.10 SAMPLE COLLECTION

A. Every five feet and at each change in the strata, collect a large, representative sample of the interval or new strata in accordance with procedures approved by Engineer.

B. Storage:

1. Store each sample in a suitable gallon-sized, waterproof container and label each “SAMPLE”. Alternatively, compartmented plastic boxes may be used to separate and store samples.
2. Label shall include well number, date, time, and depth interval.
3. Sample containers shall be stored in a manner to prevent breakage or loss.
4. Furnish containers approved by Engineer.

3.11 SIEVE ANALYSIS

A. The Contractor will collect at least two soil cutting samples at each planned well screen interval as shown on DRAWING A. Samples selected shall be approved by Engineer. Samples shall be submitted to a geotechnical laboratory for sieve analysis and paid for by the Contractor.

B. Perform sieve analysis in accordance with ASTM D422. The Contractor will provide results in a table and plot of the cumulative percent of particles retained by each sieve versus particle size and have results ready within 24 hours.

C. Provide a recommendation for well screen slot size, interval screened, and gravel pack gradation to the Engineer. The Engineer will discuss the recommended well design with the Owner. The Engineer will provide final approval to and allow materials to be ordered by the Contractor.

3.12 DRILL CUTTINGS AND DRILL FLUIDS DISPOSAL

A. Separate drill cuttings and drill fluids generated during borehole drilling using appropriate equipment.
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
INSTALLATION OF A DEEP NESTED GROUNDWATER MONITORING WELL

B. Contain drill cuttings while onsite in plastic lined roll-off bins, and ultimately disposed of at an appropriately licensed waste disposal facility, currently assumed to be Non-Hazardous.

C. Separate suspended solids from drill fluids using appropriate equipment, including temporary tankage to allow sufficient settling time to meet discharge requirements for suspended solids and turbidity, if applicable.

D. All waste shall be properly characterized and removed by the Contractor. The Contractor is responsible for coordinating and paying for the disposal of all drilling related waste in accordance with State and Local regulations (currently assumed to be Non-Hazardous). All waste must be manifested and will be reviewed, approved, and signed by the Owner.

E. Restore ground surface to its original condition or as required by access agreement.

++END OF SECTION++
PART 1 - GENERAL

1.01 SUBMITTALS

A. Action Submittals:

1. Product Data: Downhole geophysical logging equipment.
2. Advanced Geophysical Logging Data.
   a. Upon completing the logging, provide two field copies to the Engineer.
   b. Upon completing the logging, the logs will become property of Owner.
3. In addition to the field copies, submit the following:
   a. Five copies of each geophysical log.
   b. Digital ASCII files of geophysical data on a CD.
   c. Digital DXF files of geophysical data on a CD.
      1) Compatible for use with AutoCAD, as approved by Engineer.

B. Informational Submittals: Geophysical logging by Schlumberger (Masood Kahn at MKhan@slb.com).

C. Submittals shall be made in accordance with the General Conditions.

1.02 QUALITY ASSURANCE

A. Qualifications:

1. Advanced geophysical logging methods shall be performed by Schlumberger.
2. Operator shall be knowledgeable in the interpretation of logs, to the degree that they can make decisions regarding the accuracy and validity of the logs and the sensitivity of the instruments, while using a geophysical logging system capable of producing logs in digital format.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

A. Geophysical Logging: Operator shall be subject to acceptance by Engineer.

3.02 EQUIPMENT

A. Caliper Logging Features:

1. Minimum of three arms.
2. Capable of indicating borehole diameter up to 42 inches.
3.03 GEOPHYSICAL LOGS

A. Schlumberger borehole geophysical logging suite shall include:

2. Array Induction Tool (AIT).
4. Hostile Natural Gamma Spectroscopy (HNGS) and Gamma Ray (SGT).
5. Fullbore Formation Micro-Imager (FMI).
6. Sonic Scanner (MSIP)
7. Integrated Log Analysis (ELAN).

B. Presentation:

1. Provide logs at two vertical scales: 50 feet to 1 inch and 20 feet to 1 inch. Horizontal scale shall be approved by Engineer. Changes in these requirements may be made if, in the opinion of Engineer, all logs are not required.
2. A guide for log presentations is as follows:
   a. Logs shall have zero depth at ground level.
   b. Location with latitude, longitude shall be on log header.
   c. Run gamma ray back to land surface if mechanically possible.

3.04 GEOPHYSICAL LOGGING

A. General:

1. Notify Engineer 24 hours prior to time when geophysical survey will be run.
2. Perform geophysical logging suite immediately after completion of borehole.
3. There will be no additional payment for rig time or standby time while geophysical surveys are being performed.
4. Notify Engineer of anticipated delays whenever they become apparent.
5. Instrumentation:
   a. Resolution and precision of each instrument shall be adequate for the interpretation of the formation properties being studied.
   b. Calibration standards independent of the logging equipment shall be used.
   c. Present calibration and quality control information on logs.
   d. Record each log using an accurate depth measurement.

B. Condition borehole for its total depth prior to logging company performing geophysical logs. Drilling mud circulation in borehole shall not stop until logging company is at drilling site. It shall be the responsibility of Contractor to maintain integrity of borehole to its total depth during logging.

C. Record survey response curves to show adequate deflections for evaluation of the penetrated formations.
D. If the geophysical probes fail to reach the desired depth, borehole shall be conditioned at Contractor’s sole expense to allow probes to reach desired depth.

E. Run geophysical logs in the presence of Engineer.

3.05 CALIPER LOGGING

A. Upon completion of the pilot borehole, in conjunction with the initial advanced geophysical logging conduct a caliper, deviation, and directional survey of borehole using Schlumberger. Upon completion of the borehole reaming to its final diameter conduct a second caliper, deviation, and directional survey of borehole by suitable geophysical logging company (not Schlumberger).

B. If caliper survey shows hole to be less than specified diameter or less than specified depth, hole shall be rereamed or redrilled and resurveyed at Contractor’s sole expense.

C. Caliper log shall include a total borehole volume indicator.

++END OF SECTION++
PART 1 - GENERAL

1.01 REFERENCES
A. The following is a list of standards which may be referenced in this Section:

1.02 SUBMITTALS
A. Action Submittals: Drawings and design data for well casing materials and centralizers.
B. Informational Submittals:
   1. Proposed supplier(s) and specifications for well casing and well screen
   2. As-built drawings showing details of construction materials, including dimensions and quantities of materials used.
C. The submittals shall be made in accordance with the General Conditions.

1.03 QUALITY ASSURANCE (NOT USED)

PART 2 - PRODUCTS

2.01 WELL CASING
A. Polyvinyl Chloride:
   1. Schedule 80 PVC, flush threaded.
B. Dimensions:
   1. Nominal Diameter: 2.5 inches.

PART 3 - EXECUTION

3.01 WELL CONSTRUCTION
A. General:
   1. Recommend final casing lengths to be based on results of the sampling and testing of pilot borehole and approved by Engineer.
   2. Install, support, and anchor well casing in such a way as to hold it in place during the placement of gravel and annular grout seal, during development, and when well is completed.
B. Centralizers:

1. Extend out a minimum of 2 inches from casing or screen to within 1/2 inch of borehole wall.
2. Place every 40 feet. The first two centralizers will be placed at each end of the screen interval (assumed to be 20 feet). An extra centralizer will be placed in the center of any screen interval greater than 30 feet.
3. In the case of nested completion wells, spacers shall be placed around each well casing every 20 feet to ensure a minimum of 2 inches separates the sidewalls of the wells from one another and from the borehole wall.

++END OF SECTION++
SECTION 33 11 53.05  
WATER WELL SCREEN AND GRAVEL PACK

PART 1 - GENERAL

1.01 REFERENCES

A. The following is a list of standards which may be referenced in this Section:


1.02 SUBMITTALS

A. Action Submittals:

1. Proposed supplier(s), Drawings, and design data for well screen materials and configuration.

B. Informational Submittals:

1. Sieve Analysis:
   a. Results for two samples of proposed gravel pack material for each well. Also submit a bag sample of proposed gravel pack with the sieve analysis results. Submit for approval prior to delivery of gravel pack to each Site.
   b. Results for a minimum of two drill cutting samples from each proposed screen interval (up to a total of 14).

C. The submittals shall be made in accordance with the General Conditions.

PART 2 - PRODUCTS

2.01 WELL SCREEN

A. General:

1. Design and manufacture to withstand tensile and collapse pressures for installation for a depth up to 800 feet below ground surface with the uppermost screen at a potential depth of about 150 feet.

2. Design shall be flush threaded and compatible with the Schedule 80 flush threaded (ASTM F480 Standard) PVC casing.

B. Material:

1. Polyvinyl Chloride Machine Slotted:
   a. Schedule 80 PVC, flush threaded, ASTM F480 Standard
   b. Materials shall be new and unused.
C. Dimensions:

1. Nominal Diameter:
   a. 2.5 inches.

2. Slot Size and Screen Length:
   a. Shall be approved by Engineer, based on sieve analyses from cuttings collected while drilling.
   b. Screen slot size shall be determined in conjunction with filter pack size. Determination of size shall depend on results of sieve analyses. It is anticipated that the slot size will be between 0.010 to 0.040 inches.

2.02 CENTRALIZERS

A. Extend out a minimum of 2 inches from casing or screen to within 1/2 inch of borehole wall.

B. Place every 40 feet. The first two centralizers will be placed at each end of the screen interval (assumed to be 20 feet). An extra centralizer will be placed in the center of any screen interval greater than 30 feet.

C. In the case of nested completion wells, spacers shall be placed around each well casing every 20 feet to ensure a minimum of 2 inches separates the sidewalls of the wells from one another and from the borehole wall.

2.03 FILTER PACK MATERIAL

A. Propose size and gradation of gravel pack with high uniformity; subject to approval by Engineer, based on sieve analyses from cuttings collected while drilling.

B. In accordance with AWWA A100 Section 4.6.

C. Hard, water-worn, at least 90 percent silica, and washed clean of silt, sand, dirt, and foreign matter.

D. Crushed gravel will not be accepted.

PART 3 - EXECUTION

3.01 GENERAL

A. Notify Engineer of proposed well completion activities at least 24 hours before activities begin.

B. Notify Engineer of anticipated delays whenever they become apparent.
3.02 WELL SCREEN INSTALLATION

A. General: Place bottom of well casing/well screen assembly at a distance above the bottom of the hole to ensure that none of the weight of casing will be supported from the bottom of the hole.

B. Centralizers:
   1. Extend out at least 2 inches from well screen wall.
   2. Place at 20-foot intervals starting 5 feet from the bottom of the string and extend to the top of the screened interval.
   3. Place at least three equally spaced at each interval in such a manner that interference with gravel pack placement is minimized.

3.03 FILTER PACK INSTALLATION

A. General:
   1. Place filter pack by tremie method using a tremie pipe set to the depth required for the pack.
   2. Support and anchor well casing and well screen in such a way as to hold them in place during placement of filter pack.
   3. The rate of gravel placement shall not exceed 2 feet per minute, as measured by a sounding line, and placement shall proceed without interruption until completion.
   4. The filter pack shall extend a minimum of 2 feet and a maximum of 3 feet above and below the screen, respectively.

B. Water:
   1. Before filter pack placement, make adequate preparations for continuous circulation of clear water.
   2. Fluid properties shall be approved by Engineer.
   3. Circulate clear water while installing pack.
   4. Circulation shall be continuous until pack is fully in place.
   5. If an alternative drilling method to mud rotary is being used, the filter pack shall be surged with a surge block prior to emplacement of the bentonite seal and cement grout.

3.04 FIELD QUALITY CONTROL

A. Well screen that fails, collapses, separates, or does not pass the tests for plumbness or alignment shall be repaired or replaced, or a new well drilled, as determined by Engineer, at Contractor’s sole expense.

B. Filter Pack: If borehole does not take the calculated volume of filter pack with allowances for normal losses and settling, Engineer will have cause to reject the well.
++END OF SECTION++
SECTION 33 21 13.06
WATER WELL GROUTING AND BOREHOLE PLUGGING

PART 1 - GENERAL

1.01 REFERENCES

A. The following is a list of standards which may be referenced in this Section:

1. ASTM International (ASTM):


1.02 SUBMITTALS

A. Action Submittals: Grout mix design.

B. Informational Submittals:

1. Grout composition for each grout batch for each well.

2. Record of volume of grout used. Volume shall not be less than calculated volume of the annular space between well casing and reamed borehole.

C. The submittals shall be made in accordance with the General Conditions.

1.03 QUALITY ASSURANCE

A. Regulatory Requirements:

1. Comply with applicable permits, laws, and regulations in disposing of drilling fluids, drill cuttings, and water generated during grouting. The permits, laws and regulations shall include, but not be limited to, the following:
   a. Federal, state, and local laws, regulations, and ordinances related to disposing of materials generated in constructing wells.

2. Comply with permitting agency well installation requirements

PART 2 - PRODUCTS

2.01 GROUT

A. Cement-bentonite Grout:

1. Neat Portland cement mixture with approximately 5% bentonite by weight
2. Cement: Meet requirements of ASTM C150, Type I or Type II, or an approved equivalent.
3. Additives: Meet requirements of ASTM C494/C494M and approved by Engineer.

2.02 BOREHOLE PLUG

A. Borehole plug installed at the direction of the Engineer into the bottom of a pilot hole shall consist of medium bentonite chips, or equivalent, unless otherwise directed by the Engineer.

2.03 WATER

A. Use potable water.

2.04 WELL BOX

A. Well boxes used for the surface completion shall be traffic-rated and have a width of 24-inches, length of 36-inches, and depth of 30-inches (Model 10524X36X30WT manufactured by PEMCO).

PART 3 EXECUTION

3.01 GENERAL

A. Water Well Grouting:
1. Prior to emplacement of cement/bentonite grout, a seal of hydrated bentonite no less than 3 feet long shall be placed above the filter pack.
2. Calculate volume of annular space between well casing and final borehole prior to placement. Calculated volume shall be reviewed by Engineer.
3. Stock a reserve onsite of at least 30 percent over the calculated volume of cement required as a safety factor to fill washouts in the hole.
4. Notify Engineer of anticipated delays whenever they become apparent.
5. Take precautions to prevent casing from collapsing, warping, or melting. In the event casing collapses, take steps necessary to reopen well and place seal as specified. Such remedial actions shall be at Contractor’s sole expense and shall require prior approval by Engineer.

B. Borehole Abandonment (if needed): If specified by the Engineer, the borehole shall be abandoned using cement grout in accordance with county and state requirements within 24 hours of completing the geophysical logging.

C. Borehole Plugging: If specified by the Engineer, the borehole plug shall be placed in the pilot hole within 24 hours of completing the geophysical logging.

3.02 INSTALLATION

A. Water Well Grouting:
1. Make-up Water Pretreatment:
   a. Buffer pH of the water to a value no less than 8 and no greater than 10.
   b. Use a ratio of 1:2 pounds of soda ash per 100 gallons of water to buffer pH and remove excess calcium.

2. Grout Placement:
   a. Tremie Pipe:
      1) Place in borehole as approved by Engineer.
      2) Extend from ground surface to the bottom of zone to be grouted.
      3) Place grout from the bottom to top, in a continuous operation.
      4) Slowly raise grout tremie pipe as grout is placed.
      5) Discharge end of grout tremie pipe shall remain submerged in grout until grouting is completed.
      6) Maintain a full grout pipe until completion of grouting of the specified interval.
   b. Keep a record of volume of grout used. The volume shall not be less than the calculated volume of the annular space between the well casing and reamed borehole. The Contractor shall supply the devices to measure the volume of grout placed in the well annular space.

3. Do not conduct Work on well or operate heavy equipment onsite during the 24-hour period immediately following placement of the grout.

4. Contain displaced fluids as required by applicable regulatory requirements.

B. Borehole Abandonment (if needed):

1. Make-up Water Pretreatment:
   a. Buffer pH of the water to a value no less than 8 and no greater than 10.
   b. Use a ratio of 1:2 pounds of soda ash per 100 gallons of water to buffer pH and remove excess calcium.

2. Grout Placement:
   a. Tremie Pipe:
      1) Place in borehole as approved by Engineer.
      2) Extend from ground surface to the bottom of zone to be grouted.
      3) Place grout from the bottom to top, in a continuous operation.
      4) Slowly raise grout tremie pipe as grout is placed.
      5) Discharge end of grout tremie pipe shall remain submerged in grout until grouting is completed.
      6) Maintain a full grout pipe until completion of grouting of the specified interval.
   b. Keep a record of volume of grout used. The volume shall not be less than the calculated volume of the annular space between the well casing and reamed borehole. The Contractor shall supply the devices to measure the volume of grout placed in the well annular space.

3. Contain displaced fluids as required by applicable regulatory requirements.

C. Borehole Plugging:
1. Borehole Plug Placement:
   a. Tremie Pipe:
      1) Place by hydraulically pumping bentonite through a tremie pipe from the bottom of the borehole upward, as approved by Engineer.
      2) Extend from ground surface to the zone to be plugged. At no point should borehole plug be placed with the bottom of the tremie pipe within the depth interval of the proposed well screen.
      3) The rate of placement shall not exceed 1-1/2 feet per minute, as measured by a sounding line, and placement shall proceed without interruption until completion.
   b. Keep a record of volume of borehole plug used. The volume shall not be less than the calculated volume of the annular space between the well casing and reamed borehole. The Contractor shall supply the devices to measure the volume of grout placed in the well annular space.

2. Contain displaced fluids as required by applicable regulatory requirements.

D. Surface Completion:

1. Concrete/Asphalt cutouts:
   a. Concrete or asphalt shall be saw cut to accommodate the well vault and there shall be no overcuts on the corners.
   b. The well box shall be set such that the top of the lid is approximately 0.5 inches higher than the surrounding grade level and with sufficient clearance below the lid to allow a water tight cap to be placed on the well(s) or as directed by the Engineer.
   c. The well boxes shall be set in concrete that is uniformly hydrated and emplaced in lifts if necessary. The surface shall be smoothed and leveled to slope away from the slightly raised well lid down towards the surrounding ground surface.

++END OF SECTION++
SECTION 33 11 53.07
WATER WELL DEVELOPMENT

PART 1 - GENERAL

1.01 REFERENCES

A. The following is a list of standards which may be referenced in this Section:

1.02 SUBMITTALS

A. Informational Submittals:
   1. Well development data for each well.
   2. Water quality analysis test results for each well.

B. The submittals shall be made in accordance with the General Conditions.

1.03 QUALITY ASSURANCE

A. Regulatory Requirements:
   1. Comply with applicable permits, laws, and regulations in disposing of water generated during well development. Permits, laws and regulations shall include, but not be limited to, the following:
      a. Federal, state, and local laws, regulations, and ordinances related to disposing of materials generated in constructing wells.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

A. Notify Engineer 48 hours prior to well development activities.

B. Notify Engineer of anticipated delays whenever they become apparent.

3.02 EQUIPMENT AND MATERIALS

A. Surge Block Swabs:
   1. Two, separated by 5 feet of perforated pipe.
   2. Outside Diameter: Sufficient to develop wells, as approved by the Engineer.

B. Drill Pipe:
1. Fitted with air eductor pipe to allow air lift pumping.
2. Sufficient perforations in drill pipe and air compressor capacity to air lift 10 gpm.

C. Pump:
   1. Capable of producing up to 5 gpm from well.
   2. Do not equip with a foot valve which would prevent backspin and interfere with surging.
   3. Sufficient pump column pipe so that pump can be lowered to and set at the bottom of the screened interval.

D. Discharge Piping:
   1. Size and length to conduct 5 gpm water to containment location. Piping shall be approved by Engineer.
   2. Provide in-line meter with 6 digit, straight reading totalizer, registering in units of 10 gallons, together with a rate of flow indicator dial, which reads in units of gallons per minute and suitable for the expected flow range.

E. Well Development Discharge:
   1. Tank or drums: Provide sufficient size and quantity to accommodate development discharge.
   2. Pump: Provide sufficient size and horsepower to continuously pump stored discharge water as required from tank(s) to discharge point.
   3. Discharge Piping: Provide of sufficient size and length to pump water to discharge point as approved by Engineer.

F. Provide instruments to measure turbidity, pH, and electrical conductivity during pump development.

G. Provide Rossum Sand Tester or Imhoff Cone during development to measure amount of sand produced from well.

3.03 SURGE BLOCK AND AIR LIFT DEVELOPMENT

A. Commence not less than 24 hours and no more than 48 hours after placing grout seal. If not commenced within 48 hours conduct, without additional cost, surge and air lift development for length of time between placing grout seal and time that surging and air lift development was initiated, in addition to normal development time.

B. Initial Airlift Development
   1. Begin by running an eductor, open-ended to the bottom of the well and simultaneously air lifting as the pipe is lowered.
   2. Air Lifting Rate: Between 5 and 10 gpm.
3. Continue airlifting at the bottom of the well until sand, silt, and clay production have ceased or leveled off to satisfaction of Engineer. Airlifting will continue until all sediment that has accumulated at the bottom of the well has been removed and the total depth of the well has been verified.

C. Unperforated Casing Procedure:

1. Begin by gently surging and simultaneously air lifting in unperforated casing as the airlift tool is lowered to the screen section of the well.
2. Air Lifting Rate: Between 5 and 10 gpm.

D. Screen Procedure:

1. Following surging and air lifting of unperforated casing, lower surge block into uppermost screened section and continue surge development by gently surging and simultaneously air lifting from top of screened interval downward.
2. Surge and air lift screen in 5 foot sections.
3. Raise and lower surge block.
   a. Air Lifting Rate: Between 5 and 10 gpm.
4. Make sand measurements after each screened interval is developed and before development is started on next screened interval.
5. Work each 5 foot interval of screened section until successive surging produces little change in color and discharge is relatively clear as assessed by Engineer.
6. Continue surging and bailing for approximately 4 hours until sand, silt, and clay have been washed through screen to satisfaction of Engineer.

3.04 SWABBING / BAILING DEVELOPMENT

A. Swabbing will be conducted within the screen interval from top-to-bottom in 5-ft increments. Swabbing will be conducted multiple times, but no less than two times, prior to commencing the pumping development.

B. After each round of swabbing the entire screened interval, accumulated sediment from the well will be removed by bailing.

C. Air lifting with compressed air may also be used for development of Extraction Wells, depending on field logistics and the recommendations of the site geologist.

3.05 PUMP DEVELOPMENT

A. General:

1. Following swabbing and bailing (and potentially air lift development), install test pump to perform pump development of well.
2. Commence pumping development no later than 24 hours following swabbing development.
3. Pump settings will be determined by the Engineer following construction of the well. Pump development will take place with the suction inlet initially set near the bottom of the well perforations.

B. Procedure for Each Pump Depth Setting:

1. Pump well at a restricted initial pumping rate.
2. As water clears, gradually increase rate, as determined by Engineer, until maximum discharge rate is reached.
3. At regular intervals, stop pump and allow water in pump column to surge back through pump intake.
4. Develop well by pumping and surging until it produces at maximum discharge, the specific capacity is relatively constant, and specified sand production limitations are met, as determined by Engineer.
5. It is estimated that development by pumping shall continue for approximately 4 hours at each well.

C. Contractor may treat well with mud dispersing chemicals to help well development. Types of chemicals used shall be subject to approval by Engineer.

3.06 WELL DEVELOPMENT DISCHARGE

A. Separate suspended solids from fluids generated during development using appropriate equipment, including temporary tankage to allow sufficient settling time to meet disposal requirements for suspended solids and turbidity.

B. If discharge pipe must be located in areas that block vehicle access, construct and maintain vehicle crossings over discharge piping.

3.07 FIELD QUALITY CONTROL

A. Testing:

1. Monitoring frequency and instrumentation shall be approved by Engineer.
2. Measure pH and electrical conductivity using a Horiba U-10, or Engineer-approved equivalent, during pump development.
3. Measure turbidity with Hach 2100P turbidimeter, or Engineer-approved equivalent, during pump development.
4. Measure sand content with:
   a. Imhoff Cone during surge block and air lift development.
   b. Rossum Sand Tester during pump development.

B. Well shall be considered thoroughly developed when the following occur:

1. Turbidity is less than 5 nephelometric turbidity units (NTU) and turbidity, pH, and electrical conductivity are relatively constant plus or minus 5 percent.
2. Well does not produce sand in excess of sand production limitations.
a. Sand production limitations shall be met when water produced contains less than 5 parts per million sand after 15 minutes of surging and pumping at design capacity of well

3. Engineer's approval.

C. Well Development Data:

1. Maintain for each screened interval developed (for airlift swab/surge block development), and during pump development.

2. Include pumping rate, water level, drawdown, specific capacity, elevation of gravel pack, sand content, color of discharge water, pH, electrical conductivity, turbidity, and other pertinent information regarding well development.

3.08 FLUIDS STORAGE AND WASTE DISPOSAL

A. The Contractor is responsible for containing all fluids on-site in an appropriately sized holding tank and disposing of the fluids at an appropriately licensed waste disposal facility, currently assumed to be Non-Hazardous.

B. All waste shall be properly characterized and removed by the Contractor. The Contractor is responsible for coordinating and paying for the disposal of all fluids waste in accordance with State and Local regulations (currently assumed to be Non-Hazardous). All manifests will be reviewed, approved, and signed by the Owner.

C. Restore ground surface to its original condition.

++END OF SECTION++
### EXPLANATION

- **Cement Grout with Bentonite (up to 5%)**
- **Hydrated Bentonite Chip**
- **Filter Pack with Anticipated Screen Interval**

Note: Anticipated depths may be adjusted based on actual geologic conditions encountered while drilling pilot boring.

### Reaming:

- **14-3/4"** 0' to 500'
- **12-1/4"** 500' to 700'
- **8"** 700' to 800'

### Materials:

- **2.5-inch Sch 80 PVC CASING**
- **2.5-inch Machine Slotted SCREEN, Schedule 80 PVC, flush-threaded, ASTM F488**

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**TYPICAL WELL CONSTRUCTION DETAIL**

Project No. 0110735 (NGWMN)
MEMORANDUM
ITEM NO. 13

DATE: MARCH 5, 2020
TO: BOARD OF DIRECTORS
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: RECEIVE AND FILE THE 2020 ENGINEERING SURVEY AND REPORT; AND ADOPT RESOLUTION NO. 20-1127

SUMMARY
On February 6, 2020, the Board of Directors adopted Resolution No. 20-1123 ordering the preparation of the annual Engineering Survey and Report (ESR). Staff has completed this report pursuant to California Water Code Section 60300 et seq. The report determines, among other things the past, current, and ensuing year groundwater conditions in the Central Basin and West Coast Basin. It also determines the District's replenishment water needs and the estimated costs for that water. This information, combined with the upcoming fiscal year proposed budget, provides the Board with the necessary information to determine the Replenishment Assessment (RA) for the ensuing fiscal year which will run from July 1, 2020 through June 30, 2021. A summary of the information from the report is as follows and a copy of the full report is attached:

Groundwater Production
- Adjudicated Amount: 281,835.25 acre-feet (AF)
- Previous Water Year (2018/19): 208,114 AF
- Current Water Year (2019/20): 213,000 AF (estimated)
- Ensuing Water Year (2020/21): 213,000 AF (estimated)

Annual Overdraft
- Previous Water Year (2018/19): 16,724 AF
- Current Water Year (2019/20): 67,800 AF (estimated)
- Ensuing Water Year (2020/21): 67,800 AF (estimated)

Accumulated Overdraft
- Previous Water Year (2018/19): 766,465 AF
- Current Water Year (2019/20): 745,100 AF (estimated)

Replenishment Water Needs for Ensuing Year
- Amount of Water: 91,200 AF
- Estimated Cost of Water: $34,132,691
The Board of Directors is anticipated to adopt the Replenishment Assessment by the second Tuesday in May. Any new or updated information between the March ESR and adoption of the Replenishment Assessment will be reflected in an updated ESR to be published after adoption of the Replenishment Assessment.

In addition, Water Code Section 60305 requires the Board on or before the second Tuesday in March, after the ESR has been prepared, to declare by Resolution whether funds shall be raised in the ensuing fiscal year for water replenishment and water quality programs. Attached is Resolution 20-1127 for the Board’s consideration to meet this requirement.

**FISCAL IMPACT**
None

**WATER RESOURCES COMMITTEE RECOMMENDATION**
The Water Resources Committee recommends that the Board of Directors receive and file the 2020 Engineering Survey and Report and adopt Resolution No. 20-1127.
RESOLUTION NO. 20-1127

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA ORDERING ACCEPTANCE AND FILING OF THE ENGINEERING SURVEY AND REPORT SUBMITTED PURSUANT TO SECTIONS 60300 AND 60301 OF THE WATER CODE, DECLARING THAT FUNDS SHALL BE RAISED FOR THE PURCHASE OF WATER FOR REPLENISHMENT AND FOR GROUNDWATER REPLENISHMENT AND QUALITY PROGRAMS AND PROJECTS DURING THE ENSUING FISCAL YEAR, THAT SUCH FUNDS SHALL BE RAISED BY A REPLENISHMENT ASSESSMENT AS PROVIDED IN SAID WATER CODE, DECLARING THAT THE FUNDS TO BE RAISED BY SAID REPLENISHMENT ASSESSMENT WILL BENEFIT, EITHER DIRECTLY OR INDIRECTLY, ALL OF THE PERSONS, REAL PROPERTY AND/OR IMPROVEMENTS WITHIN THE DISTRICT, AND ORDERING THE PUBLICATION OF A NOTICE OF PUBLIC HEARING IN ACCORDANCE WITH SECTION 60306 OF THE WATER CODE

WHEREAS, there has been submitted to the Secretary of the Board of the Water Replenishment District of Southern California (“District”) the engineering survey and report heretofore ordered pursuant to Sections 60300 and 60301 of the California Water Code; and

WHEREAS, the Board of Directors of the District (“Board”) has received said report;

NOW, THEREFORE, BE IT RESOLVED AND DECLARED BY THE BOARD OF THE WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA:

Section 1. That the said engineering survey and report be received and filed in the records of the District;

Section 2. That funds shall be raised to purchase water for replenishment of the groundwater supplies within the District during the next ensuring fiscal year of the District, Fiscal Year 2020-2021, and to accomplish all acts reasonably necessary to said replenishment, including but not limited to the development and operation of capital projects, and that such funds shall be raised by a replenishment assessment, as provided in California Water Code Sections 60300 et seq;

Section 3. That funds shall be raised to remove contaminants from groundwater supplies and to exercise any other power under California Water Code Section 60224, including but not limited to developing and operating capital projects, and that such funds shall be raised by a replenishment assessment as provided by California Water Code Section 60300 et seq;

Section 4. That funds shall be raised to pay for the District’s operating and administrative expenses and such funds shall be raised by a replenishment assessment pursuant to California Water Code Section 60300 et seq;

Section 5. A Public Hearing shall be held in accordance with the California Water Code Section 60043 for the purpose of determining whether and to what extent the estimated cost of the actions described in Sections 2, 3, and 4, above for the ensuing fiscal year shall be paid for by a replenishment assessment;
Section 6. That the funds so raised to accomplish the actions described in Sections 2, 3 and 4, above during the next ensuing fiscal year, 2020-2021, will benefit, directly or indirectly, all of the persons and/or real property and improvements within the District;

Section 7. That the General Manager of the District shall cause to be published on behalf of the Board a notice that a public hearing will be held for the purposes described in Section 5, above. Such notice shall be published once in the Los Angeles Bulletin, an adjudicated paper of general circulation in Los Angeles County, at least ten (10) days before said hearing. Such notice shall contain a copy of said Board’s resolution, the time and place of said hearing, and an invitation to all interested parties to attend and be heard in support of or in opposition to said proposed assessment, and shall invite inspection of the engineering survey and report upon which the Board acted.

PASSED, APPROVED AND ADOPTED this 5th day of March, 2020.

________________________________________
Board President

ATTEST:

________________________________________
Board Secretary
Management Staff

Robb Whitaker, PE  General Manager
Ted Johnson, PG/CHG Assistant General Manager
Rob Beste, PE  Assistant General Manager
H. Francisco Leal  District Counsel

Professional Certification

This Engineering Survey and Report has been prepared under the direct supervision of the California Professional Geologist whose signature appears below. This individual certifies that the information contained in the report has been prepared in accordance with the generally accepted principles and practices of his profession.

Brian Partington, PG, CHG
Manager of Hydrogeology
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<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ABP</td>
<td>Alamitos Barrier Project</td>
</tr>
<tr>
<td>AF</td>
<td>Acre-Feet (equivalent to 325,851 gallons)</td>
</tr>
<tr>
<td>AFY</td>
<td>Acre-Feet per Year</td>
</tr>
<tr>
<td>APA</td>
<td>Allowed Pumping Allocation</td>
</tr>
<tr>
<td>ARC</td>
<td>Albert Robles Center for Water Recycling and Environmental Learning</td>
</tr>
<tr>
<td>AWTF</td>
<td>Advanced Water Treatment Facility</td>
</tr>
<tr>
<td>BAC</td>
<td>Budget Advisory Committee</td>
</tr>
<tr>
<td>BOS</td>
<td>Bureau of Sanitation (City of Los Angeles Dept. of Public Works)</td>
</tr>
<tr>
<td>CASGEM</td>
<td>California Statewide Groundwater Elevation Monitoring</td>
</tr>
<tr>
<td>CB</td>
<td>Central Basin</td>
</tr>
<tr>
<td>CBMWD</td>
<td>Central Basin Municipal Water District</td>
</tr>
<tr>
<td>CBWCB</td>
<td>Central Basin and West Coast Basin</td>
</tr>
<tr>
<td>CDPH</td>
<td>California Department of Public Health (now Division of Drinking Water)</td>
</tr>
<tr>
<td>CEC</td>
<td>Constituents of Emerging Concern</td>
</tr>
<tr>
<td>CEQA</td>
<td>California Environmental Quality Act</td>
</tr>
<tr>
<td>CIP</td>
<td>Capital Improvement Program</td>
</tr>
<tr>
<td>CMMS</td>
<td>Computer Maintenance Management System</td>
</tr>
<tr>
<td>CPI</td>
<td>Consumer Price Index</td>
</tr>
<tr>
<td>DAC</td>
<td>Disadvantaged Community</td>
</tr>
<tr>
<td>DDW</td>
<td>State Water Resources Control Board – Division of Drinking Water (formerly CDPH)</td>
</tr>
<tr>
<td>DGBP</td>
<td>Dominguez Gap Barrier Project</td>
</tr>
<tr>
<td>DTSC</td>
<td>California Department of Toxic Substances Control</td>
</tr>
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<td>DWR</td>
<td>California Department of Water Resources</td>
</tr>
<tr>
<td>EIR</td>
<td>Environmental Impact Report</td>
</tr>
<tr>
<td>EPA</td>
<td>U.S. Environmental Protection Agency</td>
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<tr>
<td>ESR</td>
<td>Engineering Survey and Report</td>
</tr>
<tr>
<td>FY</td>
<td>Fiscal Year (July 1 – June 30)</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic Information System</td>
</tr>
<tr>
<td>GRIP</td>
<td>Groundwater Reliability Improvement Project (now known as ARC)</td>
</tr>
<tr>
<td>IRWMP</td>
<td>Integrated Regional Water Management Plan</td>
</tr>
<tr>
<td>LACDHS</td>
<td>Los Angeles County Department of Health Services</td>
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<td>LACDPW</td>
<td>Los Angeles County Department of Public Works (Flood Control)</td>
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<td>LACFCD</td>
<td>Los Angeles County Flood Control District</td>
</tr>
<tr>
<td>LADWP</td>
<td>City of Los Angeles Department of Water and Power</td>
</tr>
<tr>
<td>LBWD</td>
<td>City of Long Beach Water Department</td>
</tr>
<tr>
<td>LBWRP</td>
<td>Long Beach Water Reclamation Plant</td>
</tr>
</tbody>
</table>
### Glossary of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAR</td>
<td>Managed Aquifer Recharge</td>
</tr>
<tr>
<td>Met</td>
<td>Metropolitan Water District of Southern California (aka “MWD”)</td>
</tr>
<tr>
<td>MCL</td>
<td>Maximum Contaminant Level</td>
</tr>
<tr>
<td>MF</td>
<td>Microfiltration</td>
</tr>
<tr>
<td>MGD</td>
<td>Million Gallons per Day</td>
</tr>
<tr>
<td>msl</td>
<td>Mean Sea Level</td>
</tr>
<tr>
<td>MWD</td>
<td>Metropolitan Water District of Southern California (aka “Met”)</td>
</tr>
<tr>
<td>NDMA</td>
<td>N-Nitrosodimethylamine</td>
</tr>
<tr>
<td>ppb</td>
<td>Parts Per Billion, equivalent to micrograms per liter (µg/L)</td>
</tr>
<tr>
<td>ppm</td>
<td>Parts Per Million, equivalent to milligrams per liter (mg/L)</td>
</tr>
<tr>
<td>PWRP</td>
<td>Pomona Water Reclamation Plant</td>
</tr>
<tr>
<td>RA</td>
<td>Replenishment Assessment</td>
</tr>
<tr>
<td>RGWMP</td>
<td>Regional Groundwater Monitoring Program</td>
</tr>
<tr>
<td>RO</td>
<td>Reverse Osmosis</td>
</tr>
<tr>
<td>RWQCB</td>
<td>Regional Water Quality Control Board (Los Angeles Region)</td>
</tr>
<tr>
<td>SAT</td>
<td>Soil Aquifer Treatment</td>
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<tr>
<td>SCADA</td>
<td>Supervisory Control and Data Acquisition</td>
</tr>
<tr>
<td>SDLAC</td>
<td>Sanitation Districts of Los Angeles County</td>
</tr>
<tr>
<td>SDWP</td>
<td>Safe Drinking Water Program</td>
</tr>
<tr>
<td>SGVMWD</td>
<td>San Gabriel Valley Municipal Water District</td>
</tr>
<tr>
<td>SJCWRP</td>
<td>San Jose Creek Water Reclamation Plant</td>
</tr>
<tr>
<td>SWRCB</td>
<td>State Water Resources Control Board</td>
</tr>
<tr>
<td>TAC</td>
<td>Technical Advisory Committee</td>
</tr>
<tr>
<td>TITP</td>
<td>Terminal Island Treatment Plant</td>
</tr>
<tr>
<td>USGS</td>
<td>United States Geological Survey</td>
</tr>
<tr>
<td>USGVMWD</td>
<td>Upper San Gabriel Valley Municipal Water District</td>
</tr>
<tr>
<td>UVAOP</td>
<td>Ultraviolet Light Advanced Oxidation Processes</td>
</tr>
<tr>
<td>VOC</td>
<td>Volatile Organic Compounds</td>
</tr>
<tr>
<td>WBMWD</td>
<td>West Basin Municipal Water District</td>
</tr>
<tr>
<td>WCB</td>
<td>West Coast Basin</td>
</tr>
<tr>
<td>WCBBP</td>
<td>West Coast Basin Barrier Project</td>
</tr>
<tr>
<td>WIN</td>
<td>Water Independence Now program</td>
</tr>
<tr>
<td>WNOU</td>
<td>Whittier Narrows Operable Unit</td>
</tr>
<tr>
<td>WNWREP</td>
<td>Whittier Narrows Water Reclamation Plant</td>
</tr>
<tr>
<td>WRD</td>
<td>Water Replenishment District of Southern California</td>
</tr>
<tr>
<td>WRP</td>
<td>Water Reclamation Plant</td>
</tr>
<tr>
<td>WY</td>
<td>Water Year (October 1 – September 30)</td>
</tr>
</tbody>
</table>
District Staff is pleased to present this 2020 Engineering Survey and Report (ESR). It was prepared pursuant to the California Water Code, Section 60300 et seq. and determines the past, current, and ensuing year groundwater conditions in the Central Basin and West Coast Basin (CBWCB). The report contains information on groundwater production, annual and accumulated overdraft, water levels, quantity, source, and cost of replenishment water, and a discussion of necessary projects and programs to protect and preserve the groundwater resources of the basins.

The ESR provides the Board of Directors with the necessary information to justify the setting of a replenishment assessment (RA) for the ensuing fiscal year (FY) (July 1 through June 30) to purchase replenishment water and to fund projects and programs related to groundwater replenishment and groundwater quality over the ensuing water year (WY) (October 1 through September 30).

The following is a summary of the ESR elements required by the Water Code, and Plates 1, 2 and 3 provide illustrations of pumping and groundwater conditions for the previous WY 2018/19.

1. **Groundwater Production**
   - Adjudicated Amount: 281,835.25 acre-feets (AF)
   - Previous Water Year (2018/19): 208,114 AF
   - Current Water Year (2019/20): 213,000 AF (estimated)
   - Ensuing Water Year (2020/21): 213,000 AF (estimated)

2. **Annual Overdraft**
   - Previous Water Year: 16,724 AF
   - Current Water Year: 67,800 AF (estimated)
   - Ensuing Water Year: 67,800 AF (estimated)

3. **Accumulated Overdraft**
   - Previous Water Year: 766,465 AF
   - Current Water Year: 745,100 AF (estimated)

4. **Groundwater Levels**

   WY 2018/19 had above normal precipitation resulting in an overall water level increase in the CBWCB. Water levels in the Montebello Forebay on rose over 22 feet in some areas and on average rose approximately 11 feet. The Los Angeles Forebay and Whittier Area saw rises averaging about 4.5 feet each and the Central Basin Pressure Area experienced a rise of 2.5 feet. The West Coast Basin change was more muted, with water levels rising on average less than a half foot. Over the entire WRD service area, water levels rose on average 3 feet. This led to an increase in groundwater storage of 62,200 acre feet, improving the accumulated overdraft from 828,655 AF to 766,465 AF, which is 133,535 AF above the Board-adopted minimum groundwater quantity for the basins.

   In the current WY 2019/20, through the time of this writing precipitation has been normal, with rainfall at 101% of normal through January 8, 2020. Water levels in the Montebello Forebay rose nearly 20 feet during the peak of the winter season but are presently about 12 feet higher than the previous year.
Because the current year is normal precipitation so far and WRD will continue to replenish with recycled water, the projected groundwater levels in the CBWCB will be within historic ranges and the District anticipates that there will continue to be sufficient supplies of safe and reliable groundwater to meet the demands of the pumpers in our service area in the current and ensuing years. Details of the groundwater levels in the CBWCB are described in Chapter 3.

5. **Quantity of Replenishment Water Required in the Ensuing Year**

The District determines replenishment water needs based on averages from a long-term (30 year) hydrologic record and computer models, meaning extremely wet years and extremely dry years in addition to average precipitation years are accounted for in deriving the average replenishment needs. Other considerations by the Board are also incorporated into replenishment water needs. The District’s Water Independence Now (WIN) initiative has been successful to build and/or have permitted the recharge facilities it uses to replenish the groundwater basins with 100% recycled water instead of imported water. As these facilities secure the recycled water they need for full operations, the amount of imported water will approach near zero. Chapter 4 details the quantity of water that WRD plans to purchase in the ensuing year. A summary is as follows:

- **Spreading Water**: 61,400 AF (50,000 AF tertiary recycled; 10,000 AF advanced treated recycled at ARC, zero imported; 1,400 Whittier Narrows Operable Unit water – considered Local Water)
- **Seawater Barrier Water**: 29,800 AF (permitted for 100% recycled)
- **In-Lieu Program Water**: 0 AF
- **Total Water**: 91,200 AF

6. **Source of Replenishment Water**

The sources of replenishment water to the District for the ensuing year are detailed in Chapter 4, and include recycled water and imported water if needed. A summary follows:

- **Recycled Water**: Tertiary water for spreading is available from the Sanitation Districts of Los Angeles County (SDLAC). Advanced-treated recycled water for the West Coast Basin Barrier Project (WCBBP) is available from the West Basin Municipal Water District. Advanced-treated recycled water for the Dominguez Gap Barrier Project (DGBP) is available from the City of Los Angeles. Advanced-treated recycled water for the Alamitos Barrier Project (ABP) is available from WRD’s Leo J. Vander Lans Water Treatment Facility. Advanced-treated recycled water for the Montebello Forebay (spreading grounds and injection wells) is available from WRD’s Albert Robles Center for Water Recycling and Environmental Learning (ARC), formerly known as the Groundwater Reliability Improvement Project (GRIP).
- **Imported Water**: Raw river water (untreated) Tier 1 is assumed to be available for spreading from MWD and its member agencies if needed by WRD. For the seawater barrier wells, treated potable imported water Tier 1 is assumed to be available if needed for the WCBBP and DGBP from the West Basin Municipal Water District (WBMWD), and for the ABP from the City of Long Beach.

7. **Cost of Replenishment Water**

WRD has estimated it will need 91,200 AF of replenishment water in the ensuing year to help overcome the annual overdraft. WRD purchases imported replenishment water if needed from MWD
member agencies and purchases recycled water from local providers. These agencies set the price for
the replenishment water that WRD buys for the spreading grounds, seawater barrier injection wells,
and In-Lieu water when available. The cost for replenishment water is a direct pass-through from
WRD to the water suppliers on WRD’s replenishment assessment. The cost for source water for
WRD’s projects (Leo J. Vander Lans and ARC) are included in the operations and maintenance
budgets for those projects and therefore not included on Table 2.

Using currently available information, the estimated cost of water to WRD for the ensuing year is
$34,132,691 which is a 1.1% decrease from the previous year. Tables 1 and 2 provide a detailed
breakdown of the water amounts and estimated costs.

The water cost are for water purchases only and do not include the additional costs for projects and
programs related to water replenishment and water quality matters. These projects and programs are
presented in Chapter 5, although their costs are presented in separate District materials, including
budget workshops, Finance Committee meetings, Board of Directors’ meetings, Budget Advisory
Committee (BAC) meetings, and other public meetings and workshops. The Board of Directors will
combine the cost of water with the cost of all other necessary District operations in considering the
rate for the ensuing year RA, which they will adopt on or before the second Tuesday in May in
accordance with the Water Code.

8. Projects and Programs

A list of the projects and programs in which WRD is involved related to groundwater replenishment
and the protection and preservation of groundwater quality is shown on Table 3. Funds are required
to finance these projects and programs. Sections 60221, 60230 and 60224 of the Water Code authorize
the WRD to undertake a wide range of capital projects and other programs aimed at enhancing
groundwater replenishment and improving groundwater quality.

These projects and programs address any existing or potential problems related to the basins’
groundwater, and may extend beyond the District's boundaries if the threat of contamination is outside
those boundaries. The programs span all phases of planning, design, and construction and are financed
by the collection of a replenishment assessment. A more detailed description of each project and
program is presented in Chapter 5 of the report.

9. Conclusions

Based upon the information presented in the ESR, a RA is necessary in the ensuing year to purchase
replenishment water and to finance projects and programs to perform replenishment and water quality
activities. These actions will ensure sufficient supplies of high quality groundwater within the District
for the benefit of the residents and businesses in the CBWCB
CHAPTER 1 - INTRODUCTION

Purpose of the Engineering Survey & Report
To facilitate the Board of Directors' decisions and actions, the Water Replenishment District Act requires that an engineering survey and report (ESR) be prepared each year. This Engineering Survey and Report 2020 is in conformity with the requirements of Section 60300 et seq. of the Water Replenishment District Act and presents the necessary information on which the Board of Directors can declare whether funds shall be raised to purchase water for replenishment during the ensuing year, as well as to finance projects and programs aimed at accomplishing groundwater replenishment. With the information in this ESR, the Board can also declare whether funds shall be collected to remove contaminants from the groundwater supplies or to exercise any other power under Section 60224 of the California Water Code. The information presented in this report along with the District’s strategic planning and budget preparation presents the necessary information on which the Board of Directors can base the establishment of a replenishment assessment for the ensuing fiscal year (FY) effective July 1, 2020 through June 30, 2021.

Scope of Engineering Survey & Report
This report contains specific information outlined in Chapter I, Part 6 of Division 18 of the Water Code (the Water Replenishment District Act, § 60300 and § 60301). The following is a brief description of the contents of this report:

1) a discussion of groundwater production within the District (Chapter 2);
2) an evaluation of groundwater conditions within the District, including estimates of the annual overdraft, the accumulated overdraft, changes in water levels, and the effects of water level fluctuations on the groundwater resources (Chapter 3);
3) an appraisal of the quantity, availability, and cost of replenishment water required for the ensuing water year (Chapter 4); and
4) a description of current and proposed programs and projects to accomplish replenishment goals and to protect and preserve high quality groundwater supplies within the District (Chapter 5).

Schedule for Setting the Replenishment Assessment
The following actions are required by the Water Code to set the Replenishment Assessment:

1) The Board shall order the preparation of the ESR no later than the second Tuesday in February each year (see Section 60300).
2) The Board shall declare by resolution whether funds shall be collected to purchase replenishment water and to fund projects and programs related to replenishment and/or water quality activities on or before the second Tuesday in March each year and after the ESR has been completed (see Section 60305).
3) A Public Hearing will be held for the purpose of determining whether District costs will be paid for by a replenishment assessment. The Public Hearing will be opened on the second Tuesday in April and may be adjourned from time to time but will be completed by the first Tuesday in May (see Sections 60306 and 60307).
4) The Board by resolution shall levy a replenishment assessment for the ensuing fiscal year no later than the second Tuesday in May (see Sections 60315, 60316 and 60317).
Introduction

Although dates specified in the Water Code refer generally to ‘on or before certain Tuesdays’, Section 60043 also states that “Whenever any act is required to be done or proceeding taken on or set for a particular day or day of the week in any month, the act may be done or proceeding set for and acted upon a day of the month otherwise specified for a regular meeting of the board”. Therefore, there is flexibility as to the actual dates when Board actions are taken regarding the ESR, adopting resolutions, conducting public hearings, and the setting of the replenishment assessment.

The ESR is completed on or before the second Tuesday in March of each year to comply with the Water Code and to provide the Board with the necessary information to determine whether a replenishment assessment will be needed in the ensuing year to purchase replenishment water and to fund projects and programs related to water quality and replenishment activities. However, in the subsequent months leading up to the adoption of the replenishment assessment in April or May, new information may be received that affects the findings presented in the March ESR. The final information used by the Board of Directors when they adopt the replenishment assessment is reflected in an updated ESR that is published after adoption of the replenishment assessment in April or May.
CHAPTER 2 - GROUNDWATER PRODUCTION

Adjudication and Demand

Prior to the adjudication of groundwater rights in the early 1960s, annual groundwater production (pumping) reached levels as high as 259,400 acre feet (AF) in the Central Basin (CB) and 94,100 AF in the West Coast Basin (WCB). This total of 353,500 AF was more than double the natural safe yield of the basins (173,400 AF) as determined by the California Department of Water Resources in 1962. Due to this serious overdraft, water levels declined, groundwater was lost from storage, and seawater intruded into the coastal aquifers. To remedy this problem, the courts adjudicated the two basins to put a limit on pumping. The West Coast Basin adjudication was set at 64,468.25 acre-feet per year (AFY). The Central Basin “Allowed Pumping Allocation” (APA) was set at 217,367 AFY. Therefore, the current amount allowed to be pumped from both basins is 281,835.25 AFY, plus any carryover or stored water, or other provisions as described at the end of this Section or in the Judgments.

The adjudicated pumping amounts were set higher than the natural replenishment amounts, creating an annual deficit known as the “Annual Overdraft”. WRD is enabled under the California Water Code to purchase and recharge additional water to make up this annual overdraft, which is known as artificial replenishment or managed aquifer recharge (MAR). WRD has the authority to levy a replenishment assessment on all pumping within the District to raise the monies necessary to purchase or manufacture the artificial replenishment water and to fund projects and programs necessary for replenishment and groundwater quality activities.

Groundwater Production

Under the terms of Section 60326.1 of the Water Replenishment District Act, each groundwater producer must submit a report to the District summarizing their monthly production activities (quarterly for smaller producers). The information from these reports is the basis by which each producer pays the replenishment assessment.

Previous Water Year:

Per the Water Code, WRD tracks and reports on groundwater production (pumping) on a water year (WY) basis covering the time frame of October 1 - September 30 of each year. In the previous WY (2018/19), total pumping in both basins was 208,113.63 AF, including 180,482.92 AF in the CB and 27,630.71 AF in the WCB. Because the adjudicated rights are 281,835.25 AF, there were about 73,722 AF of available rights that were not pumped in the previous WY, although many of these unpumped rights were allowed to carry over into the current WY or converted into storage.

Plate 1 illustrates the groundwater production in the CBWCB during the previous WY and Table E presents the historical pumping amounts.

Current Water Year:

For the first three months of the current WY (October 2019 through December 2019), groundwater production was 51,364AF (44,049 AF in the CB and 7,315 AF in the WCB). This is 375 AF more than the same period of the year earlier (or 0.7%). Because these numbers represent only the first three months of the WY, they are difficult to use to forecast through the rest of the year. However, based on conversations with the Central Basin and West Coast Basin Watermaster Administrative Body and a review of the FY pumping to date, the early forecast is for total pumping for the entire WY to be 213,000 AF (185,000 AF in the CB and 28,000 AF in the WCB).
Ensuing Water Year:
To estimate production for the ensuing year, recent averages are typically used in addition to knowledge of changing conditions that might affect pumping. Actual pumping patterns can vary considerably throughout the year based on a pumper’s individual operational needs, water demands, water well maintenance, conservation efforts and hydrology. In the 2015/16 WY, pumping was significantly reduced due to the State’s fifth year of drought that resulted in mandated water reductions and public awareness for conservation efforts and the shutdown of some wells due to operational issues. This led to the lowest pumping amounts the District has seen in over 20 years. The drought was declared over by the California Governor due to a wet year in 2016/17. This was followed by year of dry weather in 2017/18 and another wet year in 2018/19. As of January 2020, rainfall data is about normal for this time of year and may continue for the remainder of the current year 2019/20. Groundwater pumping has picked up from the recent lows, but conservation efforts are expected to continue. Therefore, recent averages may not be indicative of future pumping.

To estimate the ensuing year’s groundwater pumping, WRD has made a forecast based on the current year’s anticipated pumping plus expected additional or reduced pumping from discussions with purveyors, and on recommendations made by the District’s Budget Advisory Committee and Finance/Audit Committee. Based on this information, WRD is estimating that the ensuing WY pumping will be 213,000 AF, or 185,000 AF in the CB and 28,000 AF in the WCB.

Table 1 shows the groundwater production amounts for the previous, current, and ensuing WYs.

Measurement of Production
With few exceptions, meters installed and maintained by the individual producer measure the groundwater production from their wells. Through periodic testing by Watermaster (Water Rights Panel) to verify the accuracy of individual meters, corrective measures are taken when necessary. The production of the few wells that are not metered is estimated on the basis of electrical energy consumed by individual pump motors or other reasonable means.

Carryover and Drought Provisions
The carryover of unused pumping rights in any given year influences the actual amount of production for the ensuing year. The Central Basin Judgment allowed carryover for the ensuing year is 60% of the allotted pumping right. The West Coast Basin Judgment allowed carryover is 100% of allotted pumping rights. In both the Central Basin and West Coast Basin, the amount of carryover is reduced by the quantity of water held in a pumper’s storage account, but in no event is carryover less than 20% of the allotted pumping right. These provisions of the Judgments extend the flexibility with which the pumpers can operate.

During emergency or drought conditions, WRD can allow under certain conditions an additional 27,000 AF of extractions for a four-month period (17,000 for CB and 10,000 for WCB). This provision has yet to be exercised but offers the potential use of an additional 7.8% pumping in the CB and 15% in the WCB.

The Central Basin Judgment also contains an additional Drought Carryover provision available to all Central Basin water rights holders after a declaration of a Water Emergency by the WRD Board of Directors. The Drought Carryover allows water rights holders to carryover an additional 35% of their APA (or 35 AF, whichever is larger) beyond the annual carryover described above during the period the Declared Water Emergency is in effect.
The intent of the action is to prevent further degradation of the groundwater basins by helping to restore groundwater levels and improving the water supply in the aquifers by providing an incentive to groundwater producers in the Central Basin to reduce pumping for a particular period of time.

A Declared Water Emergency is defined in the Central Basin Judgment as:

"A period commencing with the adoption of a resolution of the Board of Directors of the Central and West Basin Water Replenishment District [renamed Water Replenishment District of Southern California] declaring that conditions within the Central Basin relating to natural and imported supplies of water are such that, without implementation of the water emergency provisions of this Judgment, the water resources of the Central Basin risk degradation. In making such declaration, the Board of Directors shall consider any information and requests provided by water producers, purveyors and other affected entities and may, for that purpose, hold a public hearing in advance of such declaration. A Declared Water Emergency shall extend for one (1) year following such resolution, unless sooner ended by similar resolution."

Groundwater Production
CHAPTER 3 - GROUNDWATER CONDITIONS

Introduction
The California Water Code Section 60300 requires WRD to determine annually in the ESR the following items related to groundwater conditions in CBWCB:

1) Total groundwater production for the previous WY and estimates for the current and ensuing WYs;
2) The Annual Overdraft for the previous WY and estimates for the current and ensuing WYs;
3) The Accumulated Overdraft for previous WY and an estimate for the current WY;
4) Changes in groundwater levels (pressure levels or piezometric heights) within the District and the effects these changes have on groundwater supplies within the District; and
5) An estimate of the quantity, source, and cost of water available for replenishment during the ensuing WY;

To meet these requirements, WRD’s hydrogeologists and engineers closely monitor and collect data to manage the groundwater resources of the District throughout the year. They track groundwater levels from WRD’s network of specialized monitoring wells and from groundwater producers’ production wells. They utilize computer models developed by the United States Geological Survey (USGS) and others to provide parameters for data analysis and to simulate groundwater conditions and predict future conditions. They use their geographic information system (GIS) and database management system to store, analyze, map, and report on the information required for the ESR. They work closely with the Los Angeles County Department of Public Works (LACDPW) on spreading grounds and seawater barrier wells to determine current and future operational impacts to groundwater supplies. They work closely with the Metropolitan Water District of Southern California (MWD or Met), the local MWD member agencies, and the Sanitation Districts of Los Angeles County (SDLAC) on the current and future availability of replenishment water. They also work with regulators on replenishment criteria for water quality and recycled water use, and with the groundwater pumpers, the pumpers’ Technical Advisory Committee (TAC), the Budget Advisory Committee (BAC), and other stakeholders to discuss the current and future groundwater conditions and beneficial projects and programs within the District and neighboring basins.

The information on Annual Overdraft, Accumulated Overdraft, water levels, and change in storage are discussed in the remainder of this chapter. Groundwater production was previously discussed in Chapter 2. The estimated quantity, source, and cost of replenishment water will be discussed in Chapter 4. Projects and programs are discussed in Chapter 5.

Annual Overdraft
Section 60022 of the Water Replenishment District Act defines Annual Overdraft as "...the amount...by which the quantity of groundwater removed by any natural or artificial means from the groundwater supplies within such replenishment district during the water year exceeds the quantity of non-saline water replaced therein by the replenishment of such groundwater supplies in such water year by any natural or artificial means other than replenishment under the provisions of Part 6 of this act or by any other governmental agency or entity." (Part 6 of the Act pertains to water that WRD purchases for replenishment). Therefore, the Annual Overdraft equals the natural inflows to basins (not including WRD purchased water) minus all of the outflows (mostly pumping). There is an Annual
Overdraft almost every year for the simple fact that the groundwater extractions typically exceed the natural inflows into the groundwater basins. It has been one of the District's main responsibilities since its formation in 1959 to help make up this Annual Overdraft by purchasing or producing artificial replenishment water to recharge the aquifers and supplement natural recharge.

To determine the Annual Overdraft for the previous WY, WRD determines the inflows and outflows of the CBWCB. In the previous WY 2018/19, natural inflows (storm water capture, areal recharge, and net groundwater underflow) were higher due to a wet year and totaled 191,390 AF. Total pumping in the basins was 208,114 AF. The Annual Overdraft is the total outflows that exceed the natural inflows, or 16,724 AF.

For the current and ensuing WY estimates for Annual Overdraft, the concept of “Average Annual Groundwater Deficiency” is utilized. The Average Annual Groundwater Deficiency is the long-term average of natural inflows minus total outflows and represents the long term average deficit in the basins. The development of the USGS/WRD computer model derived these long term average inflow and outflow terms. Table 4 presents this information, which concluded that the Average Annual Groundwater Deficiency is 105,385 AFY. Values for the Average Annual Groundwater Deficiency are based on the 30-year average inflows and outflows as calculated by the computer model which was built to simulate groundwater conditions from October 1970 through September 2000. Long-term average inflows are influenced by the amount of precipitation falling on the District as well as for storm water capture at the spreading grounds. Table 5 and Figure A show the historical precipitation amounts in the District. Current measurements are utilized from LACDPW Precipitation Station #383 (Imperial Yard) located in unincorporated County land near the cities of South Gate, Downey, and Lynwood.

The calculation of the Average Annual Groundwater Deficiency represents that, in general, WRD needs to replenish about 105,385 AFY assuming long-term average conditions over that 30 year period for the water balance to reach equilibrium, the overall change in storage to equal zero, and groundwater levels to remain relatively constant. To estimate the current and ensuing year Annual Overdraft, adjustments are made to the Average Annual Groundwater Deficiency for any expected deviations in the current and ensuing water years. Table 6 presents these adjustments and the calculation of the Annual Overdraft. For the current and ensuing water years, the Annual Overdraft is estimated at 67,800 AF.

Accumulated Overdraft

Section 60023 of the Water Replenishment District Act defines "Accumulated Overdraft" as "...the aggregate amount...by which the quantity of ground water removed by any natural or artificial means from the groundwater supplies...during all preceding water years shall have exceeded the quantity of non-saline water replaced therein by the replenishment of such ground water supplies in such water years by any natural or artificial means..."

In connection with the preparation of Bulletin No. 104-Appendix A (1961), the DWR estimated that the historically utilized storage (Accumulated Overdraft) between 1904 and 1957\(^1\) was 1,080,000 AF (780,000 in CB, 300,000 in WCB). Much of this storage removal was from the forebay areas (Montebello Forebay and Los Angeles Forebay), where aquifers are merged, unconfined and serve as the "headwaters" to the confined pressure aquifers. Storage loss from the confined and completely full, deeper aquifers was minimal in comparison or was replaced by seawater intrusion, which cannot be accounted for under the language of the Water Code since it is considered saline water.

\(^1\) DWR Bulletin 104-A did not refer to the ending year for the storage determination. WRD has assumed it to be the year 1957, as this is the end year for their detailed storage analysis presented in Bulletin 104-B – Safe Yield Determination.
The goal of groundwater basin management by WRD is to ensure a sufficient supply of safe and reliable groundwater in the basins for annual use by the pumpers, to keep a sufficient supply in storage for times of drought when imported water supplies may be curtailed for several consecutive years as well as to keep suitable room available in the basins to receive natural water replenishment in very wet years.

To compute the Accumulated Overdraft since this initial amount of 1,080,000 AF, WRD takes each consecutive year's Annual Overdraft and replenishment activities and determines the change in storage. It adds to or subtracts from the corresponding value from the Accumulated Overdraft. Since the base level, the aggregate excess of extractions over recharge has been reduced due to the artificial replenishment activities by LACDPW and WRD at the spreading grounds and seawater barrier wells and the reduction of pumping established by the adjudications and by WRD’s In-Lieu Program. The Accumulated Overdraft at the end of the previous WY was determined to be 766,465 AF. The Accumulated Overdraft for the current year is estimated at 745,100 AF.

Table 7 presents information for the previous and current Accumulated Overdraft estimate. The annual changes in storage are presented on Table 8.

Groundwater Levels

A groundwater elevation contour map representing water levels within the District in fall 2019 (end of the WY) was prepared for this report and is presented as Plate 2. The data for the map were collected from wells that are screened in the deeper basin aquifers where the majority of groundwater pumping occurs. These deeper aquifers include the Upper San Pedro Formation aquifers, including the Lynwood, Silverado, and Sunnyside. Water level data was obtained from WRD’s network of monitoring wells and from groundwater production wells that are screened in the deeper aquifers.

As can be seen on Plate 2, groundwater elevations range from a high of about 160 feet above mean sea level (msl) in the northeast portion of the basin, above the spreading grounds in the Whittier Narrows, to a low of about 105 feet below mean sea level (msl) in the Long Beach area. With the exception of the Montebello Forebay, and along the West Coast Basin Barrier Project, the majority of groundwater levels in the District remain below sea level (red colored contour lines on Plate 2), which is why continued injection at the seawater barriers is needed to prevent saltwater intrusion.

Plate 2 also shows the location of the key wells used for long-term water level data. These long-term hydrographs have been presented in the ESR for years, and provide a consistent basis from which to compare changing water levels. A discussion of water levels observed in the key wells is presented below.

Los Angeles Forebay

The Los Angeles Forebay occupies the westerly portion of the Central Basin Non-Pressure Area. Historically a recharge area for the Los Angeles River, this forebay's natural recharge capability has been substantially reduced since the river channel was lined and open areas paved over. Recharge is now limited to deep percolation of precipitation in limited areas, In-Lieu replenishment when available, subsurface inflow from the Montebello Forebay, the northern portion of the Central Basin outside of WRD's boundary, and the San Fernando Valley through the Los Angeles Narrows.

Key well #2778 (2S/13W-10A01) represents the water level conditions of the Los Angeles Forebay (see Figure B). The water level high was observed in 1938 at an elevation of approximately 70 feet above msl and by 1962 water levels had fallen nearly 180 feet to an elevation of 109 ft below msl due to basin over-pumping and lack of sufficient natural recharge. Since then, basin adjudication and managed aquifer recharge by WRD and others have improved water levels in this area. At the end of WY 2018/19, groundwater levels were at an elevation of 20.3 feet below msl, which is 1.9 feet higher
from the previous year. Overall, groundwater elevations increased across the Los Angeles Forebay. The average water level change based on WRD’s GIS analysis was a 4.6 foot increase over the WY.

Montebello Forebay

The Montebello Forebay lies in the northeastern portion of the Central Basin and connects with the San Gabriel Basin to the north through the Whittier Narrows. The Rio Hondo and San Gabriel River coastal spreading grounds (often collectively called the “Montebello Forebay Spreading Grounds”) provide a substantial amount of recharge water to the CBWCB since the aquifers there are unconfined and allow easy infiltration of surface water impounded at the spreading grounds to the deeper groundwater.

Three key wells help describe the groundwater level conditions in the Montebello Forebay, a northern well, a middle well, and a southeastern well (Plate 2). The historic water levels in these three key wells are discussed below:

- Well Pico1_4 (2S/11W-18C07) is in the northern part of the Montebello Forebay. The upper chart on Figure C shows the water levels for this well. Historic water levels at this well or its predecessors have ranged from a high elevation of 164.7 feet above mean sea level in April 1944 to a low of 42.8 feet above msl in December 1957. At the end of WY 2018/19, groundwater levels in this well were at an elevation of 101.70 feet above msl and were 20.25 feet higher than the previous year due to the wet winter/spring.

- Well 1601T (2S/12W-24M08) is centrally located between the Rio Hondo and San Gabriel coastal spreading grounds. This well is monitored weekly to assess water levels in the middle of the forebay. The center chart on Figure C shows the water levels for this well. The historic water level high was observed in 1942 at an elevation of 137.8 feet above mean sea level, but by 1957 it had fallen 117 feet to an all-time low elevation of 20.9 feet above msl due to basin over-pumping and insufficient natural recharge. As described above for the Los Angeles Forebay, adjudication of pumping rights and managed aquifer recharge helped restore water levels in the Montebello Forebay. At the end of WY 2018/19, groundwater levels in this well were at an elevation of 72.90 feet above msl and were 20.25 feet higher than the previous year.

- Well 1615P (3S/12W-01A06) is located downgradient and southeast of the spreading grounds near the southern end of the Montebello Forebay. Water level responses in this well are typically less pronounced than the other two wells because it is further away from the spreading grounds and the recharge activities that occur there. The lower chart on Figure C shows the water level history for this well. The historic water level high was observed in 1947 at an elevation of 113.6 feet above mean sea level but by 1957 had dropped 102 feet to an all-time low elevation of 11.4 feet above msl. Since then, water levels have recovered. At the end of WY 2018/19, groundwater levels were at an elevation of 48.50 feet above msl and were 6.5 feet higher than the previous year.

Overall, groundwater elevations increased across the Montebello Forebay. The average water level change based on WRD’s GIS analysis was a 10.6 foot increase over the WY.

Central Basin Pressure Area

The District monitors long term key wells 906D (4S/13W-12K01) and 460K (4S/12W-28H09) which represent the conditions of the pressurized groundwater levels in the Central Basin Pressure Area. The hydrographs for these two wells are shown on Figure D.

Groundwater highs were observed in these wells in 1935 when they began to continually drop over 110 feet until their lows in 1961 due to the over-pumping and insufficient natural recharge. Groundwater levels recovered substantially during the early 1960s as a result of replenishment
operations and reduced pumping. Between 1995 and 2007 there were 100-foot swings in water levels each year between winter and summer caused by pumping pattern changes by some of the Central Basin producers who operate with more groundwater in the summer months and less groundwater in the winter months, and took advantage of the MWD and WRD In-Lieu programs. From May 2007 to March 2011 the In-Lieu water was not available, so pumping remained more constant throughout those years and water levels remain low. Since then, In-Lieu with the City of Long Beach has occurred on several occasions, with resulting water levels rising as the pumps go off.

At the end of WY 2018/19, groundwater levels in well 906D were at an elevation of 75.00 ft below msl and were 5.05 feet lower than the previous year. Water levels in well 460K were at an elevation of 91.1 ft below msl and were 1.6 feet higher than the previous year. Overall, groundwater elevations increased within the Central Basin Pressure Area. The average water level change based on WRD’s GIS analysis was a 2.5 foot increase over the WY.

West Coast Basin

The West Coast Basin is adjacent to the Central Basin along the Newport-Inglewood Uplift, which is a series of discontinuous, sub-parallel hills and faults that act as a partial barrier to groundwater flow. Groundwater moves across the uplift based on water levels on both sides and the “tightness” (hydraulic conductivity) of the uplift along its various reaches, both horizontally and vertically. Like the Central Basin Pressure Area, most of the aquifers used for water supply are confined aquifers and therefore do not respond rapidly to precipitation events, but instead to changes in pumping patterns or seawater barrier well injection rates.

Figure E shows the hydrographs of key well Wilmington1_3 and well Lawndale1_4. These two wells represent the general conditions of the water levels in the West Coast Basin. In 1955, the control of groundwater extractions in the West Coast Basin resulted in stabilizing and reversal of the declining water levels in the center of the basin whereas at the eastern end near the Dominguez Gap Barrier water levels continued to decline until about 1971, when a recovery began due mostly to the startup of the Dominguez Gap Barrier Project.

At the end of the previous WY 2018/19, water levels in well Lawndale1_4 were at an elevation of 2.08 ft below msl and were 2.11 feet higher than the previous year. Water levels in well Wilmington1_3 were at an elevation of -35.06 ft below msl and were 5.69 feet lower than the previous year. Overall, groundwater elevations increased slightly within the West Coast Basin. The average water level change based on WRD’s GIS analysis was a 0.4 foot increase over the WY.

Whittier Area

The Whittier Area is in the northeastern-most portion of the Central Basin and historically has not been used for significant water supplies due to poor natural water quality conditions (high total dissolved solids concentrations) and low production rates. Some minor pumping does occur towards the western end. Because of this, WRD does not maintain long term hydrographs for this area, but does track current groundwater levels from its recently constructed monitoring wells. Overall, groundwater elevations increased within the Whittier Area. The average water level change based on WRD’s GIS analysis was a 4.6 foot increase over the WY.

Plate 3 shows the water level changes over the entire WRD Service area for the previous WY.

In WY 2018/19, on average there was a net increase in groundwater levels across the WRD service area of 3.0 feet, although in some areas rises of up to nearly 22 feet were observed and declines of over 6 feet were also observed (Plate 3).
In the current WY 2019/20, through the time of this writing it been an average year with precipitation at approximately 101% of normal through January 8, 2020. Water levels in the Montebello Forebay rose nearly 20 feet during the peak of the winter season but are presently about 12 feet higher than the previous year. Therefore, because the current and projected groundwater levels in the CBWCB are within historic ranges, the District anticipates that there will continue to be sufficient supplies of safe and reliable groundwater to meet the demands of the pumpers in our service area in the current and ensuing years.

**Change in Storage**
The District determines the annual change in groundwater storage by comparing water levels from one year to the next, and factoring in the storage coefficients of the major aquifer layers. Rising groundwater means there is an increase in the amount of groundwater in storage whereas a drop in groundwater levels means there is a decrease from storage. Using groundwater elevation data collected from WRD's monitoring well network and selected production wells, the District constructs a groundwater level change map showing water level differences from one year to the next (Plate 3). The data from this map are converted to grids in the District’s GIS and multiplied by the storage coefficient value grids for the aquifer layers as obtained from the USGS calibrated Modflow computer model of the District. This calculation produces the change in storage value for the previous WY.

Performing this analysis determines that in WY 2018/19 there was an increase in storage in the basins of 62,200 AF (mostly due to an increase in water levels within the Montebello Forebay). Table 8 provides the historical groundwater storage changes in the CBWCB.

**Optimum and Minimum Groundwater Quantity**
In response to a 2002 State audit of the District’s activities, the Board of Directors adopted an Optimum and Minimum Quantity for groundwater amounts in the CBWCB. The Optimum Quantity is based on the Accumulated Overdraft (AOD) concept described in the Water Code and this ESR. The historic maximum groundwater drawdown due to over pumping reported in the CBWCB between 1904 and 1957 was 1,080,000 AF. This is defined as the historic maximum AOD. As pumping eased and artificial replenishment occurred, more water was put back into the basins and the AOD was reduced resulting in rising water levels.

After considerable analysis and discussion, the Board of Directors on June 18, 2003 adopted an Optimum Quantity of groundwater in the WRD service area at an AOD of 400,000 AF and a Minimum Quantity of an AOD of 900,000 AF. Several years later, additional reviews were conducted to update the Optimum Quantity to recognize the need for groundwater storage space within the District. On April 19, 2006 the WRD Board of Directors revised the Optimum Quantity to an AOD of 612,000 AF. This value was based on an extensive review of over 70 years of water level fluctuations in the District and recognizing that in WY 1999/2000 groundwater amounts were at an acceptable quantity to sustain the adjudicated pumping rights in the basins. The AOD at that time was 611,900 AF (rounded to 612,000 AF), and therefore was set by the Board of Directors as the Optimum Quantity. The Minimum Quantity was not modified and therefore remains at an AOD of 900,000 AF.

The Board of Directors on April 19, 2006 also adopted a policy to make up the Optimum Quantity should it fall too low. The policy is as follows:

> An Accumulated Overdraft greater than the Optimum Quantity is a deficit. WRD will make up the deficit within a 20 year period as decided by the Board on an annual basis. If the deficit is within 5 percent of the Optimum Quantity, then no action needs to be taken to allow for natural replenishment to makeup the deficit.

The Accumulated Overdraft at the end of WY 2018/19 was 766,465 AF, or 133,535 AF above the Minimum Quantity of AOD = 900,000 AF.
CHAPTER 4 - GROUNDWATER REPLENISHMENT: QUANTITIES, AVAILABILITY, AND COSTS

As discussed in the previous chapter, the CBWCB have an annual overdraft because more groundwater is pumped out than is typically replaced by natural means. The District purchases supplemental water (artificial replenishment water) each year to help offset this overdraft through managed aquifer recharge. The purchased water enters the groundwater basins at the Montebello Forebay spreading grounds, at the seawater barrier injection wells, and through the District's In-Lieu Program. The purpose of this Chapter is to determine the quantities of water needed to offset the overdraft in the ensuing WY, the anticipated cost for that water, and the expected availability of that water.

Sources of Replenishment Water

The District currently has available to it recycled and imported water sources for use as artificial replenishment water. Starting in 2020, with the completion of WRD’s ARC facility, the District can plan on using 100% recycled water for its replenishment needs. This was a major accomplishment from the Water Independence Now (WIN) initiative started over a decade ago. Since recycled water availability is reliant upon source water supply from water reclamation plants, imported water connections are kept current to possibly utilize that source should temporary needs arise. These two replenishment sources are described below:

- **Recycled Water**: Recycled water is wastewater from the sewer systems that is reclaimed and purified through extensive treatment at water reclamation plants (WRPs). The water is treated to high quality standards so that it can be reused safely, and offsets the need to use more expensive and sometimes less available imported water. Some agencies and businesses use recycled water for non-potable purposes, such as for irrigation of parks, golf courses, and street medians, or for industrial purposes (known as “purple-pipe projects”). WRD has successfully used recycled water for groundwater recharge since 1962. In semi-arid areas such as Southern California where groundwater and imported water are in short supply, recycled water has proven to be a safe and reliable additional resource to supplement the water supply. Recycled water is used at the spreading grounds and the seawater barrier injection wells and is high quality, relatively low cost, and a reliable supply all year long. As of 2020, the District has all applicable permits and treatment plants completed to plan on 100% recycled water for replenishment at the spreading grounds and seawater barrier wells. Imported water connections are kept current in case shortages of recycled water should occur.

- **Imported Water**: River water originating in northern California (State Water Project and Los Angeles Aqueduct) and from western states (the Colorado River) is imported into Southern California through canals and aqueducts by the Metropolitan Water District of Southern California (MWD or Met) and the City of Los Angeles Department of Water and Power (LADWP). MWD sells this water as-is (untreated raw river water) or after it treats the water to potable standards to their member agencies for multiple uses, including municipal, industrial, and groundwater recharge. When needed, WRD purchases raw imported water from the State Water Project at the spreading grounds (Colorado River water is currently not available to WRD due to potential invasive Quagga Mussel issues) and uses treated potable water for injection at the seawater barrier wells and the In-Lieu program. Because of treatment and transportation costs, imported water is the most expensive type for groundwater replenishment. Prior to October 2011, MWD offered seasonally-available discounted water that could be purchased for replenishment. In turn for the discount, it was considered by MWD to be interruptible and they could stop deliveries at any time. But due to a lack of surplus supplies caused by drought and other factors, MWD has eliminated
offering this type of discounted interruptible water. Instead, replenishment agencies such as WRD must now purchase what is known as “Tier 1” or “Tier 2” water from MWD member agencies for spreading and In-Lieu. This water is at a higher price and relies on available allocation from the member agency. But, this Tier 1 or Tier 2 water is supposed to be firm delivery (not interruptible), although during extreme droughts MWD can implement a water supply allocation to reduce sales of imported water. The seawater barrier injection water has been Tier 1 treated water for decades and has to date not been interrupted by MWD.

Recommended Quantities of Replenishment Water

With the information presented in the preceding chapters regarding the pumping demands in the CBWCB, annual and accumulated overdraft, and the overall condition of the groundwater basins, WRD can estimate its projected need for replenishment water in the ensuing year.

Spreading

Groundwater recharge through surface spreading occurs intentionally in the Montebello Forebay Spreading Grounds adjacent to the Rio Hondo and the San Gabriel River, within the unlined portion of the San Gabriel River, and incidental recharge behind the Whittier Narrows Dam in the Whittier Narrows Reservoir. Owned by the Los Angeles County Flood Control District (LACFCD) and operated by the Los Angeles County Department of Public Works (LACDPW), they were originally constructed in 1938 for flood control and conservation of local storm water, but have been used since the 1950s to replenish the basins with imported water and since 1962 with recycled water.

The District currently uses recycled water that has gone through tertiary treatment for most of its spreading needs. Since tertiary recycled water is a high quality, less expensive, and available year-round source of replenishment water, the District maximizes its use within established regulatory limits. These limits are discussed below under “Expected Availability of Replenishment Water”. The District’s permit allows up to 45% tertiary recycled water contribution over a 10-year (120-month) running average (see below under Expected Availability of Replenishment Water), with the remaining 55% being diluent (dilution) water consisting of stormwater, urban base flow, and/or imported water. Recently due to conservation, the amount of tertiary water available from the Sanitation Districts of Los Angeles County (SDLAC) San Jose Creek, Whittier, and Pomona water reclamation plants has been lower than in the past. Therefore, for the ensuing year, WRD is budgeting for 50,000 AF of tertiary recycled water for spreading.

The District has also completed its Albert Robles Center for Water Recycling and Environmental Learning (ARC - formerly known as the Groundwater Replenishment Improvement Project or GRIP) in 2019, which uses tertiary recycled water as source water and provides additional treatment including ultrafiltration, reverse osmosis (RO), and ultraviolet advanced oxidation processes (UVAOP) to improve overall water quality. The advanced treated water will either be used for spreading and/or direct injection into the aquifers. The District anticipates 10,000 AF of ARC water in the ensuing year.

In addition, under an agreement with the Main San Gabriel Basin Watermaster related to the Whittier Narrows Operable Unit (WNOU), which is a groundwater containment and cleanup project to protect Central Basin from receiving contaminated groundwater originating in the Main San Gabriel Basin, any groundwater pumped out from the WNOU project that is discharged to lakes or rivers that then overflows into Central Basin and is lost from Main San Gabriel Basin, WRD will reimburse the Main San Gabriel Basin Watermaster for the cost of that water. The water that WRD receives is considered “Local Water” as it originated in San Gabriel Valley and is not imported water from MWD. This effort is necessary to protect Central Basin from receiving contaminated groundwater. This is a short-
Groundwater Replenishment

term agreement until the WNOU water is instead put to a beneficial use such as a drinking water source to Main San Gabriel Basin customers. For the ensuing year, the District estimates 1,400 AF of WNOU water.

Table 9 presents the anticipated replenishment needs at the spreading grounds.

Injection

Another way of replenishing the groundwater supply is to inject water at the three seawater intrusion barriers owned and operated by the LACDPW, including the West Coast Basin Barrier, Dominguez Gap Barrier, and Alamitos Barrier. Although the primary purpose of the barriers is for seawater intrusion control, groundwater replenishment also occurs as the freshwater is injected into the CBWCB aquifers and then moves inland towards pumping wells.

To determine the amount of barrier water needed for the ensuing year, WRD under an Agreement with LACDPW gets annual estimates from the expected demand at the barriers. WRD reviews these estimates, reviews recent 5-year averages of actual injection amounts, and makes adjustments as necessary. For the ensuing year, WRD estimates the West Coast Basin Barrier Project will require 17,000 AF. Source water is advanced treated recycled water from WBMWD’s Edward C. Little Water Recycling Facility and, if needed, supplemental Tier 1 treated imported water from WBMWD. For the Dominguez Gap Barrier Project, a total of 7,800 AF is expected to be required. Source water is advanced treated recycled water from the City of Los Angeles’ Terminal Island Treatment Plant and, if needed, supplemental Tier 1 treated imported water from WBMWD. For the Alamitos Barrier Project, a total of 5,000 AF is expected to be required by WRD (does not include barrier water purchased by Orange County Water District for their side of the barrier). Source water is advanced treated recycled water from WRD’s Leo J. Vander Lans Water Treatment Facility and, if needed, supplemental Tier 1 treated imported water from the City of Long Beach.

The total barrier demand for WRD in the ensuing year is estimated at 29,800 AF (See Table 9).

In-Lieu Replenishment Water

The basic premise of WRD’s In-Lieu Program is to offset the pumping in the basin to lower the annual overdraft and reduce the artificial replenishment needs. It helps provide an alternate means of replenishing the groundwater supply by encouraging basin pumpers to purchase imported water when available instead of pumping groundwater. This can help raise water levels in areas that are otherwise more difficult to address. MWD has ceased providing seasonally discounted water for the In-Lieu program since 2011, so WRD’s program has been put on hold with the exception of a few localized projects with the City of Long Beach. For the ensuing year, WRD is not planning on any In-Lieu programs, although may consider new programs if opportunities arise.

Expected Availability of Replenishment Water

The availability of water supplies for the ensuing WY has been taken into account when determining how funds should be raised. If a particular resource is expected to be unavailable during a given year, money can still be raised to fund the purchase of that quantity of water in a succeeding year.

Recycled Water

Recycled water is reliable all year round but its use for recharge is capped by regulatory limits. The current limits for tertiary recycled water spreading in the Montebello Forebay are established by the Los Angeles Regional Water Quality Control Board (RWQCB) and are detailed in Order No. 91-100 adopted on September 9, 1991 with amendments on April 2, 2009 under Order No. R4-2009-0048 and June 4, 2013 (letter approval from RWQCB Executive Officer). On April 10, 2014, under Order No. R4-2009-0048-A-01, the RWQCB approved a request by WRD to increase the allowable percentage
of recycled water to be recharged at the Montebello Forebay spreading grounds from 35% to 45% over a 10-year (120-month) running average. This major action will allow continued use of historic amounts of recycled water for longer periods of time should extended droughts return like the 2011-2016 five year drought, and might allow for additional recycled water for recharge should normal to wet hydrologic conditions return. This will allow WRD to continue to maximize use of recycled water for groundwater recharge as part of its WIN initiative.

The SDLAC provides the recycled water to WRD for spreading by LACDPW. This water comes from the Whittier Narrows Water Reclamation Plant (WNWRP), San Jose Creek Water Reclamation Plant (SJCWRP), and Pomona Water Reclamation Plant (PWRP). For planning purposes in the ensuing year, due to conservation and lower amounts of available tertiary water, the District assumes it will purchase 50,000 AF and 10,000 AF of additional water for the ARC facility (formerly named GRIP).

Recycled water for injection into the seawater barrier wells comes from different agencies depending on the specific barrier. At the WCBBP, the water is provided by WBMWD's Edward C. Little Water Recycling Facility. Per regulatory limits, this resource can provide up to 100% recycled water to the Barrier.

Recycled water for the DGBP is available from the City of Los Angeles’ Terminal Island Treatment Plant (Harbor Recycled Water Project). In 2016 the plant was permitted by the Los Angeles Regional Water Quality Control Board to provide the barrier with 100% recycled water.

Recycled water for the ABP is available from WRD’s Leo J. Vander Lans Water Treatment Facility. This treatment plant was permitted to provide up to 100% of the barrier with recycled water in 2014.

Although the three barriers are permitted for 100% recycled water, should source water become unavailable due to temporary plant shutdowns for maintenance or other purposes, imported water may be provided as an alternate for a limited time.

Imported Water

If imported water should become desired or necessary at the spreading grounds, WRD is able to purchase untreated Tier 1 water from CBMWD, treated Tier 1 water for the In-Lieu program through Met-member agencies, and treated Tier 1 water for the seawater barrier wells from WBMWD or City of Long Beach. However, since the completion of WRD’s WIN initiative by having all three barriers permitted for 100% recycled water and the ARC facility coming online with advanced treated recycled water, WRD is not anticipating the need for imported water on a regular basis at this time.

Projected Cost of Replenishment Water

WRD has estimated it will need 91,200 AF of replenishment water in the ensuing year to help overcome the annual overdraft. WRD purchases replenishment water from MWD member agencies and recycled water providers. These agencies set the price for the replenishment water that WRD buys for the spreading grounds, seawater barrier injection wells, and In-Lieu water when available. The cost for replenishment water is a direct pass-through from WRD to the water suppliers on WRD’s replenishment assessment. For the recycled water source water to feed WRD’s ARC project and the Leo J. Vander Lans facility, the cost of that source water is part of the separate operations budget for those facilities and are not part of the water purchase budget which is shown on Table 2.

Using currently available information and estimates for the cost of replenishment water to WRD in the ensuing year, the estimated cost of water is $34,132,691 which is a 1.2% decrease from the previous year (2018/19). Tables 1 and 2 provide a detailed breakdown of these costs.

These estimated costs are for water purchases only and do not include the additional costs for projects and programs related to water replenishment and water quality. These projects and programs are
presented in Chapter 5. The costs for these projects and programs are discussed separately in District budget workshops, Finance Committee meetings, Board of Directors’ meetings, Budget Advisory Committee (BAC) meetings, and other public meetings and combined with these water costs before the Board adopts the Replenishment Assessment (RA) for the ensuing Fiscal Year.
CHAPTER 5 - PROJECTS AND PROGRAMS

California Water Code Sections 60220 through 60226 describe the broad purposes and powers of the District to perform any acts necessary to replenish, protect, and preserve the groundwater supplies of the District. In order to meet its statutory responsibilities, WRD has instituted numerous projects and programs in a continuing effort to effectively manage groundwater replenishment and groundwater quality in the Central Basin and West Coast Basin (CBWCB). These projects and programs include activities that enhance the replenishment program, increase the reliability of the groundwater resources, improve and protect groundwater quality, and ensure that the groundwater supplies are suitable for beneficial uses.

These projects and programs have had a positive influence on the basins, and WRD anticipates continuing these activities into the ensuing year. The following is a discussion of the projects and programs that WRD intends to continue or initiate during the ensuing year.

001 – Leo J. Vander Lans Advanced Water Treatment Facility Project

The Leo J. Vander Lans Advanced Wastewater Treatment Facility (AWTF) provides advanced treated recycled water to the Alamitos Seawater Intrusion Barrier. Source water to the facility consists of tertiary-treated municipal wastewater provided by the Sanitation Districts of Los Angeles County Long Beach Water Reclamation Plant (LBWRP). Source water is treated using a multi-barrier treatment process consisting of microfiltration (MF), reverse osmosis (RO) and ultraviolet advanced oxidation processes (UVAOP). The facility’s operations permit was approved by the Los Angeles Regional Water Quality Control Board and operations began in October 2005. The facility capacity was expanded in early 2015 to increase the capacity from 3 MGD to 8 MGD, with the operations permit amended by the RWQCB for the expanded facility. Expansion of the treatment facility provided a number of unique enhancements to optimize operations. These enhancements included (1) a third-stage RO system to increase recovery from the original 85% to 92.5%; and (2) a recovery MF system that captures the primary MF waste and treats it through a two-step treatment process consisting of dissolved air flotation and secondary MF. With these process enhancements, the facility has been expanded to achieve enhanced production while minimizing the cost associated with brine disposal.

Finish product water is delivered to the Alamitos Barrier to offset the use of imported water, thus improving the reliability and quality of water supplying the barrier. The AWTF has sufficient production capacity to meet WRD’s barrier demand of approximately 4 million gallons per day (MGD) of highly purified, potable quality water. Presently the Long Beach Water Department (LBWD) is responsible for the operations and maintenance of the AWTF under contract with WRD.

The facility has faced a series of scheduled extended shutdowns over the past three years resulting from infrastructure improvements being performed by LASCD at the upstream LBWRF. WRD is also actively engaged with the LBWD to establish a new water purchase agreement which will serve to guarantee future sustainable water supplies to the AWTF. Operational costs for the coming fiscal year will include operations and maintenance, groundwater monitoring at the barrier and improvements aimed at optimizing current and future facility operations. This program is funded 100% from the Replenishment Fund.

002 – Robert W. Goldsworthy Desalter Project
The Robert W. Goldsworthy Desalter (also known as the Torrance Desalter) was commissioned in 2002. Located within the City of Torrance, the facility utilizes reverse osmosis (RO) membrane technology to desalt brackish groundwater in the Torrance area that was stranded inland of the West Coast Basin Barrier after it was placed into operation in the 1950s. The Torrance Desalter was originally designed with a production capacity of 2,200 AFY of potable quality water for delivery to the City’s distribution system. The City of Torrance is responsible for operations and maintenance of the treatment plant under contract with WRD.

The facility underwent a significant expansion to increase production to a total capacity of 4,800 AFY in December 2017. This expansion included the addition of one RO system, two new source water wells, and associated conveyance pipelines and pump stations. The overlying purpose of this expansion project is to provide additional remediation of the groundwater quality within the basin for beneficial use. Project costs were funded through WRD’s Capital Improvement Program and grants. Expected costs for the coming fiscal year will include continued capital improvements as well as increased operation and maintenance costs associated with operations of the expanded facility. This project is funded 100% from the Clean Water Fund.

WRD continues to explore additional efforts toward groundwater remediation of the saline plume, which extends beyond the City of Torrance boundaries, through the utilization of its Regional Brackish Water Program. Under this program, a feasibility study has been performed which included participation from the City of Torrance, the Technical Advisory Committee, and stakeholders to assess the future of the saline plume removal in the West Coast Basin. The feasibility study was completed in 2019, and WRD is considering moving forward with permitting efforts and pilot testing in 2020.

004 – Recycled Water Program

Recycled water (aka reclaimed municipal wastewater) has been successfully used for groundwater recharge by WRD since 1962. Recycled water provides a reliable source of high-quality water for surface spreading in the Montebello Forebay and for injection at the seawater intrusion barriers. In light of the recurring drought conditions in California and uncertainties about future water availability and growing cost of imported water supplies, recycled water has become increasingly vital as a replenishment source.

In order to ensure that the use of recycled water for groundwater recharge remains a safe and reliable practice, WRD participates in various research and monitoring activities, proactively contributes to the regulatory and legislative development processes, and engages in information exchange and dialogue with regulatory agencies and other recycled water users. The District continues to closely coordinate with the Sanitation Districts of Los Angeles County (SDLAC), which produces the recycled water used for surface spreading in the Montebello Forebay, on permit compliance activities, including groundwater monitoring, assessment, and reporting. Many monitoring and production wells are sampled frequently by WRD staff, and the results are reported to the regulatory agencies.

In addition to compliance monitoring and sampling associated with the spreading grounds, WRD is partnering with others to more fully investigate the effectiveness of soil aquifer treatment (SAT) during groundwater recharge. WRD completed a research project with the Colorado School of Mines to evaluate the impact on SAT from using different blends of tertiary recycled water and fully advanced treated recycled water. The results of the study indicated that the SAT system can tolerate a wide range of blend ratios, including with only fully advanced treated recycled water with short duration, and can still demonstrate effective treatment performance. The District has also participated in researches in characterizing the percolation process and quantifying the filtering and purifying
properties of the underlying soil with respect to constituents of concern, such as nitrogen, total organic carbon, and chemicals of emerging concern (CECs). The District continues to be vigilant in monitoring research on the occurrence, significance, attenuation, and removal of CECs, including pharmaceuticals, endocrine disruptors, and personal care products, in accordance with the amended Recycled Water Policy.

Recycled water is also injected into the Los Angeles County Department of Public Works’ three seawater intrusion barriers located along the Coast of Los Angeles County (Alamitos, West Coast, and Dominguez Gap barriers). Highly purified recycled water used for injection at the Alamitos Barrier is produced at WRD’s Leo J. Vander Lans Water Treatment Facility. The recycled water for the Dominguez Gap Barrier is generated at the City of Los Angeles’ Terminal Island Water Reclamation Plant/Advanced Water Purification Facility. And the recycled water for the West Coast Barrier is produced at the West Basin Municipal Water District’s Edward C. Little Water Recycling Facility. Extensive recycled water monitoring and regular groundwater modeling are performed to ensure that the treatment plants are operating as intended and that the injected water is making a positive contribution to the groundwater basins. All three barrier projects have increased the recycled water produced in the barrier operations and are expanding their respective infrastructures to increase delivery, with the ultimate goal of completely phasing out the potable water used at the barriers. All three barriers are currently permitted for 100% recycled water recharge.

Projects under this program help to improve the reliability and utilization of an available local resource, i.e. locally produced recycled water. This resource is used to help maintain the integrity of the basins and improve replenishment capabilities. This program is funded 100% from the Replenishment Fund.

**005 – Groundwater Resources Planning Program**

The Groundwater Resources Planning Program was instituted to evaluate basin management issues and to provide a means of assessing project impacts in the District’s service area. Prior to moving forward with a prospective project, an extensive evaluation is undertaken. Within the Groundwater Resources Planning Program, new projects and programs are analyzed based on benefits to overall basin management. This analysis includes performing an economic evaluation to compare estimated costs with anticipated benefits. As part of this evaluation process, all capital projects are brought to the District’s Technical Advisory Committee for review and recommendation. The culmination of this review and evaluation process is the adoption of the Five-Year Capital Improvement Program (CIP) by the District’s Board of Directors.

Conceptual projects identified in the District’s Groundwater Basins Master Plan will continue to be evaluated through pumper workshops and/or focused meetings with basin stakeholders and prospective project proponents. These workshops and meetings, facilitated by District staff, will further the development of available groundwater resources to reduce the region’s demand for imported water.

Also, District staff will continue to monitor state and federal funding programs to determine applicability to the District’s list of prospective projects described within the CIP. The District will continue its participation in the various Greater Los Angeles County Region’s Integrated Regional Water Management Plan (IRWMP) stakeholder committees. Collaborative development of the region’s IRWMP is a requirement for entities to secure grant funding under Proposition 1 that was passed in November 2014.
Projects under the Groundwater Resources Planning Program serve to improve replenishment operations and general basin management. This program is funded 100% through the Replenishment Fund.

006 – Groundwater Quality Program

This program is an ongoing effort to address water quality issues that affect WRD projects and the pumpers’ facilities. The District monitors and evaluates the impacts of proposed, pending and recently promulgated drinking water regulations and legislation. The District assesses the justification and reasoning used to draft these proposals and, if warranted, joins in coordinated efforts with other interested agencies to resolve concerns during the early phases of the regulatory and/or legislative process.

Annually, the District offers a groundwater quality workshop to water purveyors. At the workshop, industry experts and regulators provide information on the latest water quality regulations, state of the groundwater in the local basins, information on the cutting edge technology for contaminant removal or well rehabilitation, and other topics that are of key interest to the District’s water purveyors. The annual workshop also gives a comprehensive overview of the resources provided under the District’s Groundwater Quality Program.

The District continually evaluates compliance with current and anticipated water quality regulations in production wells, monitoring wells, and spreading/injection waters of the basins. WRD proactively investigates any potential non-compliance situations to confirm or determine the causes of noncompliance, develops recommended courses of action and estimates their associated costs to address the problem, and implements the best alternative to achieve compliance.

Effective January 1, 2007, the District initiated performance of the Title 22 Groundwater Monitoring Program. The program involves working with participating pumper to comply with regulatory requirements for well water monitoring, including: (1) scheduling the collection and analysis of samples for Title 22 compliance required by the State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW) and special sampling such as the Unregulated Contaminant Monitoring Rule required by the United States Environmental Protection Agency (EPA); (2) coordinating the submittal of results to the SWRCB DDW; and 3) preparing the annual Consumer Confidence Reports for the pumper. This program is available to pumper who choose to participate and agree to reimburse the District the actual monitoring costs, including District staff time in administering the program. The District presently has 22 pumper/participants in this program, which involves a total of 84 wells.

In recent years, new Chemicals of Emerging Concern (CECs) have been identified nationwide as potentially impacting surface water and groundwater. CECs can be broadly defined as any synthetic or naturally occurring chemical or any microorganism that is not commonly monitored in the environment but has been recently detected in the environment. CECs such as pharmaceuticals and personal care products, perfluorinated compounds, polybrominated diphenyl ethers, and others may pose a potential threat to water resources including per-and polyfluoroalkyl substances (PFAS). Their detection in the environment does not necessarily mean that they pose a health threat at their measured concentrations. WRD is actively monitoring surface spreading and injection activities for water quality constituents, including many CECs. In addition, the District supports research evaluating CEC removals using innovative treatment technologies and is currently pilot testing ion exchange and granular activated carbon to treat PFAS.
WRD’s service area contains a large and diverse industrial and commercial base. Consequently, many potential groundwater contamination sources exist within District boundaries. Examples of potential contamination sources include leaking underground storage tanks, petroleum pipeline leaks at refineries and petrochemical plants, and discharges from dry cleaning facilities, auto repair shops, metal works facilities, and others. Such contamination sources may pose a threat to the drinking water aquifers. Accordingly, WRD established its Groundwater Contamination Prevention Program as a key component of the Groundwater Quality Program in an effort to minimize or eliminate threats to groundwater supplies. The Groundwater Contamination Prevention Program includes several ongoing efforts:

- Central Basin and West Coast Basin (CBWCB) Groundwater Contamination Forum: In 2005, WRD established this data-sharing and discussion forum with key stakeholders including the EPA, the California Department of Toxic Substances Control (DTSC), the RWQCB, the SWRCB DDW, the United States Geological Survey (USGS), and various cities and purveyors. Stakeholders drafted and signed a Memorandum of Understanding agreeing to meet regularly and share data on contaminated groundwater sites within the District. WRD acts as the meeting coordinator and data repository/distributor, helping stakeholders to characterize the extent of contamination to identify potential pathways for contaminants in shallow aquifers to reach deeper drinking water aquifers and develop optimal methods for remediating contaminated groundwater.

- With the cooperation and support of all stakeholders in the Groundwater Contamination Forum, WRD developed a list of high-priority contaminated groundwater sites located within the District. This list is a living document, subject to cleanup and closure of sites, as well as discovery of new sites warranting further attention. Currently, the list includes 46 sites across the CBWCB. WRD works with the lead regulatory agencies for each of these sites to keep abreast of their status, offer data collection, review and recommendations as needed, and facilitate progress in site characterization and cleanup.

- In 2012, WRD formed the Los Angeles Forebay Groundwater Task Force to coordinate and align regulators and water purveyors/agencies to collaboratively address groundwater contamination in the Los Angeles Forebay that is a threat to drinking water resources. The Task Force members currently include WRD, DTSC, EPA, RWQCB, SWRCB DDW, USGS, City of Vernon, City of Los Angeles and others. WRD and DTSC are investigating and collecting data to assess the extent of regional volatile organic compound and perchlorate plumes and find the source(s) of this contamination.

- In 2017, WRD was awarded Prop 1 grant funds to remediate a perchlorate “hot spot” located in the City of Vernon. The data generated during the groundwater remediation project will be utilized to identify responsible party(ies) and seek cost recovery through the DTSC. WRD initiated work in 2018.

WRD remains committed to projects seeking opportunities and innovative project concepts to enhance capture and recharge of local stormwater runoff in order to augment local groundwater resources, as follows:

- In 2012, the District partnered with the City of Los Angeles Bureau of Sanitation (the lead applicant) to pursue Proposition 84 funding (Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006) to implement a portion of the concept design to increase stormwater infiltration and to assist the City of Los Angeles in its compliance with total maximum daily load (water quality-related) requirements. The project area
is located in the City of Los Angeles south of the 10 freeway and east of the 110 freeway. The stormwater capture/infiltration measures were installed on 19 residential properties within the City of Los Angeles and included dry wells, rain gardens, continuous deflectional separation (CDS) system for trash and sediment removal, and infiltration gallery. The combined watershed of all proposed stormwater infiltration projects is approximately 220 acres with mixed land uses. In 2013, the City was awarded $2,939,361 by the State Water Resources Control Board to construct and monitor the project. Known as the “Broadway Neighborhood Stormwater Greenway (Broadway) Project, this project was completed in June 2016 and is currently operating.

WRD continues to do work involving additional investigations at well sites known to have contaminated water, continued monitoring of water quality regulations and proposals affecting production and replenishment operations, further characterization of contaminant migration into the deeper aquifers, and monitoring and expediting cleanup activities at contaminated sites. The work under this program is related to water quality and cleanup efforts; 100% of it is funded from the Clean Water Fund.

010 – Geographic Information System (GIS)

The District maintains an extensive in-house database and Geographic Information System (GIS). The database includes water level and water quality data for WRD’s service area with information drawn not only from the District’s Regional Groundwater Monitoring Program and permit compliance monitoring, but also from water quality data obtained from the DDW. The system requires continuous update and maintenance but serves as a powerful tool for understanding basin characteristics and overall basin health.

The GIS is used to provide better planning and basin management. It is used to organize and store an extensive database of spatial information, including well locations. The GIS allows the spatial data to relate to the water level data, water quality information, well construction data, production data, aquifer locations, and computer model files which are stored in a regularly updated SQL database, assuring accurate and timely data output. In the coming year, this information will be further integrated with readily available data from other state and federal agencies, as well as other District departments. Staff uses the system daily for project support and database management. Specific information is available upon request to any District pumper or stakeholder and can be delivered through the preparation of maps, tables, reports, or in other compatible formats. Additionally, the District has made its web-based Interactive Well Search tool available to the public. This web site provides these users with limited access to WRD’s water quality and production database. In the 2019/20 FY and WY, the site was upgraded to increase performance, functionality and improve access.

District staff will continue to streamline and refine the existing data management system and ensure its compatibility with the District’s asset management system, which is currently under development. As part of the streamlining of the data, staff will work closely with other District departments to evaluate and implement updates to the District’s existing system to facilitate the seamless transfer of data and access to that data. Additionally, District staff will continue the development of applications to more efficiently manage and report groundwater production information. Continued use, upkeep, and maintenance of the GIS are planned for the coming year. The use of the system supports both replenishment activities and groundwater quality efforts. Accordingly, the cost for this program is equally split between the Replenishment and Clean Water Funds.
011 – Regional Groundwater Monitoring Program

WRD has been monitoring groundwater quality and water levels in the CBWCB for nearly 60 years. The Regional Groundwater Monitoring Program (RGWMP) provides for the collection of basic information used for groundwater basin management including groundwater level data and water quality data. The RGWMP utilizes a network of 335 WRD and USGS-installed monitoring wells at 60 locations throughout the District, supplemented by data from groundwater production wells operated by the water purveyors. The information generated by this program is stored in the District’s GIS and provides the basis to better understand the dynamic groundwater system in the Central Basin and West Coast Basin. WRD hydrogeologists and engineers provide the in-house capability to collect, analyze and report on new and historical groundwater data.

Water quality samples from the monitoring wells are collected once or twice a year and analyzed for numerous common constituents such as general minerals, volatile organic compounds, metals, and general physical properties, as well as “special study constituents” such as 1,2,3-trichloropropane, pharmaceuticals and personal care products, explosives such as HMX, RDX, and TNT, and other chemicals of emerging concern on a case by case basis (such as PFAS). Water levels are measured in most monitoring wells with automatic data loggers every six hours, while water levels in all monitoring wells are manually measured by field staff a minimum of four times per year. On an annual basis, staff prepares the Regional Groundwater Monitoring Report that documents groundwater level and groundwater quality conditions each water year throughout the District. This report is distributed to the WRD stakeholders and is also available on the District’s website. The RGWMP also generates the data required for the District’s Salt and Nutrient Management Plan and California Statewide Groundwater Elevation Monitoring (CASGEM) program. In 2011, the National Groundwater Associated presented WRD with the “2011 Groundwater Protection Project Award” in recognition of the regional groundwater monitoring program.

WRD is also the designated groundwater monitoring entity for the CBWCB under the State of California’s CASGEM program. WRD collects water level data from 28 of its nested monitoring wells and uploads it to the State’s CASGEM website on a regular basis for seasonal and long-term water level trend tracking. Public access to the CASGEM website is at www.water.ca.gov/groundwater/casgem.

Ongoing work by WRD involves continuous field activities including quarterly, semi-annual, and annual data collection, well and equipment maintenance, and annual reporting activities. Work associated with the RGWMP also supports activities relating to both replenishment and water quality projects. The program is funded 50% each from the Replenishment and Clean Water Funds.

012 – Safe Drinking Water Program

WRD’s Safe Drinking Water Program (SDWP) has operated since 1991 and is intended to promote the cleanup of groundwater resources at specific well locations. Through the installation of wellhead treatment facilities at existing production wells, the District removes contaminants from the underground supply and delivers the extracted water for potable purposes. Projects implemented through this program are accomplished in collaboration with well owners.

One component of the program focuses on the removal of volatile organic compounds (VOCs) and offers financial assistance for the design, equipment and installation at the selected treatment facility. Another component offers zero-interest loans for secondary constituents of concern that affect a specific production well. The capital costs of wellhead treatment facilities range from
$800,000 to over $2,000,000. Due to financial constraints, the initial cost is generally prohibitive to most pumpers. Financial assistance through the District’s SDWP makes project implementation much more feasible.

There are several projects in various stages of implementation and new candidates for participation are under evaluation. Three projects for VOC removal are currently under construction scheduled. A total of 16 facilities have been completed and are online and one facility has successfully completed removal of the contamination and no longer needs to treat. While continued funding of this program is anticipated for next year, the District has revised the guidelines of the SDWP to place a greater priority on projects involving VOC contamination or other anthropogenic (man-made) constituents, now classified as Priority A Projects. Treatment projects for naturally-occurring constituents are classified as Priority B Projects and funded as a secondary priority, on a case-by-case basis and only if program monies are still available during the fiscal year. While such projects are of interest to WRD, availability of funding for them will not be determined until after the budget process is completed.

The District recently revised the Safe Drinking Water Program to include a revolving fund plan for Priority B Projects and implementation of a revitalization plan to maximize program participation. The Safe Drinking Water Program now includes a third component, the Disadvantage Communities (DAC) Outreach Assistance Program, which will provide assistance to water systems in Disadvantaged areas with applying for State funding. There are currently 11 participants in the DAC Outreach Assistance Program. Through the District’s program, four of the participants have received a total of $3.1 million in State funding for their projects and the remaining seven participants are awaiting final approval.

Projects under the SDWP involve the treatment of contaminated groundwater for subsequent beneficial use. This water quality improvement assists in meeting the District’s groundwater cleanup objectives. Funding for the costs of the program is drawn wholly from the Clean Water Fund.

**018 – Dominguez Gap Barrier Recycled Water Injection**

This Project involves the delivery of recycled water from the City of Los Angeles Department of Public Works - Bureau of Sanitation (BOS) Terminal Island Water Reclamation Plant/Advanced Water Treatment Facility (AWTF) to the Dominguez Gap Barrier Project (DGBP). Delivery of recycled water to the barrier commenced in February 2006.

Prior to injection at the barrier, the recycled water produced at the AWTF undergoes advanced treatment processes including microfiltration, reverse osmosis, and chlorination. The DGBP was originally permitted by RWQCB in conjunction with DDW for up to 5 MGD of recycled water and 50% recycled water contribution (meaning recycled water may not exceed 50% of the total injected volume with the remainder consisting of potable water). In 2016, the permit was revised to allow up to 12 MGD of 100% recycled water to the DGBP. Water quality requirements, including turbidity and modified fouling index, must also be satisfied to minimize potential fouling of DGBP injection wells owned and operated by the County of Los Angeles Department of Public Works.

While BOS is responsible for the treatment and the water quality monitoring of the recycled water at the AWTF and LADWP for the delivery of the recycled water to the DGBP, WRD performs the groundwater monitoring and modeling aspects for compliance purposes at the request of BOS and LADWP. WRD measures and tracks groundwater levels and quality conditions, evaluates potential impact of recycled water on groundwater, and identifies potential problems at monitoring wells before recycled water arrives at any downgradient drinking water wells. In addition, WRD performed an
extensive tracer study from the start of recycled water injection in February 2006 through fall 2010 to
determine the extent of travel and movement of the recycled water through the aquifers. The tracer
study confirmed that after injection, adequate mixing and further blending of recycled water with
diluent water occurs in the ground and that groundwater samples collected were representative of the
recycled water blend.

In December 2018, WRD entered into a 30-year recycled water purchase agreement with LADWP to
deliver 7.5 mgd of advanced treated to the DGBP with the ability to expand up to 9.5 mgd to meet
other needs of the District. This agreement included the expansion of the existing infrastructure to
include a Second Barrier Connection and a Potable Water Backup System. WRD is working with
LADWP to get these improvements installed.

Recycled water use at the seawater intrusion barriers in Los Angeles County improves the reliability
of a supply in continuous demand. Traditionally, water purchases for the barriers have been viewed
as a replenishment function. Therefore, this program is funded 100% through the Replenishment
Fund.

023 – Replenishment Operations

WRD actively monitors the operation and maintenance practices at the LACDPW-owned and operated
spreading grounds and seawater barriers within the District. Optimizing replenishment opportunities
is fundamentally important to WRD, in part because imported and recycled water deliveries directly
affect the District’s annual budget. Consequently, the District seeks to ensure that the conservation of
stormwater is maximized, and that imported and recycled water replenishment is optimized.

Due to the high cost and susceptibility of imported water to drought and environmental concerns,
WRD is working on its Water Independence Now (WIN) initiative to eventually become independent
from imported water for groundwater recharge. By maximizing the use of recycled water and
stormwater, the amount of imported water needed can eventually be reduced or eliminated, thereby
providing the groundwater basins with full replenishment needs through locally-derived water.

WRD coordinates regular meetings with LACDPW, MWD, SDLAC, and other water interests to
discuss replenishment water availability, spreading grounds operations, barrier operations, scheduling
of replenishment deliveries, seawater barrier improvements, upcoming maintenance activities, and
facility outages or shutdowns. The District tracks groundwater levels in the Montebello Forebay
weekly to assess general basin conditions and determine the level of artificial replenishment needed.
WRD also monitors the amount of recycled water used at the spreading grounds and seawater barriers
to maximize use while complying with pertinent regulatory limits. While improvements undertaken
in recent years by LACDPW/WRD (e.g., expansion of Whittier Narrows Conservation Pool,
installation of rubber dams on San Gabriel River, Interconnection Pipeline, and recycled water
diversion structures) have considerably increased the stormwater portion of WRD’s supply portfolio,
the potential for further increasing the use of stormwater for groundwater augmentation remains
significant, and WRD will work to enhance storm water capture and replenishment.

The District plans to continue working with the LACDPW on several design projects for the Rio
Hondo and San Gabriel coastal spreading grounds with the goal of increasing the volume of storm
water and recycled water conserved. The District is continually looking for opportunities to work with
the LACDPW on improvement projects at the recharge facilities. Several potential projects have been
identified and are being further evaluated to determine if they should be pursued. This fiscal year the
District plans to continue working with the LACDPW to maximize the use of the turnout structures
and increase the volume of recycled water conserved as well as using of the Montebello Forebay
Spreading Grounds Operation Model to evaluate and prioritize future improvement projects. The District will also install new groundwater monitoring wells in the Montebello Forebay in order to maintain regulatory compliance with the new recycled water use requirements.

The District plans to continue partnering with the LACDPW to co-fund enhancements to the Interconnection Pipeline and associated pump station at the Montebello Forebay Spreading Grounds. As its name implies, the Replenishment Operations Program deals primarily with replenishment issues and therefore its costs are borne 100% through the Replenishment Fund.

025 – Hydrogeology Program

This program accounts for the projects and programs related to hydrogeologic investigations of the District and surrounding areas to ensure safe and reliable groundwater. Work performed under this program includes the preparation of the annual Engineering Survey and Report, which incorporates the calculation and determination of annual overdraft, accumulated overdraft, changes in storage, pumping amounts, and replenishment water availability into a document to help the District assess its replenishment needs and costs in the ensuing year. Extensive amounts of data are compiled and analyzed by staff to determine these values. Maps are created showing water levels in the basins and production patterns and amounts.

An ongoing effort at the District to better characterize the hydrogeologic conditions across the Central and West Coast Basins is called the "Hydrogeologic Conceptual Model". This long-term project being performed in cooperation with the USGS involves compiling and interpreting the extensive amounts of data generated during drilling and logging of the WRD/USGS monitoring wells and collected from historical information for production wells and oil wells within the District. The ultimate goal of this project is to develop a new geologic framework model based on sequence stratigraphy as a basis for the new conceptual model, and incorporate the information into WRD's database, GIS, and models to generate aquifer surfaces and cross-sections for comparison with historical interpretations of basin hydrogeology. The final geologic framework conceptual model will significantly improve the understanding of the aquifer depths, extents and thicknesses throughout the District and will assist staff, pumpers and stakeholders with planning for groundwater resource projects such as new well drilling, storage opportunities or modeling. The data will also be made available on WRD's website to be used as a reference source for hydrogeologic interpretations and to fill project-related data requests.

The geologic framework conceptual model is being incorporated into a new USGS numerical flow model. The updates to the numerical model are being performed based on the new information gleaned from the additional aquifer-specific WRD monitoring wells and the extensive groundwater monitoring that the District has performed since then to identify trends in groundwater levels. The new model will also include refining the original model’s resolution to 1/8-mile square cells versus the previous model’s 1/2 - mile cells, and creating at least 12 vertical layers to simulate groundwater flow in the various aquifers versus the previous model’s 4 layers. The model has also been converted to the newest version of Modflow known as Unstructured Grids (USG), which allows better simulation of groundwater flow in the complex geology of the Central and West Coast Basins. Time frames for model calculation will improve from annual measurements to quarterly. All of these upgrades will lead to a much improved groundwater modeling simulator for the District’s future management efforts. This model is a significant analytical tool utilized by WRD to determine basin benefits and impacts of changes proposed in the management of the Central Basin and West Coast Basin. It is anticipated that this model will be completed and published in 2020, with a subsequent conversion to the Modflow 6 platform.
Hydrogeologic analysis is also needed for projects associated with groundwater quality concerns and specific cleanup projects. Staff work may include investigative surveys, data research, and oversight of specific project studies. Such efforts are used to relate water quality concerns with potential impact to basin resources. An example of this type of staff work is the District’s Well Profiling Program. The District assists pumpers in evaluating drinking water supply well contamination. Services may include existing data collection and review and field tasks such as spinner logging and depth-discrete sampling. WRD’s evaluation helps pumpers to determine the best course of action; e.g., sealing off a particular screened interval of a well, wellhead treatment, or well destruction.

Salt / Nutrient Management Plans are a State requirement for all groundwater basins throughout California. The Plans are required as part of the Recycled Water Policy issued by the State Water Resources Control Board (SWRCB) and effective as of May 14, 2009. As stated in the Policy, its purpose is to “establish uniform requirements for recycled water use and to develop sustainable water supplies throughout the state”. The SWRCB therefore “supports and encourages every region...to develop a Salt / Nutrient Management Plan by 2014”. WRD along with other stakeholders completed the SNMP in 2014 and the Regional Water Quality Control Board adopted a Basin Plan Amendment to incorporate the SNMP in February 2015. Follow up work will be to monitor the salt and nutrient concentrations in the District over time, and compare results to the model predictions in the SNMP.

Modeling of groundwater flow and movement of injected recycled water at the Alamitos and Dominguez Gap seawater barriers are also included in this program. These efforts are required under permits for the recycled water injection.

In 2019, WRD replaced Central Basin MWD, City of Long Beach, and City of Compton, as the Lower Area Plaintiff under the Long Beach Judgment. In 1959, the Long Beach Board of Water Commissioners filed a lawsuit in Los Angeles County Superior Court against numerous parties in the San Gabriel Basin to determine the rights of the various parties to the water flow from the San Gabriel River. Central Basin MWD and the City of Compton joined the case in Long Beach's support shortly thereafter. The WRD was not yet formed when the case was filed and therefore not part of the original lawsuit. After several years of court proceedings and negotiations, judgment was entered in 1965, allocating the San Gabriel River's flow between the Upper Area and the Lower Area, with Whittier Narrows established as the dividing line between the Upper and Lower Areas. The Judgment, commonly referred to as the "Long Beach Judgment", entitles the Lower Area to receive a long-term average of 98,415 acre-feet per year of water from the San Gabriel River system, which can be adjusted from time to time based on hydrology.

Because WRD is the groundwater manager for the Lower Area and benefits from the water provided under the Judgment, the three plaintiffs in 2018 agreed that it was more appropriate for WRD to replace Central Basin MWD, Long Beach and Compton as the sole plaintiff to represent the Lower Area and take on the Lower Area’s responsibilities under the Judgment. WRD agreed and submitted the appropriate paperwork to the Court to make the switch official in 2019.

The Hydrogeology Program addresses both groundwater replenishment objectives and groundwater quality matters. The cost of the program is evenly split between the Replenishment and Clean Water Funds.

**033 – Albert Robles Center for Water Recycling and Environmental Learning (ARC)**

The WRD approached substantial completion for construction of its Albert Robles Center for Water Recycling and Environmental Learning (ARC), formerly known as the Groundwater Reliability
Projects and Programs

Improvement Project (GRIP) Advanced Water Treatment Facility (AWTF) and received final approval from the Los Angeles Regional Water Quality Control Board in January 2020 to discharge product water to the Montebello Forebay Spreading Grounds. ARC will offset the current use of imported water at the spreading grounds by providing up to 10,000 AFY of advanced treated recycled water for groundwater recharge. Due to the high quality of the AWTF effluent, an additional 11,000 AFY of tertiary recycled water can also be used, offsetting the need for imported water at the spreading grounds. The primary goals of ARC are to:

- Provide a sustainable and reliable supply for replenishing the Basins;
- Protect and improve groundwater quality;
- Minimize the environmental/energy footprint of any option or options selected;
- Comply with pertinent regulatory requirements employing an institutionally feasible approach;
- Minimize cost to agencies using groundwater; and
- Engage stakeholders in the decision-making process.

Using tertiary recycled water supplied by the SDLAC’s San Jose Creek Water Reclamation Plant, the ARC AWTF will produce 10,000 AFY of highly treated recycled water for groundwater recharge in the Montebello Forebay. Specifically, the advanced treated water will be diverted to both the San Gabriel and Rio Hondo spreading basins via two (2) turnout/diversion structures that were constructed by WRD in 2016. In addition, the water also will be injected using three (3) new supplemental recharge wells that have been installed at the ARC facility.

In 2018, the Title 22 Engineering Report was completed and the final permit to operate the new AWTF was adopted by the Los Angeles Regional Water Quality Control Board. The project is being funded from a combination of 2015 Bond Proceeds, California State Revolving Fund (SRF) Loan and Grant Proceeds, SRF, United States Bureau of Reclamation Title XVI Grant, and a River’s and Mountains Conservancy Grant, respectively.

This resource is used to improve replenishment capabilities and is thus funded 100% from the Replenishment Fund.

038 – Engineering Program

The Engineering Department provides technical planning, engineering, program management, environmental review, construction management, and hands-on support on capital improvement projects ranging from concept development through planning, engineering design, entitlement, project management, and construction inspections. The Engineering Department is also responsible for developing, updating, and managing the five-year capital improvement program (CIP) and its related projects. The Engineering Department prepares and/or oversees the preparation of plans, specifications and engineer’s estimates of probable construction costs, and/or prepares requests for interest/proposals/qualifications for professional engineering consultation and construction management services depending on the size and specific needs of the project.

The Engineering Department receives and reviews public bids and provides recommendations to various committees and the Board of Directors to award contracts. The Engineering Department also applies, secures, and administers/manages grants from various, Federal, State, and Local organizations to supplement funds allocated by WRD.

The Engineering Department provides and oversees project planning and environmental review/entitlement services for its CIP projects. The Engineering Department also monitors construction work in progress, reviews/approves progress pay estimates, and provides quality
assurance/quality control oversight services on approved projects to ensure compliance with Board goals and objectives.

The Engineering Program is intended to provide a mechanism for engineering staff to plan and further develop alternatives for potential capital improvement projects. Not all CIP project concepts develop into multi-year capital improvement program projects, and more often than not require many months of advanced planning and concept development before being capitalized. The Engineering Program deals primarily with replenishment issues and therefore its costs are borne by the Replenishment Fund until such time as alternative capital improvement program funding is identified.

039 – Supervisory Control and Data Acquisition (SCADA)

The Supervisory Control and Data Acquisition (SCADA) System project includes the development of a SCADA System Master Plan, which was completed in May 2016 in order to establish comprehensive standards for the District’s entire SCADA system infrastructure, a communications network between all of the District’s operating facilities, and a system-wide network security program. The SCADA System Master Plan is currently being implemented to create a master SCADA system that will meet the expanding needs of the District, as related to the implementation of ongoing and recently completed construction projects including the expansion of the Goldsworthy Desalter, the two turnout structures at the Montebello Forebay Spreading Grounds, and the new ARC AWTF (formerly named GRIP). Eventually, a fully integrated and standardized master SCADA system will be established and all of WRD’s operating facilities displayed at the Centralized Information System established at the District’s offices in Lakewood, California.

This project supports both replenishment activities and groundwater quality efforts. Accordingly, the cost for this program is equally split between the Replenishment and Clean Water Funds.

040 – Computerized Maintenance Management System (CMMS) and Asset Management

In recent years, District assets have expanded to greater than $200 million, and will continue to grow as new projects are implemented, including the newest treatment plant (ARC AWTF) and Field Operations & Storage Annex. An enterprise asset management plan was developed to facilitate more effective management across all District assets. A core component of this management plan is the Computerized Maintenance Management System (CMMS). This system consists of an electronic database of all District assets which is utilized to generate electronic work orders in response to maintenance-related issues, including reactionary and preventative maintenance-related work. The CMMS system tracks work performance to verify that maintenance is being performed as needed to ensure proper operations. The system was fully implemented at the Leo J. Vander Lans treatment plant in 2018, with rollout at the remaining treatment facilities and District headquarters to follow. An additional effort was launched in 2018 that will be utilized by both Operations and Finance Department. This program will work in conjunction with the CMMS to track the condition of District assets. Tracking the condition and associated risk of asset failure will assist when planning capital replacements and move the District toward achieving a high level of service. The enterprise asset management program is currently funded 100% from the Replenishment fund.
043 – Regional Brackish Water Reclamation Program Feasibility Study

Within the West Coast Basin a significant plume (approx. 600,000 acre feet) of high Total Dissolved Solids (TDS) has been trapped due to seawater intrusion and the implementation of the West Coast Seawater Intrusion Barrier. WRD began the Regional Brackish Water Reclamation Program (Program) through the Groundwater Basin’s Master Plan to evaluate ways to remediate the basin. WRD initiated a regional planning effort to evaluate the feasibility of remediating the high TDS plume, working with six additional stakeholders (Stakeholder Group) who pump and wholesale potable water within the basin.

A Feasibility Study was completed as the first step in determining how to remediate this plume to allow for future groundwater use within the basin. The Feasibility Study evaluated potential siting and technologies for brackish water reclamation facilities within the plume, while also striving for maximum remediation benefit and the most efficient life cycle cost. The Feasibility Study identified six final preferred project alternatives with capacities ranging from 12,500-20,000 acre-feet per year, each consisting of a centralized desalter facility with the option for remote wellhead treatment. As a follow-up to the Feasibility Study findings, WRD has initiated a Replenishment Study and development a Pilot Program that will both inform future project-specific development. Moving forward, WRD and the Stakeholder Group anticipate proceeding forward with partnership agreements determining project specific responsibility followed by CEQA and permitting for the recommended project.

Once completed, the benefits of this program will include recovering an impaired groundwater resource and putting to beneficial use the available space to store water. In addition, local users will decrease their reliance on imported water, further “drought proofing” local communities and the region. This project supports both replenishment activities and groundwater quality efforts. Accordingly, the cost for this program is equally split between the Replenishment and Clean Water Funds.

044 – Pipeline Projects

Pipelines to connect the District’s various assets are currently under the planning phase and may become a critical resource for the District in the future. Currently, WRD is evaluating pipelines to provide additional source water to the Leo J. Vander Lans Water Treatment Facility (LVL). Historically, LVL has encountered challenges with reliable source water for continuous plant operation. LVL currently receives source water from the Long Beach Water Reclamation Facility (LBWRF), owned and operated by the Sanitation Districts of Los Angeles County (LACSD), which has been undergoing a series of planned shutdowns for various facility improvement. WRD is evaluating options to diversify source water with an end goal of improved and continuous operation of LVL. One of these alternatives that is under evaluation is utilizing existing allocations from the Los Coyotes Water Reclamation Facility (LCWRF), owned and operated by LACSD, to provide an alternate source water supply to LVL via a new pipeline project.

The Los Coyotes pipeline project study is included in the five-year capital improvement program (CIP) and is currently funded under the 2018 bond issuance with debt payments attributed to the Replenishment fund.
045 – Joint Los Angeles Basin Replenishment and Extraction Master Plan

WRD and Los Angeles Department of Water and Power (LADWP) are working collaboratively to investigate potential future opportunities for sustainable extraction and replenishment of groundwater from the West and Central groundwater basins. LADWP has access to the Hyperion Water Reclamation Plant (WRP) as a potential source of replenishment water (supply equaling ~200 million gallons per day) and shares WRD’s goal of increased local sustainability through utilization of all available recycled water in the Los Angeles Basin. The two agencies have partnered on a Master Plan effort to identify all feasible assets within the greater Los Angeles area within the following categories:

- Sustainable recycled water supplies available;
- Locations, infrastructure and treatment to get new recycled water into the ground; and
- Locations, infrastructure and treatment to get new water out of the ground.

Previously in 2019, the two agencies formalized the Master Plan effort with a cost-sharing Memorandum of Agreement and the procurement of professional services to begin evaluation of available assets, potential project opportunities, and funding and outreach strategies. The plan is currently in-development and work to date has included an inventory of all potential existing assets within the basins and high-level groundwater modeling to assess overall basin capacities. Next steps for the plan include detailed and predictive groundwater modeling and identification of alternative routes for recycled water conveyance to potentially feasible recharge locations.

This project is an initiative to improve replenishment flexibility and therefore its costs are being borne by the Replenishment Fund until final projects are determined and alternative CIP funding is identified.

046 – Well Construction and Rehabilitation Program

The District developed a new Well Construction and Rehabilitation Loan Program (Program) to assist groundwater producers within its service area to increase their groundwater pumping capabilities. This Program will improve the producers' ability to utilize their full groundwater extraction rights and reduce their need for imported water. The Program, modeled after the Safe Drinking Water Program, will provide 10-year, zero percent interest loans, up-front capital, and expert assistance with the design, construction, and implementation of new production wells and well rehabilitation projects. There is a significant economic benefit to Program recipients; specifically, when compared to the cost of imported water, each recipient has the potential to save on average $536 per acre-foot of water at today’s prices.

In order to be eligible, the applicant must be an entity within the District’s service area, must be a Party to the Central Basin Third Amended Judgment or the West Coast Basin Judgment, and must demonstrate that the new well construction or well rehabilitation project will increase their annual extraction beyond their most recent five-year total extraction average by at least 10%. In its initial year, the District approved two projects each receiving $1.5 million loans. One project is expected to yield 2,300 acre-feet per year (afy) and the other 2,022 afy. The overall goal of the Program is to support the District’s initiative of reaching full adjudicated pumping rights by 2040 and to provide assistance to disadvantaged communities.
TABLES
### Table 1
GROUNDWATER CONDITIONS AND REPLENISHMENT SUMMARY

<table>
<thead>
<tr>
<th>WATER YEAR</th>
<th>Oct 1 - Sep 30</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2018/19</td>
</tr>
<tr>
<td>Total Groundwater Production</td>
<td>208,114 AF</td>
</tr>
<tr>
<td>Annual Overdraft</td>
<td>(16,724) AF</td>
</tr>
<tr>
<td>Accumulated Overdraft</td>
<td>(766,465) AF</td>
</tr>
</tbody>
</table>

#### Quantity Required for Artificial Replenishment for the Ensuing Year

**Spreading**

- Imported for Spreading in Montebello Forebay:  - AF
- Recycled for Spreading in Montebello Forebay: 60,000 AF
- Whittier Narrows Operable Unit Spreading Water (Local Water): 1,400 AF
- Subtotal Spreading: 61,400 AF

**Injection**

- Alamitos Seawater Barrier Water (WRD side only): 5,000 AF
- Dominguez Gap Seawater Barrier Water: 7,800 AF
- West Coast Seawater Barrier Water: 17,000 AF
- Subtotal Injection: 29,800 AF

**In-lieu**

- Subtotal In-lieu:  -

**Total**: 91,200 AF

(a) Estimated values
(b) In-Lieu Program currently not established for ensuing year
Table 2
QUANTITY AND COST OF REPLENISHMENT WATER FOR THE ENSUING YEAR

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity (AF)</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spreading - Tier 1 Untreated Imported</td>
<td>0</td>
<td>$366,360</td>
</tr>
<tr>
<td>Spreading - Recycled (tertiary spreading)</td>
<td>50,000</td>
<td>$3,650,000</td>
</tr>
<tr>
<td>Spreading - Recycled (GRIP/ARC AWTF)*</td>
<td>10,000</td>
<td>$-</td>
</tr>
<tr>
<td>Spreading - Whittier Narrows Operable Unit</td>
<td>1,400</td>
<td>$1,246,000</td>
</tr>
<tr>
<td>Alamitos Barrier Water*</td>
<td>5,000</td>
<td>$1,299,352</td>
</tr>
<tr>
<td>Dominguez Barrier Water</td>
<td>7,800</td>
<td>$9,388,671.68</td>
</tr>
<tr>
<td>West Coast Barrier Water</td>
<td>17,000</td>
<td>$18,182,307.52</td>
</tr>
<tr>
<td>In-Lieu MWD Member</td>
<td>0</td>
<td>$-</td>
</tr>
<tr>
<td>In-Lieu WBMWD Customer</td>
<td>0</td>
<td>$-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>91,200</strong></td>
<td><strong>$34,132,691</strong></td>
</tr>
</tbody>
</table>

Detailed Breakout of Water Costs and Surcharges to WRD

<table>
<thead>
<tr>
<th>Water</th>
<th>Quantity (AF)</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spreading</td>
<td>61,400</td>
<td>$4,896,000</td>
</tr>
<tr>
<td>Alamitos Barrier Water*</td>
<td>5,000</td>
<td>$1,118,000</td>
</tr>
<tr>
<td>Dominguez Barrier Water</td>
<td>7,800</td>
<td>$8,541,800</td>
</tr>
<tr>
<td>West Coast Barrier Water</td>
<td>17,000</td>
<td>$17,920,000</td>
</tr>
<tr>
<td>In-Lieu</td>
<td>0</td>
<td>$-</td>
</tr>
<tr>
<td><strong>Water Subtotal</strong></td>
<td><strong>91,200</strong></td>
<td><strong>$32,475,800</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surcharges</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CBMWD Agency Fees</td>
<td></td>
<td>$366,360</td>
</tr>
<tr>
<td>LBWD Agency Fees</td>
<td></td>
<td>$181,352</td>
</tr>
<tr>
<td>WBMWD Agency Fees</td>
<td></td>
<td>$1,109,179</td>
</tr>
<tr>
<td><strong>Agency Fees Subtotal</strong></td>
<td></td>
<td>$1,656,891</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>91,200</strong></td>
<td><strong>$34,132,691</strong></td>
</tr>
</tbody>
</table>

* Cost of source water for ARC and Vander Lans is covered under that project's separate operations budget
<table>
<thead>
<tr>
<th>PROJECT / PROGRAM</th>
<th>DISTRICT FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Replenishment</td>
</tr>
<tr>
<td>001 Leo J. Vander Lans Water Treatment Facility Project</td>
<td>100%</td>
</tr>
<tr>
<td>002 Robert W. Goldsworthy Desalter Project</td>
<td></td>
</tr>
<tr>
<td>003 Cal Trans Highway 105 Dewatering</td>
<td>100%</td>
</tr>
<tr>
<td>004 Recycled Water Program</td>
<td>100%</td>
</tr>
<tr>
<td>005 Groundwater Resources Planning Program</td>
<td>100%</td>
</tr>
<tr>
<td>006 Groundwater Quality Program</td>
<td></td>
</tr>
<tr>
<td>010 Geographic Information System (GIS)</td>
<td>50%</td>
</tr>
<tr>
<td>011 Regional Groundwater Monitoring Program</td>
<td>50%</td>
</tr>
<tr>
<td>012 Safe Drinking Water Program</td>
<td></td>
</tr>
<tr>
<td>018 Dominguez Gap Barrier Recycled Water Injection</td>
<td>100%</td>
</tr>
<tr>
<td>023 Replenishment Operations</td>
<td>100%</td>
</tr>
<tr>
<td>025 Hydrogeology Program</td>
<td>50%</td>
</tr>
<tr>
<td>033 Albert Robles Center for Water Recycling and Environmental Learning (ARC)</td>
<td>100%</td>
</tr>
<tr>
<td>(formerly named GRIP)</td>
<td></td>
</tr>
<tr>
<td>038 Engineering Program</td>
<td>50%</td>
</tr>
<tr>
<td>039 Supervisory Control And Data Acquisition (SCADA)</td>
<td>50%</td>
</tr>
<tr>
<td>040 Computerized Maintenance Management System (CMMS) and Asset Management</td>
<td>50%</td>
</tr>
<tr>
<td>043 Regional Brackish Water Reclamation Program Feasibility Study</td>
<td>50%</td>
</tr>
<tr>
<td>044 Pipeline Projects</td>
<td>100%</td>
</tr>
<tr>
<td>045 Joint Los Angeles Basin Replenishment and Extraction Master Plan</td>
<td>100%</td>
</tr>
<tr>
<td>046 Well Construction and Rehabilitation Loan Program</td>
<td>100%</td>
</tr>
</tbody>
</table>
### Table 4

**30-YEAR AVERAGE GROUNDWATER BALANCE**
**FROM USGS AND WRD REGIONAL MODEL**

<table>
<thead>
<tr>
<th>INFLOWS</th>
<th>Average AFY</th>
<th>OUTFLOWS</th>
<th>Average AFY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Natural Inflows:</strong></td>
<td></td>
<td><strong>Artificial Outflows:</strong></td>
<td></td>
</tr>
<tr>
<td>Local water conserved at spreading grounds</td>
<td>48,825</td>
<td>Pumping</td>
<td>250,590</td>
</tr>
<tr>
<td>(1) includes stormwater and base flow water captured and recharged at the spreading grounds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interior and mountain front recharge</td>
<td>47,900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net underflow from adjacent basins (2)</td>
<td>48,480</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal Natural Inflows:</td>
<td>145,205</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Artificial Inflows:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imported and recycled spreading (3)</td>
<td>74,075</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) includes all imported purchased, all recycled purchased, and Pomona Plant (free) recycled water.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barrier injection water (4)</td>
<td>34,600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) includes all injected water at the three barrier systems, including all of Alamitos Barrier. Model value may differ slightly from actual purchases.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtotal Artificial Inflows:</td>
<td>108,675</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Inflows:</strong></td>
<td>253,880</td>
<td><strong>Total Outflows:</strong></td>
<td>250,590</td>
</tr>
</tbody>
</table>

Average Annual Groundwater Deficiency (afy) = Natural Inflows - Total Outflows = (105,385)

(1) includes stormwater and base flow water captured and recharged at the spreading grounds

(2) does not include average of 7,100 afy of seawater intrusion, which can not be considered as replenishment per the water code

(3) includes all imported purchased, all recycled purchased, and Pomona Plant (free) recycled water.

(4) includes all injected water at the three barrier systems, including all of Alamitos Barrier. Model value may differ slightly from actual purchases.

Description of the model can be found in USGS, 2003, Geohydrology, Geochemistry, and Ground-Water Simulation - Optimization of the Central and West Coast Basins, Los Angeles County, California; Water Resources Investigation Report 03-4065 by Reichard, E.G., Land, M., Crawford, S.M., Johnson, T., Everett, R.R., Kulshan, T.V., Ponti, D.J., Halford, K.J., Johnson, T.A., Paybins, K.S., and Nishikawa, T.
### Table 5
**ANNUAL RAINFALL IN THE WRD SERVICE AREA**

<table>
<thead>
<tr>
<th>Water Year</th>
<th>Inches</th>
<th>Water Year</th>
<th>Inches</th>
<th>Water Year</th>
<th>Inches</th>
<th>Water Year</th>
<th>Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>1932-33</td>
<td>10.02</td>
<td>1957-58</td>
<td>24.65</td>
<td>1982-83</td>
<td>30.3</td>
<td>2007-08</td>
<td>17.11</td>
</tr>
<tr>
<td>1934-35</td>
<td>21.94</td>
<td>1959-60</td>
<td>9.84</td>
<td>1984-85</td>
<td>12.44</td>
<td>2009-10</td>
<td>13.02</td>
</tr>
<tr>
<td>1940-41</td>
<td>34.21</td>
<td>1965-66</td>
<td>17.02</td>
<td>1990-91</td>
<td>12.22</td>
<td>2015-16</td>
<td>7.46</td>
</tr>
<tr>
<td>1949-50</td>
<td>10.14</td>
<td>1974-75</td>
<td>15.01</td>
<td>1999-00</td>
<td>9.21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Period of Record** 94 years

**Running 94 Year Average** 14.0 inches

**Minimum** 1.95 inches

**Maximum** 34.21 inches
Table 6
ANNUAL OVERDRAFT CALCULATION
for Current and Ensuing Water Years (in acre-feet)*

<table>
<thead>
<tr>
<th>Item</th>
<th>WATER YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2019/20</td>
</tr>
<tr>
<td>Average Annual Groundwater Deficiency (from Table 4)</td>
<td>(105,385)</td>
</tr>
<tr>
<td>Adjustments/Variiances to AAGD</td>
<td></td>
</tr>
<tr>
<td>(1) Local Water at Spreading Grounds(^{(a)})</td>
<td>0 (^{(d)})</td>
</tr>
<tr>
<td>(2) Precipitation, mountain front recharge, applied water(^{(a)})</td>
<td>0 (^{(d)})</td>
</tr>
<tr>
<td>(3) Subsurface inflow(^{(b)})</td>
<td>0 (^{(d)})</td>
</tr>
<tr>
<td>(4) Groundwater Extractions(^{(c)})</td>
<td>(37,600) (^{(d)})</td>
</tr>
<tr>
<td>ANNUAL OVERDRAFT [AAGD+(1)+(2)+(3)-(4)]</td>
<td>(67,800)</td>
</tr>
</tbody>
</table>

* Previous Year Annual Overdraft is derived in Chapter III

(a) Difference between actual and model average. Positive value indicates increased recharge.
(b) Difference between annual model value and average model value. Positive value indicates increased inflow.
   Does not include seawater intrusion inflow
(c) Difference between actual and model average. Positive value indicates increased pumpage.
(d) Estimated Values. A value of zero indicates average year was assumed.
Table 7
ACCUMULATED OVERDRAFT CALCULATION (in acre-feet)

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulated Overdraft at End of Previous Water Year</td>
<td>(766,465)</td>
</tr>
<tr>
<td>Estimated Annual Overdraft for Current Year</td>
<td>(67,800)</td>
</tr>
<tr>
<td><strong>Subtotal without artificial replenishment</strong></td>
<td>(834,265)</td>
</tr>
<tr>
<td>Planned Artificial Replenishment for Current Year</td>
<td></td>
</tr>
<tr>
<td>Imported and WNOU* Water Purchased for Spreading</td>
<td>1,400</td>
</tr>
<tr>
<td>Recycled Water Purchased for Spreading</td>
<td>57,500</td>
</tr>
<tr>
<td>Imported and Recycled Water Purchased for Barrier Wells</td>
<td>30,300</td>
</tr>
<tr>
<td><strong>WRD Replenishment Subtotal</strong></td>
<td>89,200</td>
</tr>
<tr>
<td><strong>PROJECTED ACCUMULATED OVERDRAFT FOR CURRENT WATER YEAR</strong></td>
<td>(745,100)</td>
</tr>
</tbody>
</table>

* WNOU = Whittier Narrows Operable Unit Water Purchased for Spreading
### Table 8

**CHANGES IN GROUNDWATER STORAGE**

<table>
<thead>
<tr>
<th>WATER YEAR</th>
<th>ANNUAL CHANGE IN STORAGE (AF)</th>
<th>CUMULATIVE CHANGE IN STORAGE (AF)</th>
<th>WATER YEAR</th>
<th>ANNUAL CHANGE IN STORAGE (AF)</th>
<th>CUMULATIVE CHANGE IN STORAGE (AF)</th>
<th>WATER YEAR</th>
<th>ANNUAL CHANGE IN STORAGE (AF)</th>
<th>CUMULATIVE CHANGE IN STORAGE (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961-62</td>
<td>88,500</td>
<td>88,500</td>
<td>1985-86</td>
<td>10,600</td>
<td>238,200</td>
<td>2009-10</td>
<td>27,000</td>
<td>141,500</td>
</tr>
<tr>
<td>1962-63</td>
<td>(11,100)</td>
<td>77,400</td>
<td>1986-87</td>
<td>4,000</td>
<td>242,200</td>
<td>2010-11</td>
<td>110,000</td>
<td>251,500</td>
</tr>
<tr>
<td>1963-64</td>
<td>10,300</td>
<td>87,700</td>
<td>1987-88</td>
<td>(11,700)</td>
<td>230,500</td>
<td>2011-12</td>
<td>(73,200)</td>
<td>178,300</td>
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<td>1964-65</td>
<td>35,200</td>
<td>122,900</td>
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<td>2012-13</td>
<td>(68,000)</td>
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<td>1965-66</td>
<td>21,100</td>
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<td>2013-14</td>
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<td>1967-68</td>
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<td>176,800</td>
<td>1991-92</td>
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<td>2015-16</td>
<td>(500)</td>
<td>35,000</td>
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<td>1968-69</td>
<td>(7,500)</td>
<td>169,300</td>
<td>1992-93</td>
<td>45,800</td>
<td>330,300</td>
<td>2016-17</td>
<td>84,400</td>
<td>119,400</td>
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<tr>
<td>1969-70</td>
<td>(800)</td>
<td>168,500</td>
<td>1993-94</td>
<td>(28,500)</td>
<td>301,800</td>
<td>2017-18</td>
<td>(80,243)</td>
<td>39,157</td>
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<td>1971-72</td>
<td>(50,600)</td>
<td>114,500</td>
<td>1995-96</td>
<td>12,500</td>
<td>333,700</td>
<td>2019-20</td>
<td>-</td>
<td>-</td>
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<tr>
<td>1972-73</td>
<td>34,800</td>
<td>149,300</td>
<td>1996-97</td>
<td>15,700</td>
<td>349,400</td>
<td>2020-21</td>
<td>-</td>
<td>-</td>
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<td>1973-74</td>
<td>(2,400)</td>
<td>146,900</td>
<td>1997-98</td>
<td>16,700</td>
<td>366,100</td>
<td>2021-22</td>
<td>-</td>
<td>-</td>
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<td>1974-75</td>
<td>(14,100)</td>
<td>132,800</td>
<td>1998-99</td>
<td>(80,200)</td>
<td>285,900</td>
<td>2022-23</td>
<td>-</td>
<td>-</td>
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<tr>
<td>1975-76</td>
<td>(40,200)</td>
<td>92,600</td>
<td>1999-00</td>
<td>(30,000)</td>
<td>255,900</td>
<td>2023-24</td>
<td>-</td>
<td>-</td>
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<tr>
<td>1976-77</td>
<td>(32,900)</td>
<td>59,700</td>
<td>2000-01</td>
<td>(400)</td>
<td>255,500</td>
<td>2024-25</td>
<td>-</td>
<td>-</td>
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<tr>
<td>1977-78</td>
<td>88,600</td>
<td>148,300</td>
<td>2001-02</td>
<td>(36,500)</td>
<td>219,000</td>
<td>2025-26</td>
<td>-</td>
<td>-</td>
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<td>1978-79</td>
<td>30,100</td>
<td>178,400</td>
<td>2002-03</td>
<td>(10,500)</td>
<td>208,500</td>
<td>2026-27</td>
<td>-</td>
<td>-</td>
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<tr>
<td>1979-80</td>
<td>(1,100)</td>
<td>177,300</td>
<td>2003-04</td>
<td>(43,000)</td>
<td>165,500</td>
<td>2027-28</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1980-81</td>
<td>17,100</td>
<td>194,400</td>
<td>2004-05</td>
<td>89,100</td>
<td>254,600</td>
<td>2028-29</td>
<td>-</td>
<td>-</td>
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<tr>
<td>1981-82</td>
<td>18,400</td>
<td>212,800</td>
<td>2005-06</td>
<td>12,000</td>
<td>266,600</td>
<td>2029-30</td>
<td>-</td>
<td>-</td>
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<tr>
<td>1982-83</td>
<td>46,800</td>
<td>259,600</td>
<td>2006-07</td>
<td>(59,000)</td>
<td>207,600</td>
<td>2030-31</td>
<td>-</td>
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<td>1983-84</td>
<td>(22,400)</td>
<td>237,200</td>
<td>2007-08</td>
<td>(41,600)</td>
<td>166,000</td>
<td>2031-32</td>
<td>-</td>
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<td>1984-85</td>
<td>(9,600)</td>
<td>227,600</td>
<td>2008-09</td>
<td>(51,500)</td>
<td>114,500</td>
<td>2032-33</td>
<td>-</td>
<td>-</td>
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</tbody>
</table>

**Note:** Numbers in parentheses represent negative values.
### Table 9
 QUANTITY OF WATER REQUIRED FOR ARTIFICIAL REPLENISHMENT

<table>
<thead>
<tr>
<th>WATER TYPE</th>
<th>AMOUNT (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Term Average for Imported Spreading (updated, see below)*</td>
<td>-</td>
</tr>
<tr>
<td>Tertiary Recycled Water for Spreading (WRD Purchases)</td>
<td>50,000</td>
</tr>
<tr>
<td>Recycled Water for ARC**</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>Total Spreading</strong></td>
<td>60,000</td>
</tr>
<tr>
<td>West Coast Barrier Water</td>
<td>17,000</td>
</tr>
<tr>
<td>Dominguez Gap Barrier Water</td>
<td>7,800</td>
</tr>
<tr>
<td>Alamitos Barrier Water - WRD portion only</td>
<td>5,000</td>
</tr>
<tr>
<td><strong>Total Barriers</strong></td>
<td>29,800</td>
</tr>
<tr>
<td>In-Lieu Central Basin</td>
<td>0</td>
</tr>
<tr>
<td>In-Lieu West Coast Basin</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total In-Lieu</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Water Purchase Estimate for Ensuing Year</strong></td>
<td>89,800</td>
</tr>
<tr>
<td>Other Actions (Whittier Narrows Operable Unit Water for Spreading)</td>
<td>1,400</td>
</tr>
<tr>
<td><strong>Total Water Purchase Estimate for Ensuing Year</strong></td>
<td>91,200</td>
</tr>
</tbody>
</table>

* - Derivation of new Long Term Imported Spreading Requirement is possible due to new projects that will capture more storm/recycled water for conservation, and thus less imported needs;

** ARC = Albert Robles Center for Water Recycling and Environmental Learning (formerly GRIP)

1. Long Term Average of 27,600 af defined in 2003 ESR
2. Minus 3,000 afy for increasing Whittier Narrows Conservation Pool
3. Minus 3,600 afy for two new rubber dams on San Gabriel River
4. Minus 5,000 afy of imported due to 5,000 afy increase in recycled based on new averaging period effective 2013
5. Minus 10,000 afy water for ARC
6. Minus 6,000 af of more tertiary water
7. Equals new Long Term Average of 0 afy imported spreading
FIGURES
Figure A

Annual Rainfall in WRD Service Area

94 Year Running Average = 14.0"
FLUCTUATION OF WATER LEVELS IN THE
LOS ANGELES FOREBAY

Figure B
FLUCTUATION OF WATER LEVELS IN THE MONTEBELLO FOREBAY

Figure C
FLUCTUATION OF WATER LEVELS IN THE CENTRAL BASIN PRESSURE AREA

Figure D
FLUCTUATION OF WATER LEVELS IN THE WEST COAST BASIN

Figure E
Plate 1
Groundwater Production
Water Year
2018 - 2019

Legend
Groundwater Production
(acre-feet)
- < 500 Acre Ft/Yr
- 500 - 2,000 Acre Ft/Yr
- > 2,000 Acre Ft/Yr

Data source: WRD Production Database, WRD GIS

Central Basin Sub-Area Boundary
Newport Inglewood Uplift
Seawater Intrusion Barrier
WRD Service Area Boundary
Plate 2
Groundwater Elevation Contours
Fall 2019
(Upper San Pedro Formation Aquifers)

Legend

- WRD Nested Monitoring Well with Groundwater Elevation (feet mean sea level)
- Other Monitoring Well with Groundwater Elevation (feet mean sea level)

2019 Groundwater Elevation Contours (feet mean sea level)
Contour Interval = 10 ft

- Below Sea Level
- Above Sea Levele

Data source: WRD Regional Groundwater Monitoring Program

Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Plate 1 for Detail)
Plate 3

Changes in Groundwater Elevations
Fall 2018 to Fall 2019

Legend
WRD Nested Monitoring Well with the difference (in feet) between groundwater elevations measured in Fall 2019 & Fall 2018
Other Well used for Analysis with the difference (in feet) between groundwater elevations measured in Fall 2019 & Fall 2018

Data source: WRD Regional Groundwater Monitoring Program

Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Plate 1 for Detail)
MEMORANDUM
ITEM NO. 14

DATE: MARCH 5, 2020

TO: BOARD OF DIRECTORS

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: RECEIVE AND FILE THE REGIONAL GROUNDWATER MONITORING REPORT FOR WATER YEAR 2018-19

SUMMARY

WRD staff has completed the Regional Groundwater Monitoring Report for water year 2018-19 (October 1, 2018 through September 30, 2019). This year’s report presents the most comprehensive information to date on WRD’s Regional Groundwater Monitoring Program (RGWMP) and includes information on the groundwater levels, groundwater quality and replenishment water quality for the Central Basin and West Coast Basin (CBWCB). The purpose of the RGWMP is to perform the basic District function of tracking groundwater levels and groundwater quality to determine the overall health of the basins, and to assist in the development of concepts to optimize the use of our local groundwater resource. The major components of the RGWMP include the following:

- Establish and maintain a network of 335 specialized monitoring wells throughout the District.
- Collect water levels from these wells at regular (daily) intervals using automated data loggers.
- Collect water quality samples from these wells once or twice per year using the Districts’ hydrogeology field staff and sampling vehicles.
- Collect water quality data for production wells and the different types of replenishment waters recharging the CBWCB.
- Perform in-depth analysis of the water level and water quality data to establish first-hand knowledge of current basin conditions. Construct tables, maps and charts to present the results of the data and identify trends.
- Provide data required for the CBWCB Salt and Nutrient Management Plan.
- Incorporate the information into WRD’s Geographic Information System (GIS) for efficient database storage and retrieval for use by staff, stakeholders, and the public.
- Prepare Annual Reports on the RGWMP findings which are made available on our web page and mailed to basin pumpers and other stakeholders.

Staff will provide an overview of the results of the program for water year 2018-19 at the Committee meeting.
FISCAL IMPACT
None

WATER RESOURCES COMMITTEE RECOMMENDATION
The Water Resources Committee recommends the Board of Directors receive and file the 2018-19 Regional Groundwater Monitoring Report.
REGIONAL GROUNDWATER MONITORING REPORT
WATER YEAR 2018-2019
Central and West Coast Basins
Los Angeles County, California

March 2020
Water Replenishment District

REGIONAL GROUNDWATER MONITORING REPORT
CENTRAL BASIN AND WEST COAST BASIN
LOS ANGELES COUNTY, CALIFORNIA
WATER YEAR 2018-2019

MARCH 2020

WRD BOARD OF DIRECTORS

Management:

Robb Whitaker, PE  General Manager
Rob Beste, PE      Assistant General Manager
Ted Johnson, PG, CHG Assistant General Manager
Brian Partington, PG, CHG Manager of Hydrogeology

Prepared by:

Mat Kelliher, PG, CHG  Hydrogeologist
Everett Ferguson, Jr., PG, CHG Senior Hydrogeologist
Benny Chong  Associate Hydrogeologist
Peter Piestrzeniewicz  Associate Hydrogeologist
Moises Santillan  Assistant Hydrogeologist
Brittany Liu  Water Quality & Regulatory Compliance Specialist
Josi Jenneskens  GIS Specialist
Greg Osti  Online Technology & Data Specialist
Cover photo – The American Flag flies high above the drill rig installing WRD's most recent addition to its nested monitoring well network, Los Angeles #6, with the City skyline framing the view to the north.
Executive Summary

The Water Replenishment District (WRD or the District) was formed in 1959 to manage the groundwater replenishment and groundwater quality activities for four million people in 43 cities that overlie the Central Basin and West Coast Basin (CBWCB) in southern Los Angeles County. WRD’s service area encompasses most of the Central Basin and nearly all of the West Coast Basin. These two basins currently supply over 40 percent of the water used by the population in the region. Our mission is to protect and preserve high-quality groundwater in the basins through innovative, cost-effective, and environmentally sensitive management practices for the benefit of residents and businesses within the WRD service area.

This year marks the 60th year that WRD has been monitoring the CBWCB, and this year’s annual report presents the most comprehensive information to date utilizing WRD’s network of aquifer-specific monitoring wells and in-depth water quality analysis. To that end, WRD has a dedicated Board and staff that engage in year-round activities to closely monitor groundwater conditions. The Regional Groundwater Monitoring Program (RGWMP) currently consists of a network of 335 monitoring wells at 60 locations throughout the District. WRD performs extensive collection, analysis, and reporting of groundwater data to ensure proper resource management. The publication of this Regional Groundwater Monitoring Report (RGWMR) is one result of those efforts. It presents information on groundwater levels and groundwater quality over the past Water Year (WY), which runs from October 1 through September 30. This current report covers WY 2018-19. Detailed information is presented in the body of the report with a summary below:

**Groundwater Levels**

Across the WRD service area water levels have generally increased over the WY. On average this year water levels rose three feet across the District. In the Central Basin, water levels increased nearly everywhere which is mostly attributed to above average precipitation in WY 2018-19. Water levels in the West Coast Basin have generally
increased; however, there are local areas where water levels are lower than they were in WY 2017-18. Overall groundwater storage gain across the District was 62,200 Acre-Feet (AF); 50,800 AF of that gain in storage occurred in the unconfined Montebello Forebay. Groundwater storage gain in the Los Angeles Forebay was 8,400 AF; the Whittier Area experienced a gain of 2,300 AF; and 700 AF of storage was gained in the Central Basin Pressure Area (CBPA). Storage in the West Coast Basin was unchanged compared to WY 2017-18.

**Groundwater Quality**

In WY 2018-19, WRD collected over 600 groundwater samples from its monitoring well network and analyzed them for more than 100 water quality constituents to produce over 60,000 individual data points to help track the water quality in the CBWCB. Included in the data for the first time this year are the analytical results for Los Angeles #6, WRD’s most recently installed nested monitoring well. Analytical results from Los Angeles #6 are included in the Tables, Figures, and discussion in the body of this report.

Analysis for this report uses water quality maps and trend graphs to focus on 13 key water quality constituents to represent overall groundwater quality in the basins, including total dissolved solids (TDS), iron, manganese, chloride, nitrate, trichloroethylene (TCE), tetrachloroethylene (PCE), arsenic, perchlorate, hexavalent chromium, and 1,4-Dioxane. Also included this year is an analysis for the presence of 32 distinct Perfluorooalkyl and Polyfluoroalkyl Substance (PFAS) constituents in groundwater in the vicinity of the spreading grounds, including Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA). Overall, groundwater quality in the District remains very good, with only some areas facing poor water quality from natural or anthropogenic sources that WRD staff continue to monitor closely to determine increasing or decreasing trends.

This report also complies with the state’s Recycled Water Policy to present information for the adopted Salt and Nutrient Management Plan (SNMP) for the CBWCB. Through the RGWMP, 13 key WRD nested monitoring wells track salt and nutrient water quality trends throughout the District and in the most critical areas of the basins, including areas near
groundwater recharge projects that utilize recycled water (i.e. the seawater intrusion barriers and the Montebello Forebay Spreading Grounds). Overall, the data show that salt and nutrient concentrations in groundwater are generally stable, and although a few individual well zones do show increasing trends, a comparable number show decreasing trends.

**Future Activities**

WRD remains committed to its statutory charge to protect and preserve groundwater resources in its service area. To that end, WRD plans to add to its groundwater monitoring well network in the CBWCB to fill data gaps and enhance the tracking of replenishment water by installing three new wells within and downgradient of the spreading grounds.

WRD will continue to use the data generated by the RGWMP along with WRD’s Geographic Information System (GIS) capabilities to address current and potential upcoming issues related to water quality and groundwater replenishment in its service area. WRD staff will be working on refining the hydrogeologic conceptual model of the CBWCB using data from the RGWMP along with an update to the groundwater model, developed by the United States Geological Survey (USGS), and expected to be published in 2020, to improve the framework for understanding the groundwater system and for use as a planning tool.

Further information is available on the WRD web site at [http://www.wrd.org](http://www.wrd.org), or by calling WRD at (562) 921-5521. WRD welcomes any comments or suggestions to this RGWMR.
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GLOSSARY OF ACRONYMS

AF       Acre-Feet
ARC      Albert Robles Center for Water Recycling and Environmental Learning
AWTF    Advanced Water Treatment Facility

BGS     Below Ground Surface
CAGEM   California Statewide Groundwater Elevation Monitoring
CEC     Chemical of Emerging Concern
CSDLAC  County Sanitation Districts of Los Angeles County
CBWCB   Central Basin and West Coast Basin
CBPA    Central Basin Pressure Area

DDW     State Water Resources Control Board, Division of Drinking Water
DME     Designated Monitoring Entity
DWR     California Department of Water Resources

ELWRF   Edward C. Little Water Recycling Facility
ESR     Engineering Survey and Report

GIS     Geographic Information System
GPS     Global Positioning System
GRIP    Groundwater Reliability Improvement Program

LACDPW  Los Angeles County Department of Public Works
LAX     Los Angeles International Airport

MCL     Maximum Contaminant Level
mg/L    Milligram per Liter
µg/L    Microgram per Liter
MSL     Mean Sea Level
MWD     Metropolitan Water District of Southern California

NAVD88  North American Vertical Datum of 1988
NDMA    N-Nitrosodimethylamine
ng/L    Nanograms per Liter
NL      Notification Level

OEHHA   Office of Environmental Health Hazard Assessment
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>PCE</td>
<td>Tetrachloroethylene</td>
</tr>
<tr>
<td>PDF</td>
<td>Portable Document Format</td>
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<tr>
<td>PFAS</td>
<td>Perfluoroalkyl and Polyfluoroalkyl Substances</td>
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<tr>
<td>PFOA</td>
<td>Perfluorooctanoic Acid</td>
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<tr>
<td>PFOS</td>
<td>Perfluorooctane Sulfonate</td>
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<td>PHG</td>
<td>Public Health Goal</td>
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<td>RGWMP</td>
<td>Regional Groundwater Monitoring Program</td>
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<tr>
<td>RGWMR</td>
<td>Regional Groundwater Monitoring Report</td>
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<tr>
<td>RL</td>
<td>Response Level</td>
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<td>SMCL</td>
<td>Secondary Maximum Contaminant Level</td>
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<td>SNMP</td>
<td>Salt and Nutrient Management Plan</td>
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<td>SWRCB</td>
<td>State Water Resources Control Board</td>
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<td>TBA</td>
<td>Tertiary Butyl Alcohol</td>
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<tr>
<td>TCE</td>
<td>Trichloroethylene</td>
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<tr>
<td>TDS</td>
<td>Total Dissolved Solids</td>
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<td>TIWRP</td>
<td>Terminal Island Water Reclamation Plant</td>
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<td>UCMR</td>
<td>Unregulated Contaminant Monitoring Rule</td>
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<td>USEPA</td>
<td>United States Environmental Protection Agency</td>
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<td>United States Geological Survey</td>
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<td>West Basin Municipal Water District</td>
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<td>WQO</td>
<td>Water Quality Objective</td>
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<td>Water Replenishment District</td>
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SECTION 1
INTRODUCTION

The Water Replenishment District (WRD or the District) manages groundwater replenishment and water quality activities for the Central Basin and West Coast Basin (CBWCB) in southern Los Angeles County (Figure 1.1). WRD’s service area encompasses most of the Central Basin and nearly all of the West Coast Basin. Our mission is to protect and preserve high-quality groundwater in the basins through innovative, cost-effective, and environmentally sensitive management practices for the benefit of residents and businesses within WRD’s service area.

As part of accomplishing this mission, WRD maintains a thorough and current understanding of groundwater conditions in its service area and strives to predict and prepare for future conditions. This is achieved through groundwater monitoring, modeling, and planning, which provide the necessary information to determine the “health” of the basins. This information in turn provides WRD, the groundwater pumpers in WRD’s service area, other interested stakeholders, and the public with the knowledge necessary for responsible water resources planning and management. Each year WRD compiles the most recently collected information into a Regional Groundwater Monitoring Report (RGWMR) that presents the most current understanding of conditions in the basins; the RGWMR is just one of the efforts by WRD to fulfill its mission.

1.1 BACKGROUND OF THE REGIONAL GROUNDWATER MONITORING PROGRAM

Since its formation in 1959, WRD has been actively involved in groundwater replenishment, water quality monitoring, contamination prevention, data management, and data publication. Historical over-pumping of the CBWCB caused overdraft, seawater intrusion, and other groundwater management problems related to supply and quality. Adjudication of the basins in the early 1960s set a limit on allowable groundwater extractions in order to control the over-pumping. Concurrent with adjudication, WRD was
formed to address issues of groundwater recharge and groundwater quality. Following its inception, WRD implemented the Regional Groundwater Monitoring Program (RGWMP) as a program designed to track groundwater levels and groundwater quality in the WRD service area in the effort to ensure the sustainability of groundwater as a reliable resource.

Prior to 1995, WRD relied heavily upon groundwater data collected, interpreted, and presented by other entities such as the Los Angeles County Department of Public Works (LACDPW), the California Department of Water Resources (DWR), and the private sector for understanding basin conditions. However, these data were collected primarily from production wells, which are typically screened across multiple aquifers to maximize water inflow. The result is a mixing of waters from different aquifers into a single well casing, causing an averaging of water levels and water quality.

In order to obtain more accurate data for specific aquifers from which to infer localized water level and water quality conditions, depth-specific (nested) monitoring wells that tap discrete aquifer zones are necessary. Figure 1.2 illustrates the capabilities of nested monitoring wells to assess individual aquifers compared to typical production wells.

Data for the RGWMRs are provided for a Water Year (WY), which occurs from October 1 to September 30. During WY 1994-95, WRD and the United States Geological Survey (USGS) began a cooperative study to improve the understanding of the geohydrology and geochemistry of the CBWCB. The initial study was documented in USGS Water Resources Investigations Report 03-4065, Geohydrology, Geochemistry and Ground-Water Simulation-Optimization of the Central Basin and West Coast Basin, Los Angeles County, California (Reichard et al. 2003). The study provides the nucleus of WRD’s ongoing RGWMP. In addition to compiling existing available data, that study recognized that the sampling of production wells did not adequately characterize the layered multiple aquifer systems of the CBWCB. The study focused on new data collection through drilling and construction of nested groundwater monitoring wells and conducting depth-specific groundwater monitoring.
Figure 1.3 is a District map showing the locations of wells in WRD’s nested monitoring well network that are used in the RGWMP. Currently, there are 335 wells at 60 locations; a few of these wells are used exclusively to monitor groundwater elevations, but most are used to monitor both groundwater elevations and water quality within the WRD service area. A listing and well construction details for the WRD nested wells used in the RGWMP are presented in Table 1.1. Listings and well construction details for other wells used to prepare the groundwater elevation contour and groundwater elevation change maps that are included in this report are presented in Table 1.2.

An Annual Report on the Results of Water Quality Monitoring (Annual Report) was published by WRD each year for WYs 1972-73 through 1994-95 and was based on a basinwide monitoring program outlined in the Report on Program of Water Quality Monitoring (Bookman-Edmonston Engineering, Inc., January 1973). The latter report recommended a substantial expansion of the then-existing program, particularly the development of a detailed and intensive program for the monitoring of groundwater quality in the Montebello Forebay. The RGWMP was designed to serve as an expanded, more representative basinwide monitoring program for the CBWCB. WRD’s RGWMR is published annually in lieu of the previous Annual Reports.

On November 4, 2009, the State Legislature amended the Water Code with SBx7-6, mandating a statewide groundwater elevation monitoring program to track seasonal and long-term trends in California's groundwater basins. In accordance with this amendment, DWR developed the California Statewide Groundwater Elevation Monitoring (CAGSEM) program. In October 2011, WRD was assigned as the Designated Monitoring Entity (DME) responsible for collecting and reporting CBWCB groundwater level data to CAGSEM. Through the RGWMP, WRD collects groundwater level data from within its service area, tracks seasonal and long-term trends and provides that data to the CAGSEM program.
1.2 CONCEPTUAL HYDROGEOLOGIC MODEL

As described above, the RGWMP has changed the focus of groundwater monitoring efforts in the WRD service area from production wells with averaged groundwater level and groundwater quality information, to a layered multiple aquifer system with individual zones of groundwater quality and groundwater levels. WRD views each aquifer as a significant component of the groundwater system and recognizes the importance of the interrelationships between aquifers. The most accepted hydrogeologic description of the basins and the names of water-bearing zones are provided in DWR document entitled *Bulletin No. 104: Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County, Appendix A–Ground Water Geology* (DWR, 1961). WRD generally follows the naming conventions defined in Bulletin 104; however, in some cases WRD's in-house interpretation has resulted in aquifer classifications that differ from those predicted by that report. During WY 2017-18, WRD updated its interpretation of the aquifer classifications assigned to each well so that they more closely match those of Bulletin 104. This has resulted in changes to designations at some wells from those that have been previously used and published by WRD. Table 1.1 lists the specific aquifer assigned to each well used in the RGWMP and indicates whether that designation follows Bulletin 104 or is the result of WRD's most current interpretation.

The locations of idealized geologic cross-sections A-A' and B-B' through the WRD service area are shown on Figure 1.3. These cross-sections are presented on Figures 1.4 and 1.5, respectively. These cross-sections are modified versions of cross-sections presented in Bulletin 104 and illustrate a simplified aquifer system in the CBWCB. The main potable production aquifers described in Bulletin 104 are shown, including the deeper Lynwood, Silverado, and Sunnyside aquifers of the lower Pleistocene San Pedro Formation. Other shallower aquifers, which locally produce potable water, include the Gage and Gardena aquifers of the upper Pleistocene Lakewood Formation. Also shown on the geologic sections are the aquitards separating aquifers. Throughout this report the aquifers shown on the geologic sections are referred to as discrete groundwater zones. Many references are made to the Silverado Aquifer, typically thought of as the main producing aquifer in
the CBWCB; however, substantial pumping can come from the Lynwood and Sunnyside aquifers as well.

1.3 GIS DEVELOPMENT AND IMPLEMENTATION

WRD uses a Geographic Information System (GIS) as a tool for groundwater management in its service area. Much of the GIS data was compiled during the WRD/USGS cooperative study described above in Section 1.1. The GIS links spatially-related information (e.g., well locations, geologic features, cultural features, contaminated sites) to data on well production, water quality, water levels, and replenishment amounts. WRD uses industry standard Esri ArcGIS® software for data analysis and preparation of spatially-related information (maps and graphics tied to data).

WRD utilizes Global Positioning System (GPS) technology to determine and document the locations of basinwide production wells, nested monitoring wells, and other geographic features for use in the GIS database. During WY 2015-16, WRD updated and modernized its database so that a consistent reference surface datum is used when describing the mean sea level (MSL) elevation at each monitoring well. This update required a re-survey of the measurement reference point at each of WRD’s wells relative to the North American Vertical Datum of 1988 (NAVD88) reference plane. This update resulted in adjustment for some of the “reference point elevations” that have previously been used and published by WRD. Current NAVD88 reference point elevations are listed in Table 2.1.

WRD is constantly updating the GIS with new data and newly-acquired archives of data acquired by staff or provided by pumpers and other agencies. The GIS is a primary tool for WRD and other water-related agencies to accurately track current and past use of groundwater, track groundwater quality, and project future water demands, thus allowing improved management of the basins.

In early 2003, WRD completed the development of its Internet-based GIS and Interactive Well Search Tool, which was made available to the public for access to CBWCB
groundwater information. In 2018, a major upgrade to this site was completed to enhance its capabilities, and in November 2019 further enhancements to the site were launched. WRD’s internet-based GIS can be accessed through our GIS website at http://gis.wrd.org. The website provides the public with access to much of the water level and water quality data contained in this report. The well information on the website can be accessed through interactive maps or text searches, and the results can be displayed in both tabular and graphical formats.

1.4 SCOPE OF REPORT

This report updates information on groundwater conditions in the WRD service area for WY 2018-19 and discusses the status of the RGWMP. Section 1 provides an overview of the WRD and its RGWMP. Section 2 discusses district-wide groundwater levels for WY 2018-19. Section 3 presents water quality data for the WRD nested monitoring wells, basin-wide production wells, and replenishment water. Section 4 summarizes salt and nutrient management in the CBWCB and presents water quality trends for TDS and chloride. Section 5 summarizes findings from the evaluation of data in this report. Section 6 presents future regional groundwater monitoring and related activities. Section 7 lists the references used in this report. Tables and figures are presented in separate sections at the end of the report. This current WY 2018-19 RGWMR, along with previously published reports for past WYs, can be viewed online and downloaded in Portable Document Format (PDF) form from the WRD website at http://www.wrd.org.
Groundwater levels are a direct indication of the amount of groundwater in the basins. Groundwater levels can identify areas of recharge and discharge from the basins. Differences in groundwater levels suggest which way groundwater is moving so that recharge water or contaminants can be tracked. WRD uses groundwater levels to determine when additional replenishment water is required and to calculate groundwater storage changes. Groundwater levels can also be used to identify possible source areas and pathways for seawater intrusion, and to demonstrate the effectiveness of seawater barrier injection wells. Groundwater levels are dependent on both regional precipitation and on the amount of water extracted by pumping.

WRD tracks groundwater levels throughout the year by measuring the depth to water in monitoring wells and production wells located throughout its service area. Groundwater elevations are calculated by comparing depth to water measurements to the MSL elevation at the measuring point of each well. Table 2.1 presents manual groundwater level measurements collected from the District’s nested monitoring wells during WY 2018-19. In order to capture the daily and seasonal variations in water levels, WRD has installed automatic data-logging equipment in most of the nested monitoring wells to collect water levels more frequently than practical for manual measurements. WRD also obtains water level data from cooperating entities such as pumpers, DWR, and LACDPW, who collect water levels from their own wells. These data are entered into WRD’s GIS water level database for archiving and analysis.

From the water level database, a groundwater elevation contour map, change in groundwater level map, and groundwater elevation hydrographs for selected wells were prepared to aid in analysis and illustrate the current and historical groundwater conditions in the basins. These are presented and explained in the following sections.
2.1 GROUNDWATER ELEVATION CONTOURS

A contour map showing the groundwater elevations measured across the WRD service area in the deeper, main producing aquifers during the fall of 2019 is presented in Figure 2.1. Specific well zones used to develop the groundwater contour map are identified on Table 2.1. The fall 2019 Contour Map shows that in the Central Basin water levels range from highs in excess of 160 feet above MSL to lows deeper than 105 feet below MSL. The highest water levels are in the Montebello Forebay; water levels decrease to the south and west towards the Long Beach area, the Newport-Inglewood Uplift, and the Los Angeles Forebay.

In the West Coast Basin, water levels range from highs of nearly 10 feet above MSL to lows of more than 60 feet below MSL. The highest water levels are along the West Coast Basin Seawater Intrusion Barrier; they decrease to the east where they are at their lowest elevations in the City of Gardena between the Charnock Fault and Newport-Inglewood Uplift, both of which are geologic structural features that partially restrict groundwater flow.

2.2 CHANGES IN GROUNDWATER LEVELS

Figure 2.2 is a groundwater level change map that illustrates the difference between groundwater levels measured in fall 2018 and those measured in fall 2019. Specific well zones used to develop the groundwater level change map are identified on Table 2.1. During WY 2018-19, groundwater levels across the WRD service area have generally increased, although decreases are observed in some areas, and in others groundwater levels are essentially unchanged from WY 2017-18.

In the Central Basin, groundwater levels have increased nearly everywhere in WY 2018-19. Across the unconfined Montebello Forebay the greatest increases in water levels are observed in close vicinity to the spreading grounds where water levels are as much as 22 feet higher than they were the previous year (fall 2018). The increase in water levels...
becomes less pronounced moving away from the spreading grounds; along the eastern reach of the Montebello Forebay they are as much as 12 feet higher than they were in fall 2018, and along the western reach they are about six feet higher than they were in fall 2018. Across the unconfined Los Angeles Forebay, water levels have increased by nearly 13 feet compared to those measured in fall 2018. Water levels in the western portion of the Los Angeles Forebay range from relatively unchanged to about three feet higher than they were in fall 2018, while those in the eastern portion have increased by as much as seven feet. Water levels in the Whittier Area have also increased or remained relatively unchanged in WY 2018-19; in the west they are as much as 12 feet higher than they were in fall 2018. In the eastern reach of the Whittier Area water levels are essentially unchanged from fall 2018.

Water levels have generally increased or have remained relatively unchanged across the rest of the Central Basin in WY 2018-19. In the north-central portion of the Central Basin Pressure Area (CBPA), water levels have increased this year by as much as eight feet; along the eastern edge of the CBPA water levels range from relatively unchanged to as much as six feet higher than they were in fall 2018. Across the southern and western portions of the CBPA, near the Newport-Inglewood Uplift, water levels remain generally unchanged from those measured in fall 2018. One exception is in the Willowbrook area where a small area of localized groundwater depression has resulted in a decrease of nearly four feet.

In the West Coast Basin, water levels have generally increased; however local areas with water levels lower than those measured in fall 2018 are observed. Across much of the coastal area water levels are about one to two feet higher this year than in fall 2018. In the Wilmington area, a localized area of groundwater depression has resulted in a decrease of nearly six feet. In the Long Beach/Carson/Torrance areas, water levels range from about one to six feet higher than they were in WY 2017-18. In the Gardena area between the Newport-Inglewood and Charnock Faults, water levels have generally decreased and range from relatively unchanged to as much as six feet lower than they were in fall 2018.
District wide, groundwater levels increased by three feet in WY 2018-19, although across the Montebello Forebay region water levels increased by an average of more than 10 feet. Overall groundwater storage gain across the District in WY 2018-19 was 62,200 Acre-Feet (AF); 50,800 AF of that increase in storage occurred in the Montebello Forebay. Groundwater storage gain in the Los Angeles Forebay was about 8,400 AF; 700 AF of storage was gained in the CBPA, and the Whittier Area saw an increase of 2,300 AF. Storage in the West Coast Basin was unchanged compared to WY 2017-18.

2.3 GROUNDWATER LEVEL HYDROGRAPHS

WRD relies on hydrographs to track the changes in water levels in wells over time. Hydrographs reveal the seasonal fluctuations of water levels caused by variations in natural and artificial recharge, and the effects of pumping and other basin discharge. Historical hydrographs of water level data going back to the 1930s and 1940s in the Montebello Forebay, Los Angeles Forebay, CBPA, and West Coast Basin are presented in the annual WRD Engineering Survey and Report (ESR). In general, the hydrographs show that in the Central Basin, water levels were in steep decline through the 1930s and into the late 1950s as a result of excessive pumping (overdraft). Initiation of groundwater management policies in the late 1950s and early 1960s including formation of the WRD, adjudication of the basins, and installation of seawater barrier wells are evident on the hydrographs in the form of a distinct reversal in water level decline followed by a steady increase through the 1960s. Despite repeated fluctuation between periods of decreasing and increasing trends, water levels in the Central Basin have generally been relatively stable since the 1960s, although over the past several years they have been in decline. In the West Coast Basin, the hydrographs show a similar steep decline in water levels in the 1930s through the 1950s as a result of overdraft, followed by stabilization and steady increase through the 1960s that continues to the present day. ESR hydrographs are not presented in this RGWMR; however, they can be viewed in the ESR reports online and downloaded from the WRD website at http://www.wrd.org.
Hydrographs for WRD nested monitoring wells that plot water level measurements from individual aquifer zones against time provide WRD with a graphical method to observe changes in water level and can aid in identifying current and historic trends in aquifer conditions. The data for these annual hydrographs are collected from WRD’s network of nested monitoring wells. **Figures 2.3 through 2.15** are hydrographs of 13 key WRD nested monitoring wells, including three in the Montebello Forebay, one in the Los Angeles Forebay, four in the CBPA, one in the Whittier Area, and four in the West Coast Basin. The 13 key nested monitoring well locations are shown on **Figure 1.3**. These hydrographs illustrate that there can be distinct groundwater elevation differences, up to 90 feet, between adjacent aquifers at a single nested well location. The differences in elevation are influenced by variable discharge (i.e. pumping from wells) and recharge (i.e. injection, percolation, or underflow) and the degree of hydraulic communication between aquifers. These hydrographs are particularly useful in identifying the zones that are in the main flow system and the zones that show the greatest depth and seasonal fluctuations in groundwater levels during the WY. A discussion of the hydrographs shown on **Figures 2.3 through 2.15** is presented in the following sections.

### 2.4 GROUNDWATER LEVELS IN THE MONTEBELLO FOREBAY

**Figure 2.3** is a hydrograph for WRD’s Rio Hondo #1 key nested monitoring well located in the Montebello Forebay at the Rio Hondo Spreading Grounds. There are six individual wells (zones) that are screened, from shallowest to deepest, in the Gardena, Hollydale, Silverado, and Sunnyside (two zones) Aquifers, and the Pico Formation, with depths ranging from 140 to 1,130 feet below ground surface (BGS). Because this well is located in the Montebello Forebay, where the aquifers are in general hydraulic communication with each other, water level responses in each of the aquifers are similar. Seasonal highs and lows are in response to recharge and pumping. Groundwater elevations are lowest in Zone 4, the Silverado Aquifer, suggesting that this aquifer is the most heavily pumped in the area. Water levels in Zone 4 increased by more than 10 feet over the previous WY, bringing them to about the levels last observed in WY 2016-17.
**Figure 2.4** is a hydrograph for WRD’s Pico #2 key nested monitoring well located in the Montebello Forebay adjacent to the San Gabriel River and just south of the San Gabriel River Spreading Grounds. There are six individual wells (zones) that are screened, from shallowest to deepest, in the Gaspur/Gage, Lynwood, Silverado, and Sunnyside (three deepest zones) Aquifers, with depths ranging from 100 to 1,200 feet BGS. Groundwater elevations are lowest in Zones 1, 2, and 3, all of which are screened in the Sunnyside Aquifer, suggesting that the Sunnyside Aquifer is the most heavily pumped in this area. Water levels in Zone 3 increased more than 11 feet over the previous WY, returning them to levels last observed at this location in WY 2016-17.

**Figure 2.5** is a hydrograph for WRD’s Norwalk #2 key nested monitoring well located in the Montebello Forebay, 3.5 miles south of the San Gabriel River Spreading Grounds. There are six individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gardena, Silverado, Sunnyside (two zones) Aquifers, and the Pico Formation (two deepest zones), with depths ranging from 236 to 1,480 feet BGS. Norwalk #2 is the third key well representing the Montebello Forebay and is at the southern margin of the Forebay where it transitions into the CBPA. Unlike Rio Hondo #1 and Pico #2, water level responses to seasonal discharge and recharge influences are less pronounced at Norwalk #2, with seasonal swings of around 20 feet compared to the greater than 30-foot seasonal swings at Rio Hondo #1 and Pico #2. Groundwater elevations are deepest in Zones 3 and 4, which are both screened in the Sunnyside Aquifer, suggesting that this aquifer is the most heavily pumped in the area. The water level in Zone 3 increased by more than 7 feet over the previous WY, bringing it to about the level last observed here in WY 2016-17.

### 2.5 GROUNDWATER LEVELS IN THE LOS ANGELES FOREBAY

**Figure 2.6** is a hydrograph for WRD’s Huntington Park #1 key nested monitoring well located in the Los Angeles Forebay near the intersection of Slauson Avenue and Alameda Street. There are five individual wells (zones) that are screened in the following aquifers (from shallowest to deepest): Gaspur, Gage, Hollydale, Lynwood, and Silverado, with
depths ranging from 114 to 910 feet BGS. Only four of the zones are shown on the hydrograph because the shallowest well (screened from 114 to 134 feet BGS in the Gaspur Aquifer) is dry. There is a large separation in water levels between Zone 4 and the three deeper zones, suggesting the presence of a low permeability aquitard(s) above Zone 3 that hydraulically isolates the Gage Aquifer from the deeper aquifers. Water levels in the deepest two zones, the Lynwood and Silverado Aquifers, are generally similar. Water levels in the Lynwood Aquifer increased nearly 13 feet and in the Silverado Aquifer they increased by about eight feet over WY 2018-19. Unlike recent decreases over the past seven years in the Montebello Forebay, water levels in the Los Angeles Forebay have remained relatively stable over the past 20 years.

2.6 GROUNDWATER LEVELS IN THE CENTRAL BASIN PRESSURE AREA

Figure 2.7 is a hydrograph for WRD’s South Gate #1 key nested monitoring well, which is located in the north-central portion of the CBPA, just outside the Montebello and Los Angeles Forebays. There are five individual wells (zones) that are screened, from shallowest to deepest, in the Exposition, Lynwood, Silverado, and Sunnyside (two deepest zones) Aquifers, with depths ranging from 220 to 1,460 feet BGS. Water levels in Zones 1 through 4 generally behave similarly in response to seasonal discharge and recharge. The upper Zone 5 has much shallower water levels, shows little seasonal response, and is isolated from the aquifers below by an aquitard, resulting in the observed hydraulic separation. South Gate #1 water levels increased by between two and seven feet in the deeper aquifers over WY 2018-19.

Figure 2.8 is a hydrograph for WRD’s Willowbrook #1 key nested monitoring well, which is located in the CBPA, about seven miles down-gradient of the Montebello Forebay. There are four individual wells (zones) that are screened, from shallowest to deepest, in the Gage, Lynwood, Silverado, and Sunnyside Aquifers, with depths ranging from 200 to 905 feet BGS. Zone 1 is screened in the deepest responding aquifer. The upper three zones have generally shallower water levels than Zone 1. Zones 3 and 4 track very closely. These trends suggest some hydraulic separation (aquitards) between Zones 1 and 2, and between
Zones 2 and 3. Zones 3 and 4 have little hydraulic separation. Water levels have decreased by four feet in Zone 1 and by about 0.5 foot in Zone 2 over WY 2018-19. Water levels in Zones 3 and 4 have decreased by less than 0.5-foot over WY 2018-19. Water levels in Willowbrook #1 have generally declined over the past 20 years.

**Figure 2.9** is a hydrograph for key nested monitoring well Long Beach #6 located in the southern portion of the CBPA. There are six individual wells (zones) that are screened, from shallowest to deepest, in the Gage, Lynwood, Silverado, and Sunnyside (two zones) Aquifers, and Pico Formation, with depths ranging from 220 to 1,510 feet BGS. Because this portion of the CBPA has multiple confined aquifers separated by substantial aquitards, and experiences heavy local seasonal pumping cycles, water level fluctuations can be larger than in other areas. For example, water levels in Zones 4 and 5 are the deepest responders; they are screened in the Silverado and Lynwood Aquifers, can rise and fall by more than 100 feet through typical seasonal cycles, and have been recorded historically at elevations ranging from highs near sea level to lows deeper than 120 feet below sea level. Water levels in the other zones also generally show significant seasonal variation. **Figure 2.9** shows minor decreases to slight increases in water levels in Zones 1, 2, 3, and 6 over WY 2018-19; water levels in Zones 4 and 5 have increased slightly during WY 2018-19.

Seal Beach #1 is included as a key nested monitoring well for the CBPA due to its proximity inland of the Alamitos Gap Seawater Intrusion Barrier Recycled Water Project. Historical groundwater elevations for Seal Beach #1 are shown on **Figure 2.10**. There are seven individual wells (zones) that are screened, from shallowest to deepest, in the Artesia, Gage, Lynwood, Silverado, and Sunnyside (three deepest zones) Aquifers, with depths ranging from 60 to 1,365 feet BGS. Zone 4, screened in the Silverado Aquifer, is the deepest responding unit at Seal Beach #1. Zone 5 responds similarly to Zone 4 but draws down less during heavily pumped periods. Zones 1, 2, and 3 overlay on the hydrograph and have decreased about two feet in WY 2018-19. Zones 6 and 7 show a smaller seasonal response than the five lower zones, with groundwater elevations at or slightly below sea level, suggesting partial isolation from the lower aquifer systems. Groundwater levels in Zone 4 increased slightly more than four feet this WY compared to WY 2017-18.
2.7 GROUNDWATER LEVELS IN THE WHITTIER AREA

The Whittier Area of the Central Basin extends from the Puente Hills south and southwest to the Santa Fe Springs-Coyote Hills uplift. The western boundary is an arbitrary line separating the Whittier Area from the Montebello Forebay and the eastern boundary is the Orange County line. Figure 2.11 is a hydrograph from WRD’s Whittier #1 key nested monitoring well located in the eastern part of the Whittier Area. There are five individual wells (zones) that are screened, from shallowest to deepest, in the Jefferson, Silverado, and Sunnyside Aquifers, and the Pico Formation (two deepest zones), with depths ranging from 200 to 1,200 feet BGS. Groundwater levels in the Whittier Area do not show a seasonal fluctuation typical of other areas of the Central Basin and adjacent Montebello Forebay Area, which suggests limited groundwater discharge and recharge. Zones 1 through 4 have similar groundwater elevations and track very closely over time while the Zone 5 groundwater elevation is more than 80 feet higher suggesting substantial isolation by an aquitard(s). The Whittier #1 hydrograph indicates that groundwater levels in the Whittier Area have remained relatively unchanged over WY 2018-19 and have decreased about 10 feet over the past 19 years.

2.8 GROUNDWATER LEVELS IN THE WEST COAST BASIN

Figure 2.12 is a hydrograph for WRD’s PM-4 Mariner key nested monitoring well, which is located in the City of Torrance, in the coastal area inland from the West Coast Basin Seawater Intrusion Barrier. There are four individual wells (zones) that are screened, from shallowest to deepest, in the Gardena, Lynwood, Silverado, and Sunnyside Aquifers, with depths ranging from 200 to 710 feet BGS. All four zones respond similarly to seasonal fluctuations. Water levels in Zone 1 (Sunnyside) are deepest and are separated from Zone 2 (Silverado) water levels, which are a couple of feet higher. Water levels in Zones 3 and 4 (Lynwood and Gardena) are both between two and four feet higher than those in Zone 2. Water levels have increased by about one foot in Zones 1, 2, 3 and 4 at PM-4 Mariner in WY 2018-19.
Figure 2.13 is a hydrograph for WRD’s Carson #1 key nested monitoring well, which is located in the inland region of the West Coast Basin. There are four individual wells (zones) that are screened, from shallowest to deepest, in the Gage, Lynwood, and Silverado (two deepest zones) Aquifers, with depths ranging from 250 to 1,010 feet BGS. Water levels in Zone 1 track very similar to Zone 2 throughout the year and are the deep responding aquifers at this location. Zone 3 tracks similar to Zone 4. Groundwater elevations currently differ by about 25 feet between the upper two and lower two zones, which suggests the presence of a low permeability aquitard(s) between them that hydraulically isolate the shallow aquifers from the deeper ones. Water levels in Zones 1 and 2 have decreased slightly more than one foot over WY 2018-19 but have generally increased about 35 feet over the past 20 years.

Manhattan Beach #1 is designated as a key nested monitoring well for the West Coast Basin due to its proximity one half mile inland of the West Coast Basin Seawater Intrusion Barrier. Figure 2.14 is a hydrograph for Manhattan Beach #1, which includes seven individual wells (zones) that are screened, from shallowest to deepest, in the Gage, Silverado, and Sunnyside (two zones) Aquifers, and the Pico Formation (three deepest zones), with depths ranging from 180 to 1,990 feet BGS. Zone 3 is screened in the Pico Formation and has the deepest groundwater levels, as much as 30 feet lower than Zones 1, 2, 4, and 5 which generally track together. Water levels in Zones 6 and 7 are six to eight feet above Zones 1, 2, 4, and 5. Seasonal fluctuations are not pronounced at the Manhattan Beach #1 location and groundwater levels did not change significantly over the previous WY. Water levels in Zone 3 have increased slightly more than two feet over the previous WY and about 12 feet since this well was installed in WY 2010-11.

Figure 2.15 is a hydrograph for WRD’s Wilmington #2 key nested monitoring well, which is located in the West Coast Basin, inland of the Dominguez Gap Seawater Intrusion Barrier. There are five individual wells (zones) that are screened, from shallowest to deepest, in the Gage, Lynwood, Silverado (two zones), and Sunnyside Aquifers with depths ranging from 120 to 970 feet BGS. Water levels in Zones 1 through 4 are generally deeper
and behave similarly in response to seasonal influences. The upper Zone 5 has shallower water levels and shows less seasonal change suggesting hydraulic separation from the lower four zones. Wilmington #2 water levels have increased slightly in the deeper aquifers over WY 2018-19 and have increased by as much as 30 feet over the past 20 years.
SECTION 3

GROUNDWATER AND REPLENISHMENT WATER QUALITY

This section discusses the vertical and horizontal distribution of water quality constituents in WRD’s service area based on data from WRD’s nested monitoring wells, purveyors’ production wells, and source waters used for CBWCB groundwater replenishment. Regional groundwater quality maps included herein depict constituents of interest to WRD and District stakeholders in the nested monitoring wells and production wells where water quality data is available.

Comparisons of water quality results to various regulatory standards are made throughout this section. A brief discussion of the regulatory standards used in the report follows. A Primary Maximum Contaminant Level (MCL) is an enforceable drinking water standard that the California Environmental Protection Agency, State Water Resources Control Board, Division of Drinking Water (DDW) establishes after health effects, risk assessment, detection capability, treatability, and economic feasibility are considered. A Secondary Maximum Contaminant Level (SMCL) is established for constituents that impact aesthetics of the water, such as taste, odor, and color, but do not impact health. A Public Health Goal (PHG) is an advisory level that is developed by the Office of Environmental Health Hazard Assessment (OEHHA) after a thorough review of health effects and risk assessment studies. A Notification Level (NL) and Response Level (RL) are non-enforceable health-based advisory levels established by the DDW based on preliminary reviews of health effects studies for which enforceable levels have not been established. NLs and RLs replaced State Action Levels effective January 1, 2005 per California Health and Safety Code Section 116455. It should be noted that constituents with NLs often are considered unregulated contaminants for which additional monitoring may be required to determine the extent of exposure before MCLs and/or PHGs are established.
3.1 QUALITY OF GROUNDWATER

The focus of this section is groundwater quality in samples collected from WRD nested monitoring wells and purveyors' production wells. Section 1 of this report described the value of data from aquifer-specific nested monitoring wells and that these data provide the most valuable insight into CBWCB groundwater quality. Groundwater samples collected from WRD's nested wells are submitted immediately after collection to a State-certified laboratory for analysis for general water quality constituents, known or suspected natural and man-made contaminants, and other select constituents of interest.

Historically, WRD has performed groundwater sampling of its nested monitoring wells on a semi-annual schedule, and over the past few decades has compiled an enormous database of analytical results. In WY 2017-18, WRD conducted an intensive review of this database specifically to determine if the frequency of sampling could be reduced at some wells without compromising its current high-quality assessment of groundwater conditions in the CBWCB. Using criteria such as the length of time a well has been in service, and the nature of concentration trends within each zone at a nested monitoring well site, WRD was able to identify 11 nested wells where the sampling frequency could be reduced from semi-annual to annual. Commencing in WY 2017-18 and continuing this WY (WY 2018-19), semi-annual sampling was not conducted during fall sampling events at Bell Gardens #1, Carson #2, Cerritos #1, Commerce #1, Compton #2, Hawthorne #1, Lakewood #1, Long Beach #2, Long Beach #8, Norwalk #1 and Whittier #2; however, annual sampling was conducted from those wells each year during the spring sampling events. This reduction in sampling will produce a net cost savings without sacrificing the quality of data provided by WRD. As the quantity of data from each nested well site continues to increase, WRD will periodically review that data and where conditions allow, will reduce the sampling frequency at additional nested well sites. WRD will closely monitor the data collected from the reduced frequency wells to assure that conditions that allowed their reductions still exist; if they do not, sampling will be resumed on a semi-annual schedule.
Table 3.1 presents water quality analytical results from 35 WRD nested monitoring wells (201 individual well zones) in the Central Basin during WY 2018-19. Table 3.2 presents water quality analytical results from 22 WRD nested monitoring wells (112 individual well zones) in the West Coast Basin during WY 2018-19. WRD also collected samples from 20 nested monitoring wells (124 individual well zones) in the vicinity of the spreading grounds to assess for the presence of 32 distinct Per- and polyfluoroalkyl substance (PFAS) constituents, including Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA). Table 3.3 presents the analytical results of WRD’s PFAS assessment during WY 2018-19. Complementing the data from the nested monitoring well network, data for CBWCB production wells were obtained from the DDW based on results submitted over the past three years by purveyors for their DDW Title 22 drinking water compliance.

Water quality maps for nested monitoring wells and production wells are presented herein for 13 water quality constituents (Figures 3.1 – 3.26). The 13 constituents include total dissolved solids (TDS), iron, manganese, chloride, nitrate, trichloroethylene (TCE), tetrachloroethylene (PCE), arsenic, perchlorate, hexavalent chromium, 1,4-Dioxane, PFOS, and PFOA. The maps illustrate areal and vertical differences in water quality and compare the aquifer-specific water quality data from WRD’s nested monitoring wells to the averaged water quality data collected from purveyors’ production wells.

3.1.1 Total Dissolved Solids (TDS)

TDS is a measure of the total mineralization of water and is indicative of general water quality. In general, the higher the TDS, the less desirable a given water supply is for beneficial uses. The SMCL for TDS ranges from 500 milligrams per liter (mg/L), which is the recommended level, to an upper level of 1,000 mg/L, and to 1,500 mg/L, which is the level allowed for short-term use. WRD uses the 1,000 mg/L upper level SMCL for water quality comparisons and analyses.

WRD nested monitoring well data for WY 2018-19 indicate relatively low TDS concentrations for groundwater in the producing aquifers of the Central Basin. As shown on Figure 3.1, in the Central Basin, TDS was detected in WRD nested monitoring wells at
concentrations above the SMCL in 19 out of 201 individual well zones (9%). In the West Coast Basin, TDS was detected in WRD nested monitoring wells at concentrations above the SMCL in 34 out of 112 individual well zones (30%). Elevated TDS concentrations in the West Coast Basin were observed along the coast from Redondo Beach to Los Angeles International Airport (LAX), in the Inglewood area, and the Dominguez Gap area.

**Figure 3.2** presents DDW water quality data for the maximum TDS detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. In the Central Basin, TDS was not detected above the Upper Level SMCL of 1,000 mg/L in any of the 194 production wells sampled for TDS during this period. In the West Coast Basin, TDS was detected at concentrations above the SMCL in five out of 30 production wells (17%). The elevated TDS levels detected in the West Coast Basin may be caused by seawater intrusion, connate brines, or perhaps oil field brines.

### 3.1.2 Iron

Iron occurs naturally in groundwater. Sources for iron in the water supply are both natural and man-made. Iron is leached from sediments in subsurface aquifers and steel pipes used for construction of water wells and distribution systems. Sufficient concentrations of iron in water can affect its suitability for domestic or industrial purposes. Some industrial processes cannot tolerate more than 0.1 mg/L iron. The SMCL for iron in drinking water is 0.3 mg/L. High concentrations of iron in water can stain plumbing fixtures and clothing, encrust well screens, clog pipes, and may impart a salty taste. While these problems are recognized, iron is considered an essential nutrient, important for human health, and does not pose significant health effects except in special cases.

Nested monitoring well data do not indicate iron to be a widespread water quality problem in groundwater in the WRD service area. As shown on **Figure 3.3**, in the Central Basin, iron was detected in WRD nested monitoring wells at concentrations above the SMCL in 13 out of 201 individual well zones (6%). In the West Coast Basin, iron was detected in WRD nested monitoring wells at concentrations above the SMCL in 19 out of 112 individual well zones (17%).
Figure 3.4 presents DDW water quality data for the maximum iron detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. In the Central Basin, iron was detected at concentrations above the SMCL of 0.3 mg/L in 20 out of 231 production wells (9%). In the West Coast Basin, iron was detected at concentrations above the SMCL in nine out of 31 production wells (29%).

3.1.3 Manganese

Manganese is naturally-occurring and in high concentrations may be objectionable in water in the same manner as iron. Stains caused by manganese are black and are more unsightly and harder to remove than those caused by iron. While manganese is considered an essential nutrient for human health at low levels, an SMCL of 50 micrograms per liter (µg/L) is established for manganese due to its undesirable aesthetic qualities; manganese also has an NL of 500 µg/L.

Manganese concentrations in the WRD nested monitoring wells exhibit widespread vertical and horizontal variations across the WRD service area. In the southern portion of the Central Basin, elevated manganese typically occurs in shallower aquifers above the Silverado producing zones. In the northern portion of the Central Basin, manganese is present in shallow zones, the Silverado zones, and the deeper zones. As shown in Figure 3.5, in the Central Basin nested well sites, manganese concentrations exceed the SMCL in 65 out of 201 individual well zones (32%), and in three of those 65 zones (5%) manganese was detected at concentrations above the NL. In West Coast Basin nested well sites, manganese was detected at concentrations above the SMCL in 53 out of 112 individual well zones (47%), and in five of those 53 zones (9%) it was detected at concentrations above the NL.

Figure 3.6 presents DDW water quality data for the maximum manganese detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. Manganese was detected in Central Basin production wells at concentrations above the SMCL in 43 out of 223 production wells (19%), and in one of those 43 wells (2%)
manganese was detected at concentrations above the NL of 500 µg/L. Manganese was detected in West Coast Basin production wells at concentrations above the SMCL in 20 out of 31 production wells (65%) but was not detected at concentrations above the NL in any of those 20 wells.

### 3.1.4 Chloride
Chloride at elevated levels causes water to taste salty and it is the characteristic constituent used to identify seawater intrusion. The recommended SMCL for chloride is 250 mg/L with an upper SMCL of 500 mg/L, and a short term SMCL of 600 mg/L.

**Figure 3.7** presents water quality data for chloride in WRD nested monitoring wells in the WRD service area during WY 2018-19. In the Central Basin, with only a few exceptions all 35 nested well sites generally have low chloride concentrations. As shown on Figure 3.7, chloride was detected in WRD nested monitoring wells in the Central Basin at concentrations above both the upper SMCL and the short term SMCL in five out of 201 individual well zones (2%). In the West Coast Basin, chloride was detected in WRD nested monitoring wells at concentrations above the upper SMCL in 26 out of 112 individual well zones (23%); in 23 of those 26 individual well zones (88%) chloride was at a concentration above the short term SMCL of 600 mg/L.

**Figure 3.8** presents DDW water quality data for the maximum chloride detection in production wells in the WRD service area for a three-year period spanning WYs 2016-19. Chloride was not detected above the upper SMCL of 500 mg/L in any of the 214 Central Basin production wells sampled for chloride during this period. In the West Coast Basin, four of the 30 (13%) production wells tested, all of which are located on the west side of the basin near the coast, had chloride concentrations above the short term SMCL of 600 mg/L.

### 3.1.5 Nitrate
MCLs were established by DDW for two forms of nitrogen in drinking water, nitrate and nitrite. Nitrate (measured as Nitrate) has an MCL of 45 mg/L, which corresponds
to 10 mg/L of nitrate as Nitrogen. Nitrite (measured as Nitrogen) has an MCL of 1 mg/L. The combined total of the nitrate and nitrite, measured as total nitrogen, has an MCL of 10 mg/L. These constituents are regulated because they present possible acute health risks and can cause anoxia in infants. When consumed in excess of the MCLs, they reduce the uptake of oxygen causing shortness of breath, lethargy, and a bluish skin color.

Nitrate concentrations in groundwater are also a concern because their presence indicates that a degree of contamination has occurred due to the degradation of organic matter. Native groundwater typically does not contain nitrate. It can be introduced into groundwater from agricultural practices such as fertilization of crops or lawns and leaching of animal wastes. Low concentrations of nitrogen compounds, including nitrate and nitrite, are present in treated recycled water below regulatory and permitted limits and may be a source of nitrate loading to groundwater. Typically, organic nitrogen and ammonia are the initial byproducts of the decomposition of human or animal wastes. Upon oxidation, the organic nitrogen and ammonia are converted first to nitrite and then to nitrate ions in the subsurface. A portion of the nitrate and nitrite are converted to nitrogen gas and are returned to the atmosphere.

**Figure 3.9** presents nitrate (as Nitrogen) water quality data for nested monitoring wells in the WRD service area during WY 2018-19. In the Central Basin, nitrate was detected in WRD nested monitoring well locations at concentrations above the MCL in three out of 201 individual well zones (1%). All three of those nitrate detections were from the shallower zones; two of those wells are located in the Los Angeles Forebay, and one is located in the CBPA near the District Boundary. In general, nested monitoring wells in the immediate vicinity of the Montebello and Los Angeles Forebays typically contain nitrate at concentrations below the MCL in the shallower zones. Some wells downgradient from the Montebello Forebay have middle zones with nitrate detections below the MCL. Nested wells further downgradient from the forebays generally do not have detectable concentrations of nitrate. In the West Coast Basin, nitrate was detected in WRD nested
monitoring well locations at concentrations above the MCL in three out of 112 individual well zones (3%).

**Figure 3.10** presents DDW water quality data for the maximum nitrate detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. One of the 225 (<1%) Central Basin production wells tested for nitrate, located in the Los Angeles Forebay, contained nitrate above the MCL of 10 mg/L. None of the 30 production wells tested in the West Coast Basin for nitrate exceeded the MCL during WYs 2016-19.

### 3.1.6 Trichloroethylene (TCE)

TCE is a solvent used in metal degreasing, textile processing, and dry cleaning. In addition to its multiple, acute effects on health, TCE is also classified as a probable human carcinogen. The MCL for TCE in drinking water is 5 µg/L. If present in water, TCE can be removed easily by common treatment processes, including air stripping or vapor extraction utilizing granular activated carbon filtration media.

As shown on **Figure 3.11**, in the Central Basin TCE was detected in WRD nested monitoring well locations at concentrations above the MCL in four out of 201 individual well zones (2%). In the West Coast Basin, TCE was detected in WRD nested monitoring well locations at concentrations above the MCL in one out of 112 individual well zones (<1%). Nested wells impacted by TCE are generally located in the northern portion of the Central Basin, within or near the Los Angeles Forebay.

**Figure 3.12** presents DDW water quality data for the maximum TCE detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. As shown on Figure 3.12, in the Central Basin TCE was detected at concentrations above the MCL of 5 µg/L in 20 out of 228 production wells (9%). Wells impacted by TCE are generally located in the northern portion of the Central Basin, within or near the Montebello and Los Angeles Forebays. In the West Coast Basin, TCE was not detected at
concentrations above the MCL in any of the 31 West Coast Basin production wells tested for TCE during WYs 2016-19.

### 3.1.7 Tetrachloroethylene (PCE)

PCE (also known as tetrachloroethylene, tetrachloroethene, perc, perclene, and perchlor) is a solvent used commonly in the dry-cleaning industry, as well as in metal degreasing and textile processing. The MCL for PCE in drinking water is 5 µg/L. In addition to its multiple acute health effects, PCE is also classified as a probable human carcinogen. If present in water, PCE can be removed easily by common treatment processes, including air stripping or vapor extraction utilizing granular activated carbon filtration media.

As shown on Figure 3.13, in the Central Basin PCE was detected in WRD nested monitoring well locations at concentrations above the MCL in one of 201 individual wells zones (<1%). In West Coast Basin nested wells, PCE was not detected in any of the individual well zones.

Figure 3.14 presents DDW water quality data for the maximum PCE detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. In the Central Basin, PCE was detected at concentrations above the MCL in 12 out of 228 production wells (5%). Production wells with detectable PCE concentrations are primarily located within the vicinity of the Los Angeles and Montebello Forebays and extend southwestward and southward into the CBPA. PCE was not detected in any of the 31 West Coast Basin production wells tested for PCE.

### 3.1.8 Arsenic

Arsenic is an element that occurs naturally in the earth's crust and accordingly there are natural sources of arsenic, including weathering and erosion of rocks, deposition of arsenic in water bodies, and uptake of the metal by animals and plants. Consumption of food and water are the major sources of arsenic exposure for the majority of U.S. citizens. Over 90% of commercial arsenic is used as a wood preservative in the form of chromate copper arsenate to prevent dry rot, fungi, molds, termites, and other pests. People may also
be exposed from industrial applications, such as semiconductor manufacturing, petroleum refining, animal feed additives, and herbicides. Arsenic is classified as a known human carcinogen by the United States Environmental Protection Agency (USEPA), and also causes other health effects, such as high blood pressure and diabetes. The DDW established an MCL of 10 µg/L for arsenic.

**Figure 3.15** presents water quality data for arsenic in WRD nested monitoring wells during WY 2018-19. In the Central Basin, arsenic was detected in WRD nested monitoring well locations at concentrations above the MCL in 19 out of 201 individual well zones (9%). In the West Coast Basin, arsenic was detected in WRD nested well locations at concentrations above the MCL at three out of 112 individual well zones (3%).

**Figure 3.16** presents DDW water quality data for the maximum arsenic detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. In the Central Basin, arsenic was detected at concentrations above the MCL in nine out of 220 (4%) production wells. In the West Coast Basin, arsenic was not detected at a concentration above the MCL in any of the 29 production wells tested for arsenic.

### 3.1.9 Perchlorate

Perchlorate is used in a variety of defense and industrial applications, such as rockets, missiles, road flares, fireworks, air bag inflators, lubricating oils, tanning and finishing leather, and the production of paints and enamels. Under certain conditions, perchlorate is also reported to occur naturally in groundwater (Trumpolt, 1995). When ingested, it can inhibit the proper uptake of iodide by the thyroid gland, which causes a decrease in hormones for normal growth and development and normal metabolism. In October 2007, the DDW established an MCL of 6 µg/L for perchlorate.

**Figure 3.17** presents perchlorate water quality data for WRD nested monitoring wells during WY 2018-19. In the Central Basin, perchlorate was detected in WRD nested monitoring well locations at concentrations above the MCL in one out of 201 individual well zones (<1%). In the West Coast Basin, perchlorate was detected in WRD nested
monitoring well locations at concentrations above the MCL in one out of 112 individual well zones (<1%).

Figure 3.18 presents DDW water quality data for the maximum perchlorate detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. In the Central Basin, perchlorate was detected at concentrations above the MCL of 6 µg/L in two out of 220 production wells (<1%). Perchlorate was not detected in any of the 30 West Coast Basin production wells that were tested for perchlorate.

3.1.10 Hexavalent Chromium

Hexavalent chromium (chromium-6) and trivalent chromium (chromium-3) are two forms of the metal chromium found in groundwater. Together, these two forms of chromium are designated “total chromium”. The MCL for total chromium is 50 µg/L. In 2014 California established an MCL of 10 µg/L for hexavalent chromium; however, on May 31, 2017, a judgement was issued by the Superior Court of California that invalidated the MCL for hexavalent chromium in drinking water. The Court has ordered the State Water Resources Control Board (SWRCB) to adopt a new MCL; in the meantime, the MCL for Total Chromium will remain in place. The SWRCB will use data collected since the standard was adopted in 2014 to help establish a new MCL; they note that it generally takes between 18 and 24 months to develop regulation. To remain consistent with prior reporting and aid in assessing concentration trends, WRD will continue to discuss hexavalent chromium results herein in terms of the historic MCL value of 10 µg/L until a new MCL is established by the SWRCB.

Both forms of chromium occur naturally in groundwater and are also introduced to soil and groundwater through disposal practices from commercial and industrial operations. Only hexavalent chromium is considered to pose health risks. It has been known to increase cancer risk when inhaled and has recently been shown to increase the risk of cancer if ingested.
**Figure 3.19** shows hexavalent chromium concentrations in WRD nested monitoring wells in the WRD service area. In the Central Basin, hexavalent chromium was detected at concentrations above the historic MCL value in three out of 201 individual well zones (2%). In the West Coast Basin, hexavalent chromium was not detected at concentrations above the MCL in any of the individual well zones.

**Figure 3.20** presents DDW water quality data for the maximum hexavalent chromium detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. Hexavalent chromium was not detected at a concentration above the historic MCL of 10 µg/L in any of the production wells that were tested for hexavalent chromium in either the Central Basin or West Coast Basin.

### 3.1.11 1,4-Dioxane

1,4-Dioxane is a synthetic organic compound. It is used as a stabilizer for solvents (in particular 1,1,1-trichloroethane) and as a solvent itself in a number of industrial and commercial applications. 1,4-Dioxane is also found in trace amounts in some cosmetic and personal care products such as detergents and shampoos. 1,4-Dioxane is highly soluble in water, does not readily bind to soils, readily leaches to groundwater, and is resistant to naturally occurring biodegradation processes. EPA classifies 1,4-dioxane as a probable human carcinogen and a known irritant, and as a result it is included in the Third Unregulated Contaminant Monitoring Rule (UCMR 3). In November 2010, the SWRCB established a drinking water NL of 1 µg/L, and a RL of 35 µg/L, for 1,4-Dioxane.

**Figure 3.21** shows 1,4-Dioxane concentrations in WRD nested monitoring wells in the WRD service area. In the Central Basin, 1,4-Dioxane was detected at concentrations above the NL in 24 out of 201 individual well zones (12%). In the West Coast Basin, 1,4-Dioxane was not detected above the NL in any of the 112 individual well zones (0%). 1,4-Dioxane was not detected at concentrations above the RL in any of the individual well zones in the CBWCB.
Figure 3.22 presents DDW water quality data for the maximum 1,4-Dioxane detection in production wells across the WRD service area for a three-year period spanning WYs 2016-19. In the Central Basin 1,4-Dioxane was detected at concentrations above the NL of 1 µg/L in 70 of the 96 (73%) production wells that were tested. In the West Coast Basin, 1,4-Dioxane was not detected in any of the production wells. 1,4-Dioxane was not detected at concentrations above the RL of 35 µg/L in any CBWCB production wells.

3.1.12 Per- and Poly-Fluoroalkyl Substances (PFAS)

PFAS are a large group of man-made compounds including the most commonly used PFOA and PFOS. They have been used for several decades all over the world in industrial manufacturing, firefighting foams (aqueous film forming foam [AFFF]), and several consumer products including fast food wrappers, pizza boxes, stain resistant carpets, non-stick cookware (TeflonTM), clothing (Gore-Tex®), and fabric protectant (ScotchgardTM). However, PFOA and PFOS have been phased out of products made in the United States since the 2000’s.

In May 2016, the USEPA issued a lifetime health advisory of 70 nanograms per liter (ng/L) for the combined concentration of PFOS and PFOA. In August 2019, California (through DDW) established drinking water NLs of 5.1 ng/L for PFOA and 6.5 ng/L for PFOS, and in February 2020 the DDW established a RL of 10 ng/L for PFOA and 40 ng/L for PFOS.

WRD collected samples from 20 nested monitoring wells (124 individual well zones) in and around the spreading grounds to evaluate the presence of 32 distinct PFAS constituents. Although results of the entire suite of PFAS constituents analyzed in WY 2018-19 are summarized in Table 3.3, discussion of those results are limited herein to PFOS and PFOA.

Figure 3.23 shows PFOS concentrations in the WRD nested wells that were tested in WY 2018-19. PFOS was detected in 45 out of 124 individual well zones (36%); 39 of those 45 detections (87%) were at concentrations above the NL of 6.5 ng/L and eight (18%) were at concentrations above the RL of 40 ng/L.
Figure 3.24 presents all DDW water quality data received by WRD (as of January 8, 2020) for the maximum PFOS detection in production wells across the WRD service area. In the Central Basin, PFOS was detected at concentrations above the NL of 6.5 ng/L in 42 out of 62 production wells (68%) that were tested; 19 of those 62 wells (31%) had concentrations above the RL of 40 ng/L. Sampling for PFOS was not conducted in any West Coast Basin production wells.

Figure 3.25 shows PFOA concentrations in the WRD nested wells that were tested in WY 2018-19. PFOA was detected in 44 out of 124 individual well zones (35%); 36 of those 44 detections (82%) were at concentrations above the NL of 5.1 ng/L and 22 (50%) were at concentrations above the RL of 10 ng/L.

Figure 3.26 presents all DDW water quality data received by WRD (as of January 8, 2020) for the maximum PFOA detection in production wells across the WRD service area. In the Central Basin, PFOA was detected at concentrations above the NL of 5.1 ng/L in 36 out of 62 production wells (58%) that were tested; 30 of those 62 wells (48%) had concentrations above the RL of 10 ng/L. Sampling for PFOA was not conducted in any West Coast Basin production wells.

3.2 QUALITY OF REPLACEMENT WATER

This section discusses water quality data for key water quality constituents in CBWCB replacement water and local surface water. Although numerous constituents are monitored, the constituents discussed and reported here are the ones found to be most prevalent at elevated levels or are of current regulatory interest. The data are classified according to their sources. The key water quality parameters of this discussion were also discussed for the WRD nested monitoring wells: TDS, iron, manganese, chloride, nitrate, TCE, PCE, arsenic, perchlorate, and hexavalent chromium. Monitoring of these constituents helps to understand the general chemical nature of the recharge source, and its suitability for replenishing the groundwater basins.
3.2.1 Quality of Imported Water

Surface water is imported by the Metropolitan Water District of Southern California (MWD) to the WRD service area from the Colorado River and from Northern California via the State Water Project for potable supply and for groundwater recharge. Colorado River water deliveries have been suspended due to the potential presence of quagga mussels; however, 5,340 AF of State Water Project water was received for replenishment in WY 2018-19. Currently, treated imported water and advanced treated recycled water are injected into the three seawater intrusion barriers. Treated imported water meets all drinking water standards and is thus suitable for direct injection. Untreated imported water, when available, is used for recharge at the Montebello Forebay Spreading Grounds. Average water quality data for treated and untreated imported water are presented in Table 3.4.

In 2018, the average TDS concentration of untreated Colorado River water was 591 mg/L and the average TDS concentration of untreated water from the State Water Project was 217 mg/L. Only untreated State Water Project water was received for recharge in the Montebello Forebay spreading grounds in 2018.

In 2018, average concentrations of nitrate (as Nitrogen) were below detection limits in untreated Colorado River water and the average nitrate concentration in water from the untreated State Water Project was 0.4 mg/L. Recently and historically, both Colorado River and State Water Project nitrate concentrations have remained below the MCL.

In 2018, the average iron and manganese concentrations in untreated Colorado River water were below detection limits. Untreated State Water Project water contained averaged iron and manganese at concentrations below detection limits. Colorado River and State Water Project iron and manganese concentrations have recently and historically been below the SMCL.
The average chloride concentrations in water from the Colorado River and State Water Project have not changed significantly over the past several years. State Water Project and Colorado River chloride concentrations have historically been below the SMCL of 500 mg/L for chloride.

According to the MWD, TCE, PCE, hexavalent chromium, and perchlorate have not been detected in water from the Colorado River or State Water Project during calendar year 2018. Both Colorado River and State Water Project TCE, PCE, hexavalent chromium, and perchlorate concentrations have historically been below their respective MCLs.

### 3.2.2 Quality of Recycled Water

Recycled water is used for groundwater recharge in the WRD Service Area for percolation through the Montebello Forebay spreading grounds, which is comprised of the Rio Hondo Coastal Spreading Grounds and the San Gabriel Coastal Spreading Grounds, and for injection into the seawater barriers. In the Montebello Forebay, tertiary-treated recycled water produced by the County Sanitation Districts of Los Angeles County (CSDLAC) at their Whittier Narrows Water Reclamation Plant (WRP), San Jose Creek East WRP, San Jose Creek West WRP, and Pomona WRP facilities is diverted into the Montebello Forebay spreading grounds where it percolates into the subsurface to recharge underlying aquifers. The effluent from these WRPs is carefully controlled and monitored, as required by permits and other regulations, and typically shows little water quality variation over time. Average water quality data for the effluent from these WRPs is shown in Table 3.4.

All constituents listed have remained stable over recent WYs. Furthermore, arsenic, TCE, PCE, perchlorate, and hexavalent chromium have either not been detected or have been detected well below their respective MCLs in recycled water from the four WRPs. 1,4-Dioxane concentrations in recycled water from the Whittier Narrows, San Jose Creek West, and Pomona WRPs, and San Jose Creek East WRP are all slightly at or above the NL of 1.0 µg/L, but they are well below the RL of 35 µg/L. N-nitrosodimethylamine (NDMA) has been detected above its NL of 10 µg/L in recycled water from the Whittier Narrows, San Jose Creek West, San Jose Creek East, and Pomona WRPs.
Currently, both treated imported water and advanced treated recycled water produced by the West Basin Municipal Water District (WBMWD) Edward C. Little Water Recycling Facility (ELWRF) are injected at the West Coast Basin Barrier to prevent the intrusion of seawater and replenish the groundwater basin. Treatment processes at the ELWRF include microfiltration, reverse osmosis, ultraviolet light, advanced oxidation with hydrogen peroxide, and chemical stabilization. The advanced treated recycled water complies with all drinking water standards and thus, is suitable for direct injection. The ELWRF was expanded in September 2013 and it is expected that ultimately advanced treated recycled water will replace nearly all the imported water used for injection at the West Coast Basin Barrier. Table 3.4 presents average water quality data for the advanced treated recycled water produced by the ELWRF.

The Alamitos Gap Seawater Intrusion Barrier currently receives both treated imported water and advanced treated recycled water produced by WRD’s Leo J. Vander Lans Advanced Water Treatment Facility (Vander Lans AWTF) for injection. The Vander Lans AWTF treats disinfected tertiary effluent from the CSDLAC Long Beach WRP using microfiltration, reverse osmosis, ultraviolet light, and advanced oxidation using hydrogen peroxide. The advanced treated recycled water meets drinking water quality standards and other stringent regulations for direct injection into the aquifers. The Vander Lans AWTF was expanded in 2014 to allow additional capacity and ultimately to replace nearly all the imported water used for injection at the Alamitos Gap Seawater Intrusion Barrier. A lack of source water has kept the Vander Lans AWTF offline for much of WY 2018-19. Table 3.4 presents average water quality data for the advanced treated recycled water produced by the Vander Lans AWTF.

The City of Los Angeles Terminal Island Water Reclamation Plant/Advanced Water Treatment Facility (TIWRP) produces advanced treated recycled water using microfiltration, reverse osmosis, and disinfection with chlorine. This water meets drinking water quality standards and other stringent regulations for direct injection into aquifers. Currently, treated imported water is blended with advanced treated recycled water from the
TIWRP for injection at the Dominguez Gap Seawater Intrusion Barrier. Expansion of the TIWRP was completed in December 2016 and included the installation of an advanced oxidation process into the treatment train. Although the TIWRP has been offline for about the first half of WY 2018-19, it is anticipated that ultimately the advanced treated recycled water produced there will replace nearly all the imported water used for injection into the Dominguez Gap Seawater Intrusion Barrier. Table 3.4 presents average water quality data for the advanced treated recycled water produced by the TIWRP.

3.2.3 Quality of Stormwater
Stormwater infiltrates the subsurface to varying degrees throughout the WRD service area. It is also intentionally diverted from the major storm channels and used for groundwater recharge along with imported and recycled water at the Montebello Forebay Spreading Grounds. Routine stormwater quality analyses are typically performed by LACDPW and other entities; however, several of the constituents that are usually reported by LACDPW were not analyzed during WY 2017-18, and therefore those results are not available for inclusion in this report. Average stormwater quality data for those constituents that were provided by LACDPW for WY 2017-18 are presented on Table 3.4.
3.3 MINERAL CHARACTERISTICS OF GROUNDWATER IN THE CENTRAL BASIN AND WEST COAST BASIN

Major minerals data obtained from the WRD nested monitoring wells were used to characterize groundwater of discrete vertical zones (Table 3.5). Research by the USGS led to three distinct groupings of groundwater compositions. Group A groundwater is typically calcium bicarbonate or calcium bicarbonate/sulfate dominant. Group B groundwater has a typically calcium-sodium bicarbonate or sodium bicarbonate character. Group C has a sodium chloride character. A few of the WRD wells yield results that do not fall into one of the three major groups and are thus classified separately as Group D.

Groundwater from Group A likely represents recent recharge water containing a significant percentage of imported water. Group B represents older native groundwater replenished by natural local recharge. Group C represents groundwater impacted by seawater intrusion or connate saline brines. Table 3.5 lists the groundwater group for each WRD nested monitoring well. Comparison of groundwater groups with well locations indicates that, in general, Group A groundwater is found at and immediately downgradient from the Montebello Forebay Spreading Grounds in all but the deepest zones. Group B groundwater is found farther down the flow path within the Central Basin and inland of the West Coast Basin Seawater Intrusion Barrier. Group C groundwater is generally found near the coastlines or in deeper zones. Several wells, grouped as “Other” on Table 3.5, exhibit a chemical character range different from Groups A, B, or C and indicate unique waters not characteristic of the dominant flow systems in the basins. The USGS is conducting ongoing research on trace element isotopes in water from these wells to identify their hydrogeologic source(s).

The major mineral compositions of water from the WRD nested monitoring wells sampled this WY have not changed substantially from previous years. It is expected that continued analysis will show gradual changes in major mineral compositions over time, as older native water is extracted from the basins and replaced by younger naturally and artificially replenished water.
SECTION 4
SALT AND NUTRIENTS IN GROUNDWATER

In February 2009, the SWRCB adopted Resolution No. 2009-0011, which established a statewide Recycled Water Policy. This Policy encourages increased use of recycled water and local stormwater for groundwater recharge across the State. It also requires local entities to develop a Salt and Nutrient Management Plan (SNMP) for each groundwater basin in California to monitor groundwater quality and any impact due to increased recycled water and stormwater recharge.

A SNMP Workplan was jointly prepared by the CBWCB stakeholders and approved by the Los Angeles Regional Water Quality Control Board in December 2011. The SNMP for the CBWCB was finalized February 12, 2015 and adopted in July 2015. The full text of the “2015 Salt Nutrient Management Plan – 2015” can be found at http://www.wrd.org/content/other-reports

The objective of the SNMP is to manage salts and nutrients from all sources "... on a basin-wide or watershed-wide basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses." Future groundwater quality and assimilative capacity were calculated based on predicted salt and nutrient loading through 2025 in the CBWCB. Accordingly, current and proposed projects through 2025 were identified and used to develop strategies to manage salt and nutrient loading. The SNMP included the following:

- Stormwater and Recycled Water Use/Recharge Goals and Objectives,
- Characterization of the Hydrogeologic Conceptual Model/Water Quality,
- Estimation of Current and Future Salt and Nutrient Loading,
- A Basin-Wide Water Quality Monitoring Plan,
- Estimation of Salt and Nutrient Assimilative Capacity,
- An Anti-degradation Analysis,
- Implementation Measures to Manage Salt and Nutrient Loading, and
- California Environmental Quality Act analysis of the SNMP.
WRD’s RGWMP was used to develop the SNMP monitoring program. The groundwater data evaluated in the annual RGWMRs provide an annual assessment of salt and nutrients in groundwater. In addition to the water quality maps generated and discussed in Section 3, historical trend graphs at key monitoring well locations, as described in the following sections, were used to assess salt and nutrient concentrations in groundwater.

4.1 SALT AND NUTRIENT MONITORING LOCATIONS

As discussed in the SNMP, TDS, chloride, and nitrate were identified as the most appropriate indicators of salt and nutrients in the CBWCB. These constituents, as well as other constituents of concern identified in the SNMP, are monitored in the WRD nested monitoring wells along with production wells located throughout the CBWCB.

As part of the SNMP monitoring program, 13 key monitoring well locations in the CBWCB were selected to evaluate past and current salt and nutrient concentrations in groundwater with respect to applicable water quality objectives (WQOs). As established in the Basin Plan, the WQO for TDS in the Central Basin CBWCB is 700 mg/L and in the West Coast Basin it is 800 mg/L. The WQO for chloride in the Central Basin is 150 mg/L and 250 mg/L in the West Coast Basin. The MCL/WQO for nitrate (as Nitrogen) is 10 mg/L in both the Central Basin and the West Coast Basin.

In accordance with the statewide Recycled Water Policy, the 13 selected nested well locations are in the most critical areas of the basins, based on their proximity to water supply wells and groundwater recharge projects that utilize recycled water, including the seawater intrusion barriers (Alamitos Gap Barrier, Dominguez Gap Barrier, and West Coast Basin Barrier) and the Montebello Forebay Spreading Grounds. There are three nested well locations in the Montebello Forebay, one in the Los Angeles Forebay, four in the CBPA, one in the Whittier Area, and four in the West Coast Basin. Monitoring locations in the Montebello Forebay and Los Angeles Forebay target groundwater where connectivity with adjacent surface waters is possible.
The 13 key nested well locations are shown as a different symbol set on Figure 1.3. These locations include 70 individual monitoring zones, screened in specific CBWCB aquifers. The depths and aquifer designation for these key monitoring wells are provided in Table 1.1. WRD is the entity, designated by the SWRCB, responsible for collecting TDS, chloride, and nitrate samples (on a semi-annual basis) from these nested wells.

4.2 SALT AND NUTRIENT MONITORING RESULTS AND EVALUATION

Concentrations of salt and nutrients have been and continue to be closely monitored in all WRD nested monitoring wells and purveyors’ production wells and results are discussed in Section 3. Concentrations of TDS, chloride, and nitrate (as nitrogen) for all WRD nested wells sampled during WY 2018-19 are shown on maps (Figures 3.1, 3.7, and 3.9, respectively) and summarized along with other monitored constituents identified in Tables 3.1 and 3.2. TDS, chloride, and nitrate (as nitrogen) concentrations in production wells, sampled during WYs 2016-2019 are presented on maps (Figures 3.2, 3.8, and 3.10 respectively). Trends for TDS and chloride concentrations at the 13 key well locations discussed above in Section 4.1 are plotted on graphs and compared to SMCLs and WQOs (Figures 4.1 through 4.13). Nitrate generally has not been detected in the monitoring wells, or it has been detected only at concentrations significantly below the MCLs and WQOs, and thus, trend graphs for nitrate have not been prepared. However, nitrate continues to be monitored as part of the RGWMP and is reported in Section 3 of the annual RGWMRs.

In the Montebello Forebay, TDS and chloride concentration trends for the key well locations Rio Hondo #1 (six zones), Pico #2 (six zones), and Norwalk #2 (six zones) are presented on Figures 4.1 through 4.3, respectively. TDS and chloride concentrations have historically been and remain below the SMCLs and WQOs at all three well locations, with a one-time exception in the shallow zone at Pico #2, where chloride concentrations were detected during the fall 2018 sampling round at the WQO of 150 mg/L. Zones 4 and 5 at Pico #2 show very slightly increasing trends in chloride concentrations. Otherwise, trends do not indicate significant increasing salt concentrations in the Montebello Forebay.
In the Los Angeles Forebay, the key well is Huntington Park #1 (four zones). TDS and chloride concentration trend graphs are shown on Figure 4.4. The deeper two zones of this well show stable trends for TDS and chloride at concentrations below the SMCL and WQO. The upper two zones indicate a relatively stable trend in chloride concentrations that are below both the WQO and SMCL but show a slight increase over the past 10 years in TDS concentrations. TDS concentrations in the shallowest zone (Zone 4) are consistently above the WQO of 700 mg/L, but below the SMCL. TDS concentrations in Zone 3 fluctuate just above and below the WQO but remain below the SMCL of 1,000 mg/L.

In the CBPA, key wells include South Gate #1 (five zones), Willowbrook #1 (four zones), Long Beach #6 (six zones), and Seal Beach #1 (seven zones). TDS and chloride trends are shown on Figures 4.5 through 4.8, respectively. At South Gate #1, the four deeper zones show TDS and chloride concentrations at relatively consistent values below the SMCLs and WQOs. TDS and chloride concentrations in Zone 5 of South Gate #1 have increased somewhat since initial sampling but have remained relatively stable over the past 15 years and are below both the WQOs and SMCLs. At all four zones of Willowbrook #1, and the upper four zones at Long Beach #6, TDS and chloride concentrations are quite stable and are below both the SMCLs and WQOs. In Zone 1, the deepest zone of Long Beach #6, TDS is typically detected very close to the WQO of 700 mg/L. TDS concentrations in Zone 2 fluctuate by as much as 50% with historic highs near the WQO; over the past four years TDS concentrations have stabilized somewhat and show a distinctly decreasing trend. Chloride concentrations in Zones 1 and 2 remain stable and are substantially below the SMCL and WQO. At Seal Beach #1, the deeper six zones have historically contained TDS and chloride at concentrations below the WQOs and SMCLs; however, chloride concentrations in Zone 5 have steadily increased over the past three years and were measured at concentrations above the WQO, but below the SMCL, in WY 2018-19. Zone 7, the shallowest zone, contains TDS and chloride at concentrations that steadily increased during the first six years after the wells were installed; they appear to have stabilized since then however, and concentrations are steady and slightly decreasing. TDS
and chloride concentrations in Zone 7 are well above the WQOs and SMCLs, likely due to seawater intrusion.

In the Whittier Area, represented by key well Whittier #1 (five zones), TDS and chloride trends are shown on Figure 4.9. TDS in Zones 4 and 5 has been stable over the past 15 years, is below the SMCL, and meets the WQO. TDS in Zones 1, 2, and 3 has historically exceeded the SMCL and WQO; in Zones 1 and 2 its trend has been stable, in Zone 3 TDS concentrations have generally increased over the past 10 years but have been relatively stable for the past three years. Chloride in Zones 4 and 5 has been historically below the SMCL and meets the WQO. Chloride in Zones 1, 2, and 3 has historically exceeded the WQO, but has been historically below the SMCL, and generally shows a stable trend.

In the West Coast Basin, key wells include PM-4 Mariner (four zones), Carson #1 (four zones), Manhattan Beach #1 (seven zones), and Wilmington #2 (five zones). TDS and chloride trends are presented on Figures 4.10 through 4.13, respectively. At PM-4 Mariner, Zones 1, 3, and 4 show TDS and chloride at relatively consistent concentrations below the SMCLs and WQOs. However, in Zone 2 at PM-4 Mariner, TDS and chloride concentrations are well above the SMCLs and WQOs and have increased since monitoring began around 1998. This is attributed to historical seawater intrusion prior to the construction of the West Coast Basin Seawater Barrier. At Carson #1, all four zones contain TDS and chloride concentrations below both the SMCLs and WQOs; here the three deeper zones show relatively stable TDS and chloride concentrations, while concentrations of these constituents in the shallow Zone 4 have decreased since initial sampling in 1998. At Manhattan Beach #1, groundwater in this coastal area shows evidence of impact by seawater intrusion. TDS concentrations in five of the seven zones exceed the WQO and SMCL, and in four zones the WQO and SMCL for chloride are exceeded. TDS and chloride concentrations in all seven of the zones at Manhattan Beach #1 appear to be rather stable. At Wilmington #2, TDS in Zones 1 and 3 has historically been below the WQO and SMCL but has steadily increased over the past six years. TDS in Zone 2 has been both stable and consistently above the WQO and SMCL. TDS and chloride in Zone 4 were initially above the WQOs and SMCLs but have steadily decreased. TDS and chloride

4-5
concentrations in Zone 4 have been below the WQOs and SMCLs for at least the past six years, likely due to the implementation measures discussed in Section 4.3 below. TDS and chloride in Zone 5 are much higher than the WQOs and SMCLs; however, they have steadily decreased and are currently at concentrations far below those observed during the first years of sampling.

4.3 IMPLEMENTATION MEASURES TO MANAGE SALT AND NUTRIENT LOADING

As summarized in the previous section, overall TDS and chloride concentrations are generally stable at most of the 13 key nested monitoring locations in the CBWCB. While a few individual zones show increasing trends, a comparable number show decreasing trends. Notably, TDS and chloride concentrations in the two shallowest zones at nested well location Rio Hondo #1 and the three shallowest zones at Pico #2, each of which is beneath and adjacent to the Montebello Forebay recharge basins, have generally fluctuated within the same concentration range since 1998. At the key well location in the Los Angeles Forebay, Huntington Park #1, the shallow zones have variable TDS concentrations at and above the WQO, but deeper zones do not show increasing TDS levels. In the CBPA, TDS concentrations in the shallowest zone at key well location South Gate #1 fluctuate slightly but remain relatively stable, and chloride concentrations have remained relatively stable over the past 15 years. TDS and chloride concentrations in the four lower zones are stable. Key nested monitoring well locations near the coast, including PM-4 Mariner, Manhattan Beach #1, and Seal Beach #1, have zones that show increasing TDS and chloride concentration trends that can be attributed to historical seawater intrusion. In the relatively isolated Whittier Area, historically high TDS and chloride concentrations in the middle depth zones are stable and are not expected to fluctuate in response to anticipated management practices.

As discussed in the SNMP, TDS and chloride concentrations in the Central Basin are not expected to exceed WQOs in the future, and current and proposed projects in the basin are not expected to increase salt and nutrient concentrations above the available assimilative
capacity. Two notable projects in the Central Basin include the increased use of advanced treated recycled water for injection at the Alamitos Gap Seawater Intrusion Barrier and the increased use of recycled water at the Montebello Forebay Spreading Grounds through the implementation of the Albert Robles Center for Water Recycling and Environmental Learning (ARC) formerly known as the Groundwater Reliability Improvement Program (GRIP) which includes tertiary treated and advanced treated recycled waters.

In the West Coast Basin, average TDS and chloride concentrations can exceed WQOs due to historical seawater intrusion. However, these concentrations are decreasing and are anticipated to achieve WQOs in the future due to implementation measures such as the increased use of advanced treated recycled water for injection at the West Coast Basin and Dominguez Gap Seawater Intrusion Barrier and the continued operation of the desalter wells located in Torrance.

Nitrate concentrations in the CBWCB remain low and are not expected to increase above the MCL or WQO in the future. Overall, the data show that salt and nutrient concentrations in groundwater are stable as a result of past and current groundwater management practices. Based on the existing water quality of the CBWCB and the future groundwater quality as estimated from the SNMP analysis, existing and planned implementation measures appear adequate to manage salt and nutrient loading on a sustainable basis.
SECTION 5
SUMMARY OF FINDINGS

This RGWMR was prepared by WRD to provide a comprehensive review of groundwater conditions in the WRD service area during WY 2018-19. A summary of findings is presented below.

- Artificial replenishment activities combined with natural replenishment and controlled pumping have ensured a sustainable, reliable supply of groundwater in the WRD service area. Artificial replenishment water sources used by WRD include imported water supplied by the member agencies to the MWD, tertiary-treated recycled water produced by the CSDLAC, and advanced treated recycled water produced by WBMWD, the City of Los Angeles, and WRD.

- Groundwater levels (heads) are monitored continuously in the WRD service area throughout the year. The WRD nested monitoring wells show clear, significant differences in groundwater elevations between the various aquifers. The water level differences in these nested wells reflect both hydrogeologic and pumping conditions in the WRD service area. Vertical head differences of up to 90 feet occur between zones above and within the producing aquifers. The greatest head differences between aquifers tend to occur in the southern area of the Central Basin (Long Beach) and the inland, eastern areas of the West Coast Basin (Gardena and Carson), while the smallest differences occur in the recharge area of the Montebello Forebay, and the southern area of the West Coast Basin (Torrance), which has merged and unconfined aquifers.

- Hydrographs and groundwater elevations measured in basin-wide nested monitoring wells and key production wells indicate increases across most of the CBWCB during WY 2018-19. In the unconfined Montebello Forebay, water levels have increased due to above average precipitation that was available for natural replenishment in WY 2018-19; in the vicinity of the spreading grounds water levels are as much as 22 feet higher than they were in WY 2017-18. Across the
unconfined Los Angeles Forebay, water levels have increased by as much as 13 feet from those measured in fall 2018. Water levels in the Whittier Area have also either increased or have remained relatively unchanged in WY 2018-19, in the west they are as much as 13 feet higher, and in the eastern reach they are relatively unchanged from those measured in fall 2018. In the CBPA, water levels increased by as much as eight feet in some areas and remain relatively unchanged in other areas over WY 2018-19.

- In the West Coast Basin water levels have generally increased; however local areas with water levels lower than those measured in fall 2018 are observed. Across much of the coastal area water levels are about two feet higher this year than in fall 2018. In the Wilmington area, a localized area of groundwater depression has resulted in a decrease of nearly six feet. In the Long Beach/Carson/Torrance areas, water levels range from about one to six feet higher than they were in WY 2017-18. In the Gardena area between the Newport-Inglewood and Charnock Faults, water levels have generally decreased and range from relatively unchanged to as much as six feet lower than they were in fall 2018. District wide, groundwater levels increased by an average of about three feet in WY 2018-19. As a result of that increase, a district-wide gain in groundwater storage of 62,200 AF was calculated for WY 2018-19. In the Montebello Forebay, which is unconfined and responds the most to spreading grounds recharge or discharge events, the increase in storage was 50,800 AF. Groundwater storage gain in the Los Angeles Forebay was about 8,400 AF, storage in the Whittier Area increased by 2,300 AF, and the CBPA saw an increase in storage of 700 AF. Storage in the West Coast Basin was unchanged this year compared to WY 2017-18.

- For an assessment of groundwater quality, WRD collected over 600 samples from its nested monitoring wells throughout the WY and obtained water quality data from potable wells in the District from the DDW database. WRD uses 11 chemical compounds to summarize overall water quality across the district although results for over 100 compounds are present in our databases. A discussion of the 11 constituents used follows:
• TDS concentrations for wells located in the Central Basin are relatively low, while those in the West Coast Basin are elevated in certain portions, primarily the coastal areas from Redondo Beach to LAX and the Inglewood and Dominguez Gap areas. The elevated TDS concentrations (above the SMCL) may be caused by seawater intrusion, connate brines, or perhaps oil field brines.

• Iron is generally common at low concentrations across the WRD service area. In Central Basin nested wells, iron concentrations above the SMCL are observed in and around the Los Angeles and Montebello Forebays, while in production wells iron concentrations above the SMCL extend southward from the forebays into the CBPA. Across the West Coast Basin in both nested and production well sites, iron is present at concentrations above the SMCL at numerous locations.

• Manganese is very common in groundwater across the CBWCB and was detected at all of the nested monitoring wells and more than one third of the production well sites. It is present in the Central Basin at concentrations above the SMCL in samples collected from about 30% of the nested monitoring wells and about 20% of production wells but was only present above its NL in about 2% of those wells. Manganese is even more widespread in the West Coast Basin, where it was detected above the SMCL in about 45% of nested monitoring well sites and 65% of the production well sites. It was only detected above the NL in 10% of the nested monitoring well zones and is not detected above the NL in any of the production well sites in the West Coast Basin.

• Chloride concentrations are low in the Central Basin and in wells within the inland areas of the West Coast Basin. Some coastal areas of the West Coast Basin are impacted by seawater intrusion and thus, have high chloride concentrations in groundwater.

• Nitrate concentrations in WRD nested monitoring wells in the CBWCB are generally below the MCL. The few nested wells that have nitrate concentrations approaching or exceeding the MCL tend to be limited to the shallowest zones at a given location and are likely due either to localized surface recharge, or isolated areas of shallow impacts from industrial operations.
• TCE and PCE detections above the MCL in Central Basin nested monitoring wells are only observed within and in close proximity to the Los Angeles Forebay, but in Central Basin production wells elevated TCE and PCE concentrations are observed within the general vicinity of Los Angeles Forebay, west of the Rio Hondo spreading grounds, and downgradient of the San Gabriel River Spreading grounds. TCE is observed at a concentration above the MCL in the West Coast Basin in just one individual well zone in the Hawthorne area, and PCE is not detected in any of the West Coast Basin nested monitoring wells. Neither TCE nor PCE was detected in any of the West Coast Basin production wells.

• Arsenic is present at low concentrations in groundwater from most of the WRD nested monitoring well sites. With few exceptions, arsenic in nested monitoring wells at concentrations above the MCL is generally restricted to areas within the southeastern portion of the Central Basin and along the western area of the West Coast Basin. Arsenic at concentrations above the MCL in West Coast Basin production wells was not detected, however concentrations above the MCL were present in a few production wells located in the southeastern portion of the Central Basin.

• Perchlorate is relatively common at low concentrations within and downgradient of the nested monitoring wells located in the Los Angeles and Montebello Forebays in the Central Basin but is rarely detected in West Coast Basin nested wells. Perchlorate in Central Basin production wells is restricted to within and just east of the Los Angeles Forebay; it is absent elsewhere in CBWCB production wells.

• Hexavalent chromium is present in the CBWCB at low concentrations in nearly every nested monitoring well site, but it is only found at concentrations above the historic MCL in two nested monitoring well sites in the Los Angeles Forebay. In production wells, hexavalent chromium is only present at low concentrations in a few wells located within and downgradient of the Los Angeles and Montebello Forebays and in the southeastern portion of the Central Basin. Hexavalent chromium was not detected in any of the West Coast Basin production wells.

• 1,4-Dioxane is present at concentrations above the NL in Central Basin nested monitoring and production wells east of the Los Angeles Forebay and extending
southward into the CBPA, as well as within the Montebello Forebay and extending southward to the CBPA adjacent to the San Gabriel River. In the West Coast Basin, 1,4-Dioxane was detected in only one of the nested monitoring wells and was not detected in any of production wells tested.

- In addition to the constituents addressed above, this year WRD performed a focused assessment within and in the general vicinity of the Montebello Forebay for the presence of 32 distinct PFAS constituents at 20 nested monitoring well sites. Two of those constituents, PFOS and PFOA, were used to summarize WRD’s findings, they are discussed below.

  - PFOS was detected at 14 of the 20 nested monitoring well sites tested and in 45 out of 124 individual well zones; 39 of those 45 detections were at concentrations above the NL of 6.5 ng/L and eight of those 39 were at concentrations above the RL of 40 ng/L. PFOS sampling was also conducted from 62 production wells in the Central Basin, all located within and downgradient of the Montebello Forebay. PFOS was detected at concentrations above the NL in 42 of those 62 wells and in 19 of those wells concentrations were detected above the RL. Sampling for PFOS was not conducted in any West Coast Basin production wells.

  - PFOA was detected at 14 of the 20 nested monitoring well sites tested and in 44 out of 124 individual well zones; 36 of those 44 detections were at concentrations above the NL of 5.1 ng/L and 22 of those 36 were above the RL of 10 ng/L. PFOA sampling was also conducted from 62 production wells in the Central Basin, all located within and downgradient of the Montebello Forebay. PFOA was detected at concentrations above the NL in 36 of those 62 wells and in 30 of those wells concentrations were above the RL. Sampling for PFOA was not conducted in any West Coast Basin production wells.

- The water quality of key constituents in untreated imported water recharged at the Montebello Forebay Spreading Grounds and treated imported water injected at the seawater barriers remains in compliance with regulatory limits. Average TDS, iron, manganese, chloride, nitrate, and arsenic concentrations in imported water used for
recharge do not exceed their respective MCLs. Meanwhile, TCE, PCE, hexavalent chromium, and perchlorate were not detected in the untreated imported water.

- The water quality of key constituents in recycled water used for recharge at the Montebello Forebay Spreading Grounds and injection at the seawater intrusion barriers complies with regulatory limits and is monitored regularly to ensure its safe use.

- A total of 13 WRD nested groundwater monitoring wells across the CBWCB are designated for salt and nutrient (specifically, TDS, chloride, and nitrate) sampling and reporting as part of the SNMP monitoring program. Overall TDS and chloride concentrations are generally stable at most of the 13 key nested monitoring locations in the CBWCB. While a few individual zones show increasing trends, a comparable number show decreasing trends. Nitrate concentrations remain below the MCL at all 13 monitoring locations. In the Central Basin, local exceedances of the WQO for TDS are observed in the three deep zones at Whittier #1, the two shallowest zones at Huntington Park #1, and the shallowest zone at Seal Beach #1. While TDS concentrations at Whittier #1 and Seal Beach #1 are relatively stable and remain at concentrations seen historically, TDS in the shallowest zone at Huntington Park #1 is at concentrations higher than were initially detected in this well. TDS first began to be consistently detected at Huntington Park #1 at concentrations above the WQO in about 2010; TDS concentrations increased slightly over the next few sampling events but have remained relatively stable for the past five years. Chloride concentrations in the three deep zones at Whittier #1 have historically exceeded the WQO, but have remained below the SMCL, and generally show a stable trend. Chloride concentrations in Zones 5 and 7 at Seal Beach #1 also exceed the WQOs. Chloride in Zone 5 has steadily increased over the past three years and exceeded the WQO for the first time in WY 2018-19. Chloride in Zone 7 remains relatively stable and is at values consistent with those measured historically. Elsewhere in the Central Basin average TDS and chloride concentrations do not currently exceed WQOs and are not expected to do so in the future. In the West Coast Basin, average TDS and chloride concentrations exceed WQOs locally due to historical seawater intrusion. However, these concentrations
are in general either relatively stable or are decreasing slightly and are anticipated to achieve WQOs in the future as a result of current groundwater management practices.

As shown by the data presented herein, groundwater in the WRD service area is of generally good quality and is suitable for use by the pumpers in the District, the stakeholders, and the public. Groundwater from localized areas with marginal to poor water quality can still be utilized but may require treatment prior to being used as a potable source.
SECTION 6
FUTURE ACTIVITIES

WRD will continue to update and augment its RGWMP to best serve the needs of the District, the pumpers, and the public. Some of the activities planned for the RGWMP in the current WY 2019-20 are listed below.

- WRD continues refining the regional understanding of groundwater occurrence, movement, and quality. Water levels will continue to be recorded using automatic dataloggers to monitor groundwater elevation differences throughout the year. Conductivity sensors are being utilized at selected nested monitoring wells to track water quality changes and supplement the automated water level data. Telemetry technology is being implemented to send real-time water level data to WRD from several locations with a goal of real-time display of water levels on the WRD website.

- WRD continually evaluates the need to fill data gaps in water level data, water quality data, and the hydrogeologic conceptual model with additional geologic data provided from drilling, construction, and monitoring of nested wells. Three such wells are planned for installation in WY 2019-20 within and downgradient of the spreading grounds. The additional wells will provide additional water quality data and will enhance tracking of replenishment water.

- WRD will continue to sample groundwater from nested monitoring wells and analyze the samples for general water quality constituents. In addition, the focus will continue on constituents of interest to WRD, the pumpers, and other stakeholders, such as TCE, PCE, manganese, arsenic, perchlorate, and hexavalent chromium. As regulators consider new water quality standards for Chemicals of Emerging Concern (CEC)s that have not been comprehensively monitored in the past, WRD’s nested monitoring well network is in good position to screen for emerging CECs in groundwater which may include, pesticides, pharmaceuticals and personal care products, oil and gas field indicators, and other CECs. This year WRD anticipates enhancing its assessment of the presence of PFAS constituents, including PFOS and PFOA, beyond the general
vicinity of the Montebello Forebay to incorporate all of WRD’s remaining nested well sites across the district into the assessment. Sampling of those nested wells where the full suite of PFAS constituents was analyzed in WY 2018-19 will be reduced from the full PFAS suite to PFOS and PFOA only in WY 2019-20 to aid in identifying concentration trends of these constituents. WRD will be working on refining the hydrogeologic conceptual model of the CBWCB using data from the RGWMP along with an update to the groundwater model, developed and expected to be published by the USGS in 2020, to improve the framework for understanding the groundwater system and for use as a planning tool.

- Consistent with WRD’s mission to provide, protect, and preserve high quality groundwater and as required by the State’s Recycled Water Policy, a SNMP is in place and is being implemented. Based on the existing water quality of the CBWCB and results from the SNMP analysis, it has been shown that salt and nutrient loading to groundwater is not a concern and that salt and nutrient concentrations overall in groundwater are either stable or improving due to past and current groundwater management practices. Existing and planned implementation measures are protective of groundwater quality and its beneficial uses and the increased use of recycled water in the WRD service area is consistent with the goals of the State’s Recycled Water Policy and necessary to ensure a sustainable water supply.

- On November 4, 2009, the State Legislature amended the Water Code with SBx7-6, mandating a statewide groundwater elevation monitoring program to track seasonal and long-term trends in California’s groundwater basins. In accordance with this amendment DWR developed the CASGEM program. In October 2011, WRD was assigned as the DME responsible for collecting and reporting CBWCB groundwater level data to CASGEM. Through the RGWMP, WRD will continue to collect CBWCB groundwater level data, track seasonal and long-term trends and provide the data to the CASGEM program.

- WRD will continue to monitor the quality of replenishment water sources to ensure the CBWCB are being recharged with high-quality water.
- WRD will continue to use the data generated by the RGWMP along with WRD’s GIS capabilities to address current and potential water quality issues and groundwater replenishment in its service area.
SECTION 7
REFERENCES


Metropolitan Water District of Southern California (MWD), Annual Report to Member Agencies, 2006.


Reichard, Eric G.; Land, Michael; Crawford, Steven M.; Johnson, Tyler; Everett, Rhett; Kulshan, Trayle V.; Ponti, Daniel J.; Halford, Keith J.; Johnson, Theodore A.; Paybins, Katherine S.; and Nishikawa, Tracey: Geohydrology, Geochemistry, and Ground-Water Simulation-Optimization of the Central and West Coast Basins, Los Angeles County, California, United States Geological Survey Water Resources Investigations Report 03-4065; Sacramento, California, 2003.

State Water Resources Control Board (SWRCB), Per-and Polyfluoroalkyl Substances (PFAS), https://www.waterboards.ca.gov/pfas/ - December 9, 2019 update


TABLES
### TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

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1 - Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
2 - Aquifer designation is based on WRD's in-house interpretation.
# TABLE 1.1

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¹ Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
² Aquifer designation is based on WRD's in-house interpretation.
### TABLE 1.1
CONSTRUCTION INFORMATION FOR WRD NESTED MONITORING WELLS

**Page 3 of 7**

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¹ Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
² Aquifer designation is based on WRD's in-house interpretation.
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1 - Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
2 - Aquifer designation is based on WRD's in-house interpretation.
## TABLE 1.1
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1 - Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
2 - Aquifer designation is based on WRD's in-house interpretation.
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1 - Aquifer designations are based on DWR’s Bulletin 104
2 - Groundwater elevation was not measured in Fall 2018-19
### TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019

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1 - Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
2 - Aquifer designation is based on WRD's in-house interpretation.
- Shaded cell identifies the zone and measurement used in Figures 2.1 and 2.2.
### TABLE 2.1

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1. Unless otherwise noted, aquifer designations are based on DWR's Bulletin I 04.
2. Aquifer designation is based on WRD's in-house interpretation.
- Shaded cell identifies the zone and measurement used in Figures 2.1 and 2.2.
**TABLE 2.1**

**GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019**

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1. Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
2. Aquifer designation is based on WRD's in-house interpretation.
3. Shaded cell identifies the zone and measurement used in Figures 2.1 and 2.2.
### Table 2.1

#### GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019

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<td>Jefferson</td>
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1. Unless otherwise noted, aquifer designations are based on DWR's Bulletin I 04.
2. Aquifer designation is based on WRD's in-house interpretation.
3. Shaded cell identifies the zone and measurement used in Figures 2.1 and 2.2.

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### Reference Points

- **Reference Point Elevation:** 40.51
- **Reference Point Elevation:** 78.30
- **Reference Point Elevation:** 48.93
- **Reference Point Elevation:** 79.48
- **Reference Point Elevation:** 10.17
- **Reference Point Elevation:** 30.86
- **Reference Point Elevation:** 44.20

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**Meeting Date:** 3/5/2020   **Item No.** 14

**Packet Page:** 640 of 793
TABLE 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019

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1 - Unless otherwise noted, aquifer designations are based on DWR’s Bulletin 104.
2 - Aquifer designation is based on WRD’s in-house interpretation.
- Shaded cell identifies the zone and measurement used in Figures 2.1 and 2.2.
### TABLE 2.1
**GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019**

**Page 6 of 9**

#### Los Angeles #4

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#### Norwalk #1

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1. Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.
2. Aquifer designation is based on WRD's in-house interpretation.
3. Shaded cell identifies the zone and measurement used in Figures 2.1 and 2.2.
### Table 2.1
GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019

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3 - Shaded cell identifies the zone and measurement used in Figures 2.1 and 2.2.
### TABLE 2.1

**GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019**

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**PM-5 Columbia Park**

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**PM-6 Madrona Marsh**

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**Riv_70 Hono 1**

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**Seab_70 Hono 1**

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**South Gate 1**

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**Westchester 1**

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TABLE 2.1  
GROUNDWATER ELEVATIONS, WATER YEAR 2018 - 2019  
Page 9 of 9

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<thead>
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<th>ZONE 1</th>
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**Whittier #1**

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**Whittier #2**

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**Whittier Narrows #1**

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**Willobrook #1**

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**Wilmington #1**

| Depth of Screen Interval | Sunnyvale | Silverado | Silverado | Silverado | Silverado | Silverado | Silverado |
|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 12/20/2018               | -32.89     | -33.29    | -23.51    | -10.51    | -7.78     |            |            |
| 2/27/2019                | -34.06     | -34.33    | -34.67    | -10.42    | -7.64     |            |            |
| 3/18/2019                | -33.54     | -33.93    | -34.14    | -10.29    | -7.54     |            |            |
| 9/11/2019                | -34.84     | -34.71    | -35.06    | -9.78     | -6.99     |            |            |

**Wilmington #2**

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1 - Unless otherwise noted, aquifer designations are based on DWR's Bulletin 104.  
2 - Aquifer designation is based on WRD's in-house interpretation.  
3 - Shaded cell identifies the zone and measurement used in Figures 2.1 and 2.2.
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REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19
Page 1 of 35

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MCL: Maximum Contaminant Level; Bold color indicates concentration exceeds MCL. (P): Primary MCL; (S): Secondary MCL; (N): Notification Level; (ND): Not Detected.

Packet Page 647 of 793
## Table 3.1

### Central Basin Water Quality Results

#### Regional Groundwater Monitoring - Water Year 2018-19

<table>
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<tr>
<th>Constituents</th>
<th>Units</th>
<th>MCL Type</th>
<th>Zone 1</th>
<th>Zone 2</th>
<th>Zone 3</th>
<th>Zone 4</th>
<th>Zone 5</th>
<th>Zone 6</th>
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</table>

### General Physical Properties

- **Apparent Color**: ACU 15 S
- **Hardness (Total, as CaCO3)**: mg/L 1,2-Dichloroethene
- **Lab pH**: Units 8.1
- **Luster Index - 35 degree Noce**: 0.95
- **Odor**: TON 3 S
- **Specific Conductance**: mhos/cm 1600 S
- **Turbidity**: NTU 6 S
- **Total Chloride**: mg/L 0.3 S
- **Load, Total**: mg/L 0.039
- **Magnesium, Total**: mg/L 132
- **Total Magnesium**: mg/L 8.1
- **Mercury**: mg/L 0.2
- **Nickel**: mg/L 3.0
- **Total Nickel**: mg/L 5.0
- **Total Silver**: mg/L 2.0
- **Silver, Total**: mg/L 1.0
- **Total Thallium**: mg/L 0.2
- **Total Zinc**: mg/L 500 S

### Volatile Organic Compounds

- **1,1-Dichloroethane**: mg/L 1.0
- **1,1-Dichloroethylene**: mg/L 0.5
- **1,2-Dichloroethane**: mg/L 1.0
- **Benzene**: mg/L 0.5
- **Carbon Tetrachloride**: mg/L 0.5
- **Chloroform**: mg/L 0.5
- **Chloromethane (Methyl Chloride)**: mg/L 0.5
- **cis-1,2-Dichloroethylene**: mg/L 0.5
- **Diisopropyl Ether**: mg/L 0.5
- **Ethanol**: mg/L 0.5
- **Ethyl Tert Butyl Ether**: mg/L 0.5
- **Freon 11**: mg/L 0.5
- **Freon 123**: mg/L 0.5
- **Methyl Chloride**: mg/L 0.5
- **MTBE**: mg/L 0.5
- **Pentane**: mg/L 0.5
- **Pentane (Isomers)**: mg/L 0.5
- **Toluene**: mg/L 0.5
- **Total Pesticides**: mg/L 0.5

### Others

- **1,4-Dioxane**: mg/L 1
- **Perchlorate**: mg/L 0.5
- **Surfactants**: mg/L 0.5
- **Total Organic Carbon**: mg/L 1

**MCL**: Maximum Contaminant Level; ND: value indicates concentration exceeds MCL. (P): Primary MCL; (S): Secondary MCL; (N): Noticeable Level; (NB): Not Reporting.
### TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

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<th>Constituents</th>
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<th>MCL Type</th>
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<td></td>
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<td>ND</td>
<td>1.4</td>
<td>1.4</td>
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</tr>
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</table>

MCL: Maximum Contaminant Level; Bold values indicate concentrations exceed MCL. (P): Primary MCL; (S): Secondary MCL; (N): Notification Level; (ND): Not Detected

Meeting Date: 3/5/2020   Item No. 14

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Meeting Date: 3/5/2020 Item No. 14

TABLE3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

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Constituents

Tetraehloroethvlenc (PCEl
Toluene
Total Tnha!omethanes
trans• l.2-D1chloroethv lenf
Tneh!orocthv!ene (TCEl
Vmv! chlonde (YC)
Xvlcnes (Total)
Olhers
I ,4-Dioxanc
Perchlorate
Surfactants
Total Onrnnic Carbon

•

Cerritos #2

;o

"
u

Zone2

Zone I
9/12/2019

4/23/2019

9112/2019

140
35
180

160
8I
200
016
150

160
77
200
0 17
150

mg/I

150
36
180
0 051
23
43

m"1l
mWI

ND
ND

"
ND

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Fluoride
Hvdrox1de as OH. Calculated
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Nitrate as NitfO"Cll
Nitrite. as Nitrogen
Potassium. Total
Sodium. Tota!
Sulfate
Total Dissolved Solid (TDSl
Total N1trol!en. N1trate+N1trite
General Plwsknl Pronerliei
Annarent Color
Hardness (Tota!. as CaCOJ)
LabnH
Lamteher Index - 25 degree
Odor
Soeelfic Conductance
Turbid1tv
Metals
Aluminum, Tota!
Anhmoriv. Tota!
Arsenic, Total
Banum. Total
Be1Yllium. Total
Cadmium. Total
Chromium. Total
Hexavalent Chromium (Cr Vil
Conner. Total
Iron, Tota!
Lead. Total
Magnesium. Total
Manganese. Total
Mereurv
Nickel. Total
Selcmum. Total
Silver. Total
Thallium. Total
Zmc, Total
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Packet Page 650 of 793


### TABLE 3.1

**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19**

<table>
<thead>
<tr>
<th>Constituents</th>
<th>Units</th>
<th>MCL</th>
<th>MCL Type</th>
<th>Zone 1</th>
<th>Zone 2</th>
<th>Zone 3</th>
<th>Zone 4</th>
<th>Zone 5</th>
<th>Zone 6</th>
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<tbody>
<tr>
<td><strong>General Minerals</strong></td>
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<td>Alkalinity</td>
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<td>Alumina Sum</td>
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<td>Bicarbonate as HCO₃</td>
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<td>Calcium, Total</td>
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<td>Carbon Dioxide</td>
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<td>Carbonate as CO₃</td>
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<td>Carboxy Sum</td>
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<td>Chloride</td>
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<td>Fluoride</td>
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<td>Hexavalent as OH, Calculated</td>
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<td>Iodide</td>
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<td>Nitrate (as N)</td>
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<td>Nitrate as Nitrogen</td>
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<td>Nitrite, as Nitrogen</td>
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<td>Total Dissolved Solid (TDS)</td>
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<td>Total Nitrogen, Nitrite+Nitro</td>
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MCL: Maximum Contaminant Level; Bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Not Aflactable Level (ND): Not Detected
### TABLE 3.1

**CENTRAL BASIN WATER QUALITY RESULTS**

**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19**

**Compton #1**

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MCL: Maximum Contaminant Level; Bold values indicates concentration exceeds MCL (M): Primary MCL (S): Secondary MCL (N): Notification Level (ND): Not Detected.
### TABLE 3.1

**CENTRAL BASIN WATER QUALITY RESULTS**

**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19**

**Page 7 of 35**

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MCL: Maximum Contaminant Level, *Solid value indicates concentration exceeds MCL. (P): Primary MCL (S) Secondary MCL (N): Notification Level (ND): Not Detected
## TABLE 3.1

### CENTRAL BASIN WATER QUALITY RESULTS

### REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

**Page 8 of 35**

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**Table Notes:**
- **MCL:** Maximum Contaminant Level; Bold value indicates concentration exceeds MCL.
- **(P):** Primary MCL
- **(S):** Secondary MCL
- **(N):** Notification Level
- **(ND):** Not Detected

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### CENTRAL BASIN WATER QUALITY RESULTS

#### REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

**Huntington Park #1**

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MCL: Maximum Contaminant Level, ND: Value indicates concentration exceed MCL. (P): Primary MCL; (S): Secondary MCL; (N): Notification Level; (NR): Not Detected

---

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### Table 3.1

**Regional Groundwater Monitoring - Water Year 2018-19**

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<td>Bicarbonate as CO3</td>
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<td>Carbonates as CO</td>
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<td><strong>Organic Compounds</strong></td>
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<td>1,1-Dichloroethane</td>
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<td>Chlorocyclohexane (Methyl Chloride)</td>
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<td>Vinyl chloride (VCl)</td>
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<td>Xylenes (Total)</td>
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<td>Toluene, Methyl Ether</td>
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<td>Vinyl chloride (VCl)</td>
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<td>Xylenes (Total)</td>
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**Legend:**
- **ND:** Not Detected
- **MCL:** Maximum Contaminant Level; bold value indicates concentration exceeds MCL
- **P:** Primary MCL; **S:** Secondary MCL; **N:** Notification Level; **ND:** Not Detected

*Meeting Date: 3/5/2020  Item No. 14*

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## TABLE 3.1

### REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

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**Note:** MCL = Maximum Contaminant Level. Bold values indicate concentrations exceed MCL (P) = Primary MCL; (S) = Secondary MCL; (N) = Notification Level (ND) = Not Detected.
## CENTRAL BASIN WATER QUALITY RESULTS

### Regional Groundwater Monitoring - Water Year 2018-19

### Table 3.1

#### Constituents

<table>
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<th>Constituents</th>
<th>Limit (mg/L)</th>
<th>MCL Type</th>
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**MCL:** Maximum Contaminant Level; **ND:** Not Detectable; **(P):** Primary MCL; **(S):** Secondary MCL; **(N):** Notification Level; **(R):** Residual Level

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Meeting Date: 3/5/2020   Item No. 14

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#### REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

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MCL: Maximum Contaminant Level; bold value indicates concentration exceeds MCL (P): Primary MCL; (S): Secondary MCL; (N): Notification Level (ND) Not Detected
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REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

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## Table 3.1

### CENTRAL BASIN WATER QUALITY RESULTS

#### REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

**Page 16 of 35**

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**MCL:** Maximum Contaminant Level; Bold value indicates concentration exceeds MCL. (P) Primary MCL; (S) Secondary MCL; (N) Notification Level; (ND) Not Detected.

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**NOTES:**
- Total TCE and Trichloroethene (TCE)
- MTBE
- Total Chlorinated Solvents (TCS)
- Total Volatile Organic Compounds (VOCs)
- Total Organic Halogenated Compounds (TOHCs)
- Total Petroleum Hydrocarbons (TPHs)
- Total Petroleum Hydrocarbons (TOHs)
- Total Petroleum Hydrocarbons (TPHs) Not Detected

---

**Legend:**
- **ACU**: 15 µg/L
- **Au**: 31 µg/L
- **Cd**: 3 µg/L
- **Cr**: 0.5 µg/L
- **Cu**: 1 µg/L
- **Fe**: 50 µg/L
- **Ni**: 50 µg/L
- **Pb**: 50 µg/L
- **Zn**: 500 µg/L
- **Cu**: 10 µg/L
- **Zn**: 10 µg/L
- **Cu**: 1 µg/L
- **Zn**: 1 µg/L
- **Cu**: 0.5 µg/L
- **Zn**: 0.5 µg/L
- **Cu**: 0.1 µg/L
- **Zn**: 0.1 µg/L
- **Cu**: 0.05 µg/L
- **Zn**: 0.05 µg/L
- **Cu**: 0.01 µg/L
- **Zn**: 0.01 µg/L
- **Cu**: 0.001 µg/L
- **Zn**: 0.001 µg/L
- **Cu**: 0.0001 µg/L
- **Zn**: 0.0001 µg/L
- **Cu**: 0.00001 µg/L
- **Zn**: 0.00001 µg/L
- **Cu**: 0.000001 µg/L
- **Zn**: 0.000001 µg/L
### TABLE 3.1
#### CENTRAL BASIN WATER QUALITY RESULTS
#### REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

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### TABLE 3.1
#### CENTRAL BASIN WATER QUALITY RESULTS
#### REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

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**MCL:** Maximum Contaminant Level; bold value indicates concentration exceeds MCL.

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<td>mg/l</td>
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<td></td>
<td></td>
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<td>Volatile Organic Compounds</td>
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<tr>
<td>1,1-Dichloroethane</td>
<td>mg/l</td>
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<td>1,1-Dichloroethylether</td>
<td>mg/l</td>
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<tr>
<td>1,2-Dichloroethane</td>
<td>mg/l</td>
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<tr>
<td>Benzene</td>
<td>mg/l</td>
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<tr>
<td>Carbon Tetrachloride</td>
<td>mg/l</td>
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<tr>
<td>Chlorobenzene</td>
<td>mg/l</td>
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<td>Chloromethane (Methyl Chloride)</td>
<td>mg/l</td>
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<td>cis-1,2-Dichloroethene</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Dio-Propyl Ether</td>
<td>mg/l</td>
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<tr>
<td>Ethyl Toxybutyl Ether</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Freon 11</td>
<td>mg/l</td>
<td></td>
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<td>Freon 12</td>
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<td></td>
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</tr>
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<td>Methyl Chloride</td>
<td>mg/l</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>MTBE</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Sulfide</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Toluene</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>mg/l</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MCLs: Maximum Contaminant Level. Bold value indicates concentration exceeds MCL. (P) Primary MCL. (S) Secondary MCL. (NL) Non-detectable Level (ND) Not Detected.
### TABLE 3.1

**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19**

**Page 20 of 35**

<table>
<thead>
<tr>
<th>Constituents</th>
<th>Units</th>
<th>Los Angeles #5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Minerals</strong></td>
<td></td>
<td>Zone 1</td>
</tr>
<tr>
<td><strong>Conductivity</strong></td>
<td>mS/cm</td>
<td>2050</td>
</tr>
<tr>
<td><strong>Sodium</strong></td>
<td>mg/L</td>
<td>120</td>
</tr>
<tr>
<td><strong>Potassium</strong></td>
<td>mg/L</td>
<td>5</td>
</tr>
<tr>
<td><strong>Calcium</strong></td>
<td>mg/L</td>
<td>5</td>
</tr>
<tr>
<td><strong>Magnesium</strong></td>
<td>mg/L</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total Dissolved Solids (TDS)</strong></td>
<td>mg/L</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total Nitrogen</strong></td>
<td>mg/L</td>
<td>2</td>
</tr>
<tr>
<td><strong>Phosphorus</strong></td>
<td>mg/L</td>
<td>10</td>
</tr>
<tr>
<td><strong>Chloride</strong></td>
<td>mg/L</td>
<td>120</td>
</tr>
<tr>
<td><strong>Sulfate</strong></td>
<td>mg/L</td>
<td>120</td>
</tr>
<tr>
<td><strong>Nitrate - As NO3</strong></td>
<td>mg/L</td>
<td>5</td>
</tr>
<tr>
<td><strong>Nitrite - As NO2</strong></td>
<td>mg/L</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**Metals**

| **Iron** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| **Lead** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| **Magnesium** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| **Manganese** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| **Mercury** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| **Nickel** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| **Cadmium** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| **Silver** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| **Thallium** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| **Zinc** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

**Total Organic Compounds**

| **Total Organic Carbon** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

**VOCs**

| **Total Volatile Organic Compounds** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

**Halogenated Organic Compounds**

| **Total Haloaromatics** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

**Chlorinated Solvents**

| **Total Chlorinated Solvents** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

**Pesticides**

| **Total Pesticides** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

**Total Organics**

| **Total Organics** | mg/L | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
### TABLE 3.1
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

#### Los Angeles #6

<table>
<thead>
<tr>
<th>Constituents</th>
<th>Units</th>
<th>MCL Type</th>
<th>Zone 1</th>
<th>Zone 2</th>
<th>Zone 3</th>
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<tr>
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<td></td>
<td></td>
<td>6/11/19</td>
<td>9/5/19</td>
<td>6/11/19</td>
<td>9/5/19</td>
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<td><strong>General Minerals</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Alkali</td>
<td>mg/L</td>
<td></td>
<td>0.056</td>
<td>0.056</td>
<td>0.056</td>
<td>0.056</td>
</tr>
<tr>
<td>Anion</td>
<td>mg/L</td>
<td></td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Organic Compounds</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,1-Dichloroethane</td>
<td>ug/L</td>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>1,2-Dichloroethane</td>
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<td>200</td>
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<td>200</td>
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<td><strong>Other</strong></td>
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<td>mg/L</td>
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<td>0.25</td>
<td>0.25</td>
<td>0.25</td>
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<tr>
<td><strong>Metals</strong></td>
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<tr>
<td>Aluminum</td>
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<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
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<tr>
<td>Antimony</td>
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<tr>
<td>Arsenic</td>
<td>mg/L</td>
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<tr>
<td>Barium</td>
<td>mg/L</td>
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<td>0.001</td>
<td>0.001</td>
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<tr>
<td>Beryllium</td>
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<tr>
<td>Cadmium</td>
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<td>Mercury</td>
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<tr>
<td>Nickel</td>
<td>mg/L</td>
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<tr>
<td>Nickel</td>
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<td>Silver</td>
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<tr>
<td>Thallium</td>
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<tr>
<td>Zinc</td>
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</table>

**MCL:** Maximum Contaminant Level; bold value indicates concentration exceeds MCL. (P): Primary MCL; (S): Secondary MCL; (N): Not detected.
Meeting Date: 3/5/2020 Item No. 14

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TABLE3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING- WATER YEAR 2018-19
Page 22 of35

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Constituents

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160
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120

130
4
160
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140
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140
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34
14
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me/I

Boron

mWI

Bromide
Calcium. Total

""'
me/I

Carbon Dioxide
Carbonate as CO3

me/I

Chloride
Fluoride
Hvdroxide as OH. Calculated
Iodide
Nitrate (as N03)
Nitrate as Nitrogen
N1tr1te. as Nmo11.en
Potassium, Total
Sodium, Tota!
Sulfate
Total Dissolved Solid (TDSJ
Total N1tro"en. N1trate+N1tnte
General Phvsicnl Proncrlic!
Aooarent Color
Hardness (Total, as CaCO3l
LabnH
Langelier Index - 25 degree
Odor
Snecdie Conduct:mce
Turb1d1tv
l\lctals
Aluminum. Total
Anttmorw. Total
Arsenic. Tota!
Barium. Total
Bervllmm. Total
Cadmium, Total
Chromium. Total
Hexavalent Chromium (Cr Vil
Cooner. Total
Iron. Total
Lead, Total
Mal!nesmm. Tota!
Man11:ancse, Total
Mercurv
Nickel. Total
Selcn111m. Total
Silver. Total
Thallium. Tota!
Zmc. Total
Volatile Or.,.anic Comnound!
l. l-D1chlorocthane
l. l-D1chloroe1hv!cne
l .2-D1ehloroe1hanc
Benzene
Carbon Tetrach!onde
Ch!orobenzene
Chloromcthane fMethvl Chlor1del
c1s- l ,2-D1chlorocthv Jene
Di-lsooroovl Ethc1
Ethv!benzcnc
Eth,•! Tert Butv! Ethe1
Freon ! I
Freon !13
Methvlenc Chloride
MTBE
Stvrcne
Tert Amv! Methvl Ethei
Tetraehlorocthvlene (PCEl
Toluene
Total Tnha!omethanes
trans-! .2-Dichlorocthvlen~
Tnchloroethvlene (TCEl
Vmvl ch!onde (VCl
Xvlenes (Total)
Others
1,4-Dioxane
Perchlorate
Surfactants
Total Or •anic Carbon

•"

Zone 3

l!,1,.010

Amon Sum
Bicarbonate as HC03

Canon Sum

Lynwood #1
Zone2

Zone I
92>:l0\9

Alkalm1t•

TBA

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General l\Iinern15

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p

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180
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180
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220
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23

ND

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22
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47
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0 27

54

20
0 28

49
20
0 25

5

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4
20
043

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21

ND
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28

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ND
ND

26

ND
ND
ND
ND

240
13

86
42

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44

16
50
80

16
49

2

250

11
46

21

ND

130
48
160
0 084

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0 12
100
54
2.1
2

12

130

Zone·1
nnn•

Zone 6

9l7.010

140
0 098
100
39

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I 10

43

Zone 5
lWmo

160
5.3
200
0 12
100
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190
99
44
II
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Zone4
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190
0 087
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52
200

120
67
29

180
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220
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120
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ND

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23

20
0.34

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OJ

ND

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ND

ND

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JS

ND
ND
ND

ND
ND
ND

ND
ND
ND

ND
ND
ND

ND
ND
ND

19
50
49

JJ

3.3
39

29
42

28
41

Zone8
iwm• SU,7(1!0
180

Zone 9
l ll1019

290
18
360
0 18
610
230

n,ioio

290

180
76
220
0 13
140
85
36

220
0 13
140

IS

18
360
017
590
220
12

ND

ND

ND

ND

7.7

75

SJ

0 39

49
04

19
160
OJ

OJ

ND
ND

ND
ND

ND

ND

220

240

71
I6

69
16

ND

ND

ND
ND
ND

ND
ND
ND

55
370

52
74
350

1100

IJOO

ND

ND

73

81
45

JJ

18
ISO

ml!/1
ml!/!
mQ/1

s
s

I2
670

270

76
270

72
270

290

300

SJ
280

290

68
320

81

680

JS
69
310

SJ

1000

86
40
250

360

370

3.4
43
110
440

me!\

10

p

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

16

ACU

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180
JJ
8.4
0 79
40

100

40
IS

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

120

120

140

140

83

83

82

82

82

81
0 SJ

290
8
078

I

2
600
0 17

740

2

480
01

280
7.9
073
I
730

770
76
I

llOO

210
82
0 89
8
600
0 JI

740
7.7

0 59

180
8.1
07

I JOO

120
8.3
078
2
470
0 IS

220

88
0 25

140
8.2
0 71

180

8.5
086
8

45
14
88
0 26

ND

0 28

ND
ND

ND
ND

ND
ND

ND
ND

ND
ND

5.7
100

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MCL: Ma.lmum Cuntamln•nt Uni, bold nlue lnJ1••1•• cr,ni:,,ntratlun uc .. d, MCL (P): Primary MCL (S): s .. nnJary MCL (N): NnUlka1iun U•·•I (NOJ, Not Ootected

Packet Page 668 of 793


## Table 3.1
### Regional Groundwater Monitoring - Water Year 2018-19

<table>
<thead>
<tr>
<th>Constituents</th>
<th>Table</th>
<th>MCL Type</th>
<th>Zone 1</th>
<th>Zone 2</th>
<th>Zone 3</th>
<th>Zone 4</th>
<th>Zone 5</th>
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<td>Alkali metals</td>
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<td>Arsenic</td>
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<td>Cadmium</td>
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<td>Hydrogen as OH, Calculated</td>
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<td>Nitrate (as NO₃)</td>
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<td>Total</td>
<td>mg/l</td>
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<td>Calcium, Total</td>
<td>mg/l</td>
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<td>Total</td>
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<td>Sodium, Total</td>
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<td>Total Dissolved Solid (TDS)</td>
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<td><strong>Apparent Alkalinity</strong></td>
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<td><strong>Hardness (Total, as CaCO₃)</strong></td>
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<td><strong>Langelier Index - 35 degree</strong></td>
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<td><strong>OG</strong></td>
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<td><strong>Specific Conductance</strong></td>
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<tr>
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<td><strong>Total</strong></td>
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<td>1,1-Dichloroethane</td>
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<td>1,1-Dichloroethylene</td>
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<td>Vindoloid (VC)</td>
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<td><strong>Others</strong></td>
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<td>1,3-Chloro</td>
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<td>Total Organic Carbon</td>
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</table>

MCL: Maximum Contaminant Level; ND: value indicates concentration exceeds MCL. (P): Primary MCL; (S): Secondary MCL; (N): Notification Level (NHL): Not Detected
### TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

#### Constituents

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<th>Constituents</th>
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<th>Zone 2 5/2/2019</th>
<th>Zone 3 5/2/2019</th>
<th>Zone 4 5/2/2019</th>
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<td><strong>General Minerals</strong></td>
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<td>Alkalinity</td>
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**MCL:** Maximum Contaminant Level, bold value indicates concentration exceeds MCL. **(P): Primary MCL; **(S): Secondary MCL; **(N): Not Detected **(ND)**

---

Meeting Date: 3/5/2020   Item No. 14

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### TABLE 3.1

#### REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

**Norwalk #2**

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|**Note:** The table above provides information on the concentrations of various substances in Zone 1 through Zone 9 of the year 2019. The units for each substance are specified in the 'Units' column, and the MCL (Maximum Contaminant Level) is noted in the 'MCL' column. The MCL Type indicates whether the MCL is Primary or Secondary. The concentrations are given in milligrams per liter (mg/l) or parts per million (ppm). The table includes a variety of substances such as Alkaliinity, Anion, Sum, Bicarbonate as HCO3, Boon, Brome, Calcium, Total, Carbon Dioxide, Carbonate as CO3, Carboron, Chloride, Fluoride, Hydrocarbons as OH Chlorinated, Acid, Nitrate, as NO3, Nitrate, as Nitrogen, Nitrogen, Sulfate, Tributyl Phosphate (TBP), and Volatile Organic Compounds. The concentrations are measured in various zones to assess the water quality. Please note that the table does not include all possible substances and concentrations, and the specific data may vary based on the monitoring location and time.**
# TABLE 3.1

## CENTRAL BASIN WATER QUALITY RESULTS

### REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

Page 27 of 35

## Constituents

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| General Physical Properties
| Apparent Color | ACU | 15 S | ND | ND | ND | ND | ND |
| Hardness, Total, as CaCO₃ | mg/L | 360 | 390 | 489 | 460 | 330 | 340 |
| Lab pH | 7.7 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 |
| Langelier Index - 25 degree | None | 0.7 | 0.9 | 0.23 | 0.84 | 0.63 | 0.37 |
| Chlorine | mg/L | 1.4 | 1.4 | 0.92 | 1 | 1.4 | 0.62 |
| Copper | mg/L | 150 | 150 | 150 | 150 | 150 | 150 |
| Magnesium | mg/L | 31 | 31 | 31 | 31 | 31 | 31 |
| Manganese | mg/L | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Mercury | mg/L | 2 | 2 | 2 | 2 | 2 | 2 |
| Nickel | mg/L | 100 | 100 | 100 | 100 | 100 | 100 |
| Sodium | mg/L | 5 | 5 | 5 | 5 | 5 | 5 |
| Silver | mg/L | 100 | 100 | 100 | 100 | 100 | 100 |
| Selenium | mg/L | 2 | 2 | 2 | 2 | 2 | 2 |
| Zinc | mg/L | 1500 | 1500 | 1500 | 1500 | 1500 | 1500 |
| Zinc | mg/L | 5 | 5 | 5 | 5 | 5 | 5 |
| Toluene | mg/L | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Hexachlorobenzene (HCB) | mg/L | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Tetrahydrofurfuryl Alcohol (THFA) | mg/L | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Vinyl Chloride (VC) | mg/L | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Xylenes (Total) | mg/L | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 |
| Others | mg/L | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Total Organic Carbon | mg/L | ND | ND | ND | ND | ND | ND |

### TABLE 3.1  
**CENTRAL BASIN WATER QUALITY RESULTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19**  
Page 28 of 35

**Constituents**  
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**Notes**: MCL = Maximum Contaminant Level; hold value indicates concentration exceed MCL. (P): Primary MCL (S) Secondary MCL (N) Non-detect Level (ND) Not Biotated.
## TABLE 3.1

### CENTRAL BASIN WATER QUALITY RESULTS

#### REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

---

**Table 3.1:**

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# TABLE 3.1

## CENTRAL BASIN WATER QUALITY RESULTS

### REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

### Page 30 of 35

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MCL: Maximum Contaminant Level; Bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): No Detection (ND)
### TABLE 3.1

**CENTRAL BASIN WATER QUALITY RESULTS**

**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19**

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<th>Constituents</th>
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**MCL:** Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL; (S): Secondary MCL; (N): Notification Level (M): Not Detected
### TABLE 3.1

**CENTRAL BASIN WATER QUALITY RESULTS**

**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19**

#### Page 32 of 35

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<td>mg/L</td>
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<td>Borate</td>
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<td>Carbon Dioxide</td>
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<td>Carbohydrate as CO3</td>
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MCL: Minimum Contaminant Level; ND: value indicates concentration exceeds MCL. (P): Primary MCL; (S): Secondary MCL; (N): Notification Level; (ND): Not detected
### TABLE 3.1

**CENTRAL BASIN WATER QUALITY RESULTS**

**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19**

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**MCL:** Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (ND): Not Detected

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**Legend:**

- **ND:** Not Detected
- **PPM:** Parts per million
- **PPB:** Parts per billion
- **mg/L:** Milligrams per liter
- **nmol/L:** Nanomoles per liter
- **NTU:** Nephelometric Turbidity Units
- **s:** seconds
- **p:** minutes
- **mmol/L:** Millimoles per liter
- **D1OX1DE:** D1chloroethvlene
- **D1chloroethvlenes (PCE):**
- **Toluene**
- **Total Toluene**
- **VOCs**
- **Total Organic Carbon**
## TABLE 3.1
CENTRAL BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19
Page 34 of 35

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MCL: Maximum Contaminant Level; Bold value indicates concentration exceeds MCL. (P): Primary MCL; (S): Secondary MCL; (N): Notification Level; (ND): Not Detected
### Table 3.1

#### Central Basin Water Quality Results

**Regional Groundwater Monitoring - Water Year 2018-19**

**Page 35 of 35**

<table>
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**Notes:**
- MCL: Maximum Contaminant Level.
- IU: Initial Value (if applicable).
- ND: Not Detected.
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MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P) Primary MCL (S): Secondary MCL (N): Not Detected
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<tr>
<td>Phosphate</td>
<td>mg/l</td>
<td>2</td>
<td>P</td>
<td>0.34</td>
<td>0.34</td>
<td>0.3</td>
<td>0.21</td>
<td>0.29</td>
</tr>
<tr>
<td>Hydrogen as OH, Calculated</td>
<td>mg/l</td>
<td></td>
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<td>700</td>
<td>ND</td>
<td>ND</td>
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<td>Sodium</td>
<td>mg/l</td>
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<td>31</td>
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<td>22</td>
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<td>Nitrate as NO3</td>
<td>mg/l</td>
<td>45</td>
<td>P</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
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<td>Nitrate as Nitrogen</td>
<td>mg/l</td>
<td>10</td>
<td>P</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
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<td>Nitrate, as Nitrogen</td>
<td>mg/l</td>
<td>1</td>
<td>P</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
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<tr>
<td>Potassium, Total</td>
<td>mg/l</td>
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<td></td>
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<td>Sodium, Total</td>
<td>mg/l</td>
<td></td>
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<tr>
<td>Sulfate</td>
<td>mg/l</td>
<td>500</td>
<td>S</td>
<td>ND</td>
<td>0.78</td>
<td>21</td>
<td>ND</td>
<td>24</td>
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<tr>
<td><strong>Total Dissolved Solid (TDS)</strong></td>
<td>mg/l</td>
<td>100</td>
<td>S</td>
<td>210</td>
<td>210</td>
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<td><strong>Total Nitrogen, Non-Volatile</strong></td>
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<td>10</td>
<td>P</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
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<td><strong>General Physical Properties</strong></td>
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<td><strong>Apparent Color</strong></td>
<td>ACU</td>
<td>15</td>
<td>S</td>
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<td>ND</td>
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<td>TON</td>
<td>3</td>
<td>S</td>
<td>1</td>
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<td>ND</td>
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<td>3</td>
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<td>umho/cm</td>
<td>1600</td>
<td>S</td>
<td>380</td>
<td>440</td>
<td>480</td>
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<td>S</td>
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<td>ND</td>
<td>0.11</td>
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<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Iron, Total</strong></td>
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<td>4</td>
<td>P</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Arsenic, Total</strong></td>
<td>µg/l</td>
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<td>P</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
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<td><strong>Barium, Total</strong></td>
<td>µg/l</td>
<td>1000</td>
<td>P</td>
<td>ND</td>
<td>ND</td>
<td>15</td>
<td>17</td>
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<tr>
<td><strong>Beryllium, Total</strong></td>
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<td>ND</td>
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<tr>
<td><strong>Cadmium, Total</strong></td>
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<td>ND</td>
<td>ND</td>
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<td><strong>Hexavalent Chromium (Cr VI)</strong></td>
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<td>0.34</td>
<td>0.19</td>
<td>0.21</td>
<td>0.13</td>
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<td><strong>Copper, Total</strong></td>
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<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Lead, Total</strong></td>
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<td>P</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
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<td>S</td>
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<td>7</td>
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<td><strong>Mercury</strong></td>
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<td>2</td>
<td>P</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Nickel, Total</strong></td>
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<td>100</td>
<td>P</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
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<tr>
<td><strong>Selenium, Total</strong></td>
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<td>100</td>
<td>P</td>
<td>ND</td>
<td>ND</td>
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<td>ND</td>
</tr>
<tr>
<td><strong>Silver, Total</strong></td>
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<td>100</td>
<td>S</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Thorium, Total</strong></td>
<td>µg/l</td>
<td>2</td>
<td>P</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Zinc, Total</strong></td>
<td>µg/l</td>
<td>5000</td>
<td>S</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
</tbody>
</table>

**Volatile Organic Compounds**

- 1,1-Dichloroethene
- 1,2-Dichloroethene
- Benzene
- Carbon Tetrachloride
- Chlorobenzene
- Chloroethane (Methyl Chloride)
- cis-1,2-Dichloroethylene
- Di-Terpentyl Ether
- Ethylbenzene
- Ethyl Tert Butyl Ether
- Formaldehyde
- Methylene Chloride
- MTBE
- Toluene
- Tolu Tert Butyl Ether
- Toluene
- TEA
- Tetrachloroethylene (PCE)
- Trichloroethylene
- Total Trihalomethanes
- trans-1,2-Dichloroethylene
- Trichloroethylene (CCE)
- Vinyl chloride (VC)
- Xylenes (Total)
- Total Other

**Others**

- 1,2-Dichloroethane
- Phenol
- Surfactants
- Total Organic Carbon

Meeting Date: 3/5/2020 Item No. 14

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TABLE3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19
Page3 of22
Constituents

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~

Carson #3

.., ~-'
u

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u

"'

Zone I

Zone 2

Zone 5

Zone4

Zone 3

Zone 6

4/17/2019

8/15/2019

4/17/2019

St\512019

4/17/2019

8/15/2019

4/17/2019

8/15/2019

4/17/2019

8/15/2019

4/17/2019

8/15/2019

340
72
410
064
340
78

150

130

160

140

160

160

170

170

34

JS

34

JS

JS

5

160
0 I
JOO
20

200
0 I
110
17

170
0 I
110
17

200
0 089
JOO
26

200
0 089

39
200

5

180
0 I
110
20

170
4
210
0 I

170

JS

0 II

210
0 12

200
0 12

98
25

98
32

98
48

95

31

21
84

ND

ND

ND

ND

ND

ND

ND

ND

ND

21

29
38

26

33

28

33

38

38
20

26
4
19

26
42
20

0,29

026

39
20
0 26

27
4,2
20

0.26

0 25

27
52
19
0 37

0.35

ND

Genernl l\linerah
Alkalmitv

m,/1

Amon Sum

men/I

Bicarbonate as HCOJ

mil.II

Boron

me/I

Bromide
Calc111m. Tota!
Carbon D1ox1de
Carbonate as C03
Cation Sum

"''
me/I

350
74
420
063
340
79

me!\

ND

mwl

II
74
II
057

73
II
0.55

024

19
0.24

38
19
0.3

ND

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24
160

2.6
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31

37
47

28
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3.4

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61

3.7
47

29

61

43

41

ND

3
57
II

31

ND

3
56
II

ND

ND

ND

ND

ND

ND

460

470

220

220

220

240

220

220

220

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49
290

42
50
310

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ND

JOO
28
86
068
2
700

120
28
85

ND

ND

15

ND

ND

06

055

N

men/I

Chlonde

ml!/!

Fluoride
Hvdrox1de as OH. Calculated

mg/!

Iodide

I

500
2

s

45

p

JO

p

p

mg/!
me/I

Nitrate (as NO3)

ffi"I[

Nitrate as Nitrogen

mg/[

p
N1tnte. as N1!roucn
me/I
I
Potassium. Total
me!\
Sodium. Total
mwl
Sulfate
mwl
500 s
Total Dmolved Sohd (TDSl
me/I l000 s
p
Total Nitrogen. Nitra!e+Nitrite
me!\
JO
General Phvsic:d Prnnerticl
Aooarent Color
ACU 15 s
Hardness (Total. as CaCO3)
m.!/1
Lab nH
Units
Langelier Index• 25 degree
None
Odor
TON 3 s
llmho/cn 1600 s
Soccific Conductance
Turb1d11v
NTU
5 s
Metals
1000 p
Aluminum. Total
p
6
Anumonv. Total
p
Arscruc. Total
JO
"ell
Banum. Total
"ell 1000 p
p
4
Bcrvllium. Tota!
uu/1
p
5
Cadmium. Total
"ell
p
50
Chrommm. Total
p
Hcxavalent Chrommm (Cr Vil
uu/1
IQ
Conner. Total
1300 p
mwl
03 s
Iron. Tota!
p
u!!/1
15
Lead. Total
Mm~nes1um, Total
None
!Man •anesc, Total
50 s
"ell
p
2
Mercurv
"ell
JOO p
Nickel. Total
"ell
p
50
Selemum. Total
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S1h•er. Total
JOO s
"ell
p
2
Thalhum. Total
"ell
Zmc. Total
"ell 5000 s
Volatile Or<'anic Comnound~
p
5
!. !-Dichloroethane
p
uu/!
6
l. !-Dichlorocthvlcnc
0.5 p
1.2-Dich!oroethane
"'"I
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Benzene
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Carbon Tetrachlonde
"ell 0.5 p
p
70
Chlorobenzcne
"ell
Chloromethane (Methvl Ch!ondc)
"ell
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c1s• l.2•D1chlorocthv Jene
6
"ell
Di-lsooroovl Ether
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Ethvlbenzene
"ell 300
Ethvl Tert Butvl Ethe1
"ell
Ul!/1
150 p
Freon 11
1200 p
Freon 113
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5 p
Methvlene Chloride
"ell
p
13
MTBE
"ell
JOO p
Stvrene
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Tert Amvl Methvl Ethe1
12 N
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TBA
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Tetrachloroethv!cnc {PCE)
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Toluene
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Total Tnhalomethancs
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trans• I ,2-D1chlorocthvlcnf
JO
"' I
Trichlorocthv!cne ffCE)
5 p
u,• 1 05 p
Vmvl chlonde (VC)
Xv!enes(TotalJ
1750 p
"' I
Others
I
N
1.4-Dioxane
p
6
Perchlorate
"ell
mwl
0.5 s
Surfactants
m,11
Total Onzamc Carbon

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ND

072

I

093

34

054

25

035

ND

ND
ND

ND
ND

ND

ND

ND
ND

ND

66

12

ND

ND
ND
ND
ND
ND
ND
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ND

ND
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ND
ND

ND
ND
ND
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ND

ND
ND
ND
ND

ND
ND
ND
ND

ND

MCL: l\1nximum Contnminnnt Level, bold vnlue indicates concentration exceeds MCL. (l'J, l'rlmaty MCL (SJ, Sre,,ndar~· MCL (NJ: Nntln~•1lun l.,,nl (ND): Nut De!~t•J

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### TABLE 3.2

**West Coast Basin Water Quality Results**

**Regional groundwater monitoring - Water Year 2018-19**

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<tr>
<th>Constituents</th>
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# Table 3.2: West Coast Basin Water Quality Results

## Regional Groundwater Monitoring - Water Year 2018-19

## Page 5 of 22

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<td>42</td>
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<td>310</td>
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<td><strong>Apparent Color</strong></td>
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<td><strong>Total</strong></td>
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<td>ND</td>
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</table>

MCL: Maximum Contaminant Level; bold value indicates concentration exceeds MCL. (P): Primary MCL; (S): Secondary MCL; (N): Not Determined

Meeting Date: 3/5/2020   Item No. 14

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### TABLE 3.2

**WEST COAST BASIN WATER QUALITY RESULTS**

**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19**

**Meeting Date: 3/5/2020   Item No. 14**

<table>
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<th>Constituents</th>
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<th>Zone 2</th>
<th>Zone 3</th>
<th>Zone 4</th>
<th>Zone 5</th>
<th>Gardena #2</th>
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<td>Bicarbonate as HCO3</td>
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<td>Trichloroethylene (Methylene chloride)</td>
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<tr>
<td><strong>Total Dissolved Solid (TDS)</strong></td>
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<td>1000</td>
<td></td>
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<td>Total Nitrogen, Nitrate-Nitrite</td>
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<td>100</td>
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</tr>
</tbody>
</table>

**Additional Notes:**
- MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL.

---

**General Physical Properties**

**Standing Water**
- Gardena #2: 3/5/2020
- Gardena #2: 3/5/2020

**Water Quality Parameters**
- pH: 8.2
- Transparency: 10 ft
- Chlorine: 2.8 mg/l
- **Total** Chlorine: 0.03 mg/l

**Additional Observations**
- No significant contaminants detected above MCL levels.

---

**Meeting Details:**
- Date: 3/5/2020
- Location: Gardena #2
- Water Year: 2018-19

---

**Technical Notes:**
- The table includes data from various testing locations and dates.
- Contaminants listed include a mix of inorganic and organic compounds.
- MCL values are used to assess whether concentrations are within acceptable limits.

---

**Data Source:**
- Regional Groundwater Monitoring Program
- Water Year 2018-19

---

**Acknowledgments:**
- This data was compiled from various sources and is provided for educational and informational purposes.

---

**Disclaimer:**
- The interpretations and conclusions drawn are based on the provided data and may require further validation.

---

**Contact Information:**
- For more information, contact [Your Contact Information].
TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19
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<tr>
<th>Constituents</th>
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### TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

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**Volatile Organic Compounds**

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## TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

Page 9 of 22

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## TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19
Page 10 of 22

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- **NCL**: Maximum Contaminant Level, bold value indicates concentration exceeds NCL. (P) Primary NCL, (S) Secondary NCL, (N) Notification Level (ND) Not Detected.
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MCL: Maximum Contamination Level, bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (N): Not Detectable

Meeting Date: 3/5/2020   Item No. 14
### TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

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MCLs: Maximum Contaminant Level; bold value indicates concentration exceeds MCL. (P): Primary MCL (S): Secondary MCL (ND): Not Detected

Meeting Date: 3/5/2020 Item No. 14
## TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

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MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL; (S): Secondary MCL; (N): Non-detect (ND)
### TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

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MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P) Primary MCL (S) Secondary MCL (N) Not Beneficial.
## WEST COAST BASIN WATER QUALITY RESULTS
### REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

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**MCL**: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P) Primary MCL (S) Secondary MCL (N) Natural Level (ND) Not Detected
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## WEST COAST BASIN WATER QUALITY RESULTS
### REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

**PM-4 Mariner**

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MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL. (S): Secondary MCL. (N): Notification Level. (ND): Not Detected
### TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19
Page 18 of 22

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MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P) Primary MCL; (S) Secondary MCL; (N) Notification Level (ND): Not Detected

Meeting Date: 3/5/2020   Item No. 14
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MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P) Primary MCL (S) Secondary MCL (N): Not Detectable (ND)
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### TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

Page 21 of 22

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**General Minerals**

- **Alkalinity**
- **Toluene**
- **Cadmium, Total**
- **Chromium, Total**
- **Nickel, Total**
- **Potassium, Total**
- **Total Chloride (Cl–)**
- **Total Nitrates, Nitrate+Nitrite**
- **Mercury**
- **Sulfate, Total**
- **Total Dissolved Solid (TDS)**
- **Total Manganese**
- **Total Organic Chlorides**
- **Total Organic Carbon**

**Apparent Color**

- **ACU**

**Hardness (Total, as CaCO3)**

- **Total Alk**
- **Total Ca**

**Lugol Index» 35 degrees**

- **Tug**

**Total Dissolved Solid (TDS)**

- **Total Nitrates, Nitrate+Nitrite**

**Organic Physical Properties**

- **Iron, Total**
- **Lead, Total**
- **Magnesium, Total**
- **Manganese, Total**
- **Mercury**
- **Nickel, Total**
- **Selenium, Total**
- **Silver, Total**
- **Thallium, Total**
- **Zn, Total**

**Volatile Organic Compounds**

- **1,1-Dichloroethane**
- **1,1-Dichloroethylene**
- **1,2-Dichloroethane**
- **Benzene**
- **Carbon Tetrachloride**
- **Chlorobenzene**
- **Chloroethane (Methyl Chloride)**
- **(1,1-2)-Dichloroethylene**
- **Di-isopropyl Ether**
- **Ethybenzene**
- **Ethyl Terbutyl Ether**
- **Pesticides**
- **PFCs**
- **Pesticides 113**
- **Methylcyclohexane**
- **MTBE**
- **Naphthalene**
- **Tri- and Methy1 Ether**
- **TDA**
- **Tetrachloromethane (PCE)**
- **Telone**
- **Total Toluene**
- **Total Trichloroethene**
- **Total Tetrachloroethene**
- **Total Vinyl Chloride (VC)**
- **Xylenes (Total)**

**Others**

- **1,4-Dioxane**
- **Phenol**
- **Sulfur**

MCL: Maximum Contaminant Level, bold value indicates concentration exceeds MCL. (P): Primary MCL. (S): Secondary MCL. (N): Not Detected.
## TABLE 3.2
WEST COAST BASIN WATER QUALITY RESULTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19
Page 22 of 22

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**TABLE 3.3**

**WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS**

**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19**

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### TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUORORALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

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NL - Drinking Water Notification Level
RL - Response Level
### TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19
Page 3 of 20

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**Date:** Meeting Date: 3/5/2020   **Item No.:** 14

**Notes:**
- **RL** - Reporting Level
- **ND** - Not Detected

**References:**
- NL = Drinking Water Notification Level
- RL = Reporting Level
**TABLE 3.3**
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

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**Legend:**
NL - Drinking Water Notification Level
RL - Response Level
### TABLE 3.3
**WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS**

**REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19**

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**Notes:**
- ND: Not Detected
- RL: Reporting Level
- Quality Assurance

**NL:** Drinking Water Notification Level

**RL:** Response Level

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Meeting Date: 3/5/2020  Item No. 14

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**TABLE 3.3**

WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS

REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

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**TABLE 3.3**

WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS

REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

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NL - Drinking Water Notification Level
RL - Request Level
### TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

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**Note:**
- **Lat.** = Drinking Water Notification Level
- **RL** = Response Level

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### Table 3.3

**WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS**  
**REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19**

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**Note:**  
NL - Drinking Water Notification Level  
RL - Response Level
### TABLE 3.3

**WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS**

#### REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

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**Legend:**
- **ND**: Not Detected
- **RL**: Response Level
- **BL**: Breaking Water Notification Level

**Note:** The table includes various per- and poly-fluorinated substances detected in groundwater monitoring for the water year 2018-19.
### TABLE 3.3
**WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS**
**REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19**

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WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

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**ML - Drinking Water Notification Level**
**RL - Response Level**
### TABLE 3.3

**WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS**

**REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19**

**Page 13 of 20**

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**Notes:**

- NL - Drinking Water Notification Level
- RL - Response Level
### TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
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**NOTES:**
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- RL - Request Level
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**TABLE 3.3**

WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS

REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

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**Legend:**
- **NL**: Drinking Water Notification Level
- **RL**: Response Level
TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19

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**ML** - Drinking Water Notification Level
**RL** - Response Level
### TABLE 3.3

**WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS**

**REGIONAL GRONDWATER MONITORING - WATER YEAR 2018-19**

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**NOTES:**

- NL - Drinking Water Notification Level
- RL - Response Level
### Table 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GROUNDDWATER MONITORING - WATER YEAR 2018-19

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**NL** - Drinking Water Notification Level
**RL** - Request Level
### TABLE 3.3
WATER QUALITY RESULTS: PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) CONSTITUENTS
REGIONAL GROUNDWATER MONITORING - WATER YEAR 2018-19

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<td>Specific Conductivity</td>
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<td>Selenium</td>
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<td>锿-200</td>
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<td>Total Suspended Solids (TSS)</td>
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<td>Turbidity</td>
<td>NTU</td>
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</table>

See footnote on following page.
TABLE 3.4
QUALITY OF REPLENISHMENT WATER

<table>
<thead>
<tr>
<th>Notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A = Used at the scawer extension bames generally, Desert Plant efficient / Jones Plant efficient (Data Source #1)</td>
</tr>
<tr>
<td>B = Used at the Montebello Forebay spreading grounds (Lake Mathews) (Data Source #1)</td>
</tr>
<tr>
<td>C = Used at the Montebello Forebay spreading grounds (Silverwood Lake) (Data Source #1)</td>
</tr>
<tr>
<td>D = Effluent of Edward C. Little Water Recycling Facility (ELWRF) before blending with treated water from Colorado River/State Water Project, used at the West Coast Basin Seawater Inursion Barrier (Data Source #4).</td>
</tr>
<tr>
<td>E = Effluent of Terminal Island Water Reclamation Plant/Advanced Water Treatment Facilities (TWIRP) before blending with treated water from Colorado River/State Water Project, used at the Dominguez Gap Seawater Inursion Barrier</td>
</tr>
<tr>
<td>F = Effluent of Leo J. Vander Lans Advanced Water Treatment Facility (LYL AWTF) before blending with treated water from Colorado River/State Water Project, used at the Alamitos Gap Seawater Inursion Barrier (Data Source #7).</td>
</tr>
<tr>
<td>G = Effluent of water reclamation plants (WRPS), used at the Montebello Forebay spreading grounds (Data Source #1)</td>
</tr>
<tr>
<td>H = Average concentration of water samples collected from LACDPW San Gabriel River Monitoring Station #14 from December 2017 through March 2018 (four storm events total) (Data Source #5)</td>
</tr>
<tr>
<td>I = Average concentration for Water Year October 2018 through September 2019 (Data Source #5)</td>
</tr>
<tr>
<td>J = Average concentration in blended water treatment plant efficient &amp; treated water from Colorado River/State Water Project, which is delivered to the Dominguez Gap Seawater Inursion Barrier (Data Source #1)</td>
</tr>
<tr>
<td>K = California’s 2014 Groundwater Replenishment Using Recycled Water Regulations specify the following TOC limits for groundwater replenishment projects</td>
</tr>
</tbody>
</table>

- For surface spreading (surface application), TOC limit = 0.5 mg/L divided by the 12-month running monthly average recycled water concentration (e.g., the TOC limit for a 100% recycled water project would be 9.5 mg/L). For compliance determination, TOC may be monitored in one of the following: 1) extracted recycled municipal wastewater prior to application or within the zone of percolation, 2) diluted percolated recycled municipal wastewater, with the value amended to negate the effect of the effluent water, or 3) blended recycled municipal wastewater prior to application, with the value amended using a non-sewer treatment factor approved by the Division of Drinking Water. |

- For injection (subsurface application), TOC limit = 9.5 mg/L. For compliance determination, TOC is monitored in the applied recycled municipal wastewater. |

| NA = Not Available/Analyzed |
| ND = Not Detected |
| NS = Not sampled due to plant shutdown |
| mg/L = milligrams per liter |
| µg/L = micrograms per liter |
| µStm = microStains per centimeter |
| NTU = Nephelometric Turbidity Units |
| MCL = Maximum Contamination Level |
| SMCL = Secondary Maximum Contamination Level |
| AL = Action Level |
| NL = Notification Level |
| WRP = Water Reclamation Plant |
| LACDPW = Los Angeles County Department of Public Works |
| LADWP = Los Angeles Department of Water and Power |
| MWD = Metropolitan Water District of Southern California |
| SDLACI = County Sanitation Districts of Los Angeles County |
| WBMWD = West Basin Municipal Water District |
| WRD = Water Replenishment District of Southern California |

**Sources of Data:**
(1) 2018 Water Quality Report to MWD Member Agencies (Metropolitan Water District of Southern California, March 2019)
(2) Title 31, Monthly Analyses of the District Water Supply (Metropolitan Water District of Southern California, October 2016 – September 2019)
(3) October 2018 – September 2019 Annual Monitoring Report, Montebello Forebay Groundwater Recharge (County Sanitation Districts of Los Angeles County (SDLAC), December 12, 2019)
(5) Annual stormwater monitoring provided by Los Angeles County Department of Public Works (LACDPW)
(7) 2019 Annual Summary Report, Alamitos Barrier Recycled Water Project, Leo J. Vander Lans Water Treatment Facility (Water Replenishment District of Southern California (WRD), April 2020) – Only two sampling events were conducted in 2019 (April) due to plant operation.
TABLE 3.5
MAJOR MINERAL WATER QUALITY GROUPS

<table>
<thead>
<tr>
<th>NESTED MONITORING WELL LOCATIONS</th>
<th>GROUP A ZONES</th>
<th>GROUP B ZONES</th>
<th>GROUP C ZONES</th>
<th>GROUP D ZONES</th>
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<tbody>
<tr>
<td></td>
<td>Generally Calcium Bicarbonate or Calcium Bicarbonate/Sulfate Dominant</td>
<td>Generally Calcium-Sodium-Bicarbonate or Sodium-Bicarbonate Dominant</td>
<td>Generally Sodium-Chloride Dominant</td>
<td>Generally Different Than Groups A, B, and C</td>
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<td>Bell #1</td>
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<td>PM-4 Marine</td>
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</tr>
</tbody>
</table>

Note: Values shown above represent the various zones at each nested well location classified by major mineral water quality group.
FIGURES
Production wells are typically perforated across multiple aquifers producing an average water quality. Nested monitoring wells are screened in a portion of a specific aquifer, providing water quality and water level information for the specific zone.
MONTEBELLO FOREBAY

TO THE PACIFIC OCEAN WEST OF SEAL BEACH

CENTRAL BASIN

LEGEND

AQUIFERS IN REDETT ALLUVIUM (INCLUDES THE GASPUR AND BALLONA AQUIFERS)

AQUIFERS IN LAKEWOOD FORMATION (INCLUDES THE ARTESIA, EXPOSITION, OASIS AND GARDENA AQUIFERS)

AQUIFERS IN THE SAN PEDRO FORMATION (INCLUDES THE HOLLADALE, JEFFERSON, LYNWOOD, SEVERANO AND SUNNYSIDE AQUIFERS)

IDEALIZED GEOLOGIC CROSS SECTION BB'

Adapted from CDWR Bull. 104 App. B

FIGURE 1.5
Figure 2.2
Changes in Groundwater Elevations
Fall 2018 to Fall 2019
(Upper San Pedro Formation Aquifers)

Legend
- WRD Nested Monitored Well
- The difference (in feet) between groundwater elevations measured in Fall 2019 & Fall 2018

Other wells used for analysis include the differences (in feet) between groundwater elevations measured in Fall 2019 & Fall 2018.

- > 20’ - 25’ Increase
- > 15’ - 20’ Increase
- > 10’ - 15’ Increase
- > 5’ - 10’ Increase
- 1’ - 5’ Increase
- Relatively Unchanged

Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
FIGURE 2.3
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL RIO HONDO #1

Reference point elevation 146.51 feet above mean sea level

- Zone 1 (1110' - 1130', Pico Fm)
- Zone 2 (910' - 930', Sunnyside)
- Zone 3 (710' - 730', Sunnyside)
- Zone 4 (430' - 450', Silverado)
- Zone 5 (280' - 300', Hollydale)
- Zone 6 (140' - 160', Gardena)
FIGURE 2.5
WATER LEVELS IN WRD KEY NESTED MONITORING WELL NORWALK #2

Reference point elevation 116.73 feet above mean sea level

Zones 1 and 2 overlay

- Zone 1 (1460 - 1480', Pico Fm)
- Zone 2 (1260 - 1280', Pico Fm)
- Zone 3 (960 - 980', Sunnyside)
- Zone 4 (800 - 820', Sunnyside)
- Zone 5 (480 - 500', Silverado)
- Zone 6 (236 - 256', Gardena)
FIGURE 2.6
WATER LEVELS IN WRD KEY NESTED MONITORING WELL HUNTINGTON PARK #1

Reference point 179.44 feet above mean sea level

Zone 1 (890' - 910', Silverado)  Zone 2 (690' - 710', Lynwood)  Zone 3 (420' - 440', Hollydale)  Zone 4 (275' - 295', Gage)
FIGURE 2.7
WATER LEVELS IN WRD KEY NESTED MONITORING WELL SOUTH GATE #1

Reference point elevation 107.50 feet above mean sea level
FIGURE 2.8
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL WILLOWBROOK #1

Reference point elevation 98.87 feet above mean sea level

Zone 1 (885' - 905', Sunnyside)  Zone 2 (500' - 520', Silverado)  Zone 3 (360' - 380', Lynwood)  Zone 4 (200' - 220', Gage)
FIGURE 2.9
WATER LEVELS IN WRD KEY NESTED MONITORING WELL LONG BEACH #6

Reference point 34.47 feet above mean sea level

- Zone 1 (1490' - 1510', Pico Formation)
- Zone 2 (930' - 950', Sunnyside)
- Zone 3 (740' - 760', Sunnyside)
- Zone 4 (480' - 500', Silverado)
- Zone 5 (380' - 400', Lynwood)
- Zone 6 (220' - 240', Gage)
FIGURE 2.10
WATER LEVELS IN WRD KEY NESTED MONITORING WELL SEAL BEACH #1

Reference Point Elevation 9.06 ft above mean sea level

Legend:
- Zone 1 (1345'-1365', Sunnyside)
- Zone 2 (1160'-1180', Sunnyside)
- Zone 3 (1020'-1040', Sunnyside)
- Zone 4 (775'-795', Silverado)
- Zone 5 (605'-625', Lynwood)
- Zone 6 (215'-235', Gage)
- Zone 7 (60'-70', Artesia)
FIGURE 2.11
WATER LEVELS IN WRD KEY NESTED MONITORING WELL WHITTIER #1

Reference point elevations 217.35 (Zones 1, 2, 4 and 5) and 217.81 (Zone 3) feet above mean sea level

- Zone 1 (1180' - 1200', Pico Fm)
- Zone 2 (920' - 940', Pico Fm)
- Zone 3 (600' - 620', Sunnyside)
- Zone 4 (450' - 470', Silverado)
- Zone 5 (200' - 220', Jefferson)
FIGURE 2.12
WATER LEVELS IN WRD NESTED MONITORING WELL PM-4 MARINER

Reference point elevation 100.38 feet above mean sea level

Zones 3, 4 overlay

- Zone 1 (670'-710', Sunnyside)
- Zone 2 (500'-540', Silverado)
- Zone 3 (340'-380', Lynwood)
- Zone 4 (200'-240', Gardena)
FIGURE 2.13
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL CARSON #1

Reference point 26.86 feet above mean sea level

- Zone 1 (990' - 1010', Silverado)
- Zone 2 (740' - 760', Silverado)
- Zone 3 (460' - 480', Lynwood)
- Zone 4 (250' - 270', Gage)
FIGURE 2.14
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL MANHATTAN BEACH #1

Reference point elevation 128.71 feet above mean sea level

- Zone 1 (1950-1990', Pico Fm)
- Zone 2 (1570-1590', Pico Fm)
- Zone 3 (1250-1270', Pico Fm)
- Zone 4 (865-885', Sunnyside)
- Zone 5 (640-660', Sunnyside)
- Zone 6 (320-340', Silverado)
- Zone 7 (180-200', Gage)
FIGURE 2.15
WATER LEVELS IN WRD KEY NESTED
MONITORING WELL WILMINGTON #2

Reference point elevation 32.30 feet above mean sea level
Figure 3.1
TDS Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

Legend
TDS: SMCL Upper level = 1,000 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year:

- No Data
- None Detected
- > 1,000 - 2,000 mg/L
- > 2,000 - 4,000 mg/L
- ≤ 500 mg/L
- > 4,000 mg/L
- > 500 - 1,000 mg/L

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

Seawater Intrusion Barrier
WRD Service Area Boundary

Central Basin Sub-Area Boundary (See Figure 1.1 for Detail)
Figure 3.2
TDS Concentrations from Groundwater Production Wells

Legend
TDS: SMCL Upper level = 1,000 mg/L

- None Detected
- ≤ 500 mg/L
- > 500 - 1,000 mg/L
- > 1,000 - 2,000 mg/L
- > 2,000 - 4,000 mg/L
- > 4,000 mg/L
- WRD Monitoring Well

Symbol represents the maximum concentration reported from October 2016 - September 2019.

Data Source: State Water Resources Control Board
Division of Drinking Water

- Seawater Intrusion Barrier
- WRD Service Area Boundary
- Central Sub-Area Boundary
  (See Figure 1.5 for Detail)
Figure 3.3
Iron Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

Legend
Iron: SMCL = 0.3 mg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

- Bold outline indicates zone in Silverado aquifer.
- Data Source: WRD Regional Groundwater Monitoring Program

- Legend:
  - No Data
  - None Detected
  - \( \leq 0.15 \text{ mg/L} \)
  - \( > 0.15 - 0.3 \text{ mg/L} \)
  - \( < 0.3 - 0.6 \text{ mg/L} \)
  - \( > 0.6 - 1.2 \text{ mg/L} \)
  - \( > 1.2 \text{ mg/L} \)

(See Figure 1.1 for detail)
Figure 3.4
Iron Concentrations from Groundwater Production Wells

Legend
Iron: SMCL = 0.3 mg/L
- None Detected
- ≤ 0.15 mg/L
- > 0.15 - 0.3 mg/L
- > 0.3 - 0.6 mg/L
- > 0.6 - 1.2 mg/L
- > 1.2 mg/L
- WRD Monitoring Well

Symbol represents the maximum concentration reported from
October 2016 - September 2019
Data Source: State Water Resources Control Board
Division of Drinking Water

Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.5 for Detail)
Figure 3.5
Manganese Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

Legend
Manganese: SMCL = 50 µg/L
NL = 500 µg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year:

- No Data
- None Detected
- > 25 - 50 µg/L
- > 50 - 250 µg/L
- > 250 - 500 µg/L
- > 500 µg/L

Bold outline indicates zone in Sisquoc aquifer

Data Source: WRD Regional Groundwater Monitoring Program

Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 11 for detail)
Figure 3.6
Manganese Concentrations from Groundwater Production Wells

Legend
Manganese: SMCL = 50 µg/L
NL = 500 µg/L

- None Detected
- ≤ 15 µg/L
- > 15 - 50 µg/L
- > 50 - 250 µg/L
- > 250 - 500 µg/L
- > 500 µg/L
- WRD Monitoring Well

Symbol represents the maximum concentration reported from October 2016 - September 2019

Data Sources:
- State Water Resources Control Board
- Division of Drinking Water
- State Water Resources Control Board
- Division of Drinking Water

Scavenger Intake Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for detail)
Figure 3.7 Chloride Concentrations in Groundwater WRD Nested Monitoring Wells Water Year 2018 - 2019

Legend
Chloride: SMCL Upper Level = 500 mg/L

- Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
- The box fill pattern legend indicates the maximum concentrations detected during the water year.
- Bold outline indicates zone in Silverado aquifer.

Data Source: WRD Regional Groundwater Monitoring Program
Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Figure 3.8
Chloride Concentrations from Groundwater Production Wells

Legend
Chloride: SMCL Upper Level = 500 mg/L

- None Detected
- ≥ 250 mg/L
- > 250 - 500 mg/L
- > 500 - 1000 mg/L
- > 1000 - 2000 mg/L
- > 2000 mg/L
- WRD Monitoring Well

Symbol represents the maximum concentration reported from October 2016 - September 2019

Data Source: State Water Resources Control Board Division of Drinking Water

Water Intake Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Figure 3.9
Nitrate Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

Legend
Nitrate (as Nitrogen): MCL = 10 mg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year:

- No Data
- None Detected
- < 5 mg/L
- > 5 - 10 mg/L
- > 10 - 20 mg/L
- > 20 - 40 mg/L
- > 40 mg/L

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Figure 3.10
Nitrate Concentrations from Groundwater Production Wells

Legend
Nitrate (as Nitrogen): MCL = 10 mg/L

- None Detected
- ≤ 5 mg/L
- > 5 - 10 mg/L
- > 10 - 20 mg/L
- > 20 - 40 mg/L
- > 40 mg/L
- WRD Monitoring Well

Symbol represents the maximum concentration reported from October 2016 - September 2019
Data Source: State Water Resources Control Board Division of Drinking Water

- Scavenger Intensive Barrier
- WRD Service Area Boundary
- Central Basin Sub-Area Boundary
(See Figure 1.5 for Detail)
Figure 3.11
TCE Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

Legend
TCE: MCL = 5 µg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone within the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year:

- **Bold outline indicates zone in Silverado aquifer**
- Data Source: WRD Regional Groundwater Monitoring Program
- Seawater Intrusion Barrier
- WRD Service Area Boundary
- Central Basin Sub-Area Boundary (See Figure 11 for Detail)

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Figure 3.12
TCE Concentrations from Groundwater Production Wells

Legend
TCE: MCL = 5 µg/L
None Detected
≤ 2.5 µg/L
> 2.5 - 5 µg/L
> 5 - 10 µg/L
> 10 - 20 µg/L
> 20 µg/L

Symbol represents the maximum concentration reported from
October 2016 - September 2019
Data Source: State Water Resources Control Board
Division of Drinking Water

Water Replenishment District

Service Area Boundary
Intrusion Barrier
Central Basin Sub-Area Boundary
(See Figure 1.1 for detail)
Figure 3.13
PCE Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

Legend
PCE: MCL = 5 µg/L

- Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
- The box fill pattern legend indicates the maximum concentrations detected during the water year:
  - No Data
  - None Detected
  - > 5 - 10 µg/L
  - > 10 - 20 µg/L
  - ≤ 2.5 µg/L
  - > 20 µg/L
  - ≥ 2.5 - 5 µg/L

- Bold outline indicates zone in Silvomado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 11 for Detail)
Figure 3.14
PCE Concentrations from Groundwater Production Wells

Legend

- None Detected
- ≤ 2.5 µg/L
- > 2.5 - 5 µg/L
- > 5 - 10 µg/L
- > 10 - 20 µg/L
- > 20 µg/L

WRD Monitoring Well

Symbol represents the maximum concentration reported from October 2006 - September 2019

Data Source: State Water Resources Control Board

Scawater Intensive Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary

(See Figure 1.3 for Detail)
Figure 3.15
Arsenic Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

Legend
Arsenic: MCL = 10 µg/L
Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.
The box fill pattern legend indicates the maximum concentrations detected during the water year.

- No Data
- None Detected
- > 5 - 10 µg/L
- > 10 - 20 µg/L
- > 20 - 40 µg/L
- > 40 µg/L

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Figure 3.16
Arsenic Concentrations from Groundwater Production Wells

Legend
Arsenic: MCL = 10 µg/L

- None Detected
- ≤ 5 µg/L
- > 5 - 10 µg/L
- > 10 - 20 µg/L
- > 20 - 40 µg/L
- > 40 µg/L
- WRD Monitoring Well

Symbol represents the maximum concentration reported from October 2016 - September 2019

Data Sources:
- State Water Resources Control Board
- Division of Drinking Water

- Seawater Intrusion Barrier
- WRD Service Area Boundary
- Central Basin Sub-Area Boundary
(See Figure 1 for Detail)
Figure 3.17
Perchlorate Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

Legend
Perchlorate: MCL = 6 µg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year:

- No Data
- No Detection
- > 6 - 12 µg/L
- > 12 - 24 µg/L
- > 24 µg/L
- > 3 - 6 µg/L
- Bold outline indicates zone in Santa Monica Aquifer

Data Source: WRD Regional Groundwater Monitoring Program

Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Figure 3.18
Perchlorate Concentrations from Groundwater Production Wells

Legend
Perchlorate: MCL = 6 µg/L

- None Detected
- ≤ 1 µg/L
- > 1-6 µg/L
- > 6-12 µg/L
- > 12-24 µg/L
- > 24 µg/L
- WRD Monitoring Well

Symbol represents the maximum concentration reported from October 2016 - September 2019

Data Source: State Water Resources Control Board Division of Drinking Water

- Scanner Intention Barrier
- WRD Service Area Boundary
- Central Basin Sub-Area Boundary
  (See Figure 11 for Detail)
Figure 3.19
Hexavalent Chromium Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

Legend
Chromium VI: Historic MCL = 10 µg/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year:
- No Data
- Zone Detected
- > 10 - 20 µg/L
- > 20 - 40 µg/L
- > 40 µg/L
- > 5 - 10 µg/L

Bold outline indicates zone in Silverado aquifer

Data Source: WRD Regional Groundwater Monitoring Program

Seawater Intrusion Barrier:
WRD Service Area Boundary:
Central Basin Sub-Area Boundary
(See Figure 1.1 for Details)
Figure 3.20
Hexavalent Chromium Concentrations from Groundwater Production Wells

Legend
Chromium VI:
Historic MCL = 10 µg/L
- None Detected
- ≤ 5 µg/L
- > 5 - 10 µg/L
- > 10 - 20 µg/L
- > 20 - 40 µg/L
- > 40 µg/L
- WRD Monitoring Well

Symbol represents the maximum concentration reported from October 2016 - September 2019
Data Source: State Water Resources Control Board
Division of Drinking Water

Seawater Intention Barrier
WRD Service Area Boundary
** Central Basin Sub-Area Boundary
(See Figure 1.1 for Detail)
Figure 3.21
1,4 Dioxane Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

Legend
1,4 Dioxane: Notification Level = 1.0 µg/L
Response Level: 35 µg/L

Each row of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year:
- No Data
- 1 - 5 µg/L
- > 5 - 10 µg/L
- > 35 µg/L

Bold outline indicates zone in Silliman aquifer

Data Source: WRD Regional Groundwater Monitoring Program

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Figure 3.22
1,4 Dioxane Concentrations from Groundwater Production Wells

Legend
1,4 Dioxane: Notification Level = 1.0 µg/L
Response Level = 35 µg/L

- None Detected
- 1 - 5 µg/L
- > 5 - 10 µg/L
- > 35 µg/L
- WRD Monitoring Well

Symbol represents the maximum concentration reported from October 2016 - September 2019

Data Source: State Water Resources Control Board
Intake of Drinking Water

Seawater Intake Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.1 for detail)
Figure 3.23
PFOS Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

Legend
PFOS: Notification Level = 6.5 ng/L
Response Level = 40 ng/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deepest zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year:

- No Data
- None Detected
- ≤ 3.2 ng/L
- > 3.2 - 6.5 ng/L
- > 6.5 - 20 ng/L
- > 20 - 40 ng/L
- > 40 ng/L

Bold outline indicates zone in Silverado Aquifer

Data Source: WRD Regional Groundwater Monitoring Program

Seawater Intensification Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary

(See Figure 11 for Detail)
Figure 3.24
PFOS Concentrations from Groundwater Production Wells

Legend
PFOS: Notification Level = 6.5 ng/L
Response Level = 40 ng/L
- None Detected
- ≤ 3.2 ng/L
- > 3.2 - 5 ng/L
- > 5 - 20 ng/L
- > 20 - 40 ng/L
- > 40 ng/L
- WRD Monitoring Well

Symbol represents the maximum concentration reported from sampling conducted in WY 2018 – 2019
Data Source: State Water Resources Control Board
Division of Drinking Water (DDW), Includes all data received through the end of Water Year 2019-20 and made available by DDW as of January 8, 2020.

Summer Insulation Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 11 for Detail)
Figure 3.25

PFOA Concentrations in Groundwater
WRD Nested Monitoring Wells
Water Year 2018 - 2019

Legend
PFOA: Notification Level = 5.1 ng/L
Response Level = 10 ng/L

Each stack of boxes represents one nested monitoring well. Each individual box represents one perforated zone in the nested monitoring well, with the deeper zone at the bottom of the stack.

The box fill pattern legend indicates the maximum concentrations detected during the water year:

- No Data
- None Detected
- ≤2.5 ng/L
- >2.5 - 5.1 ng/L
- >5.1 - 10 ng/L
- >10 - 70 ng/L
- >70 ng/L

Bold outline indicates zone in Saltonstall aquifer

Data Source: WRD Regional Groundwater Monitoring Program

Seawater Intrusion Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 11 for Detail)
Figure 3.26
PFOA Concentrations from Groundwater Production Wells

Legend
PFOA: Notification Level = 5.1 ng/L
Response Level = 10 ng/L

- None Detected
- ≤ 2.5 ng/L
- > 2.5 - 5.1 ng/L
- > 5.1 - 10 ng/L
- > 10 - 70 ng/L
- > 70 ng/L
- WRD Monitoring Well

Symbol represents the maximum concentration reported from sampling conducted in FY 2018 - 2019

Data Source: State Water Resources Control Board
Direction of Drinking Water (SCDW). Includes all data received through the end of Water Year 2018-19 and made available by SCRW as of January 3, 2020.

Scisswater Intensive Barrier
WRD Service Area Boundary
Central Basin Sub-Area Boundary
(See Figure 1.5 for Detail)

Miles
TDS AND CHLORIDE IN
WRD KEY MONITORING WELL RIO HONDO #1

FIGURE 4.1
Total Dissolved Solids

Secondary Maximum Contaminant Level = 1,000 mg/L

Water Quality Objective = 700 mg/L

Chloride

Secondary Maximum Contaminant Level = 500 mg/L

Water Quality Objective = 150 mg/L

TDS AND CHLORIDE IN WRD KEY MONITORING WELL PICO #2

FIGURE 4.2
Total Dissolved Solids

Secondary Maximum Contaminant Level = 1,000 mg/L

Water Quality Objective = 700 mg/L

Chloride

Secondary Maximum Contaminant Level = 500 mg/L

Water Quality Objective = 150 mg/L

TDS AND CHLORIDE IN WRD KEY MONITORING WELL NORWALK #2

FIGURE 4.3
TDS AND CHLORIDE IN
WRD KEY MONITORING WELL HUNTINGTON PARK #1

FIGURE 4.4
Total Dissolved Solids

Secondary Maximum Contaminant Level = 1,000 mg/L

Water Quality Objective = 700 mg/L

Chloride

Secondary Maximum Contaminant Level = 500 mg/L

Water Quality Objective = 150 mg/L

TDS AND CHLORIDE IN WRD KEY MONITORING WELL SOUTH GATE #1
FIGURE 4.6

Total Dissolved Solids

Water Quality Objective = 700 mg/L
Secondary Maximum Contaminant Level = 1,000 mg/L

Chloride

Water Quality Objective = 150 mg/L
Secondary Maximum Contaminant Level = 500 mg/L

TDS AND CHLORIDE IN WRD KEY MONITORING WELL WILLOWBROOK #1
Total Dissolved Solids

Secondary Maximum Contaminant Level = 1,000 mg/L

Water Quality Objective = 700 mg/L

Chloride

Secondary Maximum Contaminant Level = 500 mg/L

Water Quality Objective = 150 mg/L

Zones 1 through 5 overlay

TDS AND CHLORIDE IN
WRD KEY MONITORING WELL LONG BEACH #6

FIGURE 4.7
Total Dissolved Solids

Secondary Maximum Contaminant Level = 1,000 mg/L

Water Quality Objective = 700 mg/L

Chloride

Secondary Maximum Contaminant Level = 500 mg/L

Zones 1 through 5 overlay
Water Quality Objective = 150 mg/L
Zones 1 through 4 overlay

Zones:
- Zone 1 (1345'-1365', Sunnyside)
- Zone 2 (1160'-1180', Sunnyside)
- Zone 3 (1020'-1040', Sunnyside)
- Zone 4 (775'-795', Silverado)
- Zone 5 (605'-625', Lynwood)
- Zone 6 (215'-235', Gage)
- Zone 7 (60'-70', Artesia)

TDS AND CHLORIDE IN
WRD KEY MONITORING WELL SEAL BEACH #1

FIGURE 4.8
Total Dissolved Solids

Chloride

TDS AND CHLORIDE IN
WRD KEY MONITORING WELL WHITTIER #1

FIGURE 4.9
**Total Dissolved Solids**

Secondary Maximum Contaminant Level = 1,000 mg/L

Water Quality Objective = 800 mg/L

**Chloride**

Secondary Maximum Contaminant Level = 500 mg/L

Water Quality Objective = 250 mg/L

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**TDS AND CHLORIDE IN**

**WRD KEY MONITORING WELL PM-4 MARINER**

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**FIGURE 4.10**
Total Dissolved Solids

Secondary Maximum Contaminant Level = 1,000 mg/L

Water Quality Objective = 800 mg/L

Chloride

Secondary Maximum Contaminant Level = 500 mg/L

Water Quality Objective = 250 mg/L

TDS AND CHLORIDE IN
WRD KEY MONITORING WELL CARSON #1

FIGURE 4.11
**Total Dissolved Solids**

- **Secondary Maximum Contaminant Level**: 1,000 mg/L
- **Water Quality Objective**: 800 mg/L

**Chloride**

- **Secondary Maximum Contaminant Level**: 500 mg/L
- **Water Quality Objective**: 250 mg/L

**TDS AND CHLORIDE IN WRD KEY MONITORING WELL MANHATTAN BEACH #1**

**FIGURE 4.12**
Total Dissolved Solids

- Secondary Maximum Contaminant Level = 1,000 mg/L
- Water Quality Objective = 800 mg/L

Chloride

- Secondary Maximum Contaminant Level = 500 mg/L
- Water Quality Objective = 250 mg/L

TDS AND CHLORIDE IN
WRD KEY MONITORING WELL WILMINGTON #2

FIGURE 4.13
Mission:

“To provide, protect and preserve high-quality groundwater through innovative, cost-effective and environmentally sensitive basin management practices for the benefit of residents and businesses of the Central and West Coast Basins.”
MEMORANDUM
ITEM NO. 15

DATE: MARCH 5, 2020
TO: BOARD OF DIRECTORS
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: RECEIVE AND FILE THE BUDGET ADVISORY COMMITTEE RECOMMENDATION FOR THE UPPER LIMIT TO THE 2020-2021 REPLENISHMENT ASSESSMENT

SUMMARY
The Budget Advisory Committee (the “BAC”) is an advisory body to WRD established to review the District’s proposed replenishment assessments (RA) and the annual operating budget, including reserve funds maintained by the District.

The BAC consists of seven (7) members who serve four (4) year terms who are elected from among representatives of groundwater producers subject to the replenishment assessment levied by the District pursuant to CA Water Code Section 60317.

There are three (3) categories of members (each a “Membership Category”):

- Category A: Two (2) members with an annual pumping right of less than five thousand (5,000) acre feet. The City of Lomita and Liberty Utilities currently serve as Category A members;

- Category B: Two (2) members with an annual pumping right of at least five thousand (5,000) acre-feet but less than ten thousand (10,000) acre-feet. The City of Lakewood and the City of Torrance currently serve as Category B members; and

- Category C: Three (3) members with an annual pumping right of ten thousand (10,000) acre-feet or greater. California Water Service, Long Beach Water Department, and the Los Angeles Department of Water and Power currently serve as Category C members.

On February 26, 2020 there was a joint meeting of the WRD Board of Directors and the BAC to review and discuss the District’s midyear budget and proposed ensuing year’s budget and RA alternative scenarios. After much discussion, the BAC recommended that the Board of Directors adopt an upper limit on the 2020-2021 RA of 5% above the current
RA of $365 per acre foot, which equates to an RA of $383.25. This is the upper limit recommended for the purposes of the Pumper Notification process.

**FISCAL IMPACT**
None

**BUDGET ADVISORY COMMITTEE RECOMMENDATION**
The Budget Advisory Committee recommends that the Board of Directors adopt an upper limit on the Fiscal Year 2020-2021 Replenishment Assessment (RA) of $383.25 per acre foot pumped, which is a 5% increase on the current RA of $365 per acre foot pumped, for the purposes of the Pumper Notification process.
DATE: MARCH 5, 2020
TO: BOARD OF DIRECTORS
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: MID-YEAR BUDGET REVIEW AND BUDGET WORKSHOP # 1

SUMMARY
The District’s annual budget is the basis for the Board of Directors setting the replenishment assessment each year. The California Water Code requires that the ensuing year’s Replenishment Assessment (RA) be adopted no later than the second Tuesday in May following the opening and closing of a Water Code Public Hearing.

The District also currently follows a separate Pumper Notification process which has its own Public Hearing after mailing to all groundwater producers within the District the proposed upper limit being considered by the Board of Directors for the RA and information regarding the hearing, including protest information.

The District has started its budgeting process by presenting the current Fiscal Year 2019-20 mid-year budget projection and the draft ensuing Fiscal Year 2020-21 budget to the Finance/Audit Committee on February 24, 2020 and to the joint meeting of the WRD Board of Directors and the Budget Advisory Committee on February 26, 2020.

The mid-year budget projection is an important step in the District’s financial planning process as it provides updated projections of revenues and expenditures for the current fiscal year and assists the District in developing the ensuing year’s budget.

Staff will present the ensuing year’s draft budget and seek direction from the Board of Directors on the proposed RA rate for Fiscal Year 2020-21, including the RA upper limit to provide on the Pumper Notification mailing.

FISCAL IMPACT
None

STAFF RECOMMENDATION
For discussion and possible action.